CARBON AND CERTAIN ALLOY STEEL PRODUCTS

Volume I

Report to the President on Investigation No. TA-201-51 Under Section 201 of the Trade Act of 1974

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Note.--Information which would reveal the confidential operations of individual concerns may not be published and therefore has been deleted from this report. These deletions are indicated by asterisks.

UNITED STATES INTERNATIONAL TRADE COMMISSION
July 24, 1984

REPORT TO THE PRESIDENT ON INVESTIGATION NO. TA-201-51

CARBON AND CERTAIN ALLOY STEEL PRODUCTS

Determination

On the basis of the information developed during the course of investigation No. TA-201-51, the Commission determines that carbon and alloy steel 1/ plates, sheets and strip, wire and wire products, and structural shapes and units are being imported into the United States in such increased quantities as to be a substantial cause of serious injury to the domestic industries producing articles like or directly competitive with the imported articles; 2/ that carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing articles like or directly competitive with the imported articles; 3/ and that carbon and alloy steel wire rods, railway-type products, bars, and pipes and tubes and blanks therefor are not being imported into the United States in such increased

1/ The term "carbon and alloy steel" covers alloy and other than alloy steel (except stainless steel, heat resisting steel, or tool steel, but including tool steel of the type described in headnote 2(h)(vii) to part 2B of schedule 6 of the Tariff Schedules of the United States (TSUS)). The scope of the products included in each of the specified product groups is presented on p. 6.
2/ Chairwoman Stern and Vice Chairman Liebeler dissenting.
3/ Chairwoman Stern and Vice Chairman Liebeler dissenting. Commissioners Lodwick and Rohr determine that carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars are being imported into the United States in such increased quantities as to be a substantial cause of the threat of serious injury to the domestic industry producing articles like or directly competitive with the imported articles. Commissioner Eckes determines that such products are being imported into the United States in such increased quantities as to be a substantial cause of serious injury to the domestic industry producing articles like or directly competitive with the imported articles.

quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industries producing articles like or directly competitive with the imported articles. 1/

Findings and recommendations 2/

Commissioners Eckes, Lodwick, and Rohr find and recommend that in order to prevent or remedy the serious injury found with respect to ingots, blooms, billets, slabs, and sheet bars; plates; sheets and strip; wire and wire products; and structural shapes and units, it is necessary to impose the following 5-year program of tariffs and quotas: 3/

> Ingots, blooms, billets, slabs, and sheet bars: A tariff-rate quota with the existing rates of duty applying to imports up to 1.5 million tons per year. Above that level imports would be assessed additional duties of 15 percent ad valorem in years 1, 2, and 3 of the relief period and 10 percent ad valorem in years 4 and 5.
>
> Plates: A quantitative restriction with imports limited to the larger of 2.1 million tons per year or the following shares of apparent U.S. consumption--21.2 percent in years 1, 2, and 3 of the relief period and 23.3 percent in years 4 and 5.
>
> Hot-rolled sheets and strip: A quantitative restriction with imports limited to the larger of 1.8 million tons per year or the following shares of apparent U.S. consumption--11.0 percent in years 1, 2, and 3 of the relief period and 12.1 percent in years 4 and 5.

1/ Commissioners Eckes and Rohr dissenting with respect to carbon and alloy steel pipes and tubes and blanks therefor.

2/ Pursuant to sec. 213(e)(2) of the Caribbean Basin Economic Recovery Act (19 U.S.C. § 2703(e)(2)), these findings and recommendations also apply to the subject carbon and alloy steel products when imported from beneficiary [Caribbean Basin] countries.

3/ Certain products are excluded from the remedy recommendation. They are bandsaw steel, razor-blade steel, bread-knife steel, and shoe-die knife steel. In addition, Commissioners Eckes, Lodwick, and Rohr recommend that the President review the record of exclusion requests furnished by the Commission to determine whether other items should be excluded. All quantities refer to short tons (2,000 pounds).

Cold-rolled sheets and strip: A quantitative restriction with imports limited to the larger of 1.9 million tons per year or the following shares of apparent U.S. consumption--10.6 percent in years 1, 2, and 3 of the relief period and 11.7 percent in years 4 and 5.

Galvanized sheets and strip: A quantitative restriction with imports limited to the larger of 1.6 million tons per year or the following shares of apparent U.S. consumption--21.4 percent in years 1, 2, and 3 of the relief period and 23.5 percent in years 4 and 5.

All other further worked sheets and strip: A quantitative restriction with imports limited to the larger of 400,000 tons per year or the following shares of apparent U.S. consumption--6.4 percent in years 1, 2, and 3 of the relief period and 7.0 percent in years 4 and 5.

Structural shapes and units, excluding light structural shapes: 1/ A quantitative restriction with imports limited to the larger of 2.1 million tons per year or the following shares of apparent U.S. consumption--28.9 percent in years 1, 2, and 3 of the relief period and 31.8 percent in years 4 and 5.

Wire: A quantitative restriction with imports limited to the larger of 400,000 tons per year or the following shares of apparent U.S. consumption--24.5 percent in years 1, 2, and 3 of the relief period and 26.9 percent in years 4 and 5.

Wire products: An additional duty of 12 percent ad valorem in years 1, 2, and 3 of the relief period and 10 percent ad valorem in years 4 and 5.

In addition, Commissioners Lodwick and Rohr recommend that continued import relief be conditioned on the presentation of plans that describe how the period of relief will be used to facilitate an orderly adjustment to import competition. Commissioner Rohr recommends that these plans be presented no later than 120 days following implementation of relief. Commissioners Lodwick and Rohr note that, if the President provides relief, during the period of that relief the Commission will closely monitor the

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1/ No relief is recommended for light structurals, i.e., those having a maximum cross-sectional dimension of less than 3 inches.

progress of the industry relative to the relief measures in force and at appropriate intervals of the period the Commission will conduct formal reviews under provisions of Title II of the Trade Act of 1974 and report, as appropriate, its findings and/or recommendations to the President.

Chairwoman Stern, having voted in the negative with respect to all products subject to this investigation, recommends that no relief be provided.

Vice Chairman Liebeler, having determined that no temporary tariff or quota can remedy the injury to this industry, recommends that no relief be provided. In the event that the President decides to erect an import barrier, however, Vice Chairman Liebeler recommends that it be conditioned on a compensation cut to steelworkers of at least 20 percent.

Background

On January 24, 1984, following receipt of a petition filed on behalf of the United Steelworkers of America, AFL-CIO/CLC, and Bethlehem Steel Corp., the Commission instituted investigation No. TA-201-51, under section 201(b)(1) of the Trade Act of 1974 (19 U.S.C. § 2251(b)(1)), to determine whether carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars; plates; sheets and strip; wire rods; wire and wire products; railway-type products; bars; structural shapes and units; and pipes and tubes and blanks therefor are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing articles like or directly competitive with the imported articles.

Notice of the institution of the investigation and of public hearings to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, D.C., and by publishing the notice in the Federal Register on February 15, 1984 (49 FR 5838). Public hearings were held on May 9-12, 1984 (on the question of injury) and June 21-22, 1984 (on the question of remedy), at which time all persons were afforded the opportunity to present evidence and be heard. In public sessions, the Commission announced its injury determination on June 12, 1984, and its remedy recommendations on July 11, 1984.

This report is being furnished to the President in accordance with section 201(d)(1) of the Trade Act. The information in the report was obtained from responses to Commission questionnaires, fieldwork and interviews by members of the Commission's staff, other agencies, information presented at the public hearings, briefs submitted by interested parties, the Commission's files, and other sources.

Scope of the products subject to this investigation 1/

Ingots, blooms, billets, slabs, and sheet bars

Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars provided for in items 606.6705, 606.6710, 606.6715, 606.6720, 606.6725, 606.6730, 606.6735, 606.6740, 606.6926, 606.6929, 606.6932, 606.6935, 606.6938, 606.6941, 606.6944, and 606.6947 of the Tariff Schedules of the United States Annotated (TSUSA).

Plates

Carbon and alloy steel plates provided for in TSUSA items 607.6610, 607.6620, 607.6625, 607.6900, 607.7803, 607.7806, 607.8320, 607.8600, 607.9100, 607.9400, 608.0710, 608.1100, 608.1420, 609.1400, and 609.1500.

Sheets and strip

Hot-rolled carbon and alloy steel sheets and strip provided for in TSUSA items 607.6710, 607.6720, 607.6730, 607.6740, 607.8100, 607.8342, 608.1920, 608.2120, 608.2320, 608.5900, and 608.6720.

Cold-rolled carbon and alloy steel sheets and strip provided for in TSUSA items 607.6200, 607.6400, 607.8355, 607.8360, 607.9205, 607.9210, 607.9320, 608.1940, 608.2145, 608.2150, 608.2340, 608.3100, 608.3820, 608.3900, 608.4700, and 608.5520.

Galvanized carbon and alloy steel sheets and strip provided for in TSUSA items 608.1310, 608.1320, and 608.1330.

All other carbon and alloy steel sheets and strip provided for in TSUSA items 607.8350, 607.9600, 607.9700, 607.9900, 608.0100, 608.0730, 608.1340, 608.1350, 608.1440, 609.1710, and 609.1790.

Wire rods

Carbon and alloy steel wire rods provided for in TSUSA items 607.1400, 607.1700, 607.2200, 607.2300, 607.3200, 607.4100, 607.4800, and 607.5900.

Wire

Carbon and alloy steel wire, bale ties made from wire, and milliners' wire and other wire covered with textile or other material not wholly of metal provided for in TSUSA items 609.2000, 609.2100, 609.2200, 609.2500, 609.2800, 609.3040, 609.3340, 609.3500, 609.3600, 609.3700, 609.4010, 609.4040, 609.4055, 609.4065, 609.4120, 609.4125, 609.4165, 609.4315, 609.4365, 609.4530, 609.4560, 609.7000, 609.7200, 609.7500, 609.7600, 642.9000, 642.9100, 642.9600, and 642.9700.

1/ Based on tariff classifications in the 1984 TSUSA through supplement 3.

Wire products

Carbon and alloy steel barbed and twisted wire provided for in TSUSA items 642.0200 and 642.1105.

Carbon and alloy steel wire strand provided for in TSUSA items 642.1120, 642.1142, 642.1144, and 642.1146.

Carbon and alloy steel wire ropes, cables, and cordage provided for in TSUSA items 642.1200, 642.1610, and 642.1650.

Carbon and alloy steel wire fencing provided for in TSUSA items 642.3510, 642.3530, 642.3560, and 642.3570.

Carbon and alloy steel wire brads, nails, spikes, staples, and tacks provided for in TSUSA items 646.2500, 646.2622, 646.2624, 646.2626, 646.2628, 646.2642, 646.2644, 646.2646, and 646.2648.

Railway-type products

Carbon and alloy steel rails provided for in TSUSA items 610.2010, 610.2020, and 610.2100.

Carbon and alloy steel joint bars, tie plates, and track spikes provided for in TSUSA items 610.2500, 610.2600, and 646.3020.

Carbon and alloy steel railway wheels and axles provided for in TSUSA items 690.2500 and 690.3000.

Bars

Carbon and alloy steel bars provided for in TSUSA items 606.7900, 606.8100, 606.8310, 606.8330, 606.8350, 606.8600, 606.8805, 606.8815, 606.9105, 606.9110, 606.9700, 606.9900, 607.0500, 607.0700, and 607.0900.

Structural shapes and units

Carbon and alloy steel sheet piling provided for in TSUSA items 609.9600 and 609.9800.

Carbon and alloy steel angles, shapes, and sections (light structural shapes) provided for in TSUSA items 609.8050, 609.8070, 609.8090, 609.8235, and 609.8240.

Carbon and alloy steel angles, shapes, and sections (heavy structural shapes) provided for in TSUSA items 609.8005, 609.8015, 609.8035, 609.8041, 609.8045, 609.8225, and 609.8230.

Carbon and alloy steel angles, shapes, and sections and columns, pillars, posts, beams, girders, and similar structural units provided for in TSUSA items 609.8400, 609.8600, 652.9400, and 652.9600.

Pipes and tubes and blanks therefor

Carbon and alloy steel pipes and tubes and blanks therefor provided for in TSUSA items 610.3000, 610.3100, 610.3205, 610.3208, 610.3209, 610.3212, 610.3213, 610.3216, 610.3219, 610.3221, 610.3227, 610.3231, 610.3233, 610.3234, 610.3241, 610.3242, 610.3243, 610.3249, 610.3252, 610.3254, 610.3256, 610.3258, 610.3262, 610.3264, 610.3500, 610.3600, 610.3704, 610.3711, 610.3712, 610.3713, 610.3721, 610.3722, 610.3728, 610.3732, 610.3751, 610.3925, 610.3935, 610.3945, 610.3955, 610.4025, 610.4035, 610.4045, 610.4055, 610.4225, 610.4235, 610.4245, 610.4255, 610.4325, 610.4335, 610.4345, 610.4355, 610.4500, 610.4600, 610.4800, 610.4920, 610.4925, 610.4928, 610.4931, 610.4933, 610.4936, 610.4942, 610.4944, 610.4946, 610.4948, 610.4951, 610.4953, 610.4954, 610.4955, 610.4956, 610.4957, 610.4966, 610.4967, 610.4968, 610.4969, 610.4970, 610.4976, 610.5160, 610.5206, 610.5209, 610.5211, 610.5214, 610.5216, 610.5221, 610.5222, 610.5226, 610.5229, 610.5240, 610.5242, 610.5243, and 610.5244.

VIEWS OF CHAIRWOMAN STERN, COMMISSIONER ECKES, COMMISSIONER LODWICK, AND COMMISSIONER ROHR ON DOMESTIC INDUSTRY, INCREASING IMPORTS, AND SERIOUS INJURY

I. Introduction

This investigation under section 201 of the Trade Act of 1974 1/ concerns the effect of imports of a wide variety of carbon steel products 2/ on facilities in the United States producing articles that are like or directly competitive with these imported products. These joint views address the questions of the relevant domestic industry, increasing imports, and serious injury. In addition, we have included general comments on the potential causes we have considered to explain the serious injury we have found. We address the causes of serious injury more specifically in our respective additional views.

Section 201(b)(1) provides that:

> the Commission shall promptly make an investigation to determine whether an article is being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or threat thereof, to the domestic industry producing an article like or directly competitive with the imported article. 3/

Thus, the Commission must first define the relevant domestic industry in terms of a product that is like or directly competitive with the imported article. The Commission must then find (1) that the imported article is increasing either in actual terms or relative to domestic production, (2) the domestic

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1/ 19 U.S.C. § 2251.

2/ Although certain alloy steel products are within the scope of this investigation, the vast majority of imports and domestic production at issue consists of carbon steel products. See Report of the Commission ("Report") at a-5-6. The term carbon steel as used in these views refers to both the carbon and alloy steel products subject to this investigation.

3/ 19 U.S.C. § 2251(b)(1).

industry is experiencing serious injury or threat of serious injury, and (3) the increased imports are a substantial cause of the serious injury or threat thereof. An affirmative determination under section 201 requires that conditions in the domestic industry and U.S. market satisfy all three criteria. Based upon the information developed during the course of this investigation, we find that there are nine domestic industries producing articles "like or directly competitive with" imported articles. These nine domestic industries consist of U.S. facilities producing (1) ingots, blooms, billets, slabs, and sheet bars, 4/ (2) plates, (3) sheets and strip, (4) wire rods, (5) wire and wire products, (6) railway-type products, (7) bars, (8) structural shapes and units, and (9) pipes and tubes, respectively. We further find that all nine domestic industries are faced with increasing imports and have experienced serious injury or are threatened with serious injury.

In addressing the remaining statutory question regarding substantial cause, the Commission has made divergent findings. A majority of the Commission, consisting of Commissioner Eckes, Commissioner Lodwick, and Commissioner Rohr, made affirmative determinations with regard to the domestic industries producing (1) ingots, blooms, billets, slabs, and sheet bars, (2) plates, (3) sheets and strip, (4) wire and wire products, and (5) structural shapes and units. 5/ Chairwoman Stern and Vice Chairman Liebeler, voting in the minority, made negative determinations with respect to these industries. 6/ In addition, the Commission made unanimous negative determinations with regard to the domestic industries producing (1) wire rods,

4/ Ingots, blooms, billets, slabs, and sheet bars are also referred to as "semi-finished products."

5/ See Views of Commissioner Eckes, Commissioner Lodwick, and Commissioner Rohr at 55.

6/ See Additional Views of Chairwoman Stern at 87 and Views of Vice Chairman Liebeler at 130.

(2) railway-type products, and (3) bars. Finally, a Commission majority, consisting of Chairwoman Stern, Vice Chairman Liebeler, and Commissioner Lodwick, made a negative determination with respect to the domestic industry producing pipes and tubes. 7/ Commissioner Eckes and Commissioner Rohr, voting in the minority, made an affirmative determination with respect to the domestic pipes and tubes industry. 8/ The following table summarizes the Commissioners' votes regarding each industry.

Industry	Commission Determination	Commissioner's Votes Affirmative	Commissioner's Votes Negative
Ingots, blooms, billets, slabs, and sheet bars (semifinished)	Affirmative (threat of injury)	Lodwick Rohr Eckes (present injury)	Stern Liebeler
Plates	Affirmative	Eckes Lodwick Rohr	Stern Liebeler
Sheets and strip	Affirmative	Eckes Lodwick Rohr	Stern Liebeler
Wire rods	Negative		Unanimous
Wire and wire products	Affirmative	Eckes Lodwick Rohr	Stern Liebeler
Railway-type products	Negative		Unanimous
Bars	Negative		Unanimous
Structural shapes and units	Affirmative	Eckes Lodwick Rohr	Stern Liebeler
Pipes and tubes	Negative	Eckes Rohr	Stern Liebeler Lodwick

7/ See Views of Chairwoman Stern at 87, Vice Chairman Liebeler at 130, and Commissioner Lodwick at 65.

8/ See Views of Commissioner Eckes and Commissioner Rohr at 68.

II. Domestic industry

The statute defines the domestic industry in terms of producers of an article like or directly competitive with the imported article. 9/ The legislative history to the Trade Act of 1974 distinguishes between like and directly competitive products, stating that—

> In such context [the Act], "like" articles are those which are substantially identical in inherent or intrinsic characteristics (i.e., materials from which made, appearance, quality, texture, etc.), and "directly competitive" articles are those which, although not substantially identical in their inherent or intrinsic characteristics, are substantially equivalent for the commercial purposes, that is, are adapted for the same uses and are essentially interchangeable therefor. 10/

Both producers of a like product as well as a directly competitive product can be part of the domestic industry under section 201.

In this investigation the "imported article" consists of numerous products ranging from semifinished carbon steel products such as ingots, blooms, and billets to more advanced or finished products such as steel wire rope and nails. The breadth of this investigation, covering such a diversity of products, requires the Commission to define like or directly competitive in a manner that reflects the realities of the market and at the same time accomplishes the fundamental purpose of section 201, protection of the productive resources of domestic producers. Thus, the Commission considers

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9/ 19 U.S.C. § 2251(b)(1).

10/ H.R. Rep. No. 571, 93d Cong., 1st Sess. 45 (1973); S. Rep. No. 1298, 93d Cong., 2d Sess. 121-22 (1974).

This language is in contrast to the domestic industry definition in antidumping and countervailing duty investigations which requires the Commission to examine the effect of imports on producers of articles like, or in the absence of like, most similar in characteristic and uses to the imported product. 19 U.S.C. § 1677(10). Thus, the domestic industry for the purpose of a section 201 investigation may include a wider range of productive facilities than the domestic industry in antidumping and countervailing duty investigations.

both the productive facilities and processes and the markets for these products in determining those articles that may be considered like or directly competitive within the meaning of section 201.

Petitioners, Bethlehem Steel Corp. (Bethlehem) and the United Steelworkers Union (Union), argue that there is a single domestic industry comprised of domestic producers of all basic steel mill products and certain "first tier" finished products. 11/ Petitioners contend that all steel products are a class or kind of merchandise and that the advanced products must be included in the domestic industry to prevent circumvention of any relief accorded producers of basic steel products. If the Commission were to find more than one industry, petitioners assert that circumvention would then occur through importation of more advanced products. 12/

In arguing that there is one domestic industry within the meaning of section 201, petitioners emphasize the factors common to the articles under investigation. These common characteristics are: (1) a common technological and metallurgical base, (2) production in shared facilities in whole or in part, (3) common melt facilities, (4) relative ease of varying product mix among articles, 13/ (5) unitary economies of production, and (6) the high degree of vertical integration among some producers. Further, petitioners argue that two-thirds of the cost of production of finished products is in the production of raw steel. Moreover, they argued that the existence of a continuum of products with no clear dividing lines among product groups makes

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11/ Petition at 2-3.
12/ Id. at 3-4 n.1; Petitioners' Prehearing Brief on Injury at 40-41; Petitioners' Posthearing Brief on Injury at 17.
13/ For example, slab can easily be used to produce plate or sheet products.

a single industry approach realistic. 14/ Under this approach there would be a single domestic industry consisting of all domestic facilities producing any article like or directly competitive with the imported articles. Thus, the domestic industry would consist of basic steel producers as well as U.S. producers of finished products such as pipe and tube and wire products which are manufactured from basic steel products such as plate and rod, respectively. 15/

14/ Petitioners' Prehearing Brief on Injury at 7, 9, 19-22, 24, 30-35; Petitioners' Posthearing Brief on Injury at 16-18. Petitioners also argued that if the Commission decided to find more than one domestic industry, the Commission should find seven product groups. These were (1) ingots, blooms, billets and slabs, (2) plates, (3) bars, rods, joint bars, tie plates, and track spikes, (4) structural shapes, piling, rails, and wheels and axles, (5) all sheet, strip, and tin mill products, (6) pipes and tubes, and (7) wire and wire products.

15/ Alternatively, petitioners assert that section 601(5) definition of directly competitive permits the Commission to find a single domestic industry consisting of the facilities of firms that possess basic steel making capacity. Section 601(5), 19 U.S.C. § 2481 provides that:

> An imported article is "directly competitive with" a domestic article at an earlier or later stage of processing, and a domestic article is "directly competitive with" an imported article at an earlier or later stage of processing, if the importation of the article has an economic effect on producers of the domestic article comparable to the effect of importation of articles in the same stage of processing as the domestic article. For the purpose of this paragraph, the unprocessed article is at an earlier stage of processing.

Petitioners would aggregate articles like the imported basic steel products with articles that are directly competitive at an earlier stage of processing. For example, domestic wire rod is like imported wire rod and directly competitive with wire products. Thus, petitioners argue that facilities producing both articles should be part of the domestic industry. This analysis results in a domestic industry that excludes the facilities of firms that only produce the more advanced products. We have not relied upon this analysis in this investigation because it greatly expands the concept of earlier or later stage of processing and results in a domestic industry definition that may not be representative of all of the productive facilities engaged in producing the article subject to investigation.

Importers and several domestic manufacturers of products that use steel argue that the Commission should find several domestic industries. 16/ These parties argue that the criteria set forth in the legislative history and Commission precedent, i.e. (1) inherent and intrinsic characteristics of the articles, (2) basic physical properties, and appearance, and (3) current production and marketing practices, require a finding of multiple industries. 17/ Parties opposing a finding of a single domestic industry also argue that there can be no domestic industry or injury finding for a product which is not produced in the United States. Finding a single domestic industry would include many such products in the Commission's determination. Finally, section 201 is derived from the General Agreement on Tariffs and Trade (GATT). Moreover, the provisions of Article XIX, the escape clause, refer to serious injury resulting from trade concessions granted on specific articles. Moreover, the escape clause provides relief to producers of "an article" rather than a "class of articles."

Diversity of products and types of firms producing steel and steel products in the United States characterize this investigation. The imported products that are the subject of this investigation are found in 263 items of the Tariff Schedules of the United States (TSUS). Furthermore, the types of productive facilities range from large integrated producers, which produce raw

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16/ The Canadian Steel Industries Committee, for example, propose that the Commission find twenty-one separate domestic industries and the European Communities (EC) propose that the Commission find fourteen domestic industries. Canadian Steel Industries Committee Prehearing Brief at 57; Commission of the European Communities Prehearing Brief at 31-32.

17/ Canadian Steel Industries Committee Prehearing Brief at 55-56; Commission of the European Communities Prehearing Brief at 27; Korea Iron & Steel Ass'n Prehearing Brief on Injury at 22.

steel in basic-oxygen or open-hearth furnaces, to nonintegrated producers, which produce steel primarily from scrap in electric furnaces, to nonsteel producers, which purchase steel and shape or treat it to produce more advanced products. 18/ Integrated steel producers manufacture most of the products which are the subject of this investigation; in addition, nonintegrated producers are also important producers of some products covered by the investigation, such as rod and bar.

Integrated steel producers operate blast furnaces, steelmaking furnaces, electric furnaces, rolling and finishing facilities, as well as own or operate mines which provide iron ore, coal and limestone for the production of iron. These firms, which are concentrated in the Great Lakes region of the United States, accounted for over 75 percent of raw steel production in 1982 and 1983. In addition to raw steel production, a number of integrated producers operate facilities devoted to shaping and finishing steel products. 19/

In addition to operating a varied line of steel-making and related facilities, several of the integrated steel producers have diversified their operations into activities unrelated to steel production. U.S. Steel produces industrial chemicals and oil-drilling and pumping equipment. In 1981, U.S. Steel purchased Marathon Oil Corp. National Steel Corp. produces aluminum, finished aluminum products, and building components, as well as owning a savings-and-loan holding company. 20/

18/ Report at a-26.
19/ Id. at a-30.
20/ See id. at a-30-31 for a more comprehensive discussion of integrated steel producers' nonsteel activities.

Nonintegrated steel producers typically operate an electric furnace with a relatively limited raw steel capacity and use locally available scrap as raw material. 21/ Recently, the comparatively low price of scrap has given nonintegrated producers a cost advantage of as much as $100 per ton over integrated producers. 22/ These firms are generally small, regional producers located near a primary market for their product, which results in lower freight costs for these producers. Nonintegrated producers, or minimills, normally specialize their production in a narrow range of products such as bars, wire rods, and light structural shapes. 23/

Nonsteel producers include firms that purchase semifinished steel products or finished steel products such as plates, sheets, or strip and use them as raw material for processing into more advanced products such as pipes and tubes or wire and wire products. 24/ Nonsteel producers, or processors, are concentrated in the western part of the United States and these western processors tend to focus on production of wire, pipes and tubes, and railway-type products. 25/

The co-petitioner in this investigation is the United Steel Workers Union. The Union represents workers in all three types of productive facilities; however, the union's membership is concentrated in the integrated producer firms. 26/

21/ Id. at a-32.
22/ Id.
23/ The industry refers to these producers as minimills, merchant mills, market mills, and specialty steel makers.
24/ Report at a-33.
25/ Id. at a-35.
26/ Petition at ii, Report at a-121.

Based on the record in this investigation, we find that there are nine classes of products that are like or directly competitive with the imported articles.

In prior investigations we have analyzed the effect of imports on a class of products. 27/ We have used this approach, however, in analyzing discrete categories of closely-related products. Although a "class of products" approach is appropriate for the individual nine product groups that we have identified, we believe that including all of the imported articles encompassing both semifinished and finished products in a single class of products exceeds this precedent. 28/ Although all of the articles at issue in this investigation share common characteristics in that steel forms the raw material for further processing, there are meaningful differences in the productive facilities and processes for many of these products and wide variance in the U.S. market for each group of products. Moreover, some indicia of serious injury, such as decreased ability to raise capital for investment in steelmaking, have been assessed on a specific firm basis in accord with capital market practices rather than on a product group basis. 29/ Thus, we have based our decision regarding the domestic industries on a balancing of all of these criteria.

27/ Stainless Steel, Inv. No. TA-201-48, USITC Pub. No. 1377 (1983); Nonrubber Footwear, Inv. No. TA-201-50, USITC Pub. No. 1545 (1984); Motorcycles, Inv. No. TA-201-47, USITC Pub. No. 1342 (1983).

28/ Unlike the Televisions investigation in which the market for subassemblies depended upon the demand for finished televisions, the market for sheet and strip, for example, is not dependent upon the demand for nails.

29/ The nine categories of products that we have considered as separate domestic industries are broadly defined and include more products than many domestic industries under section 201.

The nine domestic industries

Ingots, blooms, billets, slabs, and sheet bars (hereinafter semifinished products) are the major semifinished products which are subsequently processed into other types of carbon steel. Ingots are castings of molten steel which have a shape suitable for rolling or forging into other semifinished products. The products in this group are distinguished on the basis of cross-sectional dimensions and size. 30/ Blooms, billets, slabs, and sheet bars are produced either from ingots or, in continuous casting, formed directly from molten steel. 31/ Semifinished products are normally captively consumed within the producers' facility for processing into more advanced products. 32/ This contrasts with other steel products in this investigation. Some semifinished products are commercially traded, for example, to producers who need material for processing while their furnaces are down or demand is high, 33/ to independent forgers, and to the automotive market.

Plate is a finished flat rolled steel product which is produced in coils or cut-to-length and may be coated or plated with metal. 34/ Plate is produced from slab which is reheated, descaled, and rolled into plates. Plates are produced in various types of mills—universal mills, sheared-plate mills, and hot-strip mills—which use different rolling techniques to form the plates. Plate varies in thickness and in the type of finishing that occurs after rolling. Plate can be cold finished, clad, coated, or plated with other metal, particularly zinc. 35/ The major uses for plate are in the

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30/ Report at a-6-7.
31/ Id. at a-13-14.
32/ Id. at a-46.
33/ Id. at a-37.
34/ Id. at a-7.
35/ Id. at a-14-15.

construction, machinery, industrial equipment, tools, and shipbuilding industries. Steel plate is used primarily in the construction of bridges, storage tanks, pressure vessels, railroad freight and passenger cars, ships, line pipe, and for industrial machinery. 36/

Sheet and strip are another flat-rolled product that is processed from slab. This product differs from plate in width, thickness, and production process. Many of the processes performed to produce basic sheet and cold-rolled or galvanized sheet are continuous processes as opposed to the process for manufacturing plate. 37/ Significantly, the uses and markets for sheet and strip differ from those for plate. The major markets for sheet and strip are the automotive industry, steel service centers and distributors, the container, packaging and shipping materials industry, and for use in making contractors' products. 38/

Wire rod is produced from billets which are hot-rolled into rod. Rod is coiled during the manufacturing process and shipped in this form. 39/ The primary use for wire rod is in the production of wire products. Other significant markets for wire rod include the construction industry, and the machinery, industrial equipment, and tool industries. 40/ Nonintegrated producers, "minimills", dominate the production and sales of rod products in the United States. These minimills primarily use electric furnaces and rely almost exclusively on scrap steel as their raw material. 41/

36/ Id. at a-46-47.
37/ Id. at a-15.
38/ Id. at a-47. Contractors' products include plumbing equipment and building products among other items. Id.
39/ Id. at a-15-16.
40/ Id. at a-47.
41/ Id. at a-32.

The wire and wire products group covers a large number of items manufactured from wire drawn from rod or having a specified cross-sectional dimension. 42/ The items produced from wire within the scope of this investigation include: barbed wire, twisted barbless wire, wire strand, wire ropes, cables, and cordage, wire fencing, brads, nails, spikes, staples, tacks, wire bale ties, and milliners' wire and other wire covered with textile or other nonmetallic material. 43/ Wire is produced from descaled, coiled wire rods which are continuously drawn through a die or series of dies. 44/ This wire is then manufactured into the various wire products. Major uses of wire and wire products are in the production of fasteners, springs, strand, rope, welding wire, and woven or knitted wire products. 45/ Nonsteel producers 46/ account for a significant portion of U.S. production of wire and wire products. 47/

Railway-type products included in this investigation include rails, joint bars, tie plates, railway track spikes, railroad and railway axle bars, and railroad and railway axles and wheels and parts of axles and wheels. 48/ Railway-type products are rolled, forged, or cast for the specific requirements of the product. 49/ These products share a common market in that 80 percent of railway-type products are sold directly to the railway-

42/ Id. at a-7-8.
43/ Id. at a-8.
44/ Id. at a-16.
45/ Id. at a-47.
46/ Nonsteel producers include firms that shape, treat, or otherwise further process steel but do not make raw steel. These firms purchase semifinished products such as wire rod and process them into more advanced products. Id. at a-33.
47/ Id. at I-10 through I-15 Tables I-9 through I-14.
48/ Id. at a-8-9.
49/ Id. at a-17-18.

transportation industry. Service centers and distributors accounted for an additional 10 percent of shipments of these products. 50/

Bars are produced in a wide variety of shapes and sizes. The Tariff Schedule of the United States defines bar as products of solid section that do not completely conform to the specifications for blooms, billets, slabs, sheet bars, wire rods, plates, sheets, strip, wire, rails, joint bars, or tie plates, and which have cross sections in the shape of circles, segments of circles, ovals, triangles, rectangles, hexagons, or octagons. 51/ Although nonsteel producers (rerollers) produce bar, the industry is dominated by minimills and integrated firms. 52/ Bar products are either hot-rolled or further processed into cold-finished bar. There are two major grades of bar, merchant quality and special quality bar. Special quality bar differs in chemical and physical specifications from merchant quality bar. Bar products are widely used throughout the construction and general industrial segments of the U.S. economy. The automotive, machinery manufacturing, and road construction industries constitute major markets for bar products. 53/

Structural shapes and units consist of three subcategories of products, (1) angles, shapes and sections, (2) sheet piling, and (3) fabricated units. 54/ These products are usually formed by passing hot ingots or blooms, billets, or bars through a series of grooved rolls. The rolls shape the products to desired contours and dimensions, and distinguish them from other finished steel products in their cross-sectional configuration and the overall

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50/ Id. a-48.
51/ Id. at a-9.
52/ Id. at I-19-21 Tables I-18-20, app. E, app. F.
53/ Id. at a-18, 48.
54/ Id. at a-9-10.

shape of the product. Structurals are formed in a wide variety of shapes and usually consist of flat surfaces at varying angles to each other. Sheet piling has interlocking joints on both edges. 55/ The construction industry is the major market for structural shapes and units. 56/ Structurals are used as columns and beams in buildings and in bridge spans. Sheet piling is used extensively in maritime construction. 57/

Pipes and tubes are hollow products that are manufactured for a variety of specifications and uses. Pipes and tubes are usually produced as either a seamless or welded product. Rotary-piercing and rolling of a solid length of steel or an extrusion method is used to produce seamless pipe and tube. 58/ Welded pipes and tubes are usually made by passing plates, sheets, or strip through a series of forming rollers which shape the flat-rolled product into cylindrical form in which the seam is welded. 59/ Standard pipes and pressure tubes are used to convey liquids and gases which may be transported at high temperatures or pressures. Mechanical and structural pipes, tubes, and tubing are used in a variety of structural or mechanical applications such as posts and poles, conveyor rolls and links, and support members in the construction and shipbuilding industries. 60/ The oil and gas industry, where these products are used in drilling wells and conveying oil and gas to the surface, is a major market for pipes and tubes. 61/

55/ Id. at a-18-19.
56/ Id. at a-48.
57/ Id.
58/ Id. at a-19.
59/ Id.
60/ Id. at a-48-49.
61/ Id.

III. Increasing imports

Statutory Framework.—The Commission has taken the view that import increases in either absolute quantities or relative to domestic production would satisfy the requirement for increased imports as well as be relevant to causation. 62/ This issue has arisen in this investigation because the recent recession has been deep and the following recovery slow for some steel products. Therefore, imports have declined in actual terms for these steel products and have not yet returned to their former levels. When imports have not increased in actual terms, we are to determine whether they increased "relative to domestic production." If imports have declined in actual terms, but at a slower rate than domestic production, imports have increased relative to domestic production and the increased imports criterion of the statute has been satisfied. 63/

During the course of this investigation and other recent section 201 investigations as well, parties have argued that the Commission must, as a matter of law, make a negative determination when there is no actual increase in imports. They argue that the "relative to domestic production" term in section 201(b)(2)(C) applies only to the causation criterion and not to the increased imports criterion. 64/

Congress clearly intended that the "relative to domestic production" term be part of the test for increased imports. This is clear from both the

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62/ The specific language "actual or relative to domestic production" is contained in 19 U.S.C. § 2251(b)(2)(C), a provision that addresses the question of substantial cause. We find that this language is equally applicable to increased imports.

63/ The language "actual or relative to domestic production" is contained in section 201(b)(2)(C), a provision addressed to the question of substantial cause rather than increased imports.

64/ See Views of Vice Chairman Liebeler in Unwrought Copper, Inv. No. TA-201-52 (1984).

statute and its legislative history. Section 201(b)(2)(C) requires that the Commission consider, with respect to substantial cause, "an increase in imports (either actual <u>or</u> relative to domestic production) and a decline in the proportion of the domestic market supplied by domestic producers" (emphasis added). The definition of increased imports is thus part of a parenthetical contained in section 201(b)(2)(C). 65/ The Commission's determination—that a relative increase in imports satisfied the statutory requirement of increasing imports—is consistent with the legislative history and recognizes Congress' intent that the Commission assess the causal effect of a relative increase in imports. In cases where the actual quantity of imports declined, the Commission could never reach the causation issue if relative increases would not satisfy the increased import requirement.

In section 201 the basic statutory test is set forth in subsection (b)(1). The definition of the key terms in that test and the factors to be considered

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65/ In drafting section 201, the House and Senate initially disagreed over whether the increase had to be in actual terms or whether it could be actual or relative to domestic production. The actual or relative language was contained in the House version of the bill. The Senate version did not contain this language. The Senate Committee on Finance in its report on the bill noted the difference and stated that the increase in imports had to be "absolute":

> . . . the Committee bill would require the Commission to consider only whether there is an <u>absolute</u> increase in imports, as well as a decline in the proportion of the domestic market supplied by domestic producers. The Committee feels that unless imports are increasing absolutely, they cannot be a substantial cause of serious injury (emphasis in original). S. Rep. No. 1298, 93d Cong. 2d Sess. 121 (1974).

The House version prevailed in conference. The Conference Report, after noting the House language stated:

> Senate amendments Nos. 180 and 181 provide that with respect to substantial injury, the Commission shall take into account only an absolute increase in imports. The Senate recedes. H.R. Rep. No. 1644, 93d Cong., 2d Sess 33 (1974).

by the Commission are set forth in subsections (b)(2), (b)(3), and (b)(4). The magnitude of the increase in imports is relevant to the causation question and it seems logical that Congress would define the term increased imports in the same subsection in which it enumerated the factors to be considered in deciding the causation issue. Nothing in the statute or its legislative history suggests that there should be different tests for increased imports under the increased imports criterion and the causation criterion. To have separate tests introduces an inconsistency in the statute that cannot be explained when the purpose of section 201 is examined, that is, to prevent or remedy injury while facilitating orderly adjustment. If imports are increasing relative to domestic production, yet falling in absolute amounts, serious injury from imports may still occur. To deny relief under this instance ignores the purposes of section 201.

Prior escape clause laws and changes thereto and Article XIX of the GATT, upon which the U.S. escape clause laws are based, provide further support for our conclusion. The 1962 law, section 301(b) of the Trade Expansion Act of 1962, 66/ in effect from 1962 to 1974, required that the increase in imports be in absolute terms. The 1951 law, on the other hand, section 7 of the Trade Agreements Extension Act of 1951, 67/ in effect from 1951 to 1962, provided that the increase could be "actual or relative to domestic production." In drafting the 1974 law, Congress sought to "relax" the eligibility criteria of the 1962 law, which were considered to be more restrictive than those under the 1951 law. Congress believed that the 1962 criteria were too "rigid", but it believed that the 1951 law had "worked reasonably well." 68/ In easing the

66/ 76 Stat. 872, Pub. Law 87-794, Oct. 11, 1962.
67/ 65 Stat. 74, Pub. Law 50, June 16, 1951.
68/ S. Rep. No. 1298, 93d Cong., 2d Sess. 119-20 (1974).

criteria Congress used or adapted certain of the terms in the 1951 law. For example, it took the term "contributed substantially" used to characterize the nexus between imports and causation and revised it to "substantial cause" under the 1974 law, and it took the phrase "actual or relative to domestic production" used to define the increase in imports and placed it in the 1974 law verbatim. The "actual or relative" language was used in the 1951 law for the same purpose as under the 1974 law—"to allow escape action even though imports, as well as domestic output, are declining." 69/

Article XIX of the General Agreement on Tariffs and Trade (GATT), upon which the various U.S. escape clause laws have been based, has been interpreted to apply to cases in which there has been an actual increase in imports or an increase relative to domestic production. A working party report adopted at the second session of the GATT contracting parties in September 1948 stated:

> It was also the understanding of the working party that the phrase "being imported . . . in such increased quantities" in Article XIX . . . was intended to cover cases where imports may have increased relatively, as made clear in . . . the Havana Charter. 70/

In summary, Congress in drafting section 201 sought to relax the eligibility criteria by including standards which were similar to those used in the 1951 law and which would also conform with the GATT. As part of this relaxation, it adopted the actual or relative increased imports test which was used in the 1951 law and which was consistent with our GATT obligations.

Thus, in making its determination on serious injury, the Commission must find that the article subject to investigation is being imported into the

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69/ S. Rep. No. 299, 82d Cong., 1st Sess. 6 (1951).

70/ General Agreement On Tariffs and Trade, 2 BISD, at 44-45 (1952); J. Jackson, World Trade and the Law of GATT, at 558.

United States in increased quantities. This increase may be either in absolute quantities or relative to domestic production. 71/ In this investigation we find that imports of each of the nine categories of products have increased either in absolute or in relative terms, thus satisfying the statutory requirement. In addition, the aggregate data for all of the steel mill products subject to this investigation have increased relative to domestic producers' shipments and domestic consumption.

Absolute and Relative Changes in Imports.—With regard to all steel mill products subject to this investigation, the data show that the absolute volume of total U.S. imports for consumption fluctuated during the period of 1979-83. Imports were at 17,704,000 tons in 1979, reached a peak of 19,983,000 tons in 1981, dropped to 16,766,000 tons in 1982 and then recovered to 17,228,000 tons in 1983. 72/

The ratio of imports of all steel mill products to domestic producers' shipments of products subject to this investigation increased continuously from 17.9 percent in 1979 to 27.7 percent in 1982. The ratio of imports to domestic producers' shipments decreased slightly in 1983 to 26.0 percent, and then increased to 34.1 percent in the first quarter of 1984. The ratio of imports to domestic consumption show a similar pattern. 73/ Thus, there has been a relative increase in imports over the most recent five years.

Imports of ingots, blooms, billets, slabs, and sheet bars (semifinished products) have more than doubled from 1979 to 1983. In absolute volume imports of semifinished products climbed from 342,000 tons in 1979 to 821,000 tons in 1983. Moreover, the most recent quarterly data available show an

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71/ See 19 U.S.C § 2251(b)(2)(C).
72/ Report at a-52 Table 6; G-2 Table G-1.
73/ Id. at G-2 Table G-1.

increase from 254,000 tons in the first quarter of 1983 to 285,000 tons in the corresponding period of 1984. 74/ In addition, the ratio of imports to domestic production and domestic consumption also increased over the period of this investigation. 75/ The ratio of imports to production of semifinished products increased from 0.3 percent in 1979 to 1.3 percent in 1982 and 1983. 76/

The ratio of imports to domestic shipments of semifinished products increased from 13.5 percent in 1979 to 84.4 percent in 1983. 77/ These increases in imports in both absolute terms and as a percentage of domestic production and shipments during the period of this investigation clearly satisfy the statutory requirement of increasing imports.

Although the absolute volume of imports of plates declined in 1982 and 1983 in response to a substantial decline in U.S. consumption, the ratio of imports to U.S. shipments increased dramatically from 1979 to 1983. 78/ The ratio of imports to shipments increased from 20.5 percent in 1979 to 39.8 percent in 1982. This ratio decreased to 37.4 percent in 1983, however, data for the first quarter of 1984 indicate a substantial increase to 42.5 percent

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74/ Id. at G-3 Table G-2.

75/ Id. at a-68 Table 7; G-3 Table G-2. Consumption of semifinished products constitutes only a small percentage of production because most semifinished products are processed into more advanced products. Data sources such as the Department of Commerce and the American Iron and Steel Institute do not publish statistics on production. The Commission, however, compiled production data from questionnaire responses. All domestic producers of the subject products did not receive questionnaires and some questionnaire recipients failed to respond to the questionnaires. Thus, import-to-production ratios are overstated. Id. at a-66-67. Consequently, the Commission considered both the ratio of imports to domestic production and to shipments.

76/ Id. at a-68 Table 7.

77/ Id. at G-3 Table G-2.

78/ Id. at G-4 Table G-3.

in the ratio of imports of plate to domestic shipments. 79/ The ratio of imports to U.S. production and consumption follow similar trends increasing from 1979 to 1982 and then decreasing slightly in 1983. 80/

The absolute volume of imports of sheet and strip products fluctuated widely from 1979 through the first quarter of 1984. 81/ On an annual basis, 1983 represented the high point of imports for this period, with imports increasing from 4,683,000 tons in 1982 to 7,153,000 tons in 1983. 82/ Imports have also increased relative to domestic consumption and U.S. producers' shipments. The ratio of imports of sheet and strip products to domestic shipments increased from 14.5 percent in 1979 to 18.7 percent in 1983. Moreover, the data indicate a surge in the quantity of imports of sheet and strip products in the first quarter of 1984. During this quarter, imports accounted for 25.2 percent of domestic shipments. 83/ The ratio of imports to U.S. consumption showed similar increases over the period growing from 12.9 percent in 1979 to 15.9 percent in 1983 and 20.2 percent of domestic consumption in the first quarter of 1984. 84/

Imports of wire rod increased both in absolute volume and relative to domestic production and shipments. 85/ In absolute terms imports increased from 963,000 tons in 1979 to 1,159,000 tons in 1983. 86/ Imports also gained an increasing share of the U.S. market with the ratio of imports of wire rod to domestic shipments increasing from 34.1 percent in 1979 to 40.6 percent in 1983. This trend accelerated in the first quarter of 1984 when imports of

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79/ Id.
80/ Id. at a-68 Table 7, G-4 Table G-3.
81/ Id. at G-5 Table G-4.
82/ Id.
83/ Id.
84/ Id.
85/ Id. at a-68 Table 7, G-10 Table G-9.
86/ Id. at G-10 Table G-9.

wire rod accounted for 49.3 percent of domestic producers' shipments. 87/ The ratio of imports to domestic production shows the same pattern of increases with imports growing from 21.9 percent of U.S. production in 1979 to 34.0 percent in 1983. 88/ The ratio of imports to domestic consumption increased from 25.6 percent in 1979 to 28.9 percent in 1983 and 33.1 percent in the first quarter of 1984. 89/

The domestic industry producing wire and wire products makes a wide variety of products; import trends vary for some of these products. Import trends for both wire and the total of wire products, however, show increases in the absolute volume of imports and in the ratio of imports to domestic consumption, production and shipments. 90/

The absolute volume of total imports of wire and wire products increased slightly from 1979 through 1983, growing from 1,030,000 tons to 1,057,000 tons in 1983. 91/ The ratio of imports of wire and wire products to domestic consumption of these products increased from 30.4 percent in 1979 to 44.5 percent in 1983. This trend continued into the first quarter of 1984, when the ratio of imports to U.S. consumption reached 50.1 percent. 92/ The ratio of imports to U.S. producers' shipments increased dramatically, going from 42.6 percent in 1979 to 97.4 percent in the first quarter of 1984. 93/

Imports of railway-type products fluctuated from 1979 to 1983. In absolute terms imports reached a peak in 1980 of 414,000 tons and then

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87/ Id.
88/ Id. at a-68 Table 7.
89/ Id. at G-10 Table G-9.
90/ Id. at a-68 Table 7, G-12 Table G-11, G-13 through G-17 Tables G-12 through G-16.
91/ Id. at G-11 Table G-10.
92/ Id.
93/ Id.

declined dramatically in 1983 to a level of 159,000 tons. 94/ Although the absolute volume of imports increased slightly from 319,000 tons in 1981 to 340,000 tons in 1982, the ratio of imports to domestic shipments increased from 21.7 percent in 1981 to 43.5 percent in 1982. The ratio of imports to domestic shipments subsequently dropped to 18.0 percent in 1983, however, this percentage remained above the ratio of imports to domestic shipments in 1979. 95/ The ratio of imports to domestic consumption shows a similar pattern. 96/

In 1983 the absolute volume of imports of steel bars returned to nearly 1979 levels while apparent consumption declined substantially from the 1979 level. 97/ Thus, imports of bars have increased substantially relative to domestic consumption and shipments of bars. 98/ The ratio of imports to domestic producers' shipments increased from 5.3 percent in 1979 to 7.7 percent in 1983. This trend accelerated in the first quarter of 1984, when imports accounted for 12.3 percent of domestic shipments. 99/

Domestic producers' shipments of structural shapes and units decreased continuously from 1979 to 1982, dropping from 7,062,000 tons in 1979 to 4,511,000 tons in 1982. Domestic shipments then remained relatively stable at 4,373,000 tons in 1983. At the same time, the absolute volume of imports decreased from 2,370,000 tons in 1979 to 2,299,000 tons in 1981. Imports declined to 1,778,000 tons in 1982 and then increased to 1,825,000 tons in 1983. Because of the lesser decline in the absolute volume of imports, the ratio of imports of structural shapes and units to domestic producers'

94/ Id. at G-18 Table G-17.
95/ Id.
96/ Id.
97/ Id. at G-22 Table G-21.
98/ Id.
99/ Id.

shipments and domestic consumption of these products increased continuously from 1979 through 1983. Imports represented 33.6 percent of domestic producers' shipments in 1979 and 41.7 percent in 1983. The most recent data show an increase in the import ratio from 31.1 percent in the first quarter of 1983 to 47.5 percent in the corresponding period of 1984. 100/ The ratio of imports of structural shapes and units to domestic consumption shows the same pattern with the level of imports increasing from 25.7 percent in 1979 to 32.5 percent of domestic shipments in the first quarter of 1984. 101/

With regard to pipes and tubes, the absolute volume of domestic consumption, domestic producers' shipments and imports increased steadily in 1979 and 1980. In 1981, however, the absolute volume of imports nearly doubled from 3,753,000 tons in 1980 to 6,537,000 tons in 1981. All three indicators decreased substantially in 1982 and again in 1983. Domestic shipments declined from 4,985,000 tons in 1982 to 3,186,000 tons in 1983. Imports declined from 5,227,000 tons in 1982 to 2,843,000 tons in 1983. In the first quarter of 1984, however, both domestic shipments and imports increased. Domestic shipments increased from 715,000 tons in the first quarter of 1983 to 973,000 tons in the corresponding period of 1984 and imports increased from 498,000 tons in the first quarter of 1983 to 1,154,000 tons in the corresponding period of 1984.

The ratio of imports of pipes and tubes to domestic shipments of these products nearly tripled from 1979 to 1982, increasing from 35.4 percent to 104.8 percent. Although this ratio declined to 89.2 percent in 1983, the ratio of imports to domestic producers' shipments increased to 118.6 percent

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100/ *Id*. at G-26 Table G-25.
101/ *Id*.

in the first quarter of 1984. 102/ At these times there were more imports into the United States than domestic producers' shipments. The ratio of imports to domestic consumption also increased with the ratio growing from 27.9 percent in 1979 to 53.4 percent in 1982 and 55.4 percent in the first quarter of 1984. 103/

Considering all of the trends in imports in the nine domestic industries, we find that these industries are faced with increasing imports within the meaning of section 201. 104/

IV. Serious injury to the domestic industries

Under section 201, the domestic industry must be experiencing serious injury or be threatened with serious injury. The statute does not define serious injury; 105/ however, it does indicate some of the economic factors that the Commission should consider in evaluating the condition of the domestic industry. Section 201(b)(2) 106/ provides that the Commission is to—

> take into account all economic factors which it considers relevant, including (but not limited to) . . . the significant idling of productive facilities in the industry, the inability of a significant number of firms to operate at a reasonable level of profit, and significant unemployment or underemployment in the industry . . . .

102/ *Id*. at G-31 Table G-30.
103/ *Id*.
104/ Chairwoman Stern finds that the import pattern of railway-type products is very atypical and does not conclude that imports of these products have been increasing within the meaning of § 201. However, she believes the analysis is best continued to the injury-causation stage in order to consider the industry's problems and their causes.
105/ The legislative history to the Trade Agreements Act of 1979 states that serious injury represents a higher threshold of injury than material injury. Material injury is the injury standard applied in antidumping and countervailing duty investigations. S. Rep. No. 249, 96th Cong., 1st Sess (1979).
106/ 19 U.S.C. § 2251(b)(2).

Based upon the information developed in this investigation, we determine that all nine domestic industries are seriously injured or threatened with serious injury.

Industry overview—U.S. production of raw carbon steel declined substantially from the 1979 level of 134.2 million tons to a low of 73.3 million tons in 1982. Although production increased to 82.9 million tons in 1983, this level of production is the lowest for any year since 1964, with the exception of 1982. 107/ U.S. producers' net shipments of all steel mill products dropped to a 20-year low of 62 million tons in 1982. Although shipments increased in 1983 to 67 million tons, this represented the second lowest annual shipment amount since 1964 and were 39 percent below the peak shipment level of 111 million tons in 1973. 108/ Capacity utilization declined from 87.8 percent in 1979 to a low of 48.4 percent in 1982. Capacity utilization remained low at 56.2 percent in 1983. 109/

The average number of production and related workers employed in U.S. firms producing products subject to this investigation declined substantially form a level of 168,000 employees in 1979 to 98,400 employees in 1983. 110/ The hours worked by these employees declined drastically from 294,547 hours in 1981 to 197,669 hours in 1982 and then remained stable in 1983. 111/ Wages paid to production and related workers follow the same trend. 112/

107/ Commission report at a-69 Table 8.
108/ Id. at a-70.
109/ Id. at a-69.
110/ Id. at a-88 Table 17.
111/ Id. at a-89 Table 18.
112/ Id. at a-90 Table 19.

With regard to the overall financial performance of steel producers, the data show that integrated producers experienced severe declines in major financial indicators. 113/ The overall financial performance of the companies which are the major producers of carbon and alloy steel products reached record lows in 1982 and 1983, when 10 integrated producers had operating losses of $5.6 billion and 5 nonintegrated producers had operating profits of only $28 million or 1.1 percent of sales. Debt-to-equity ratios reached highs for the integrated producers of 1.7 to 1 in 1982 and 2.1 to 1 in 1983, and debt coverage was nonexistent or extremely low. 114/ Bond ratings for the integrated firms have been lowered in most cases, thus jeopardizing their ability to obtain financings. 115/ The precarious financial condition of these companies provides a clear indication of serious injury.

Semifinished products.—U.S. production of these products fluctuated from 1979 through 1983; however, there was an overall downward trend. Both integrated and nonintegrated steel producers experienced this trend with total production declining from 104,541,000 tons in 1979 to 56,913,000 tons in 1982. Production levels recovered slightly in 1983, increasing to 64,375,000 tons. 116/ U.S. capacity for producing raw steel remained relatively stable from 1979 through 1983; however, capacity utilization reflected the trends in production. 117/ Domestic shipments of ingots, blooms, billets, slabs, and

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113/ Id. at a-94 Table 20.
114/ Id. at a-94 Table 20, a-103 Table 26.
115/ Id. at a-102 Table 25.
116/ Id. at I-3 Table I-2.
117/ Id. at I-2 Table I-1. Capacity and capacity utilization data for raw steel production is used for these semifinished products. This is appropriate because these products are made directly from the raw steel.

sheet bars dropped from 567,000 tons in 1979 to only 254,000 tons in 1983. Inventories remained relatively stable until 1983 when domestic inventory levels dropped from 3,393,000 tons to 2,385,000 tons. 118/

With regard to employment, the average number of employees producing raw steel declined from 34,649 employees in 1979 to 20,165 employees in 1983. The hours worked by these employees decreased from 72,381 to 41,251 respectively. 119/ Although the number of employees working at nonintegrated producers remained fairly stable, the number of hours worked fluctuated from a high of 5,622 in 1981 to a low of 3,958 in 1982. Average hourly wages increased from 1979 through 1982 and then declined in 1983, reflecting the new labor agreement. 120

Net sales of these products increased from 1979 through 1981, decreased in 1982, and then plunged in 1983. 121/ Gross profit fluctuated with 1981 marking a high point and the domestic industry experiencing subsequent declines in profitability. Operating income and the percentage margin of income or loss reflect similar trends. 122/

Plates—U.S. production of plates remained fairly stable from 1979 through 1981 and then dropped sharply from 7,685,000 tons in 1981 to

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118/ *Id*. at I-3 Table I-2.
119/ *Id*. at K-2 Table K-1.
120/ *Id*. *See* Commission report at a-87, 91 for a detailed discussion of the terms of this contract.
121/ Because of the limited number of firms providing financial information relating to this group of products, we have limited ourselves to a discussion of the general financial trends. More detailed discussion would reveal confidential business information.
122/ *Id*. at L-2 Table L-1.

4,122,000 tons in 1982. Production remained at 4,281,000 tons in 1983. 123/ Domestic shipments of plates reflected the same trends, remaining relatively stable from 1979 through 1981, then dropping sharply from 6,504,000 tons in 1981 to 3,476,000 tons in 1982, and remaining at 3,401,000 tons in 1983. 124/ Capacity declined slightly from 9,951,000 tons in 1979 to 9,206,000 tons in 1983. Capacity utilization, however, dropped from 79.6 percent in 1981 to 44.5 percent in 1982 and 46.5 percent in 1983. Domestic shipments of plates show a downward trend, declining from 6,552,000 tons in 1979 to 3,401,000 tons in 1983. 125/ Inventory levels fluctuated from 1979 through 1981; however, inventories dropped from 413,000 tons in 1981 to 256,000 tons in 1982 and declined to 244,000 tons in 1983. 126/

The average number of employees in the U.S. plate industry decreased throughout the period from 1979 to 1983, declining from 17,761 employees in 1979 to 7,949 employees in 1983. The number of hours worked dropped drastically in 1982 and continued to decline in 1983. Employees worked 35,723,000 hours in 1979 and only 16,263,000 hours in 1983. 127/ Average hourly wages increased from 1979 until 1982 and then decreased significantly in 1983. Unit labor costs per ton dropped in 1983 to $87.87, which is approximately the 1980 cost of $87.75 per ton. 128/

The income-and-loss experience of domestic firms producing plates shows a drop in net sales from $3,453 million in 1981 to $1,878 million in 1982, and

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123/ Id. at I-4 Table I-3.
124/ Id.
125/ Id.
126/ Id.
127/ Id. at K-3 Table K-2.
128/ Id.

$1,531 million in 1983. In 1982 and 1983, domestic plate producers experienced losses of $184 million and $267 million, respectively. This represents an operating loss margin of 9.8 percent in 1982 and 17.4 percent in 1983. 129/

Sheets and Strip—Although domestic shipments of sheet and strip products have fluctuated from 1979 through 1983, shipments have remained substantially below the 1979 levels throughout the period. Shipments of all sheet and strip products were at 48,977,000 tons in 1979, and reached a low point in 1982 when domestic shipments were 31,655,000 tons. Domestic shipments recovered to 38,322,000 tons in 1983; however, this level is substantially below the 1979 shipments level. 130/ Capacity utilization in the sheet and strip industry shows a similar pattern. Capacity utilization was at 80.2 percent in 1979, reached its low point of 54.8 percent in 1982, and then recovered to 69.2 percent in 1983. 131/

The total number of production and related workers employed in the sheet and strip industry also fluctuated from 1979 through 1983. In 1979, there were 53,628 employees in this industry who worked a total of 106,307,000 hours. 132/ The level of employment and hours worked fluctuated at levels below the 1979 level reaching a low point in 1982. In that year there were 36,728 production and related employees in this industry who worked a total of 71,184,000 hours. Employment increased slightly in 1983; however, it remained substantially below the 1979 level. 133/

129/ Id. at L-3 Table L-2.
130/ Id. at G-5 Table G-4.
131/ Id. Weighted average calculated from data shown at I-5 through I-8 Tables I-4 through I-7.
132/ Id. at a-88 Table 17, a-89 Table 18.
133/ Id.

The wages paid to these workers have not declined to the same extent as employment, reflecting an increasing hourly wage. Wages reached a peak of $1,343,582,000 in 1981, decreased to $1,063,051,000 in 1982, and then increased to $1,162,194,000 in 1983. 134/

U.S. producers of sheet and strip products have been experiencing operating losses since 1980. 135/ Net sales fluctuated from 1979 through 1983 and operating loss and the operating loss margin reflect the trends. Net sales dropped from $15.2 billion in 1979 to $12.6 billion in 1980, then increased to $14.9 billion in 1981, dropped to $11.6 billion in 1982, and then increased to $13.6 billion in 1983. 136/ Thus, net sales have not recovered to 1979 annual levels.

Wire rods—The data on U.S. production of steel wire rods reflects the shift in production towards nonintegrated steel producers. Thus, while integrated steel producers' production and shipments have declined from 1979 levels, the nonintegrated producers have increased production and shipments since 1981. 137/ The capacity of nonintegrated producers has also increased and there is a substantial difference in capacity utilization for integrated and nonintegrated firms. Combined data on production, shipments, and capacity utilization reflect a similar pattern. The three indicators declined in 1980, increased in 1981, declined in 1982, and then increased in 1983, remaining below 1979 levels. 138/

134/ Id. at a-90 Table 19.
135/ Id. at L-4 Table L-3. Nonsteel producers accounting for a very small percentage of U.S. production did recognize profits from 1979 through 1983. Net sales of integrated producers dwarfed the small amount of sales of these nonsteel producers. Id.
136/ Id.
137/ Id. at I-9 Table I-8.
138/ Id.

The average number of employees also reflects the shift in productive facilities. In integrated firms the average number of employees, hours worked, and wages paid declined. These same indicators increased for nonintegrated producers. 139/ The data for the entire industry show a decline in the number of employees from 6,645 in 1979 to 2,666 and 2,835 in 1982 and 1983, respectively. The number of hours worked declined from 13,305,000 in 1979 to 5,134,000 in 1982 and 5,820,000 in 1983. Average hourly wages increased from $11.72 in 1979 to $14.43 in 1981 and then declined to $13.77 in 1982 and $13.13 in 1983. 140/

The financial experience of the integrated and nonintegrated producers is disparate. The integrated producers showed declining net sales and operating losses throughout 1979-1983. Nonintegrated producers showed an operating income from 1979-1983. That income margin, however, declined from 7.9 percent in 1979 to 2.0 percent in 1982. This margin increased to 4.0 percent in 1983. Total industry information shows an operating loss throughout the period, ranging from 0.4 percent loss margin in 1979 to 10.5 percent in 1982. The total industry experienced a 7.4 percent operating loss margin in 1983. 141/

Wire and wire products—Domestic shipments of wire and wire products have declined from the 1979 level of 2,416,000 tons. Shipments fluctuated from that point reaching their lowest level in 1982 at 1,291,000 tons, and then increased slightly in 1983 to 1,357,000 tons, substantially below the level of domestic shipments in 1979. 142/

139/ *Id*. at K-8 Table K-7.
140/ *Id*.
141/ *Id*. at L-5 Table L-4.
142/ *Id*. at G-11 Table G-10.

Data for wire and all of the major wire products except barbed and twisted wire and wire fencing reflect these same trends. Capacity utilization for this group of products also shows this downward fluctuating trend. In 1979, capacity utilization was at 69.6 percent. This decreased to 49.7 percent in 1982 and then improved to 55.8 percent in 1983. 143/

Unlike several of the other domestic industries in this investigation, employment levels, hours worked and wages have continued to decline in 1983. 144/ Employment in this industry decreased from 9,229 in 1979 to 6,551 production and related employees in 1983. The hours worked declined from 18,194,000 in 1979 to 12,474,000 hours in 1983. Wages also reached their lowest level, declining from $184,975,000 in 1979 to $144,566,000 in 1983. 145/

The three types of domestic producers of wire and wire products, integrated firms, nonintegrated firms, and nonsteel producers, varied in the extent of the operating losses experienced from 1979 through 1983. 146/ Composite data reflect a decline in net sales from $1,104 million in 1979 to $821 million in 1982 and $760 million in 1983. Operating income also declined and the industry experienced operating losses of $77 million in 1982 and $57 million in 1983. This represented an operating loss margin of 9.4 percent in 1982 and 7.5 percent in 1983. 147/

Railway-type products—Domestic shipments of railway-type products declined throughout the period of 1979 to 1982 and recovered slightly in

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143/ *Id*. Weighted average calculated from data shown at I-10 through I-15 Tables I-9 through I-14.
144/ *Id*. at a-88 Table 17, a-89 Table 18, a-90 Table 19.
145/ *Id*.
146/ *Id*. at L-6 Table L-5.
147/ *Id*.

1983. In 1979, shipments of these products were 2,026,000 tons. Shipments declined in 1980 and 1981 to 1,469,000 tons and then dropped to 782,000 tons in 1982. Shipments improved to 883,000 tons in 1983, less than half the level of 1979. 148/ Capacity utilization shows a substantial drop from 80.5 percent in 1979 to 25.9 percent in 1982. In 1983 capacity utilization recovered only to 29.1 percent. 149/

The total number of production and related employees in this domestic industry decreased from 2,587 in 1979 to 1,323 in 1982 and remained stable at 1,329 in 1983. 150/ The hours worked show the same pattern of a continuous decline from 1979, when employees worked 5,091,000 hours, to 1982, when employees worked 2,423,000 hours, and remained at that level in 1983. 151/ Wages, however, remained stable from 1979 to 1981 at approximately $59,000,000 then dropped substantially in 1982 to $36,142,000 and declined again in 1983 to $34,150,000. 152/

Net sales of railway-type products increased from $474 million in 1979 to $557 million in 1980, declined slightly to $516 million in 1981, and then dropped to $282 million in 1982, and $299 million in 1983. The operating loss margin for these latter two years is 13.8 percent and 15.1. percent respectively. 153/

Bars—Domestic shipments of bars declined substantially from 1979 to 1983, reaching a low point in 1982. The quantity of shipments in 1979 amounted to 15,887,000 tons in 1979. This quantity decreased to 9,724,000

148/ Id. at G-18 Table G-17.
149/ Id. Weighted average calculated from data presented at I-16 through I-18 Tables I-15 through I-17.
150/ Id. at a-88 Table 17.
151/ Id. at a-89 Table 18.
152/ Id. at a-90 Table 19.
153/ Id. at L-7 Table L-6.

tons in 1982 and then increased slightly to 10,594,000 tons in 1983. 154/ Capacity utilization rates for these products show the same fluctuations with firms using capacity at a level substantially below the 1979 level. In 1979, capacity utilization was 69.6 percent. This utilization rate declined to 40.8 percent in 1982 and then increased to 44.9 percent in 1983, still one third below the 1979 level. 155/

Employment declined by over 50 percent in the domestic bars industry from 16,988 workers in 1979 to 7,158 workers in 1983. 156/ Hours worked declined similarly from 32,654,000 hours in 1979 to 13,666,000 hours in 1982. The hours worked in 1983 increased slightly to 13,942,000. 157/ Wages, however, continued to decline in 1983, dropping from $411,358,000 in 1979 to $204,372,000 in 1982 and $195,873,000 in 1983. 158/

Net sales of bars declined from a high of $3,555.4 million in 1979 to $2,854 million in 1980, increased to $3,350 million in 1981, and then declined substantially to $2,200 million in 1982, and $2,146 million in 1983. 159/ Although the pattern of net sales was the same for integrated, nonintegrated, and nonsteel producers, the operating income and loss data varied with each type of firm. The integrated producers experienced losses in 1980, 1982, and 1983. The nonintegrated producers experienced an operating loss only in 1983 and the nonsteel producers recognized losses from 1981 through 1983. Data for the entire industry show a drop from an operating income of $136 million in

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154/ Id. at G-22 Table G-21.
155/ Id. Weighted average calculated from data presented at I-19 through I-21 Tables I-18 through I-20.
156/ Id. at a-88 Table 17.
157/ Id. at a-89 Table 18.
158/ Id. at a-90 Table 19.
159/ Id. at L-8 Table L-7.

1981 to an operating loss of $314 million in 1982, and an operating loss of $194 million in 1983. This represents an operating loss margin of 14.3 percent in 1982 and 9.0 percent in 1983. 160/

Structural shapes and units—Domestic shipments of structural shapes and units declined continuously from 1979 to 1983. The quantity of shipments was 7,062,000 tons in 1979 and this quantity declined to 4,373,000 tons in 1983. 161/ The percentage of capacity utilized by the industry also declined throughout the period 1979–1983. In 1979 the domestic industry operated at approximately 69.5 percent of capacity. This decreased to 41.7 percent in 1983. 162/

Employment declined slightly from 1979 to 1981, decreasing from 12,827 workers in 1979 to 11,284 workers in 1981. The number of workers dropped substantially to 7,557 in 1982 and continued to decline to 7,110 in 1983. 163/ The decline in the hours worked began in 1980 when hours worked dropped from 25,755,000 hours in 1979 to 23,148,000 hours in 1980. This decline continued through 1983 when hours worked amounted to 14,108,000 hours. 164/ Wages, however, increased from $299 million in 1979 to $309 million in 1981. Wages subsequently declined to $201 million in 1982 and $188 million in 1983. 165/

Net sales of structural shapes and units remained stable from 1979 through 1981 and then dropped from $1,887.5 million in 1981, to $1,324.6 million in 1982, and $1,076.8 million in 1983. The operating loss increased

160/ Id. at L–8 Table L–7.
161/ Id. at G–26 Table G–25.
162/ Id. Weighted average calculated from data presented at I–22 through I–24 Tables I–21 through I–23.
163/ Id. at a–88 Table 17.
164/ Id. at a–89 Table 18.
165/ Id. at a–90 Table 19.

from $14.2 million in 1980 to $23.2 million in 1981. Then in 1982, the operating loss jumped to $186.5 million and in 1983, the loss reached $207.8 million. This represented a 14.1 percent operating loss margin in 1982 and 19.3 percent in 1983. 166/

Pipes and tubes and blanks—Domestic shipments of pipes and tubes increased from 1979 through 1981, climbing from 8,196,000 tons in 1979 to 10,264,000 tons in 1981. In 1982, however, shipments plummeted to 4,985,000 tons and then decreased again to 3,186,000 tons in 1983. 167/ Capacity utilization increased to 79.3 percent in 1981 and then dropped to 33.9 percent in 1982 and 23.0 percent in 1983. 168/

Employment shows similar trends with increases in 1980 and 1981 and sharp declines in 1982 and 1983. The number of production and related workers reached a peak of 15,509 in 1981. The number of workers declined to 9,030 in 1982 and 4,467 in 1983. 169/ In 1981, these workers worked 30,067,000 hours and earned $430,155,000 in wages. In 1982 the figures declined to 16,811,000 hours worked for $246,313,000 in wages and in 1983 the hours worked dropped to 8,764,000 for $121,682,000 in wages. 170/

The financial information on the pipes and tubes industry reflects the rapid growth in the domestic industry until 1981 when net sales reached $6 billion. Net sales drastically declined to $3.4 billion in 1982, and $1.3 billion in 1983. Operating income or loss and the margin of income or loss followed a similar trend with the income ratio increasing to 19.4 percent in

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166/ Id. at L-9 Table L-8.
167/ Id. at G-31 Table G-30.
168/ Id. Weighted averages calculated from data presented at a-105 Table 9.
169/ Id. at a-88 Table 17.
170/ Id. at a-89 Table 18, a-90 Table 19.

1981, and then declining to 10.7 percent in 1982, and experiencing an operating loss of 36.4 percent in 1983. 171/

V. Substantial cause of serious injury 172/ 173/

The third criterion which must be satisfied for the Commission to make an affirmative determination under section 201 is that the increased imports must be a substantial cause of serious injury or threat of serious injury to the domestic industry. 174/ The statute defines substantial cause as "a cause which is important and not less than any other cause." 175/ Thus, the Commission must (1) identify other potential causes of serious injury and (2) determine whether increased imports are an important cause of serious injury and whether any other cause has a "more important" effect on the condition of the domestic industry than increased imports.

Based upon the information developed in this investigation, we have identified several potential causes of serious injury to the domestic industries. Because the demand for steel products is derived from the demand for the products manufactured by steel consuming industries, the domestic steel industries reflect cyclical changes in the steel consuming industries. 176/ Declines in consumption of products manufactured from steel

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171/ Id. at L-10 Table L-9.
172/ Chairwoman Stern joins this portion of the Views, but also refers readers to the more explicit weighing of alternate causes found in her Additional Views, infra.
173/ Commissioner Eckes joins this section for the limited purpose of identifying various possible causes of serious injury to the domestic industry suggested by parties and other interested persons. He does not necessarily agree with the discussion and conclusions regarding each possible cause, nor should the discussion here be interpreted as suggesting that such a cause (or causes) was considered as having any merit in his causal analysis. Rather, he refers readers to subsequent discussion of individual steel industries for his analysis of causation issues.
174/ See 19 U.S.C. § 2251(b)(1).
175/ 19 U.S.C. § 2251(b)(4).
176/ Id. at a-191-192.

resulted in a large decrease in consumption of steel products in the United States. This decline in demand may constitute a potentially important cause of serious injury to the domestic industry. 177/

Another aspect of declining consumption of steel products in the United States is related to long-term changes in consumption patterns. Steel consuming industries have made technological advances that have reduced the steel contained in their products. Current bridge designs, for example, require substantially less steel for their construction. Steel consuming industries have also engaged in product substitution; for example, lightweight aluminum has been substituted for steel in the production of automobiles.

We believe that short term declines in consumption related to the business cycle should be distinguished from long term declines in consumption resulting from product substitution or technological advances. This distinction is based on differences in market behavior after these different declines in consumption occur. For example, consumption of sheet and strip products increased in the last quarter of 1983 and the first quarter of 1984 in response to increased demand for automobiles. Conversely, consumption of sheet and strip may not return to historical levels for the volume of automobiles manufactured in 1984, because of the decline in demand resulting from substitution of aluminum and plastic for sheet and strip.

In identifying other potentially independent causes of serious injury to the domestic industries, we have considered factors specifically related to conditions within these industries. The first of these changes in government regulations has affected both the cost of producing steel products in the

177/ See Views of Chairwoman Paula Stern at 25-28 and Views of Commissioner Eckes, Commissioner Lodwick, and Commissioner Rohr at 12-13, Unwrought Copper, Inv. No. TA-201-52 (1984).

United States and investment decisions regarding modernization of plants. 178/ Most of these regulations can be considered a condition of doing business in the United States, such as the minimum wage law requirements. In some instances, the initial cost of bringing plants into compliance with these regulations represents an atypical cost affecting the domestic industries in this investigation. However, we find that the effects of changes in governmental regulation are not an important cause of the condition of the domestic industries in this investigation.

A second potentially important cause of serious injury in this investigation is intra-industry competition. Minimills compete with integrated producers in the production of many products covered in this investigation. Recently, the preponderance of shipments in many of these products has shifted from integrated producers to minimills. In addition, minimills can have certain cost advantages over integrated producers.

Finally, in the context of these particular industries, discretionary decisions could result in an increasingly noncompetitive cost structure which in-turn may be a potential cause of serious injury to the domestic industries. For example, discretionary decisions regarding raw material sourcing, labor contracts, 179/ and investment in activities unrelated to steel production may have affected the industries' cost structure and ability to compete.

178/ These governmental regulations include, among others, the substantial investment required to bring domestic plants into initial compliance with environmental regulations and accelerated cost recovery provisions in the tax laws. Thus, governmental regulation has had a beneficial effect in some instances. Moreover, the domestic industries made most of the initial investment in environmental compliance efforts in the middle and late 1970s. See Commission report at R-5 for a discussion of domestic producers' expenditures on environmental compliance efforts.

179/ Recent contract concessions have substantially affected labor costs. However, these contracts expire in July 1986. Id. at a-87, 91.

Having identified potential causes of serious injury to the domestic industry, we must next determine whether imports are an important cause of serious injury and no less important than any of the other potential causes of serious injury that we have identified. In assessing the relative importance of these causes of injury, the statute states that:

> the Commission shall take into account all economic factors which it considers relevant, including (but not limited to)--
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> * * * *
>
> an increase in imports (either actual or relative to domestic production) and a decline in the proportion of the domestic market supplied by domestic producers. 180/

Our examination of the relevant economic factors reveals that intra-industry competition constitutes a more important cause of injury to the domestic industries producing rods and bars than increased imports. We also find that the decline in demand for railway-type products resulting from short term declines in consumption is a more important cause of injury to the railway-type products industry than increased imports.

Wire-Rods--We determine that competition between integrated producers and minimills is a more important cause of injury to the domestic industry producing wire rods than imports. 181/ The domestic industry has experienced a shift in production from integrated producers to minimills. In 1979, integrated steel producers accounted for 68 percent of production, while minimills accounted for 32 percent of production. 182/ By 1983, this situation had reversed with integrated producers accounting for 39 percent of production and minimills accounting for 61 percent of production. 183/

180/ 19 U.S.C. § 2251(b)(2)(C). See also H.R. Rep. No. 571, 93d Cong., 1st Sess. 47 (1973).
181/ Chairwoman Stern refers readers to the discussion at 108 in her Additional Views.
182/ Calculated from data presented in Commission report at I-9 Table I-8.
183/ Id.

This shift is important because minimills have become the price leaders in the U.S. market. Although imports undersold integrated producers in several instances, minimills have consistently underpriced both importers and integrated producers of rod products. The Commission has collected data on average unit values of domestic shipments and imports and on actual transaction prices for 32 representative products in seven geographical markets. 184/ Average unit value information is a useful indicator of pricing trends while transaction prices allow direct comparisons of prices for domestic and imported products. 185/ An analysis of transaction prices for wire rod products reveals that in 21 of 26 quarterly comparisons of prices paid by end users of wire rods, the minimills underpriced imported wire rods. 186/ Minimills undersold imports by an average of 17 percent over these quarters, or by more than $50 per ton. 187/ The more limited information available on sales to service center distributors in two of the marketing areas shows that minimills undersold imports in 3 of 11 quarters.

Even though minimills are the price leaders in the U.S. market for wire rods, these firms have remained profitable from 1979 through 1983, as they accounted for an increasing share of U.S. production. 188/ The integrated

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184/ *See* appendix P for a description of these products.
185/ *Id*. at a-147 n.2.
186/ *Id*. at a-171-72 Table 58.
187/ *Id*.
188/ *Id*. Although the operating income margin declined from 2.1 percent in 1981 to 2.0 percent in 1982, the margin increased to 4.0 percent in 1983. Integrated producers, however, experienced operating losses throughout the period and an operating loss margin of 18.1 percent in 1983. *Id*. at L-5 Table L-4.

firms' large losses support a finding of serious injury to the industry. This is not dispositive of the substantial cause issue. Although imports increased slightly from 25.6 percent of domestic consumption in 1979 to 28.9 percent in 1983, the relative effect of this increase on the condition of the domestic industry is not as important as the shift of production to minimills, together with minimills' price leadership, in this market.

Bars--With respect to the domestic industry producing bars, we determine that intra-industry competition is the most important cause of serious injury to the domestic industry. 189/ Production has demonstrated a significant shift from integrated producers to minimills in this industry. 190/ At the same time that minimills began dominating the domestic bar industry, imports increased only modestly. 191/

Minimills are the price leaders in the U.S. market; Commission data show a consistent pattern of underselling of imports of hot-rolled bars by minimills in 23 of 24 quarterly comparisons of sales to service center distributors. Minimill prices to these distributors averaged 24 percent lower than import prices. 192/ In sales to end users, the limited data show a mixed pattern, with minimill prices for hot-rolled bars lower than imports in six out of twelve quarters by comparison by an average of 13 percent and import prices lower than minimill prices in the remaining six quarters by comparison by an average of seven percent. 193/

189/ Chairwoman Stern refers readers to the discussion at 113 in her Additional Views.
190/ Id. at I-19 Table I-18, I-20 Table I-19, I-21 Table I-20.
191/ Id. at G-24 Table G-23.
192/ Id. at a-175-76 Table 61.
193/ Id. at L-8; G-24 Table G-23.

Although minimills producing bars experienced an operating loss in 1983, imports claimed a declining share of the U.S. market in that year. 194/ Minimills were highly profitable from 1979 through 1981, remained profitable in 1982 when imports reached their peak, and out performed integrated producers throughout the period. 195/ Although the integrated producers' operating losses support a finding of serious injury to the domestic industry producing bars, we find that the most important cause of that injury is competition from minimills. Although there is a relative increase in imports from 5.3 percent of domestic producers' shipments in 1979 to 7.7 percent in 1983, the modest amount of that increase and other market conditions indicate that this increase in imports is not as important a cause of serious injury as intra-industry competition.

Railway-type products—We determine that the recent drastic decline in demand for railway products is the most important cause of the serious injury experienced by this industry. 196/ As with other steel industries, demand for railway-type products is related to demand for the finished product manufactured from that product. The period following 1980 reflected a basic consolidation in the railway industry. 197/ Recently, the demand for rails has fallen as a result of lack of capital and high interest rates limiting investments in railways. 198/ Demand for railway-type products has subsequently also fallen. For example, freight car deliveries declined from 90,300 units in 1979 to 8,000 units in 1983. 199/

194/ Id. at L-8; G-24 Table G-23.
195/ Id.
196/ Chairwoman Stern refers readers to the discussion at 112 in her Additional Views.
197/ Certain Tapered Roller Bearings and Parts Thereof from Japan and Italy, Invs. Nos. 731-TA-120 and 122 (Final), USITC Pub. No. 1497 (1984).
198/ Id. at a-159.
199/ Id. at a-205.

U.S. consumption and shipments of railway products have declined more than 50 percent in 1983 from 1979 and 1980 levels. The ratio of imports to shipments increased from 15.5 percent in 1979 to 23.0 percent in 1980. The ratio then declined to 21.7 percent in 1981 before jumping to 43.5 percent in 1982. The ratio of imports to shipments returned to historical levels in 1983, when the ratio dropped to 18.0 percent. 200/ Although this unusual pattern of imports satisfies the statutory requirement of increasing imports, the overall increase in the ratio of imports to shipments over the 1979-1983 period is modest. The single year of an abnormally high import to shipments ratio followed by a return to historical levels is an anomaly and is not decisive of the causation question. In addition, the financial experience of integrated producers which account for the majority of shipments of these products continued to deteriorate in 1983 despite the substantial drop in the absolute and relative volume of imports in that year. 201/

In a recent antidumping investigation involving a component of railway freight cars, the Commission found that the dramatic decline in demand for railway freight cars precluded a finding of any causal connection between imports of tapered roller bearings from Japan and Italy and the condition of the domestic roller bearing industry. 202/ In this investigation involving a higher causation standard than in an antidumping investigation, we must reach the same conclusion. We find that the decline in U.S. consumption of these products is the most important cause of the condition of the domestic industry producing railway-type products.

200/ Id. at G-18 Table G-17.
201/ Id. at L-7 Table L-6.
202/ Certain Tapered Roller Bearings and Parts Thereof from Japan and Italy, Invs. Nos. 731-TA-120 and 122 (Final), USITC Pub. No. 1497 (1984).

VIEWS OF COMMISSIONER ECKES, COMMISSIONER LODWICK, AND COMMISSIONER ROHR ON SUBSTANTIAL CAUSE OF SERIOUS INJURY TO THE DOMESTIC INDUSTRIES PRODUCING SEMIFINISHED PRODUCTS, PLATES, SHEETS AND STRIP, STRUCTURALS, AND WIRE AND WIRE PRODUCTS

With regard to the domestic industries producing semifinished products, plates, sheets and strip, structurals, and wire and wire products, we find that increased imports are an important cause and not less than any other cause of serious injury or threat thereof to these industries. In the preceeding views we discussed the potential causes of serious injury. In our analysis of the causal connection between imports and the serious injury experienced by these domestic industries, we have considered, among other factors, (1) trends in the volume of imports, domestic consumption, and domestic producers' shipments, (2) pricing practices in the markets for these products, 1/ and (3) the relationship between these two factors and the financial experience of domestic producers.

Semifinished products--Over the period of this investigation, imports of these products have increased absolutely, although the pattern of increase fluctuated during the period. Imports reached a level of 821,000 tons in 1983, the highest level during the period, compared with 152,000 tons in 1980, the lowest level during the period. Imports measured as a percentage of domestic production (the most meaningful measure of penetration for imports of this product), increased from 0.3 percent in 1979 to 1.3 percent in 1982 and 1983.

1/ The Commission collected data on average unit values of domestic shipments and imports and on actual transaction prices for 32 representative products. See appendix P for a description of these products. Average unit value information is a useful indicator of pricing trends while transaction prices allow direct comparisons of prices for domestic and imported products. Id. at a-147 n.2.

Because of the limited commercial trade in these products, transaction prices are not available. However, unit value information indicates that, with the exception of one quarter in 1983, average unit values for imports from all sources were well below the domestic industry values, particularly those values for integrated producers.

Semifinished products are used as raw material for further processing into mill products. Historically, the trade in these products has for the most part involved purchases by integrated mills for purposes of complementing their own production levels. Most of domestic production is consumed captively by integrated producers.

Commissioner Lodwick and Commissioner Rohr, in reaching their affirmative determination based on a threat of serious injury, focus their analysis on the uncertainty created in this market by changes occurring in these historical patterns. Increased imports in 1982 and 1983 are attributable in part to imports by domestic processors seeking semifinished products; thus, they are concerned that present trends of imports if continued into the future, will not allow domestic integrated producers the opportunity to supply domestic processors with semifinished products.

Commissioner Eckes in his determination of present serious injury is concerned that the impact of these changing trade patterns has already affected the performance of the domestic industry. Specifically, these semifinished products are raw materials for further processing; losses of sales of even small quantities of these products have a proportionately greater impact on the performance of this industry, since the impact is reflected in raw steel capacity utilization, the major cost component for the production of all steel products.

Plates—Imports of plates have increased dramatically in proportion to domestic shipments from 1979 through 1983. During this period, the ratio of imports to domestic shipments increased from 20.5 percent in 1979, to a peak of 39.8 percent in 1982, before declining to 37.4 percent of domestic shipments in 1983. 2/ Domestic shipments decreased by over 50 percent, dropping from 8,889,000 tons in 1979 to 3,731,000 tons in 1983. In the first quarter of 1984, domestic shipments increased over the level in the comparable period of 1983. However, in this most recent period the level of imports increased much faster with the ratio of imports to shipments rising to 42.5 percent. 3/ Data on domestic consumption and production show the same trends. 4/

Plates are fungible products manufactured to industry standards. Consequently, price differences are a major factor in the purchase of plate products. Throughout the period of increasing imports, the imported product consistently undersold the domestic product. 5/

Data on average unit values and transaction prices show a broad based price advantage for imports in all of the markets examined. 6/ Despite a decline in the average unit value of the domestic product throughout 1981–83, the average unit values of imports from all countries were considerably below the domestic level. 7/

2/ Id. at G–4 Table G–3.
3/ Id.
4/ Id. at a–68 Table 7, G–4 Table G–3.
5/ Id. at M–4, Table M–5, M–5 Table M–7.
6/ Id. at a–163–65 Table 53; M–4 Table M–5, M–5 Table M–7.
7/ Id. at M–4 Table M–5, M–5 Table M–7. The only exception to this trend is for imports from Japan during the last two quarters of 1983. Prior to that time the average unit value of plates even from Japan was substantially below the domestic average unit value.

Transaction prices on three plate products that are sold to service center distributors and end users show that imports enjoyed substantial price advantages in all seven of the markets analyzed. 8/ For example, in sales of certain plates in cut lengths sold to service center distributors, imports undersold the domestic product in 40 of the 41 price comparisons. Averaged over the six-quarter period, import prices ranged from 17 to 29 percent below the domestic price in five of the areas and from 8-10 percent below the domestic price in the two western areas. 9/

Integrated producers account for most of the production of plate products in the United States. 10/ These producers have realized declining average unit values beginning in the second quarter of 1982 and experienced a drop of 26 percent in the index of average unit values. 11/ Until the last quarter of 1983, the index of average unit values for imports was even lower than the index of values for domestic producers. 12/ The record clearly shows that prices for imports have dropped by a greater percentage than domestic prices. Further, displacement of domestic producers' shipments coupled with declines in average unit values for this lower volume of shipments have adversely affected industry profitability. Although the recent decline in the absolute volume of plates consumed in the United States has adversely affected the domestic industry, 13/ we find that the shift in sales to imports combined

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8/ Id. at a-164 Table 53.
9/ Id. at a-163.
10/ Id. at I-4 Table 7 I-3.
11/ Id. at M-4 Table M-6.
12/ Id. at M-5 Table M-8.
13/ This decline in consumption consists of two types, short term, and long term. See discussion of potential causes of serious injury at 47, infra. We have considered these two types of decline in demand as separate causes of injury and find that each is no more important a cause of injury than imports.

with increased imports' depressive effect on prices for the remaining sales of domestic producers is an important cause of serious injury and not less than any other cause.

Sheets and strip—Imports of sheets and strip have fluctuated in absolute terms over the period of this investigation. Import levels declined from 1980-82, and then in 1983, increased to levels slightly above the 1979 levels. 14/ Imports surged higher in the first quarter of 1984. Current domestic producers' shipments, however, remained well below 1979 levels. Domestic shipments declined from a high of 48,977,00 tons in 1979 to 38,322,000 tons in 1983. Thus, the ratio of imports to domestic producers' shipments has increased from 14.5 percent in 1979 to 18.7 percent in 1983. This ratio increased to 25.2 percent in the first quarter of 1984. 15/

Sheet and strip products are price sensitive because of their fungibility within product specifications. Thus, declines in prices have a far reaching effect on volume of sales of these products.

The average unit value information on sheet and strip products shows a drastic decline in the value of sheets and strip imported from developing countries. 16/ Average unit values decreased from $355 per ton in the first quarter of 1982 to $284 in the last quarter of 1983. 17/ Imports of sheet and strip products from developing countries increased from 442,000 tons in 1982 to 1,594,000 tons in 1983. 18/ Total imports were 4,683,000 tons in 1982 and 7,153,000 tons in 1983. Thus, the percentage of imports from developing countries increased substantially in 1983. Domestic integrated producers'

14/ Id. at G-5 Table G-4.
15/ Id.
16/ Id. at M-7 Table M-11.
17/ Id.
18/ Id. at H-6 Table H-5.

average unit values also decreased from the second quarter of 1982 up to the third quarter of 1983. Average unit values were at $463 per ton in July–September 1982, and $442 in July–September 1983. 19/

Transaction price information shows that imports undersold the domestic industry in 112 of 147 quarterly price comparisons of all sheet and strip products in sales to service center distributors and end users. 20/ Imports undersold the domestic product in varying amounts depending upon the particular market area and type of sheets and strip. 21/ These price comparisons serve to establish a pattern of price leadership by the imported products.

Although the demand for sheet and strip products is increasing in the U.S. market, the domestic industry is not realizing the full benefit of this recovery. Imports are continuing to gain an increasing market share and suppressing prices in the United States. Although indicators suggest some improvement in 1983 industry performance, the trends do not suggest a return to historical levels. Domestic producers are still showing operating losses, although to a lesser degree than in 1982. Shipments, although increasing, are below 1981 levels.

Parties have argued that long term decline in demand is a more important cause of injury to the domestic sheet and strip industry than imports. 22/ Among these long term factors are (1) the effect of increased importation of automobiles, (2) the decline in steel content of domestically produced automobiles, and (3) the decline in the consumption of automobiles resulting,

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19/ Id. at M-6 Table M-9.
20/ Id. at a-165-69 Tables 54-56.
21/ See discussion of transaction price differentials on all types of sheet and strip products at a-165, 168.
22/ See, e.g., Canadian Steel Industries Committee Prehearing Brief on injury at 9-14, Exhibits 1-4, C-2.

in part, from the tendency of consumers to wait a longer period of time before replacing an automobile, and (4) substitution of aluminum cans for steel cans. We do not believe that all of these factors should be considered collectively as a single cause of injury. The effect of increased automobile imports is clearly not the same as the effect of the decline in steel content in domestic cars. Changes in the demand for imported cars are, in part, a matter of consumer taste and can vary rapidly. Changes in the amount of steel used in automobiles reflect various cost considerations and are more long term. In addition, assuming arguendo that in terms of volume these causes are greater than imports, this analysis fails to quantify the effect of a smaller volume of imports which are priced substantially lower than the domestic product. 23/ This effect may be intensified when domestic prices are already being discounted and may not even be covering fixed costs of production.

Based on the record in this investigation, we find that increased imports are an important cause of serious injury to the domestic sheet and strip industry and not less than any other cause of injury.

Wire and wire products—Apparent consumption of wire and wire products decreased substantially from 3,383,000 tons in 1979 to levels ranging from 2,075,000 to 2,640,000 tons during 1980-83. At the same time that apparent consumption fluctuated within this lower range, imports increased to levels above that achieved in 1979. This resulted in a drastic increase in the ratio of imports to domestic producers' shipments, with imports amounting to 42.6 percent of domestic shipments in 1979 and 77.9 percent in 1983. In the first

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23/ The staff attempted to quantify the volume and price effects. See Office of Economics Memorandum, EC-H-197, Appendix. Even accepting the underlying assumptions made in that analysis, when the changes in downstream import competition in the automobile market are separated out, the effects of secular demand changes fell to a level below that of imports.

quarter of 1984, the ratio of imports to domestic shipments was 97.4 percent. In addition, imports accounted for 20 percent more of domestic consumption of wire and wire products in the first quarter of 1984 than they did in 1979. 24/

Transaction prices for wire and wire products show that imports undersold the domestic products by substantial margins. Imports undersold the domestic products in all categories of products and in all markets for which the Commission received data. 25/ Although the wide variation in margins of underselling among the numerous products and different markets makes generalizations difficult, the data clearly reveal that imports of wire and wire products were sold at prices below the domestic industry's prices for these products.

Comparison of the financial experience of domestic producers in 1980 with subsequent years demonstrates the injurious effect that increased imports have had on domestic producers; the financial experience of all three types of producers has deteriorated. Aggregate data for all domestic producers show a decline from an operating income margin of 2.5 percent in 1981 to an operating loss margin of 9.4 percent in 1982. These losses continued in 1983 with the aggregate industry data showing an operating loss margin of 7.5 percent. 26/

Although domestic consumption declined from 1979 to 1980, it remained stable in 1981. Then in 1982, domestic consumption declined further by 565,000 tons. Importantly, the increase in the ratio of imports to domestic shipments accelerated increasing from 51.7 percent in 1981 to 64.8 percent in 1982. Despite the decline in demand, imports have been able to maintain or increase market share. Faced with this additional loss of market share and

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24/ *Id*. at G-11 Table G-10.
25/ *Id*. at a-168-71.
26/ *Id*. at L-6 Table L-5.

underselling by imports, the domestic industry's financial performance declined from an operating income margin of 2.5 percent in 1981 to an operating loss margin of 9.4 percent in 1982. 27/ In light of imports' increased market share combined with evidence of underselling, we find that imports are no less important than any other cause of serious injury to the domestic wire products industry.

Structural shapes and units—Domestic demand for structural shapes and units declined slightly between 1979 and 1981, and then declined substantially in 1982. Domestic demand for these products then remained stable in 1983. Although the ratio of imports to shipments remained stable between 1979 and 1981, it increased substantially from 34.4 percent in 1981 to 41.7 percent in 1983. Moreover, this ratio continued to increase to 47.5 percent in the first quarter of 1984. This most recent increase in the relative quantity of imports occurred at the same time that apparent consumption substantially increased, climbing from 1,368,000 tons in the first quarter of 1983 to 2,073,000 tons in the corresponding period of 1984. 28/ Thus, imports continue to gain market independent from changes in demand.

Increased imports are also significantly affecting prices in the U.S. market. Transaction price information on imports shows that the price of imported wide-flange beams, a heavy structure product, is substantially below the price for this product from both integrated producers and minimills. 29/ In sales to service center distributors, imports undersold domestic integrated producers in every quarter by an average of 23 percent or $94 per ton. 30/ In

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27/ Id. at G-11 Table G-10; L-6 Table L-5.

28/ Id. at G-26 Table G-25.

29/ Id. at a-175-79 Tables 62-63. Integrated producers account for the majority of shipments of all structural shapes and units. Id. at I-22 Table I-21, I-23 Table I-22, I-24 Table I-23. Minimills, however, account for most of the production of light structural products. Id. at I-23 Table I-22.

30/ Id. at a-175.

sales to end users, imports undersold integrated producers by an average of 15 percent, or $65 per ton. Imports of wide-flange beams also undersold domestic minimill sales to several service center distributors in 20 of 25 quarters by comparison by an average of 19 percent, or $78 per ton. 31/

The index of average unit values from 1981-1983 shows a substantial decline for both minimills and integrated producers. The index for minimills dropped from a high of 104 in the third quarter of 1981 to 82 in the last quarter of 1983. Integrated producers also experienced a substantial decline in the index of average unit values, going from a high of 112 in the second quarter of 1982 down to 92 in the last quarter of 1983. 32/ Thus, both integrated producers and minimills have realized lower average prices in addition to loss of volume to imports.

The financial data on this industry reflect the effect of increased imports and suppressed prices in 1982-83. Although domestic consumption remained stable in 1983, the financial condition of the domestic industry substantially deteriorated. Aggregate data show that the domestic industry's operating loss ratio increased from 14.1 percent in 1982 to 19.3 percent in 1983. 33/ Although the recent decline in consumption has adversely affected this industry, we find that increased imports are at least as important a cause of serious injury to the domestic industry.

31/ Id. The limited data regarding average unit values on sales of angles, a light structural product, is mixed, with imports underselling integrated producers by an average of 26 percent in the three quarters for which we have data. In the two western markets, however, domestic minimills price their products substantially below imports. Id. at a-178.

32/ Id. at M-16 Table M-30.

33/ Id. at L-9 Table L-8.

VIEWS OF COMMISSIONER SEELEY G. LODWICK ON SUBSTANTIAL CAUSE OF SERIOUS INJURY TO THE DOMESTIC INDUSTRY PRODUCING PIPES AND TUBES AND BLANKS THEREFOR 1/

I find that the recent sharp decline in demand for pipes and tubes and blanks therefor is a more important cause of injury to the domestic industry producing these products than increased imports.

Apparent consumption of pipes and tubes increased from 10.4 million short tons in 1979 to 16.3 million short tons in 1981 and then declined sharply to 9.8 million short tons in 1982 and 5.8 million short tons in 1983. Thus, apparent consumption in 1983 stood at only 35 percent of the 1981 peak level. 2/

The drop in demand was especially severe for oil-well tubing, casing and drill pipe. Between 1979 and 1981 apparent consumption climbed by over 150 percent to total 7.0 million short tons for the year 1981. The increased demand was triggered by the approximate tripling of world oil prices following the Iranian Revolution. However, as oil suppliers and consumers adjusted to these massive price hikes, demand for oil-well tubing, casing and drill pipe literally collapsed. Apparent consumption fell almost 50 percent in 1982 and nearly a further 70 percent in 1983. Apparent consumption totalled only 1.2 million short tons in 1983, a mere 17 percent of the 1981 figure. 3/

1/ For the views of the other Commissioners concurring in the majority position on injury to the domestic industry producing pipes and tubes and blanks therefor see views of Chairwoman Stern at page 87 and Vice Chairman Liebeler at page 130.

2/ Report at Table G-30.

3/ Id. at Table G-31. The drop in apparent consumption exceeded declines in actual use as producers, importers, and distributors greatly misjudged the drop in demand. As a result inventories initially accumulated. The working down of these excess stocks exacerbated the decline in demand.

Responses to the Commission's questionnaires from producers accounting for roughly one half of domestic shipments indicate that during 1980 and 1981 domestic production capacity utilization exceeded 90 percent, despite increases in capacity in both years. Increased imports were needed because demand could not be met with domestic output. By 1983 domestic capacity utilization plummeted to under 10 percent. 4/

Between 1979 and 1981 imports of pipes and tubes increased in both actual volumes and relative to domestic consumption. By 1981 imports climbed to 6.5 million short tons, or 40 percent of consumption. 5/ However, these increased imports did not outweigh the buoyant market conditions and caused no substantial injury to the domestic industry. In at least some instances imports were needed to supplement domestic production in order to satisfy demand. The health of the industry in 1981 is indicated by the facts that (1) the ratio of operating income to net sales averaged 19.4 percent, more than double the 1979-80 average 6/ and (2) the average unit value of domestic shipments rose substantially. 7/

As demand faltered during 1982 imports also declined, though imports continued to rise relative to consumption. Due to market strength early in the year the industry was able to show firm profits in 1982, but income declined from the peak levels achieved in 1981. The ratio of operating income to net sales remained over 10 percent and continued to exceed the 1979 and 1980 levels, and the average unit value of domestic shipments was up modestly. 8/

4/ Id. at Table I-24.
5/ Id. at Table G-30.
6/ Id. at Table L-9.
7/ Id. at Page J-11.
8/ Id. at Table L-9 and p. J-11.

However, with the second year of sharp reductions in demand in 1983 the industry suffered severe injury. Net sales failed to cover even the cost of goods sold, and the average unit value of domestic shipments skidded sharply. 9/

Imports declined in both actual volumes and relative to consumption in 1983. The volume of imports in 1983 was 2.8 million short tons, less than 45 percent of the 1981 level. Though the ratio of imports to consumption declined from 53 percent in 1982 to 49 percent in 1983, it remained above the ratios for 1979 through 1981. Imports contributed to the injury suffered by the domestic industry in 1983, but they were a less important cause than the sharp reduction in demand. 10/

9/ Id.
10/ Id. at Table G-30.

VIEWS OF COMMISSIONER ECKES AND COMMISSIONER ROHR
ON SUBSTANTIAL CAUSE OF SERIOUS INJURY TO THE
DOMESTIC INDUSTRY PRODUCING
PIPES AND TUBES AND BLANKS THEREFOR

We found the statutory criteria for increased imports and serious injury to be satisfied for the pipe and tube industry. With regard to the remaining criterion, we have determined that increased imports are a substantial cause of serious injury, and thus are not less important than any other cause of serious injury to the domestic pipe and tube industry.

The absolute level of imports does not reflect an increasing trend in imports over the period. Imports did increase from 2.9 million tons in 1979 to 6.5 million tons in 1981, before declining to 5.2 million tons in 1982, and further declining to 2.8 million tons in 1983. However, as a share of domestic shipments, imports increased dramatically from 1979 to 1983. During this period, the ratio of imports to domestic shipments increased from 35.4 percent in 1979 to a peak of 104.8 percent in 1982, before declining to 89.2 percent in 1983. Although domestic shipments were higher in the first quarter of 1984 than in the first quarter of 1983, imports again increased as a share of shipments, increasing from 69.6 percent to 118.6 percent.

The Commission gathered transaction pricing data for 10 pipe and tube products in various market areas in the United States. With only occasional exceptions, the purchase prices paid by steel service centers and end users for imports of the various pipe and tube products were lower than the purchase prices of competing domestic products. The import price advantage was substantial in most cases, ranging from 14 percent to 41 percent for some products. The comparison of unit values for imported articles and domestic articles confirms these transaction price relationships.

Because the demand for pipes and tubes is dependent on a wide range of economic activities such as nonresidential construction, home and office furniture construction, public construction activity, and oil-well drilling activity, the recent recession dampened demand for pipes and tubes. In addition, the oil glut in late 1982 and the subsequent decline in oil prices curtailed oil exploration operations, and, in turn, reduced the demand for pipes and tubes. As the demand for pipes and tubes declined, domestic and offshore competition stiffened and prices declined. During 1979-81, when demand was increasing, the share of U.S. consumption held by imported oil-country goods increased from 21.1 percent in 1979 to 41.4 percent in 1981. Despite declining demand during the remainder of the period, the import share climbed to 57.6 percent in 1981 before decreasing somewhat to 47.8 percent in 1983, still well above historical levels.

Despite the replacement of steel pipe by reinforced plastic pipe in construction projects, domestic shipments of nonoil-country carbon and alloy steel pipe and tubing increased from 1979 to 1981, but declined in 1982 when consumption dropped sharply, to about two-thirds of the 1981 level. Despite the sharp drop in consumption, imports were able to increase their market share to about 50 percent of U.S. consumption in 1982, compared with 39 percent in 1981. Although consumption declined even further in 1983 (by about 25 percent), imports maintained their market share at about 50 percent.

Thus, with regard to the two subgroups in this industry, it is clear that although declines in demand are evident, the nature of the import trends clearly indicates substantial import penetration inconsistent with historical patterns. Moreover, it is apparent that these import penetration levels were achieved by strong patterns of underselling, and adversely affected domestic pricing, resulting in lower profitability on the remaining volume of domestic sales.

With regard to this product group, there is insufficient information that intra-industry competition has been a cause of serious injury which is more important than imports. Production of oil-country tubular goods has been dominated by integrated producers. Although nonintegrated producers have increased their share of the domestic market, the increase has not been as dramatic as for other products, such as wire rod and bars. With regard to all other pipes and tubes, nonintegrated producers have also increased their share of the domestic production relative to integrated producers. Yet these gains, in the absence of compelling data indicating price leadership by nonintegrated producers in the market, do not make those producers a more important cause of injury to the industry than imports.

VIEWS OF COMMISSIONER ECKES, COMMISSIONER LODWICK, AND COMMISSIONER ROHR REGARDING REMEDY

We recommend that the President impose (1) a tariff-rate quota on imports of semifinished steel, (2) quantitative restrictions (quotas) on imports of plates, sheets and strip, structurals, and wire, and (3) a tariff increase on imports of wire products. Furthermore, we recommend that relief be granted for a period of five years with specified reductions in the level of relief in the fourth and fifth years. We find that the representative period for imports of these products is 1979-1981 and we base our recommendation regarding minimum import levels on the average import level during the representative period. To insure the orderly entry and supply of imports under these quotas, we recommend that no more than 30 percent of each of the respective annual aggregate quantities specified for each domestic industry or product category, as determined by the specific percentages as forecast or minimum quantity as appropriate, should be entered during any quarterly period. 1/ We have also recommended exemption of band saw steel, razor blade steel, and bread knife steel from these remedies. We also have considered and dismissed another statutory option, adjustment assistance. It is not a realistic option, given the low levels of funding, nor would it provide the type of relief required to facilitate orderly adjustment in these steel industries. The following tables summarize our recommended remedies.

1/ The mechanism for such quarterly forecasting already exists and is operating in connection with imports of steel products under the EC-US Arrangement.

Product	Remedy	Imports at Existing Duty	Additional Duty	
			Years 1-3	Years 4-5
Semifinished	Tariff-rate quota	1.5 million tons	15 percent	10 percent
Wire products	Tariff		12 percent	10 percent

Product	Remedy	Level		Minimum Quantity
		Years 1-3	Years 4-5	
Sheet and strip products				
Hot-rolled	Quota 2/	11 percent	12.1 percent	1.8 million tons
Cold-rolled	Quota 2/	10.6 percent	11.7 percent	1.9 million tons
Galvanized	Quota 2/	21.4 percent	23.5 percent	1.6 million tons
Other sheet and strip	Quota 2/	6.4 percent	7.0 percent	400,000 tons
Plates	Quota 2/	21.2 percent	23.3 percent	2.1 million tons
Structurals	Quota 2/	28.9 percent	31.8 percent	2.1 million tons
Wire	Quota 2/	24.5 percent	26.9 percent	400,000 tons

2/ All recommended quotas are based on a percentage of apparent domestic consumption.

Quotas

Section 201(d)(1) provides that:

> [I]f the Commission finds with respect to any article, . . ., the serious injury or threat thereof, . . ., it shall—
>
> (A) find the amount of the increase in, or imposition of, any duty or import restriction on such article which is necessary to prevent or remedy such injury . . . .

The petitioners and the majority of producers in each of the five domestic industries for which we have made an affirmative finding on injury have taken the position that the Commission should recommend quotas as the most appropriate remedy for the serious injury suffered by these five industries. In addition, many importers and foreign producers prefer quotas so long as they are consistent with existing import arrangements. We find that quotas are the most appropriate remedy for the domestic industries producing sheet and strip, plates, structurals, and wire. 3/ For these products, our recommendations also establish a minimum volume for imports to insure that the absolute volume of imports will not drop below the average level of imports during the most recent representative period, as required by law. 4/ Above this minimum, however, the level of imports should reflect changing market conditions during the period of relief.

Within the sheet and strip industry, we have established separate quotas and minimum import volumes for four types of products, hot-rolled sheet and strip, cold-rolled sheet and strip, galvanized sheet and strip, and other types of sheet and strip. In addition, we find that no remedy is required for the producers of light structural shapes and thus the quota for structural shapes and units does not cover light structural products. 5/

Imposition of quotas for the sheet and strip, plate, structural and wire product categories will allow domestic producers to adjust their cost structures through modernization and rationalization of their facilities.

3/ See discussion of recommended remedy for semifinished and wire products infra at 75-77.

4/ 19 U.S.C. § 2253.

5/ Minimills account for a major proportion of the production of light structural products. Report at I-23 Table I-22. As in the other domestic industries in which minimills are significant participants, there are substantial differences in the financial performance and ability to compete with imports for minimills and integrated producers. In conformity with our responsibility to recommend only that remedy necessary to remedy or prevent serious injury, we have excluded light structurals from the remedy recommendation for the domestic structural industry.

Integrated producers dominate production of these products and increasing volumes of low priced imports have exacerbated integrated producers' problems in raising capital for investment in modernization. 6/

We have established separate quotas and minimum import volumes for sub-products within the domestic sheet and strip industry. These sub-products constitute relatively distinct product lines within the industry. Prior experience with quotas indicates that exporting countries will likely shift to higher value products within a unitary quota category. Such a shift could deny the domestic industry the full benefit of relief that we have found necessary.

Although the President has the authority to allocate quotas imposed under section 201 on a country-by-country basis, we have not developed a specific recommendation for allocation of quotas in our proposed remedy. Should the President decide to allocate a quota, we note that several considerations have been raised during this investigation. Multilateral and bilateral arrangements exist establishing import levels from specific countries. However, countries that have not reached arrangements could be penalized if a quota allocation was based upon these arrangements. Moreover, new entrants into the U.S. market could be excluded from the market under an allocation system based on traditional market share.

Under the statute, the President has the authority to negotiate orderly marketing agreements with foreign countries limiting the export of articles from foreign countries. 7/ In accord with prior Commission practice, we have

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6/ Report at a-93.

7/ Parties have argued that this presents problems under Article XIII of the General Agreement on Tariffs and Trade. See, e.g., Taiwanese Steel Producers Brief on Remedy at 10-11. Article XIII of GATT requires that any allocation of quotas be distributed in accordance with the share of imports that each country would have had in the absence of import restraints.

not recommended negotiation of orderly marketing agreements. This alternative, of course, remains available to the President, and in light of the broad economic and foreign policy effects of any relief, may be an appropriate course of action.

Tariff-rate quota

For semifinished products, we recommend a tariff-rate quota with the existing rates of duty applying to imports of these products up to 1.5 million tons per year. Imports above that level would be assessed additional duties of 15 percent ad valorem in the first three years of relief and 10 percent ad valorem in the fourth and fifth years of relief.

The Commission found that the semifinished products industry is threatened with serious injury. In reaching this determination the Commission noted the expanding domestic market for semifinished products and the potential for increased employment in firms processing semifinished products. Two firms are either currently importing semifinished products or intend to import these products for further processing in U.S. plants. In addition, the current market for semifinished products consists primarily of integrated producers supplementing their production when their furnaces are down for refurbishing or demand is unusually high. We find that a tariff-rate quota, whereby domestic processors could import the necessary raw materials for processing and integrated producers could continue to obtain interim supplies of semifinished products at present duty rates, provides the appropriate remedy to prevent serious injury to the domestic industry in the future. The increase in duty on imports above this level should deter future increases in imports above the quota level.

Commissioner Eckes notes that although his determination with regard to this product is based on the existence of serious injury, he has joined his colleagues in this remedy recommendation. Future import levels under this recommendation may exceed past injurious levels. However, anticipated changes in the nature of trade for these products warrant some additional flexibility, as processors of these products, one of which is isolated geographically from domestic sources, turn to import sources to keep production lines in operation. Projections indicate these domestic needs will increase in the next few years. This approach is consistent with the notion that a remedy should only be as restrictive as necessary to address the injury found.

Tariffs

In determining the most appropriate remedy for the wire and wire products industry, we have recommended different forms of relief for the two components of this industry. Specifically, we have recommended a quota for wire and a tariff increase of 12 percent above the current duty for imports of wire products for the first three years of relief and 10 percent for the final two years of relief. Our distinction between the most appropriate remedy for these two subcategories is based upon market conditions within this category of products and the characteristics of the countries exporting wire products to the United States.

Unlike wire, which is a fungible commodity for which quantitative restrictions can be effectively applied, the wire products category includes a vast array of articles including various types of end products such as wire rope, fencing, and fasteners. Thus, a quota could result in shortages of some products and a shift in imports into higher priced articles within the product category. Minor distinctions between the large number of articles constituting this portion of the industry make separate quotas for each article difficult to determine and administer. Further, the fact that wire products are imported from many sources also makes administration of a quota difficult.

We have set the level of tariff increase after considering the change in volume required for an appropriate remedy, the responsiveness of imports to an increase in the tariff rate, and the potential for absorption of any tariff increase. The most subjective factor is predicting the amount of absorption of increased tariffs, if any, that exporting countries will undertake. The developing countries are the major sources of imports of wire products into the United States. 8/ Some of the facilities producing wire products in these countries are government owned and thus, more able to absorb this increased cost. In addition, the developing countries need to generate foreign exchange for debt repayment and continued investment.

Representative period

Section 203(d)(2) requires that quantitative restrictions or orderly marketing agreements must permit importation of a quantity or value of the article which is not less than the level of imports during the most representative period. Thus, the selection of the most recent representative period for imports is important in this investigation because it provides the basis for recommending minimum import levels for the period of relief. Further, should country-by-country quota allocations be adopted, the recent representative period is also used to establish market share percentages for such allocations. 9/ We have selected the period of 1979-1981 as the most

8/ Commission report at H-14-H-18 Tables H-13-H-17.
9/ See Commissioner Eckes' Views Regarding Remedy in Stainless Steel and Alloy Tool Steel, Inv. No. TA-201-48, USITC Pub. No. 1377 at 57 (1984).

recent representative period for imports. This period directly precedes the two years of most serious injury in the domestic industries and conforms to the Commission's practice of choosing a two to five year representative period. 10/ In addition, market forces were affecting the level of imports during these years since quantitative restraints were not in effect during 1979–1981. 11/ Indeed, petitioners argue that the Commission should adopt this representative period for the sheet and strip, wire and wire products, and semifinished industries, because serious injury "emerged most clearly and intensified in 1982–1983." 12/ We do not find petitioners' arguments that differences in trends in import penetration in the plate and structural industries warrant selection of a different representative period. Moreover, the representative period recommended by petitioners, 1973–76, cannot in this investigation serve as a recent representative period. For both plates and structurals, domestic shipments were higher in 1973 and 1974 than in any year since 1970. The percentage declines in domestic shipments during 1975 and 1976 is comparable to the decline in domestic shipments that occurred in 1982 and 1983—the two years of most serious injury. In addition, imports of these products have been consistently higher, as a percent of the domestic apparent consumption, in every year since 1975. We conclude that the 1979–1981 period is the most recent representative period for imports in all five of the domestic industries for which we are making a remedy recommendation.

Period of relief

We recommend that all three types of relief recommended for the various domestic industries be granted for a period of five years. We believe that

10/ See Commissioner Eckes Views Regarding Remedy in Stainless Steel and Alloy Tool Steel, Inv. No. TA-201-48, USITC Pub. No. 1377 at 57–58 (1983).
11/ The Trigger Price Mechanism (TPM) was in effect during this period, however, TPM had a limited effect on import market share after 1979.
12/ Petitioners' Brief on Remedy at 22.

this period is necessary for the domestic industries to generate additional income, make investments in modernizing facilities, and thus adjust to import competition. The size of the investment required for modernization of facilities and the time necessary for items such as continuous casters to become operational would make a shorter period of relief ineffective.

In accord with section 203(h)(2), we have recommended reductions in the level of relief provided in the forth and fifth years of these remedies. These reductions will encourage the domestic industries to take steps to adjust as rapidly as possible because import competition will increase in the later part of the remedy period. Furthermore, the domestic industries' ability to compete with imports should have improved to some extent in the preceding three years.

Exemptions

We have recommended exemptions of bandsaw steel, razor blade steel, shoe die knife steel, and bread knife steel from import relief. 13/ There is either no domestic production or insufficient production of these products to meet consumers' demand. In addition, domestic producers have not objected to exemption of these products from import relief. Further, we recommend that the President review the complete record of exemption requests furnished to the Commission to determine whether other items should be exempted.

13/ Headnote 2(h)(x) of part 2B of the TSUS defines "razor blade steel" as a specific stainless steel of identified dimensions. "Razor blade steel" so defined was never included within the scope of this investigation. However, requests for exemptions for other razor blade steel not classifiable as such within the strict TSUS definitions were received by the Commission and it is this razor blade steel which we exclude from the remedy recommendation. Statistical headnote 1(b) of part 2B of the TSUS defines "band saw steel" as a specific alloy tool, other than that described in headnote 2(h)(vii) of part 2B of the TSUS. "Band saw steel" so defined was never included within the scope of this investigation. However, requests for exemptions for band saw steel not classifiable as such within the strict TSUS definitions were received by the Commission and it is this band saw steel which we exclude from the remedy recommendation.

ADDITIONAL VIEWS OF COMMISSIONER LODWICK AND COMMISSIONER ROHR ON A CONDITIONAL REMEDY

We recommend that import relief for the steel industries be conditioned on commitments from these industries to use the relief period to adjust to competitive conditions. We therefore recommend that if the President provides relief, that continued import relief be conditioned on plans that describe how the period of relief will be used to "facilitate an orderly adjustment to import competition." Commissioner Rohr recommends that these plans be presented to the President no later than 120 days following implementation of relief. Further, Commissioner Lodwick and Commissioner Rohr recommend that the President provide a mechanism to terminate relief if these commitments are not fulfilled. The effects of this remedy on the U.S. economy are simply too pervasive to permit the remedy to continue without meaningful efforts by the domestic steel industry to adjust to import competition.

Our recommendation contains three critical elements: the parties responsible for developing the plans, the content of the plans, and the monitoring mechanism necessary to determine whether relief should be terminated. We feel the specifics of these elements should be left to Presidential discretion. We do, however, provide illustrations of these elements.

With respect to development of the plans, we strongly believe that the plans should be developed by the individual companies because they have the expertise to both create and implement such plans and because circumstances, problems, and opportunities vary widely from company to company. We do not recommend specific mechanics for the development and implementation of these plans. The President could require each petitioner and each party in support of the petition to present a formal, detailed plan, and to provide formal assurances that each plan is workable. Compliance with the plans developed could be monitored by the Commission in its annual reviews.

With respect to the content of the plans, elements of such plans could include financing arrangements, dividend policy, leasing plans and/or capital investment, research and development efforts, pension plans, production rationalization, cost-cutting measures, changes in marketing or distribution, flexibility in work practices, and wage and compensation concessions. We recognize that the content of each individual plan may differ across companies given their differing circumstances.

With respect to monitoring efforts to adjust and compliance ith these plans, if the President provides relief, during the period of that relief, the Commission will closely monitor progress of the industry relative to the relief measures in force and report on the adjustment efforts being undertaken. At appropriate intervals of the relief period, the Commission will conduct formal reviews under the provisions of Title II of the Trade Act of 1974, and report, as appropriate, its findings and/or recommendations to the President.

ADDITIONAL VIEWS OF COMMISSIONER ALFRED ECKES ON REMEDY

During this investigation, the largest section 201 in which the Commission has made a remedy recommendation, several novel issues--such as "conditionality"--have emerged and invite additional comment. While I have joined two of my colleagues--Commissioner Lodwick and Commissioner Rohr--in recommending a specific program of tariffs and quotas to the President, I cannot agree with some of my fellow Commissioners who recommend conditions for granting relief or suggest remedies for nonimport-related injury.

Let me address the issue of conditionality, first. At the public vote regarding remedy, held on July 11, 1984, one colleague indicated that he would recommend that the President condition import relief upon the presentation of an adjustment plan. He said such a plan could include such elements as financing arrangements, dividend policy, leasing plans and/or capital investment, research and development efforts, pension plans, production rationalization, cost-cutting measures, changes in marketing or distribution, flexibility in work practices, and wage and compensation concessions. This plan would be presented no later than 120 days following implementation of relief.

Another colleague, one who incidentally found no injury and proposed no import remedy, suggested to the President that he condition any steel import relief to a 20-percent compensation reduction by steelworkers.

A third colleague, one who also found no injury and recommended no import remedy, suggested that a broad industrial policy for steel "would be a new path and perhaps in the current steel crisis, a desirable one" for the United States.

Such statements go well beyond previous Commission recommendations for relief in section 201 investigations. My own general statement during the vote did point out that the success of any adjustment program depends on the parties themselves as well as the government. Both labor and management, must be prepared to exercise restraint and use the remedy period for undertaking the reforms required to make this industry competitive in world markets. I noted further that the Commission has authority under the statute to review under appropriate circumstances any import relief provided to the steel producers, and report to the President its judgment as to the probable effect of extending, reducing or terminating the import relief provided. As a final point, I emphasized that I did not intend to take that statutory responsibility lightly.

However, unlike several of my colleagues, I do not recommend that the President condition import relief to the preparation of a comprehensive plan or to wage concessions. I do not advocate specific nontrade concessions, nor do I seek to expound on the subject of industrial policy.

In my view there are sound reasons for not addressing these issues. First, I find nothing in the statute that invites the Commission to comment upon conditionality. Rather, the Commission is instructed to make an impartial injury determination and then "find the amount of the increase, or imposition of, any duty or other import restriction on such article which is necessary to prevent or remedy such injury . . . ." 1/ Second, as I testified in response to questioning during the hearing before the Senate Committee on Finance regarding my nomination to this agency, " . . . the role of the ITC from its very beginnings has been a factfinding role as opposed to a role in

1/ 19 U.S.C. sec. 2251 (d)(1)(A).

which it seeks to make policy or propose policy. While the ITC, I believe, can outline options, it is very careful to preserve its independence and detachment from policy considerations which are clearly the prerogative of Congress, and the executive." No one has stated the Commission's traditional factfinding role more succinctly than its first chairman, Dr. Frank Taussig. He said in May 1917, "as regards advice, we must be sparing, since advice must often rest on the basis of established fundamental principles; and fundamental principles must be settled not by the Commission, but by Congress and the public." 2/

Third, the President, not the Commission, has statutory responsibility to assess the appropriateness of any conditions upon ultimate relief. Once the Commission has fulfilled its responsibility and recommended to the President a "duty or other import restriction on such article which is necessary to prevent or remedy such injury," the President is obliged to weigh a number of broad encompassing policy considerations. These include the national economic interest, the impact of relief on consumers and competition, and other matters.

In contrast to such broad policy considerations, the statutory scope of the Commission's investigation is much more narrowly focused. The Commission determines whether increased imports are a substantial cause of serious injury to the various carbon steel industries. As part of that determination, the Commission considers other possible causes of injury which may be more important causes than imports. But, the Commission does not examine in any systematic manner remedies which would address nonimport related injury.

Because of this relatively narrow focus, I encountered nothing during the course of our investigation that would enable me to state with certainty that wage rollbacks or other management initiatives could remedy the steel

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2/ Frank W. Taussig, United States Tariff Commission: Outline of its Work and Plans (Washington: Government Printing Office, 1917), p. 4.

industry's ills. I have seen and heard nothing that indicates a 20-percent compensation reduction would result "in the same increase of employment in the industry and as large a reduction in the share of imports in the American market as a quota."

Undoubtedly, there are a number of ways to reduce costs and restore competitiveness to producers of steel products. However, section 201 directs this agency to consider only remedies which address import-related injury. Consequently, the Commission did not hear testimony on nonimport-related remedies. Nor did parties and other interested persons have any opportunity to evaluate and comment on such nonimport-related remedies. As a result, I do not believe the record of this investigation allows me to comment in a responsible way on other methods of restoring competitiveness to the steel industry. Moreover, from my vantage point any such comment would be inconsistent with this agency's statutory mandate and its traditional role as a factfinding, not a policy-making, agency.

ADDITIONAL VIEWS
OF CHAIRWOMAN PAULA STERN

I. Introduction

In each of the nine industry groupings producing carbon steel and alloy steel products, I have determined that increasing imports are not a substantial cause of the serious injury facing U.S. producers. Nor are increasing imports a substantial cause of the threat of serious injury. With respect to the industries producing wire rod, railway-type products, and bars, I have joined a unanimous Commission in my negative findings. In the case of pipes and tubes, I joined with Commissioners Susan W. Liebeler and Seeley G. Lodwick in making a negative Commission determination. With respect to semi-finished products, plates, sheets and strips, and wire and wire products, I have joined my colleague, Commissioner Liebeler, in making minority negative findings.

These additional views are offered to explain my findings with respect to causation and threat. They concentrate particularly on the weighing of the individual causes of injury to the domestic industries. I conclude with a discussion of why I believe no remedy is appropriate under section 201, the general import relief law under which the present investigation has been conducted.

Each investigation has its own unique aspect. Perhaps the most unusual aspect of the present investigation--in light of the Commission's split findings--has been the broad agreement of the Commission on a number of fundamental questions regarding the definition of the domestic industry, the presence of increasing imports and serious injury, and the kinds of causes of injury to be evaluated. This consensus is reflected in the preceding joint views on these subjects. Most differences in findings seem to come in the application rather than the framework being applied. For that reason, my additional views first center on my interpretation of the facts of this investigation rather than my interpretation of the statute. My belief in the importance both of an analytically transparent weighing of causes and of a focus on the adjustment process is explained in some detail. The framework employed here is the one that I have consistently developed and applied in section 201 investigations since joining the Commission in 1978. 1/ One of the gratifications of participating in this investigation has been an appreciation of the common analytical ground increasingly shared by the Commission on matters of causation. Unfortunately, as the concluding section of my views explains, the Commission majority has not yet made equivalent progress in applying the discipline of the statute to adjustment..

II. Causes of Injury to U.S. Producers: Overview

A. Summary

There is no question that domestic producers of carbon and alloy steel are seriously injured, whether taken as a whole or broken down into the nine zonstituent industries or product groups that the Commission has unanimously found appropriate. Despite some improvement in 1983 and/or the first quarter of 1984, the crisis in steel definitely continues and imports, in general, have been increasing.

However, for import relief to be justified, Congress has required that increasing imports be at least as important as any other cause of an

1/ See for example: Nonrubber Footwear, Inv. No. TA-201-50, USITC Pub. No. 1545 (July 1984), "Views of Chairwoman Paula Stern, Vice Chairman Susan W. Liebeler, and Commissioner David Rohr," at 3-41; Stainless Steel Table Flatware, Inv. No. TA-201-49, USITC Pub. 1536 (June 1984), "Views of the Commission" at 3-16, referred to as "SSTF"; Stainless Steel and Alloy Tool Steel, Inv. No. TA-201-48, USITC Pub. 1377 (May 1983), "Additional Views of Commissioner Paula Stern" at 63-101, referred to as "Specialty Steel"; Heavyweight Motorcycles, and Engines and Power Train Subassemblies Therefor, Inv. No. TA-201-47, USITC Pub. 1342 (February 1983), "Views of Commissioner Paula Stern" at 55-83; and Certain Motor Vehicles and Certain Chassis and Bodies Therefor, Inv. No. TA-201-44, USITC Pub. 1110 (December 1980), "Views of Commissioner Paula Stern" at 93-166, referred to as "Automobiles".

industry's serious problems. A qualitative exercise of weighing 2/ among alternative potential causes of injury is therefore required to determine whether imports are a "substantial" cause--at least as important as any other. This exercise lies at the heart of the statutory framework and is the single most important feature of most section 201 investigations.

It has been my consistent position that the Commission must fully assess an industry's problems--import and non-import--if the weighing process mandated by Congress is to be performed in a reliable and comprehensive manner. Unlike in unfair import investigations under Title VII of the Tariff Act of 1930, the Commission's analysis in a section 201 investigation serves as a basis only for recommendations to the President. Under certain circumstances, the Congress may become directly involved in the remedy process. 3/ Thus, the Commission's findings under section 201 can fill an important role as a non-partisan, independent basis for the formation of public policy outside the Commission. These facts only strengthen the desirability that the Commission's reasoning be as comprehensible and well-supported as possible. For all these reasons, I am of the firm belief that the statutory purpose, the President, and the nation are best served by as straightforward a causal analysis as is practicable.

2/ The substantial cause criterion requires a finding that increased imports are both an important cause of injury and no less important than any other single cause. This involves what the Senate Finance Committee has referred to as weighing causes. The Committee cautioned against applying a "mathematical test" in deciding the cause question. The weighing exercise is therefore a qualitative one. Report of the Committee on Finance on the Trade Reform Act of 1974, S. Rep. No. 93-1298, 93d Cong., 2d Sess. (1974), at 120.

3/ While the legislative veto in section 203(c) of the Trade Act may be unenforceable as a result of the Supreme Court's ruling in INS v. Chadha, 6 U.S. 6 (1983) and related cases in June 1983, the act contemplated legislative involvement. Furthermore, Congress may nevertheless legislate remedies. For example, bills pending in Congress today would, if passed and signed into law, limit carbon and alloy steel imports to a 15 percent share of the U.S. market.

I have attempted to concentrate on those phenomena that are relatively independent and of potentially great enough significance to add to our understanding of the problems confronting the industry. Six broad causes or explanations of the steel industry's poor performance since 1979 have been examined:

(1) A long-term or secular decline in demand, due to factors such as substitution of aluminum and plastics, downsizing of automobiles, and the increased importation of finished steel products, such as capital goods and autos. The trend toward imports of finished steel products has been over a extended period. 4/

(2) Unique short-term problems, including especially severe cyclical problems and the sudden collapse of certain markets. The unusually high real interest rates of recent years, a phenomenon without historic precedent, have played a large role here.

(3) Intense intra-industry competition from cost-efficient mini-mills, which are continuing to displace the large integrated producers in some important product groups and markets.

(4) An increasingly non-competitive cost structure, exacerbated by rapidly escalating wage rates (until recently), reliance on expensive raw materials, and a sub-optimal investment strategy.

(5) Government actions affecting environmental costs and the tax system.

(6) Imports, which have in general increased significantly in recent years.

4/ The strength or "over valuation" of the dollar is often referred to as a short-term phenomenon. But the extraordinary interest rates on which its high value is largely based show every promise of continuing into the future.

This listing of potential causes is perhaps the most extensive ever considered in a general import relief investigation. Relatively independent causes have not been lumped together before weighing their impact against that of increasing imports. However, each cause does represent the combined effects of several constituent factors as noted above.

The results of my examination are clear and surprisingly straightforward; for the steel industry as a whole, and the nine product groupings considered by all Commissioners, increased imports were definitely not close to being the most important cause of injury. In many cases two causes were more important than increased imports.

The condition of the industry as a whole and almost all of the nine product groupings appears to be improving, with some recovery in demand and adjustment by the producers to make production more efficient. Imports are not fading away. But having found that they have not been a substantial cause of serious injury, I find that the arguments are even weaker that they are a substantial cause of threat.

Imports have in general been an important cause of injury. Only in semi-finished products and railway-type products were imports not found to be an important explanation of the industry's problems.

One cause on the list was not found to be important. The impact of Government actions affecting environmental costs had largely been registered by the end of the 1970's. And the institution of the Accelerated Cost Recovery System of depreciation for tax purposes in 1981 if anything probably has faciliated the modernization process by making new investment more attractive. Therefore, Government actions have not played an important role in the industry's recent poor performance during the most recent representative period (generally speaking, since 1979).

An increasingly non-competitive cost structure has continued to hurt this industry, despite recent improvements. However, most of its effects were also present before the beginning of this decade. Hence, this cause, while still important, cannot be considered to exceed the importance of imports in explaining the industry's serious injury since 1979. Such a judgment should not be taken to imply that further improvement on this account would not aid the industry's adjustment and recovery.

B. The industry's important non-import causes of injury 5/

Dramatic changes in the level of steel demand have adversely affected each of the nine steel industries during the period of investigation. For four steel industries--sheet and strip, plate, structural shapes and units, and pipe and tube (except oil-country pipe and tube)--I have found that permanent, long-term declines in demand or unusually severe short-term declines were a more important cause of injury to the industry than increased imports.

Demand changes generally can be categorized under two broad headings: changes attributable to long-term, permanent, or secular changes in steel consumption, and changes attributable to shorter-term, temporary, or cyclical changes in consumption. A significant secular decline in demand characterized the sheet and strip industry and clearly outweighed any adverse effect from import competition. Unusually severe cyclical downturns in demand characterized the plate, structural, and pipe and tube industries (except oil-country tubular goods), and also clearly outweighed any adverse import

5/ Each of the causes discussed here will be elaborated upon in the discussions of the individual products groups which follow.

effect. 6/ Secular declines in demand also characterized the plate, structural, and pipe and tube industries, but were not as adverse to the performance of these industries as the severe cyclical decline in 1982-83. Even so, long-term decline in demand in these industries exceeded imports in importance as a cause of injury.

(1) Long-term decline in demand

An analysis of changes in steel apparent consumption from 1973 to 1983 demonstrates that permanent changes in steel demand contributed to decreases in steel apparent consumption over this period. A variety of independent steel analysts have recognized this decline in "steel intensity", 7/ though I find this concept in some respects inadequate for the causal analysis required under section 201. The decline in steel intensity is the result of the substitution of lighter and cheaper materials for steel and the use of lighter-gauge steel, as well as an inevitable decline in the rate of infrastructure construction in the mature U.S. economy. For example, the use of steel in automobiles has dropped by about 20 percent or 400 pounds per vehicle since 1978. 8/ That change alone can account for a decline in steel consumption of 1.8 million tons. Moreover, the market for automobiles has also declined in recent years beyond that expected in a normal recession. If this decline had been only 1 million vehicles annually, the decline in steel usage would have been an additional 750,000 tons.

6/ In order for an industry that is highly cyclical to receive equal access to section 201 import relief, only that component of a cyclical demand decline that is unusually severe should be weighed against imports as a cause of injury. I have consistently followed this methodology in past section 201 investigations. See "Views of Commissioner Paula Stern" in Automobiles and Specialty Steel.

7/ See, for example, Donald Barnett and Louis Schorsch, Steel, Upheaval in a Basic Industry, Ballinger Publishing Co., 1983.

8/ Report at a-216.

Aluminum and other materials are rapidly replacing steel in cans, particularly those used for beverages. Steel held 55 percent of the beverage can market in 1976, but only 15 percent by 1983 The market for structurals has also shrunk as bridges and buildings are now frequently, if not most often, built with cement. All of these markets, and others that are not so obvious, are most likely permanently lost to steel. 9/ In addition, significant inroads made by steel imports in downstream steel-consuming industries have caused a reduction in the demand for steel by these industries. 10/ Downstream import competition constitutes a permanent reduction in the demand for steel by downstream users and is therefore relevant as a long-term change in demand. For automobiles alone, the growth of imports from only 2.5 million vehicles in the early 1970's to over 3.1 million vehicles in 1983 11/ accounts for the loss of more than a half-million tons of steel. Other steel products facing import competition include all types of heavy equipment, machine tools, and similar articles.

Permanent declines in demand are most easily recognized and measurable in the carbon and alloy steel sheet and strip industry. In this industry, I find that the permanent decline in steel demand was a more important cause of injury than was imports. The use of less sheet and strip per automobile due to downsizing and substitution, as well as the substitution of aluminum for steel sheet in the metal can industry, are only two examples of the long-term structural changes in demand that have adversely affected this industry. If

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9/ The substitution of lighter material for steel and the use of lighter-gauge steel is in turn largely the result of higher energy prices in the mid-1970's and 1980's, and the increased demand for lighter, more fuel-efficient materials. These factors are likely to have long-term consequences.

10/ Increased import competition downstream is not technically a reduction in steel intensity, but a substitution of imported finished steel products for U.S.-produced finished steel products.

11/ Report at a-218.

the secular declines in demand in other consuming industries could be measured, 12/ the case for a negative decision for sheet and strip would be even more compelling.

(2) Unique short-term problems

Because the steel industry is cyclical, it expects periodic downturns, with reduced profits. However, the adverse effects of these downturns should be offset by higher returns in the expansionary phase of the business cycle. On average over the longer run, a healthy cyclical industry should be able to earn a reasonable rate of return. Therefore, periodic decreases in production, shipments and profits that are associated with a normal cyclical downturn should not be considered injurious, since they are inherent in a cyclical industry. However, the recession of 1982-83 was anything but normal, particularly for those steel industries that rely on capital investment to drive their markets. Consumption of the subject steel products declined by nearly 20 million tons from 1979 to 1980, and after only a single year of "recovery" plummeted from 104 million tons in 1981 to 75 million tons in 1982. 13/ Not only was the economic expansion in 1981 a mere 12 months compared to an average of 44 months for all recoveries since 1945, but the contraction in 1982 lasted 16 months instead of the average of 12 months. 14/ The recessionary period of 1980-83 was the longest and deepest of the post-war period and for the steel industry had all the trappings of a depression. In spite of the partial recovery of some products in 1983, markets for others have remained quite depressed. The existence of unusually high real interest rates during 1982-83 has had a devastating effect on business investment, and

12/ Two other industries that are large users of sheet and strip are consumer appliance manufacturers and electrical machinery and equipment manufacturers.

13/ Report at a-44.

14/ Id. at a-191-192.

with it on the demand for those steel products oriented toward capital goods production. Therefore, for carbon and alloy steel plate, structural shapes and units (except light structurals), and pipes and tubes (except oil-country pipes and tubes), an unusually severe cyclical decline in demand, triggered by high real interest rates, was a more important cause of injury than imports.

For example, from 1981 to 1983, apparent consumption declined by 4.5 million tons or 47 percent for plate, by 2.1 million tons or 32 percent for heavy structurals, and by 4.7 million tons or 51 percent for pipes and tubes. 15/ In each of these markets, the absolute levels of imports declined. Although the relative levels of imports increased, the cyclical decline in demand far outweighed the adverse impact of the increase in import penetration. Each of these products will be discussed later in more detail.

For two steel product groupings--pipes and tubes, and semifinished products--I have found that other unique short-term problems were a more important cause than imports. The oil-country tubular goods (OCTG) segment of the pipe and tube industry experienced unusually strong demand increases from 1979 to 1981, with apparent consumption increasing by 4.3 million tons or 154 percent. 16/ This increase in apparent consumption was well in excess of the increase in actual consumption, and was encouraged by higher fuel prices and expectations of OCTG shortages as drilling activity increased. A buildup of OCTG inventory was the result. However, with the subsequent fuel price decline, drilling activity was much weaker than expected, and OCTG consumption was drawn from excess inventory rather than filled by new orders from producers. The result was a 5.8 million ton decline in apparent consumption of OCTG from 1981 to 1983. Over the same period, imports declined by 2.3 million tons. 17/ The severe boom and bust cycle in this industry from 1979

15/ Report at a-44.
16/ Id.
17/ Id.

to 1983 was much more violent than any other cycle experienced previously, and the adverse effect of the downside of this cycle obviously outweighed any adverse effect of a relative increase in imports.

In semifinished products, structural changes within the steel industry, as well as temporary outside factors, led to the increase in imports and import penetration during 1981-83. Furthermore, imports of semifinished products by producers within the industry generally are part of the adjustment process. Therefore, it is difficult indeed to find increased imports as a cause of injury, much less an important cause for semifinished products.

(3) Intense intraindustry competition

The increasing market power of non-integrated steel producers or mini-mills has resulted in intense intraindustry competition in the wire rod, bar, and wire and wire products industries, and in the light structural segment of the structural shapes and units industry. In all of these industries, non-integrated producers have gained market share from the integrated producers, and in some markets even gained market share from imports. In these industries, intraindustry competition was a greater cause of injury than increasing imports.

Prices charged by non-integrated producers in these product lines were generally lower than both integrated producers' prices and import prices, a reflection of the fact that the relative efficiency of the non-integrated mill sector of the steel industry makes them aggressive competitors with a bright future. 18/ For example, in 21 of 26 quarterly observations of non-integrated and import price comparisons for wire rods, sold to end-users, non-integrated mills were lower-priced. 19/ From 1979 to 1983, nonintegrated producers'

18/ Report at a-163-181.
19/ Id. at a-171.

share of total domestic shipments of wire rod increased from 26 percent to 62 percent, while integrated producers' share decreased from 74 percent to 38 percent. 20/ These same types of market share shifts characterized each of the industries where non-integrated producers were an important factor. In sheets and strip, non-integrated producers promise to make inroads, but they have not yet become important players.

(4) Increasingly non-competitive cost structure

An analysis of costs indicates that for each of the product lines, with the exception of wire rod, increasing costs of production have been a major factor contributing to the decline in industry profits. 21/ The increasingly non-competitive cost structure of the U.S. steel industries is the result of a variety of factors, including the high rate of labor cost increases, the lag in the implementation of new technology, inefficient dispersal of investment funds, and the continued payment of dividends to stockholders even when incurring losses. The performance of this industry cannot be properly understood without an appreciation of these factors. However, since the bulk of their impact became evident during the 1970's, and recent cost increases have been more modest, an increasingly non-competitive cost structure in general is not as important an explanation as increasing imports for the problems of the industry that developed in the most recent period.

In the recently completed section 201 investigation of the copper industry, I also examined "increasingly non-competitive cost structure" as a potential non-import cause of injury. I noted: "A major argument . . . is

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20/ Based on shipment information for each sector. Report at J-2.

21/ Report at a-112-115. The variance analysis employed there does not (and cannot) adjust for the effects on unit costs of the decline in the scale of production between 1979 and 1983. Such effects are not under the control of the industry. Therefore, the variance analysis overstates the role of the costs of concern here. It is only suggestive.

that the much higher costs of production of U.S. copper producers is a cause more important than the recent increase in imports." After examining the origin of a significant cost differential, I concluded: "However, this cost disadvantage is not a new problem for U.S. producers. U.S. ore grades have followed a declining trend for years, and must be considered a long-term structural factor, unrelated to the industry's relatively recent injury." 22/

Although Copper is distinguishable from the present case in a number of respects, a major point relevant to the causal analysis here carries over intact: Just as one examines increasing imports rather than merely the volume of imports, one also must examine an increasingly non-competitive cost structure during the most recent relevant period, rather than making a static comparison of costs. Section 201 relief cannot be denied to an industry simply because, for example, its employees--by virtue of enjoying an American living standard--receive significantly higher compensation than those of foreign competitors. 23/

In the steel industry, the problem is somewhat more complex. As the analysis of cost components demonstrates, the compensation of U.S. steel workers made great strides in the 1970's even measured against U.S. standards. But this investigation concerns the situation in 1983 and the first quarter of 1984. Certainly the rising cost of labor, as well as other inputs, in the 1970's had an important detrimental effect on the international competitive standing of U.S. firms (and also on the domestic competitive status of the integrated vs. non-integrated firms). But by 1979, much of this had already become structural. For this reason only recent increases in costs are relevant to a causal analysis.

22/ See Unwrought Copper, Inv. No. TA-201-51, USITC Pub. No. 1549 (July 1984), "Views of Chairwoman Paula Stern," at 31-33.

23/ For that matter, Section 201 is not written to allow relief now from imports which increased a decade ago and then remained stable thereafter.

Labor costs --From 1978 to 1981 hourly compensation to labor increased by 41 percent, while labor productivity increased by only 4 percent. 24/ The rapid unit labor cost increases throughout the mid- to late-1970's and into the 1980's were likely encouraged by the Experimental Negotiating Agreement (ENA), which was first applied as a result of the 1974 labor negotiations. Under the ENA, in return for a "no-strike" agreement, steelworkers received considerable increases in wages and cost-of-living allowances (COLA). 25/ Steelworkers, who had previously received a 30 percent premium in their compensation above the general manufacturing compensation, were given cost of living adjustments which raised that premium to 67 percent by 1979 and to 95 percent by 1982. In 1983, the premium declined, however, to 74 percent as the Union responded to the poor condition of the industry. In addition to raising wages above other U.S. wages, the cost of these increases contributed importantly to the lack of international competitiveness.

From 1975 to 1982 unit labor costs rose at a faster rate in the United States than in foreign countries, with a corresponding deterioration in the U.S. steel industry's relative competitiveness. 26/ For example, in 1975 the premium paid to U.S. steelworkers relative to Japanese steelworkers was $4.98 per hour. Relative to West German steel workers, the premium was $3.12 per hour. In 1979, this labor cost gap was $5.90 per hour relative to Japanese steelworkers and $2.43 per hour relative to West German steelworkers. By 1982 the U.S. steelworkers' premium had increased to $12.84 per hour relative to Japanese steelworkers and to $11.17 per hour relative to West German steelworkers. 27/ However, much of this increase was due to the rapid appreciation of the U.S. dollar and thus cannot be considered a cost under

24/ Report at a-85.
25/ Report at a-92.
26/ Report at a-86.
27/ Id.

the control of U.S. producers. 28/ The remainder does reflect the effect of high inflation and the automatic COLA adjustments already structured into the union contracts. To the steel industry's credit, this gap narrowed somewhat in 1983 owing to concessions made by steelworkers under the leadership of the United Steel workers Union. However, the relative wage gap remained large in 1983, and it is clear that further progress toward world competitiveness can be made in this area, among others. 29/ It is noteworthy that the improvement in the U. S. relative wage costs occurred in a year when import competition was intense, evidence of the positive role of competition in forcing an industry to produce more efficiently. 30/

An analysis of hourly labor costs in those product groups where non-integrated mills are active also highlights the wage premium enjoyed by workers in integrated firms. 31/ For example, in 1979 hourly labor compensation in the integrated and non-integrated wire rod mills was roughly equal. 32/ By 1983, workers in integrated mills commanded an hourly compensation of $21.69 per hour compared to hourly compensation of $16.71 per hour for workers in non-integrated mills--a 21 percent differential. Wage

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28/ The effects of such exchange rate differentials are rather a factor in explaining how increasing imports have made their advances.

29/ See transcript of remedy hearing, at 148, for a statement by Lynn Williams of the United Steelworkers concerning the role to be played by labor if import relief is granted.

30/ It would be tragic if the isolation of the industry from outside competitive pressures, through the imposition of import restrictions, results in the loss of the labor cost improvements made in 1983. Some of the initial union concessions for instance the cost of living allowances are already being partially restored in the second year of the contract (beginning February 1, 1984). See Report at a-87, 91. The United Steelworkers have indicated that they believe they "have already made their contribution. . . ." See Transcript (Remedy at 106 and Posthearing Brief of Petitioners, Exhibit 1, "Agreement between Bethlehem Steel Corp. and United Steelworkers of America" at 97.

31/ A comparison of labor compensation in non-integrated and integrated mills may give some indication of the premium enjoyed by unionized labor because integrated mills tend to be more highly unionized than non-integrated mills.

32/ Report, at K-8.

differentials of roughly this same magnitude existed in 1983 in some other product lines with active non-integrated mill participation.

In spite of the larger changes in labor costs during the period of the investigation, most of the premium over the general manufacturing wage had already become structural by 1979. The change in the premium in 1982--to 95 percent--was a shortlived phenomenon, quickly reversed by the cooperation of labor and management, and therefore did not cause the injury we have found.

Implementation of new technology.--Two of the most important technological innovations in the steel production process since World War II were the basic oxygen furnace (BOF) and the continuous caster. The adoption of newer, more efficient production processes has important implications for cost competitiveness. The BOF refinement method was introduced in 1952. From 1960 to 1981 the percentage of U.S. producers' output accounted for by this method increased from 3.4 percent to 60.6 percent. 33/ Japan adopted this technology more quickly, with the share of its output accounted for by the BOF method increasing from 11.9 percent to 75.2 percent over the same period. For the EEC, this percentage increased from 1.6 to 75.1 percent.

Continuous casting was introduced in the mid-1960's. From 1971 to 1981 the share of U.S. producers' output accounted for by continuous casting increased from 4.8 to 21.1 percent. For Japan, this percentage increased from 11.2 percent to 70.7 percent, and for the EEC this percentage increased from 4.8 to 45.1 percent. Some of this investment involved retrofitting of brownfield plants. Similar figures for countries like Korea, considered more cost competitive than Japan, because of its modern facilities are likely to be even more startling. Clearly, the U.S. industry has lagged behind foreign competitors in the adoption of these technological innovations.

33/ Barnett and Schorsch, op. cit., at 54-56.

Inefficient dispersal of investment funds.--Recent testimony before the House Committee on Ways and Means by the Congressional Budget Office (CBO), as well as other sources, indicates that the steel industry's problem has not been the availability of funds in the capital market, but the choice of investments made by the industry. The CBO report states that the U.S. industry's investments "have been very capital intensive, dispersed among numerous plants, and lacking market focus. As a result, integrated firms' investments often earn low rates of return--the underlying reason for the persistence of alleged capital shortfalls." 34/ While the Commission cannot construct a detailed optimal investment plan for this industry, the record does not indicate that the industry itself has approached such a task with any enthusiasm. 35/

III. Causal Analysis of the Nine Industries or Product Groups

A. Carbon and alloy semifinished products

I have found that imports are not an important cause of serious injury to the U.S. semifinished steel product industry producing ingots, blooms, billets, slabs, and sheet bars. Although imports increased rapidly during 1981-83, this increase was largely the result of factors not injurious to the U.S. industry. Furthermore, import penetration measured as a share of imports to apparent consumption exaggerates the impact of imports of semifinished steel. While the ratio of imports to open-market apparent consumption increased from 8.4 percent in 1980 to 48.5 percent in 1983, the ratio of imports to total U.S. production increased only from 0.2 percent to 1.3 percent over the same period. 36/ This apparent inconsistency is due to

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34/ Statement of Eric A. Hanushek, Deputy Director, Congressional Budget Office, June 20, 1984, before Subcommittee on Trade Committee on Ways and Means, U.S. House of Representatives.

35/ See footnote 89 below.

36/ Report at a-141 and a-68.

the fact that most semifinished steel production is consumed internally. The increase in imports in 1981 was primarily the result of a steel strike in Canada in that year. Canadian mills exported semifinished steel to the United States for processing and subsequently reimported the milled steel products into Canada. 37/

The level of imports in 1982-83 remained relatively high owing to structural changes within the industry itself. A large portion of the imports of semifinished steel in these years was accounted for by Kaiser Steel and Ohio River Steel. Kaiser decided to terminate its hot steel capacity and to import semifinished steel for rolling. Ohio River Steel brought its finishing facility onstream and used imported semifinished steel. Because Kaiser Steel and Ohio River Steel are both steel producers, it is difficult to see how imports by these producers can be considered injurious to the industry as a whole. If anything, imports of semifinished steel by these two firms increased or maintained employment of steel workers by allowing the production of higher-valued finished steel products that might very well not have otherwise occurred in the United States. As such, the modest growth of imports of semi-finished products in this case represents a necessary industry-wide adjustment of the domestic industry to international competition. 38/

37/ Canada accounted for 476,000 tons of the 634,000 tons increase in semifinished steel from 1980 to 1981. While imports in 1982 decreased by 74,000 tons, imports from Canada decreased by 392,000 tons.

38/ Ironically, the Commission majority, which has found the industry producing semifinished products to be injured, seems to agree implicitly with this analysis. When the majority reaches the remedy issue, it recommends a tariff-quota which would allow entry of almost twice the quantity of semifinished products entered in 1983 at the present rate of duty.

I have also determined that increased imports of semifinished products do not threaten to cause serious injury to the domestic industry. Because these products can only be used to produce a more finished product, these imports are a contribution to the efficiency of the industry, allowing the industry time to invest in more cost efficient hot metal facilities. When these facilities are able to produce semi-finished products at a cost below that paid for imports, imports will decline to more traditional levels. I find no threat in that prospect.

B. Plates

Although imports of plate were an important cause of injury to the U.S. carbon and steel plate industry, they were not the most important cause. Apparent consumption of plate declined more dramatically in this product category than in any other, by 5.5 million tons or by 52 percent, from 1979 to 1983. 39/ Imports, on the other hand, decreased by 426,000 tons over the same period. 40/ Although import market share increased from 1979 to 1983, any adverse impact of this increase pales by comparison with the impact of the extraordinary decline in demand in 1982-83. 41/

A portion of the decline in apparent consumption of plate in 1982-83 was the result of a normal cyclical downturn and should not be weighed against

39/ Report at a-44.
40/ Report at a-52.
41/ If import market share had remained at 1979 levels, imports in 1983 would have been 525,000 tons lower in 1983, compared with the 5.5 million ton decline in apparent consumption. Previous cyclical changes in plate consumption have generally been in the range of 1 to 2 million tons in any one year.

imports as a cause of injury. 42/ However, the decline in plate apparent consumption in 1982-83 was so great that a portion of this decline can be considered to be unusual, and was the result of the impact of unique factors characterizing the recent recession. The total demand decrease was so great that even if only a relatively small portion of that decrease is considered to be unusual, it would still outweigh imports as a substantial cause of injury.

The effect of the recession on plate consumption was unusually severe owing to the fact that high real interest rates likely affected this sector more so than other steel sectors. 43/ High interest rates disproportionately affected the capital goods and construction industries, which are the primary consumers of carbon and alloy steel plate. In addition, the precipitous decline of shipbuilding and nuclear plant construction, primarily owing to factors other than high interest rates, contributed further to the decline in plate consumption. 44/

The long-term secular decline in plate consumption is primarily the result of the move to lighter-gauge plate products, to heavier sheet products, or to plate products of higher-quality, stronger, and longer-lasting steel. 45/

42/ I have consistently maintained that a cyclical industry should not have a more difficult time obtaining relief under section 201 than a non-cyclical industry. Therefore, normal cyclical downturns should be factored out in any causation analysis. See "Additional Views of Commissioner Paula Stern" in Specialty Steel at 75.

43/ The end-use markets for plate are construction, machinery, industrial equipment, tools, and shipbuilding and marine equipment.

44/ Report at a-206.

45/ The share of alloy plate to total plate shipments increased from 16 percent in 1973 to 25 percent in 1983, evidence of the increased use of higher-quality alloy steel plate relative to carbon steel plate.

I also determine that increasing imports are not a substantial cause of threat to the domestic plate industry. The increase in imports is a relative change, not an absolute change since 1979. Imports quantities have actually declined during the period of injury, and in 1982-83 were not significantly different than in the early 1970's. There is no reason to believe that imports will cause future serious injury as the market recovers and as the plate industry has escaped. Serious injury substantially caused by imports in the worst recession since 1945, there is no reason to believe serious injury from imports is imminent during economic recovery.

C. Carbon and alloy steel sheet and strip

Although imports may have been an important cause of injury to the U.S. sheet and strip industry, a long-term, permanent decline in demand was a more important cause of injury. This longer-term secular decline in demand was apparent for this product line over the last six years, with apparent consumption declining from 55.2 million tons in 1979 to 45.0 million tons in 1983. 46/ I have therefore focused my analysis on secular demand decreases as the cause of injury to be weighed against import competition. 47/

Secular decreases in demand in two of the largest sheet and strip consumer industries alone, automobiles and metal cans, outweigh the total

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46/ Report at a-44.

47/ The cyclical demand decrease was not as severe in this industry as in the steel products oriented toward the capital market. From 1974 to 1975, sheet and strip apparent consumption decreased by 28 percent. From 1981 to 1982, sheet and strip consumption decreased by 21 percent. Therefore, for sheet and strip there is a relatively small contribution from any unusual component of the cyclical downturn as a cause to be weighed against imports.

adverse impact of sheet and strip import competition. 48/ Secular decreases in demand for sheet and strip in the automobile industry were primarily the result of three factors. First, increased import competition from foreign automobiles has resulted in a reduction of U.S. automobile production and a concurrent decline in demand for sheet and strip by the automobile industry. Automobile import penetration increased from 26 percent in 1978 to 34 percent in 1983, even with the existence of the Japanese Voluntary Restraints Arrangement. 49/ Second, substitution of lighter-weight materials for steel and the downsizing of automobiles has resulted in the use of less steel per automobile. 50/ Third, there has been a secular decline in automobile consumption, evidenced by the increasing average age of automobiles on the road. These changes in the market together account for an estimated 3 million tons in the total decline in sheet and strip consumption. 51/

The secular decline in demand for sheet and strip in the metal can industry was primarily the result of the substitution of aluminum cans for steel cans. From 1980 to 1983 the sheet and strip industry lost about 1.2 million tons of steel shipments due to the substitution of aluminum for steel cans.

D. Wire rods

Imports of wire rod are clearly not a substantial cause of injury to the domestic wire rod industry. Like consumption of most other steel

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48/ See Appendix to Memorandum EC-H-197 from the Office of Economics (OE). The OE analysis looked at both the quantity and price effects of secular declines in the automobile and metal can industries, and found the secular effects to be greater than the quantity and price effects of import competition. Also, the total impact of secular factors would likely be higher if secular demand declines in other user industries had been calculated. The OE analysis was, therefore, a conservative estimate of the effect of the secular decline in demand on the sheet and strip industry.

49/ Report at a-65.

50/ Report at a-216.

51/ Appendix to Memorandum EC-H-197, op. cit., at 7.

products, apparent consumption of wire rod during 1979-83 followed the general economic conditions. However, unlike other products, apparent consumption in 1983 climbed above that in any year covered by the investigation, reaching over 4 million tons. This level of consumption is up substantially from 1980 and 1982 levels, and slightly higher than it was in 1979 and 1981, both relatively good years for the industry. 52/ There does not appear to be any long term secular decline in wire rod consumption. In addition, the cyclical decline was no more than 500,000 tons in either 1980 or 1982, or 13 percent. This decline is far less than the cyclical declines in most other steel products. Clearly, neither secular or unusual cyclical declines are important causes of serious injury to the wire rod industry.

Imports were higher in 1979 than in any year until 1983, and their market share declined until 1982. Although imports increased by 250,000 tons from 1982 to 1983 53/ this was at least partially in response to the improvement in the market overall.

The low profits in the wire rod industry have primarily been the result of intra-industry competition during the entire period covered by our investigation. Questionnaire data show that in 1979 integrated producers accounted for 68 percent of U.S. production and 74 percent of producers' open market shipments. These producers utilized 63 percent of their capacity in 1979. Nonintegrated producers, mostly operating independent mini-mills, had only 32 percent of production, and 26 percent of open market shipments, while utilizing 83 percent of their capacity. 54/

The picture had changed substantially by 1983, however. In fact, it showed a near complete reversal. In that year, the integrated producers'

52/ Report at a-44.
53/ Report at I-9 and J-2.
54/ Id.

share of both U.S. production and producers' open market shipments had fallen to 39 percent of the totals and nonintegrated firms had the remaining 61 percent. While integrated firms suffered with capacity utilization at only 35 percent, nonintegrated firms had actually increased their capacity by 56 percent and in spite of this were able to utilize over 78 percent of it. 55/ It is clear that the nonintegrated producers are largely responsible for the decline in shipments suffered by the integrated producers.

It is also obvious why the integrated producers lost so much of the market to the mini-mills. The latter are modern and efficient mills dedicated to the production of one or two products. The efficiency of their technology, management, and cost control techniques enable mini-mills to keep their prices low. Also important, these mills are often located near their source of raw material--scrap--or near their customers, reducing the final delivered costs of the finished wire rod. Price data show that the average delivered price paid for rod from nonintegrated firms was well below that paid for rod from integrated firms in most regions and in most of the period of the investigation. 56/ But even more significant is the fact that these efficient U.S. mills were able to sell wire rod at a price that, on average, was below the average price of imported wire rod. 57/

Although there are undoubtedly instances of imported wire rod selling at prices below the mini-mill price, for the product group as a whole this is obviously not true. And although integrated producers also produce some rod in efficient mini-mills, they apparently are unable to pass through the resulting benefits in the form of competitive, lower prices.

55/ Report at I-9.
56/ Report at a-170-172.
57/ Ibid.

So, while imports did in fact gain some few percentage points in market share and about 250,000 tons in sales from 1979 to 1983, nonintegrated mills increased their production by over 600,000 tons and took substantial market share from the integrated producers. As the domestic producers have said time and time again in Commission steel industry investigations, firms increase their market share of a fungible product like wire rod by delivering it to their customers at a price below that of their competitors. This is certainly more the case when that market share is gained during a period of general recession. Clearly, this competition between integrated and nonintegrated producers, not imports, has caused the indicia of injury to the wire rod industry to turn downward in 1982. Although the short-run effect on the profits of all these producers is quite negative, the United States is well along in the process of rebuilding a wire rod industry that can hold its own in international competition.

I also find that increased imports are not a substantial cause of threat of serious injury to the wire rod industry. This industry has shown itself capable of out-competing imports under the best and the worst economic conditions. There is no reason to believe that a reversal of this trend is imminent.

E. <u>Carbon and alloy steel wire and wire products</u>

Although imports of wire and wire products were an important cause of injury to this industry, they were not the most important cause. There has been a serious long-term secular decline in consumption of wire and wire products. Since 1973, consumption has declined over 45 percent, and one-half of that occurred between 1979 and 1983. This decline of 1 million tons in the period of investigation is clearly a more important cause of injury than the 27,000 ton increase in imports over 1979-83 or the 220,000 ton increase from 1982 to over 1983.

This industry, like the wire rod and bar industries, is characterized by a large concentration of non-integrated and non-steel producers. The non-integrated and non-steel producers gained market share over the 1979-1983 period at the expense of integrated producers. 58/ Although imports also gained market share over this period, their gain was somewhat less than the market share gain of the non-integrated and non-steel producers. This indicates that intra-industry competition was also probably a more important cause of material injury than was import competition.

I also find that increased impots are not a substantial cause of threat of serious injury. Imports have shown only moderate fluctuations over the past decade and the changes in 1979-83 are well within that range. There is no reason to believe that imports threaten imminent serious injury to an industry that has already weathered the recent recession and is looking towards economic improvement.

F. Railway-type products

It is unclear than imports of carbon and alloy steel railway-type products have increased, either absolutely or relative to domestic production, within the meaning of the act. In addition to the data presented in the joint views above, it should be noted that imports of these products fell from 340,000 short tons in 1982 to 159,000 in 1983, their lowest level in five years. 59/ The market share held by imports of these products fell from an average of 20 percent in 1979-1982, and 33.1 percent in 1982 to 16.1 percent in 1983. 60/ Imports in 1983 of railway type products were less than half the average of the previous 4 years, and the ratio of imports to apparent

58/ Based on shipment data in tables I-9 to I-14, and table 6, of the Report.
59/ Report at a-44.
60/ Id. at a-141.

consumption was only 80 percent of its average for the previous 4 years. In January-March 1984, imports increased over January-March 1983, but by a smaller percent than domestic shipments. As a result, the import market share again fell. Given the unquestionably serious injury to this industry, and the extremely marginal case that imports have increased, increasing imports could not have been an important cause as required by the statute.

Rather, a precipitous collapse in the demand for these products during 1982-83 is the principal cause of the problems. The industry's poor performance is ultimately connected to the decline of the nation's rail industry as expressed in the consolidations of the Amtrak and Conrail systems. Furthermore, the removal in 1981 of an investment tax credit for box cars resulted in a permanent downward shift in demand for this railway-type product. 61/

I also find that increased imports are not a substantial cause of threat of serious injury. There is no indication that imports will increase faster than the market generally, and in fact, the market share of imports in the first 3 months of 1984 is below that for early 1983.

G. Bars

Bars, like wire rod, are a product of nonintegrated mini-mills as well as of integrated mills. However, unlike the case of wire rod, it is an unusually severe decline in the market that is the most important cause of the injury.

61/ I note in passing that even in a recent Title VII case, where no weighing of causes is allowed and the injury standard is "material" rather than "serious," the Commission found that all the material injury to the industry producing some components of railway freight cars was due to demand factors rather than dumped imports. See Certain Tapered Rollier Bearings and Parts Thereof from Japan and Italy, Invs. Nos. 731-TA-120 and 122 (Final), USITC Pub. No. 47 (1984).

Imports of bar accounted for a consistently low share of the total market, ranging from 5.1 percent in 1979 to 7.3 percent in 1983. 62/ In spite of the market share increase, the actual quantity of imports was lower in 1983 than in 1979, and the increase in share was the result of a market that had plummeted by 39 percent from 1979 to 1982 and had only slightly recovered. 63/ The overall change in the bar market exceeded 5 million tons, while the increase in import share--2.2 percentage points--represented less than 250,000 tons.

As in the case of wire rod, non-integrated firms have taken increasing shares of the market for bar. The share of U.S. producers' total shipments by these firms increased from 47 percent to 62 percent of reinforcing bars, and from 37 percent to 46 percent for hot-rolled bars in the period 1979-83. Imports increase in shares are far below these levels. Only if imports had a particularly large influence on prices could an increase of this slight magnitude be a substantial cause of the injury we have found. However, imports are not the driving force behind lower prices. Questionnaire data show clearly that nonintegrated mini-mills frequently provided bar products at an average delivered price below that of imports in virtually all large market areas. 64/ The margins by which mini-mills undersold imports ranged in 1982-83 from a few percentage points to 60-70 percent on some products. While imports did generally sell at prices below integrated producers, they were clearly both being undersold by the cost-efficient nonintegrated producers.

62/ Report at a-141.
63/ Id. at a-44.
64/ Report at a-171-176.

Because the change in import share was so small, and because imports were not the driving influence behind the decline in prices for bar, they could not have been a substantial cause of serious injury. Rather, the unusual decline in consumption of bar and the subsequent intraindustry competition for the remaining market were both causes more important than imports.

I also find that imports are not a substantial cause of threat of serious injury to the bar industry. It is clear that this industry's future is in the mini-mill, and that minmills can compete with imports. There is no reason to believe that imports will have a greater impact in the future then they have in the past.

H. Carbon and alloy steel structural shapes and units

While imports of structural shapes and units were an important cause of injury to the U.S. industry, they were not the most important cause. Because the competitive conditions for each of the narrow product lines within the structural shapes and units category differed significantly, my causal analysis focuses on each product line separately 65/ and then amalgamates the results into one determination.

Heavy structural shapes.--This is the largest volume product line within the structural shapes and units category, accounting for almost 80 percent of the total (measured by raw steel). 66/ This product line is used primarily in non-residential construction and bridges. As in the situation of carbon and alloy steel plate, high real interest rates in the 1982-83 recession deepened the cyclical downturn in this industry far below what would have been expected in a more normal downturn with lower real interest rates. In addition, analysis of the apparent consumption data demonstrates that a long-term

65/ The Commission may analyze segments within an industry in its analysis of the industry as a whole. See General Counsel memorandum GC-H-180, June 18, 1984, at 7.

66/ Report at a-44.

secular decline in demand also adversely affected this industry. One possible secular change that could account for this long-term decline is the increased use of reinforced concrete, rather than heavy structural shapes, in the construction of non-residential buildings. For example, apparent consumption from the cyclical peak of 1973 to the cyclical peak of 1979 declined by 515,000 tons, and from the cyclical trough of 1976 to the cyclical trough of 1983 declined by 489,000 tons, suggesting a permanent decline in demand. By contrast, the absolute volume of imports decreased by about 490,000 tons from 1981 to 1983. 67/ Import penetration did increase in 1982 and 1983. However, had import penetration remained at the relatively low 1979 level of 26.7 percent, imports would have been about 250,000 tons lower in 1982 and 1983. It is therefore apparent that declines in apparent consumption due to the unusually severe cyclical downturn in this industry, as well as the secular decline in demand, far outweighed any adverse impact that could be attributed to imports.

Light structural shapes.--In this market, non-integrated producers and non-steel producers have gained a larger portion of the market over the last five years at the expense of both integrated mills and imports. Therefore, intra-industry competition was a greater cause of injury than import competition in this segment of the structural shape and unit market. From 1979 to 1983, the integrated mills' share of total domestic shipments in the United States (shipments both by U.S. producers and imports) decreased from

67/ Report at a-52.

nearly 30 percent to less than 10 percent. 68/ The market share held by imports decreased from 14 percent to 9 percent over the same period. 69/ The share of producers' shipments captured by non-integrated and non-steel producers increased from about 70 percent to more than 90 percent. Thus, it is apparent that non-integrated steel producers have increased their share of this market at the expense of both integrated producers and imports. Based on the significant decline in both the volume of imports and the market share of imports form 1979 to 1983, there is little evidence that imports were a cause of injury, much less a cause of injury that was both important and an important as any other cause.

As increasing imports have not been a substantial cause of serious injury in either segment of this industry, one must conclude that imports did not meet the substantial cause criterion for the product group as a whole.

I. Pipes and tubes

The decline in demand for carbon and alloy steel pipes and tubes was a far greater cause of injury than imports. This is true for both oil country tubular goods (OCTG) and for other pipes and tubes. Apparent consumption of OCTG goods increased by 72 percent (2.0 million tons) from 1979 to 1980 and by 48 percent (2.3 million tons) from 1980 to 1981, 70/ much more rapidly than the increase in actual consumption. The result was a buildup in user-industry inventories of OCTG, which led to low levels of apparent consumption in 1982 and 1983. By 1983, apparent consumption had fallen by 4.6 million tons from

68/ Report at J-4.
69/ Report at a-141.
70/ Id. at a-44.

its 1979-82 average, or 1.3 million tons below its 1979 level. 71/ By contrast, if imports had maintained their 1979 market share in 1983, they would have been 0.3 million tons lower. If they had maintained their 1979-82 average share of consumption, they would only have been 0.1 million tons lower. Therefore, the extraordinary decline in apparent consumption of oil country tubular goods was many times as important as imports as a cause of injury to the domestic industry. In 1983, imports of oil country tubular goods were at their lowest level in 5 years and thus were not a significant cause of injury. In January-March 1984, imports increased, but so did domestic shipments. The U.S. industry has possibly already weathered the worst part of its recent crisis and can look forward to increasing production without any threat of serious injury.

An analysis of shipments, imports, and apparent consumption reveals a similar pattern for other pipes and tubes. Apparent consumption and imports increased from 1979 to 1981 and then decreased from 1979 to 1981 and decreased again in 1982 and 1983. The ratio of imports to consumption also increased from 1979 to 1982 and remained near 50 percent in 1983. Thus, although imports fell, the import share of consumption remained high. Nevertheless, if the import share had remained at its 1979 level, 72/ imports would only have been 0.9 million tons lower than their actual level. Domestic shipments were 3.2 million tons lower in 1983 than they were in 1979. The unique decline in demand 73/ accounted for a 2.3 million ton drop in shipments, or for more than

71/ Id.

72/ Report at G-33.

73/ The decline in demand for either category of pipes and tubes is due to conditions which cannot be neatly labelled as short-term or long-term without an examination of probable future market conditions. Such an examination for these products is too speculative and far afield to be attempted in the bounds of this investigation.

2.5 times as much a drop in shipments as imports. The contrast is even greater if averages are used. If imports as a share of apparent consumption had remained at its 1979-81 average, imports would have been only 0.7 million tons lower. In contrast, apparent consumption was 3.2 million tons lower in 1983 than its 1979-81 average. Furthermore, in 1983 imports were at their lowest level in 5 years. Therefore, increasing imports of pipes and tubes were not a substantial cause of serious injury to the domestic industry. In January-March 1984, domestic shipments increased 20 percent over the same period in 1983. Thus, although, the import share of apparent consumption was also up, it appears that the domestic industry is recovering and will not be seriously injured in the near future. Thus I do not see increasing imports as substantial cause of a threat of serious injury to the domestic industry.

IV. No Import Relief Recommended

I am recommending that no import relief under the provisions of section 201 be accorded in any of the nine product groupings or industries examined in this investigation. This negative recommendation is based on two major considerations:

(1) increased imports are not a substantial cause of serious injury of threat thereof to any of the nine industries producing carbon and alloy steel products examined above; and

(2) the remedy recommendation fashioned by the Commission majority and other alternatives available under section 201 are more likely to inhibit rather than enhance the overdue efforts of U.S. steel producers to adjust to conditions of competition of the 1980's. 74/

74/ Commissioners who have voted negatively in the injury-causation phase of a section 201 proceeding may participate in the remedy phase. In Specialty Steel, I joined a Commission remedy recommendation for all four product groupings, though I had voted negatively on one of them and affirmatively in the other three. See GC memorandum GC-H-190, July 3, 1984, at 9-13.

I have found that in all cases except semi-finished products and railway-type products that increasing imports have been an important cause of the industry's poor performance. The U.S. steel industry's crisis continues and its toll on its workers--who by the tens of thousands will never return to once secure, high-paying jobs--and the nation remains heavy. 75/ In this context, I believe some further comments on import relief are merited.

A. The Role of Adjustment in the Statutory Framework

The goal of import relief in the statutory framework is industry adjustment. The idea of adjustment runs throughout the statute and its legislative history. Import relief is to be "for the purpose of facilitating orderly adjustment to import competition", and petitions filed with the Commission must include a statement "describing the specific purposes for which relief is being sought, which may include such objectives as facilitating the orderly transfer of resources to alternative uses and other means of adjustment to new conditions of competition". 76/ In the course of its proceedings, the Commission, in order to assist the President, is to "investigate and report on efforts made by firms and workers in the industry to compete more effectively with imports." 77/ The Commission may recommend adjustment assistance. 78/

In addition, the President, in determining whether to provide import relief, is to take into account "the probable effectiveness of import relief as a means to promote adjustment [and] the efforts being made or to be

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75/ See, testimony by Lynn R. Williams, President, United Steelworkers of America, June 21, 1984. Also, transcript, remedy phase, at 48.

76/ Section 201(a)(1).

77/ Section 201(b)(5).

78/ Section 201(d)(1)(B).

implemented by the industry concerned to adjust to import competition. . . ." 79/ If the President decides to provide relief, he is to provide the relief necessary "to prevent or remedy serious injury . . . and to facilitate the orderly adjustment to new competitive conditions by the industry in question. . . ." 80/ Finally, the Commission, in advising the President on the probable economic effect of the extension, reduction, or termination of import relief, is to advise on "the progress and specific efforts made by the industry concerned to adjust to import competition." 81/ The statute does not list any factors relevant to adjustment and does not expressly give the Commission a role in section 201 cases of considering the adjustment issues (although it does in the case of Commission advice under section 203(i)). However, despite the absence of any express requirement that the Commission consider the issue of industry adjustment in a section 201 action, Commissioners generally have considered the issue, 82/ and presumably, an industry which has adjusted does not need relief. Presumably also, increased imports would no longer be, assuming they were previously, a substantial cause of serious injury or threat to the industry. Under section 201(d)(1)(A) the Commission is to find relief "necessary" to prevent or remedy injury. Only the minimum amount of "necessary" relief is to be recommended since the provision of relief may give rise to a need to compensate adversely affected trading parties or may result in retaliation 83/ or may directly impede the adjustment process by removing an important competitive incentive.

79/ Section 202(c)(3).
80/ Section 203(a).
81/ Section 203(i)(4).
82/ See General Counsel Memorandum GC-H-180, June 18, 1984, at 3-5.
83/ Because section 201 cases are traditionally directed at imports which are traded fairly and compensation or retaliation is allowed by the GATT, section 202(c)(5) implicitly suggests that the President exercise care in applying any kind of relief.

B. Alternative Courses for the Steel Industry

Since its establishment in 1916, the Commission has never become so familiar with an industry as it has in the last decade with the American steel industry. 84/ In the present investigation alone, a massive record has been compiled from the testimony and submissions of the U.S. producers, the United Steelworkers Union, importers, other Government agencies, and consultants, as well as the great experience of the Commission in analyzing this industry. From this record, I have distilled three major alternative courses which have been proposed to the Commission for consideration. I will briefly comment on each. Then, I will close with comments on the appropriate role of imports and import relief in the ongoing adjustment of the U.S. steel industry.

Market forces and Recent Adjustments.--The first alternative is to continue to rely on the market forces which--with little grace and much pain--have finally forced long overdue change on this industry. The industry has recently taken serious steps to adjust to the realities of the international steel trade in the 1980's. The industry's problems have been over two decades in the making. Of course, the recent catastrophic recession has severely exacerbated the crisis in steel. The industry's recent adjustment efforts include plant modernization, new wage and labor arrangements, shut-downs of uncompetitive excess capacity, construction of more flexible and better-located mini-mills, selective foreign sourcing of some semi-finished products, and an improved investment strategy. Yet all these positive steps have gained momentum only in the last two years.

In constrast to its relative inactivity during the 1960's and 1970's, the steel industry has recently embarked on making some of the adjustments

84/ Since I joined the ITC in 1978, there have been over 200 investigations of subsidized and dumped imports of steel products under the unfair import trade laws of Title VII (of the Tariff Act of 1930). One year ago, the Commission conducted a major section 201 investigation of U.S. specialty steel producers.

necessary to return it to a more competitive position in the world steel market. Included are shutdowns of inefficient facilities, diversification into non-steel activities 85/, modernization of existing facilities, wages concessions by labor, and imports by U.S. steel mills of lower-cost semifinished steel products. It is noteworthy that most of these adjustments took place from 1980 to 1983, a period when the U.S. steel market was relatively open and U.S. steel producers were subject to import pressure.

Over the last ten-years period, plant shutdown by U.S. producers were more highly concentrated between 1982 and the first quarter of 1984. Because of world steel overcapacity during this period, these closures primarily of the less efficient facilities were necessary adjusments. The shutdowns will allow the steel industry to focus their future investment strategy on those facilities which are more efficient and have a better chance of competing in the world steel market.

Several of the large integrated firms have chosen to diversify into activities unrelated to steel. For example, the U.S. Steel Corp. purchased Marathon Oil Corp. in 1981 for $6.2 billion, and National Steel owns a savings and loan holding company. 86/ These diversifications will allow the steel producers to spread their risks, since they will not depend solely on the cyclical swings of the steel market.

For those steel facilities that remain open, the steel industry has taken some steps toward moderanization, although much more investment is necessary. Recent investments have included the purchase of continuous casters. 87/

85/ Section 201 explicitly includes the shutdown of manufacturing facilities as a possible adjustment to import competition (section 201(a)(1)).

86/ See pages a-30-31 of the Report for more details concerning diversification by integrated steel producers.

87/ See pages a-218-302 and appendix Q of the Report for a more detailed list of modernization or reorganization efforts made or planned by the U.S. steel industry.

On the labor side of the equation, recent wage concessions by steelworkers have narrowed the labor-cost gap between U.S. producers and foreign producer, improving the competitive position of U.S. steel producers.

Finally, the increase in imports of semifinished producers during 1981-83 is in part a reflection of the desire by U.S. steel producers to obtain raw material at lower costs, thereby improving the competitive position of their finished steel products. For example, Kaiser Steel shut down its own melting facility and plans to import semifinished steel for finishing. U.S. Steel exhibited an interest in importing semifinished slabs from the United Kingdom.

Import relief.--The second alternative is a classical general import relief program of tariffs and/or quotas. Whether strong or weak in character, any program of relief centering on just imports could very rapidly worsen this industry's medium-term viability by removing a crucial impetus for continuing this necessary adjustment process. 88/ To deal with this dilemma, it has become fashionable to talk of conditions or quid pro quos for import relief. But the Commission has not seen any concrete plans for future adjustment. 89/ Talking about conditions absent a concrete adjustment plan becomes a sugar coating for stop-gap import relief. There must be visible yardsticks to

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88/ In this context, I find particularly counterproductive any import relief which could impede the modest but positive adjustment signified by the imports of some semi-finished products. Any relief in plates will certainly impede producers of pipes and tubes which use plate as an input.

89/ In Automobiles (1980), the Commission received detailed adjustment plans from the copetitioner, Ford Motor Co. The American steel industry must certainly be capable of similar corporate planning. Yet the Commission investigation has not been able to uncover any such detailed adjustment plans, despite the fact that the industry has been in a state of crisis for five years. Consider the following exchange from the remedy phase of the hearing: --Chairwoman Stern, "So there is no plan?" -- Mr. Rohatyn (testifying for Bethlehem and the United Steelworkers), "I believe there is a plan. I just haven't seen it." --Mr. Trautlein (Chairman and CEO of Bethlehem): ". . .[T]here is no formal plan, line by line, chapter by chapter, verse by verse, that I know of. There is a plan of what we are going to do on macro terms." See Hearing Transcript (Remedy Phase) at 104.

measure adjustment. 90/ And adjustment is required not only to imports, but also to the industry's many remaining non-import problems. No remedy proposals for import relief meet these important standards.

Industrial policy.--The third alternative is one proposed by the petitioners: a broad national policy to deal with all this industry's important problems--including imports. The foreign record of such industrial policies is checkered. Often what has been billed as an overall, coordinated policy has become an incoherent patchwork of compromises which have institutionalized inefficiency. But broad programs could facilitate adjustment--by establishing clear quid pro quos on the behavior of both management and labor. In return, the Government and the private sector could provide for comprehensive assistance with financing, research and development, consolidation, Government regulations, tax policy, worker retraining, and import relief. Such programs can succeed if they focus on the total adjustment process, not just imports.

For the United States, this would be a new path and in the current steel crisis is perhaps worthy of consideration, but not at this forum. The petitioners have given the Commission a taste of this approach. 91/ But it remains only a vague taste. Such a program requires a national political commitment and should be the work of our popularly elected representatives. This Commission has vast expertise acquired through its 200 investigations of

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90/ The remedies proposed by the industry, as well as those by the majority, lack any concrete conditions and do not focus on adjustment. The petitioners have not demonstrated in sufficient detail how they plan to adjust to the industry's important non-import problems, and how import relief would further that process. The one concrete condition suggested by one colleague--a 20 percent wage concession--focuses far too narrowly on but one of many potential factors which could improve the performance of the U.S. industry.

91/ See testimony on behalf of Bethlehem Steel Corp. by Felix G. Rohatyn, June 21, 1984. Also, Hearing Transcript (Remedy Phase), at 148.

the steel industry. As the most experienced, independent industry assessor in the Government, this Commission can study any questions the Congress or the Executive deems appropriate. But the Commission remains an independent, non-partisan, non-policy making, quasi-judicial agency and as such cannot possibly orchestrate the series of explicit "bargains between government, management and labor" envisioned in the petitioners' remedy testimony.

C. Adjustment, Imports and Section 201 92/

In two other very recent decisions, the Commission majority has found that goods imported by domestic producers have signified a meaningful adjustment to the harsh realities of competition rather than injury by reason of such imports, while in this case the majority has found them injurious. 93/ Answering the question of whether imports of domestic producers indicate adjustment or injury requires careful analysis of the facts and circumstances of each case.

The Commission has addressed this issue in other cases as well. First, the Commission has noted that producer imports of components or raw materials may enable them to compete successfully at the higher value added, finished product level. 94/ In some circumstances, more jobs can be saved by this discrete trade off than by limiting imports. Second, imports of finished

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92/ While it has become fashionable to talk of adjustment and the conditions for it to take place, my discussion is motivated by the emphasis on the subject which has always been present in the statute.

93/ See SSTF at 15, and Nonrubber Footwear, "Views of Chairwoman Stern, Vice Chairman Liebeler and Commissioner Rohr", at 20-23.

94/ See, e.g., Color Television Receivers and Subassemblies Thereof: (Televisions), Inv. No. TA-203-6, USITC Pub. 1068, May 1980, at 5; see also Unlasted Leather Footwear Uppers from India, Inv. No. 701-TA-1 (Final), USITC Pub. 1045, March 1980, at 13.

goods in the low-value end of a product line may enable domestic producers to adjust by concentrating domestic production in more profitable product lines that are less susceptible to import competition. This was the case in Stainless Steel Table Flatware (SSTF), in which a unanimous Commission found that domestic flatware producers, after years of import relief, imported flatware to fill out the low-value end of their product line, enabling them domestically to produce high priced flatware. Similarly, in Nonrubber Footwear, the Commission majority found that footwear imported by domestic footwear manufacturers generally complement rather than compete with domestic production, and that imports of footwear, both the low-value finished product and components, are an important part of these producers' broader, long term strategy to adjust to import competition. Such adjustment will allow them to maximize domestic production and decrease the costs of manufacturing in high-value product lines.

It should be noted that over 75 percent of the flatware market and 64 percent of the nonrubber footwear market were captured by imports in 1983. 95/ The imports of carbon and alloy semifinished products in this case present an even clearer example of adjustment, not injury. Unlike the facts in SSTF and Nonrubber Footwear, which involved imports of finished products that could arguably be said to compete head-to-head with the domestic production of other domestic producers, this case involves a semifinished product that domestic firms produce almost entirely for captive consumption in making value-added products, not for open market shipments. Imports actually enable some domestic producers to compete with imports of the finished product by lowering costs or avoiding costly capital renovations of outdated, inefficient facilities that produce the semifinished product. Thus, this situation is in

95/ This can be compared to the open-market penetration of 48.5 percent and total penetration of 1.3 percent for imports of semifinished steel producers in 1983.

some ways analogous to Televisions, where imports of component materials posed one of the clearest and strongest examples of adjustment, not injury.

Despite the Commission's analysis in SSTF and Nonrubber Footwear, the majority in this case has found that imports of the semifinished product should be placed on the "injury" side of the fence. Apparently, before some colleagues can conclude that imports indicate adjustment, first there must be years of import competition and a recognition that past relief has failed to enable domestic producers to become competitive in certain product areas. The majority apparently distinguishes this situation by emphasizing the fact that imports of semifinished products are a recent development. For cases involving imports of finished products, such reasoning may be more appropriate, since head-to-head competition is involved. However, for imports of semifinished products, this type of distinction can be tragically shortsighted. The net benefits of imports of these semifinished products in a market where there are few commercial shipments of such products are immediately recognizable, much easier to analyze than imports of finished products, and compelling. Tragically, the majority's conceptual myopia on this point could discourage certain domestic producers from continuing to develop a realistic, intelligent strategy for independently adjusting to import competition.

D. Unfair Imports --It should be noted that this industry has had more than its share of problems with unfair imports. But the industry has already been successful in obtaining the appropriate available relief. Since I joined the Commission in 1978, there have been over 200 investigations of subsidized and dumped steel imports under Title VII. In over three-quarters of them, the Commission has found that the imports were causing the requisite injury to the U.S. industry and special duties were imposed to counteract any unfair advantage enjoyed by imports. Half of all imports of basic steel mill products are already covered by antidumping and countervailing duty orders, or are the subject of current investigations, or are covered by suspension agreements or voluntary restraints. Congress has been explicit that general import relief under section 201 is not the preferred avenue for unfair imports. 96/

E. Conclusion.-- My recommendation to deny general import relief to this industry is in effect a conclusion that the best course is a continued reliance on market forces to force adjustment. Short of grand industrial policy plans, import relief would create the kind of situation over which the U.S. Steel Corporation, for example, has expressed concern "lest any inadequate recommendation . . . cause more harm than good." 97/ Imports are not the most critical problem facing the American steel industry. For that reason I was compelled to vote negatively in the injury/causation phase. A "solution," whether in the form of tariffs or quotas, that focuses solely on imports--or on imports and wages--chooses isolated scapegoats for a much broader complex of problems. An incorrect or partial identification of solutions coupled with strong import relief would impede the present, reluctantly-begun adjustment. Weak, ineffective relief could be harmful, and would surely be self-deceptive. Therefore, I am compelled to recommend that in the present context import relief is not appropriate. 98/

96/ Section 201(b)(6).

97/ See Memorandum by United States Steel Corporation, June 21, 1984, at 1.

98/ With respect to the factors within the President's responsibility to decide, I have concluded that general import relief for the steel industry is likely to further delay adjustment, increase substitution, encourage imports of finished steel products like autos and machinery, and contribute to stalling the present recovery. This is an extremely high price to pay, given that the industry is likely to emerge from any period of protection with fewer downstream customers. I have not seen and therefore cannot comment on the majority analysis of their remedy proposal's likely impact on future steel demand. But it is already clear that the cost of the majority remedy to American consumers, if adopted by the President, will be several billion dollars. See Hanushek Statement, CBO, op cit.

INJURY AND REMEDY

VIEWS OF VICE CHAIRMAN SUSAN LIEBELER

I. Introduction

A. Summary

I have joined my fellow Commissioners in determining the domestic industry product groups covered by this investigation. In each of the nine industry groups I have found that increased imports are not a substantial cause of serious injury or threat of serious injury. The Commission was unanimous in making a negative injury determination for wire rod, railway products, and bars. I joined Chairwoman Stern and Commissioner Lodwick in the Commission's negative injury determination for pipes and tubes. I joined with Chairwoman Stern in making a minority negative determination for semifinished products, plates, sheet and strip, wire and wire products, and structural shapes and units.

These views set forth my interpretation and analysis of increased imports (Pt. II B), serious injury (Pt. II C), and causation (Pt. II D). 1/ Part III contains my application of this analysis to the nine product groups in

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1/ The framework for my analysis in this investigation was developed and applied in Injury and Remedy Views of Vice Chairman Susan Liebeler, Unwrought Copper: Report to the President on Investigation No. TA-201-52, USITC Publication 1549, July 1984.

this investigation. Part IV contains my remedy recommendation: 1) import relief should not be granted; and 2) if granted, import relief should be conditioned on a 20 percent compensation concession by steelworkers. My remedy views also contain a discussion on the likely consumer welfare loss flowing from the import relief requested by petitioners and the relief recommended by a majority of the Commission. I also explain why such import relief will not facilitate the steel industry's adjustment to import competition. This discussion responds to April 6 and April 9, 1984 letters from the Special Trade Representative to the Chairman of the Commission requesting such information.

B. The Purpose of Section 201

Our economy is based on the principle that competition, whether domestic or foreign, increases efficiency and enhances consumer welfare. Industries and firms within those industries are always under attack from competitors. In drafting section 201, Congress was aware of our treaty obligations under the General Agreements on Tariffs and Trade (GATT), the sorry history of retaliatory tariffs in the 1930's, and the delicate nature of our relations with our trading partners. Congress was aware that Americans as a whole are better off under a system of free trade than otherwise. Section 201 was not intended to protect domestic industries from the rigors of the marketplace. 2/

2/ If section 201 were intended to insulate domestic firms from foreign competition, Congress would have enacted a different statute. Presumably, such a statute would provide permanent rather than temporary relief to any domestic firm being injured by imports. The statute would require neither serious injury nor that imports be as large a cause of the injury as any other cause. Also, the statute would not require that imports be increasing.

There has been a progressive decline in import barriers under the GATT, which, along with sections 201-203, allows the President to provide a domestic industry temporary escape from import competition under a narrow set of circumstances and for a specific purpose. The purpose of section 201 is to "facilitat[e] orderly adjustment to import competition." It is not intended as a general protectionist measure designed to shift wealth from consumers to producers.

II. Injury

A. The Domestic Industry

Congress has charged the Commission with determining whether a domestic industry is being seriously injured or threatened with serious injury by rising imports. Section 201 defines a domestic industry as one "producing an article like or directly competitive with the imported article." I concur with the Commission's determination that nine industry groups are covered in this investigation: (1) ingots, blooms, billets, slabs, and sheet bars, (semifinished products); (2) plates; (3) sheet and strip; (4) wire rods; (5) wire and wire products; (6) railway-type products; (7) bars; (8) structural shapes and units; and (9) pipes and tubes and blanks therefor. 3/

B. Increased Imports

Section 201 requires the Commission to "determine whether an article is being imported into the United States in such increased quantities as to be a

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3/ I am, however, troubled by drawing such fine distinctions between product groups because of the possibility of supply substitution between product lines, i.e., the ready movement of factors of production from one product line to another in response to price changes. Nonetheless, for purposes of my determination, I accept the separation of this industry into these nine product categories.

substantial cause of serious injury, or the threat thereof . . ." 4/ The threshold question in every section 201 case is whether imports have increased in absolute amount. If not, the Commission must make a negative determination.

Several previous Commission decisions suggest that the "increased quantities" requirement may be satisfied by a relative increase in imports. 5/ The suggestion, like "dicta" in a judicial opinion, is not binding on my determination. I am aware of no case in which the Commission made an affirmative injury determination and imports had not increased in quantity. 6/ Also, the clear language of the statute is to the contrary. 7/ My interpretation is that unless imports have increased in absolute amount, the Commission must make a negative determination. 8/

4/ 19 U.S.C. § 2251(b)(1)(1982)(emphasis added). The increased quantity requirement may be satisfied by increases in volume or, in appropriate cases, by increases in the value of imports.

5/ See, e.g., Stainless Steel and Alloy Tool Steel: Report to the President on Investigation No. TA-201-48, USITC Publication 1377, 1983, p. 16; Sugar: Report to the President on Investigation No. TA-201-16, USITC Publication 807, 1977, p. 11.

6/ In response to a question by then-Chairman Eckes at the hearing, petitioners were unable to cite any instance in which the Commission made an affirmative injury determination where imports had not increased absolutely over the relevant period.

7/ Former Commission Vice Chairman Michael J. Calhoun recently testified that his prior interpretation of "increased quantities" was erroneous and that section 201 requires imports to increase absolutely. Import Relief for the U.S. Non-Rubber Footwear Industry: Hearing Before the Subcommittee on International Trade of the Senate Committee on Finance, 98th Cong., 2d Sess. (June 22, 1984).

8/ See note 1, supra.

When Congress wanted the Commission to consider the relative share of imports, it used precise language to convey its intent. 9/ Once an absolute increase in imports has been found, the Commission can examine both the absolute and relative amounts of the increase to determine whether the increased quantity of imports has been a substantial cause of serious injury. In requiring that imports be increasing in quantity, and not simply in relation to domestic production, Congress delicately balanced domestic and foreign policy considerations. This Commission may not substitute its judgment for that of Congress.

C. Serious Injury - Threat of Serious Injury

The focus of section 201 is threat of, or serious injury to, the existence of a domestic industry. It is my opinion that it is appropriate to consider injury to the viability of the industry, rather than injury to the

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9/ For example, Congress directed the Commission to consider both relative and absolute increases in imports in determining substantial cause. In subsec. 201(b)(2)(C), Congress directed that:

> the Commission shall take into account all economic factors which it considers relevant, including (but not limited to)
>
> *   *   *
>
> (c) with respect to substantial cause, an increase in imports (either actual or relative to domestic production) and a decline in the proportion of the domestic market supplied by domestic producers.

19 U.S.C. § 2251(b)(2)(C)(1982)(emphasis added).

economic well-being of those who provide the factors of production to the industry, i.e., labor and capital. 10/

In order to illustrate the difference, I will restate my example of two hypothetical industries, A and B. 11/ Assume that: labor and capital in Industry A can readily be moved to other uses without significant losses; labor and capital in Industry B cannot readily be moved to other uses; and rates of return in each industry are at competitive levels.

Increased imports would have quite different effects on these industries. Such an increase would, all else constant, drive down the price of the output of the industry, causing a decline in the returns to labor or capital, or both. Any decrease in the wage rate of labor or in the return on capital in Industry A would cause labor and capital to move rapidly to their next best alternative use. The result is that Industry A would disappear rapidly. Workers will find alternative employment at comparable wages and suppliers of capital will shift their investment from one industry to another by either moving the machinery itself or selling the machinery and reinvesting their capital. Thus, neither suppliers of capital nor suppliers of labor will be injured. However, the industry will disappear quickly and this business will no longer be conducted in the United States.

A different situation will result in Industry B. In Industry B, increased imports may cause a significant drop in the price of the product but only a negligible decrease in the quantity of the product supplied by domestic

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10/ See note 1, supra.

11/ Id.

producers. Industry B will not shrink. The suppliers of labor and capital, however, will suffer. Because the next best use of the factors in Industry B would involve a large decrease in their returns, labor and capital will not shift to another industry. The lack of an alternative comparable return renders these factors less mobile. 12/

These two extreme examples illustrate the difference in the meaning of injury to a domestic industry. In the first case, Industry A is so severely affected that it disappears, but the workers and suppliers of capital are not adversely affected. In the second case, Industry B continues to produce, but the suppliers of the capital and labor are severely injured. I believe that the correct construction of the statute requires that Industry A but not Industry B be eligible for import relief under section 201.

Congress was concerned with the preservation of a domestic industry when it enacted section 201. The statute speaks in terms of injury to the industry rather than to the participants. 13/ Section 201 lists several factors that the Commission is to "take into account" in making its injury determination. Those factors are offered as evidence of injury or threat, and not as definition of the injury or threat. 14/

12/ Industry B might be able to remain intact for a considerable length of time, depending on the life of the capital involved and any development of an alternative use into which labor and capital may shift.

13/ Section 201 provides in relevant part that the Commission shall investigate whether increased imports are "a substantial cause of serious injury, or the threat thereof, to the domestic industry . . ." 19 U.S.C. § 2251(b)(1)(1982)(emphasis added).

14/ The factors that the Commission is to consider as evidence of serious injury are set forth in sec. 201(b)(2)(a) and include "significant idling of productive facilities in the industry, the inability of a significant number of firms to operate at a reasonable level of profit, and significant unemployment or underemployment within the industry. . . ." The factors which the Commission must consider as evidence of threat of serious injury are spelled out in subsec. 201(b)(2)(B) and include "a decline in sales, a higher and growing inventory, and a downward trend in production, profits, wages, or employment (or increasing unemployment) in the domestic industry.

There is no reason to suppose that Congress wanted to protect the economic well-being of those providing capital and labor when it enacted section 201. Since the losses suffered by suppliers of labor and capital due to increased imports are no different than they would suffer from domestic competition, it would make little sense to insulate them from foreign competition. To do so would impose great costs on the rest of society.

It is important to focus on the unique harm posed by competition from imports—the disappearance of a domestic industry—as with Industry A above. In deciding whether to implement import relief, the President must consider the national economic interest. In so doing, he must weigh, among other things, the importance of the preservation of a domestic industry in the national economy against the high cost of such relief to consumers and other industries and the amount of compensation which the United States may become obligated to pay under international agreements. 15/ Therefore, I conclude that the Commission's role is to focus on injury to the existence of an industry since it is the importance of preserving the domestic industry which the President must weigh under section 202.

D. Substantial Cause

Increased imports must be a substantial cause of the serious injury or threat thereof to the industry. Subsection 201(b)(4) defines "substantial cause" as a cause "which is important and not less than any other cause." In defining a separate "cause," one must not compare a genus with a species or

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15/ *See* 19 U.S.C. § 2252 (1982).

subspecies. 16/

There are only three types of causes at this level of generality which can inflict serious injury or threat thereof to the domestic industry. 17/ They are (1) a decline in demand, represented by an inward and leftward shift of the demand curve (fig. A); (2) a decline in domestic supply, represented by an inward and leftward shift of the domestic supply curve (fig. B); and (3) an increase in foreign supply, represented by an outward and rightward shift of the foreign supply curve (fig. C).

The consequence of these adverse shifts will result in either a fall in the price or quantity of steel produced by the domestic producers, or both.

16/ Cf. Stainless Steel and Alloy Tool Steel: Report to the President on Investigation No. TA-201-48, USITC Publication 1377, 1983, p. 33 The Commission stated in the report:

> Shift share analysis compares the effect of imports to the effect of consumption declines, whatever may be the cause of such declines. It has been argued that a decline in consumption should be considered as a single indivisible cause. We do not believe this approach is appropriate in the context of this case. Many potentially independent, fundamental causes, such as technological change or product substitution, or interest rates, may be partially responsible for a decline in demand. Shift-share analysis does not answer the question of whether and how a decline in demand should be allocated to such causes. Thus, its results should not be considered dispositive.

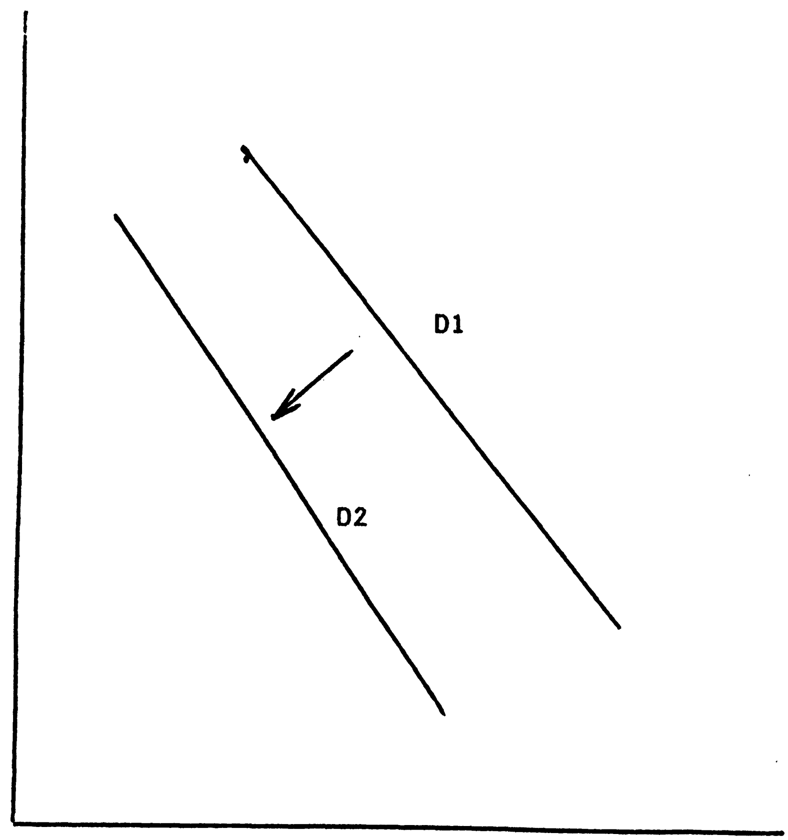
These "potentially independent, fundamental causes" referred to above are also factors which influence the supply of imports. Because Congress specifically directed the Commission to consider increased imports attributable to any and all causes, it is imperative that other "causes" be at the same level of generality.

17/ This analysis was originally developed in Injury and Remedy Views of Vice Chairman Susan Liebeler, Unwrought Copper: Report to the President on Investigation No. TA-201-52, USITC Publication 1549. As in the copper report, I am indebted to the Federal Trade Commission, which independently developed this analysis in their brief. See 19 U.S.C. § 1334 (1982) instructing the Commission to cooperate with other Government agencies including the Federal Trade Commission.

FIGURE A

DECREASE IN DEMAND

Price of steel

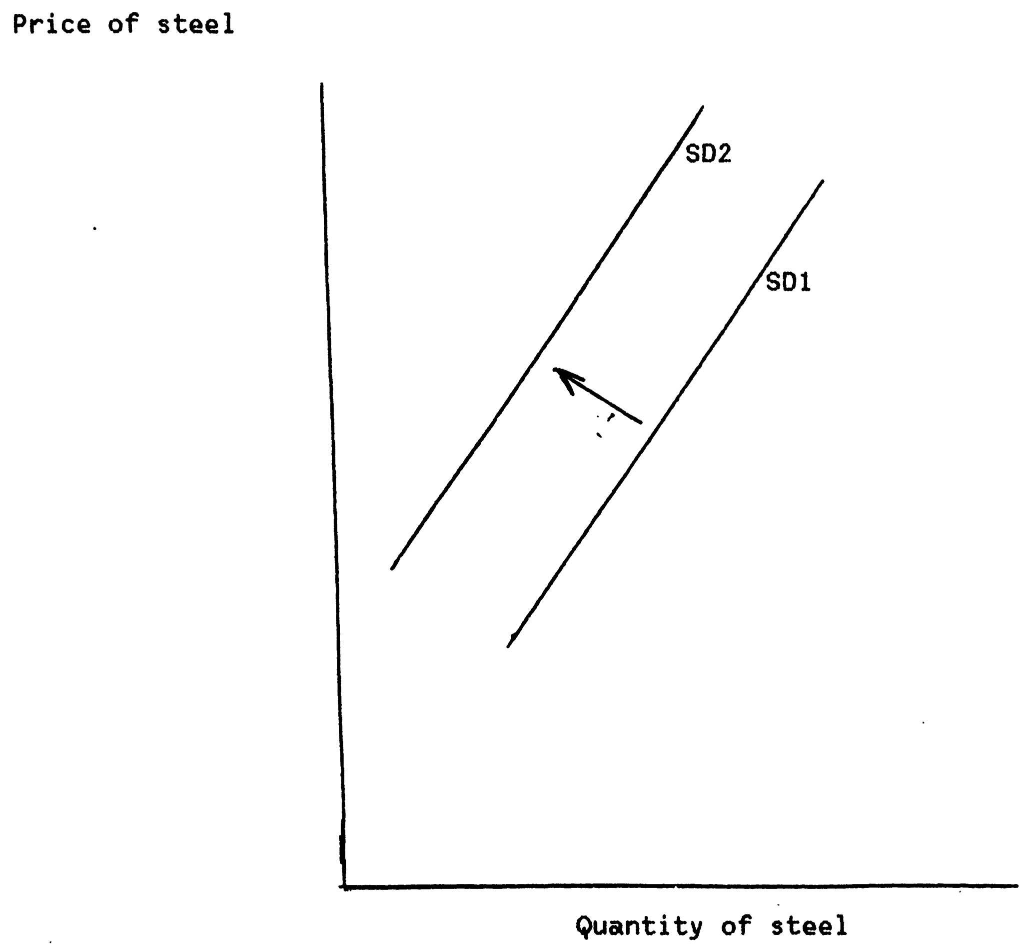


Quantity of steel

In Figure A, D1 is a demand schedule. As one moves along the demand curve from upper left to lower right, price is falling and the quantity the market is willing to purchase increases. The movement of the demand curve inward and to the left from D1 to D2 represents a fall in demand indicating that at each price the market is willing to purchase less steel.

FIGURE B

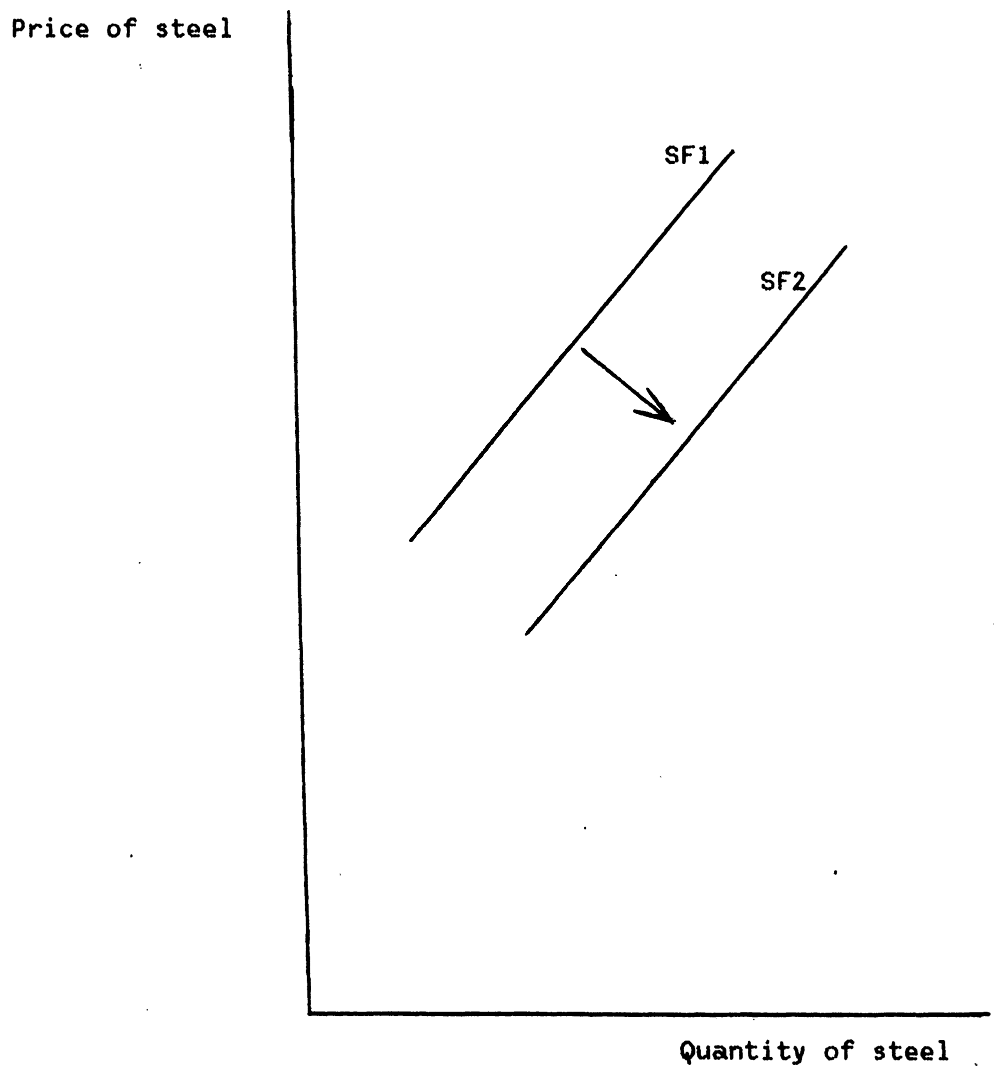
DECREASE IN DOMESTIC SUPPLY



In Figure B, SD1 is a domestic supply schedule. As one moves along the supply curve from lower left to upper right, price is rising and the domestic suppliers are willing to sell more steel. The movement of the supply curve inward and to the left from SD1 to SD2 represents a fall in domestic supply, indicating that at each price the domestic suppliers are willing to sell less steel. This downward shift in domestic supply results from an increase in the domestic producers' cost of producing their product.

FIGURE C

INCREASE IN FOREIGN SUPPLY TO THE DOMESTIC MARKET



In Figure C, SF1 is an import supply schedule. As one moves along the supply curve from lower left to upper right, price is rising and the foreign suppliers are willing to sell more steel. The movement of the supply curve outward and to the right from SF1 to SF2 represents a rise in foreign supply, indicating that at each price the foreign suppliers are willing to sell more steel.

A decline in demand means that at any given price less steel will be purchased. This decreased demand can result from changes in tastes, technology, income, or the price of substitutes. A decline in domestic supply means that at any given price domestic producers will be willing to supply less to the market. It may be caused by several factors, including increased labor costs, increased capital costs, or diminishing raw materials.

The presence of foreign supply and its effect on the market for the domestic product are the raison d'etre of the statute. An adverse shift, or increase, in foreign supply is the cause on which the statute focuses. It can occur for various reasons, including changes in foreign technology; changes in the amount of capital available; or simply from increased foreign steel capacity. 18/

If steel producers are selling steel at lower prices or quantities than previously, this can be caused only by: (1) a shift in the demand for the goods; (2) a shift in the domestic supply curve; or (3) a shift of the foreign supply curve. The Commission's responsibility under section 201 is to determine whether the shift in the foreign supply curve is at least as responsible for the injury to the industry as the shift in the domestic demand curve or in the domestic supply curve.

18/ Shifts in foreign supply are complicated by exchange rates and their effect on imports. If exchange rates change only because inflation is higher in another country than in the United States, the supply curve of steel from the foreign country will be unaffected. The foreign currency will have fallen in value just enough to compensate for the increase in the cost of that country's steel in terms of its own currency. However, a change in exchange rates can be caused by other factors such as changes in the demand for foreign products or changes in the demand by foreigners for American products. These types of changes will cause changes in exchange rates and shifts in the import supply curve.

III. The Nine Product Groups

This part is broken into nine subparts, one for each industry group. For each of the nine industry groups, I have set forth my analysis of increased imports, serious injury, and causation. My determination that imports have not increased in plates, railway-type products, bars, structural shapes and units, and pipes and tubes could serve as the sole basis for my negative determination for each of these industries. Because a majority of the Commission determined that imports had increased for these industries, I also concluded my analysis of serious injury and causation for these industries. I have examined each industry over a 5-year period to determine whether imports have increased, whether serious injury exists, and whether increased imports is a substantial cause of any serious injury or threat to the industry. In general, I have compared the pertinent data in 1979 with that of 1983. Where appropriate, I have examined and made reference to the performance of the product group during the intermediate years.

A. Semifinished Products

1. Increased Imports

Imports of semifinished products have increased from 342,000 short tons in 1979 to 821,000 short tons in 1983. This satisfies the statutory criterion of increased imports.

2. Serious Injury and Threat Thereof

Semi-finished products are an intermediate input in the production of final products of the steel industry. Data were somewhat scant on profit and loss in this industry category: only two producers reported these figures.

These firms showed small profits in this product group from 1979 through 1983. However, since these semifinished products are an input into the production of virtually all finished products, I hesitate to eliminate it from consideration on such scant data.

Production, capacity, and capacity utilization give a mixed, though less rosy, picture of the health of this product group. Production fell from 104,541,000 tons in 1979 to 64,375,000 tons in 1983, although capacity increased from 117,350,000 tons in 1979 to 120,218,000 tons in 1983. Capacity utilization, therefore, fell from 89.0 percent to 53.5 percent over the same period. An increase of capacity is normally a sign of a healthy industry. On the other hand, the precipitous fall in capacity utilization is indicative of an industry in severe distress.

Though this data is somewhat equivocal, the facts that virtually all major steel producers have lost money over this period and semifinished products are the input into their finished products convince me that there has been serious injury to this product group.

3. Substantial Cause

The final injury test is whether increased imports are a substantial cause of the serious injury. The ratio of imports to domestic shipments rose from 13.5 percent in 1977 to 84.4 percent in 1983. At first blush this would seem to support a finding that imports are a substantial cause of serious injury. These figures are highly misleading. Over 98 percent of all semifinished steel used in this country is not traded on a market, but rather is transferred internally within each company. The ratio of imports to shipments will, therefore, overstate import penetration.

A more meaningful figure is the ratio of imports to domestic production. Imports increased from 0.3 percent of U. S. production in 1979 to 1.3 percent of U.S. production in 1983. Since imports of semifinished products constitute such an insubstantial fraction of American production, increased imports could not have been a substantial cause of serious injury.

Because we are dealing with an intermediate product, it is possible that an increase in imports of the final products which has been a substantial cause of serious injury to the domestic industry producing the "final" product is pari passu a substantial cause of serious injury to the semi-finished product industry as well. This is not possible in this case because I have found that none of the nine product groups have been seriously injured by increased imports.

B. Plates

1. Increased Imports

Imports of plates decreased from 1,820,000 short tons in 1979 to 1,394,000 short tons in 1983. Because imports of plates have decreased, there can be no affirmative injury determination.

2. Serious Injury and Threat Thereof

Domestic producers' shipments of carbon and alloy steel plate fell from 8,889,000 short tons in 1979 to 3,731,000 short tons in 1983. In addition, prices fellover the period.

Both capacity and capacity utilization fell as well. Capacity dropped from 9,951,000 short tons to 9,206,000 short tons from 1979 to 1983, and utilization fellfrom 77.0 percent to 46.5 percent over this period. Operating income for producers of plate fell from 4.3 percent of sales in 1979 to -17.4 percent in 1983. Thus, the plate industry has been seriously injured.

3. Substantial Cause

The problems of the American steel plate industry are not primarily rooted in imports. It seems clear that in light of the large fall in consumption, 19/ domestic production, imports, and price (constant dollars), that the most important cause, by far, of the distress of this industry is a fall in demand. Thus increased imports are not a substantial cause of injury to this industry.

C. Sheet and Strip

1. Increased Imports

Imports of sheet and strip rose from 7,121,000 short tons in 1979 to 7,153,000 short tons in 1983, or by less than 0.5 percent.

2. Serious Injury or Threat Thereof

Sheet and strip production fell from 55,108,000 short tons in 1979 to 46,644,000 short tons in 1983. Capacity utilization fell from 80.2 percent in 1979 to 69.2 percent in 1983. Return on sales fell from 1.4 percent in 1979 to -4.5 percent in 1983.

In sheet and strip, the minimills have entered the market but have not yet become significant producers. Therefore, unlike some other product groups, I cannot say with confidence that the vitality of the minimills bespeaks a continuing vitality for this industry in America.

19/ I recognize that consumption changes are not the perfect proxies for demand shifts. A decrease in consumption can occur either as the result of a decrease in domestic demand or domestic supply. (A decrease in imports could also result in a decrease in consumption, but such a change could not be a cause of harm.) Because real prices decreased between 1979 and 1983, the decrease in consumption must have been due in large part, if not exclusively, to a decrease in demand.

The sheet and strip industry has been seriously injured.

This product category is by far the largest of the nine product groups involved in our investigations. The serious injury to this product group is an important factor in the serious injury to the steel industry as a whole.

3. Substantial Cause

Total domestic production of sheet and strip fell by 8,464,000 short tons in the last 5 years. During this same period imports have increased from 7,121,000 to 7,153,000 tons, or by a scant 32,000 tons. The remaining 99.6 percent of the fall in production by domestic steel producers can be accounted for by a decrease in consumption, which may have been caused by a decrease in domestic demand, a decrease in domestic supply, or some combination of the two. In any case, either of these causes outweighs an increase in foreign supply as an explanation of the distress of this injury. Thus, it is clear that increases in imports are not a substantial cause of the serious injury in the sheet and strip injury.

D. Wire Rods

1. Increased Imports

Imports of wire rods increased by approximately 20 percent from 1979 to 1983, from 963,000 to 1,159,000 short tons. This increase clearly satisfies the threshold test for a section 201 injury determination.

2. Serious Injury and Threat Thereof

Domestic shipments for this product group increased slightly over the period. Shipments totaled 2,821,000 short tons in 1979 and 2,851,000 short tons in 1983. Production, however, decreased dramatically, from 4,403,000 short tons in 1979 to 3,413,000 short tons in 1983.

Prices for wire rods were fairly stable over the entire period. In 1979, the unit value per short ton was $346. This figure decreased to $317 in 1983. This price drop is considerably greater in constant dollars. The real price reduction in conjunction with only a slight increase in shipments implies that revenue (in constant dollars) for this product group decreased. The financial picture deteriorated between 1979 and 1983 for wire rods. The return on sales fell from -0.4 percent in 1979 to -7.4 percent in 1983.

The nonintegrated wire rod producers' share of the market rose from 19 percent in 1979 to 41 percent in 1983. This has accompanied a positive return on sales in each of the last 5 years. I can find no serious injury to the existence of a domestic wire rod industry. On the contrary, I see a significant restructuring of the industry in which one set of domestic producers is replaced by another lower cost set of domestic producers. 20/ This is a sign of health not a symptom of illness.

3. Substantial Cause

Imports in 1983 were 196,000 short tons greater than in 1979. In order for imports to be a substantial cause of serious injury, the shift of the import supply curve outward and to the right must be at least as great as any adverse shift in both the domestic supply curve and the domestic demand curve.

The decrease in domestic production may have been caused by an adverse shift of the demand curve, the domestic supply curve, the import supply curve,

20/ I concur in the majority's rationale and finding on this issue.

or any combination of the three. The major cause of the decrease in production must have been either a decrease in demand or an increase in imports, because we have observed a fall in the real price of wire rods. An adverse shift in the domestic supply curve would tend to drive up prices.

Subtracting the increase in imports from the production decline leaves an unexplained change in production of 794,000 short tons, or 80 percent of the decrease in production. If a decrease in demand explained all of this change, the shift in the demand curve would clearly be a greater cause than the shift in the import supply curve. Even assuming that the "unexplained" decrease in production was attributable equally to shifts in the domestic supply and demand curves, the increase in imports would still be smaller than either of the other explanatory variables and, therefore, could not satisfy the statutory criteria for substantial cause.

E. Wire and Wire Products

1. Increased Imports

Imports of wire and wire products increased from 1,030,000 short tons in 1979 to 1,057,000 short tons in 1983.

2. Serious Injury and Threat Thereof

Domestic production of wire and wire products decreased from 2,262,000 short tons in 1979 to 1,728,000 short tons in 1983, though the 1983 production was slightly above production in 1982. Prices of wire and wire products increased from an average of $723 per ton in 1979 to an average of $753 per ton in 1983. This increase in price was substantially below the rate of inflation. Capacity utilization fell from an average of 80.2 percent in 1979 to an average of 69.2 percent in 1983. The rate of return on sales fell from 5.1 percent in 1979 to -7.5 percent in 1983. Thus, by traditional measures, this industry is suffering serious injury. On the other hand, the nonintegrated wire and wire product producers' share of the market rose steadily from 1979 to 1983. Although their rise in market share has not been accompanied by favorable income statements during each of the last 5 years, the performance of the nonintegrated companies has been far superior to the integrated companies. This suggests that the industry that is restructuring. Therefore, although the question is close, I find serious injury.

3. Substantial Cause

Total domestic production of wire and wire products decreased 534,000 short tons from 1979 to 1983. During this same period, imports increased from 1,030,000 tons to 1,057,000, or by 27,000 tons. The remaining 95 percent of the fall in production by domestic steel producers can be accounted for by a decrease in consumption. This fall in consumption must be attributed to a fall in domestic supply, a fall in demand, or some combination of the two. Whichever is the case, it is clear that at least one of these causes must far exceed an increase in foreign supply as an explanation of the distress of this industry.

F. Railway-Type Products

1. Increased Imports

There have not been increased imports of this product. Imports of railway-type products decreased from 313,000 short tons in 1979 to 159,000 short tons in 1983, or by almost 50 percent, thus failing the threshold test for injury.

2. Serious Injury and Threat Thereof

Shipments of railway-type products decreased monotonically from 2,026,000 short tons in 1979 to 782,000 short tons in 1982. Shipments then rose in 1983 to 883,000 short tons. Production followed the same pattern, falling from 1979 to 1982 and then rising slightly in 1983.

The price of railway-type products rose from $432 per short ton in 1979 to $540 per short ton in 1981. The normal price in 1983 returned to its 1979 level. In conjunction with declining shipments and inflation, these price figures indicate that real revenue for this product group has fallen substantially. Financial experience was available for four integrated and two nonintegrated producers. All financial indicators (sales, operating income) deteriorated between 1979 and 1983.

The serious injury test has been met.

3. Substantial Cause

Apparent U.S. consumption of railway-type products fell monotonically from 2,226,000 short tons in 1979 to 987,000 short tons in 1983. Imports also fell during this period. Increased imports, represented by a shift outward and to the right in the import supply curve, therefore, could not have been as great a cause of the serious injury as either an adverse shift of the domestic demand curve, or of an adverse shift of the domestic supply curve.

G. Bars

1. Increased Imports

Imports of bars decreased from 846,000 short tons in 1979 to 818,000 short tons in 1983.

2. Serious Injury and Threat Thereof

Both shipments and production in 1983 were, therefore, below their 1979 levels. U.S. shipments of bars decreased from 15,887,000 short tons in 1979 to 9,724,000 short tons in 1982. In 1983, shipments rose to 10,594,000 short tons. Production also fell from 1979 to 1982 and then rose slightly in 1983.

The average price of bars rose from $421 per short ton in 1979 to $445 per short ton in 1983 and then fell below its 1979 level in 1983 ($416 per short ton). Revenue in constant dollars was lower in 1983 than in 1979. Return on sales fell from 7.3 percent in 1979 to -9.0 percent in 1983.

Conversely, the nonintegrated bar producers, minimills in particular, have grown stronger over the last 5 years, experiencing a steady increase in market share. This has been accompanied by a positive return on sales in all years but 1983, when there was a small loss. Therefore, I conclude that the existence of a domestic bar industry is not threatened; we are simply witnessing the end of the era in which large, integrated, high-cost, inefficient producers dominated the industry. I find that this industry is not seriously injured.

3. Substantial Cause

Apparent U.S. consumption of bars fell by more than 30 percent between 1979 and 1983. Imports decreased slightly during this period. There was no shift of the import supply curve outward and to the right. Increased imports, therefore, could not have been as great a cause of any injury as the decrease in domestic demand. 21/

H. Structural Shapes and Units

1. Increased Imports

Imports of structural shapes and units declined from 2,370,000 short tons in 1979 to 1,825,000 short tons in 1983. This product category fails the increased import test.

2. Serious Injury and Threat Thereof

Domestic shipments in this product group fell from 7,062,000 short tons in 1979 to 4,373,000 short tons in 1983, or by 38 percent. Domestic production fell by approximately 41 percent over this period.

The average price of structural shapes peaked in 1981 at $418 per short ton. The prices in 1979 and 1983 were $366 and $369, respectively. Compared with that in 1979, revenue (in constant dollars) in this product group is down considerably.

The financial picture for this industry deteriorated between 1979 and 1983. In 1979, this product group generated an operating income of $79.4 million dollars. In 1983, the firms suffered a loss of $207.8 million. These facts support a finding of serious injury.

The nonintegrated steel producers have had increasing market share in the production of steel structural shapes and units. This increased market share has been largely limited to light structurals. The earnings performance of the minimills has been considerably better than that of the integrated

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21/ *See* note 19, *supra*.

producers, but they have not made significant inroads into the largest segment of the market, heavy structural shapes. Thus, I conclude that this industry has been seriously injured.

3. Substantial Cause

Apparent U.S. consumption of structural shapes decreased from 9,234,000 short tons in 1979 to 6,112,000 short tons in 1983, or by approximately 33 percent. No adverse shift of the import supply curve occurred. Imports could not have been as great a cause of the serious injury as the decrease in the domestic demand. 22/

I. Pipes and Tubes

1. Increased Imports

Imports of pipes and tubes in 1979 and 1983 totaled 2,898,000 and 2,843,000 short tons, respectively. In 1981 and 1982, imports were at much higher levels: 6,537,000 short tons in 1981 and 5,227,000 short tons in 1982. In 1983 they fell to slightly below the level in 1979. The statutory requirement of increased imports is not met.

2. Serious Injury and Threat Thereof

Domestic shipments of this product group rose from 8,196,000 short tons in 1979 to 10,246,000 short tons in 1982 and then fell by 70 percent to 3,186,000 short tons in 1983. Production also declined by approximately 70 percent.

The average price of pipes and tubes was identical in 1979 to that in 1983: $730 per short ton. Revenue, both in real and nominal terms, was, therefore, lower in 1983 than in 1979.

22/ See note 19, supra.

Firms in this product group reported a return on sales of 7.4 percent in 1979. These same firms reported a return on sales -36.4 percent in 1983.

These factors indicate that the pipe and tube industry has been seriously injured.

3. Substantial Cause

Apparent U.S. consumption of pipes and tubes decreased from 10,377,000 short tons in 1979 to 5,778,000 short tons in 1983. Imports were slightly lower in 1983 than in 1982. There has been no shift of the import supply curve. Imports, therefore, could not have been a substantial cause of the serious injury. 23/

J. Conclusion

After a careful analysis of each of the nine product groups, I have determined that all of them fail one or more conditions necessary for an affirmative determination of injury or threat thereof under section 201.

IV. Remedy

A majority of the Commissioners have made affirmative injury determinations with respect to semifinished products, sheet and strip, plates, structural shapes and units, and wire and wire products. Their affirmative injury determination triggers our search for a remedy. The Commission's remedy "recommendation" is not based on a weighing of all the factors relevant to imposing relief. The decision to impose import relief should entail a consideration of such questions as consumer welfare and national defense, and those are concerns that the statute mandates as proper

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23/ *See* note 19, *supra*.

for the President to consider. The Commission's mandate is far narrower. It must determine whether a domestic industry has suffered or is threatened with serious injury from imports, and what remedy, if any, is necessary to prevent or remedy the injury. Whether such a remedy would be consistent with the broader national interest cannot be taken into account in deciding what remedy, if any, to recommend.

In response to Special Trade Representative William Brock's request that the Commission inform the President as to all relevant costs and benefits associated with the Commission's recommendation, I have included a brief discussion on the impact of quotas and tariffs. I am persuaded by the Federal Trade Commission brief and the other economic evidence 24/ that the import relief requested by petitioners would result in a net social welfare loss to the economy of several billion dollars. The loss to consumers which would flow from the import relief recommended by the Commission majority is also far greater than any revenue gain to the domestic steel industry.

Social welfare gain and social welfare loss are terms of art used by economists. They are enumerated in dollars and, to those untutored in economic jargon, may not convey their underlying meaning. The social welfare loss from a quota or tariff represents the real loss to society of the underlying goods and services that could have otherwise been purchased with those dollars. In pondering the large social welfare loss that will result from a quota or tariff, one should be cognizant that the nation, as a whole, net of any gain to the steel industry and its employees, will lose the food, housing, clothing, leisure, and other goods and services represented by these

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24/ See Statement of Eric A. Hanushek, infra, note 25 at 9-11.

billions of dollars. Such prospective losses should evoke appropriate consideration for the vast number of diverse Americans who must shoulder the loss

The statute requires the Commission to recommend an increase or imposition of duty or import restriction "necessary to prevent or remedy the injury" in these industries. Alternatively, the Commission may recommend adjustment assistance if such assistance can effectively remedy the injury. The remedy recommendation must be one that facilitates an orderly adjustment of the industry to its place in a competitive world economy.

Felix Rohatyn, a senior partner of the investment banking firm of Lazard Freres and a witness on behalf of petitioners, argued that the domestic steel industry could become more competitive if it could modernize; that such modernization would cost billions of dollars; and that in light of the poor debt-to-equity ratio of the nation's integrated producers, lenders would not provide sufficient funds to finance the needed capital investments. Mr. Rohatyn concluded that the more favorable cash flow generated by quotas would encourage financial institutions to lend to the steel industry.

If Mr. Rohatyn is correct in assuming that the modernization of plant and equipment presents favorable investment opportunities for the steel industry, the capital market would provide financing. Although there is little doubt that the increased cash flow which could result from import relief would improve the equity portion of the steel producers' balance sheets and make it more likely that they could borrow funds, there are other means by which steel producers could obtain funds. They could issue additional equity or merge with an equity-rich firm outside the steel industry. Alternatively, if the market believes that good investment opportunities exist in the steel industry, but that the managers of large steel firms are not up to their task, then such firms would be ripe for takeover through tender offers or otherwise.

If there is investment in plant and equipment that can be expected to generate a competitive rate of return, then someone, whether it is the current producers or others, will find it in their self-interest to make those investments. To believe that the revenues generated by import relief are necessary to finance this new investment reflects a fundamental misunderstanding of the way in which capital markets operate. If the investment is worthwhile, it does not matter whether the funds used to purchase the investment come from retained earnings, new debentures, bank loans, or new equity ownership. In our highly sophisticated capital market, a project which would ensure the profitable survival of the steel industry would not go unfunded. 25/ It is true that the erection of temporary trade barriers will generate greater earnings for the industry during the period of import restraint. But, by itself, it cannot and should not result in any investment that would not otherwise occur.

25/ *See* Statement of Eric A. Hanushek, Deputy Director, Congressional Budget Office, Before the Subcommittee on Trade Committee on Ways and Means U.S. House of Representatives, 98 Cong., 2d Sess. (June 20, 1984) at 13-14 (arguing that steel companies have had difficulty raising funds because they do not have good investment opportunities and, therefore, such investment would not be in the public interest).

If investment in the domestic industry is not rational because expected costs are likely to exceed expected revenues, then: (1) it is not in the industry's interest to make such investment; and (2) it is not in the nation's interest that the industry does so. If a firm cannot profitably make such an investment, it means that the resources can more productively and profitably be employed elsewhere in the economy. Thus, if import relief is granted, it is clearly in the nation's interest that any increased revenues generated not be reinvested in this industry, unless the firms in the industry would have done so whether they had received the requested relief or not.

If import relief were granted conditioned on some sort of new investment in the industry, we could have the worst of all worlds. If the industry would have invested in new plant and equipment anyway, there is nothing gained by conditioning the relief. On the other hand, if relief is conditioned on investment which was not ceteris paribus profitable, then we would create a prologue to disaster. Several years later, the industry will once more be faced with the decision of whether to replace its capital stock, and there is no reason to believe that this new investment will look any more profitable then. Therefore, the Commission would again be faced with a section 201 investigation to help the same industry.

In addition, there may be another important constraint on providing funds for capital investment in the steel industry. It is likely that labor will appropriate all or part of the returns from the investment. 26/ When making longrun decisions, a firm will invest in fixed capital equipment if it expects to earn at least a competitive rate of return on its investment over

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26/ There is a concept in economic theory known as the appropriation of quasi-rents, which explains why steel firms may not have much success in raising capital. See B. Klein, R. C. Crawford and A. Alchian. "Vertical Integration, Appropriable Rests, and the Competitive Contracting Process," Journal of Law and Economics, October 1978, pp. 297-326.

the life of the equipment. This competitive rate of return is referred to as "the opportunity cost of capital." It is what the firm could earn by investing the funds in the next-best alternative use.

After investing in the plant and equipment, the firm will no longer insist on receiving the same return it originally expected. Once the investment is made, the assets are fixed. They are of little, if any, value in any other use. Thus, even if the firm can no longer expect to receive the same return on investment that it originally expected, it will continue to produce steel as long as it is covering its variable costs.

Those with a contractual relationship to the firm making this investment may, therefore, be able to "hold-up" the firm after the plant has been built and the equipment has been installed by refusing to provide needed services to the production process unless they receive a portion of the return the investing firm had originally expected. 27/

This analysis may be applied to the steel industry. Investors may expect that once the steel industry makes large investments in new plant and equipment, the unions will be in a position to appropriate part of the return the investors expected to receive by demanding large wage increases. Therefore, even if there are favorable investments at the current wage rate, they are likely to become less favorable after the investment. Investors

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27/ This appropriation of the return that the investors had expected to receive results in the firm no longer earning a competitive rate of return. Therefore, assuming, as seems likely, that investors and managers in this industry are not unaware of the probability of this scenario, the investment will not take place at all. Thus investors will choose to invest their wealth elsewhere where they can earn higher returns.

may rationally reject these products after consideration of potential appropriation of the return.

Crafting a remedy for this fundamental problem in the steel industry is beyond our ken; our task is rather to craft a remedy based upon import relief. I make reference to this labor market problem to explain why even if facially favorable investment opportunities have existed in the past or do exist now, they might not and are not being undertaken.

The remedy tools at our disposal are quotas, tariffs, tariff rate quotas, and adjustment assistance. Each is intended as a short-term measure. The question is whether any of these tools either individually or in combination will facilitate an adjustment by this industry to import competition.

A temporary remedy, in order to be effective, must somehow cure or prevent injury. Our task is not to give the domestic steel industry temporary respite which would weaken it, but rather to recommend a form of relief, if one is possible, that will facilitate its orderly adjustment to import competition. The question is whether we can devise a remedy which will leave the industry closer to its longrun position vis-a-vis imports at the end of the relief period than it would have been otherwise.

I do not believe any such relief exists. I can find no tariff or quota that can remedy the injury to the steel industry. The future condition of the steel industry is not dependent on import relief, but rather on the future cost and revenue prospects of this industry. As I indicated earlier in my discussion of the capital market, a temporary increased cash flow is by itself highly unlikely to have any substantive effect on the steel industry.

Although I recommend that the President impose no import relief, I take note that three of my fellow Commissioners have recommended some form of import relief for sheet and strip, semifinished products, structurals, plates, and wire and wire products. If the President should decide to impose import relief for any of these industry groups, I recommend that the relief be conditioned on concessions by labor to ensure that the steel industry becomes more competitive. 28/

I do not think that a Commissioner of the International Trade Commission has the appropriate expertise, incentive, or power to restructure the steel industry. Industrial policymaking is not only philosophically distasteful, it is beyond my expertise and power. Market forces, governed by the independent judgments of the managers, stockholders, bondholders, and other creditors of the steel firms, should determine the shape and prospects of the domestic steel industry. This investigation has, however, revealed two important conditions which interfere with the efficiency of the market. First, labor appears to be earning returns which far exceed their opportunity cost. Second, an imperfection in the marketplace exists that prevents normal market forces from moving labor prices toward equilibrium.

Steelworkers are neither the most highly skilled nor the most highly trained workers in American industry. Yet, over the last 20 years their compensation has risen to a point where they are the most highly compensated

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28/ Felix Rohatyn, a senior partner in the investment banking firm of Lazard Freres, testified on behalf of petitioners at the remedy hearings in this investigation. He stated that any import relief granted should be conditioned upon appropriate concessions.

industrial workers in the country. 29/

During his testimony, the President of the United Steelworkers informed us that there were 200,000 employed steelworkers, 100,000 on layoff, and a further 100,000 who have lost their jobs in recent years, with no realistic prospect of reemployment. As dire as these circumstances sound, they grossly understate the employment problem in the steel industry. There is, in addition to these people, a vast number of people who are not normally counted as unemployed steelworkers who are willing to accept employment and are able to perform the work in the steel industry at wages considerably below the current wage.

The demand curve for labor, like all demand curves, slopes downward and to the right. As wages have risen the industry has made the rational response of cutting back on employment. Substitution of machinery for labor takes time. Even if there are no additional increases in compensation, employment in the steel industry may continue to decline because of lags in the adjustment process.

If the President decides to implement import relief, then I recommend that the President condition such relief on a 20-percent compensation cut to the steelworkers. 30/ Such a concession, though large in percentage terms,

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29/ In 1983, Walter F. Williams, President of Bethlehem Steel Corporation, wrote "There is no question . . . that the most damaging factor [in the decline of the American steel industry] has been the domestic industry's non-competitive employment costs which account for close to one-half of our total cost of doing business." Walter F. Williams, Guest Columnist, Non-Competitive Pay Loss Hurt Steelworkers, U.S.A. Today (January 3, 1983).

30/ This cut may be conservative. Unlike steelworkers in other nations, in the U.S., steelworkers do not represent a manufacturing elite in terms of skill, training, and so forth, vis-a-vis other manufacturing workers.

would do no more than reduce the premium that American steelworkers currently receive over factory workers in this country to the same 30-percent premium that steelworkers receive in the rest of the world. Only with such a concession can the domestic industry hope to be competitive with foreign producers at the end of the period of import relief.

This cut should result in an increase of employment of at least 25,000 workers over what it would have been otherwise. The Congressional Budget Office has estimated that a 15-percent quota would result in a 9-percent increase in the price of steel and an increase in employment of 34,000 workers in the domestic steel industry. 31/ A 20-percent compensation cut would result in a cost saving of at least 5-percent per ton of steel, even if no additional cost savings occurred as a result of substitution of labor for capital. The decrease in cost will cause the domestic supply curve to shift outward and to the right, resulting in an increase in domestic production and a corresponding increase in the quantity of steelworkers employed.

Further, a decrease in compensation will lead management to substitute labor for capital. The longrun employment effects of a substantial wage cut would be even more salutory than a quota because a temporary quota will not induce the kind of longrun investments that will generate a continuing demand for labor. A substantial wage cut that does not terminate by force of law at the end of 5 years is likely to encourage longrun capital investment that would not occur otherwise, requiring the employment of still more labor.

31/ *See* Statement of Eric A. Hanushek, *supra* note 25 at 8-9.

The economic data is not amenable to generating precise predictions as to the longrun employment effects of a 20 percent compensation reduction. Economic theory is unequivocal, however, in its prediction that the longrun responsiveness of employment to changes in wages will be considerably greater than its short-run responsiveness, especially in an industry such as steel that requires substantial physical capital to create its product.

In conclusion, I find that no import relief will remedy the injury to this industry, and I do not recommend any relief. 32/ If, however, the President decides to impose import relief, I recommend that it be conditioned on a 20-percent compensation reduction by steelworkers.

32/ I decline to recommend adjustment assistance in this case, because we are not faced with an industry that is in irretrievable decline due to a clear comparative advantage abroad. If the wage rate in this industry can be lowered, the industry may be able to become competitive once more and employ its currently unemployed workers.

INFORMATION OBTAINED IN THE INVESTIGATION

Introduction

Following receipt of a petition filed on January 24, 1984, on behalf of the United Steelworkers of America, AFL-CIO/CLC, and Bethlehem Steel Corp. (Bethlehem), the United States International Trade Commission instituted investigation No. TA-201-51 under section 201(b)(1) of the Trade Act of 1974 to determine whether the following products of alloy steel (except those of stainless steel, of heat-resisting steel, or of tool steel, but including those of tool steel of the type described in headnote 2(h)(vii) to part 2B of schedule 6 of the Tariff Schedules of the United States (TSUS)) and other than alloy steel, 1/ provided for in the following parts of schedule 6 of the TSUS, are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing articles like or directly competitive with the imported articles:

Products provided for in part 2B:
- Ingots, blooms, billets, slabs, and sheet bars;
- Bars and wire rods;
- Hollow drill steel;
- Plates, sheets, and strip;
- Wire;
- Angles, shapes, and sections, hot rolled, or, if cold rolled, weighing over 0.29 pound per linear foot;
- Sheet piling;
- Rails; joint bars, and tie plates; and
- Pipes and tubes and blanks therefor;

Products provided for in part 3B:
- Barbed wire provided for in TSUS item 642.02;
- Wire strand provided for in Tariff Schedules of the United States Annotated (TSUSA) items 642.1105, 642.1120, 642.1142, 642.1144, and 642.1146;
- Wire ropes, cables, and cordage provided for in TSUS items 642.12 and 642.16;
- Galvanized wire fencing provided for in TSUS item 642.35;
- Bale ties made from wire provided for in TSUS items 642.90 and 642.91; and
- Milliners' wire and other wire provided for in TSUS items 642.96 and 642.97;

1/ The petition states that "The scope of the petition is all carbon and alloy steel mill products, except stainless steel and tool steel products. Besides the basic steel mill products, several 'first tier' fabricated steel products are also included within the scope of the petition because of the direct impact that imports of such products have upon the basic steel industry."

Products provided for in part 3D:
- Brads, nails, spikes, staples, and tacks, of round wire, of one-piece construction, provided for in TSUS items 646.25 and 646.26; and
- Railway track spikes provided for in TSUSA item 646.3020;

Products provided for in part 3F:
- Columns, pillars, posts, beams, girders, and similar structural units provided for in TSUS items 652.94 and 652.96; and

Products provided for in part 6A:
- Railway wheels and axles, and parts thereof, and railway axle bars, provided for in TSUS items 690.25 and 690.30.

Notice of the Commission's institution of its investigation and of public hearings to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, D.C., and by publishing the notice in the Federal Register of February 15, 1984 (49 F.R. 5838). 1/ The hearing in connection with the injury phase of the investigation was held beginning on May 9, 1984, and the hearing on the subject of remedy recommendations 2/ was held beginning on June 21, 1984. 3/ Both hearings were held in Washington, D.C. The Commission must report its determinations and recommendations in connection with this investigation to the President by July 24, 1984.

In addition to its determination under section 201 of the Trade Act of 1974, the Commission is required by legislation implementing the Caribbean Basin Initiative (CBI) to make findings on whether and to what extent its findings and recommendations apply to imports of the subject carbon and alloy steel products from certain countries in the Caribbean Basin area. The CBI is a program of nonreciprocal tariff preferences granted by the United States to developing countries in the Caribbean Basin area to aid their economic development by encouraging greater diversification and expansion of their production and exports. The CBI, as enacted in title II of Public Law 98-67 (the "Caribbean Basin Economic Recovery Act" (CBERA)) and implemented by Presidential Proclamations Nos. 5133 of November 30, 1983, and 5142 of December 29, 1983, provides for duty-free entry of eligible articles imported directly from designated countries in the Caribbean Basin area. 4/ The CBERA applies to merchandise entered, or withdrawn from warehouse for consumption, on or after January 1, 1984, and is scheduled to remain in effect until September 30, 1995.

1/ A copy of the Commission's notice is presented in app. A.

2/ The petitioners requested the limitation of the subject products, "product by product, and country by country, to less than 15% of apparent domestic consumption for all products for at least the next five years."

3/ A list of witnesses appearing at the hearings is also presented in app. A.

4/ The designated CBERA beneficiary countries are as follows: Antigua and Barbuda, Barbados, Belize, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Haiti, Honduras, Jamaica, Montserrat, Netherlands Antilles, Panama, Saint Christopher-Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, and the British Virgin Islands.

Section 213(e)(2) of title II of Public Law 98-67 provides the following:

> In any report by the International Trade Commission to the President under section 201(d)(1) of the Trade Act of 1974 regarding any article for which duty-free treatment has been proclaimed by the President pursuant to this title, the Commission shall state whether and to what extent its findings and recommendations apply to such article when imported from beneficiary countries.

Discussion of Report Format

This staff report was prepared both from information received in response to the Commission's questionnaires and from various secondary data sources, chiefly the American Iron & Steel Institute (AISI), the Department of Commerce, the Securities and Exchange Commission, the International Iron & Steel Institute, and the Organization for Economic Cooperation and Development. International Trade Commission questionnaires were sent to all domestic firms believed to produce steel and to a sample of firms which do not produce steel but which produce some of the carbon and alloy steel products included in this investigation (about 140 firms in total), about 160 firms that import such merchandise, and some 550 firms that purchase these steel products from domestic and/or import sources.

Whenever possible, the data in this report are presented in aggregate form for all carbon and alloy steel products included in the investigation, and separately for the following 9 major groups and 25 subgroups of products:

Group	Subgroup	Brief description
1	1	Ingots, blooms, billets, slabs, and sheet bars;
2	2	Plates;
		Sheets and strip:
	3	Hot-rolled;
	4	Cold-rolled;
	5	Further processed, galvanized;
	6	Further processed, all other;
3		Total sheets and strip;
4	7	Wire rods;
		Wire and wire products:
	8	Wire;
	9	Barbed and twisted wire;
	10	Wire strand;
	11	Wire ropes, cables, and cordage;
	12	Wire fencing;
	13	Brads, nails, spikes, staples, and tacks;
5		Total wire and wire products;
		Railway-type products:
	14	Rails;
	15	Joint bars, tie plates, and track spikes;
	16	Wheels and axles, parts thereof, and axle bars;
6		Total railway-type products;

Group	Subgroup	Brief description
		Bars:
	17	Concrete reinforcing bars;
	18	Other, hot-rolled;
	19	Other, cold-finished;
7		Total bars;
		Structural shapes and units:
	20	Sheet piling;
	21	Light shapes;
	22	Heavy shapes;
	23	Fabricated structural units;
8		Total structural shapes and units;
		Pipes and tubes and blanks therefor:
	24	Oil well tubing, casing, and drill pipe (oil-country goods);
	25	All other;
9		Total pipes and tubes and blanks therefor.

The data obtained from secondary sources and included in this report are usually presented for a relatively long period of time, typically 1964-83, in order to highlight long-run changes that have occurred. The more detailed data obtained from the Commission's producers' and importers' questionnaires are for the last 5 full years, 1979-83, and quarterly price data from the purchasers' questionnaires are for the second half of 1982 and 1983.

With respect to the scope of the domestic industry and the relevant time period to be examined, the petition (on page 7) states the following:

> For reasons stated _infra_ and that will be provided in subsequent briefs, the petitioners believe the Commission should examine the serious injury that has been inflicted on the basic steel mill products industry as a whole. . . . However, because the Commission has in past section 201 investigations adopted a narrower view of the domestic industry being injured, the petitioners have also supplied in the Exhibits to the petition information for the last five full years (and 1983 through November), for certain major product groupings and for certain subcategories within each group. For example, Exhibit 3 to the petition presents information on share of apparent consumption for seven major product groups (and nearly 30 subgroupings) that comprise virtually all of the domestic steel mill products industry.
>
> . . . (T)he domestic industry has been suffering serious injury throughout the time period 1977 to the present. The domestic industry suggests that the Commission consider 1973 to 1976 as a representative time period prior to the industry's serious injury, or that it consider 1964 to 1972 as a representative time period if the Commission finds the shortage and following recession during 1973-1976 cause those years not to be representative.

The Products

Description

All the products covered by this investigation are made of carbon steel or certain alloy steels. The TSUS defines steel as--

> An alloy of iron and carbon which is malleable as first cast. Steel may contain other elements intended to enhance one or more properties and may contain elements unavoidably retained from raw materials, but iron must predominate, by weight, over each of the other elements. 1/

The TSUS further categorizes steel as either alloy steel or "other than alloy" steel. Alloy steel is defined as that steel--

> which contains one or more of the following elements in the quantity, by weight, respectively indicated:
>
> over 1.65 percent of manganese, or
> over 0.25 percent of phosphorus, or
> over 0.35 percent of sulphur, or
> over 0.60 percent of silicon, or
> over 0.60 percent of copper, or
> over 0.30 percent of aluminum, or
> over 0.20 percent of chromium, or
> over 0.30 percent of cobalt, or
> over 0.35 percent of lead, or
> over 0.50 percent of nickel, or
> over 0.30 percent of tungsten, or
> over 0.10 percent of any other metallic element. 2/

The essential equivalent of the TSUS' "other than alloy" category is the steel known in the trade as carbon steel. Carbon steel is the most widely used class of steel, accounting for the largest percentage of total steel production and the widest diversity in application. Its properties are controlled mainly by its microstructure and its carbon content.

Only certain alloy steel products are included in this investigation. Stainless steel, 3/ heat-resisting steel, 4/ and most tool steels 5/ are

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1/ Headnote 2(g), subpt. B, pt. 2, schedule 6.
2/ Headnote 2(h)(ii), subpt. B, pt. 2, schedule 6.
3/ Any alloy steel which contains, by weight, less than 1 percent of carbon and over 11.5 percent of chromium (headnote 2(h)(iv), pt. 2B, schedule 6).
4/ Alloy steel which contains, by weight, less than 0.3 percent carbon and 4.0 percent to 11.5 percent, inclusive, chromium (statistical headnote 1(a), pt. 2B, schedule 6).
5/ Alloy steel which contains the following combinations of elements in the quantity, by weight, respectively indicated (headnote 2(h)(v), pt. 2B,

Footnote 5 continued on next page.

excluded from the scope of the investigation. For the purposes of this report, the term "alloy steel" refers to all alloy steels except stainless steel, heat-resisting steel, and tool steels not described in headnote 2(h)(vii) of subpart B, part 2, schedule 6, of the TSUS.

Ingots, blooms, billets, slabs, and sheet bars.--Carbon and alloy steel ingots are castings resulting from the solidification of molten carbon or alloy steel and having a columnar form suitable for working by rolling or forging. Carbon and alloy steel blooms, billets, slabs, and sheet bars are semifinished products usually made from ingots or by continuous casting. Distinctions among these products are made according to cross-sectional dimensions (with blooms and billets tending to be squarish, whereas slabs and sheet bars are oblong) and size (with blooms larger than billets, and slabs larger than sheet bars). Blooms and billets are generally of rectangular or circular cross section, having a length several times greater than the maximum cross-sectional dimension, and, if rectangular, a width less than four times the thickness. A bloom is at least 36 square inches in cross-sectional area; a billet is less than 36 square inches but not less than 3 square inches in cross-sectional area. Slabs and sheet bars are of rectangular cross section, having a width of at least four times the thickness. A slab is not less than 2 inches and not over 6 inches in thickness; a sheet bar is less than 2 inches

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Footnote continued from previous page.

schedule 6):

(A) not less than 1.0 percent carbon and over 11.0 percent chromium; or
(B) not less than 0.85 percent carbon and 1.0 percent to 1.8 percent, inclusive, manganese; or
(C) 0.9 percent to 1.2 percent inclusive chromium and 0.9 percent to 1.4 percent, inclusive, molybdenum; or
(D) not less than 0.5 percent carbon and not less than 3.5 percent molybdenum; or
(E) not less than 0.5 percent carbon and not less than 5.5 percent tungsten; or
(F) not less than 0.3 percent carbon and 1.25 percent to 11.0 percent, inclusive, chromium, except certain tool steel, known as bearing steel, which is described in headnote 2(h)(vii) of subpt. B, pt. 2, schedule 6 of the TSUS as:

"alloy tool steel which contains, in addition to iron, each of the following elements by weight in the amounts specified:

carbon-------not less than 0.95 nor more than 1.13 percent;
manganese----not less than 0.22 nor more than 0.48 percent;
sulfur-------none, or not more than 0.03 percent;
phosphorus---none, or not more than 0.03 percent;
silicon------not less than 0.18 nor more than 0.37 percent;
chromium-----not less than 1.25 nor more than 1.65 percent;
nickel-------none, or not more than 0.28 percent;
copper-------none, or not more than 0.38 percent;
molybdenum---none, or not more than 0.09 percent."

Products of tool steel described in headnote 2(h)(vii) of subpt. B, pt. 2, schedule 6, of the TSUS are included within the scope of this investigation.

in thickness. Carbon and alloy steel ingots, blooms, billets, slabs, 1/ and sheet bars are provided for in items 606.67 and 606.69 of the TSUS.

Plates.--Carbon and alloy steel plates are defined in the TSUS as flat-rolled products whether or not corrugated or crimped, in coils or cut to length, 0.1875 inch (3/16 inch or 4.76 millimeters) or more in thickness and, if not cold-rolled, over 8 inches in width, or, if cold-rolled, over 12 inches in width. This definition includes flat-rolled products over 12 inches in width and 0.1875 inch or more in thickness, shipped in coils. Such products meet the TSUS definition of "plates" but are considered "sheets" by the U.S. industry for statistical reporting purposes. For the purposes of this investigation, carbon and alloy steel plates include all such plates, whether or not cut, pressed, or stamped to nonrectangular shape, whether or not coated or plated with metal, whether or not clad, and whether or not pickled or cold-rolled, as provided for in items 607.66, 607.69, 607.78, 607.83, 607.86, 607.91, 607.94, 608.07, 608.11, 608.14, 609.14, 609.15, and 609.17 of the TSUS.

Sheets and strip.--Carbon and alloy steel sheets and strip are defined in the TSUS as flat-rolled products, whether or not corrugated or crimped, in coils or cut to length; sheets are under 0.1875 inch in thickness and over 12 inches in width, whereas strip is under 0.1875 inch in thickness and, if cold-rolled, over 0.50 inch but not over 12 inches in width, or, if not cold-rolled, not over 12 inches in width. For purposes of this investigation, all such sheets and strip, whether or not cut, pressed, or stamped to non-rectangular shape, whether or not coated or plated with metal, whether or not clad, and whether or not pickled or cold-rolled, are included. Carbon and alloy steel sheets are provided for in items 607.62, 607.64, 607.67, 607.69, 607.81, 607.83, 607.86, 607.92, 607.93, 607.94, 607.96, 607.97, 607.99, 608.01, 608.07, 608.13, 608.14, 608.19, 608.21, 608.23, 608.31, 306.38, 608.39, 608.47, 608.55, 608.59, 608.67, 609.14, 609.15, and 609.17 of the TSUS.

Wire rods.--Carbon and alloy steel wire rods are the intermediate products from which finished wire is made. The TSUS defines wire rods as coiled, semifinished, hot-rolled products of solid cross section, approximately round in cross section, not under 0.20 inch nor over 0.74 inch in diameter. For the purposes of this investigation, carbon and alloy steel wire rods include all such wire rods, whether or not tempered, treated, or partly manufactured, as provided for in items 607.14, 607.17, 607.22, 607.23, 607.32, 607.41, 607.48, and 607.59 of the TSUS.

Wire and wire products.--Carbon and alloy steel wire is either (1) a finished, drawn, nontubular product, of any cross-sectional configuration, in coils, and not over 0.703 inch in maximum cross-sectional dimension; or (2) a product of solid rectangular cross section, in coils, with a cold-rolled

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1/ Slab is defined in the TSUS as a semifinished product 2 to 6 inches in thickness, of rectangular cross section, having a width of at least four times the thickness. Imports of semifinished carbon and alloy steel slab-like products more than 6 inches in thickness are classified as "plates" under TSUSA items 607.6615 and 607.7803 if they have been rolled from ingots, or as "ingots" under TSUSA items 606.6735 and 606.6944 if they have been continuously cast.

finish, and not over 0.25 inch thick and not over 0.50 inch wide. For the purposes of this investigation, carbon and alloy steel wire includes all such wire, whether or not coated or plated with metal, as provided for in items 609.20, 609.21, 609.22, 609.25, 609.28, 609.30, 609.33, 609.35, 609.36, 609.37, 609.40, 609.41, 609.43, 609.45, 609.70, 609.72, 609.75, and 609.76 of the TSUS.

Certain carbon and alloy steel wire products are also included within the scope of this investigation. They are--

(1) Barbed wire (a wire, or strand of twisted wires, armed with barbs or sharp points), as provided for in item 642.02 of the TSUS.

(2) Twisted barbless wire (a wire strand of loosely twisted double wire, suitable for fencing purposes, not fitted with fittings, not made up into articles, and not covered with nonmetallic material), as provided for in item 642.1105 of the TSUSA.

(3) Wire strand (two or more wires which together constitute one of the parts which are twisted together to form rope, cord, or cordage, not fitted with fittings, not made up into articles, not of brass-plated wire, and not covered with nonmetallic material), as provided for in item 642.11 of the TSUS.

(4) Wire ropes, cables, and cordage (made by the twisting of a number of wire strands and 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 items 642.12 and 642.16 of the TSUS.

(5) Wire fencing (a galvanized product wholly of round wire measuring not over 0.20 inch and not under 0.075 inch in diameter, whether or not covered with plastics), as provided for in item 642.35 of the TSUS.

(6) Brads, nails, 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 items 646.25 and 646.26 of the TSUS.

(7) Wire bale ties, with or without buckles or fastenings and whether or not coated with paint or other substance, as provided for in items 642.90 and 642.91 of the TSUS.

(8) Milliners' wire and other wire covered with textile or other material not wholly of metal, as provided for in items 642.96 and 642.97 of the TSUS.

Railway-type products.--The carbon and alloy steel railway-type products included in this investigation comprise rails, joint bars, tie plates, railway track spikes, railroad and railway (RR) axle bars, and RR axles and wheels and parts thereof, as described as follows:

(1) Rails are hot-rolled carbon and alloy 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 items 610.20 and 610.21 of the TSUS.

(2) Joint bars are hot-rolled carbon and alloy 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 gage, and protect the ties. Joint bars and tie plates are provided for in items 610.25 and 610.26 of the TSUS.

(3) Railway track spikes, of one-piece construction, used to secure tie plates or ties, as provided for in item 646.3020 of the TSUSA.

(4) RR axle bars and RR axles and wheels and parts thereof; as provided for in items 690.25 and 690.30 of the TSUS.

Bars.--Carbon and alloy steel bars are products of solid cross section not conforming completely to the respective specifications set forth in the TSUSA for blooms, billets, slabs, sheet bars, wire rods, plates, sheets, strip, wire, rails, joint bars, or tie plates, and which have cross sections in the shape of circles, segments of circles, ovals, triangles, rectangles, hexagons, or octagons. The term "bars," as used in the TSUS, does not include bar-size shapes, which are classified as light structural shapes. For the purposes of this investigation, carbon and alloy steel bars include deformed concrete reinforcing bars, which are hot-rolled steel bars of solid cross section, having deformations of various patterns on their surfaces, as provided for in items 606.79 and 606.81 of the TSUS, and all other such bars, whether or not cold finished after hot rolling and whether or not coated or plated with metal, as provided for in items 606.83, 606.86, 606.88, 606.91, 606.97, and 606.99 of the TSUS. Also, for the purposes of this investigation, the term "bars" includes hollow drill steel, which is a hollow steel product in any cross section suitable for use in making mining drills or mining drill rods, with the largest internal cross-sectional dimension not greater than one-third of the largest external cross-sectional dimension, as provided for in items 607.05, 607.07, and 607.09 of the TSUS.

Structural shapes and units.--Carbon and alloy steel structural shapes and units comprise the following articles:

(1) Angles, shapes, and sections are nontubular products not conforming completely to the respective specifications set forth in the TSUS for blooms, billets, slabs, sheet bars, bars, wire rods, plates, sheets, strip, wire, rails, joint bars, or tie plates, hot-rolled, forged, extruded, or drawn, or cold-formed or cold-finished, whether or not drilled, punched, or otherwise advanced, and if cold-formed weighing over 0.29 pound per linear foot. Angles, shapes, and sections may be either light structural shapes (bar-size light shapes) having a maximum cross-sectional dimension of less than 3 inches or heavy structural

shapes having a maximum cross-sectional dimension of 3 inches or more; as provided for in items 609.80, 609.82, 609.84, and 609.86 of the TSUS.

(2) Sheet piling, e.g., rolled straight-web, deep-arch, arch-web, and Z-sections having continuous interlocking joints on each lengthwise edge; as provided for in items 609.96 and 609.98 of the TSUS.

(3) Fabricated structural units, including columns, pillars, posts, beams, girders, and similar structural units; as provided for in items 652.94 and 652.96 of the TSUS.

Pipes and tubes and blanks therefor.--The TSUS describes pipes and tubes and blanks therefor as 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:

(1) Oil well products, which include oil well tubing, casing, and drill pipe, all the foregoing conforming to the American Petroleum Institute (API) specifications, as provided for in items 610.32, 610.37, 610.39, 610.40, 610.42, 610.43, 610.49, and 610.52 of the TSUS; and

(2) All other pipes, tubes, and blanks therefor, as provided for in items 610.30, 610.31, 610.32, 610.35, 610.36, 610.37, 610.39, 610.40, 610.42, 610.43, 610.45, 610.46, 610.48, 610.49, 610.51, and 610.52 of the TSUS.

Production processes

In general, steel production comprises the initial making of steel from nonsteel raw materials and/or the reclaiming of the steel in scrap. Steelmaking initially begins with the production of iron--usually in a blast furnace, but also by several processes known as direct reduction. 1/ Iron-

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1/ Direct-reduced iron (DRI) is a porous metallic iron (a common type of DRI is known as sponge iron) which has a significantly lower carbon content than blast-furnace iron but which contains more noniron-bearing substances. DRI is primarily produced through either gas-based or coal-based processes in furnaces which operate at lower temperatures and on a smaller scale than blast furnaces. DRI is regarded by some industry sources as more cost effective than blast-furnace iron because it bypasses the need for cokemaking and sintering. Because DRI is used as a charge component in electric steelmaking, as a complement to scrap, the price of scrap has a direct relationship with the demand for DRI. Although there is currently very little, if any, DRI produced in the United States, some sources regard it as a potentially viable raw material should the price of scrap escalate. Various innovations in DRI production are discussed in the section of this report entitled "New technologies in steelmaking."

bearing materials, 1/ coke, 2/ and limestone are continuously fed ("charged"), in layers, into the top of the blast furnace. As these materials descend, hot air, and sometimes fuel, are blown into the furnace, causing the coke to burn. This generates the gases and heat required to reduce the iron ore to molten form. The molten iron descends to the hearth (or bottom) of the furnace, where it settles. The limestone reacts with the impurities in the iron ore to form slag, which floats on top of the denser molten iron. The slag and molten iron are periodically drawn, or "tapped," from the hearth of the furnace. After separation from the slag, the molten iron is poured into ladle cars which transport the iron to other parts of the steel mill for further processing. The slag may subsequently be used for landfill or roadbeds or to make cement, concrete, or insulation.

Iron is converted into steel in a steelmaking furnace by removing excess carbon and impurities and adding desired elements in controlled amounts. Iron contains over 2 percent carbon and is not malleable, being brittle and limited in shaping ability. Steel generally contains a maximum of 2 percent carbon, is much stronger than iron, and can be shaped and rolled into a variety of products.

The three major types of steelmaking furnaces are the open-hearth furnace, the basic-oxygen furnace (BOF), and the electric furnace. Until 1968, open-hearth furnaces accounted for over one-half of the raw steel 3/ produced in the United States. Since then, the share produced by the open-hearth method has declined sharply, whereas the shares produced first in the BOF's and later in the electric furnaces have increased. 4/ The following tabulation shows the shares of total U.S. raw steel production accounted for by each of the three types of furnaces during 1974-83 (in percent): 5/

1/ Iron, which makes up 5 percent of the earth's crust, is found in varying concentrations in numerous minerals (or ores). The principal ores from which iron is taken for steelmaking are hematite, magnetite, limonite, and goethite. Other iron-bearing materials include sinter and pellets, which are agglomerations of iron ore and other materials such as binders and fuel.

2/ Coal provides the needed fuel for steelmaking in the form of coke. Coke is a hard and nearly pure carbon product that is converted from coal in coking ovens. Unlike coal, it possesses properties that make it suitable for steelmaking. It has the ability to burn inside and outside, to retain its strength under the weight of iron ore and limestone, and to burn without fusing.

3/ Raw steel, as defined by the AISI, is steel in the first solid state after melting suitable for further processing or sale, including ingots, steel castings, and strand or pressure-cast (i.e., "continuously cast") blooms, billets, slabs, or other product forms.

4/ The increase in production in electric furnaces is largely the result of the rapid growth in the number of nonintegrated steel mills that do not have blast furnaces to produce iron.

5/ Compiled from data of the AISI.

	Open-hearth	Basic-oxygen	Electric
1974-------------------	24.3	56.0	19.7
1975-------------------	19.0	61.6	19.4
1976-------------------	18.3	62.5	19.2
1977-------------------	16.0	61.8	22.2
1978-------------------	15.6	60.9	23.5
1979-------------------	14.0	61.1	24.9
1980-------------------	11.7	60.4	27.9
1981-------------------	11.1	60.6	28.3
1982-------------------	8.2	60.8	31.0
1983-------------------	7.0	61.5	31.5

Steelmaking begins when molten iron and/or iron and steel scrap and limestone or other fluxes are charged into one of the steelmaking furnaces, where they are heated to high temperatures, burning off excess carbon and other impurities as gases, and forming molten steel and slag. Samples of the molten steel "heat" are taken and run through a series of tests, which are important not only in determining when the chemical composition of the steel is correct but also for recordkeeping, because steel mill products are typically identifiable back to the furnace heats. The molten steel and slag are poured or tapped from the furnaces, and the molten steel heat is placed in a ladle for conveyance to other parts of the steel mill for further processing. Desired alloying elements may be added to the heat in the furnaces, in the ladle, or later in the mold, usually depending on their relative ease of oxidation compared with iron. For example, copper or molybdenum may be added with the charge or during the furnace heat, whereas aluminum and vanadium, which are more readily oxidized, would be added in the ladle. In steelmaking, the excess carbon is removed by oxidation. Any available oxygen not removed will form bubbles or pockets during the solidification process. The addition of aluminum or silicon is frequently used to "kill" the steel--resulting in only slight evolution of gases during the solidification process and a more uniform chemical composition throughout the steel. All alloy steels are killed, as are some carbon steels. Nonkilled carbon steel is generally referred to as "rimmed" steel.

The oldest and least efficient type of furnace is the open-hearth, so named because the limestone and scrap and/or molten iron are charged into a shallow steelmaking area (the hearth). The charge is then melted by burning fuel oil, tar, or gases. In recent years this process was modified by the introduction of oxygen, which significantly accelerates an otherwise relatively slow process. Finished steel and slag are drawn from the furnace through a tap hole into ladles and the slag is removed. The use of open-hearth furnaces has declined in steelmaking due to its slow production cycle. Although capable of producing large heats (up to 600 tons), a typical heat in an open-hearth furnace requires 5 to 8 hours, whereas a typical heat in a BOF (up to 300 tons) requires only 45 minutes and a typical heat in an electric furnace (up to 350 tons) 2 to 3 hours. However, the open-hearth furnace is the most versatile of the furnaces with regard to raw material input and can be operated using varying amounts of molten iron and/or steel scrap. The open-hearth furnace can also melt larger pieces of scrap which would require more preparation--e.g., cutting into pieces--before being used in either a BOF or electric furnace.

In the BOF steelmaking process, the cup-like furnace is charged with scrap and molten iron through a large opening in the top. Typically, a cooled "lance" is lowered near the charge surface. Lime and other fluxes are added as oxygen is blown through the lance under extremely high pressure. The oxygen and fluxes react with the carbon and other unwanted elements, separating these impurities from the molten charge as gases or slag and converting the remainder to steel. Modifications of the basic BOF include bottom blowing of inert gases to stir the molten charge and bottom--rather than top--blowing of oxygen. After the lance is withdrawn, the furnace is tilted downward and the molten steel poured through a tap hole into ladles. The slag is later removed by rotating the furnace and pouring it out of the large top opening.

The electric steelmaking furnace uses electrodes to make molten steel. Unlike open-hearth and basic-oxygen furnaces, this furnace does not use molten iron from the blast furnace for its charge. Instead, it is charged only with iron and steel scrap or DRI. Typically, three electrodes are lowered to just inches above the charge and electric currents are arced from one electrode into the charge and from the charge to another electrode, thereby melting the charge. Limestone and other fluxes are added to the molten steel to remove the impurities, forming slag--some or most of which can be drawn off--after which the furnace is tilted to pour the molten steel through a tap hole into ladles.

Ingots, blooms, billets, slabs, and sheet bars.--After the molten steel has been tapped from the steelmaking furnaces into ladles, it is usually solidified into a manageable shape by one of two methods: (1) individual casting in contained molds, e.g., ingot molding, 1/ or (2) continuous casting of blooms, billets, slabs, or sheet bars through open-ended molds. In ingot molding, molten steel is poured into ingot molds and allowed to cool, solidifying from the outside in toward the center. When the steel is solid enough, the mold is removed, or stripped, from the ingot. Stripped ingots are then generally reheated (in soaking pits) and rolled into semifinished blooms, billets, slabs, or sheet bars.

Continuous (or strand) casting is a technology through which the making and reheating of ingots is bypassed in the production of blooms, billets, and slabs. In this process, molten steel flows from the ladle into a reservoir called a tundish. The tundish allows the molten steel to flow evenly 2/ and continuously through a water-cooled, copper-lined mold where it begins solidifying from the outside in toward the center, before passing through a series of water sprays which complete the solidification process. The strand of steel is moved from the mold through a series of pinch rollers, which serve

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1/ Although ingots make up the bulk of contained-mold-cast steel, a small quantity of molten steel is cast into other products. One such product included within the scope of this investigation is cast RR wheels. Also, at least one U.S. producer, under license from a foreign firm, uses a process of noncontinuous slab casting whereby the molten steel is pressure cast directly from the ladle into slab molds.

2/ Cast steel must be killed to prevent solidification of the molten steel in the tundish as it is slowly being poured into the strand caster.

to guide rather than shape the steel, to torch or blade cutters which cut the blooms, billets, or slabs to length. Continuous-cast semifinished products are generally regarded as higher quality products than ingot-cast semifinished products because they have undergone less chemical segregation during solidification. Continuous casting is also more energy efficient per ton of steel produced and has less waste material per heat than does ingot casting. The semifinished products are inspected for defects that may have arisen from the heating, rolling, and casting of the steel, and then sent to finishing mills for conversion into finished steel products.

Plates.--The production of carbon and alloy steel plates, which are flat-rolled steel mill products, typically begins with the uniform reheating of slabs in continuous or batch-type furnaces. The slabs, which usually enter the furnaces cold, are heated to their rolling temperature of approximately 2,400° F, sent through a scalebreaker for the removal of furnace scale (iron oxide formed on the surface of the hot steel during the heating process) by the use of hydraulic water sprays, and then rolled into plates. Plates are produced in various types of mills, including universal mills, sheared-plate mills, and hot-strip mills. Universal mills are characterized by vertical rolls preceding and following horizontal rolls. In these mills, only the length of the plates is increased, as the vertical rolls control the width. Consequently, only the ends of the plates need to be trimmed. Sheared-plate mills, on the other hand, roll plates only between horizontal rolls, thereby increasing both the width and length of the product while reducing its thickness. Later, all the edges are trimmed. Sheared-plate mills are generally classified as either reversing, semicontinuous, or continuous. In a typical reversing mill, slabs are reduced to their final plate thickness by being passed back and forth through a set of work rolls in a "four-high" reversing stand. These work rolls are slightly crowned and supported by backup rolls, which provide added strength to the work rolls and help reduce roll wear. In semicontinuous plate mills, slabs are usually passed from the scalebreaker through a reversing roughing stand (usually a four-high mill) and a series of single-pass finishing stands. In continuous plate mills, slabs receive only a single pass through first a roughing mill, usually consisting of several roughing stands, and then a finishing mill, typically having four to six finishing stands. Semicontinuous and continuous plate mills have several advantages over reversing mills; for example, the tonnage capacities per unit of time of the former are generally greater, and their roll wear is less, thereby reducing replacement time. Hot-strip mills roll plates in the longitudinal direction of the slabs. The slabs are roughed down in one or more roughing stands and sent to several close-spaced, in-line, progressively reducing finishing stands to attain the desired thickness. Hot-strip-mill plates may be cooled and cut to length or coiled (for later uncoiling and cutting to length).

After leaving the plate mills, the plates are usually divided according to their thickness. Thicker plates require trimming by gas flame whereas thinner plates can be sheared. Before shearing, the thinner plates are generally cooled by top and bottom water sprays and then flattened by a leveler. The effectiveness of the flattening is increased by decreasing the thickness of the plate and increasing the temperature. The surfaces of hot-rolled plates may be treated by such methods as (1) removal of surface scale or oxide, chemically by pickling with a dilute acid or mechanically by blast cleaning with sand or grit; (2) oiling to give temporary rust protection to the pickled or blast-cleaned plates; and (3) painting to give more permanent rust protection. Further processing of plates includes cold finishing 1/ to improve surface finish or increase strength; cladding, 2/ coating, or plating with other metal; 3/ or cutting, pressing, or stamping to nonrectangular shape.

Sheets and strip.--Hot-rolled carbon and alloy steel sheets and strip are flat-rolled steel mill products that are produced from slabs in much the same way as plates on hot-strip mills (discussed above). After heating and descaling, slabs are roughed down to a predetermined intermediate thickness on roughing stands, and then sent to a series of finishing stands where further reductions are made. A typical continuous mill for hot rolling will have four or five roughing stands and five to seven finishing stands. As the product is reduced in thickness, it is increased in length, with each succeeding set of rolls being rotated at a higher rate of speed to compensate for the elongated sheet. Water sprays at various locations cool the metal and remove oxide from the hot sheet surface. Upon reaching final thickness, the hot-rolled material has cooled to about 1,200° F. The product is then coiled or cut into shorter lengths and stacked. Strip may either be rolled to the desired width or made by cutting hot-rolled sheets to size. If desired, the sheets and strip, like plates, may then be surface treated (e.g., cleaned by pickling or oiled) or further processed.

Commonly used methods of further processing sheets and strip include (1) cold rolling through a series of rollers to further reduce the thickness, improve surface finish, and/or increase strength or hardness; and (2) coating with zinc, tin, or other metals. After cold rolling, the sheets and strip are usually annealed (heat treated) to reduce the hardness or brittleness resulting from cold rolling. After annealing, the sheets and strip may be further cold-rolled, if desired. Several processes in the production of sheets and strip (e.g., annealing, pickling, galvanizing, and tinplating) are, or may be, done continuously, thereby increasing efficiency, increasing quality, and/or decreasing scrap generation. The processes are done "continuously" by welding the end of one roll to the beginning of the subsequent roll. Because it is important for the processing to continue at a constant speed rather than pausing during the weld time, a series of take-up loops is usually incorporated in the system design.

Wire rods.--The traditional method of making carbon and alloy steel wire rods is the ingot method, whereby ingots are rolled into billets which are

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1/ The term "cold formed" is generally used interchangeably with "cold finished." The latter term is in greater usage in the industry and is utilized in this report; the former tracks the terminology of the TSUS.

2/ Clad plates are composite-plate products consisting of two metals which have been integrally bonded together. They were developed to combine the corrosion resistance of cladding metals--such as stainless steel, nickel and nickel alloys, and copper and copper alloys--with the strength of carbon or alloy steel backing materials, thereby reducing the usage of the more expensive cladding metals.

3/ Coated or plated plates are primarily those that have been coated with zinc (galvanized) for protection against corrosion.

then transferred to the rod mill. Wire rods produced by this ingot method may be either rimmed or killed. Continuous casting may also be used to produce the billets used to make wire rods, but such rods usually suffer some loss of ductility. 1/ Billets produced by both processes are then converted into wire rods by a hot-rolling process. The first step is the heating of the billet in the reheat furnace to uniform temperatures of 2,200° F to 2,400° F. Billets are then moved into the roughing, intermediate, and finishing stands which reduce them, at exiting speeds of up to 15,000 feet per minute, to predetermined diameters. A typical billet will produce about 4.5 miles of 7/32-inch diameter wire rod. After exiting from the last finishing stand, the rods are coiled into concentric loops on a conveyor, which moves the hot wire rods along while they cool. The speed at which the wire rods cool affects their metallurgical structure, which may be modified according to the various intended uses of the wire end product. The loops of wire rods are fed into various devices, depending on the particular plant, and collected into coils which are compacted, tied, and readied for shipment. The timespan from the exiting of the billets from the reheat furnace to the loading of the finished coils may be as short as 10 minutes.

Wire and wire products.--Carbon and alloy steel wire is produced from descaled, coiled wire rods (or bars with an approximately round cross section) by drawing the rods through a die or series of dies. Generally, the ends of successive wire rods are welded before drawing to provide a more continuous process. The end of a wire rod is tapered, inserted through a die (typically consisting of a steel ring encasing a hard, wear-resistant carbide nib), and attached to a power driven capstan (or spool). The capstan pulls the wire rod, usually lubricated with soap, grease, or the like, through the carbide nib of the die, stretching it, and thereby reducing its cross section, and rewinding it. Precision drawing to small-diameter wire is accomplished by passing the wire through progressively smaller dies, with as many as 20 die positions at one machine. Heat treatment to reduce brittleness from cold working and increase ductility of the wire is usually required at one or more stages in the production process. The cold drawing through the dies, plus the lubricant used, gives the wire its finish, or it may be coated with other metal.

Barbed wire and twisted wire are made in a machine into which two wires are fed and twisted around each other evenly under tension. In the case of barbed wire, a third wire (and a fourth, in the case of four-pronged barbed wire) is fed in from the side, wrapped around one and/or both of the two twisted wires, and cut into points, thereby forming the barbs.

1/ Wire rods produced from continuous-cast billets will always be killed. Since the killing process also results in increased levels of nonmetallic inclusions (residuals), a killed steel will be inherently less ductile than a rimmed steel of the same carbon content, and conversely, will possess a higher tensile strength. Because wire rods are the semifinished products from which wire is produced, ductility can be a very important factor. Thus, wire rods produced from continuous-cast billets, although more economical to produce, are sometimes not preferred where greater ductility is required or desired. Rimmed wire rods can provide a greater yield and normally result in less die wear for the wire drawer.

Wire strand is two or more wires twisted together precisely around a center so that all the wires in the strand can move in unison in order to equally distribute load and bending stresses. This is usually accomplished by using a single wire as the center. Stranding machines unreel individual wires and lay them together spirally around the center to make a strand. The strand may be heat treated at this stage to relax the stresses built up in the individual wires as a result of the drawing or stranding process.

Wire rope is produced by essentially duplicating the stranding process using wire strands instead of single wires. The wire strands are twisted together spirally around a center to produce the rope. The final operation is called closing. It is accomplished by a preforming head where the strands are passed over rollers before they enter the closing die. The preforming allows the strands to lie in the rope without stress. The closing die then presses the strands together and the rope is thus formed.

Wire fencing is made from wire by a number of processes. Typically, wire fencing is woven, welded, or chain linked. Woven wire fencing is made by twisting or knotting wires together in specific mesh patterns; this can be done with mostly continuous wires, forming a hexagonal pattern, or by connecting long (horizontal) wires to shorter (vertical) wires with very short knotting wires, forming a rectangular pattern. Welded wire fencing is made by laying wires together in rectangular patterns, typically without weaving or twisting the wire, and then welding the wires together at the intersections using heat and pressure. Chain link fencing is made by first bending wire into a zig-zag shape, weaving it into another similarly shaped wire, cutting the wire to the desired height of the fencing, closing the cut wire by twisting or crimping, and then repeating the procedure.

Nails are produced by drawing wire through a nail machine, where the head is formed. It is then pushed through the machine until the nail is of the desired length, at which time it is pinched to form a point and then cut. The nail is then expelled and collected for tumbling or for further finishing; the most common finishing is coating with such materials as zinc, resin, cement, or vinyl to prevent rust and/or improve holding ability. Brads, tacks, and spikes are all made in a similar manner. Staples are made from wire in a staple-making machine, which bends the wire into a U shape and cuts the ends into points. Coatings, such as those described above for nails, may be applied to the wire before forming the staple, or to the staple itself.

<u>Railway-type products</u>.--Carbon and alloy steel rails are produced by direct rolling of heated ingots or by reheating and rolling blooms. If the rails are directly rolled from ingots, an in-process reheating may also be required. The rails are shaped by passing the ingots or blooms through a series of rollers which progressively alter them into the contours and shapes desired. After rolling, the rails are sawn to length and usually control cooled to prevent the formation of bubbles in the steel. After cooling, the rails are straightened. Further processing, such as drilling bolt holes, beveling the corners of the ends, and heat treating may be required.

Carbon and alloy steel joint bars and track plates are produced from hot-rolled sections, or structural shapes, which have been made from heated billets or blooms by running them through a series of rollers, progressively forming the contour of the joint bar and track plate sections. In addition to shearing or sawing to length, the joint bars and track plates are punched with holes for bolts and spikes, respectively. RR track spikes are made from hot-rolled steel bars; they have a head formed by hot forging and a pointed cut at the bottom end. Screw-style spikes are also made from hot-rolled bars, but have forged heads designed for use with a socket wrench. The shank of the screw spike is hot-rolled to produce a coarse-pitched thread.

RR wheels may be cast or wrought. Wrought wheels are produced from blocks of carbon steel of the proper weight to form the specific wheel. The block is then progressively forged, roughly shaping the wheel blank, which is then center punched. The wheel blank is rolled to progressively increase the diameter to a specific size; after rolling, the wheel blank is pressed to give it a conical shape. The wheel, which may have been reheated several times during processing, may be control cooled, heat treated, and/or machined, if required. Cast wheels are produced by pouring the molten steel into a mold, rather than forging to shape.

Carbon and alloy steel RR axles are forged from hot blooms of the proper size and weight. Forging is done by conventional power drop forge equipment or, more commonly, by automatic forging machines wherein the axle is formed by simultaneously striking the bloom with hammers as it is rotated and positioned. The axles are straightened, if necessary, and cut to length. Further processing includes heat treating and machining, as required.

Bars.--Carbon and alloy steel bars are hot rolled from ingots, blooms, or, more commonly, billets; they can also be produced from old rails, axles, and other reclaimed products. The billets or other products are first heated to a uniform temperature and then proceed to a series of shaping rolls that form the steel into the desired shapes and sizes. Because of the numerous cross sections and sizes required, hot-rolled bars are produced in mills specially designed to roll a variety of sections and sizes. After being hot rolled, the bars are coiled or cut to standard lengths which are subsequently straightened. Hot-rolled bars may be round, oval, square, round-cornered, hexagonal, rectangular, and so forth, according to the desired end use. The hot-rolled bars may be further processed by pickling to remove scale, heat treating to reduce brittleness, coating or plating with metal, and/or cold finishing. Cold-finished bars have been subjected to such finishing processes as turning, centerless grinding, or cold drawing to further shape the bars to closer tolerances, give them a finer surface finish, or strengthen them. After cold finishing, the bar is generally cut to standard straight lengths by hot shearing, hot sawing, or other means, depending on its size, cross-sectional configuration, and grade of steel. There are two major grades of carbon steel bar, merchant quality and special quality, with the latter being manufactured to more rigorous chemical and physical specifications.

Structural shapes and units.--Carbon and alloy steel angles, shapes, and sections (structural shapes), and sheet piling, are products typically produced by passing hot ingots or semifinished products such as blooms and billets through a series of grooved rolls. The rolls shape the products to desired contours and dimensions, making them identifiable from other finished steel products by their cross-sectional configuration and shape. Such products usually consist of flat surfaces at angles to each other and, in the case of sheet piling, possessing interlocking joints on both edges. Structural shapes include a variety of shapes, notably wide-flange beams, H-piles, I-beams, angles, channels, bulb angles, tees, and zees. Standard shapes such as angles, channels, and standard beams are produced on structural mills, where the type of product is determined by the shape of the pass grooves. These differ from structural mills used for producing wide-flange beams and H-piles, which are equipped with supplementary vertical rolls and horizontal edging rolls. Structural shapes may also be forged, extruded, or drawn, to shape. Hot-processed structural shapes may subsequently be pickled, heat treated, or cold finished.

Pipes and tubes and blanks therefor.--Carbon and alloy steel pipes and tubes and blanks therefor (semifinished pipes and tubes) are usually either seamless or welded, although some are jointed, with the edges fastened together mechanically. Seamless pipes and tubes are produced by either rotary piercing and rolling or by extrusion. In the rotary-piercing process, solid round billets are heated to forging temperature and then passed through one or more piercing mills, where the billet centers are pierced and the outside surfaces are worked by rollers. Since the rollers rotate in the same direction, the steel is caused to flow spirally over and around the piercer-point. The seamless hollow billets thus produced are then reheated, if necessary, and elongated, reducing the wall thickness. Initial stages of elongation and wall reduction are done by passing the hollow billets through a series of rollers while supporting or shaping the center by a plug or mandrel, depending on the type of mill used. The elongated steel may be further rolled without internal support to specified outside diameter size or may be stretch-reduced if substantial outside diameter reduction is required. Extruded seamless pipes and tubes also begin with hot, round billets which are typically pierced by a mandrel and then hot-extruded through a die, which forms the outside diameter of the pipe or tube while the mandrel forms the interior diameter.

Welded pipes and tubes are typically made by passing plates, sheets, or strip through a series of forming rollers which shape them into cylindrical forms. The cylinders may be formed running the length of the flat-rolled products or spirally, enabling the production of very large pipes and tubes. The cylinders may be either cold formed or hot formed after heating the flat-rolled products in a furnace. If cold formed, external heat is required to effect the weld, either by connecting the cylinder edges using molten metal from a welding rod (as in the submerged-arc-weld process) or by heating the cylinder edges to a very high heat with an electric resistance welder and forcing the edges together under pressure. Hot-formed cylinders are typically made from a continuous (or butt-weld) process whereby flat-rolled sheets are welded end to end, heated in a furnace, and passed through rollers which shape the cylinders and press the hot edges together, forming the weld. However formed, pipes and tubes may be further advanced by such processes as annealing to reduce brittleness, cold drawing to a variety of shapes, surface finishing of both the inside and outside surfaces, and threading.

New technologies in steelmaking

Direct reduction of iron.--As discussed earlier, direct reduction is a process that converts any of a variety of iron ore forms into a type of sponge iron. Whereas current blast-furnace technology requires the use of coke as a fuel and results in molten iron, the direct-reduction process produces a solid, metalized product, and does so without the use of coke. In its place, coal or gas is usually used.

One new direct-reduction innovation is the Calderon Ferrocal ironmaking process, which was invented by an American. This process allows any grade of coal to be mixed with any type of iron ore, including the low-iron-content taconite ores that are common in the United States. The mixture of ore and coal (and limestone) is fed into numerous vertical tubes, or cells, which are enclosed by a tower imbedded with induction coils. These coils heat the cells, causing solid-state reduction of the iron ore and coal gasification. Coal gasification produces hot gases which rise through the tower and preheat the next batch of ore and coal being fed into the cells. Any heat that is left over can be processed and sold or used for heating and electrical generation at the plant. The solid metallic iron product is periodically pushed into a holding vessel of liquid iron where slag is formed and impurities removed. Because the end product in this process is liquid iron, it is a technology that has potential applications for both integrated and nonintegrated steel producers. 1/ The Calderon Ferrocal process is energy efficient and is an environmentally sound system. A pilot plant has been designed, but there is currently no commercial steelmaking capability.

Another development in direct-reduction technology is being tested in Sweden by SKF Steel. SKF utilizes plasma technology to produce DRI. Plasma is a gas generated from inert or reactive gases which lose electrons when heated to 5,500° F by a plasma generator. Plasma generators provide the heat that is channeled to the plasma arc heaters for the direct reduction of the iron. Plasma generators are considered ideal for meeting strict environmental regulations since they burn off all ash, sulfur, and carcinogens. They are also able to be fueled by a variety of materials, such as coal, natural gas, oil, peat, woodchips, or charcoal.

In a process called plasmared, direct reduction of iron produces the usual sponge iron. A hybrid process of direct reduction, called plasmasmelt, has also been developed by SKF, however, which takes place in a blast furnace and produces molten iron. It requires no coke or sinter, but instead can use coal and iron-ore fines in their place. This process may be especially attractive to smaller steel producers because a plasmasmelt facility can be economical to operate at 250,000 tons a year, whereas a blast furnace must reach the 2-million-ton level for efficient operation. In addition, the capital investment is about half that required for a new blast furnace. It is claimed that if an existing blast furnace were converted to plasma technology, it could triple production and reduce manufacturing costs by 20 percent.

1/ See the section of this report entitled "U.S. Producers" for a discussion of the characteristics of integrated and nonintegrated steel producers.

The increasing price of natural gas has made direct-reduction processes based on other fuels more attractive in recent years. In addition to SKF's method, other direct-reduction processes that do not rely upon natural gas are the Inred and Elred processes developed by Boliden, a Swedish firm; the KR process of Korf (West Germany); the high-pressure direct-reduction process by Nippon of Japan; and the plasma process of Stelco (Canada).

It should be noted that direct-reduction processes are not without disadvantages. These systems have higher energy requirements than do blast furnaces, and many cannot be built as large as today's blast furnaces. In addition, reduction processes that produce solid metal cannot act as a complete substitute for those that produce hot metal as a charge to basic-oxygen furnaces. Even in electric-arc furnaces, for which DRI is better suited, the scrap must meet certain specifications or the charge can damage the furnace.

Direct steelmaking.--This is a field of endeavor which is still principally in the planning stages. A direct steelmaking process is one in which steel would be produced in one reactor/furnace, thereby circumventing the current two-step process of producing iron in one furnace and then converting the iron into steel in another furnace. The development of such a system would expand the range of acceptable raw materials for use in the steelmaking process and, at the same time, would reduce environmental problems.

Serious problems remain to be overcome before direct steelmaking can become practical. With one reactor doing the work of two present-day furnaces, stronger wall refractories will be needed to retard the inevitable chemical reactions so that a consistently high-quality steel can be produced. Even then, however, engineers must match the flexibility of today's furnaces in producing a large volume and wide variety of steel grades. Given these obstacles, it is not likely that direct steelmaking will be of commercial significance in the 1980's.

Continuous casting.--Vertical continuous casting is just being widely adopted in the United States, but already some steel analysts believe it to be outdated and inferior to the potential of horizontal casting. According to these analysts, vertical casting has some inherent disadvantages. For example, it requires a substantial capital outlay to provide a building tall enough to house the caster and its attendant structure. Vertical casting has also been criticized because some believe that the curvature to which the steel is subjected may affect the quality of the final steel product. Finally, it is argued that vertical casters are relatively slow and inefficient to the extent that excessive heat losses occur.

In horizontal casting, the liquid steel flows from the tundish into a horizontal mold. Because there can be no gap between the tundish and the mold in horizontal casting, oscillation (as done in vertical casting) is not possible. Instead, sticking is prevented through a process of drawing the solidified metal out of the mold in intermittent starts and stops.

Some industry analysts argue that the operation of horizontal casting has certain volume limitations, but others believe that research and development can improve the system and make it practical for casting slabs. The adoption of horizontal casting in the production process would mean that, with the proper layout, the entire hot-rolling procedure could be performed from start to finish without interruption. Unfortunately, such a layout would probably require so much space that it would be virtually impossible to install as a conversion in the existing plants of the major steel producers and would require a greenfield operation. 1/

Another casting method, the research and development for which would be costly, is direct casting. This would entail pouring liquid steel into thin-gage molds, where it would then be ready for final rolling into thinner gages. This would effectively eliminate the need for the expensive rolling equipment now necessary to reduce a slab to plate or sheet. The advantage of the current rolling process is that the properties and gages of steel products can be controlled. In a direct-casting process, some of this flexibility would be lost.

A technological breakthrough in continuous casting could occur within 5 years that could be particularly advantageous to the nonintegrated producers. It is possible that a continuous caster will be developed that can produce slabs with a thickness of only 1-1/2 inches. To date, the nonintegrated firms have not produced sheet products because of the cost of investing in rolling machines capable of reducing a 6-inch slab into thin-gage sheet. The development of the 1-1/2 inch caster, however, would markedly reduce the investment required, thereby enabling nonintegrated producers to become cost-effective producers of sheet products. One chief executive officer of a major nonintegrated producer stated that if the technology came on line, his firm would wait until it could produce a sheet product for about 20 percent less than could the integrated firms before entering the market. The possibility of nonintegrated firms producing low-cost, commercial grade sheet products could have a significant impact on the steel industry as these mills expand their product range and increase their market shares.

Powder rolling.--In the 1970's an American firm developed and successfully operated a pilot line which could roll sheet products directly from iron powder. The iron powder was produced from steel scrap, but because of the escalating price of scrap in the mid-1970's, the firm was forced to drop the project in 1975.

Since that time, a process has been devised that allows quality iron powder to be produced directly from iron ore at a relatively low cost. In this process, the ore undergoes magnetic separation, grinding, chemical leaching, filtering, and reduction in order to produce a porous powder which compacts easily with cold compression. This direct-reduction process produces a powder that easily "welds" together during heating and, consequently, exhibits a paucity of surface oxides. This eliminates the problems of reoxidation and scaling, and dispenses with the need for pickling.

Current powder-rolling technology is limited to low-carbon steel production. For the immediate future, feasible use of this technology will probably be limited to nonintegrated firms that desire the capability and flexibility to produce sheet and strip products.

1/ A greenfield operation is one built "from the ground up."

Annealing.--Annealing is a process used to heat and cool certain steel products to render them less brittle. Many of the final products subject to annealing are destined for use in the automobile industry. Until recently, annealing was a time-consuming process, with the work having to be done on a batch basis. Continuous annealing lines utilize the most recent technological advances in the field to do in 10 minutes a job that took 5 to 10 days in the old batch process. Bethlehem and Inland Steel Co. (Inland) are the only two U.S. firms currently operating continuous annealing lines. Other firms may follow in the future, but many are reluctant to invest immediately for two reasons. First, a continuous annealing line is expensive (over $50 million) and by nature generates a large amount of capacity, which some industry executives believe may not be justified until a stronger and steadier demand for high-strength automotive steel is generated. Second, with limited funds available for capital expenditures, priority is more likely to be given to investment in continuous casting facilities.

U.S. tariff treatment

Imports of the carbon and alloy steel products included in this investigation are classified for tariff purposes under various items in parts 2, 3, and 6 of schedule 6 of the TSUS. The current column 1 (most-favored-nation) rates of duty, 1/ final concession rates granted under the Tokyo round of the Multilateral Trade Negotiations (MTN) (which are also the rates of duty for least developed developing countries (LDDC's)), 2/ and column 2 rates of duty 3/ for the products included in this investigation are shown in appendix B. As indicated, imports of these products are currently dutiable at column 1 rates ranging from free to 10.3 percent ad valorem and column 2 rates ranging from free to 45 percent ad valorem. Also, as indicated, certain alloy steel products are subject to additional cumulative duties on their chromium, molybdenum, tungsten, and/or vanadium content. 4/ Imports of certain plates,

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1/ The col. 1 rates are applicable to imported products from all countries except those Communist countries and areas enumerated in general headnote 3(f) of the TSUSA. However, these rates would not apply to products of developing countries where such articles are eligible for preferential treatment provided under the Generalized System of Preferences (GSP) or under the "LDDC" column. Col. 1 rates are currently afforded to imports from Romania, Hungary, and the People's Republic of China.

2/ Final concession rates granted under the Tokyo round of the MTN are the result of staged duty reductions of col. 1 rates which began Jan. 1, 1980. These reductions will occur annually, with the final rates becoming effective Jan. 1, 1987. LDDC rates are preferential rates (reflecting the full U.S. MTN concession rate for a particular item without staging) applicable to products of those LDDC's designated in general headnote 3(d) of the TSUSA which are not granted duty-free treatment under the GSP.

3/ The rates of duty in col. 2 apply to imported products from those Communist countries and areas enumerated in general headnote 3(f) of the TSUSA.

4/ These alloy steel products are defined in headnote 4, subpt. B, pt. 2, schedule 6, of the TSUSA; the additional cumulative duties are provided for in items 606.00, 606.02, 606.04, and 606.06 of the TSUS.

sheets, and strip (TSUS items 609.14 and 609.15); certain ropes, cables, and cordage (TSUS item 642.16, except if a product of the Republic of Korea); and railway track spikes (TSUS item 646.30) are eligible for duty-free entry under the Generalized System of Preferences. 1/ Imports of all other carbon and alloy steel products included in this investigation are not eligible for such GSP treatment. As indicated previously, imports of all the subject carbon and alloy steel products from designated beneficiary countries are eligible for duty-free entry under the Caribbean Basin Economic Recovery Act.

In addition to the import duties shown in appendix B, antidumping and countervailing duty orders are currently in effect on several of the subject products. The tabulation of the following page gives a brief description of some of these products, the types of duty orders in effect, and the sources of such imports subject to these duties.

Other antidumping and countervailing duty investigations on certain products covered by this investigation have resulted in settlements other than duty orders. These settlements include negotiated agreements to (1) end or reduce the countervailable bounty or grant, or offset such subsidy with an export tax; (2) cease dumping or cease exporting the product; (3) establish a reference or "trigger-price" system for U.S. imports; 2/ and (4) limit the imports were found to be entered at less than the published "trigger price," quantity of exports to the United States. 3/ A more thorough presentation of past and current antidumping and countervailing duty investigations is found in appendix C.

1/ The GSP, under title V of the Trade Act of 1974, provides duty-free treatment for specified eligible articles imported directly from designated beneficiary developing countries specified in general headnote 3(c) of the TSUSA. GSP, implemented by Executive Order No. 11888 of Nov. 24, 1975, applies to merchandise imported on or after Jan. 1, 1976, and is expected to remain in effect until January 4, 1985.

2/ The trigger-price mechanism (TPM) for steel mill products, designed to enable the Government to self-initiate steel antidumping investigations when was approved by the President on Dec. 6, 1977. From Mar. 24, 1980, through Oct. 7, 1980, the TPM was suspended by the Department of Commerce in response to the filing of antidumping petitions by the domestic industry. After an agreement by the petitioner to withdraw the petitions, the TPM, modified to include self-initiated action in instances of countervailable bounties and grants, was reinstated on Oct. 8, 1980. On Jan. 11, 1982, Commerce again suspended operation of the TPM on the products included in this investigation in response to the filing of antidumping and countervailing duty petitions by the domestic industry. For a more complete discussion of the TPM, see <u>Certain Steel Products From Belgium, Brazil, France, Italy, Luxembourg, the Netherlands, Romania, the United Kingdom, and West Germany</u>, . . ., USITC Publication 1221, February 1982, vol. 2, pp. G-1 through G-9.

3/ For example, a voluntary limitation on European Community exports to the United States to a specified percentage of projected U.S. consumption is currently in effect. See <u>Federal Register</u> of Oct. 29, 1982 (47 F.R. 49060).

Product	Type of order	Source
Plate	Antidumping	Japan.
Do	do	Brazil.
Do	do	Taiwan.
Do	Countervailing	Republic of Korea.
Do	do	Republic of South Africa.
Do	do	Spain.
Sheets, hot-rolled	Antidumping	Brazil.
Do	Countervailing	Republic of Korea.
Do	do	Republic of South Africa.
Sheets, cold-rolled	do	Do.
Do	do	Spain.
Sheets, galvanized	do	Republic of Korea.
Do	do	Republic of South Africa.
Do	do	Spain.
Wire rods	Antidumping	Brazil.
Do	do	Trinidad and Tobago.
Do	Countervailing	Do.
Wire rope, strand, and cordage	Antidumping	Japan.
Wire nails	do	Republic of Korea.
Bars, concrete reinforcing	do	Canada.
Bars, hot-rolled	Countervailing	Republic of South Africa.
Do	do	Spain.
Bars, cold-formed	do	Republic of South Africa.
Do	do	Spain.
Structural shapes	Antidumping	Canada.
Do	Countervailing	Republic of South Africa.
Do	do	Spain.
Pipes and tubes	Antidumping	Japan.
Do	do	Republic of Korea.
Do	do	Taiwan.
Do	Countervailing	Republic of Korea.
Do	do	Republic of South Africa.

Various "Buy-America" provisions, both Federal 1/ and State, may also affect imports of the products included in this investigation. One of the most important is section 165 of the Highway Improvement Act of 1982 (Public Law 97-424), which provides that funds authorized by the act be provided by the Secretary of Transportation only if steel and certain other products used in public highway and bridge infrastructure and certain mass transit rolling stock are domestic, if domestically available in adequate quantities and satisfactory qualities, unless the purchase of domestic material "will increase the cost of the overall project contract (excluding labor costs involved in final assembly) by more than 10 percentum in the case of projects for the acquisition of rolling stock, and 25 percentum in the case of all other projects," and unless such preference for domestic products is determined by the Secretary of Transportation to be inconsistent with the public interest.

Domestic Producers

For the purposes of this investigation, U.S. producers of the subject carbon and alloy steel products are categorized as follows: firms with basic-oxygen and/or open-hearth furnaces (integrated steel producers); firms with only electric furnaces (nonintegrated steel producers); and firms that only shape or treat steel (nonsteel producers). Integrated steel producers are those utilizing blast furnaces in some or all of their plants. 2/ Nonintegrated steel producers are those that do not have mines to supply raw materials or blast furnaces to produce pig iron; they produce raw steel exclusively in electric furnaces rather than in basic-oxygen or open-hearth furnaces. Nonsteel producers are those companies which do not produce raw steel but instead purchase steel products, such as wire rods, as raw materials and process them into further advanced forms, such as wire.

An important trend in the U.S. steel industry during the past 10 years has been the growth in raw steel production capacity of the nonintegrated companies. During 1973-83, integrated steelmakers lost over 33 million tons 3/ in annual raw steel capacity; they accounted for 81 percent of total domestic raw steel capacity in January 1983. During the same time period,

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1/ The Buy American Act, 41 U.S.C. 10a-10d (1978), is the primary congressionally mandated preference for U.S. goods. Under this act, U.S. Government agencies may purchase products of foreign origin for delivery in the United States only if the cost of the domestic product exceeds the cost of the foreign product, including duty, by 6 percent or more. This differential rises to 12 percent if the low domestic bidder is situated in a labor-surplus area, and to 50 percent if the purchase is made by the Department of Defense. The preferences may be waived in the public interest, however. For a more complete discussion of Buy-American restrictions, see Certain Carbon Steel Products From Belgium, the Federal Republic of Germany, France, Italy, Luxembourg, the Netherlands, and the United Kingdom: Determinations of the Commission in Investigations Nos. 731-TA-18-24 (Preliminary) . . ., USITC Publication 1064, May 1980, p. A-17.

2/ These firms may also utilize electric furnaces to make steel at some locations.

3/ Unless otherwise indicated, "ton," as used in this report, refers to a short ton (2,000 pounds).

nonintegrated producers gained over 7 million tons in annual capacity; they represented 19 percent of capacity in January 1983. 1/ However, integrated producers continue to account for the large majority of U.S. raw steel production.

As shown in table 1, domestic production of raw steel is highly concentrated, with the seven largest producers together accounting for 67 percent of total domestic raw steel production in both 1982 and 1983. These seven producers are fully integrated firms that produce a wide range of steel mill products from their raw steel.

Steel producers' plants are scattered throughout the United States, but are concentrated in the northeast and north central regions, particularly Pennsylvania and the Great Lakes area (fig. 1). Indiana, Ohio, and Pennsylvania together accounted for more than 55 percent of U.S. raw steel production in 1983. Plants are concentrated around the Great Lakes, where raw materials are located, large waterways are available for cost-effective barge transportation, and major markets, such as automobile and heavy-equipment makers, are nearby. The following tabulation, which was compiled from AISI data, shows the number of raw steel producing plants in 1982 and raw steel production in 1983, by States.

States	Number of plants	Production	Share of total production
		1,000 short tons	Percent
New York	8	1,305	1.5
Pennsylvania	33	13,000	15.4
Rhode Island, Connecticut, New Jersey, Delaware, and Maryland	8	3,985	4.7
Virginia, West Virginia, Georgia, Florida, North Carolina, South Carolina, and Louisiana	15	5,277	6.2
Kentucky	4	1,841	2.2
Alabama, Tennessee, Mississippi, and Arkansas	9	1,470	1.7
Ohio	13	14,586	17.2
Indiana	7	20,202	23.9
Illinois	12	5,410	6.4
Michigan	6	7,262	8.6
Minnesota, Missouri, Oklahoma, Texas, Nebraska, and Iowa	18	5,983	7.1
Arizona, Colorado, Utah, Washington, Oregon, and Hawaii	10	3,161	3.7
California	5	1,133	1.3
Total	148	84,615	1/ 99.9

1/ Because of rounding, total is not equal to 100.0 percent.

1/ Institute for Iron & Steel Studies, "IISS Commentary," January 1983, p. 2.

Table 1.--Raw steel: 1/ U.S. production, by firms, 1982 and 1983

Firm	U.S. production 1982	U.S. production 1983	Share of total 1982	Share of total 1983
	--1,000 short tons--		----Percent----	
Integrated steel producers:				
United States Steel Corp. (U.S. Steel)	12,100	14,800	16.2	17.5
Bethlehem	10,521	10,692	14.1	12.6
Jones & Laughlin Steel Corp. (J&L)	6,486	7,653	8.7	9.0
National Steel Corp. (National)	5,501	2/ 5,308	7.4	6.3
Inland Steel Corp. (Inland)	5,171	6,306	6.9	7.5
Armco, Inc. (Armco)	5,104	5,787	6.8	6.8
Republic Steel Corp. (Republic)	5,086	6,300	6.8	7.4
Wheeling-Pittsburgh Steel Corp. (Wheeling-Pittsburgh)	1,818	2,222	2.4	2.6
Sharon Steel Corp. (Sharon)	1,054	3/	1.4	3/
Kaiser Steel Corp. (Kaiser)	873	3/	1.2	3/
CF&I Steel Corp. (CF&I)	794	614	1.1	.7
Interlake, Inc. (Interlake)	420	518	.6	.6
Nonintegrated steel producers:				
Nucor Corp. (Nucor)	1,216	1,575	1.6	1.9
Korf Industries, Inc. (Korf) 4/	1,175	3/	1.6	3/
Northwestern Steel & Wire Co. (Northwestern)	1,041	417	1.4	.5
Florida Steel Corp. (Florida Steel)	5/ 753	5/ 752	1.0	.9
Chaparral Steel Co. (Chaparral)	597	884	.8	1.0
Cyclops Corp. (Cyclops)	526	549	.7	.6
Lukens Steel Co. (Lukens)	495	429	.7	.5
Laclede Steel Co. (Laclede)	487	618	.6	.7
Keystone Consolidated Industries, Inc. (Keystone)	427	3/	.6	3/
Continental Steel Corp. (Continental)	281	354	.4	.4
Phoenix Steel Corp. (Phoenix)	274	3/	.4	3/
Copperweld Corp. (Copperweld)	246	366	.3	.4
All other 6/	12,131	18,471	16.3	21.8
Total 7/	74,577	84,615	100.0	8/ 99.7

1/ Includes carbon, alloy, and stainless steel. Stainless steel production accounted for less than 2 percent of total raw steel production in 1982 and 1983.

2/ Figure includes production at Weirton, W.Va., plant through Apr. 30, 1983.

3/ Not available.

4/ Korf owned both Georgetown Texas Steel Corp. and Georgetown Steel Corp. However, Georgetown Texas Steel Corp. was sold by Korf to Cargill, Inc. (Minneapolis, Minn.) on Aug. 25, 1983, and is now known as North Star Steel-Texas.

5/ Reported on the basis of the fiscal year ending Sept. 30.

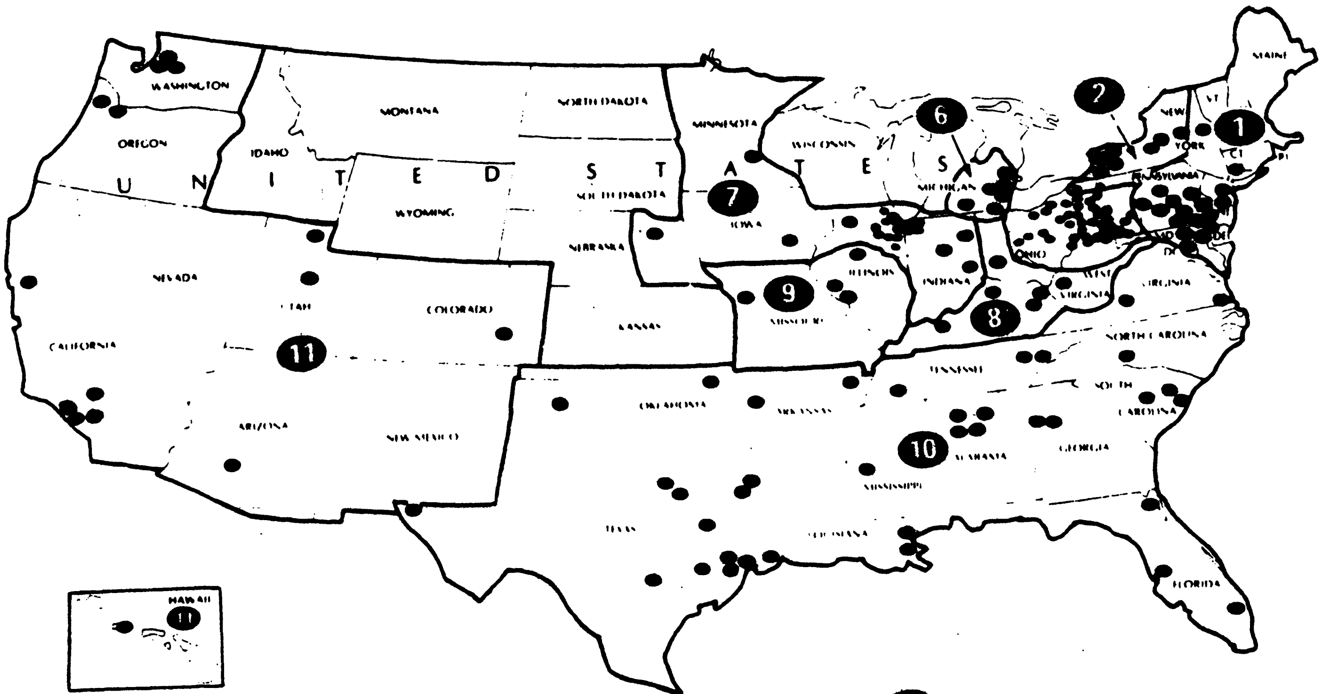
6/ Includes both integrated and nonintegrated producers.

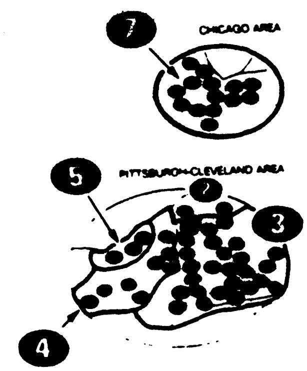
7/ AISI figure for total U.S. production of raw steel.

8/ Because of rounding, totals may not equal 100.0 percent.

Source: Iron Age, May 7, 1984, except as noted.

Figure 1.--Plant locations of U.S. steel producers, 1982





Key to districts identified by the Institute for Iron and Steel Studies

1. Northeast coast district
2. Buffalo district
3. Pittsburgh district
4. Youngstown district
5. Cleveland district
6. Detroit district
7. Chicago district
8. Cincinnati district
9. St. Louis district
10. Southern district
11. Western district

Source: Institute for Iron and Steel Studies.

The following sections of the report discuss each of the three categories of producers in greater detail.

Integrated steel producers

The seven largest U.S. producers of raw steel all have blast furnaces, as well as basic-oxygen and/or open-hearth furnaces at some or all of their steel-producing plants. Moreover, all operate some electric furnaces. These firms not only operate blast furnaces, steelmaking furnaces, and rolling and finishing facilities, but also own or operate mines which provide iron ore, coal, and limestone for the production of iron. The share of total U.S. raw steel production accounted for by all integrated producers is estimated to have exceeded 75 percent in 1982 and 1983. 1/ Among these producers, the seven largest together accounted for 67 percent of raw steel production and the two largest together accounted for 30 percent of production in each of those years (table 1).

There were 16 integrated steel producers in 1983; they operated some 53 plants in which raw steel and/or steel products were produced. These plants are located throughout the United States, but are concentrated in the Great Lakes area and in Pennsylvania. In recent years, a number of producers have closed certain steel-producing facilities. Additional information on plant closings is provided in appendix D. A list of the integrated producers, the locations of their various steel-producing plants, the types of products made at each plant, and their raw steel capacity, by companies and by plants, as of January 1, 1983, is shown in table E-1, appendix E.

In addition to operating plants that produce raw steel and certain further advanced products, a number of integrated producers own plants where basic steel forms are further shaped or processed, although no raw steel is produced. The locations of these plants, and the products produced, are presented in table E-2.

Raw steel production capacity of the integrated steel producers is dispersed throughout the United States, with significant concentrations in Indiana, Pennsylvania, and Ohio, which together accounted for 60 percent of the integrated producers' total capacity. The tabulation on the following page shows the distribution, by States, of these plants and their raw steel production capacities as of January 1, 1983. 2/

Several of the large integrated firms are diversified into activities unrelated to the production of steel. For example, U.S. Steel produces industrial chemicals and oil-drilling and pumping equipment, and in 1981 purchased Marathon Oil Corp. for $6.2 billion. National owns a savings-and-loan holding company and produces aluminum, finished aluminum products, and building components. Armco manufactures oilfield equipment and fabricated

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1/ Iron Age, May 7, 1984.
2/ The data were obtained from the Institute for Iron & Steel Studies, "IISS Commentary," January 1983.

States	Plants owned by integrated steel producers	Raw steel production capacity	Share of total raw steel production capacity
		1,000 short tons	Percent
New York	2	4,500	3.4
Pennsylvania	17	27,538	21.1
Rhode Island, Connecticut, New Jersey, Delaware, and Maryland	2	6,800	5.2
Virginia, West Virginia, Georgia, Florida, North Carolina, South Carolina, and Louisiana	1	4,000	3.1
Kentucky	1	2,100	1.6
Alabama, Tennessee, Mississippi, and Arkansas	2	4,368	3.3
Ohio	7	20,554	15.8
Indiana	4	30,430	23.3
Illinois	4	5,900	4.5
Michigan	4	10,478	8.0
Minnesota, Missouri, Oklahoma, Texas, Nebraska, and Iowa	4	6,140	4.7
Arizona, Colorado, Utah, Washington, Oregon, and Hawaii	3	5,000	3.8
California	2	2,635	2.0
Total	53	130,443	1/ 99.8

1/ Because of rounding, total is not equal to 100.0 percent.

metal and industrial products, provides financial services, and develops natural resources. LTV Corp., J&L's parent, is a major defense contractor and a diversified manufacturer of electronic products. Bethlehem, the least diversified of the firms mentioned above, builds and repairs ships, manufactures oil-drilling platforms, and produces plastics.

On March 21, 1984, the U.S. Department of Justice approved a merger between LTV Corp. (J&L) and Republic which will result in the creation of the nation's second largest steelmaker. Five weeks earlier the Justice Department had blocked the proposed merger, but in order to meet the Department's objections, the companies restructured their proposal and agreed to sell two of Republic's facilities--a stainless steel plant and one of its three carbon steel mills. Subsequent to the original Justice Department ruling, plans for a similar merger involving U.S. Steel and National were dropped. 1/ Additional information on mergers concerning U.S. steel producers is presented in a later section of this report.

1/ Washington Post, Mar. 22, 1984.

Nonintegrated steel producers

There are about 80 steel producers that use only electric furnaces to produce steel. They accounted for an estimated 20 to 25 percent of total U.S. raw steel production in 1982 and 1983. 1/ Among these producers, the five largest together accounted for over 6 percent of raw steel production in 1982, compared with 4 percent in 1979. 2/ The raw steel production capacity of nonintegrated producers ranges from less than 100,000 tons per year to more than 2 million tons. Although used principally to produce alloy, stainless, or tool steels, electric furnaces have been developed over the years into higher tonnage producers of carbon steel. Some electric-arc furnaces now total 400 tons capacity, but the majority are still in the range of 200 tons or less. 3/

Nonintegrated steel producers are categorized in several different ways within the industry. They are referred to as minimills, merchant mills, market mills, and specialty steelmakers. None of the categories is all inclusive, but firms having only electric furnaces typically include those that are relatively small in size, regional in nature, feed their electric furnaces with locally generated scrap, and specialize in the production of a narrow range of products, such as bars (primarily concrete reinforcing bars (rebars)), wire rods, and light structural shapes. However, this description is beginning to change as such producers continue to widen their scope in terms of production capacity, product diversity, geographic coverage, and market share.

Nonintegrated producers use scrap steel almost exclusively as their raw material, 4/ and fluctuations in the price of scrap may significantly affect their production costs. The price of scrap fluctuates cyclically and currently ranges from $90 to $103 per ton. In recent years, the use of scrap steel as a raw material has given producers with electric furnaces an advantage in steelmaking costs of as much as $100 per ton over the integrated producers.

As mentioned, most nonintegrated producers produce bar products, wire rods, and light structural shapes. Recently, however, some have invested in research and development aimed at improving the continuous casting process so as to enable them to produce flat-rolled semifinished steel products in thicknesses as thin as 1-1/2 inches for direct rolling into sheets. 5/ The efficiencies associated with this type of production process would enable nonintegrated producers to enter the market for certain sheet products more competitively.

1/ Iron Age, May 7, 1984. Includes carbon, alloy, and stainless steel. Stainless steel, which is not subject to this investigation, accounted for less than 2 percent of total raw steel production in 1982 and 1983.
2/ Iron Age, May 3, 1982, and May 2, 1983.
3/ Standard and Poor's, "Steel and Heavy Machinery," Industry Surveys, Aug. 11, 1983.
4/ There is some limited use of DRI as the raw material.
5/ "Minis need radically new technology to make sheet," American Metal Market, Dec. 6, 1983.

Nonintegrated steel producers usually establish their operations in strategically chosen market areas. Their location near the regional markets they serve enables them to keep their freight costs down while supplying an area often removed from the immediate markets of the integrated producers.

As mentioned earlier, there were about 80 U.S. firms using only electric furnaces to produce carbon and alloy steel as of January 1, 1983. These companies operated some 100 plants in which raw carbon and alloy steel and finished steel products were manufactured. The plants are located throughout the United States with significant concentrations in the southern region (Virginia, West Virginia, Georgia, Florida, North Carolina, South Carolina, and Louisiana), which accounted for 17 percent of total nonintegrated producers' capacity, and in Illinois, Pennsylvania, and Texas, which together accounted for over 40 percent of such capacity. The tabulation on the following page shows the distribution of plants owned by nonintegrated producers of carbon and alloy steel products and their corresponding capacities, by States, as of January 1, 1983. 1/

A list of the nonintegrated U.S. steel producers, the locations of their various steel-producing plants, the types of products made at each plant, and their raw steel capacity, by companies and by plants, as of January 1, 1983, is shown in table F-1, appendix F. A list of these firms' plants wherein basic steel forms are further shaped or processed, although no raw steel is produced, is presented in table F-2.

Nonsteel producers

For the purposes of this investigation, firms that shape, treat, or otherwise further process steel include those that do not make raw steel but instead purchase semifinished steel products (e.g., ingots, blooms, billets, slabs, or wire rods) or finished steel products (e.g., plates, sheets, or strip) as raw material and process them into more advanced forms. Processing operations such as drawing, slitting, sawing, leveling, and heat treating are commonly performed on coils of plates, sheets, and strip to produce pipes and tubes, and on wire rods to manufacture wire and wire products. Other processes that may be applied to steel products include cold-finishing operations (e.g., forging and rolling), annealing, tempering, grinding, coating, and cleaning.

Steel processors rely on both domestic and foreign sources for the raw materials used in the manufacture of their particular finished products. For many products, steel processors compete directly with the same domestic and foreign suppliers (often raw steel producers) in the market for their finished product.

Western steel processors rely more on imported steel raw materials than do their counterparts in the East. The ability of raw steel producers in the East and Midwest to market steel mill products in the Western States is

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1/ The data were obtained from the Institute for Iron & Steel Studies, "IISS Commentary," January 1983.

States	Plants owned by noninte- grated steel producers 1/	Raw steel production capacity	Share of total raw steel production capacity
		1,000 short tons	Percent
New York	6	730	2.4
Pennsylvania	20	4,197	14.1
Rhode Island, Connecticut, New Jersey, Delaware, and Maryland	4	1,314	4.4
Virginia, West Virginia, Georgia, Florida, North Carolina, South Carolina, and Louisiana	15	4,958	16.7
Kentucky	3	910	3.1
Alabama, Tennessee, Miss- issippi, and Arkansas	8	1,765	5.9
Ohio	6	2,893	9.7
Indiana	2	680	2.3
Illinois	9	4,215	14.2
Michigan	2	560	1.9
Texas	10	3,700	12.4
Minnesota, Missouri, Okla- homa, Nebraska, and Iowa	4	1,630	5.5
Arizona, Colorado, Utah, Washington, Oregon, and Hawaii	7	1,630	5.5
California	3	570	1.9
Total	99	29,752	100.0

1/ Excludes plants producing only stainless steel.

limited, primarily because of high inland shipping rates. Ocean freight rates are lower than inland shipping rates and, as a result, provide an important pricing advantage to any producer, including foreign producers, shipping by water to the Western States. 1/ Additional information on U.S. producers' shipments, imports, and consumption of the carbon and alloy steel products subject to this investigation in the Western Area 2/ is presented in a later section of this report.

1/ U.S. International Trade Commission, Conditions of Competition in the Western U.S. Steel Market Between Certain Domestic and Foreign Steel Products, Interim Report on Investigation No. 332-87, . . ., USITC Publication 951, March 1979, p. iv.

2/ For the purposes of this investigation, the Western Area includes the States of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

There are an estimated 200 to 230 processing firms producing basic steel mill products (excluding those operations that are affiliated with raw steel producers). 1/ They are located throughout the United States in a distribution pattern similar to that of the raw steel producers. The concentration of processors in the Western Area of the United States appears to be somewhat higher for products such as wire, pipes and tubes, and railway-type products than it is for hot-rolled sheets and strip, cold-rolled sheets and strip, and cold-finished bars and shapes. 2/

U.S. Importers

Using data provided by the U.S. Customs Service, the Commission identified about 160 importers that imported significant quantities of one or more of the carbon and alloy steel products subject to this investigation in 1983. Certain of these importers and their major source countries in 1983 are listed in the following tabulation:

Product	Importing firm	Major source(s)
Ingots, blooms, billets, slabs, and sheet bars.	* * *	Canada.
	* * *	Republic of South Africa, Sweden, West Germany.
	* * *	Netherlands.
	* * *	Spain, West Germany.
	* * *	Canada.
Plates--------------	* * *	Finland, Republic of South Africa, Spain, Belgium and Luxembourg.
	* * *	Brazil.
	* * *	West Germany, Sweden.
	* * *	Republic of Korea.
	* * *	Canada.
	* * *	Brazil.
Sheets and strip.	* * *	Brazil.
	* * *	Brazil, Venezuela.
	* * *	Japan.
	* * *	Japan.
	* * *	Netherlands.
	* * *	Argentina, Italy.
	* * *	Republic of South Africa, Australia and Oceania.
	* * *	West Germany, Republic of Korea.
	* * *	France.

1/ Estimate based on Current Industrial Reports, MA33B, "Steel Mill Products, 1982," issued February 1984 by the U.S. Department of Commerce, p. 26.
2/ Ibid., pp. 9-11.

Product	Importing firm	Major source(s)
Wire rods-----------	* * *	Mexico.
	* * *	Brazil.
	* * *	Poland, United Kingdom.
	* * *	France, Spain.
	* * *	Japan.
Wire and wire products.	* * *	Poland.
	* * *	Japan.
	* * *	Japan.
	* * *	Republic of Korea.
	* * *	Brazil, Belgium and Luxembourg, West Germany.
	* * *	Canada.
Railway-type products.	* * *	United Kingdom.
	* * *	West Germany.
	* * *	Japan.
	* * *	Japan.
	* * *	West Germany.
Bars----------------	* * *	Mexico.
	* * *	France.
	* * *	Canada.
	* * *	Mexico.
	* * *	Republic of Korea, Taiwan.
	* * *	Brazil, Republic of Korea.
	* * *	United Kingdom.
Structural shapes and units.	* * *	Republic of South Africa, Japan, West Germany, Spain.
	* * *	United Kingdom.
	* * *	Belgium and Luxembourg.
	* * *	Belgium and Luxembourg.
Pipes and tubes and blanks therefor.	* * *	Mexico.
	* * *	Republic of Korea.
	* * *	Japan.
	* * *	Republic of Korea.
	* * *	Japan.

Importers of steel products fall into four categories: trading companies; firms related to foreign producers (excluding trading companies); U.S. producers; and all other importers, including independent importers, service centers, distributors, and end users. Each of these types of importers is discussed separately below.

Trading companies

Trading companies, also known as traders, typically handle a wide range of products, of which steel may represent a small part. Almost all steel imported from Japan and the Republic of Korea is marketed through Japanese and Korean trading companies, respectively, which form a link between the foreign steel mills and the U.S. market. Trading companies traditionally functioned only as import brokers, or agents that handled the paperwork associated with foreign purchases. In order to strengthen their marketing efforts, many have expanded their operations to include warehousing facilities and steel-processing capability. In addition to the marketing of steel, trading companies may perform a wide range of services, including procurement of raw materials and market research. Some are directly affiliated with a foreign steel producer, although they typically handle not only that producer's exports, but also exports of other foreign producers. Trading companies that are not affiliated with a foreign producer import from a number of sources.

Firms related to foreign producers

Firms related to foreign producers, also known as mill agents, are the direct subsidiaries of foreign steel producers. 1/ They are the exclusive U.S. marketing outlets of the parent mills, which are typically European companies. Mill agents supply steel mill products for a full range of end uses, and market the steel products of foreign mills other than the parent company if the parent mill is unable to fill a particular order. As brokers, purchases made on the basis of orders received are generally either delivered directly to the customer's plant, known as a "drop shipment," or picked up by the customer at the port of importation, known as a "back-to-back" sale. Mill agents typically own warehousing facilities and processing centers, which give them greater flexibility in their marketing arrangements and allow them to go beyond the role of import broker.

U.S. producers

Most of the imports by U.S. raw steel producers consist of semifinished products such as ingots, blooms, billets, and slabs. Imports by these companies accounted for about 5 percent of total U.S. steel imports in 1982. 2/ Raw steel producers give the following reasons for their steel imports: (1) testing foreign steel companies' products; (2) meeting increased demand for various steel products when domestic steelmaking capacity is fully utilized; and (3) meeting increased demand which cannot be met due to closed steelmaking facilities or because a particular product is not manufactured by the importing company. 3/

1/ Trading companies are excluded from this category.

2/ U.S. General Accounting Office, "Effect of Foreign Steel Purchases by Domestic Steel Producers," GAO/NSIAD-83-40, Aug. 3, 1983.

3/ Ibid.

All other importers

The final group of U.S. importers of steel mill products includes independent importers, service centers, distributors, and end users. Independent importers maintain no proprietary relationships with any particular foreign steel producer and are not exclusively associated with any one country. They place orders with various foreign steel mills, choosing the mills that are able to supply the required quantity and quality of steel products. Orders are typically delivered directly to the customer. 1/ Service centers, distributors, and end users may be supplied by either trading companies or mill agents, or they may import steel directly for their own uses, which include further processing or fabrication and distribution.

U.S. Market

Apparent consumption

All steel mill products.--Apparent U.S. consumption of all steel mill products during 1964-83 is shown in table 2 and figure 2. As illustrated in figure 2, apparent consumption of steel mill products during the last 20 years has been characterized more by cyclical fluctuations than by any strong underlying trend. 2/ In the early years of the period, apparent consumption twice increased for a single year before declining for 2 years. From 1970 to 1980, two 5-year cycles occurred, each consisting of 3 years of growth followed by 2 years of decline. In the first of these 5-year cycles, consumption

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1/ Some large independent importers also warehouse steel products for resale to service centers, distributors, and end users. This practice, which is called "taking a position," may be done for the purposes of an assured supply or price and to offset the competitive disadvantage of longer lead times in obtaining foreign merchandise.

2/ Because of these fluctuations, attempts to express trends in terms of average annual rates of growth or decline are crucially dependent upon the period selected. For example, based on a trend line fitted by OLS regression, average annual consumption during 1964-83 decreased slightly (0.1 percent per year), but the slope of this line is not statistically significant (i.e., different from 0) at the 95-percent confidence level (t=0.25). However, consumption increased at an average annual rate of 2.3 percent (statistically significant, t=3.14) during 1964-73, whereas it decreased at an average annual rate of 2.8 percent (statistically significant, t=2.47) during 1973-83. Thus, although there was no statistically significant increase or decline in apparent U.S. consumption over the entire 1964-83 period, there was a statistically significant increase from the trough year 1964 to the peak year 1973 and a statistically significant decline from 1973 to the near-trough year 1983. Although a more orthodox method for establishing a trend line would entail measuring from trough to trough (or from peak to peak), several OLS regression trend lines for such periods (these trend lines are not shown in fig. 2) proved not to be statistically significant. They did, however, result in an average annual rate of decrease of 0.9 percent during 1975-82 (trough to trough) and an average annual rate of growth of 0.1 percent during 1968-81 (peak to peak).

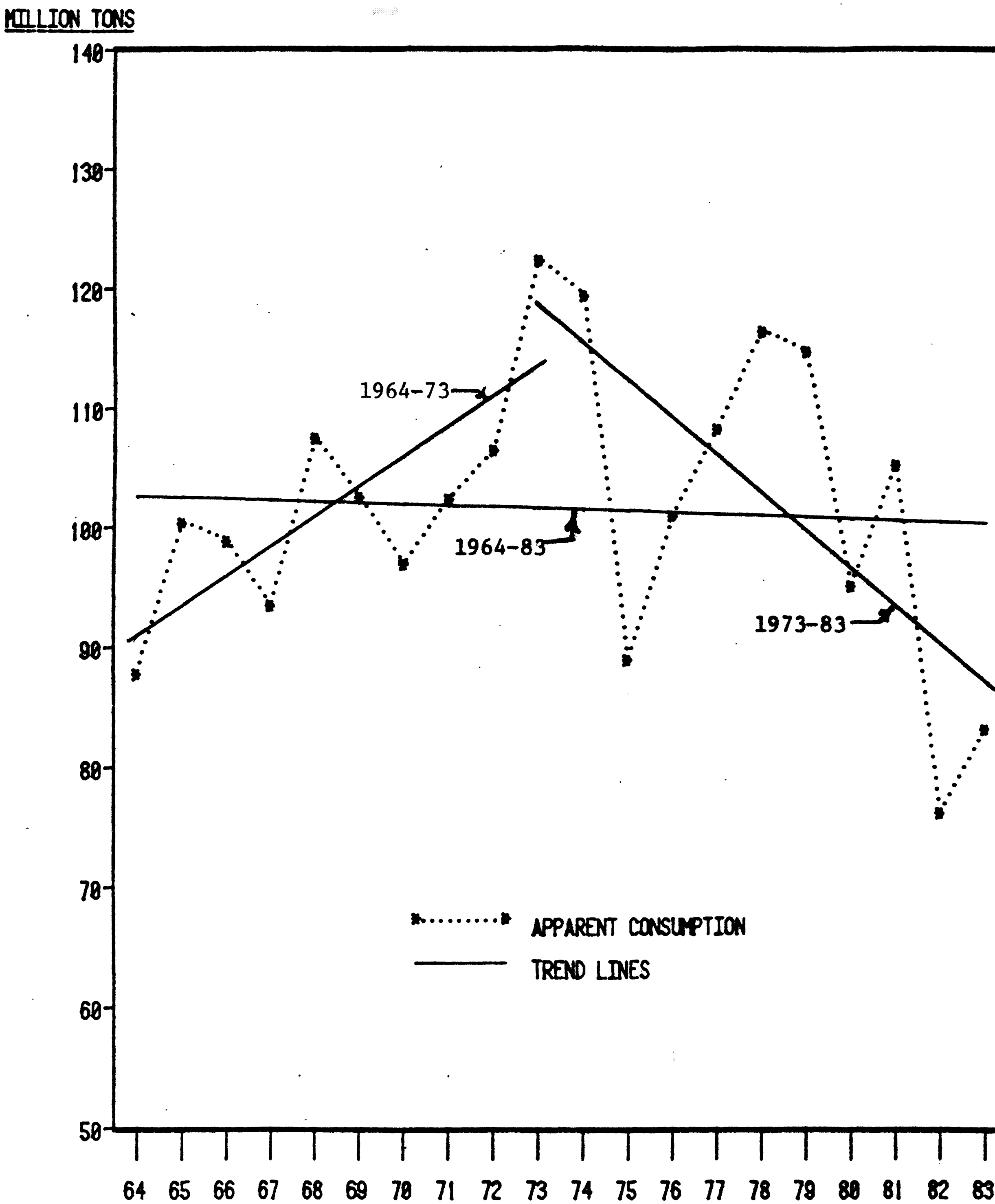
Table 2.--Steel mill products: U.S. producers' net shipments, 1/ imports for consumption, exports of domestic merchandise, and apparent consumption, 5-year averages and annual 1964-83

Period	Producers' shipments	Imports	Exports	Apparent consumption	Ratio of imports to apparent consumption
	1,000 short tons				Percent
Average:					
1964-68	88,672	11,398	2,303	97,766	11.7
1969-73	94,990	15,707	4,408	106,288	14.8
1974-78	93,592	16,542	3,173	106,960	15.5
1979-83	80,317	17,329	2,573	95,073	18.2
Annual:					
1964	84,945	6,440	3,442	87,943	7.3
1965	92,666	10,383	2,496	100,553	10.3
1966	89,995	10,753	1,724	99,024	10.9
1967	83,897	11,454	1,685	93,666	12.2
1968	91,856	17,960	2,170	107,646	16.7
1969	93,877	14,034	5,229	102,681	13.7
1970	90,798	13,364	7,061	97,101	13.8
1971	87,038	18,304	2,827	102,515	17.9
1972	91,805	17,681	2,873	106,613	16.6
1973	111,430	15,150	4,052	122,528	12.4
1974	109,472	15,970	5,833	119,609	13.4
1975	79,957	12,012	2,953	89,016	13.5
1976	89,447	14,285	2,654	101,078	14.1
1977	91,147	19,307	2,003	108,451	17.8
1978	97,935	21,135	2,422	116,648	18.1
1979	100,262	17,518	2,818	114,962	15.2
1980	83,853	15,495	4,101	95,247	16.3
1981	88,450	19,898	2,904	105,444	18.9
1982	61,567	16,663	1,842	76,388	21.8
1983	67,454	17,070	1,199	83,325	20.5

1/ The AISI reports data on both gross and net shipments, noting that "Gross shipments represent the aggregate tonnage shipped by reporting companies including steel consumed by the companies in their own construction, maintenance, repair and operations, as well as in their own manufacture of fabricated products. Net shipments eliminate tonnage duplication by deducting from the gross total those shipments from one reporting company to another reporting company for conversion, further processing or resale." Beginning with 1970, shipment statistics compiled by the AISI include estimates for a "relatively small number of companies which report raw steel production but not shipments to the Institute."

Source: Producers' shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce, with totals as aggregated by the American Iron & Steel Institute.

Figure 2.—Steel mill products: Apparent U.S. consumption, 1964-83



Source: Table 2.

increased by 26 percent, from 97 million tons in 1970 to 122 million tons in 1973, and then fell by 27 percent to 89 million tons in 1975. In the second 5-year cycle, consumption rose by 31 percent to 117 million tons in 1978, and then fell by 18 percent to 95 million tons in 1980. This latter cycle preceded a 1-year recovery of 11 percent in 1981, and a further, very sharp drop in apparent consumption in 1982 to a level 28 percent below consumption in 1981. Apparent consumption of steel mill products in 1983 amounted to 83 million tons, or 9 percent more than consumption in 1982. Nevertheless, consumption in 1983 was the second lowest annual amount during 1964-83, and was almost one-third less than peak consumption in 1973.

The demand for steel mill products is derived from their use in manufacturing a vast number of end products, such as automobiles, containers, contractors' products, electrical equipment, machinery, and so forth. The aggregate U.S. output of durable manufactures appears to be a good measure of business activity in user industries of such products (table 3 and fig. 3). However, the durability of many items manufactured from steel is a factor that permits some discretion in the timing of purchases of replacement articles; consequently, cyclical fluctuations in the overall U.S. economy usually result in changes in demand for steel articles which are more pronounced than changes in demand for nondurable goods and for many other types of durable goods. In addition, in some applications the use of steel has declined in recent years; for example, the auto industry (which is the largest end-user market for steel) has experienced declining demand for large cars and has increased its production of smaller, lighter cars. This has reduced the demand for steel sheet (which is, in terms of quantity, by far the largest of the carbon and alloy steel products included in this investigation).

Carbon and alloy steel products.--Apparent U.S. consumption during 1979-83 of the carbon and alloy steel products subject to this investigation, by types, is shown in table 4. 1/ Such data represent U.S. producers' net shipments of the respective steel mill products plus imports minus exports. 2/ As indicated, apparent domestic consumption of the products subject to the investigation declined irregularly during 1979-82 and then increased in 1983, similar to consumption of all steel mill products during the period. Consumption of the subject carbon and alloy steel products in January-March 1984 was 39 percent greater than consumption in January-March 1983 (table G-1).

1/ In addition, app. G presents data for 1979-83, January-March 1983, and January-March 1984 on apparent U.S. consumption of each of the 9 groups and 25 subgroups of carbon and alloy steel products, as well as a composite table on total products subject to this investigation. Consumption of the carbon and alloy steel products subject to this investigation is about 1 percent less than apparent U.S. consumption of all steel mill products, principally because steel mill products of stainless steel are not included in the instant investigation.

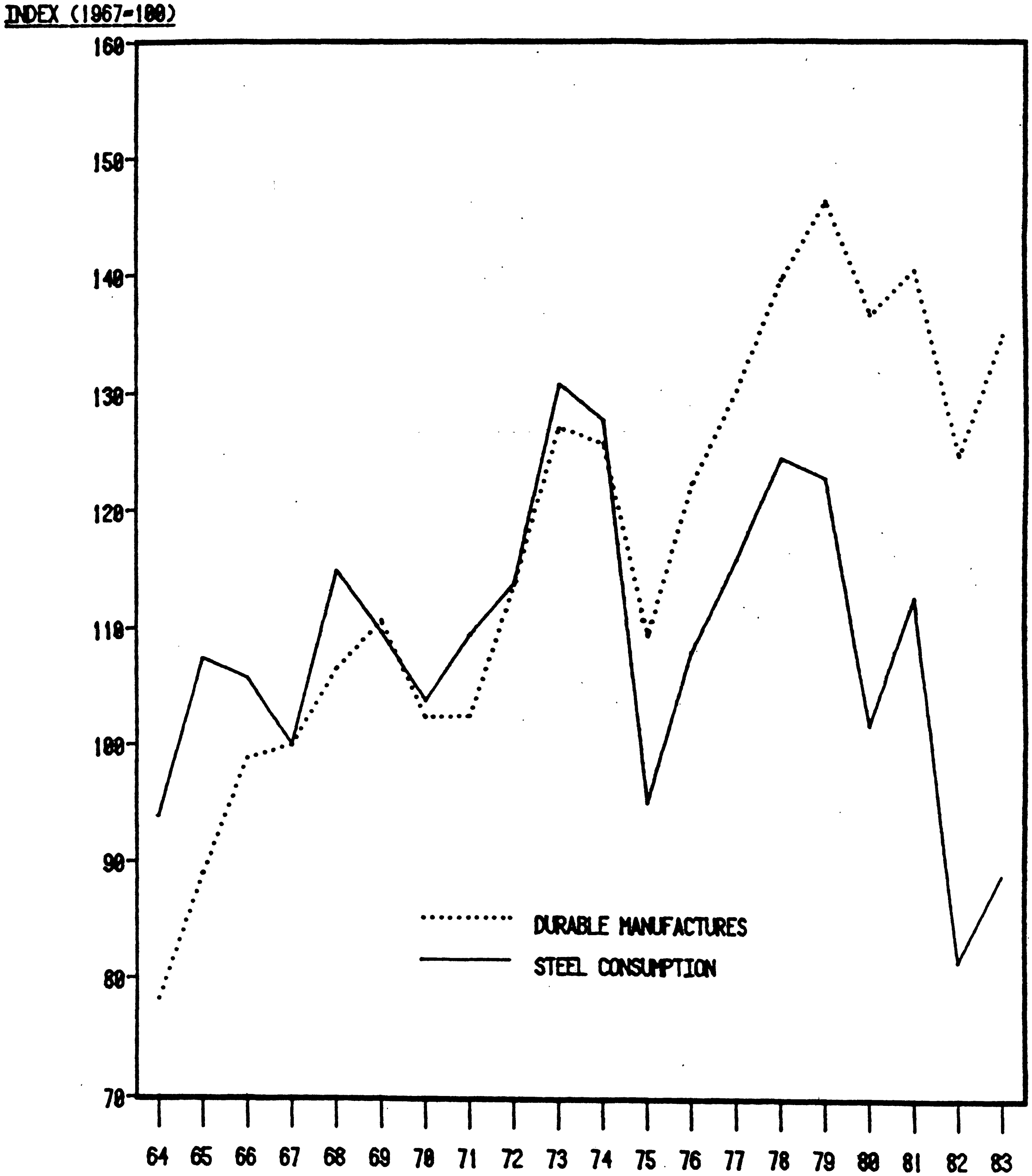
2/ Data on producers' shipments, with the exception of some so-called first-tier products, were obtained from the AISI. Data on producers' shipments during 1979-82 of wire strand were obtained from statistics published by the Department of Commerce. See the tables in app. G for further information on the sources and methodology used in compiling these data.

Table 3.--Indexes of apparent U.S. consumption of steel mill products and industrial production of all products, all manufactures, and durable manufactures, 1964-83

Year	Consumption of steel mill products	Industrial production		
		Total	All manufactures	Durable manufactures
	Index (1967=100)			
1964	93.9	81.7	81.0	78.3
1965	107.4	89.8	89.7	89.0
1966	105.7	97.8	97.9	98.9
1967	100.0	100.0	100.0	100.0
1968	114.9	106.3	106.4	106.5
1969	109.6	111.2	111.0	110.6
1970	103.7	107.8	106.4	102.3
1971	109.4	109.6	108.2	102.4
1972	113.8	119.7	118.9	113.7
1973	130.8	129.8	129.8	127.1
1974	127.7	129.3	129.4	125.7
1975	95.0	117.8	116.3	109.3
1976	107.9	130.5	130.3	122.3
1977	115.8	138.2	138.4	130.3
1978	124.5	146.1	146.8	139.7
1979	122.7	152.3	153.6	146.4
1980	101.7	147.0	146.7	136.7
1981	112.6	151.0	150.4	140.5
1982	81.6	138.6	137.6	124.7
1983	89.0	147.6	148.3	134.5
	Annual change (percent)			
1964	-	-	-	-
1965	14.4	9.9	10.7	13.7
1966	-1.6	8.9	9.1	11.1
1967	-5.4	2.2	2.1	1.1
1968	14.9	6.3	6.4	6.5
1969	-4.6	4.6	4.3	3.8
1970	-5.4	-3.1	-4.1	-7.5
1971	5.5	1.7	1.7	.1
1972	4.0	9.2	9.9	11.0
1973	14.9	8.4	9.2	11.8
1974	-2.4	-.4	-.3	-1.1
1975	-25.6	-8.9	-10.1	-13.0
1976	13.6	10.8	12.0	11.9
1977	7.3	5.9	6.2	6.5
1978	7.6	5.7	6.1	7.2
1979	-1.4	4.2	4.6	4.8
1980	-17.1	-3.5	-4.5	-6.6
1981	10.7	2.7	2.5	2.8
1982	-27.6	-8.2	-8.5	-11.2
1983	9.1	6.5	7.8	7.9

Source: Index of apparent consumption of basic steel mill products compiled from data published by the American Iron & Steel Institute; other indexes obtained from data published by the Federal Reserve Board.

Figure 3.—Indexes of apparent U.S. consumption of steel mill products and industrial production of durable manufactures, 1964-83



Source: Table 3.

Table 4.--Carbon and alloy steel products: Apparent U.S. consumption, by types, 1979-83

(In thousands of short tons)

Product	1979	1980	1981	1982	1983
Carbon and alloy steel products, total	113,654	94,174	104,257	75,505	82,286
Ingots, blooms, billets, slabs, and sheet bars	2,518	1,816	2,839	1,595	1,693
Plates	10,487	9,792	9,559	5,537	5,024
Sheets and strip:					
Hot-rolled	19,064	14,073	15,514	10,819	14,235
Cold-rolled	21,213	15,911	17,275	13,737	17,254
Galvanized	8,418	6,542	7,156	6,531	8,170
All other	6,476	5,504	5,260	4,735	5,383
Total	55,171	42,031	45,206	35,823	45,043
Wire rods	3,757	3,241	3,766	3,280	4,004
Wire and wire products:					
Wire	2,037	1,412	1,373	969	1/ 1,339
Barbed and twisted wire	83	83	106	80	126
Wire strand	276	256	320	339	2/
Wire ropes and cables	275	266	302	230	193
Wire fencing	128	95	97	76	55
Nails and staples	584	454	442	380	530
Total	3,383	2,565	2,640	2,075	2,373
Railway-type products:					
Rails	1,261	1,161	1,076	690	697
Joint bars, tie plates, and track spikes	470	337	329	212	212
Wheels and axles	495	491	238	125	77
Total	2,226	1,989	1,643	1,028	987
Bars:					
Concrete reinforcing bars	5,334	4,596	4,528	3,986	4,312
Other, hot-rolled	8,917	6,188	7,280	5,095	5,695
Other, cold-finished	2,251	1,570	1,685	1,100	1,265
Total	16,502	12,354	13,492	10,182	11,272
Structural shapes and units:					
Sheet piling	389	433	373	359	325
Light shapes	1,682	1,065	1,566	998	993
Heavy shapes 3/	7,163	6,533	6,847	4,833	4,795
Fabricated units	2/	2/	2/	2/	2/
Total	9,234	8,030	8,786	6,190	6,112
Pipes and tubes:					
Oil-country goods	2,758	4,730	7,018	3,786	1,181
All other	7,619	7,625	9,307	6,009	4,596
Total	10,377	12,355	16,325	9,795	5,778

1/ Includes wire strand.
2/ Not available.
3/ Including imports and exports of fabricated structural units.

Source: Tables G-1 through G-32 in app. G.

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

Channels of distribution and uses

In the U.S. market, sales of steel mill products are made either directly to end users or to service centers/distributors, 1/ which, in turn, sell to end users. In 1983, about 77 percent of all domestically produced carbon and alloy steel mill products was shipped to end users 2/ and 23 percent went to service centers/distributors. The principal markets for steel, which is predominantly used as an input in the production of other commodities, are diversified. The largest single end-user markets were the automotive and construction industries, which accounted for 18.0 and 9.4 percent, respectively, of total U.S. producers' shipments of carbon and alloy steel mill products in 1983 (table 5). Other major markets included producers of containers, packaging, and shipping materials (6.8 percent); contractors' products (3.9 percent); electrical equipment (3.5 percent); and machinery, industrial equipment, and tools (3.4 percent). Steel firms also engage in interplant transfers and intercompany selling to round out many of their orders. Some domestic raw steel producers use part of their output of carbon and alloy steel products in the production of finished products, such as pipes and tubes and wire products, or in the fabrication of other products, such as bridges, ships, offshore oil-drilling rigs, and pressure vessels.

There are no available data on the share of total U.S. imports that reach each class of customer. Steel importers sell their steel to independent U.S. steel service centers and distributors as well as to wholly owned or affiliated service centers and distributors which have been established by many foreign steel producers, particularly those in the European Community (EC). In contrast, only three domestic steel companies (U.S. Steel, Inland, and National) currently operate subsidiary service centers.

Both U.S. producers and importers engage in the practice of dual distribution, a situation in which a producer or importer sells a product to a distributor and also sells the identical product to end-user customers of that distributor. It occurs when a vertically integrated producer or importer of a

1/ Steel service centers and distributors function as middlemen between the steel mills and the final consumers of steel products. They inventory steel mill products, which enables them to fill orders fairly rapidly. In addition to warehousing, most further process steel by cutting, slitting, shearing, rolling, or bending the metal to meet customer specifications. Some service centers and distributors sell only to a limited range of markets, such as automotive, but many are full-line suppliers that stock a broad range of steel products. They are located throughout the United States in a geographic distribution resembling that of their customers, the end users.

2/ The end-use markets identified by the AISI include the following: steel for converting and processing; forgings (not elsewhere classified); industrial fasteners; construction, including maintenance; contractors' products; automotive; rail transportation; shipbuilding and marine equipment; aircraft and aerospace; oil and gas industry; mining, quarrying, and lumbering; agricultural; machinery, industrial equipment, and tools; electrical equipment; appliances, utensils, and cutlery; other domestic and commercial equipment; containers, packaging, and shipping materials; ordnance and other military; export; and nonclassified shipments.

Table 5.--Carbon and alloy steel mill products: U.S. producers' shipments, by major markets, 1983

Market	Quantity	Percent of total
	1,000 short tons	
Steel service centers and distributors	15,174	22.9
End users:		
Automotive	11,935	18.0
Construction, including maintenance	6,265	9.4
Containers, packaging, and shipping materials	4,514	6.8
Contractors' products	2,566	3.9
Electrical equipment	2,319	3.5
Machinery, industrial equipment, and tools	2,270	3.4
All other	21,274	32.1
Total	66,317	100.0

Source: American Iron & Steel Institute.

raw material sells that product to a U.S. consumer and in turn competes with that consumer in the sale of the finished product. Some of the products affected by dual distribution are wire rods sold to wire drawers for conversion into wire and wire products, and plates, sheets, or strip, sold to firms engaged in the manufacture of pipes and tubes.

The major markets and principal end uses of the carbon and alloy steel products subject to this investigation, by nine product categories, are presented in the following sections. 1/

Ingots, blooms, billets, slabs, and sheet bars.--The largest end-user markets for carbon and alloy steel ingots, blooms, billets, and slabs in 1983 were independent forgers, the automotive market, and the market for steel for conversion and processing into finished products. They accounted for 24, 12, and 11 percent, respectively, of U.S. producers' total shipments of such semifinished products in that year. 2/ Shipments to service centers and distributors accounted for 7 percent of the total. Ingots, blooms, billets, slabs, and sheet bars are principally used by steelmakers in the production of more advanced products such as plates, sheets, bars, and structural shapes.

Plates.--The major end-user markets for carbon and alloy steel plates were construction, including maintenance (which accounted for 23 percent of

1/ Such data are compiled by the AISI. Shipments of certain alloy steel products for which data are not available on a disaggregated level are excluded from these discussions.

2/ Data do not include sheet bars. Production and shipments of carbon and alloy steel sheet bars is believed to be negligible or nil. Those sheet bars that are produced are believed to be of stainless steel.

total shipments by domestic producers in 1983), machinery, industrial equipment, and tools (12 percent), and shipbuilding and marine equipment (9 percent). Service centers and distributors received 30 percent of carbon and alloy steel plate shipments in 1983. Steel plates are used primarily in the construction of bridges, storage tanks, pressure vessels, railroad freight and passenger cars, ships, line pipe, and industrial machinery.

Sheets and strip.--Steel service centers and distributors and the automotive industry are the largest consumers of steel sheets and strip, accounting for 30 and 26 percent, respectively, of U.S. producers' total shipments of such merchandise in 1983. These products are also used in the containers, packaging, and shipping materials industry (12 percent of shipments), in making contractors' products such as plumbing equipment and building products (6 percent), and in producing electrical equipment (6 percent). The remaining shipments of sheets and strip are distributed among a variety of other consumers.

Wire rods.--The most significant markets for wire rods are steel converters and processors, the construction industry (including maintenance), and the machinery, industrial equipment, and tools market. They accounted for 38, 16, and 11 percent, respectively, of total carbon and alloy steel wire rod shipments by domestic producers in 1983. Wire rods are drawn into wire for a wide variety of uses, which are differentiated according to the degree of malleability, strength, and hardness desired in the final wire product. In addition to wire, typical end uses for wire rods include wire mesh, home appliance shelving, shopping carts, fasteners, baling wire, chain link fence, clothes hangers, bicycle spokes, upholstery springs, tire bead, and bridge cables.

Wire and wire products.--Shipments of carbon and alloy steel wire and wire products to service centers and distributors accounted for 18 percent of U.S. producers' total shipments of such products in 1983. Other principal markets were construction (representing 23 percent of total shipments), steel for converting and processing into finished goods (12 percent), and other domestic and commercial equipment such as furniture, business machines, and toys (6 percent). The uses of wire are myriad, with significant quantities being used in the production of fasteners, springs, strand, rope, welding wire, and woven or knitted products. Fasteners include brads, nails, spikes, staples, and tacks; they are used to secure objects in place and to close openings. Wire strand is often purchased by construction firms, which tension the strand to nearly its elastic limit and use it to compress concrete to provide increased resistance to loads. The strand is widely used in the construction of bridges, girders, beams, pilings, and railroad ties, as well as in a variety of building products such as columns, roofs, and floors. Steel wire ropes are used for the transmission of force in industrial and consumer applications in which a combination of flexibility, durability, reliability, and strength is required. Typical end uses for wire ropes are in hoisting machinery, earthmoving machinery, and material-handling equipment such as clamshells, cranes, bulldozers, mining and dredging machines, and conveyors. Other uses include elevator ropes, logging ropes, marine ropes, oilfield ropes for drilling lines and well servicing, aircraft control cables, and fish net trawling cables. Wire ropes are also used by the automobile industry for clutch, brake, speedometer, and other cables.

Railway-type products.--In 1983, the majority (80 percent) of producers' shipments of carbon and alloy steel railway-type products went to the rail-transportation market. Service centers and distributors absorbed an additional 10 percent of total shipments. Railway-type products include rails, joint bars, tie plates, track spikes, and RR axles and wheels. Rails are used in open track construction on main and secondary rail lines and in tracks embedded in pavement. Joint bars connect the ends of adjacent rails in track, and tie plates are used to support rails in track, maintain track gage, and protect the ties. Railway track spikes are used to secure tie plates or ties.

Bars.--Major markets for carbon and alloy steel bars are in automotive and construction applications, which accounted for 12 and 10 percent, respectively, of U.S. producers' total shipments of such bars in 1983. 1/ Shipments to service centers and distributors represented an additional 7 percent of shipments. Bars are used in the production of parts of bridges, buildings, ships, agricultural implements, motor vehicles, roadbuilding equipment, railway equipment, and general types of machinery.

Structural shapes and units.--The most significant market for carbon and alloy steel structural shapes and units was the construction industry (including maintenance), which received 58 percent of producers' shipments of these steel products in 1983. Service centers and distributors accounted for another 13 percent of shipments that year, with the balance of shipments spread over the remaining markets. 2/ Structurals are used in building construction as columns and beams, and as structural members in bridge spans. Standard and wide-flange sections are used by automobile manufacturers for center and side sills. Certain channels and angles are used as ribs or stiffeners in barge and ship construction. The principal use for steel sheet piling is in single-wall bulkheads for piers, docks, and wharves. Steel sheet piling is used to form the dock face, or in platform docks as a cutoff wall in front of, or at the rear of, the platform. It is also used for bulkhead and retaining walls serving a variety of purposes other than piers, docks, and wharves. Steel sheet piling has found extensive use in the construction of permanent walls for buildings and for temporary use in sewer and trench excavations.

Pipes and tubes and blanks therefor.--Shipments of pipes, tubes, and blanks therefor (pipes and tubes) to service centers and distributors represented 34 percent of U.S. producers' total shipments of such merchandise in 1983. The oil and gas industry, a major end-use market for pipes and tubes, received 26 percent of shipments that year, and the machinery, industrial equipment, and tools industry took 7 percent. The various types of buildings, ships, agricultural implements, motor vehicles, roadbuilding equipment, railway equipment, and general types of machinery.

Carbon and alloy steel pipes and tubes have a number of end uses. Standard pipes are intended for the low-pressure conveyance of water, steam, natural gas, air, and other liquids and gases in plumbing and heating systems,

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1/ Less than 50 percent of shipments of carbon and alloy steel bars are identified by end use; this is likely to cause the calculated percentages to be understated. The data include bar-size light shapes.

2/ These data exclude bar-size light shapes and fabricated structural units.

air-conditioning units, automatic sprinkler systems, and other related uses. These pipes may carry fluids at elevated temperatures and pressures and may not be subjected to the application of external heat. Pressure tubes are used to convey fluids and gases at elevated temperatures or pressures, or both, and may be subjected to the application of heat. These tubes include air-heater tubes, boiler tubes, heat-exchanger and condenser tubes, and superheater tubes. Mechanical tubing is employed in a variety of mechanical applications, including bicycle and motorcycle frames and parts, conveyor rolls and links, fishing rods, flagstaffs and masts, furniture tubing, gun barrels, handles, muffler tubes, posts and poles, and vacuum cleaner parts. Structural pipes and tubing are used for framing and support members for construction or load-bearing purposes in the construction, shipbuilding, trucking, farm equipment, and related industries. Oil-country tubular goods are steel pipes and tubes used in the drilling of oil and gas wells and in conveying oil and gas to ground level. Included therein are oil well drill pipe, oil well casing, and oil well tubing. Line pipes are used for the transportation of gas, oil, or water, generally in pipeline or utility distribution systems.

The Question of Increased Imports

U.S. imports

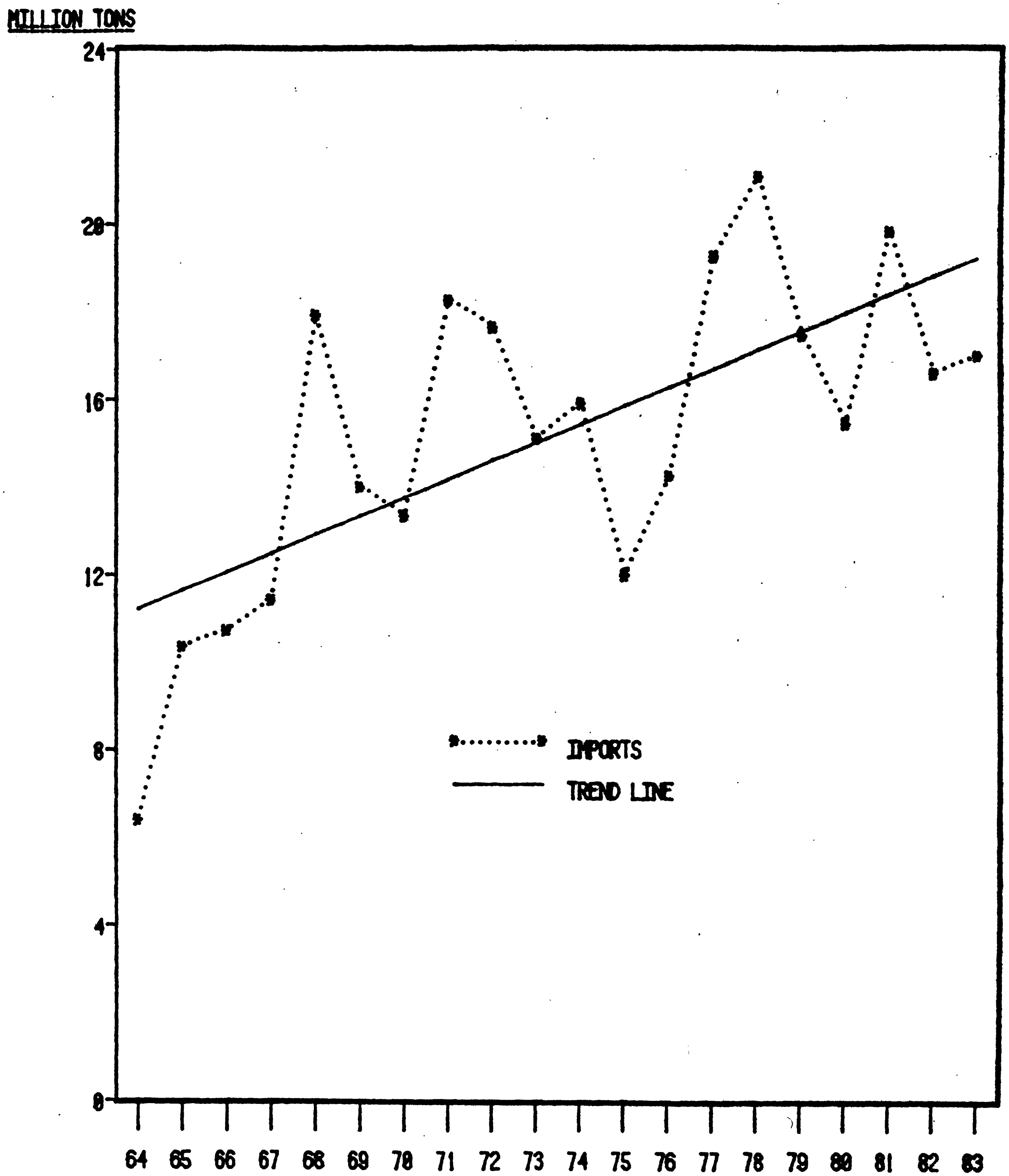
All steel mill products.--U.S. imports of all steel mill products during 1964-83 are shown in table 2 (p. a-39) and figure 4. 1/ As indicated in figure 4, imports have trended upward during the last 20 years--at an average annual rate of growth of 2.9 percent. 2/ In 1983, according to the AISI, 96 percent of total imports of steel mill products were of carbon steel, 3 percent, alloy steel, and 1 percent, stainless steel. The principal sources of imports and their shares of total U.S. imports in 1979-83 are shown below (in percent):

	1979	1980	1981	1982	1983
Japan	36.2	38.8	31.3	31.1	24.8
EC	30.9	25.1	32.6	33.6	24.1
Latin America	3.7	4.1	3.9	5.8	14.1
Canada	13.4	15.3	14.6	11.1	13.9
Republic of Korea	5.6	6.7	6.1	6.4	10.1
Africa	2.8	2.8	1.9	3.2	3.3
All other	7.4	7.2	9.6	8.8	9.7
Total	100.0	100.0	100.0	100.0	100.0

1/ Compiled from official statistics of the U.S. Department of Commerce, as aggregated by the American Iron & Steel Institute.

2/ The trend line shown in fig. 4 is statistically significant at the 95-percent confidence level (t=3.92). An OLS regression trend line for the trough-to-trough 1975-82 period (this trend line is not shown in fig. 4) proved not to be statistically significant (t=0.41). It did, however, result in an average annual rate of increase of 3.2 percent during 1975-82, or somewhat greater than the trend for the entire 1964-83 period. Similarly, a peak-to-peak trend line from 1968 to 1978 resulted in an average annual rate of growth in imports of 1.4 percent. Again, however, this trend line was not statistically significant (t=0.41).

Figure 4.—Steel mill products: U.S. imports for consumption, 1964-83



Source: Table 2.

Carbon and alloy steel products.--Table 6 shows, by product categories, the quantities, values, and unit values of U.S. imports during 1979-83 of the carbon and alloy steel products included in this investigation. 1/ Over half of these imports, on the basis of quantity, during the 5-year period were in two major product categories--sheets and strip, and pipes and tubes--which accounted for 33 and 24 percent, respectively, of the total. Structural shapes and units accounted for an additional 12 percent of the imports of all carbon and alloy steel products during 1979-83, plates accounted for 11 percent, and the five remaining product categories accounted for 2 to 5 percent each.

Aggregate U.S. imports of the carbon and alloy steel products included in this investigation fluctuated during 1979-83, decreasing from 17.7 million tons, valued at $6.8 billion, in 1979 to a low of 15.6 million tons, valued at $6.7 billion, in 1980 before increasing to a high of 20.0 million tons, valued at $10.0 billion, in 1981 and then decreasing irregularly to 17.2 million tons, valued at $6.2 billion, in 1983. Imports from Japan, which accounted for 32 percent of imports from all sources during 1979-83, decreased irregularly from 6.4 million tons, or 36 percent of the import market, in 1979 to 4.3 million tons, or 25 percent, in 1983 (app. H, table H-1). Imports from the EC, which accounted for 29 percent of imports from all sources during 1979-83--over two-thirds of which were supplied by the Federal Republic of Germany (West Germany), France, and Belgium and Luxembourg--fluctuated during the period, ranging from a low of 3.9 million tons, or 25 percent of the import market, in 1980 to a high of 6.4 million tons, or 32 percent, in 1981. Imports of the products included in this investigation from those countries, territories, and associations of countries designated in general headnote 3(c) of the TSUSA as eligible beneficiary developing countries for the purposes of the GSP (hereinafter referred to as "developing countries") have generally increased in quantity and continually increased in share of the U.S. import market from 1.9 million tons, or 11 percent of the imports from all sources, in 1979 to 4.5 million tons, or 26 percent, in 1983. The Republic of Korea, Brazil, and Mexico, the largest developing country suppliers, together accounted for over four-fifths of such imports during the 5-year period. Other major sources of imports of the products included in this investigation during 1979-83 were Canada (14 percent), Spain (3 percent), and the Republic of South Africa (3 percent).

1/ The official statistics of the U.S. Department of Commerce, which are used in this report, do not completely match the specified product categories in all cases. Discrepancies, which are believed to have a minimal effect on the data presented, are a result of so-called basket classifications in the tariff schedules wherein: (1) products excluded from the scope of this investigation, e.g., imports of heat-resisting steel, have not been specifically provided for elsewhere and, therefore, may be included in the data for certain product categories, and/or (2) imports of products included in this investigation are not specifically provided for by the specified product categories, e.g., plates, sheets, and strip, which are all classified together if cut, pressed, or stamped to nonrectangular shape. The tariff classifications included in each product grouping for the purposes of aggregating import data in this report are identified, by TSUSA numbers, in app. G.

Table 6.—Carbon and alloy steel products: U.S. imports for consumption, by types, 1979-83

Product	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Carbon and alloy steel products, total	17,704	15,650	19,983	1/ 16,766	1/ 17,228
Ingots, blooms, billets, slabs, and sheet bars	342	152	786	712	821
Plates	1,820	2,063	2,446	1,611	1,394
Sheets and strip:					
Hot-rolled	2,187	1,499	1,643	1,369	2,057
Cold-rolled	2,493	1,567	1,723	1,810	1/ 2,618
Further processed, galvanized	2,117	1,334	1,283	1,183	1,771
Further processed, other	323	407	365	321	707
Total	7,121	4,807	5,014	4,683	1/ 7,153
Wire rods	963	801	858	1/ 915	1,159
Wire and wire products:					
Wire 2/	436	374	373	323	448
Barbed and twisted wire	19	19	27	18	29
Wire strand	152	140	126	146	135
Wire ropes, cables, and cordage	75	64	88	76	60
Wire fencing	11	8	8	8	11
Brads, nails, spikes, staples, and tacks	337	292	303	264	374
Total	1,030	898	926	837	1,057
Railway-type products:					
Rails	190	229	247	255	1/ 107
Joint bars, tie plates, and track spikes	24	42	36	65	45
RR axle bars, and RR wheels and axles and parts thereof	100	143	36	20	7
Total	313	414	319	340	1/ 159
Bars:					
Concrete reinforcing bars	117	79	53	52	208
Other, hot-rolled	589	481	579	444	450
Other, cold-finished	140	106	166	167	160
Total	846	665	798	663	818
Structural shapes and units:					
Sheet piling	103	89	99	115	69
Structural shapes, light 3/	232	137	105	60	88
Structural shapes, heavy 3/	1,882	1,740	1,977	1,483	1,489
Fabricated structural units 4/	154	131	118	120	178
Total	2,370	2,097	2,299	1,778	1,825
Pipes and tubes and blanks therefor:					
Oil well tubing, casing, and drill pipe 5/	585	1,252	2,905	2,180	565
All other	2,314	2,501	3,632	3,047	2,278
Total	2,898	3,753	6,537	5,227	2,843

See footnotes at end of table.

Table 6.—Carbon and alloy steel products: U.S. imports for consumption, by types, 1979-83—Continued

Product	1979	1980	1981	1982	1983
	Value (1,000 dollars)				
Carbon and alloy steel products, total	6,842,977	6,690,833	9,964,247	8,707,265	6,227,045
Ingots, blooms, billets, slabs, and sheet bars	89,344	46,499	206,607	176,596	174,709
Plates	557,233	670,555	886,576	545,681	354,325
Sheets and strip:					
Hot-rolled	613,461	437,388	525,083	422,105	547,932
Cold-rolled	896,622	616,209	726,872	743,496	952,763
Further processed, galvanized	889,417	594,940	602,093	546,928	761,743
Further processed, other	160,469	223,432	214,845	174,904	337,088
Total	2,559,969	1,871,968	2,068,893	1,887,434	2,599,526
Wire rods	332,027	275,181	320,299	309,344	340,121
Wire and wire products:					
Wire 2/	286,592	257,870	267,602	224,887	274,813
Barbed and twisted wire	9,034	10,511	15,374	9,356	12,959
Wire strand	93,153	87,956	76,189	85,348	75,105
Wire ropes, cables, and cordage	73,664	61,092	83,121	72,156	52,273
Wire fencing	7,848	6,430	6,419	5,825	6,992
Brads, nails, spikes, staples, and tacks	188,176	152,841	160,045	140,491	188,545
Total	658,467	576,700	608,749	538,062	610,687
Railway-type products:					
Rails	65,654	89,491	95,115	109,766	41,952
Joint bars, tie plates, and track spikes	8,680	16,773	14,673	25,679	14,575
RR axle bars, and RR wheels and axles and parts thereof	58,877	101,150	30,955	18,682	7,030
Total	133,211	207,414	140,743	154,127	63,557
Bars:					
Concrete reinforcing bars	33,164	23,770	15,415	12,700	39,126
Other, hot-rolled	209,153	184,817	250,684	198,619	173,545
Other, cold-finished	74,078	61,487	111,290	108,111	80,386
Total	316,396	270,073	377,389	319,431	293,057
Structural shapes and units:					
Sheet piling	37,822	33,750	40,512	50,810	26,744
Structural shapes, light 3/	76,162	49,960	38,027	21,732	29,298
Structural shapes, heavy 3/	596,769	589,762	727,669	544,550	425,558
Fabricated structural units 4/	112,100	98,262	84,116	83,898	104,257
Total	822,853	771,734	890,325	700,990	585,858
Pipes and tubes and blanks therefor:					
Oil well tubing, casing, and drill pipe 5/	346,716	830,848	2,447,569	1,976,948	315,745
All other	1,026,761	1,169,859	2,017,096	2,098,652	889,461
Total	1,373,477	2,000 707	4,464,665	4,075,600	1,205,206

See footnotes at end of table.

Table 6.—Carbon and alloy steel products: U.S. imports for consumption, by types, 1979-83—Continued

Product	1979	1980	1981	1982	1983
	Unit value (per short ton)				
Carbon and alloy steel products, average	$387	$428	$499	1/ $519	1/ $361
Ingots, blooms, billets, slabs, and sheet bars	261	306	263	248	213
Plates	306	325	362	339	254
Sheets and strip:					
Hot-rolled	281	292	320	308	266
Cold-rolled	360	393	422	411	1/ 364
Further processed, galvanized	420	446	469	462	430
Further processed, other	497	550	588	546	477
Average	360	389	413	403	1/ 363
Wire rods	345	344	373	1/ 338	294
Wire and wire products:					
Wire 2/	658	689	718	695	613
Barbed and twisted wire	484	547	564	507	443
Wire strand	613	628	605	584	558
Wire ropes, cables, and cordage	976	953	944	947	871
Wire fencing	697	773	760	689	650
Brads, nails, spikes, staples, and tacks	559	523	527	531	504
Average	639	642	657	643	578
Railway-type products:					
Rails	345	391	385	430	1/ 390
Joint bars, tie plates, and track spikes	367	399	412	393	321
RR axle bars, and RR wheels and axles and parts thereof	591	708	867	937	1,081
Average	425	501	442	453	1/ 399
Bars:					
Concrete reinforcing bars	284	302	293	246	188
Other, hot-rolled	355	385	433	447	386
Other, cold-finished	527	578	669	647	503
Average	374	406	473	482	358
Structural shapes and units:					
Sheet piling	368	377	410	442	387
Structural shapes, light 3/	329	365	361	364	332
Structural shapes, heavy 3/	317	339	368	367	286
Fabricated structural units 4/	729	750	713	701	584
Average	347	368	387	394	321
Pipes and tubes and blanks therefor:					
Oil well tubing, casing, and drill pipe 5/	593	664	843	907	559
All other	444	468	555	689	390
Average	474	533	683	780	424

1/ Estimated by the staff of the U.S. International Trade Commission.
2/ Includes wire bale ties, milliner's wire, and other wire covered with textile or other material not wholly of metal.
3/ Excludes structural shapes which have been drilled, punched, or otherwise advanced.
4/ Includes light and heavy structural shapes which have been drilled, punched, or otherwise advanced.
5/ Includes only products conforming with specifications of the American Petroleum Institute.

Source: Compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.—Because of rounding, figures may not add to totals shown; unit values were calculated from unrounded data.

U.S. imports from those countries designated as beneficiary countries for the purposes of the Caribbean Basin Economic Recovery Act, 1/ which accounted for less than one-quarter of 1 percent of the imports from all sources during 1979-83 and less than one-half of 1 percent during any year, increased irregularly from 687 tons, valued at $334,000, in 1979 to 65,990 tons, valued at $15.5 million, in 1983 (table H-2). Virtually all of such imports since 1981 have been wire rods from Trinidad and Tobago.

Ingots, blooms, billets, slabs, and sheet bars.--U.S. imports of carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars increased irregularly from 342,000 tons, valued at $89 million, in 1979 to 821,000 tons, valued at $175 million, in 1983. Imports of these products from Canada, which accounted for 48 percent of the imports during 1979-83, fluctuated during the period, ranging from 51,000 tons, or 15 percent of the import market, in 1979 to 576,000 tons, or 73 percent, in 1981 (table H-3). Imports of ingots, blooms, billets, slabs, and sheet bars from the EC, which accounted for 22 percent of imports from all sources during 1979-83--about four-fifths of which were supplied by West Germany and the United Kingdom--decreased from 85,000 tons, or 25 percent of the import market, in 1979 to 23,000 tons, or 15 percent, in 1980 and then increased to 208,000 tons, or 25 percent, in 1983. Imports from West Germany increased from 3,000 tons, or 1 percent of the import market, in 1979 to 131,000 tons, or 16 percent, in 1983, whereas imports from the United Kingdom, which fluctuated during the period, generally decreased their share of the import market from 22 percent in 1979 to 1 percent in 1983. Other important sources of imports of ingots, blooms, billets, slabs, and sheet bars during 1979-83 included Sweden (10 percent) and Brazil (6 percent). The Republic of Korea was the third largest source of imports of these products in 1979, supplying 71,000 tons; however, during each year of the period 1980-83 such imports were negligible or nil. The only imports of these products from the CBERA countries during 1979-83 were 3 tons from Panama in 1981.

Plates.--U.S. imports of carbon and alloy steel plates increased from 1.8 million tons, valued at $557 million, in 1979 to 2.4 million tons, valued at $887 million, in 1981 and then decreased to 1.4 million tons, valued at $354 million, in 1983. Imports of plates from the EC, which accounted for 35 percent of imports from all sources during 1979-83, increased from 686,000 tons, or 38 percent of the import market, in 1979 to 876,000 tons, or 36 percent, in 1981 and then decreased to 405,000 tons, or 29 percent, in 1983; about four-fifths of these imports came from Belgium and Luxembourg, West Germany, and France (table H-4). Imports of plates from the developing countries, over four-fifths supplied by Brazil and the Republic of Korea, accounted for 25 percent of imports from all sources during 1979-83; such imports fluctuated during the period, ranging from a low of 311,000 tons, or 19 percent of the import market, in 1982 to a high of 708,000 tons, or 29 percent, in 1981. Imports of plates from Canada--the largest single-country source of such imports in both 1979 and 1983, which accounted for 13 percent of imports from all sources during 1979-83, decreased irregularly from 273,000 tons, or 15 percent of the import market, in 1979 to 169,000 tons, or 10 percent, in 1982 and then increased to 259,000 tons, or 19 percent, in 1983.

1/ Beneficiary CBERA countries are enumerated in general headnote 3(g) of the TSUSA.

Imports of plates from Japan, which accounted for 6 percent of imports from all sources during 1979-83, increased from 139,000 tons, or 8 percent of the import market, in 1979 to 165,000 tons, or 8 percent, in 1980 and then decreased to 38,000 tons, or 3 percent, in 1983. There were no imports of plates from CBERA countries during 1979-83.

Sheets and strip.--U.S. imports of carbon and alloy steel sheets and strip fluctuated during 1979-83, ranging from a low of 4.7 million tons, valued at $1.9 billion, in 1982 to a high of 7.2 million tons, valued at $2.6 billion, in 1983. Imports from Japan, which accounted for 39 percent of imports of sheets and strip from all sources during 1979-83, decreased from 3.0 million tons, or 42 percent of the import market, in 1979 to 1.6 million tons, or 34 percent, in 1982 and then increased to 2.3 million tons, or 33 percent, in 1983. Imports from the EC, accounting for 37 percent of imports from all sources during 1979-83, fluctuated during the period, ranging from a low of 1.6 million tons, or 34 percent of the import market, in 1980 to a high of 2.9 million tons, or 41 percent, in 1979. The 2.0 million tons imported from the EC in 1983 accounted for only 28 percent of the import market--a market-share low for the 5-year period (table H-5). Imports from West Germany and France accounted for over two-thirds of these imports of sheets and strip from the EC during the period. Although the developing countries accounted for only 9 percent of the imports from all sources during 1979-83, they experienced a fourfold increase in the quantity of imports and a threefold increase in import market share. The imports from the developing countries, over three-fourths of which were supplied by Brazil and the Republic of Korea, decreased from 295,000 tons, or 4 percent of the import market, in 1979 to 156,000 tons, or 3 percent, in 1980 and then increased to 1.6 million tons, or 22 percent, in 1983. Mexico, Argentina, and Venezuela, which all had negligible or nil exports of sheets and strip to the United States in the earlier part of the 5-year period, increased their exports substantially in 1983, when each accounted for over 100,000 tons of U.S. imports. Canada, another important source of imports of sheets and strip, accounted for 8 percent of imports during the 5-year period. The only imports from CBERA countries during the period were nongalvanized sheets and strip which have been further processed past the hot- and cold-rolled states; such imports are discussed below.

U.S. imports of hot-rolled carbon and alloy steel sheets and strip, whether or not pickled, which have not been cold-rolled or otherwise further processed, fluctuated during 1979-83, ranging from a low of 1.4 million tons, valued at $422 million, in 1982 to a high of 2.2 million tons, valued at $613 million, in 1979. Such imports accounted for 30 percent of the total imports of sheets and strip during 1979-83. The EC, primarily France, West Germany, and the Netherlands, accounted for 47 percent of the imports of hot-rolled sheets and strip during 1979-83; such imports from the EC decreased irregularly from 1.1 million tons, or 52 percent of the import market, in 1979 to 653,000 tons, or 48 percent, in 1982 (table H-6). Although the quantity of imports from the EC increased to 764,000 tons in 1983, the share of the total accounted for by these EC imports decreased to 37 percent. Imports from Japan, which accounted for 27 percent of the imports from all sources during 1979-83, decreased from 668,000 tons, or 31 percent of the import market, in 1979 to 345,000 tons, or 25 percent, in 1982. Like imports from the EC, imports from Japan increased in 1983, to 363,000 tons, but the share of the import market accounted for by these imports fell to 18 percent. Both the EC and Japan lost market share in 1983 to the developing countries, primarily Brazil and the Republic of Korea. Although the developing countries accounted for only 10 percent of imports of hot-rolled sheets and strip during 1979-83, these imports have increased considerably--from 52,000 tons, or 2 percent of the import market, in 1979 to 176,000 tons, or 13 percent, in 1982 and to 563,000 tons, or 27 percent, in 1983. There were no imports of hot-rolled sheets and strip from CBERA countries during the 5-year period.

U.S. imports of cold-rolled carbon and alloy steel sheets and strip which have not been further advanced decreased from 2.5 million tons, valued at $897 million, in 1979 to 1.6 million tons, valued at $616 million, in 1980 and then increased to 2.6 million tons, valued at $953 million, in 1983. Cold-rolled sheets and strip accounted for 35 percent of the total imports of sheets and strip during 1979-83. Like hot-rolled sheets and strip, the bulk of imports of cold-rolled sheets and strip during 1979-83 came from the EC--four-fifths of which were supplied by West Germany, France, and the Netherlands--(44 percent), Japan (31 percent), and the developing countries--primarily Brazil, the Republic of Korea, and Argentina--(14 percent) (table H-7). Also like the hot-rolled product, imports of cold-rolled sheets and strip from the EC lost a substantial share of the total U.S. import market for such merchandise in 1983--31 percent compared with 53 percent in 1982--as imports from developing countries gained substantial market share--29 percent compared with 12 percent in 1982. Imports of cold-rolled sheets and strip from the EC fluctuated during 1979-83, ranging from a low of 639,000 tons, or 41 percent of the import market, in 1980 to a high of 1.2 million tons, or 49 percent, in 1979. Imports from the developing countries decreased from 197,000 tons, or 8 percent of the import market, in 1979 to 106,000 tons, or 7 percent, in 1980 and then increased to 748,000 tons, or 29 percent, in 1983. Japan was the largest single-country supplier of cold-rolled sheets and strip during each year of the 1979-83 period, except 1982; imports from Japan decreased from 858,000 tons, or 34 percent of the import market, in 1979 to 410,000 tons, or 23 percent, in 1982 and then increased to 724,000 tons, or 28 percent, in 1983. There were no imports of cold-rolled sheets and strip from CBERA countries during the 5-year period.

U.S. imports of galvanized sheets and strip, which accounted for 27 percent of the total imports of sheets and strip during 1979-83, decreased from 2.1 million tons, valued at $889 million, in 1979 to 1.2 million tons, valued at $547 million, in 1982 and then increased to 1.8 million tons, valued at $762 million, in 1983. Imports from Japan, which accounted for 56 percent of the imports from all sources during 1979-83, decreased from 1.2 million tons, or 58 percent of the import market, in 1979 to 662,000 tons, or 56 percent, in 1982 and then increased to 857,000 tons, or 48 percent, in 1983 (table H-8). Japan's loss of U.S. import market share in 1983 is attributable to an increase of nearly fourfold in imports from the developing countries in that year. Imports of galvanized sheets and strip from the developing countries--primarily the Republic of Korea and Mexico--decreased from 46,000 tons, or 2 percent of the import market, in 1979 to 14,000 tons, or 1 percent, in 1980 and then increased to 246,000 tons, or 14 percent, in 1983. Imports from Canada, which accounted for 10 percent of total imports from all sources during 1979-83, followed the trend of total imports--decreasing from 166,000 tons in 1979 to 114,000 tons in 1982 and then increasing to 174,000 tons in 1983. There were no imports of galvanized sheets and strip from CBERA countries during the 5-year period.

U.S. imports of carbon and alloy sheets and strip which have been further processed, other than by galvanizing, past the hot- and cold-rolled product, varied slightly during 1979-82, ranging from a low of 321,000 tons, valued at $175 million, in 1982 to a high of 407,000 tons, valued at $223 million, in 1980. In 1983, however, such imports, which were more than double those in 1982, increased to 707,000 tons, valued at $337 million. Nongalvanized, further-processed sheets and strip accounted for a small portion of the total imports of sheets and strip during each year of 1979-83--ranging from only 5 to 10 percent of the quantity and 6 to 13 percent of the value. Over one-half of the imports of nongalvanized further-processed sheets and strip during each year of the 5-year period came from Japan and another 20 to 31 percent came from the EC, primarily West Germany and France (table H-9). The surge in imports in 1983 was attributable not only to increased supplies from traditional sources, such as Japan and the EC, but to the picking up of market share by such sources as the developing countries and the Republic of South Africa--each of which increased its import market share from 1 percent or less per year during 1979-82 to 5 percent in 1983. The only imports from CBERA countries during the 5-year period were 10 tons from the Dominican Republic in 1981 and 2 tons from the Dominican Republic and Honduras, together, in 1983.

Wire rods.--U.S. imports of carbon and alloy steel wire rods decreased from 963,000 tons, valued at $332 million, in 1979 to 801,000 tons, valued at $275 million, in 1980 and then increased to 1.2 million tons, valued at $340 million, in 1983. Imports from Canada, which accounted for 34 percent of imports from all sources during 1979-83, increased from 334,000 tons, or 35 percent of the import market, in 1979 to 370,000 tons, or 46 percent, in 1980 and then decreased to 290,000 tons, or 25 percent, in 1983 (table H-10). Imports from Japan, which accounted for 26 percent of imports from all sources during 1979-83, decreased from 349,000 tons, or 36 percent of the import market, in 1979, when Japan was the largest supplier, to 181,000 tons, or 20 percent, in 1982. Although the quantity of wire rods from Japan increased to 222,000 tons in 1983, Japan's share of the import market decreased to 19 percent. Imports from the developing countries increased from 15,000 tons, or 2 percent of the import market, in 1979 to 321,000 tons, or 28 percent, in 1983. Mexico, Brazil, Argentina, and Trinidad and Tobago, which exported no (or negligible quantities of) wire rods to the United States in 1979 and 1980, composed an increasingly larger share of the developing-country-supplied imports during 1981-83, accounting for 70 percent, 97 percent, and 98 percent of such imports in 1981, 1982, and 1983, respectively. The only imports of wire rods from CBERA countries during the 5-year period were from Trinidad and Tobago; these imports increased from nil in 1979 and 1980 to 6,010 tons in 1981, 56,338 tons in 1982, and 63,961 tons in 1983.

Wire and wire products.--U.S. imports of carbon and alloy steel wire and wire products fluctuated during 1979-83, ranging from 837,000 tons, valued at $538 million, in 1982 to 1.1 million tons, valued at $611 million, in 1983. Imports from the developing countries, which accounted for 25 percent of imports from all sources during 1979-83, fluctuated during the period, ranging from 190,000 tons, or 21 percent of imports from all sources, in 1980 to 295,000 tons, or 28 percent, in 1983; about four-fifths of the developing country exports to the United States came from the Republic of South Korea (table H-11). Japan, which accounted for 24 percent of the imports of wire and wire products from all sources during 1979-83, had a reduced share of the import market during each year of the period. Imports from Japan decreased from 315,000 tons, or 31 percent of the import market, in 1979 to 161,000 tons, or 19 percent, in 1982. Although the quantity of imports from Japan increased to 199,000 tons in 1983, Japan's share of the import market remained at 19 percent. Imports of wire and wire products from Canada, which accounted for 20 percent of imports from all sources during 1979-83, fluctuated slightly during the period, ranging from a low of 174,000 tons, or 17 percent of the import market, in 1979 to 218,000 tons, or 21 percent, in 1983. Imports from the EC, which supplied 18 percent of imports from all sources during 1979-83--over three-fifths of which were supplied by Belgium and Luxembourg, and France--fluctuated during the period, ranging from a low of 142,000 tons, or 16 percent of the import market, in 1980 to a high of 203,000 tons, or 20 percent, in 1979. Imports from CBERA countries, primarily from the Dominican Republic, but with smaller quantities supplied by Panama, Costa Rica, Jamaica, and El Salvador, decreased from 631 tons in 1979 to 124 tons in 1980, 32 tons in 1981, 21 tons in 1982, and 9 tons in 1983.

U.S. imports of carbon and alloy steel wire, which accounted for 41 percent of the total imports of wire and wire products during 1979-83, decreased from 436,000 tons, valued at $287 million, in 1979 to 323,000 tons, valued at $225 million, in 1982 and then increased to 448,000 tons, valued at $275 million, in 1983. Imports from the EC, which accounted for 35 percent of imports from all sources during 1979-83--over four-fifths of which were supplied by Belgium and Luxembourg, France, and West Germany--decreased irregularly from 166,000 tons, or 38 percent of the import market, in 1979 to 114,000 tons, or 35 percent, in 1982 and then increased to 144,000 tons, or 32 percent, in 1983 (table H-12). Imports from Japan, which accounted for 30 percent of imports from all sources during 1979-83, decreased from 147,000 tons, or 34 percent of the import market, in 1979 to 87,000 tons, or 27 percent, in 1982 and then increased to 131,000 tons, or 29 percent, in 1983. Imports from Canada, which accounted for 26 percent of imports from all sources during 1979-83, increased irregularly from 82,000 tons, or 19 percent of the import market, in 1979 to 132,000 tons, or 29 percent, in 1983. The only imports of wire from CBERA countries during the period were 26 tons from Costa Rica in 1980 and 20 tons from the Dominican Republic in 1981.

U.S. imports of barbed and twisted wire, which accounted for only 2 percent of the total imports of wire and wire products during 1979-83, fluctuated during the period from 18,000 tons, valued at $9 million, in 1982 to 29,000 tons, valued at $13 million, in 1983. The developing countries, primarily the Republic of Korea, Mexico, Argentina, and Brazil, supplied 57 percent of these imports from all sources during the 5-year period; Belgium and Luxembourg supplied 22 percent and Poland supplied 15 percent (table H-13). The only imports from CBERA countries during the period were 199 tons and 55 tons from the Dominican Republic in 1979 and 1980, respectively.

U.S. imports of carbon and alloy steel wire strand, which accounted for 15 percent of the total imports of wire and wire products during 1979-83, fluctuated during the period, ranging from 126,000 tons, valued at $76 million, in 1981 to 152,000 tons, valued at $93 million, in 1979. Imports from Japan, which accounted for 42 percent of imports from all sources during 1979-83, decreased irregularly from 88,000 tons, or 58 percent of the import market, in 1979 to 35,000 tons, or 26 percent, in 1983 (table H-14). Imports from the developing countries (over two-thirds supplied by the Republic of Korea), the EC, and Spain, which accounted for 21, 12, and 9 percent, respectively, of the wire-strand import market during 1979-83, increased their shares of that market during the period. South Africa, another important source, accounted for 13 percent of the imports of wire strand during the 5-year period. The only imports of wire strand from CBERA countries during the period were 38 tons and 20 tons from the Dominican Republic in 1979 and 1980, respectively, and less than one-fifth ton from El Salvador in 1983.

U.S. imports of carbon and alloy steel wire ropes, cables, and cordage, which accounted for 8 percent of the total imports of wire and wire products during 1979-83, fluctuated during the period, ranging from a low of 60,000 tons, valued at $52 million, in 1983 to a high of 88,000 tons, valued at $83 million, in 1981. Imports from the Republic of Korea, which accounted for 68 percent of imports from all sources during 1979-83, fluctuated during the period, ranging from a low of 41,000 tons, or 68 percent of the import market, in 1983 to 62,000 tons, or 70 percent, in 1981 (table H-15). Other import sources during the 5-year period included Japan (9 percent), the EC (6 percent), and Canada (5 percent). The only imports of wire ropes, cables, and cordage from CBERA countries during 1979-83 were from the Dominican Republic and Panama; these imports decreased from 24 tons (from the Dominican Republic only) in 1979 to 14 tons in 1980 and 7 tons in 1981 and then increased to 21 tons in 1982. There were no imports from Panama in 1983 and the Dominican Republic's exports to the United States amounted to less than two-fifths of a ton.

U.S. imports of carbon and alloy steel wire fencing, which accounted for only 1 percent of the total imports of wire and wire products during 1979-83, decreased from 11,000 tons, valued at $8 million, in 1979 to 8,000 tons annually, valued at $6 million, during 1980-82 and then increased to 11,000 tons, valued at $7 million, in 1983. The primary sources of these imports were Canada (43 percent), Mexico (30 percent), and Belgium and Luxembourg (20 percent) (table H-16). There were no imports of wire fencing from any CBERA countries during the 5-year period.

U.S. imports of carbon and alloy steel brads, nails, spikes, staples, and tacks, which accounted for 33 percent of the total imports of wire and wire products during 1979-83, decreased irregularly from 337,000 tons, valued at $188 million, in 1979 to 264,000 tons, valued at $140 million, in 1982 and then increased to 374,000 tons, valued at $189 million, in 1983. Imports from the developing countries, which accounted for 40 percent of imports from all sources during 1979-83--over four-fifths supplied by the Republic of Korea--fluctuated during the period, ranging from a low of 93,000 tons, or 32 percent of the import market, in 1980 to 177,000 tons, or 47 percent, in 1983 (table H-17). Imports from Canada, which accounted for 24 percent of the imports from all sources during 1979-83, fluctuated during the period, ranging from a low of 70,000 tons, or 23 percent of the import market, in 1981 to 82,000 tons, or 28 percent, in 1980. Other important sources of imports of brads, nails, spikes, staples, and tacks during 1979-83 included Japan (13 percent) and the People's Republic of China (9 percent). The only imports of these fasteners from CBERA countries during the 5-year period were 370 tons, 9 tons, and 5 tons from the Dominican Republic in 1979, 1980, and 1981, respectively, and 8 tons from Jamaica in 1983.

Railway-type products.--U.S. imports of carbon and alloy steel railway-type products fluctuated during 1979-82, ranging from a low of 313,000 tons, valued at $133 million, in 1979 to a high of 414,000 tons, valued at $207 million, in 1980; such imports decreased to only 159,000 tons, valued at $64 million, in 1983. Imports of railway-type products from the EC, which accounted for 39 percent of imports from all sources during 1979-83--over four-fifths of which were supplied by West Germany and France--fluctuated during 1979-82, ranging from a low of 122,000 tons, or 38 percent of the import market, in 1981 to a high of 157,000 tons, or 46 percent, in 1982; imports from the EC decreased substantially in 1983 to 48,000 tons, or 30 percent of the import market (table H-18). Imports from Canada, which accounted for 27 percent of the imports from all sources during 1979-83, increased from 109,000 tons, or 35 percent of the import market, in 1979 to 123,000 tons, or 30 percent, in 1980 and then decreased to 17,000 tons, or 11 percent, in 1983. Imports from Japan, which accounted for 31 percent of the imports from all sources during the 5-year period, increased irregularly from 66,000 tons, or 21 percent of the import market, in 1979 to 127,000 tons, or 37 percent, in 1982; although imports from Japan decreased to 90,000 tons in 1983, the import market share increased to 57 percent. The only imports of railway-type products from CBERA countries during 1979-83 were of the product category which comprises RR axle bars, and RR axles and wheels and parts thereof; they are discussed below.

U.S. imports of carbon and alloy steel rails, which accounted for two-thirds of the total imports of railway-type products during 1979-83, increased from 190,000 tons, valued at $66 million, in 1979 to 255,000 tons, valued at $110 million, in 1982 and then decreased to 107,000 tons, valued at $42 million, in 1983. Imports of rails from the EC, over four-fifths of which were from West Germany and France, accounted for 48 percent of the imports from all sources during 1979-83; such imports increased from 84,000 tons, or 44 percent of the import market, in 1979 to 148,000 tons, or 58 percent, in 1982 and then decreased to 47,000 tons, or 44 percent, in 1983 (table H-19). Imports from Canada, which accounted for 30 percent of the imports from all sources during 1979-83 but which lost import market share continually during the 5-year period, increased from 77,000 tons, or 40 percent of the import market, in 1979 to 91,000 tons, or 37 percent, in 1981 and then decreased to 15,000 tons, or 14 percent, in 1983. Imports of rails from Japan, which accounted for 21 percent of the imports from all sources during 1979-83, increased irregularly from 27,000 tons, or 14 percent of the import market, in 1979 to 65,000 tons, or 26 percent, in 1982; although imports from Japan decreased to 44,000 tons in 1983, their share of the import market increased to 41 percent. There were no imports of rails from CBERA countries during the 5-year period.

U.S. imports of carbon and alloy steel joint bars, tie plates, and track spikes, which accounted for 14 percent of the total imports of all railway-type products during 1979-83, increased irregularly from 24,000 tons, valued at $9 million, in 1979 to 65,000 tons, valued at $26 million, in 1982 and then decreased to 45,000 tons, valued at $15 million, in 1983. Virtually all imports of these products were from Japan and Canada during the 5-year period. Japan continually increased its share of the import market, from 34 percent (8,000 tons) in 1979 to 96 percent (44,000 tons) in 1983; Canada continually lost import market share, from 64 percent (15,000 tons) in 1979 to

3 percent (1,000 tons) in 1983 (table H-20). There were no imports of joint bars, tie plates, or track spikes from CBERA countries during 1979-83.

U.S. imports of carbon and alloy steel RR axle bars, and RR axles and wheels and parts thereof, which accounted for 20 percent of the total imports of all railway-type products during 1979-83, increased from 100,000 tons, valued at $59 million, in 1979 to 143,000 tons, valued at $101 million, in 1980 and then decreased to 6,000 tons, valued at $7 million, in 1983. France was the largest supplier of these RR products during 1979-83, accounting for 36 percent of the imports from all sources; although imports from France accounted for 23 to 44 percent of the import market during 1979-82, such imports accounted for only 3 percent in 1983 (table H-21). Other important sources of U.S. imports of these RR products during 1979-83 were Japan (34 percent), Canada (15 percent), and Brazil (11 percent). The only imports of these RR products from CBERA countries during the 5-year period were about one-eighth of a ton from Guatemala in 1983.

Bars.--U.S. imports of carbon and alloy steel bars fluctuated during 1979-83, ranging from a low of 663,000 tons, valued at $319 million, in 1982 to a high of 846,000 tons, valued at $316 million, in 1979. Imports from Japan, which accounted for 26 percent of the imports from all sources during 1979-83, decreased from 280,000 tons, or 33 percent of the import market, in 1979 to 146,000 tons, or 18 percent, in 1983 (table H-22). Imports of bars from Canada, accounting for 25 percent of the imports from all sources during 1979-83, were relatively constant during the period, averaging 188,000 tons per year. Imports of bars from the EC, which accounted for 24 percent of the imports from all sources during 1979-83, fluctuated from a low of 129,000 tons, or 19 percent of the import market, in 1980 to a high of 288,000 tons, or 36 percent, in 1981; almost four-fifths of these EC-supplied bars were from the United Kingdom and France. Other sources for imports of bars during the 5-year period included Brazil (6 percent), Spain (5 percent), and Mexico and the Republic of Korea (3 percent each). The only imports of bars from CBERA countries during 1979-83 were of hot-rolled bars, which are discussed below.

U.S. imports of carbon and alloy steel deformed concrete reinforcing bars (rebar), which accounted for 13 percent of the total imports of bars during 1979-83, decreased from 117,000 tons, valued at $33 million, in 1979 to 52,000 tons, valued at $13 million, in 1982 and then increased to 208,000 tons, valued at $39 million, in 1983. The developing countries, principally Brazil, Mexico, and the Republic of Korea, accounted for 60 percent of the imports of rebar from all sources during 1979-83. Such imports from the developing countries decreased from 42,000 tons, or 36 percent of the import market, in 1979 to 16,000 tons, or 30 percent, in 1981 and then increased to 186,000 tons, or 89 percent, in 1983 (table H-23). Imports from Japan, which accounted for 15 percent of the imports from all sources during 1979-83, declined irregularly from 33,000 tons, or 28 percent of the import market, in 1979 to 6,000 tons, or 3 percent, in 1983. Other important suppliers of rebar during 1979-83 included the Republic of South Africa (10 percent) and Canada (7 percent). There were no imports of rebar from CBERA countries during the 5-year period.

U.S. imports of hot-rolled carbon and alloy steel bars, excluding rebar, accounted for 67 percent of the total imports of bars during 1979-83. Such imports fluctuated during the period, ranging from a low of 444,000 tons, valued at $199 million, in 1982 to a high of 589,000 tons, valued at $209 million, in 1979. Imports of hot-rolled bars from Canada, which accounted for 33 percent of the imports from all sources during 1979-83, remained stable at 170,000 to 180,000 tons during the period--except for a drop to 151,000 tons in 1982 (table H-24). Imports from Japan, which accounted for 25 percent of the imports from all sources during 1979-83, decreased from 180,000 tons, or 31 percent of the import market, in 1979 to 77,000 tons, or 17 percent, in 1983. During 1979-83, imports of hot-rolled bars from the EC, over three-fifths of which were from the United Kingdom, accounted for 25 percent of imports from all sources; imports from the EC fluctuated during the period, ranging from a low of 89,000 tons, or 20 percent of the import market, in 1983 to a high of 201,000 tons, or 35 percent, in 1981. Other sources during 1979-83 included the developing countries (9 percent) and Spain (6 percent). Although the only significant importation of bars from CBERA countries during 1979-83 was 1,951 tons from Trinidad and Tobago in 1983, there were 2 tons and 1 ton of imports from the Dominican Republic in 1980 and 1981, respectively, and about one-quarter of a ton from Jamaica in 1983.

U.S. imports of cold-finished carbon and alloy steel bars, which accounted for 19 percent of the total imports of bars during 1979-83, decreased from 140,000 tons, valued at $74 million, in 1979 to 106,000 tons, valued at $61 million, in 1980 and then increased to the 160,000- to 167,000-ton level, valued at $80 million to $111 million, during 1981-83. Imports of cold-finished bars from Japan, which accounted for 41 percent of the imports from all sources during 1979-83, decreased from 68,000 tons, or 48 percent of the import market, in 1979 to 54,000 tons, or 32 percent, in 1982 and then increased to 64,000 tons, or 40 percent, in 1983 (table H-25). Imports of cold-finished bars from the EC, primarily from France and the United Kingdom, accounted for 35 percent of the imports from all sources during 1979-83; such imports fluctuated during the 5-year period, ranging from a low of 31,000 tons, or 29 percent of the import market, in 1980 to 79,000 tons, or 48 percent, in 1981. Other import sources during 1979-83 included Spain (8 percent) and Canada (7 percent). There were no imports of cold-finished bars from CBERA countries during the 5-year period.

Structural shapes and units.--U.S. imports of carbon and alloy steel structural shapes and units fluctuated during 1979-83, ranging from a low of 1.8 million tons, valued at $701 million, in 1982 to a high of 2.4 million tons, valued at $823 million, in 1979. Imports of structural shapes and units from the EC, primarily from Belgium and Luxembourg, the United Kingdom, and West Germany, accounted for 34 percent of the imports from all sources; imports from the EC fluctuated during the period, ranging from a low of 533,000 tons, or 29 percent of the import market, in 1983 to a high of 830,000 tons, or 35 percent, in 1979 (table H-26). Imports from Japan, which accounted for 32 percent of the imports from all sources, decreased irregularly from 792,000 tons, or 33 percent of the import market, in 1979 to 535,000 tons, or 29 percent, in 1983. Other import sources during 1979-83 included Canada (15 percent) and Spain (8 percent). Imports of structural shapes and units from CBERA countries during 1979-83 comprised 55 tons in 1979 from the Dominican Republic and Panama, 2 tons in 1980 from the Dominican Republic, and 67 tons in 1983 from the Dominican Republic, the Netherlands Antilles, and Trinidad and Tobago.

U.S. imports of carbon and alloy steel sheet piling, which accounted for only 5 percent of the total imports of structural shapes and units during 1979-83, were relatively stable during 1979-81--ranging from 89,000 to 103,000 tons, with values ranging from $34 million to $41 million. Such imports increased to 115,000 tons, valued at $51 million, in 1982 and then decreased to 69,000 tons, valued at $27 million, in 1983. Imports of sheet piling from the EC--virtually all of which was from Belgium and Luxembourg, France, the United Kingdom, and West Germany, and which accounted for 88 percent of the total from all sources during 1979-83--decreased irregularly from 101,000 tons, or 98 percent of the import market, in 1979 to 59,000 tons, or 86 percent, in 1983 (table H-27). Almost all imports of sheet piling during 1979-83 from non-EC sources were from Canada, which supplied 11 percent of the imports from all sources. Imports from Canada increased from 2,000 tons, or 2 percent of the import market, in 1979 to 23,000 tons, or 20 percent, in 1982 and then decreased to 10,000 tons, or 14 percent, in 1983. There were no imports from CBERA countries during the 5-year period.

U.S. imports of light carbon and alloy steel structural shapes, which accounted for 6 percent of the total imports of structural shapes and units during 1979-83, decreased from 232,000 tons, valued at $76 million, in 1979 to 60,000 tons, valued at $22 million, in 1982 and then increased to 88,000 tons, valued at $29 million, in 1983. Imports of light structural shapes from Japan, which accounted for 34 percent of the imports from all sources during 1979-83, decreased from 97,000 tons, or 42 percent of the import market, in 1979 to 12,000 tons, or 13 percent, in 1983 (table H-28). Imports from Canada and the EC (four-fifths of which were from Belgium and Luxembourg) accounted for 27 and 19 percent, respectively, of the imports from all sources; although imports from Canada and the EC decreased during the period, their respective shares of the import market did not vary considerably. Imports from the developing countries, which accounted for 15 percent of the imports from all sources during 1979-83, decreased from 34,000 tons, or 15 percent of the import market, in 1979 to 8,000 tons, or 8 percent, in 1981 and then increased to 32,000 tons, or 36 percent, in 1983. The only imports of light structural shapes from CBERA countries during the 5-year period were less than one-fiftieth of a ton from Panama in 1979 and 39 tons from Trinidad and Tobago and the Netherlands Antilles in 1983.

U.S. imports of heavy carbon and alloy steel structural shapes, which accounted for 83 percent of the total imports of structural shapes and units during 1979-83, fluctuated during 1979-81--ranging from 1.7 million to 2.0 million tons, with values ranging from $590 million to $728 million. Such imports decreased to 1.5 million tons, valued at $545 million and $426 million, in 1982 and 1983, respectively. Imports from the EC, primarily from Belgium and Luxembourg, West Germany, and the United Kingdom, accounted for 34 percent of imports from all sources during 1979-83; such imports fluctuated during the period, ranging from a low of 443,000 tons, or 30 percent of the import market, in 1983 to 709,000 tons, or 36 percent, in 1981 (table H-29). Imports from Japan, which accounted for 33 percent of the imports from all sources during 1979-83, decreased irregularly from 647,000 tons, or 34 percent of the import market, in 1979 to 457,000 tons, or 31 percent, in 1983. Other import sources for heavy structural shapes during 1979-83 included Canada (13 percent), Spain (9 percent), and the Republic of South Africa (6 percent). There were no imports of heavy structural shapes from CBERA countries during the 5-year period.

U.S. imports of carbon and alloy steel fabricated structural units, which accounted for 7 percent of the total imports of structural shapes and units during 1979-83, decreased from 154,000 tons, valued at $112 million, in 1979 to 118,000 tons, valued at $84 million, in 1981 and then increased to 178,000 tons, valued at $104 million, in 1983. Imports from Canada, which accounted for 42 percent of the imports from all sources during 1979-83, decreased from 86,000 tons, or 56 percent of the import market, in 1979 to 38,000 tons, or 31 percent, in 1982 and then increased to 64,000 tons, or 36 percent, in 1983 (table H-30). Imports of fabricated structural units from Japan, which accounted for 40 percent of the import market during 1979-83, remained relatively stable during 1979-81 at the 48,000- to 50,000-ton level (ranging from 31 to 41 percent of the import market) and then increased to 69,000 tons, or 58 percent, in 1982. Although such imports from Japan decreased only slightly to 66,000 tons in 1983, the share of the import market accounted for by these imports decreased by over one-third to 37 percent. Other import sources during 1979-83 included the Republic of Korea and Italy, each accounting for 6 percent of the imports from all sources. The only imports of fabricated structural units from CBERA countries during the 5-year period were 55 tons, 2 tons, and 28 tons from the Dominican Republic in 1979, 1980, and 1983, respectively.

Pipes and tubes and blanks therefor.--U.S. imports of carbon and alloy steel pipes and tubes and blanks therefor (pipes) increased from 2.9 million tons, valued at $1.4 billion, in 1979 to 6.5 million tons, valued at $4.5 billion, in 1981 and then decreased to 2.8 million tons, valued at $1.2 billion, in 1983. Imports of these products from Japan, which accounted for 44 percent of imports from all sources during 1979-83, increased from 1.5 million tons, or 51 percent of the import market, in 1979 to 2.8 million tons, or 43 percent, in 1981 and then decreased to 708,000 tons, or 25 percent, in 1983 (table H-31). Imports from the developing countries, which accounted for 23 percent of the imports from all sources during 1979-83--three-fifths of which were supplied by the Republic of Korea--increased from 642,000 tons, or 22 percent of the import market, in 1979 to 1.2 million tons, or 18 percent, in 1981 and then decreased to 916,000 tons, or 18 percent, in 1982 before increasing to a 5-year high of 1.3 million tons, or 46 percent, in 1983; this increase in the 1983 level of imports over the 1982 level reflected increased imports from the four largest developing country sources--the Republic of Korea, Mexico, Brazil, and Taiwan. Imports of pipes and tubes from the EC (over two-thirds of which were supplied by West Germany and Italy) accounted for 20 percent of the imports from all sources during 1979-83. Imports from the EC increased from 207,000 tons, or 7 percent of the import market, in 1979 to 1.8 million tons, or 27 percent, in 1981 and then decreased to 469,000 tons, or 17 percent, in 1983. Imports from Canada, which accounted for 8 percent of the imports from all sources during 1979-83, fluctuated during the period, ranging from a low of 223,000 tons, or 8 percent of the import market, in 1983 to a high of 485,000 tons, or 7 percent, in 1981. The only imports of pipes from CBERA countries during 1979-83 were 124 tons from Dominica in 1980, 68 tons from the Dominican Republic in 1981, and 118 tons from the Dominican Republic, Belize, Jamaica, and Costa Rica, together, in 1982.

U.S. imports of carbon and alloy steel oil well tubing, casing, and drill pipe, which accounted for 35 percent of the total imports of pipes and tubes and blanks therefor during 1979-83, increased from 585,000 tons, valued at

$347 million, in 1979 to 2.9 million tons, valued at $2.4 billion, in 1981 and then decreased to 565,000 tons, valued at $316 million, in 1983. Imports of these oil well products from Japan, which accounted for 57 percent of the imports from all sources during 1979-83 (accounting for a smaller share of the import market during successive years in the period), increased from 501,000 tons, or 86 percent of the import market, in 1979 to 1.5 million tons, or 50 percent, in 1981 and then decreased to 235,000 tons, or 42 percent, in 1983 (table H-32). Imports from the EC, which accounted for 29 percent of the imports from all sources during 1979-83--over three-fourths of which were supplied by West Germany and Italy--increased from 45,000 tons, or 8 percent of the import market, in 1979 to 986,000 tons, or 34 percent, in 1981; although such imports decreased to 205,000 tons in 1983, their share of the import market increased to 36 percent. Other import sources for these products include the developing countries (7 percent) and Canada (5 percent). The only imports of oil well tubing, casing, and drill pipe from CBERA countries during 1979-83 were 26 tons from Jamaica and Belize, together, in 1982.

U.S. imports of all other carbon and alloy steel pipes (excluding oil well tubing, casing, and drill pipe), which accounted for 65 percent of the total imports of pipes during 1979-83, increased from 2.3 million tons, valued at $1.0 billion, in 1979 to 3.6 million tons, valued at $2.0 billion, in 1981 and then decreased to 2.3 million tons, valued at $889 million, in 1983. Imports of these nonoil well pipes from Japan, which accounted for 37 percent of the imports from all sources during 1979-83, increased from 981,000 tons, or 42 percent of the import market, in 1979 to 1.3 million tons, or 37 percent, in 1981, remained at 1.3 million tons, or 43 percent, in 1982, and then decreased to 474,000 tons, or 21 percent, in 1983 (table H-33). Imports from the developing countries, which accounted for 32 percent of the imports from all sources during 1979-83--over three-fifths of which were supplied by the Republic of Korea--increased from 623,000 tons, or 27 percent of the imports from all sources, in 1979 to 1.0 million tons, or 28 percent, in 1981 and then decreased to 715,000 tons, or 23 percent, in 1982 before increasing to a 5-year high of 1.2 million tons, or 55 percent, in 1983. The increase in the 1983 level of imports over the 1982 level reflected increased imports from the four largest developing country sources--the Republic of Korea, Mexico, Brazil, and Taiwan. Other import sources for these pipes during 1979-83 included the EC (15 percent) and Canada (10 percent). The only imports of these nonoil well pipes from CBERA countries during the 5-year period were 124 tons from Dominica in 1980, 68 tons from the Dominican Republic in 1981, and 92 tons from the Dominican Republic and Costa Rica, together, in 1982.

Ratio of imports to production

Data on U.S. production of the carbon and alloy steel products included in this investigation were obtained from information submitted in response to the Commission's questionnaires. 1/ The ratios of imports to reported domestic production for each of the 25 subgroups of such products are

1/ Other sources of data incorporated in this report, such as the AISI and the Department of Commerce, do not publish statistics on production of these steel products.

presented in table 7. 1/ Because not all domestic producers of each subject product received a questionnaire, and not all those that did responded, the ratios are overstated (substantially so in some cases), although they should be useful in indicating trends. The ratios of imports to apparent consumption of these carbon and alloy steel products (which were developed using more comprehensive AISI and Commerce data on U.S. producers' shipments) are discussed in the section of this report entitled "The Question of Imports as a Substantial Cause of Serious Injury or the Threat Thereof."

The Question of Serious Injury

U.S. production, capacity, and capacity utilization

Raw steel.--U.S. production of raw steel amounted to 85 million tons in 1983, representing a 13-percent increase from the 1982 level of 75 million tons, but nevertheless far lower than output during any other year during the past two decades. Table 8 shows that carbon and alloy steel 2/ accounted for 98 percent or more of aggregate annual U.S. output of raw steel during this period. The share of total U.S. output of raw steel accounted for by continuous casting almost doubled during 1979-83, as indicated below:

	Share of total raw steel production (percent)
1979	17
1980	20
1981	21
1982	28
1983	32

The U.S. steel industry's share of total world production of raw steel fell from an average of 24.9 percent in 1964-68 to 13.7 percent in 1979-83; it reached a 20-year low of 10.5 percent in 1982 and then increased to 11.6 percent in 1983. 3/

1/ Producers were asked to report their production of each of the 25 specified subgroups of carbon and alloy steel products without regard to the intended use of the product, i.e., whether they were intended for sale or for captive consumption in the production of other items. Producers were cautioned to avoid double counting within each of the 25 product subgroups (e.g., not to count both their production of cold-rolled sheets and their production of cold-rolled strip made from such sheets). However, no meaningful figure can be assigned to aggregate "production" of all carbon and alloy steel products subject to this investigation because such a figure would entail substantial double counting between many of the subproduct groupings. No domestic producers that responded to the Commission's questionnaires reported any production of fabricated structural units.

2/ No stainless steel products are subject to this investigation, but certain data on stainless steel items are included for illustrative purposes.

3/ As compiled from data reported by the AISI.

Table 7.--Carbon and alloy steel products: Ratio of imports to reported U.S. production, by types, 1979-83

(In percent)

Product	1979	1980	1981	1982	1983
Ingots, blooms, billets, slabs, and sheet bars	0.3	0.2	0.8	1.3	1.3
Plates	23.7	28.6	31.8	39.1	32.6
Sheets and strip:					
Hot-rolled	8.6	7.3	7.2	8.4	9.7
Cold-rolled	13.0	10.2	10.6	14.4	16.3
Galvanized	41.3	31.7	26.0	28.3	34.0
All other	6.1	8.8	7.6	8.2	16.7
Wire rods	21.9	23.0	20.7	31.5	34.0
Wire and wire products:					
Wire	25.6	27.7	24.4	28.4	34.9
Barbed and twisted wire	45.2	40.4	35.1	31.0	46.8
Wire strand	176.7	205.9	196.9	304.2	270.0
Wire ropes, cables, and cordage	51.4	41.0	52.7	73.1	64.5
Wire fencing	15.5	12.1	8.5	10.7	13.9
Brads, nails, spikes staples, and tacks	159.7	208.6	204.7	212.9	230.9
Railway-type products:					
Rails	16.6	20.7	27.1	53.9	17.3
Joint bars, tie plates, and track spikes	***	***	***	***	***
Wheels and axles	35.8	54.0	19.0	23.3	***
Bars:					
Concrete reinforcing bars	5.6	4.1	2.8	3.2	13.8
Other, hot-rolled	9.8	11.3	11.9	15.0	13.5
Other, cold-finished	41.2	43.3	57.0	77.0	65.6
Structural shapes and units:					
Sheet piling	***	71.2	116.5	142.0	61.6
Light shapes	30.6	23.0	16.4	9.3	10.7
Heavy shapes	41.5	40.2	47.4	57.2	66.2
Fabricated units	1/	1/	1/	1/	1/
Pipes and tubes:					
Oil-country goods	43.7	67.2	119.1	203.5	256.8
All other	92.7	105.7	129.8	236.8	190.6

1/ No production of fabricated structural units was reported.

Source: Imports, compiled from official statistics of the U.S. Department of Commerce; production, compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 8.--Raw steel: U.S. production, by types, 5-year averages 1964-83, and annual 1979-83

Period	Carbon	Alloy	Stainless	Total
	Quantity (million short tons)			
Average:				
1964-68	115.8	12.9	1.5	130.3
1969-73	119.9	14.0	1.5	135.4
1974-78	112.8	16.0	1.8	130.5
1979-83	89.8	13.9	1.7	105.4
Annual:				
1979	116.2	18.0	2.1	136.3
1980	94.7	15.4	1.7	111.8
1981	101.5	17.6	1.7	120.8
1982	64.1	9.2	1.2	74.6
1983	73.8	9.1	1.8	84.6
	Percent of total quantity			
Average:				
1964-68	88.9	9.9	1.2	100.0
1969-73	88.6	10.3	1.1	100.0
1974-78	86.4	12.2	1.4	100.0
1979-83	85.2	13.2	1.6	100.0
Annual:				
1979	85.3	13.2	1.5	100.0
1980	84.7	13.8	1.5	100.0
1981	84.0	14.6	1.4	100.0
1982	86.0	12.3	1.7	100.0
1983	87.2	10.7	2.1	100.0

Source: Compiled from data of the American Iron & Steel Institute.

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

Data on U.S. raw steel production capability 1/ since 1975, as compiled by the AISI, are shown in the following tabulation:

	Production capability (million short tons)	Capacity utilization (percent)
1975	153.1	76.2
1976	158.3	80.9
1977	160.0	78.4
1978	157.9	86.8
1979	155.3	87.8
1980	153.7	72.8
1981	154.3	78.3
1982	154.0	48.4
1983	150.5	56.2

1/ Capability, as defined by the AISI, is the tonnage capability to produce raw steel for a sustained full order book.

Carbon and alloy steel products.--Data on production, capacity, and capacity utilization in the domestic manufacture of raw carbon and alloy steel and each of the 25 subgroups of carbon and alloy steel products included in this investigation were requested in the Commission's questionnaires. A summary of the data so obtained is shown in table 9. 1/ In addition, comparable data are presented in appendix I for each of the three general types of producers (integrated steel producers, nonintegrated steel producers, and nonsteel producers).

U.S. producers' shipments

All steel mill products.--U.S. producers' net shipments 2/ of all steel mill products in 1964-83 are shown in table 2 and figure 5. 3/ Shipments have generally followed the trend of consumption during the last two decades. They increased irregularly from 85 million tons in 1964 to a peak of 111 million tons in 1973, fell sharply to 80 million tons in 1975, fluctuated between 84 and 100 million tons annually during 1976-81, and then plummeted to a 20-year low of 62 million tons in 1982. U.S. producers' shipments of steel mill products in 1983 amounted to 67 million tons, or 10 percent more than shipments in 1982. Nevertheless, producers' shipments in 1983 were the second lowest annual amount during the last 20 years, and they were 39 percent less than peak shipments in 1973.

Carbon and alloy steel products.--U.S. producers' net shipments of the carbon and alloy steel products subject to this investigation, by types, are shown in table 10. As previously indicated, such data are obtained and published principally by the AISI. Net shipments of these products fluctuated during 1979-83, ranging from a low of 60.6 million tons in 1982 to a high of 98.8 million tons in 1979; net shipments during January-March 1984 were 19.1 million tons compared with 15.0 million tons during the corresponding period of 1983. Although the various carbon and alloy steel products and product groups displayed various patterns during 1979-83, all but barbed and twisted wire and wire fencing showed increased net shipments during January-March 1984 compared with shipments in January-March 1983 (see tables G-1 through G-32, app. G). Net shipments of carbon and alloy steel ingots, blooms, billets,

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1/ As indicated previously, producers were asked to report their production and total capability to produce each of the specified carbon and alloy steel products, without regard to the intended use of the product. Practical capacity was defined as the greatest level of output a plant can achieve within the framework of a realistic work pattern. Producers were asked to consider, among other factors, a normal product mix and an expansion of operations that could be reasonably attained in their industry and locality in setting capacity in terms of the number of shifts and hours of plant operation. No data were reported in response to the Commission's questionnaires on one of the product groups--fabricated structural units.

2/ See footnote 2 to table 2 (p. a-39) for AISI's definition of net shipments.

3/ The trend line shown in fig. 5 indicates a slight (0.6 percent) average annual decline in U.S. producers' net shipments during 1964-83. However, the slope of this line is not statistically significant at the 95-percent level of confidence (t=1.33).

Table 9.--Carbon and alloy steel products: U.S. production, practical capacity, and capacity utilization, 1/ by types, 1979-83

Product	1979	1980	1981	1982	1983
	Production (1,000 short tons)				
Ingots, blooms, billets, slabs, and sheet bars	104,541	84,649	92,517	56,913	64,375
Plates	7,667	7,213	7,685	4,122	4,281
Sheets and strip:					
Hot-rolled	25,551	20,667	22,747	16,358	21,191
Cold-rolled	19,107	15,438	16,229	12,554	16,022
Galvanized	5,129	4,213	4,938	4,178	5,209
All other	5,321	4,619	4,786	3,937	4,222
Wire rods	4,403	3,481	4,148	2,904	3,413
Wire and wire products:					
Wire	1,706	1,349	1,530	1,138	1,282
Barbed and twisted wire	42	47	77	58	62
Wire strand	86	68	64	48	50
Wire ropes, cables, and cordage	146	156	167	104	93
Wire fencing	71	66	94	75	79
Brads, nails, spikes, staples, and tacks	211	140	148	124	162
Railway-type products:					
Rails	1,143	1,106	913	473	620
Joint bars, tie plates, and track spikes	***	***	***	***	***
Wheels and axles	279	265	189	86	***
Bars:					
Concrete reinforcing bars	2,092	1,940	1,866	1,641	1,510
Other, hot-rolled	6,007	4,254	4,867	2,965	3,341
Other, cold-finished	340	245	291	217	244
Structural shapes and units:					
Sheet piling	***	125	85	81	112
Light shapes	759	596	641	646	823
Heavy shapes	4,533	4,323	4,174	2,591	2,249
Fabricated units	0	0	0	0	0
Pipes and tubes:					
Oil-country goods	1,340	1,862	2,440	1,071	220
All other	2,496	2,366	2,799	1,287	1,195

See footnote at end of table

Table 9.--Carbon and alloy steel products: U.S. production, practical capacity, and capacity utilization, 1/ by types, 1979-83--Continued

Product	1979	1980	1981	1982	1983
	Capacity (1,000 short tons)				
Ingots, blooms, billets, slabs, and sheet bars	117,350	118,440	120,376	124,418	120,218
Plates	9,951	9,541	9,650	9,265	9,206
Sheets and strip:					
Hot-rolled	34,390	34,291	33,549	33,941	34,278
Cold-rolled	20,421	20,421	20,117	20,117	19,651
Galvanized	7,302	7,302	6,794	6,794	7,121
All other	6,559	6,559	6,680	6,680	6,317
Wire rods	6,465	5,933	6,274	6,212	6,216
Wire and wire products:					
Wire	2,324	2,326	2,355	2,258	2,262
Barbed and twisted wire	89	89	121	104	98
Wire strand	90	91	91	93	93
Wire ropes, cables, and cordage	202	210	220	231	233
Wire fencing	140	140	180	153	153
Brads, nails, spikes, staples, and tacks	404	281	300	271	260
Railway-type products:					
Rails	1,405	1,595	1,595	1,920	1,944
Joint bars, tie plates, and track spikes	353	355	358	358	362
Wheels and axles	319	319	319	300	315
Bars:					
Concrete reinforcing bars	2,824	2,861	2,739	2,757	2,550
Other, hot-rolled	8,776	8,191	8,376	8,372	8,091
Other, cold-finished	525	551	708	700	699
Structural shapes and units:					
Sheet piling	201	201	201	201	204
Light shapes	892	856	910	1,028	1,297
Heavy shapes	6,650	6,635	6,653	6,609	6,141
Fabricated units	0	0	0	0	0
Pipes and tubes:					
Oil-country goods	1,991	2,042	2,482	2,513	2,448
All other	4,037	3,956	4,125	4,450	3,703

See footnote at end of table

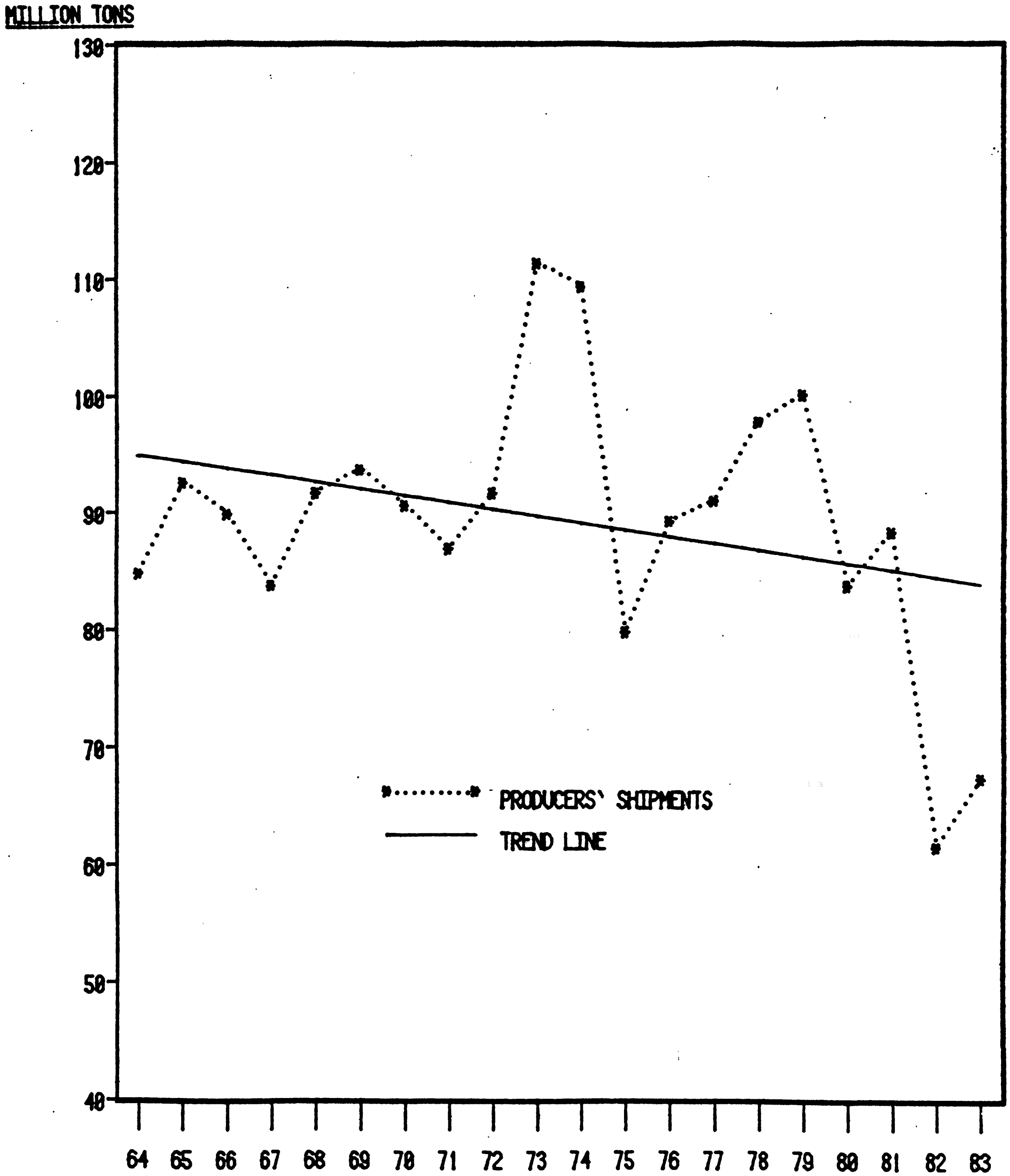
Table 9.--Carbon and alloy steel products: U.S. production, practical capacity, and capacity utilization, 1/ by types, 1979-83--Continued

Product	1979	1980	1981	1982	1983
	Capacity utilization (percent)				
Ingots, blooms, billets, slabs, and sheet bars	89.0	71.5	76.9	45.7	53.5
Plates	77.0	75.6	79.6	44.5	46.5
Sheets and strip:					
Hot-rolled	74.3	60.3	67.8	48.2	61.8
Cold-rolled	93.6	75.6	80.7	62.4	81.5
Galvanized	70.2	57.7	72.7	61.5	73.1
All other	81.1	70.4	71.6	58.9	66.8
Wire rods	68.1	58.7	66.1	46.7	54.9
Wire and wire products:					
Wire	73.4	58.0	65.0	50.4	56.7
Barbed and twisted wire	47.2	52.8	63.6	55.8	63.3
Wire strand	95.9	74.7	70.5	51.7	53.8
Wire ropes, cables, and cordage	72.3	74.3	75.7	45.1	39.8
Wire fencing	50.8	46.8	52.1	48.8	51.8
Brads, nails, spikes staples, and tacks	52.2	49.9	49.5	45.8	62.2
Railway-type products:					
Rails	81.4	69.3	57.2	24.6	31.9
Joint bars, tie plates, and track spikes	***	***	***	***	***
Wheels and axles	87.5	83.1	59.2	28.7	***
Bars:					
Concrete reinforcing bars	74.1	67.8	68.1	59.5	59.2
Other, hot-rolled	68.4	51.9	58.1	35.4	41.3
Other, cold-finished	64.8	44.5	41.1	31.0	34.9
Structural shapes and units:					
Sheet piling	***	62.2	42.3	40.3	54.9
Light shapes	85.1	69.6	70.4	62.8	63.4
Heavy shapes	68.2	65.2	62.7	39.2	36.6
Fabricated units	-	-	-	-	-
Pipes and tubes:					
Oil-country goods	67.3	91.2	98.3	42.8	9.0
All other	61.8	59.8	67.9	31.0	32.3

1/ Producers were asked to report their production and total capability to produce each of the specified carbon and alloy steel products, without regard to the intended use of the product. Practical capacity was defined as the greatest level of output a plant can achieve within the framework of a realistic work pattern. Producers were asked to consider, among other factors, a normal product mix and an expansion of operations that could be reasonably attained in their industry and locality in setting capacity in terms of the number of shifts and hours of plant operation.

Source: Tables I-2 through I-25 in appendix I.

Figure 5.—Steel mill products: U.S. producers' shipments, 1964-83



Source: Table 2.

Table 10.--Carbon and alloy steel products: U.S. producers' shipments, by types, 1979-83

(In thousands of short tons)

Product	1979	1980	1981	1982	1983
Carbon and alloy steel products, total	98,807	82,647	87,219	60,630	66,271
Ingots, blooms, billets, slabs, and sheet bars	2,532	2,572	2,588	1,244	973
Plates	8,889	7,956	7,318	4,049	3,731
Sheets and strip:					
Hot-rolled	16,981	12,773	14,090	9,534	12,231
Cold-rolled	18,998	14,683	15,756	12,057	14,755
Galvanized	6,342	5,244	5,923	5,369	6,434
All other	6,656	5,927	5,342	4,696	4,902
Total	48,977	38,627	41,110	31,655	38,322
Wire rods	2,821	2,652	3,009	2,389	2,851
Wire and wire products:					
Wire	1,633	1,075	1,037	671	1/ 911
Barbed and twisted wire	67	70	82	65	98
Wire strand	133	128	207	200	2/
Wire ropes, cables, and cordage	204	206	220	158	136
Wire fencing	122	92	95	74	49
Nails and staples	257	173	150	123	163
Total	2,416	1,744	1,790	1,291	1,357
Railway-type products:					
Rails	1,170	1,138	955	517	633
Joint bars, tie plates, and track spikes	458	307	304	157	178
Wheels and axles	398	353	210	108	72
Total	2,026	1,797	1,469	782	883
Bars:					
Concrete reinforcing bars	5,303	4,684	4,612	4,049	4,138
Other, hot-rolled	8,447	5,913	6,847	4,726	5,332
Other, cold-finished	2,137	1,488	1,545	948	1,124
Total	15,887	12,085	13,005	9,724	10,594
Structural shapes and units:					
Sheet piling	293	346	282	250	258
Light shapes	1,466	950	1,473	948	925
Heavy shapes 3/	5,303	4,861	4,929	3,313	3,190
Fabricated units	4/	4/	4/	4/	4/
Total	7,062	6,157	6,684	4,511	4,373
Pipes and tubes:					
Oil-country goods	2,458	3,612	4,241	1,759	677
All other	5,738	5,444	6,005	3,226	2,508
Total	8,196	9,055	10,246	4,985	3,186

1/ Includes wire strand.
2/ Not available; included in wire.
3/ Includes structural units.
4/ Not available; included in heavy structural shapes.

Source: See tables G-1 through G-32 in appendix G.

slabs, and sheet bars remained essentially constant at 2.5 million to 2.6 million tons during 1979-81 and then decreased to 1.0 million tons in 1983; net shipments during January-March 1984 were 321,000 tons compared with 193,000 tons during January-March 1983 (table G-2). Net shipments of carbon and alloy steel plates decreased from 8.9 million tons in 1979 to 3.7 million tons in 1983; during January-March 1984 this trend was apparently reversed, with net shipments amounting to 1.1 million tons compared with 828,000 tons in the corresponding period of 1983 (table G-3). Net shipments of carbon and alloy steel sheets and strip fluctuated during 1979-83, ranging from a low of 31.7 million tons in 1982 to a high of 49.0 million tons in 1979; net shipments during January-March 1984 were 10.7 million tons compared with 8.7 million tons during January-March 1983 (table G-4). Net shipments of carbon and alloy steel wire rods fluctuated during 1979-83, ranging from a low of 2.4 million tons in 1982 to a high of 3.0 million tons in 1981; net shipments during January-March 1984 were 877,000 tons compared with 599,000 tons during January-March 1983 (table G-9).Net shipments of carbon and alloy steel wire and wire products decreased irregularly from 2.4 million tons in 1979 to 1.3 million tons in 1982 and then increased to 1.4 million tons in 1983; net shipments during January-March 1984 were 348,000 tons compared with 326,000 tons during January-March 1983 (table G-10). Net shipments of carbon and alloy steel railway-type products decreased from 2.0 million tons in 1979 to 782,000 tons in 1982 and then increased to 883,000 tons in 1983; net shipments during January-March 1984 were 345,000 tons compared with 178,000 tons during January-March 1983 (table G-17). Net shipments of carbon and alloy steel bars fluctuated during 1979-83, ranging from a low of 9.7 million tons in 1982 to a high of 15.9 million tons in 1979; net shipments during January-March 1984 were 3.0 million tons compared with 2.4 million tons during January-March 1983 (table G-21). Net shipments of carbon and alloy steel structural shapes and units decreased irregularly from 7.1 million tons in 1979 to 4.4 million tons in 1983; net shipments during January-March 1984 were 1.4 million tons compared with 1.1 million tons during January-March 1983 (table G-25). Net shipments of carbon and alloy steel pipes and tubes increased from 8.2 million tons in 1979 to 10.2 million tons in 1981 and then dropped sharply to 3.2 million tons in 1983; net shipments during January-March 1984 were 973,000 tons compared with 715,000 tons during January-March 1983 (table G-30).

Although the AISI does not publish value or unit value data, such information was obtained from responses to the Commission's questionnaires. As shown in table 11, the unit values of most of the products included in this investigation increased from their 1979 levels through either 1981 or 1982 before decreasing in 1983. There were a few exceptions to this general trend--the unit values of concrete reinforcing bars and RR axles and wheels peaked in 1980 rather than 1981 or 1982; the unit values of galvanized sheets and strip and light structural shapes, both of which peaked in 1981, decreased irregularly to their 1983 levels; and the unit value of barbed and twisted wire increased throughout the entire 1979-83 period. Although the 1983 unit values for most products and product groups exceed the 1979 levels, there were certain exceptions--the unit values of plates and all pipes and tubes and blanks therefor were equal in 1979 and 1983, and the unit values of wire rods, concrete reinforcing bars, all bars, sheet piling, light structural shapes, and oil-country goods (oil well tubing, casing, and drill pipe) were lower in 1983 than they were in 1979.

Table 11.--Carbon and alloy steel products: Average Unit value of domestic shipments, by types, 1979-83

(Per short ton)

Product	1979	1980	1981	1982	1983
All carbon and alloy steel products, average	$428	$459	$521	$506	$448
Ingots, blooms, billets, slabs, and sheet bars	286	293	383	405	332
Plates	414	422	479	483	414
Sheets and strip:					
Hot-rolled	327	329	367	357	337
Cold-rolled	408	423	462	464	460
Galvanized	487	495	542	533	534
All other	493	538	573	586	576
Average	403	420	457	466	451
Wire rods	346	353	369	350	317
Wire and wire products:					
Wire 1/	640	674	724	710	682
Barbed and twisted wire	598	672	693	706	708
Wire strand	889	944	1,019	1,010	934
Wire ropes, cables, and cordage	1,579	1,725	1,852	1,939	1,599
Wire fencing	597	685	687	710	694
Brads, nails, spikes, staples, and tacks	621	649	676	663	632
Average	723	796	840	828	753
Railway-type products:					
Rails	386	445	497	488	400
Joint bars, tie plates, and track spikes	***	***	***	***	***
Wheels and axles	***	***	***	***	***
Average	432	508	540	529	433
Bars:					
Concrete reinforcing bars	307	312	306	274	250
Other, hot-rolled	437	469	514	495	458
Other, cold-finished	675	726	801	794	749
Average	421	438	480	445	416
Structural shapes: 2/					
Sheet piling	***	***	***	***	***
Light shapes	320	333	***	***	***
Heavy shapes	371	395	426	434	388
Average	***	***	***	***	***
Pipes and tubes:					
Oil-country goods 3/	848	968	1,348	1,539	717
All other	***	***	***	***	***
Average	***	***	***	***	***

1/ Includes wire bale ties, milliner's wire, and other wire covered with textile or other material not wholly of metal.

2/ No domestic shipments of fabricated structural units were reported.

3/ Includes only products conforming with specifications of the American Petroleum Institute.

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

Note.--Because of rounding, figures may not add to the totals shown; unit values were calculated from unrounded data.

Additional data on the quantity, value, and unit value of U.S. producers' domestic shipments of the carbon and alloy steel products included in this investigation, which were obtained from information submitted in response to the Commission's questionnaires, are presented separately for integrated steel producers, nonintegrated steel producers, and nonsteel producers in appendix J.

U.S. exports

All steel mill products.--U.S. exports of steel mill products (table 2) have generally accounted for 2 to 4 percent of annual shipments of all steel mill products. In 1983, 70 percent of total exports of steel mill products were of carbon steel, 26 percent were of alloy steel, and 4 percent were of stainless steel. The principal export markets and the percentage distribution of total U.S. exports of steel mill products in 1979-83 are shown in the following tabulation: 1/

	1979	1980	1981	1982	1983
Latin America------	32.7	47.2	45.0	34.5	23.4
Canada-------------	26.2	11.6	28.7	18.9	32.3
Asia---------------	28.4	20.8	16.1	28.7	29.8
EC-----------------	7.1	10.7	4.7	8.7	6.5
Africa-------------	3.6	6.1	4.0	7.3	6.2
All other----------	2.0	3.6	1.5	1.9	1.8
Total----------	100.0	100.0	100.0	100.0	100.0

Carbon and alloy steel products.--U.S. exports of the carbon and alloy steel products included in this investigation during 1979-83 are shown in table 12. Such exports increased from 2.9 million tons, valued at $1.8 billion, in 1979 to 4.1 million tons, valued at $2.4 billion, in 1980 and then decreased to 1.2 million tons, valued at $989 million, in 1983. Although exports of individual products exhibited various trends, all of the product groups except pipes and tubes followed the same pattern as total exports of all carbon and alloy steel products, with the export quantities increasing from 1979 to 1980 and then decreasing to 1983 levels considerably below those of 1979. Export values paralleled the quantity trends except that the values for plates and total wire and wire products peaked in 1981 instead of 1980. Exports of pipes and tubes decreased irregularly throughout the 1979-83 period. The unit values of exports of individual products were generally higher than the comparable unit values of domestic shipments during 1979-83, except for ingots, blooms, billets, slabs, and sheet bars and rails in each of the 5 years and galvanized and other further processed sheets and strip, wire rods, wire fencing, and concrete reinforcing bars in one or more of the 5 years.

1/ Compiled from official statistics of the U.S. Department of Commerce, as aggregated by the American Iron & Steel Institute.

Table 12.—Carbon and alloy steel products: U.S. exports of domestic merchandise, by types, 1979-83

Product	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Carbon and alloy steel products, total	1/ 2,856	1/ 4,123	1/ 2,946	1/ 1,891	1/ 1,213
Ingots, blooms, billets, slabs, and sheet bars	356	908	535	361	101
Plates	222	227	205	122	101
Sheets and strip:					
Hot-rolled	103	199	218	83	53
Cold-rolled	279	339	203	130	120
Galvanized	41	36	50	21	35
All other	504	829	447	281	225
Total	928	1,403	919	515	432
Wire rods	26	212	101	24	5
Wire and wire products:					
Wire 2/	32	37	37	25	21
Barbed and twisted wire	3	6	3	3	2
Wire strand	9	12	13	7	4
Wire ropes, cables, and cordage	4	4	6	4	3
Wire fencing	1/ 5	1/ 6	1/ 6	1/ 7	1/ 5
Brads, nails, spikes, staples, and tacks	10	12	12	7	7
Total	1/ 63	1/ 78	1/ 76	1/ 53	1/ 41
Railway-type products:					
Rails	100	206	126	82	43
Joint bars, tie plates, and track spikes	11	11	11	10	10
Wheels and axles	3	5	7	3	2
Total	113	222	144	94	55
Bars:					
Concrete reinforcing bars	86	166	137	115	35
Other, hot-rolled	119	206	147	75	87
Other, cold-finished	27	25	26	15	19
Total	232	397	311	205	140
Structural shapes and units					
Sheet piling	7	3	8	6	2
Light shapes 3/	16	22	13	9	20
Heavy shapes 3/	139	151	131	56	47
Fabricated units 4/	36	48	45	27	16
Total	198	224	197	98	86
Pipes and tubes:					
Oil-country goods 5/	285	134	128	153	61
All other	433	320	331	264	190
Total	717	454	459	417	251

See footnotes at end of table.

Table 12.—Carbon and alloy steel products: U.S. exports of domestic merchandise, by types, 1979-83—Continued

Product	1979	1980	1981	1982	1983
	Value (1,000 dollars)				
Carbon and alloy steel products, total	1,787,551	2,427,452	2,183,390	1,547,599	989,071
Ingots, blooms, billets, slabs, and sheet bars	88,088	241,080	145,823	79,111	25,201
Plates	95,302	118,844	123,290	87,737	62,368
Sheets and strip:					
Hot-rolled	47,273	85,817	106,643	47,719	37,126
Cold-rolled	130,119	154,219	117,480	73,627	67,053
Further processed, galvanized	17,772	19,276	32,401	18,256	21,540
Further processed, other	247,759	508,115	270,801	143,522	107,984
Total	442,924	767,426	527,325	283,123	233,703
Wire rods	12,260	66,875	41,557	10,753	4,689
Wire and wire products:					
Wire 1/	46,189	53,409	64,465	51,694	45,154
Barbed and twisted wire	3,366	7,547	7,807	7,181	5,293
Wire strand	14,009	22,917	22,327	19,524	9,552
Wire ropes, cables, and cordage	9,028	10,601	14,479	10,326	7,347
Wire fencing	4,015	3,963	3,825	3,750	2,708
Brads, nails, spikes, staples, and tacks	26,014	31,681	34,152	24,232	24,326
Total	102,621	130,118	147,054	116,705	94,380
Railway-type products:					
Rails	23,799	65,066	52,185	25,883	11,156
Joint bars, tie plates, and track spikes	9,556	14,435	11,708	8,777	9,807
Wheels and axles	9,182	20,392	24,785	11,501	9,040
Total	42,537	99,893	88,678	46,161	30,003
Bars:					
Concrete reinforcing bars	28,180	52,030	41,927	29,705	9,340
Other, hot-rolled	64,069	98,038	95,009	51,279	49,811
Other, cold-finished	22,853	22,990	26,478	16,728	16,660
Total	115,102	173,059	163,415	97,711	75,812
Structural shapes and units					
Sheet piling	4,614	1,664	9,654	3,406	1,153
Light shapes 3/	10,477	18,315	11,757	10,191	34,275
Heavy shapes 3/	73,393	83,950	80,328	36,992	30,478
Fabricated units 4/	50,164	73,237	70,493	47,404	28,835
Total	138,648	177,165	172,232	97,993	94,741
Pipes and tubes:					
Oil-country goods 5/	324,779	240,229	272,381	330,095	108,454
All other	429,305	416,723	505,460	401,959	262,429
Total	754,084	656,953	777,841	732,054	370,883

See footnotes at end of table.

Table 12.—Carbon and alloy steel products: U.S. exports of domestic merchandise, by types, 1979-83—Continued

Product	1979	1980	1981	1982	1983
	Unit value (per short ton)				
All carbon and alloy steel products, average	1/ $626	1/ $589	1/ $741	1/ $818	1/ $815
Ingots, blooms, billets, slabs, and sheet bars	247	266	273	219	249
Plates	430	524	601	717	619
Sheets and strip:					
Hot-rolled	457	431	488	574	702
Cold-rolled	467	455	578	567	560
Further processed, galvanized	432	537	654	866	623
Further processed, other	491	613	605	510	479
Average	478	547	574	549	540
Wire rods	464	316	411	440	862
Wire and wire products:					
Wire 2/	1,446	1,437	1,766	2,079	2,157
Barbed and twisted wire	1,196	1,239	3,059	2,112	3,309
Wire strand	1,516	1,883	1,771	2,671	2,357
Wire ropes, cables, and cordage	2,214	2,529	2,516	2,762	2,836
Wire fencing	1/ 810	1/ 630	1/ 590	1/ 570	1/ 540
Brads, nails, spikes, staples, and tacks	2,521	2,731	2,858	3,418	3,517
Average	1/ 1,620	1/ 1,679	1/ 1,939	1/ 2,205	1/ 2,297
Railway-type products:					
Rails	239	316	414	317	258
Joint bars, tie plates, and track spikes	847	1,257	1,108	901	947
Wheels and axles	3,670	4,512	3,354	4,242	5,801
Average	375	450	616	490	544
Bars:					
Concrete reinforcing bars	327	313	305	259	271
Other, hot-rolled	536	477	646	682	576
Other, cold-finished	857	922	1,014	1,129	884
Average	495	436	526	477	542
Structural shapes and units					
Sheet piling	676	622	1,269	606	550
Light shapes 3/	665	825	918	1,127	1,673
Heavy shapes 3/	528	556	611	656	648
Fabricated units 4/	1,382	1,531	1,568	1,733	1,787
Average	701	792	875	996	1,105
Pipes and tubes:					
Oil-country goods 5/	1,141	1,798	2,135	2,151	1,783
All other	992	1,302	1,527	1,523	1,380
Average	1,051	1,448	1,696	1,754	1,477

1/ Estimated by the staff of the U.S. International Trade Commission.
2/ Includes wire bale ties, and milliner's wire and other wire covered with textile or other material not wholly of metal.
3/ Excludes structural shapes which have been drilled, punched, or otherwise advanced.
4/ Includes light and heavy structural shapes which have been drilled, punched, or otherwise advanced.
5/ Includes only products conforming with specifications of the American Petroleum Institute.

Source: Compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.—Because of rounding, figures may not add to the totals shown; unit values were calculated from unrounded data.

U.S. producers' inventories

Data on U.S. producers' end-of-period inventories of the carbon and alloy steel products included in this investigation are summarized in table 13. Comparable information for inventories held by each of the three types of producers (integrated steel producers, nonintegrated steel producers, and nonsteel producers) is contained in appendix I. As indicated in table 13, aggregate yearend inventories of the subject carbon and alloy steel products held by responding producers declined irregularly from 8.8 million tons in 1979 to 7.5 million tons in 1983. About three-fourths of the total inventories each year consisted of products in two groups--(1) ingots, blooms, billets, slabs, and sheet bars, and (2) sheets and strip.

U.S. employment

All steel mill products.--The average number of employees engaged in the production and sale of iron and steel products during the past two decades, as compiled by the AISI, is shown in table 14. Further information on employee costs and productivity for wage employees producing all iron and steel products is presented in table 15. As indicated in table 14, with few exceptions, employment in the iron and steel industry has fallen consistently and substantially during the last 20 years--from an annual average of 564,000 persons in 1964-68 to 355,000 persons in 1979-83. The average number of employees in 1983 continued this trend, falling to 243,000, or 16 percent less than employment in 1982 and less than one-half that prior to 1975.

Although employment in the iron and steel industry continued its long-run decline in 1983, the previously uninterrupted rise in average payroll costs per hour was reversed. The average total costs per hour, after peaking at $23.78 in 1982, fell by 7 percent to $22.21 in 1983, as indicated in table 15.

Hourly compensation costs during 1975-83 for production workers engaged in iron and steel manufacturing in the United States, Canada, Japan, Brazil, Mexico, the Republic of Korea, and several European countries are shown in table 16. When expressed in national currencies, hourly compensation costs for iron and steel workers in each country shown increased without interruption during the entire period, with the exception of a decrease in such costs in the United States in 1983. When expressed in U.S. dollars, however, annual hourly compensation costs for many of the other countries fell in 1981-83, after rising approximately the same as U.S. costs during 1975-80. These declines since 1980 are due to exchange-rate fluctuations and the strengthening of the U.S. dollar vis-a-vis the currencies of those countries. The role of exchange rates is discussed in a later section of this report.

Carbon and alloy steel products.--Data on the average number of production and related workers engaged in manufacturing the 25 subgroups of carbon and alloy steel products included in this investigation, as well as hours worked by, wages and total compensation paid to, and productivity of such employees, were compiled from information submitted in response to the Commission's questionnaires. Such data are presented in appendix K, tables K-1 through K-25--separately for each of the three general types of producers (integrated steel producers, nonintegrated steel producers, and nonsteel

Table 13.--Carbon and alloy steel products: U.S. producers' end-of-period inventories, by types, 1/ 1979-83

(In thousands of short tons)

Product	1979	1980	1981	1982	1983
Carbon and alloy steel products, total	8,752	8,258	9,562	7,855	7,474
Ingots, blooms, billets, slabs, and sheet bars	3,405	3,070	3,920	3,393	2,385
Plates	348	427	413	256	244
Sheets and strip:					
Hot-rolled	1,072	1,051	1,006	813	1,038
Cold-rolled	1,287	1,262	1,396	1,035	1,332
Galvanized	384	370	461	335	445
All other	407	350	431	326	385
Total	3,150	3,033	3,294	2,509	3,200
Wire rods	164	156	158	150	169
Wire and wire products:					
Wire	147	135	134	112	121
Barbed and twisted wire	3	4	7	5	6
Wire strand	***	13	14	13	11
Wire ropes, cables, and			94	108	113
cordage	48	51	58	48	43
Wire fencing	9	11	9	9	9
Nails and staples	27	22	23	21	22
Total	***	236	245	208	212
Railway-type products:					
Rails	***	***	***	26	32
Joint bars, tie plates, and track spikes	***	***	***	***	***
Wheels and axles	24	25	27	14	15
Total	74	***	90	***	***
Bars:					
Concrete reinforcing bars	160	169	180	183	152
Other, hot-rolled	411	390	444	337	382
Other, cold-finished	41	30	46	43	40
Total	612	589	670	563	574
Structural shapes and units:					
Sheet piling	***	***	6	***	***
Light shapes	50	45	42	65	67
Heavy shapes	268	263	289	217	213
Fabricated units	0	0	0	0	0
Total	***	***	337	***	***
Pipes and tubes:					
Oil-country goods	122	88	128	248	102
All other	304	261	307	182	237
Total	426	349	435	430	339

Source: Tables I-2 through I-25 in app. I.

Table 14.--Average number of employees, hours worked and wages received by employees receiving wages, and average payroll costs in the iron and steel industry, 5-year averages and annual 1964-83

Period	Employees receiving wages: Average number	Employees receiving wages: Hours worked	Employees receiving wages: Wages received	Number of salaried employees	Total number of employees	Average payroll cost
	Thousands	Million hours	Million dollars	Thousands	Thousands	Per hour
Average:						
1964-68------	437	862	3,464	127	564	$4.26
1969-73------	388	759	4,048	122	510	5.67
1974-78------	350	671	6,193	115	465	9.63
1979-83------	257	485	7,043	98	355	14.99
Annual:						
1964---------	435	869	3,300	119	554	4.01
1965---------	459	902	3,549	125	584	4.14
1966---------	447	889	3,572	129	576	4.25
1967---------	424	818	3,330	131	555	4.32
1968---------	421	830	3,571	131	552	4.58
1969---------	415	835	3,813	129	544	4.85
1970---------	403	772	3,680	128	531	5.08
1971---------	367	690	3,601	120	487	5.56
1972---------	364	710	4,172	114	478	6.22
1973---------	393	788	4,973	116	509	6.66
1974---------	393	772	5,732	119	512	7.80
1975---------	340	622	5,167	117	457	8.71
1976---------	339	646	5,897	115	454	9.50
1977---------	337	646	6,621	115	452	10.55
1978---------	339	670	7,548	110	449	11.57
1979---------	342	669	8,397	111	453	12.84
1980---------	292	544	7,716	107	399	14.43
1981---------	286	543	8,394	105	391	15.80
1982---------	198	345	5,800	91	289	16.81
1983---------	169	325	4,906	74	243	15.09

Source: Compiled from data of the American Iron & Steel Institute.

Table 15.--Costs and productivity index for wage employees engaged in the production of iron and steel products, 5-year averages 1964-83, and annual 1974-83

Period	Costs			Productivity index 1/ (1977=100)
	Payroll	Benefits	Total	
	Per hour	Per hour	Per hour	
Average:				
1964-68------	$4.02	$.63	$4.65	2/
1969-73------	5.35	1.07	6.42	2/
1974-79------	9.28	2.47	11.75	101.4
1980-83------	14.81	5.29	20.10	2/
Annual:				
1974---------	7.42	1.65	9.08	106.5
1975---------	8.31	2.28	10.59	93.3
1976---------	9.13	2.61	11.74	99.0
1977---------	10.25	2.78	13.04	100.0
1978---------	11.27	3.03	14.30	108.3
1979---------	12.55	3.37	15.92	106.9
1980---------	14.18	4.27	18.45	102.9
1981---------	15.45	4.71	20.16	112.2
1982---------	16.81	6.97	23.78	90.9
1983---------	15.09	7.12	22.21	2/
Average annual increase, 1974-83 percent--	8.2	17.6	10.4	2/

1/ Index of output per hour, compiled by the U.S. Bureau of Labor Statistics.
2/ Not available.

Source: Compiled from data of the American Iron & Steel Institute, except as noted.

Table 16.--Hourly compensation costs for production workers in iron and steel manufacturing in selected countries, 1975-83

Country	1975	1976	1977	1978	1979	1980	1981	1982	1983
	Index of hourly compensation costs in national currencies (1979=100)								
United States	67.6	74.1	81.2	89.5	100.0	115.2	125.7	150.1	143.4
Canada	61.3	71.3	81.4	91.8	100.0	107.6	123.6	145.2	152.5
Japan	77.3	82.2	90.6	96.8	100.0	108.8	118.6	122.1	126.0
Belgium	64.8	74.0	84.6	91.5	100.0	110.3	117.3	121.2	133.3
France	61.9	71.9	83.5	89.1	100.0	111.9	129.3	156.3	174.5
Italy	54.2	62.5	74.8	87.8	100.0	114.1	139.6	166.4	194.6
Luxembourg	73.1	82.0	89.3	96.1	100.0	105.5	108.0	117.5	1/
Netherlands	73.4	81.7	86.5	90.7	100.0	108.3	110.4	118.6	123.0
United Kingdom	55.3	65.7	73.0	86.8	100.0	113.5	133.3	147.2	164.5
West Germany	75.2	81.2	86.7	92.6	100.0	108.3	112.5	120.8	123.6
Brazil	19.7	29.6	44.2	64.5	100.0	192.1	428.6	950.7	2,082.4
Mexico	41.6	51.0	69.9	82.6	100.0	125.5	163.2	253.2	1/
Spain 2/	1/	1/	66.4	78.4	100.0	116.1	144.9	167.1	1/
Sweden 3/	62.9	75.0	81.9	89.2	100.0	108.6	120.3	128.0	139.1
South Korea 3/	32.0	43.2	59.0	80.6	100.0	115.6	140.2	156.9	182.8
	Hourly compensation costs in U.S. dollars								
United States	10.24	11.23	12.31	13.56	15.15	17.46	19.04	22.74	21.73
Canada	7.47	8.95	9.49	9.99	10.58	11.40	12.78	14.58	15.32
Japan	5.26	5.60	6.83	9.38	9.25	9.73	10.88	9.90	10.72
Belgium	8.09	8.79	10.81	13.32	15.62	17.30	14.51	12.12	11.94
France	5.86	6.11	6.89	8.02	9.53	10.75	9.69	9.63	9.28
Italy	5.90	5.35	6.02	7.35	8.55	9.49	8.77	8.73	9.10
Luxembourg	7.14	7.63	8.95	10.96	12.25	12.96	10.44	9.24	1/
Netherlands	8.20	8.73	9.94	11.84	14.06	15.39	12.51	12.52	12.15
United Kingdom	3.90	3.76	4.05	5.30	6.75	8.40	8.59	8.19	7.93
West Germany	7.12	7.50	8.68	10.74	12.68	13.87	11.61	11.57	11.25
Brazil	1.44	1.65	1.86	2.12	2.21	2.17	2.74	3.15	2.13
Mexico	2.27	2.41	2.11	2.48	2.99	3.73	4.54	2.37	1/
Spain 2/	1/	1/	4.05	4.71	6.84	7.44	7.23	6.97	1/
Sweden 3/	8.21	9.31	9.91	10.69	12.61	13.89	12.92	11.01	9.81
South Korea	3/ .54	3/ .72	3/ .99	3/ 1.35	3/ 1.67	1.60	1.76	1.84	2.02

1/ Not available.
2/ Data are for primary metals.
3/ Data are for iron and steel, including foundries.

Source: U.S. Department of Labor, Bureau of Labor Statistics, Office of Productivity and Technology, "Hourly Compensation Costs for Production Workers in Iron and Steel Manufacturing, 20 Countries, 1975-1983," unpublished data, January 1984.

producers). Summary data on the average number of production and related workers and hours worked by and wages paid to such employees are shown in tables 17-19.

Unions.--Most steelworkers employed by integrated producers in the United States are organized under the United Steelworkers of America (USWA), a trade union of steel-industry workers formally organized in 1942. 1/ It came into existence as a result of the organization drives instituted by the Congress of Industrial Organization (CIO), replacing a stagnant union, the Amalgamated Association of Iron, Steel, and Tin Workers, which had existed in the iron and steel industry since 1878.

The USWA currently has about 750,000 dues-paying members, not only in steel, but in a variety of other industries such as copper, iron ore, and aluminum. About 20 percent of the union's membership is in Canada. 2/ The average annual number of USWA dues-paying members in the steel industry 3/ declined steadily, by 40 percent, from 321,691 in 1980 to 193,164 in 1983. 4/

On March 1, 1983, a new 41-month labor agreement incorporating concessions of $1.25 an hour in steelworkers' wages went into effect. Under this agreement, the USWA agreed to cuts in hourly pay, as well as reductions in certain vacations and benefits. Some of the key provisions of the new labor pact include: 5/

(1) The $1.25 per-hour give-back will be restored in hourly increments of $0.40 in 1984 and 1985 and $0.45 in 1986;

(2) Cost of living adjustments (COLA) will be eliminated in the first year of the contract. The payments in the second year would be reinstated if the Consumer Price Index (CPI) rises by 4 percent or more. In the third year of the pact, if the CPI increases by 1.5 percent or more, payments would rise;

(3) Company payments of an additional $0.50 an hour will be made to a supplemental unemployment benefit fund;

1/ Approximately half of the workers employed by nonintegrated steel producers are union members. Also, some companies (such as Armco and Weirton) have independent unions at certain plants, and some workers at Rouge (Ford) are represented by the United Autoworkers.

2/ Washington Post, Mar. 27, 1984.

3/ As used by the USWA, the steel industry includes the following Standard Industrial Classification groups: 1011 (iron ore); 3312 (blast furnaces, steel mills); 3315 (steel wire drawing); 3316 (cold-rolled sheets, strip, and bars); and 3317 (steels pipe and tubes).

4/ Data provided by counsel to the USWA. Average annual employment figure calculated by averaging quarterly membership for each year.

5/ Standard and Poor's, Industry Surveys, Aug. 11, 1983, p. S-30. The seven companies that comprise the Basic Industry Bargaining Group, which reached the pact with the union, include U.S. Steel, Bethlehem, LTV Corp. (J&L), National, Republic, Inland, and Armco.

Table 17.--Average number of production and related workers employed in U.S. establishments producing carbon and alloy steel products, by types of products, 1979-83

Item	1979	1980	1981	1982	1983
Carbon and alloy steel products, total 1/	168,196	144,536	150,487	102,592	98,440
Ingots, blooms, billets, slabs, and sheet bars 1/	34,649	29,190	31,280	21,161	20,165
Plates	17,761	16,907	16,748	9,252	7,949
Sheets and strip:					
Hot-rolled	14,501	11,772	12,381	8,485	10,465
Cold-rolled	25,050	20,602	22,482	17,150	19,145
Galvanized	7,390	6,661	7,369	6,135	6,803
All other	6,687	5,887	5,575	4,958	4,463
Total	53,628	44,922	47,807	36,728	40,876
Wire rods	6,645	4,847	4,613	2,666	2,835
Wire and wire products:					
Wire	5,516	4,792	5,845	4,638	4,304
Barbed and twisted wire	74	63	121	90	74
Wire strand	417	424	386	320	291
Wire ropes, cables, and cordage	2,099	2,117	2,115	1,646	1,353
Wire fencing	151	141	184	140	133
Brads, nails, spikes, staples, and tacks	972	450	440	364	396
Total	9,229	7,987	9,091	7,198	6,551
Railway-type products:					
Rails	798	774	762	501	679
Joint bars, tie plates, and track spikes	725	553	524	384	325
Wheels and axles	1,064	1,036	784	438	325
Total	2,587	2,363	2,070	1,323	1,329
Bars:					
Concrete reinforcing bars	2,136	2,022	1,756	1,429	852
Other, hot rolled	14,642	9,708	10,111	6,095	6,161
Other, cold-finished	***	***	***	***	***
Total	***	***	***	***	***
Structural shapes: 2/					
Sheet piling	***	***	***	***	***
Light shapes	754	734	653	550	692
Heavy shapes	12,066	11,223	10,560	6,904	6,252
Total	***	***	***	***	***
Pipes and tubes:					
Oil-country goods	5,006	5,105	5,896	3,589	1,290
All other	8,876	9,273	9,613	5,441	3,177
Total	13,882	14,378	15,509	9,030	4,467

1/ Includes employment in producing raw carbon and alloy steel.

2/ No data were obtained on employment in producing fabricated structural units.

Source: Tables K-2 through K-25 in app. K.

Table 18.--Hours worked by production and related workers employed in U.S. establishments producing carbon and alloy steel products, by types of products, 1979-83

(In thousands of hours)

Product	1979	1980	1981	1982	1983
Carbon and alloy steel products, total 1/	336,607	279,379	294,547	197,699	197,880
Ingots, blooms, billets, slabs, and sheet bars 1/	72,381	59,892	64,934	41,464	41,251
Plates	35,723	32,785	32,965	17,809	16,263
Sheets and strip:					
Hot-rolled	29,751	23,232	24,780	16,487	21,562
Cold-rolled	49,343	38,883	43,220	32,344	39,410
Galvanized	14,680	12,810	14,366	14,436	14,035
All other	12,533	10,304	10,167	7,917	7,762
Total	106,307	85,229	92,533	71,184	82,769
Wire rods	13,305	9,297	8,833	5,134	5,820
Wire and wire products:					
Wire	10,913	8,854	10,643	8,405	8,110
Barbed and twisted wire	128	117	209	158	137
Wire strand	848	786	730	571	551
Wire ropes, cables, and cordage	4,110	4,099	4,109	3,067	2,651
Wire fencing	295	276	338	263	260
Brads, nails, spikes, staples, and tacks	1,900	814	797	645	765
Total	18,194	14,946	16,826	13,109	12,474
Railway-type products:					
Rails	1,565	1,470	1,479	929	1,278
Joint bars, tie plates, and track spikes	1,383	1,007	966	622	549
Wheels and axles	2,143	2,030	1,592	872	662
Total	5,091	4,507	4,037	2,423	2,489
Bars:					
Concrete reinforcing bars	4,075	3,635	3,079	2,295	1,533
Other, hot rolled	28,164	17,607	18,956	11,068	12,117
Other, cold-finished	***	***	***	***	***
Total	***	***	***	***	***
Structural shapes: 2/					
Sheet piling	***	***	***	***	***
Light shapes	1,488	1,388	1,341	1,011	1,416
Heavy shapes	24,253	21,654	20,392	14,902	12,379
Total	***	***	***	***	***
Pipes and tubes:					
Oil-country goods	10,126	10,456	11,960	6,688	2,339
All other	17,071	17,484	18,107	10,123	6,425
Total	27,197	27,940	30,067	16,811	8,764

1/ Includes hours worked in producing raw carbon and alloy steel.
2/ No data were obtained on employment in producing fabricated structural units.

Source: Tables K-2 through K-25 in app. K.

Table 19.--Wages paid to production and related workers employed in U.S. establishments producing carbon and alloy steel products, by types of products, 1979-83

(In thousands of dollars)

Product	1979	1980	1981	1982	1983
Carbon and alloy steel products, total 1/	3,976,660	3,678,953	4,232,451	2,907,929	2,742,015
Ingots, blooms, billets, slabs, and sheet bars 1/	886,107	826,475	966,365	662,024	600,197
Plates	413,299	422,128	462,826	265,872	218,883
Sheets and strip:					
Hot-rolled	354,156	311,288	356,471	255,689	305,538
Cold-rolled	587,944	504,729	627,756	497,466	541,556
Galvanized	175,711	169,865	204,447	165,026	190,609
All other	157,176	148,448	154,908	144,870	124,491
Total	1,274,987	1,134,330	1,343,582	1,063,051	1,162,194
Wire rods	155,974	121,014	127,427	70,695	76,419
Wire and wire products:					
Wire	111,049	98,209	127,230	101,258	94,885
Barbed and twisted wire	1,392	1,436	2,922	2,117	1,670
Wire strand	8,459	8,618	8,747	7,236	6,841
Wire ropes, cables, and cordage	36,475	41,334	44,897	34,500	28,621
Wire fencing	3,277	3,344	4,600	3,466	3,023
Brads, nails, spikes, staples, and tacks	24,323	11,814	11,671	9,463	9,526
Total	184,975	164,755	200,067	158,040	144,566
Railway-type products:					
Rails	19,624	21,271	24,007	14,693	17,644
Joint bars, tie plates, and track spikes	16,262	13,157	13,657	9,329	7,047
Wheels and axles	23,409	25,315	21,395	12,120	9,459
Total	59,295	59,743	59,059	36,142	34,150
Bars:					
Concrete reinforcing bars	45,941	46,570	43,801	35,968	20,273
Other, hot rolled	334,650	242,631	284,755	164,751	171,947
Other, cold-finished	***	***	***	***	***
Total	***	***	***	***	***
Structural shapes: 2/					
Sheet piling	***	***	***	***	***
Light shapes	15,932	16,507	16,896	14,745	18,493
Heavy shapes	283,105	282,347	290,141	183,697	165,031
Total	***	***	***	***	***
Pipes and tubes:					
Oil-country goods	111,107	126,163	164,449	99,473	35,156
All other	207,307	230,731	265,706	146,840	86,526
Total	318,414	356,894	430,155	246,313	121,682

1/ Includes wages paid to workers producing raw carbon and alloy steel.
2/ No data were obtained on employment in producing fabricated structural units.

Source: Tables K-2 through K-25 in app. K.

(4) The companies signed a "letter of intent" promising either to reinvest labor savings gained under the new pact in steel operations or to use the savings to boost working capital for steel businesses; and

(5) One week's annual vacation was eliminated in the first year of the pact, and extended vacation benefits for senior workers were permanently eliminated.

During the past 25 years, labor negotiations in the steel industry have occurred every third year. In this context, it is worth noting that imports of steel products have generally increased sharply during those years in which labor negotiations took place. The following tabulation shows the level and percentage change in annual U.S. imports of steel mill products since 1957, and identifies those years in which labor negotiations occurred: 1/

Year	Quantity imported (million short tons)	Percentage change
1957	1.2	-
1958	1.7	41.7
1959 1/	4.3	152.9
1960	3.4	-20.9
1961	3.1	-8.8
1962 2/	4.1	32.3
1963	5.4	31.7
1964	6.4	18.5
1965 2/	10.4	61.2
1966	10.8	3.6
1967	11.5	6.5
1968 2/	18.0	56.8
1969	14.0	-21.9
1970	13.4	-4.8
1971 2/	18.3	37.0
1972	17.7	-3.4
1973	15.2	-14.3
1974 2/	16.0	5.4
1975	12.0	-24.8
1976	14.3	18.9
1977 2/	19.3	35.2
1978	21.1	9.5
1979	17.5	-17.1
1980 2/	15.5	-11.5
1981	19.9	28.4
1982	16.7	-16.3
1983 2/	17.1	2.4

1/ Labor negotiation year and strike.
2/ Labor negotiation year.

1/ On the average, imports rose by 41.3 percent during years in which labor negotiations took place, whereas they increased by only 1.6 percent in non-negotiation years.

The largest percentage increase in imports took place in 1959, when a labor strike lasted 116 days. As shown in the above tabulation, import increases occurred in all other labor negotiation years except 1980. Imports often declined following a labor contract but they did not return to levels generally prevailing before the negotiation years.

Although there have been no nationwide steel strikes since 1959, the threat of strikes and higher prices during labor negotiation years has caused customers to stockpile steel mill products from both domestic and foreign sources. Consequently, an agreement between management and labor not to strike during labor negotiations, embodied in the Experimental Negotiating Agreement (ENA), was first applied in the 1974 talks. The ENA committed steel companies and steelworkers to submit any unresolved bargaining issues to binding arbitration without using the strike as a weapon. In return, the steelworkers received considerable increases in wages and cost-of-living allowances.

Financial experience of U.S. producers

This section of the report examines the financial experience of U.S. producers of the steel products subject to this investigation. It is divided into the following major parts: overall corporate operations, operations on all products covered by the investigation, and operations on each of the nine covered product groups (semifinished products (ingots, blooms, billets, slabs, and sheet bars), plates, sheets and strip, wire rods, wire and wire products, railway-type products, bars, structural shapes and units, and pipes and tubes and blanks therefor). The second and third of these major parts are further divided into discussions of the operations of the three general types of producers covered by the investigation: integrated steel producers, nonintegrated steel producers, and nonsteel producers.

The discussion of overall corporate operations is based on data developed from sources other than the Commission's questionnaires (e.g., annual reports of the subject companies, investment firm analyses, and AISI publications). Accordingly, data in that section are not necessarily directly comparable with data in the other sections, which have been developed from information submitted in response to Commission questionnaires. Further, a discussion of aggregate corporate operations of the third type of producer (nonsteel producer) is not presented because the diversity of nonsteel producers would cause such a review to be of limited value.

Overall corporate operations.--This portion of the report reviews the financial performance and condition of 10 major integrated U.S. steel producers and 5 major nonintegrated steel producers.

Composite financial experience of 10 major integrated steel producers 1/ on their overall corporate operations.--Over the past 16 years, integrated steel producers in the United States have borne the brunt of a poor economy from time to time, inflation which resulted in higher material and labor costs, two energy shortages with their accompanying increased energy costs, wage rates that are the highest in the United States for industrial workers, and increasing foreign competition. 2/ As a result, the overall operating performances of these companies have been erratic and poor, resulting in a deterioration in their financial condition. Now they find themselves with poor credit ratings, which limit their ability to raise funds in capital markets, and, if they are able to raise these funds through bond or stock issues, raise the costs of such financings.

From 1968 to 1974, 3/ the 10 sampled integrated steel companies experienced a 101-percent increase in composite sales, from $15.0 billion to $30.2 billion (table 20). During that period, net profits after taxes rose from $818 million (5.4 percent of sales) to $2.0 billion (6.5 percent of sales). In 1975, composite sales dropped by 11 percent to $26.8 billion and profits after taxes fell to $1.2 billion (4.7 percent of sales). During the next 6 years composite sales rose irregularly to a record $49.8 billion in 1981, although profits after taxes did not keep pace (profits totaled $2.1 billion, or 4.1 percent of sales, in 1981). Sales fell by 13 percent in 1982 and by another 7 percent in 1983, and large losses were experienced in both years ($3.4 billion, or 7.9 percent of sales, in 1982 and $3.6 billion, or 8.8 percent of sales, in 1983).

Operating results in the first quarter of 1984 indicate a marked improvement over first quarter 1983 results (table 21). On aggregate sales of $11.1 billion the 10 integrated producers earned $173 million (1.5 percent of sales), whereas in the first quarter of 1983 there was an aggregate loss of $541 million on sales of $9.0 billion (5.9 percent). In the first quarter of 1983 only Interlake of the 10 firms had profitable operations. In the comparable period in 1984 four firms (Bethlehem, J&L, Republic, and Wheeling-Pittsburgh) suffered losses (totaling $71.2 million), while the other firms had profitable operations.

As shown in table 20, consistency of profit margins has been a problem for these firms (their composite profit margins sustained an upward trend for more than 2 years only once, 1971-74, during the entire 16-year period). The data indicate that changes in the relative level of the costs of goods sold (ratio of cost of goods sold to sales) have generally been the dominant cause

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1/ Armco, Bethlehem, Inland, Interlake, J&L, Kaiser, National, Republic, U.S. Steel, and Wheeling-Pittsburgh. Nine of the 10 firms accounted for 70 percent of total U.S. raw steel production in 1983. They include the 8 largest steel producers and the 19th largest (Interlake), based on raw steel production in 1983. Kaiser ceased raw steel production during 1983, but continued to manufacture and sell certain carbon and alloy steel products.

2/ The long-term analysis has been made on a 16-year period because the staff's computer program handles increments of 8 periods.

3/ Based on the fiscal years of the sampled firms.

Table 20.—Composite financial experience of 10 integrated U.S. steel producers 1/ on their overall corporate operations, 1968-83

Item	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Sales———million dollars	14,995	15,745	15,638	16,208	17,785	22,845	30,180	26,752	29,160	31,976	37,431	43,544	42,074	49,798	43,337	40,426
Cost of goods sold———do	12,074	12,806	13,172	13,475	14,640	18,739	23,193	21,555	24,486	27,751	31,575	37,181	36,305	42,186	37,765	34,139
Gross profit———do	2,921	2,939	2,466	2,733	3,145	4,106	6,987	5,197	4,674	4,225	5,856	6,363	5,769	7,612	5,572	6,287
Depreciation and amortization———do	818	894	876	895	977	1,050	1,097	1,035	1,035	1,158	1,294	1,475	1,522	1,634	1,993	2,086
General, selling, and administrative expenses million dollars	512	560	602	717	792	959	2,080	2,077	1,914	2,382	2,646	2,983	3,130	3,520	5,294	4,938
Net operating profit or (loss)———million dollars	1,591	1,485	986	1.121	1,376	2,095	3,810	2,085	1,725	685	1,916	1,905	1,117	2,458	(1,715)	(737)
Interest expense———do	184	201	238	271	285	288	292	325	414	553	530	551	552	598	1,436	1,444
Other income———do	96	99	111	105	146	286	395	433	417	313	378	709	1,340	2,011	1,142	885
Other expenses———do	265	289	310	333	347	384	245	237	276	877	114	1,046	174	767	1,933	2,564
Net profit or (loss) before income taxes million dollars	1,238	1,094	549	622	890	1,709	3,668	1,956	1,452	(432)	1,650	1,017	1,731	3,104	(3,942)	(3,860)
Income taxes———do	420	338	107	163	291	688	1,711	708	365	(428)	531	214	396	1,039	(503)	(308)
Net profit or (loss) after income taxes million dollars	818	756	442	459	599	1,021	1,957	1,248	1,087	(4)	1,119	803	1,335	2,065	(3,439)	(3,552)
Cash flow from operations million dollars	1,807	1,759	1,471	1,401	1,642	2,236	3,203	2,556	1,937	1,410	2,653	2,801	2,706	4,024	(401)	(229)
Working capital———do	2,604	2,193	2,444	2,431	2,796	3,105	4,085	4,054	4,259	4,073	4,425	4,379	5,003	7,134	3,308	2,962
Capital expenditures———do	1,313	1,284	1,420	1,232	1,010	1,186	1,786	2,800	2,841	2,426	2,130	2,727	2,735	2,823	3,666	2,929
As a share of net sales:																
Cost of goods sold percent	80.5	81.3	84.2	83.1	82.3	82.0	76.8	80.6	84.0	86.8	84.4	85.4	86.3	84.7	87.1	84.5
Gross profit———do	19.5	18.7	15.8	16.9	17.7	18.0	23.2	19.4	16.0	13.2	15.6	14.6	13.7	15.3	12.9	15.5
Operating profit or (loss) percent	10.6	9.4	6.3	6.9	7.7	9.2	12.6	7.8	5.9	2.1	5.1	4.4	2.6	4.9	(4.0)	(1.8)
Net profit or (loss) after income taxes———percent	5.4	4.8	2.8	2.8	3.4	4.5	6.5	4.7	3.7	2/	3.0	1.8	3.2	4.1	(7.9)	(8.8)
Liquidity ratios:																
Quick ratio———times	0.9	0.8	0.7	0.8	0.9	1.0	1.1	1.0	0.8	0.8	1.0	0.9	1.0	1.0	0.6	0.7
Current ratio———do	1.8	1.6	1.7	1.7	1.8	1.7	1.7	1.9	1.8	1.7	1.6	1.6	1.6	1.8	1.3	1.3
Receivables turnover———do	10.1	8.4	8.7	9.2	7.6	8.9	9.3	10.0	10.6	9.4	8.3	8.7	7.3	8.2	10.7	8.0
Inventory turnover———do	4.4	4.3	4.2	4.5	4.7	6.9	7.3	5.3	4.9	6.2	6.9	7.4	7.8	6.7	5.8	6.3
Leverage ratios:																
Debt to worth———times	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.1	1.7	2.1
Fixed assets to net worth times	1.0	1.0	1.1	1.1	1.0	1.0	.94	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.7	1.9
Capitalization———percent	57.0	55.8	55.3	55.2	54.8	55.0	55.4	56.6	53.4	50.5	50.4	49.4	47.5	47.3	36.8	31.9
Productivity ratios:																
Net sales to fixed assets times	1.4	1.4	1.3	1.3	1.4	1.8	2.3	1.8	1.8	1.9	2.1	2.3	2.1	2.4	1.6	1.5
Net sales to net worth times	1.4	1.4	1.4	1.4	1.5	1.9	2.2	1.8	1.9	2.1	2.3	2.6	2.5	2.6	2.8	3.0
Other ratios:																
Dividend payout———percent	45.6	48.9	87.1	67.9	46.0	31.5	21.6	35.9	46.1	(123.7)	38.1	57.1	34.4	29.4	(13.0)	(9.2)
Accumulated depreciation to fixed assets—percent	54.1	53.4	53.0	55.0	51.0	51.9	51.8	49.5	53.3	52.7	53.3	52.6	52.6	52.2	45.2	44.7
Debt coverage———times	12.1	6.8	4.4	4.4	6.3	5.0	9.5	9.4	6.1	2.8	3.2	5.6	4.3	5.1	(38.2)	(17.5)

1/ Armco, Bethlehem, Inland, Interlake, J&L, Kaiser, National, Republic, U.S. Steel, and Wheeling-Pittsburgh.
2/ Less than 0.05 percent.

Source: Compiled from annual reports and/or Forms 10K submitted to the Securities and Exchange Commission.

Table 21.--Financial experience of 10 integrated U.S. steel producers on their overall corporate operations, by firms, January-March 1983 and January-March 1984

Firm	Sales			Net profit or (loss) after taxes		Ratio of net profit or (loss) to sales	
	January-March 1983	January-March 1984	Change	January-March 1983	January-March 1984	January-March 1983	January-March 1984
	Million dollars	Million dollars	Percent	Million dollars	Million dollars	Percent	Percent
Armco	988	1,087	10.0	(128)	56	(13.0)	5.0
Bethlehem	1,119	1,335	19.2	(55)	(22)	(4.8)	(1.6)
Inland	670	878	31.2	(20)	2	(2.9)	.2
Interlake	198	237	19.7	1	7	.4	2.9
J&L	627	770	22.8	(117)	1/ (7)	(18.6)	(.9)
Kaiser	52	50	(3.8)	(10)	2/	(19.1)	.7
National	778	774	(.4)	(35)	8	(4.5)	1.0
Republic	573	827	44.3	(35)	(37)	(6.1)	(4.4)
U.S. Steel	3,864	4,836	25.2	(118)	171	(3.1)	3.5
Wheeling-Pittsburgh	173	259	49.8	(24)	(5)	(13.8)	(1.9)
Total	9,041	11,054	22.3	(541)	173	(5.9)	1.5

1/ Includes a $62 million gain on the sale of a subsidiary.
2/ Less than $0.5 million.

Source: Compiled from Forms 10Q submitted to the Securities and Exchange Commission.

of changes in the profit margin. 1/ However, general, selling, and administrative expenses increased significantly during the period examined, from 3.4 percent of sales in 1968 to 12.2 percent in 1983.

The increases in dollar sales experienced by these companies over this period are, in part, the result of inflation. In an attempt to address the effects of inflation on financial experience, the Financial Accounting Standards Board (FASB) enacted FASB Statement No. 33 in 1979. That statement prescribes two methods of measuring the extent to which a company's earnings have stayed abreast of or fallen behind inflation. The first is called the "constant-dollar" method, wherein a company's costs of raw materials and plant and equipment (i.e., depreciation) are adjusted to present-day costs by applying the Consumer Price Index (CPI) to the historical costs of assets when they were acquired, recalculating the annual depreciation and material costs,

1/ Changes in the relative level of the cost of goods sold may be the result of changes in either sales or costs. For example, an increase in the ratio of the cost of goods sold to sales would occur in any period in which average selling prices did not increase by proportionately the same amount as did average production costs.

and then adjusting net income accordingly. The second method is called the "current-cost" method. Its purpose is to reflect current costs of replacing assets; in other words, has depreciation been sufficient to replace assets and is it enough to allow profitable operations? Adjusted financial data for 7 of the 10 sampled integrated steel producers using both of these methods are presented for 1983 in table 22. It is clear in both cases that profitability after the adjustments is significantly poorer than that reported using actual costs.

Table 22.--Net profits after taxes of 7 integrated U.S. steel producers, actual, in constant dollars, 1/ and on the basis of current costs, 1/ by firms, 1983

(In millions of dollars)

Firm	Actual	Constant dollars	Current cost
Armco	(537)	2/	(762)
Bethlehem	(164)	(412)	(388)
Inland	(117)	(228)	(222)
Interlake	23	2/	1
National	(154)	(307)	(286)
U.S. Steel	(1,161)	(1,900)	(2,188)
Wheeling-Pittsburgh	(54)	(97)	(110)
Total	(2,165)	(2,944)	(3,955)

1/ As specified by FASB Statement No. 33, which requires certain large publicly held corporations to disclose specific minimum information concerning the effects of inflation on their financial statements.

2/ Not available.

Source: Annual reports of companies and Business Week magazine, Apr. 30, 1984, p. 91.

Cash flow generated from operations of the 10 sampled integrated steel producers has been erratic and generally has followed the peaks and valleys of their net income. Positive cash flows ranged from a low of $1.4 billion in 1971 to a high of $4.0 billion in 1981. It is interesting to note that in each year except 1974-76 and 1981, depreciation was the larger contributor to cash flow from operations (the others being net profits and noncash items other than depreciation such as deferred taxes). In 1983, these firms' composite cash flow from operations was a negative $229 million, with depreciation of $2.1 billion assisting to offset the net loss of $3.6 billion.

The relationship between depreciation and capital expenditures is one that highlights one of the problems of the steel industry, a problem shared by most capital-intensive industries. The problem is that capital investments are not written off at a rate fast enough to allow for their replacement. This situation has been relieved somewhat by the enactment of the Economic Tax Recovery Act of 1981, which allows more rapid writedown of assets under the Accelerated Costs Recovery System (ACRS). However, this affects only those assets purchased after 1980. Furthermore, the problem of slow depreciation rates for older assets is exacerbated by inflation. Depreciation accounted for 54 percent of these firms' capital expenditures in 1979, 56 percent in 1980, 58 percent in 1981, 22 percent in 1982, and 72 percent in 1983. Restatement of these figures in conformance with FASB Statement No. 33 would show that depreciation's contribution to the replacement of assets was considerably less when inflation is factored into the calculation. It must also be remembered that these companies have certain commitments (debt repayments, for example), which must be met before discretionary expenditures such as those for capital improvements are made. For the 10 sampled firms, debt repayments over 1968-83 averaged $515 million per year. Cash dividends, which some companies view as mandatory, averaged $386 million during that period for these firms. The policy of commiting such significant resources to the payment of dividends has been criticized by some, and several of the larger steel producers have announced a reduction in their dividend payout ratio in 1984.

During 1968-83, these companies borrowed, on the average, $1 billion per year. These substantial borrowings led to a deteriorating financial condition characterized by large amounts of debt, the burden of large interest payments on that debt, and the prospect of difficulty in raising additional funds through either equity financings (i.e., the issuance of common stock) or debt financings at reasonable rates of interest.

As mentioned, between 1982 and 1983 the aggregated sales of the 10 integrated steel producers decreased by 7 percent from $43.3 billion to $40.4 billion. More significantly, their costs of goods sold fell by 10 percent, from $37.7 billion in 1982 (87 percent of sales) to $34.1 billion in 1983 (84 percent of sales). Consequently, their composite gross profits improved from $5.6 billion in 1982 (12.9 percent of sales) to $6.3 billion in 1983 (15.5 percent of sales). The improvement in product-cost levels is attributable to several factors. Among them are the closing of aging plants with high rates of energy consumption and high maintenance costs; the $1.25 hourly labor rate reduction and other labor concessions negotiated at plant sites; and expenditures on new technology and equipment.

It is worth noting that in previous years when gross profits have exceeded 15 percent of sales, there was a composite net profit. However, that did not occur in 1983, primarily because of sharply higher general, selling, and administrative expenses (a large portion of which did not relate to steel operations), higher interest expenses, and higher "other expenses." The remainder of the discussion in this section focuses on these various items of cost.

Since 1979, general, selling, and administrative expenses increased by 66 percent, despite a decline in sales. The largest increase came in 1982, when such expenses rose by $1.8 billion. A review of the 10 sampled integrated producers' financial statements indicates that U.S. Steel was responsible for 93 percent of that increase ($1.6 billion) and that the bulk of its increased expenses were new expenses resulting from its acquisition of Marathon Oil Co. During 1982, U.S. Steel paid $429 million in windfall profit taxes (a general, selling, and administrative item levied only on the earnings of oil companies), $532 million in consumer excise taxes on petroleum products and merchandise, and $304 million in oil exploration expenses. All of these expenses (totaling $1.3 billion) were new expense items for U.S. Steel in 1982, but are normal expenses in the oil industry.

As shown in table 20, total depreciation expenses of the 10 integrated producers increased steadily from 1979 to 1983. This was caused by two factors. First, capital expenditures generally rose during the period and, second, higher writedown rates were allowed on assets purchased after 1980 by the ACRS.

Interest expenses rose modestly from 1979 to 1981, but then more than doubled in 1982 to $1.4 billion; they remained at that level in 1983. Interest expenses are a function of the amounts borrowed and the interest rates paid on such borrowings. Although all companies provide detailed data on long-term debt, many do not provide data on the average amount of short-term debt outstanding during the year, nor do they provide data on the weighted-average interest rate on short-term debt throughout the year. This makes it difficult to ascertain with certainty why interest expenses have changed from year to year; however, there is information which can provide some insights. For example, a review of interest rates in the U.S. financial markets indicates that interest rates on certain debt instruments were, on the average, lower during 1982 and 1983 than in 1981 (table 23). Therefore, increased interest expenses in 1982 were not likely the result of higher rates, unless funds were borrowed in other than conventional domestic markets. 1/ More likely, the increase in interest expenses was the result of increased borrowings. For the 10 companies, total liabilities (i.e., "borrowings") rose from $20.7 billion at yearend 1981 to $26.9 billion in 1982, and $28.4 billion in 1983. Again, U.S. Steel's acquisition of Marathon Oil has caused some of the incremental indebtedness of the 10 producers.

The contribution level of "other income," which was derived from a combination of interest and dividend income, gains on the sale of equipment, and accounting changes, decreased from 2.6 percent of sales in 1982 to 2.2 percent of sales in 1983. The net impact of these items was a 1.4 percent increase in the ratio of expenses to sales in 1983. This was compounded by an increase in the level of "other expenses" from 4.5 percent of sales in 1982, or $1.9 billion, to 6.3 percent in 1983, or $2.5 billion (table 20). In absolute terms, "other expenses" increased by 32.6 percent, primarily as a result of losses which resulted from discontinued operations, i.e., plant closings.

Therefore, despite an $853 million reduction in operating losses from $1.7 billion in 1982 to $737 million in 1983, the increase in interest expenses coupled with the decline in "other income" and increase in "other expenses" caused the loss before taxes to rise from 9.0 percent of sales in 1982 to 9.6 percent in 1983. Income tax credits also decreased, from $503 million in 1982 to $308 million in 1983, which caused the loss after taxes to increase by 5.4 percent from $3.4 billion in 1982 to $3.6 billion in 1983.

1/ Some innovative financings can, and generally do, have interest costs that are higher than conventional financings because they are financings designed for marginal credit risks. The interest rates on foreign debt instruments may be higher than interest rates which prevailed in the United States.

Table 23.--Interest rates on U.S.-issued debt instruments, by types, 1981-83

(Average percent per annum)

Item	1981	1982	1983
Prime rate 1/2/	18.87	14.86	10.79
Commercial paper: 3/			
1 month	15.69	11.83	8.87
3 month	15.32	11.89	8.88
6 month	14.76	11.89	8.79
Corporate bonds, seasoned issues: 4/			
All industries	15.06	14.94	12.78
Aaa	14.17	13.79	12.04
Aa	14.75	14.41	12.42
A	15.29	15.43	13.10
Baa	16.04	16.11	13.55

1/ Rate charged best customers, i.e., those with excellent financial condition that maintain very good demand deposit account balances.

2/ Rate charged on short-term business loans which must be repaid over a 13-month period and maintained at a zero balance for 1 month out of 13 months.

3/ Yields are quoted on a bank-discount basis rather than an investment-yield basis, which would give a higher percentage figure.

4/ Daily figure from Moody's Investors Service, based on yield to maturity on selected long-term bonds.

Source: Federal Reserve Bulletins, published by the Federal Reserve Bank.

Composite financial condition of 10 major integrated steel producers.--The composite financial condition of the 10 sampled steel producers deteriorated considerably between 1979 and 1983. The composite quick ratio declined to an alltime low in 1982 and recovered only slightly in 1983. Current assets exceeded current liabilities by only a slight margin and the companies as a whole were highly leveraged. The extent to which debt has increased is manifested in the rising ratio of debt to worth (1.0 times in 1979 to 2.1 times in 1983) and the erosion of the capitalization ratio (49.4 percent in 1979 to 31.9 percent in 1983). Both ratios represent dubious records for these companies. The ratio of debt to worth points out the extent to which the companies have relied upon debt financings (presumably because equity financings were either too costly or not available at all). The capitalization ratio, which has been declining steadily since 1975, indicates the extent to which the companies' asset base has been financed by equity. The decrease in this ratio results from the increasing use of debt financings and the substantial losses incurred in 1982 and 1983, which reduced retained earnings. In addition, the companies' ability to service their indebtedness (principally payments on long-term debt) from operations was nonexistent by 1982. The composite debt-coverage ratio, which measures the coverage of principal payments by the cash generated from operations, clearly indicated that in order to make $1.4 billion in interest payments and $3.7 billion in capital expenditures in 1982 the companies had to, among other things, deplete working capital by $3.8 billion. This was accomplished by selling $2.0

billion in marketable securities and accelerating the collection of receivables. Working capital was depleted by another $346 million in 1983.

The deterioration in financial condition which is indicated by the composite data is not the result of a situation where a few companies have brought down the the group as a whole, as indicated in tables 24 and 25, which present one Wall Street firm's (Moody's) commercial paper and bond ratings for most of the firms. Although not shown here, the other bond-rating firm, Standard & Poors, is in general agreement with the opinions expressed by Moody's. These ratings are extremely important to a company. Commercial paper is a short-term debt instrument which came into vogue in the late 1960's and early 1970's. These instruments, with maturities of no more than 9 months, replaced short-term bank financing and did so at some considerable cost savings to the issuer. Not only was the issuer able to pay a lower stated rate of interest than would have been required by a commercial bank, but the issuer was able to eliminate the compensating-balance requirements of banks (which resulted in an effective rate higher than the actual stated interest rate). Issuers of commercial paper found that they reduced effective interest costs by as much as 100 to 150 basis points, depending upon the issuer's commercial paper rating. In addition, the cash which would be sitting in a non-interest-bearing demand deposit account with the commercial bank as a compensating balance was now free to be invested and earn interest. The ratings of all identified commercial paper issuers have decreased and two companies have dropped out of the commercial-paper market as issuers entirely. In each case it is apparent that the firm's decision was based on the company's poor commercial paper rating.

In the same fashion, maintenance of a high bond rating is of paramount importance to those companies that desire to float bond issues in the capital markets. Naturally, the better the bond rating, the lower the interest paid on the bonds. By January 1984, the bond ratings of all identified companies had decreased. This will have an effect on the ability of some companies to issue new bonds, and will raise the cost of new financings in all cases.

Composite financial experience of five nonintegrated steel producers 1/ on their overall corporate operations.--Just as the 10 sampled integrated steel producers have experienced peaks and valleys in terms of revenues and profits, so also have the 5 sampled nonintegrated steel producers. Between 1979 and 1981 the composite sales performance of these five companies rose by 14.6 percent from $1.5 billion to $1.7 billion (table 26). Profitability was highest in 1979, when a composite net profit after tax of $103 million was reported. Although sales rose from 1979 to 1981, profitability inched downward as the costs of goods sold increased at a faster rate than did sales. The level of general, selling, and administrative expenses remained fairly constant over the 3-year period, averaging 5.2 percent of sales.

1/ Florida Steel, Laclede, Northwestern, Nucor, and Roanoke Electric. These five firms accounted for 4 percent of total U.S. raw steel production in 1983. They include the 9th largest steel producer (Nucor), the 11th largest (Florida Steel), the 12th largest (Laclede), and the 17th largest (Northwestern), based on raw steel production in 1983.

Table 24.--Moody's commercial paper ratings 1/ of selected integrated U.S. steel producers, 1977-84

Producer	As of January--							
	1977	1978	1979	1980 2/	1981	1982	1983	1984
Armco	P-1	P-1	P-1	P-1	P-1	P-1	P-2	P-2
Inland	P-1	P-1	P-1	P-1	P-1	P-2	P-2	P-2
Interlake	P-1	P-1	P-1	P-2	P-2	P-2	P-2	P-2
National	3/	3/	3/	3/	P-2	P-2	P-3	3/
Republic	P-1	P-1	P-1	P-1	P-2	P-2	NP	3/
U.S. Steel 4/	P-1	P-1	P-1	P-1	P-1	P-1	P-2	P-2

1/ Moody's commercial paper ratings are as follows:

P-1: Superior capacity for repayment of short-term promissory obligations. P-1 repayment capacity is evidenced by the following characteristics: leading market position in well established industries; high rates of return on funds employed; conservative capitalization structures with moderate reliance on debt and ample asset protection; broad margins in earnings coverage of fixed financial charges and high internal cash generation; and well established access to a range of financial markets and assured sources of alternate liquidity.

P-2: Strong capacity for repayment as evidenced by P-1 characteristics, but to a lesser degree.

P-3: Acceptable capacity for repayment.

NP: Not prime; does not fall within any of the prime rating categories (P-1, P-2, and P-3).

2/ Ratings are as of February 1980.

3/ Not rated.

4/ Rating is not for issuing commercial paper, but as guarantor of U.S. Steel Credit Corp. as an issuer of commercial paper.

Source: Moody's Bond Record, Moody's Investors Service, Inc., various editions.

Table 25.—Moody's bond ratings 1/2/ of selected integrated U.S. steel producers, 1973-84

Producer	As of January—											
	1973	1974	1975	1976	1977	1978	1979	1980 3/	1981	1982	1983 4/	1984 4/
Armco	A	A	A	A	A	A	A	A	A	A	A2	Baa2
Bethlehem	Aa	Aa	Aa	Aa	Aa	A	A	A	A	A	Baa2	Baa2
Inland	A	A	A	Aa	Aa	Aa	Aa	Aa	A	A	Baa2	Baa2
Interlake	A	A	A	A	A	A	A	A	Baa	Baa	Baa1	Baa1
J&L	Baa	Baa	Baa	Baa	Baa	Baa	Baa	Ba	Ba	Ba	Ba1	Ba1
National	Aa	Aa	Aa	Aa	Aa	Aa	Aa	Aa	A	A	Baa3	Baa3
Republic	A	A	A	A	A	A	A	A	A	A	Baa3	Ba1
U.S. Steel	Aa	Aa	Aa	Aa	Aa	Aa	Aa	Aa	A	A	A3	Baa2

1/ Moody's bond ratings are as follows:
- Aaa: Best quality and carry smallest degree of risk.
- Aa: High quality and, together with Aaa, are known as high-grade bonds.
- A: Possess many favorable investment attributes and are considered upper-medium-grade obligations.
- Baa: Medium-grade obligations which are neither highly protected nor poorly secured.
- Ba: Obligations which have speculative elements; future cannot be considered well assured.
- B: Generally lack characteristics of desirable investment.
- Caa: In poor standing; may be in default or may present elements of danger with respect to principal or interest.
- Ca: Speculative in a high degree.
- C: Lowest rated bonds.

2/ Bond ratings of subordinated debentures are not shown. These ratings have historically been one rating below the ratings shown above.

3/ Ratings are as of February 1980.

4/ In 1983, Moody's expanded its rating scheme to include numeric modifiers. Modifier 1 indicates that the security ranks within the higher end of the alpha rating; modifier 2 indicates mid-range; and modifier 3 indicates lower end.

Source: Moody's Bond Record, Moody's Investors Service, Inc., various editions.

Table 26.--Composite financial experience of 5 nonintegrated U.S. steel producers 1/ on their overall corporate operations, 1979-83

Item	1979	1980	1981	1982	1983
Sales------------million dollars--	1,457	1,503	1,670	1,309	1,200
Cost of goods sold----------do----	1,161	1,233	1,394	1,157	1,061
Gross profit----------------do----	295	270	276	152	139
Depreciation and amortization million dollars--	30	37	48	58	59
General, selling and administrative expenses million dollars--	77	82	79	74	69
Operating profit------------do----	186	149	147	17	11
Interest expense------------do----	7	7	13	20	10
Other income----------------do----	8	9	9	7	5
Other expense---------------do----	1	-	1	24	-
Profit or (loss) before income taxes----------million dollars--	187	152	143	(20)	6
Income taxes----------------do----	84	61	52	(15)	(3)
Profit or (loss) after income taxes----------million dollars--	103	91	91	(4)	9
Cash flow from operations million dollars--	139	134	159	93	96
Working capital-------------do----	269	263	176	226	284
As a share of net sales:					
Cost of goods sold-----percent--	79.8	82.0	83.5	88.4	88.4
Gross profit--------------do----	20.2	18.0	16.5	11.6	11.6
General, selling and administrative expenses-----percent--	5.3	5.4	4.7	5.6	5.8
Operating profit----------do----	12.8	9.9	8.8	1.3	.9
Profit or (loss) after income taxes----------------percent--	7.1	6.0	5.4	(0.3)	.7
Liquidity ratios:					
Quick ratio--------------times--	1.2	1.2	1.0	1.0	1.1
Current ratio-------------do----	2.3	2.3	2.2	2.2	2.4
Receivables turnover------do----	10.6	10.8	10.9	11.5	8.9
Inventory turnover--------do----	5.6	5.5	5.3	5.8	5.2
Leverage ratios:					
Debt to worth------------times--	.7	.6	.7	.6	.7
Fixed assets to net worth-do----	.8	.8	1.0	1.0	.9
Capitalization---------percent--	58.3	61.8	58.0	60.5	57.4
Productivity ratios:					
Net sales to fixed assets times--	3.6	3.0	2.6	1.9	1.9
Net sales to net worth----do----	2.8	2.5	2.4	1.9	1.8
Other ratios:					
Dividend payout--------percent--	18.8	24.1	20.4	(371.4)	123.5
Accumulated depreciation to fixed assets---------percent--	39.3	37.1	34.3	34.1	38.5
Debt coverage------------times--	69.6	20.2	17.1	2.1	5.5

1/ Florida Steel, Laclede, Northwestern, Nucor, and Roanoke Electric.

Source: Compiled from annual reports and/or Forms 10K submitted to the Securities and Exchange Commission.

In 1982, sales fell by 22 percent and the five firms suffered a collective loss of $4 million. It should be noted, however, that not all of the five firms sustained a loss in 1982, as Nucor, the largest nonintegrated producer, had profits of $22 million on sales of $486 million (down 10.7 percent from sales of $544 million in 1981) and Roanoke Electric had a net profit after tax of $4 million on sales of $73 million. Both companies experienced increases in their relative levels of cost of goods sold, but such costs still remained lower than those of the other three companies, which sustained losses in 1982 (the average ratio of cost of goods sold to net sales for Nucor and Roanoke Electric rose from 71 percent in 1979 to 79 percent in 1982, and the composite ratio for the other three firms rose from 84 percent to 95 percent).

In 1983, sales for these five companies declined by 8.3 percent to $1.2 billion. The relationship between cost of goods sold and sales remained stable at 88.4 percent, and operating profits aggregated to $11 million, or 0.9 percent of sales.

Depreciation expense rose by only $1 million in absolute terms, but because of the reduction in sales, the ratio of depreciation expense to sales rose from 4.4 percent in 1982 to 4.9 percent in 1983. There was a $5 million reduction in general, selling, and administrative expenses between 1982 and 1983, but the relative level of such expenses increased slightly, from 5.6 percent of sales in 1982 to 5.8 percent in 1983. In absolute terms, interest expenses were reduced by 50 percent from $20 million in 1982 to $10 million in 1983. This reduction, more than any other factor, is the reason for profitable operations before taxes in 1983. The loss carryforward, which arose from the $4 million loss in 1982, provided a $3.4 million income tax credit in 1983, which resulted in net profits of $9 million.

The reduction in interest expenses in 1983 would seem to be inconsistent with the amount of total liabilities outstanding in that year. At yearend 1983 total liabilitites had increased by 9.5 percent from $454 million in 1982 to $497 million. The interest rates on U.S. debt instruments decreased during 1983 (see table 23), but the decline in rates would not account for the 50-percent reduction in interest expenses. Therefore, some reduction in total liabilities probably occurred early in the year, before debt began to increase to the amount it attained at yearend.

On a composite basis, revenues and earnings increased for the quarter ending on March 31, 1984 (or, for one company, on April 30, 1984). Total sales aggregated to $383 million, which represented a 35.4 percent increase above the $283 million attained in the corresponding period in 1983 (table 27). Net profits were a meager $2.9 million, or 0.8 percent of total sales. However, the profit, though small, is an improvement over performance in the corresponding period in 1983, when on a composite basis the five nonintegrated steel producers lost $2.1 million, or 0.7 percent of sales.

Composite financial condition of five nonintegrated steel producers.--Between 1979 and 1982, the financial condition of the five sampled nonintegrated steel producers remained stable. Their composite liquidity ratios remained strong, current assets exceeded current liabilities by more than two times, and the liquidity of their receivables and inventories improved. The protection afforded creditors by net worth improved (their

Table 27.--Financial experience of 5 nonintegrated U.S. steel producers on their overall corporate operations, by firms, January-March 1983 and January-March 1984

Firm	Sales			Net profit or (loss) after taxes		Ratio of net profit or (loss) to sales	
	January-March 1983	January-March 1984	Percent change	January-March 1983	January-March 1984	January-March 1983	January-March 1984
	1,000 dollars	1,000 dollars	Percent	1,000 dollars	1,000 dollars	Percent	Percent
Florida Steel 1/	58,404	71,635	22.6	(1,150)	3,651	(2.0)	5.1
Laclede	46,041	58,474	27.0	1,367	1,870	3.0	3.2
Northwestern	42,984	79,304	84.5	(5,816)	(7,943)	(13.5)	(10.0)
Nucor	119,736	152,001	26.9	3,510	5,345	2.9	3.5
Roanoke Electric	15,688	21,649	37.9	2/	1	3/	4/
Total	282,853	383,063	35.4	(2,089)	2,924	(.7)	.8

1/ Data represent operating results for the company's 3rd fiscal quarters, which end on April 30.
2/ Less than ($0.5) thousand.
3/ Less than (0.05) percent.
4/ Less than 0.05 percent.

Source: Compiled from Forms 10Q submitted to the Securities and Exchange Commission.

ratio of debt to worth decreased by 10 percent from 0.7 times in 1979 to 0.6 times in 1982) and their composite capitalization ratio deteriorated only slightly, from 58 percent in 1979 to 61 percent in 1982. This decrease is attributable to the impact of losses on retained earnings, and the fact that several firms have borrowed to finance capital expenditures.

At yearend 1983, however, the financial condition of the five nonintegrated producers on a composite basis had worsened. Although the coverage of current liabilities by current assets and quick assets improved, all other ratios declined. The reason for this is that during the last few months of 1983, average daily sales increased, causing a $20.3 million increase in gross receivables at yearend. In addition, fixed assets increased by $21.2 million during 1983. The increase in these assets necessitated an increase in debt (primarily long-term debt) of $33.4 million in 1983. Although current liabilities increased, they did not increase commensurate with the increase in gross receivables. Therefore, the current and quick ratios improved as a result of the increase in gross receivables outstanding at the end of the year.

In the aggregate, the companies realized profits after extraordinary items of $10.9 million and management paid cash dividends of $10.8 million. Consequently, retained earnings increased by only $176,000. Thus, the nonintegrated producers' total liabilities increased by $43.1 million, whereas their net worth increased by a mere $176,000. These actions by management account for the deterioration in the other composite ratios.

Financial comparison of 10 integrated producers and 5 nonintegrated producers.--The most definitive and significant difference between the composite financial information on these two segments of the steel industry is their relative financial condition. During 1979-83, the composite financial condition of the five nonintegrated producers was strong and reflected viable operations. They were creditworthy and could raise money through both debt and equity issues, which some did. On the other hand, the 10 integrated producers' financial condition was poor. Their bond and commercial paper ratings were downgraded and their ability to raise money for investments worsened. Comparisons of selected financial indicators for the two types of firms are shown in table 28.

Operations producing the carbon and alloy steel products subject to this investigation.--U.S. producers' total net sales of the carbon and alloy steel products subject to this investigation peaked in 1981 at $34.2 billion, compared with $31.0 billion in 1979 and $28.7 billion in 1980 (table 29). Sales then dropped by 31 percent to $23.6 billion in 1982 and fell further, by 3 percent, to $23.0 billion in 1983; overall, net sales declined by 33 percent during 1981-83. Aggregate operating income declined from $1.1 billion, or 3.7 percent of net sales, in 1979 to an operating loss of $266 million, or 0.9 percent of net sales, in 1980. In 1981, operating income rose to $938 million, or 2.7 percent of net sales, still below the level of 1979 despite increased sales. The reporting firms sustained operating losses of $2.1 billion, or 9.0 percent of net sales, in 1982 and $1.9 billion, or 8.5 percent of net sales, in 1983.

Integrated steel producers' net sales declined by 9 percent from $26.9 billion in 1979 to $24.5 billion in 1980 and then increased by 20 percent to $29.4 billion in 1981. The major share of the increased sales by all producers in that year comprised increased sales by integrated producers. Net sales by integrated producers dropped by 34 percent to $19.4 billion in 1982, and then remained at that level in 1983. Operating income or loss margins of integrated producers followed a trend during 1979-83 similar to that of operating income or loss margins of all producers. However, operating incomes of integrated steel producers, as measured in terms of return on sales, were consistently lower (and operating losses were higher) than those of nonintegrated steel producers and nonsteel producers.

Nonintegrated steel producers' net sales remained steady at $3.5 billion in 1979 and 1980, increased by 17 percent to $4.1 billion in 1981, and then declined by 29 percent to $2.9 billion in 1983. Operating income margins of nonintegrated steel producers were higher than those of other types of producers during 1979-81. In 1982, nonintegrated steel producers reported an aggregate operating income of $242 million, equivalent to 6.7 percent of net sales, compared with operating losses sustained by integrated and nonsteel producers. Nonintegrated producers reported operating losses of $67 million, or 2.3 percent of net sales, in 1983.

Table 28.--Selected financial indicators for 10 integrated 1/ and 5 nonintegrated 2/ U.S. steel producers, by types, 1979-83

Item	1979	1980	1981	1982	1983
Ratio of cost of goods sold to net sales:					
Integrated producers---percent--	85.3	86.2	84.7	87.1	84.5
Nonintegrated producers---do----	79.7	82.0	83.5	88.4	88.4
Ratio of general, selling, and administrative expenses to net sales:					
Integrated producers---percent--	6.8	7.4	7.1	12.2	12.2
Nonintegrated producers---do----	5.3	5.4	4.7	5.6	5.8
Ratio of operating profit or (loss) to net sales:					
Integrated producers---percent--	4.4	2.6	4.9	(3.8)	(1.8)
Nonintegrated producers---do----	12.8	9.9	8.8	1.3	.9
Ratio of profit or (loss) after income taxes to net sales:					
Integrated producers---percent--	2.3	4.1	6.2	(7.8)	(8.8)
Nonintegrated producers---do----	7.1	6.0	5.4	(.3)	.7
Current ratio:					
Integrated producers-----times--	1.6	1.6	1.8	1.3	1.3
Nonintegrated producers---do----	2.3	2.3	2.2	2.2	2.4
Ratio of debt to worth:					
Integrated producers------do----	1.0	1.1	1.1	1.7	2.1
Nonintegrated producers---do----	.7	.6	.7	.6	.7
Capitalization ratio:					
Integrated producers---percent--	49.4	47.5	47.3	36.8	31.9
Nonintegrated producers---do----	58.3	61.8	58.0	60.5	57.4
Ratio of net sales to net worth:					
Integrated producers-----times--	2.6	2.5	2.6	2.8	3.0
Nonintegrated producers---do----	2.8	2.5	2.4	1.9	1.8
Dividend payout:					
Integrated producers---percent--	57.1	34.4	29.4	(13.0)	(9.2)
Nonintegrated producers---do----	18.8	24.1	20.4	(371.4)	123.5
Ratio of accumulated depreciation to fixed assets:					
Integrated producers---percent--	52.6	52.6	52.2	45.2	44.7
Nonintegrated producers---do----	39.3	37.1	34.3	34.1	38.5
Debt coverage:					
Integrated producers-----times--	5.6	4.3	5.1	(38.2)	(17.5)
Nonintegrated producers---do----	69.6	20.2	17.1	2.1	5.5

1/ Armco, Bethlehem, Inland, Interlake, J&L, Kaiser, National, Republic, U.S. Steel, and Wheeling-Pittsburgh.

2/ Florida Steel, Laclede, Northwestern, Nucor, and Roanoke Electric.

Source: Compiled from annual reports and/or Forms 10K submitted to the Securities and Exchange Commission.

Table 29.--Income-and loss experience of U.S. producers on their operations producing carbon and alloy steel products subject to this investigation, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers				
Net sales--------million dollars---	26,862	24,523	29,378	19,415	19,428
Cost of goods sold----------do----	25,210	24,176	27,815	20,749	20,413
Gross profit----------------do----	1,652	347	1,563	(1,334)	(985)
General, selling, and administrative expenses--million dollars--	883	915	1,030	1,030	902
Operating income (loss)-----do----	769	(568)	533	(2,364)	(1,887)
Operating income (loss) margin percent--	2.9	(2.3)	1.8	(12.2)	(9.7)
	Nonintegrated producers				
Net sales--------million dollars--	3,472	3,499	4,092	3,627	2,887
Cost of goods sold----------do----	2,976	3,041	3,494	3,132	2,725
Gross profit----------------do----	496	458	598	495	162
General, selling, and administrative expenses--million dollars--	173	196	246	253	229
Operating income (loss)-----do----	323	262	352	242	(67)
Operating income (loss) margin percent--	9.3	7.5	8.6	6.7	(2.3)
	Nonsteel producers				
Net sales--------million dollars--	696	664	758	600	650
Cost of goods sold----------do----	577	546	616	514	554
Gross profit----------------do----	119	118	142	86	96
General, selling, and administrative expenses--million dollars--	70	78	89	94	85
Operating income (loss)-----do----	49	40	53	(8)	11
Operating income (loss) margin percent--	7.0	6.0	7.0	(1.3)	1.7
	Total				
Net sales--------million dollars--	31,030	28,686	34,228	23,642	22,965
Cost of goods sold----------do----	28,763	27,763	31,925	24,395	23,692
Gross profit----------------do----	2,267	923	2,303	(753)	(727)
General, selling, and administrative expenses--million dollars--	1,126	1,189	1,365	1,377	1,216
Operating income (loss)-----do----	1,141	(266)	938	(2,130)	(1,943)
Operating income (loss) margin percent--	3.7	(0.9)	2.7	(9.0)	(8.5)

1/ The number of firms reporting data was as follows: 12 integrated producers, 24 nonintegrated producers, and 21 nonsteel producers.

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

Nonsteel producers' net sales increased to $758 million in 1981 from $696 million in 1979, after declining to $664 million in 1980. In 1982, net sales dropped by 21 percent to $600 million. In 1983, net sales of nonsteel producers increased by 8 percent to $650 million; integrated producers' sales remained steady and nonintegrated steel producers reported declining sales. After declining in 1980, aggregate operating income of nonsteel producers increased in 1981, and returned to the 1979 level (7.0 percent). Although nonsteel producers reported an operating loss of $8 million, or 1.3 percent of sales, in 1982, they operated at a profit level of 1.7 percent of sales in 1983, compared with the substantial losses sustained by integrated and nonintegrated steel producers.

Ingots, blooms, billets, slabs, and sheet bars.--One integrated producer, Bethlehem, and one nonintegrated producer, Standard, provided data on their income-and-loss experience on their operations producing carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars. Their data are presented in table L-1, appendix L. Total net sales peaked in 1981 at $96 million, compared with $80 million in 1979 and $95 million in 1980. Such sales then dropped by 70 percent to $29 million in 1983. Bethlehem's net sales peaked in 1980 and then declined steadily each year during 1981-83. Standard's net sales followed a trend similar to that of total net sales during 1979-82, but increased slightly in 1983. Aggregate operating income increased to $6 million, or 6.3 percent of net sales, in 1981 from $4 million, or 5.5 percent of net sales, in 1979, after declining to $3 million, or 3.1 percent of net sales, in 1980. Such operating income dropped sharply, by 82 percent, to $1 million, or 1.7 percent of net sales in 1982. In 1983, operating income rose slightly, despite decreasing sales, resulting in the higher operating margin of 4.2 percent. Bethlehem reported operating losses in 1980 and 1982 and had much lower operating margins during 1979, 1981, and 1983 than Standard, which was profitable throughout the period of investigation. Standard earned very high operating income margins during 1979-82, ranging between 16.5 percent in 1982 and 25.3 percent in 1980.

Plates.--U.S. producers' total net sales of carbon and alloy steel plates increased by 11 percent from $3.1 billion in 1979 to $3.5 billion in 1981 (table L-2). Most of the increase occurred in 1981. From 1981 to 1983, net sales dropped by 56 percent to $1.5 billion, with the larger decline occurring in 1982. The trends for integrated and nonintegrated producers' net sales were similar to those for total producers' net sales during 1979-83. Total operating income fell sharply, by 83 percent, to $23 million, or 0.7 percent of net sales, in 1980 from $134 million, or 4.3 percent of net sales, in 1979, but then rose to $75 million, or 2.2 percent of net sales, in 1981, still below the level of operating income in 1979 despite increased sales. Producers sustained significant operating losses on their carbon and alloy steel plate operations in 1982 and 1983--$184 million, or 9.8 percent of net sales, and $267 million, or 17.4 percent of net sales, respectively. Integrated producers showed a declining trend in their operating income margins during 1979-81 and had significant operating losses in 1982; nonintegrated producers reported a higher operating income margin in 1981, compared with such margins in 1979 and 1980, and reported a small operating loss in 1982. Both types of producers sustained significant losses in 1983.

<u>Sheets and strip</u>.--Producers' net sales of carbon and alloy steel sheets and strip fell by 17 percent from $15.2 billion in 1979 to $12.6 billion in 1980, and then rose to $14.9 billion in 1981 (table L-3). Such sales declined by 22 percent to $11.6 billion in 1982 and then increased by 18 percent to $13.6 billion in 1983. Net sales of integrated, nonintegrated, and nonsteel producers followed the same trend as total net sales during 1979-83. Reporting firms sustained operating losses each year during 1980-83, compared with an operating income of $206 million, or 1.4 percent of net sales, in 1979. Such losses were $766 million (6.1 percent of net sales) in 1980, $522 million (3.5 percent) in 1981, $1.5 billion (13.3 percent) in 1982, and $614 million (4.5 percent) in 1983. Integrated producers' operating income and loss margins followed the same trend as did operating income or loss margins for all producers during 1979-83. Nonintegrated producers were unprofitable during 1979-83, whereas nonsteel producers were profitable throughout the period of investigation; operating income margins for nonsteel producers moved in the same directions as net sales, and ranged from 1.5 percent in 1982 to 7.7 percent in 1979.

<u>Wire rods</u>.--U.S. producers' total net sales of carbon and alloy steel wire rods declined by 13 percent from $959 million in 1979 to $839 million in 1980, and then increased by 19 percent to $998 million in 1981 (table L-4). Such sales dropped by 29 percent to $712 million in 1982, but rose again, by 10 percent, to $780 million in 1983. Integrated producers' net sales followed a trend similar to that of total net sales during 1979-83, but in 1981, their sales were below the level of sales in 1979. The trend for nonintegrated producers' net sales was the same as that for total net sales during 1979-83. Responding firms sustained aggregate operating losses throughout the period of investigation; such losses were $47 million, or 5.6 percent of net sales, in 1980 and $37 million, or 3.7 percent of net sales, in 1981, compared with $4 million, or 0.4 percent of net sales, in 1979. Operating losses increased to $75 million (10.5 percent of net sales) in 1982 and $58 million (7.4 percent of net sales) in 1983. Integrated producers' operating income and loss margins followed a trend similar to that of total operating income and loss margins during 1979-83. Nonintegrated producers were profitable during 1979-83 but their operating income margins declined from 7.9 percent in 1979 to 2.0 percent in 1982 and then rose again to 4.0 percent in 1983.

<u>Wire and wire products</u>.--Producers' total net sales of carbon and alloy steel wire and wire products in 1981 were $1.1 billion, the same level of sales as in 1979, but 8 percent above the $1.0 billion in 1980 (table L-5). Such sales then dropped by 31 percent to $760 million in 1983. Integrated producers' net sales followed a trend similar to that of total net sales during 1979-83. Nonintegrated producers' net sales declined each year during 1979-82 and increased slightly in 1983. Net sales of nonsteel producers peaked at $518 million in 1981 and then declined (by 21 percent) in 1982 and rose slightly (by 3 percent) in 1983. Total operating income dropped from $56 million (5.1 percent of net sales) in 1979 to $28 million (2.5 percent of net sales) in 1981, despite the fact that net sales were almost the same in both years. Reporting firms sustained operating losses of $77 million, or 9.4 percent of net sales, in 1982 and $57 million, or 7.5 percent of net sales, in 1983. The trends in operating income and loss margins of nonsteel producers were similar to those for total operating income and loss margins during

1979-83. Integrated producers sustained losses during 1980-83 and earned a lower operating income margin than other types of producers in 1979. Non-integrated producers broke even in 1981 and reported losses in 1982 and 1983.

Railway-type products.--U.S. producers' total net sales of carbon and alloy steel railway-type products increased by 18 percent from $474 million in 1979 to $557 million in 1980, and then dropped by 49 percent to $282 million in 1982 (table L-6). Such sales increased by 6 percent to $299 million in 1983. The trends in integrated and nonintegrated producers' net sales were similar to those for total net sales during 1979-83, except that in 1983 nonintegrated producers reported a decline of 25 percent in their sales from those in 1982. Responding firms earned substantial operating income margins during 1979-81, ranging from 15.8 percent in 1980 to 11.2 percent in 1981. Their operating income margins turned into significant operating loss margins of 13.8 percent in 1982 and 15.1 percent in 1983. Integrated producers' operating income and loss margins reflected a trend similar to that of total operating income and loss margins during 1979-83. Nonintegrated producers reported lower operating income margins than those of integrated producers in 1980 and sustained much higher operating losses in terms of return on sales during 1981-83.

Bars.--Producers' total net sales of carbon and alloy steel bars declined by 20 percent from $3.6 billion in 1979 to $2.9 billion in 1980, and then increased by 17 percent to $3.3 billion in 1981 (table L-7). Such sales dropped drastically, by 34 percent, to $2.2 billion in 1982 and then further declined, by 2 percent, in 1983. During 1979-82, integrated and nonintegrated producers' net sales followed a trend similar to that of total net sales by all producers. In 1983, net sales of integrated producers remained at almost the same level as 1982, whereas net sales of nonintegrated producers declined by 10 percent. Net sales of nonsteel producers dropped each year during 1979-83. Aggregate operating income dropped from $259 million, or 7.3 percent of net sales, in 1979 to $37 million, or 1.3 percent of net sales, in 1980 and then increased to $136 million, or 4.1 percent of net sales, in 1981. Responding firms reported operating losses of $314 million (14.3 percent of net sales) in 1982 and $194 million (9.0 percent of net sales) in 1983. Integrated producers not only sustained substantial losses in 1982 and 1983 but also reported a loss in 1980. Operating income margins of nonintegrated producers were much higher, and their operating loss margin in 1983 much lower, than those of integrated producers. In 1982, nonintegrated producers were the only profitable groups among all types of producers. Nonsteel producers reported a declining operating income in 1980 and sustained operating losses in 1981-83; their loss margins during 1982 and 1983 were much lower than those of integrated producers.

Structural shapes and units.--U.S. producers' total net sales of carbon and alloy steel structural shapes and units increased from $1.8 billion in 1979 to $1.9 billion in 1981, or by 4 percent, after declining slightly in 1980 (table L-8). Such sales then fell sharply, by 43 percent, to $1.1 billion in 1983; most of this decline occurred in 1982. Net sales of integrated and nonintegrated producers reflected trends similar to that in total net sales during 1979-83, except in 1980, when integrated producers reported a small increase in sales. Nonsteel producers' net sales followed the same trend as did net sales by integrated producers during 1979-82, but in

1983 their net sales increased by 29 percent from those in the prior year. During 1980-83, reporting firms sustained operating losses amounting to $14 million (0.8 percent of net sales) in 1980, $23 million (1.2 percent of net sales) in 1981, $186 million (14.1 percent of net sales) in 1982, and $208 million (19.3 percent of net sales) in 1983. They had an operating income of $79 million (4.4 percent of net sales) in 1979. Integrated producers experienced a similar trend in their operating profit or loss margins as did all producers combined. During 1979-81, nonintegrated producers earned substantially higher income margins; however, their income margin dropped sharply in 1982 and turned into a loss margin in 1983. Although nonsteel producers reported an operating loss margin in 1982, they had reported increasing operating income margins during 1979-81. Moreover, they also earned a profit in 1983, whereas both other types of producers sustained significant losses.

Pipes and tubes and blanks therefor.---Producers' total net sales of carbon and alloy steel pipes and tubes and blanks therefor increased by 93 percent from $3.1 billion in 1979 to $6.0 billion in 1981, and then dropped by 78 percent to $1.3 billion in 1983 (table L-9). Net sales of integrated producers followed a trend similar to that of total net sales during 1979-83. Nonintegrated producers' net sales increased each year during 1979-82, but then fell by 53 percent in 1983. Of all product lines discussed in this report, U.S. producers earned their highest operating income margins in 1981 and 1982 on pipes and tubes and blanks therefor. Such margins were 19.4 percent in 1981 and 10.7 percent in 1982. In contrast, operating losses were sustained in 1982 on all other product lines except ingots, blooms, billets, slabs, and sheet bars. However, the responding firms reported an operating loss of $475 million, equivalent to 36.4 percent of net sales, and highest among all the products discussed in this report, in 1983. Nonintegrated producers' operating income margins were higher than those of integrated producers during 1979-82, and in 1983 the nonintegrated producers broke even, whereas the integrated producers sustained a substantial loss.

Impact of volume, price, and costs of production on gross profit.--An analysis of the decline in the gross profit on sales of the carbon and alloy steel products subject to this investigation between 1979 and 1983 is presented in table 30. The data presented in this table represent an analysis of the variation in gross profit. Each factor affecting gross profit--changes in volume, price, and cost of production--was viewed in isolation from the other factors and its impact on the change in gross profit calculated. Volume variance was computed by measuring the change in volume between 1979 and 1983, assuming that average gross profit per short ton remained at the 1979 level. Price and cost-of-production variances were calculated by measuring the 1979-83 change in those factors and assuming that the volume remained at the 1979 level. The assumptions used to compute these variances were necessary to single out causes for change. To complete the computation, the combined variance due to the interaction of all three factors was calculated by measuring the change in volume times the change in gross profit.

Out of the total decline of $2.3 billion in the gross profit, $607 million can be attributed to the drop in sales volume of 16.8 million short tons. The increase in prices between 1979 and 1983 would have increased the gross profit by $1.6 billion, but the increasing costs of production caused a

Table 30.—Carbon and alloy steel products: Effects of decreases or (increases) in volume, price, and costs of production on gross profit from 1979 to 1983, by products

Item	Carbon and alloy steel products, total 1/	Carbon and alloy steel products 2/								
		Ingots, blooms, billets, slabs, and sheet bars	Plates	Sheets and strip	Wire rods	Wire and wire products	Railway-type products	Bars	Structural shapes and units	Pipes and tubes and blanks therefor
Decrease or (increase) in U.S. producers'—										
Net sales:										
Quantity—1,000 short tons	16,774	148	2,827	6,270	(277)	552	326	3,280	1,444	2,509
Value—million dollars	6,375	52	1,161	1,334	(51)	328	175	1,401	496	1,560
Cost of goods sold—do	4,120	48	887	722	(86)	215	68	966	252	918
Gross profit—do	2,255	4	274	612	35	113	107	435	244	642
Average selling price per short ton	($30)	($20)	($10)	($46)	$39	($95)	$30	($22)	($14)	($111)
Average cost of goods sold per short ton	($77)	($20)	($74)	($64)	$7	($171)	($90)	($86)	($91)	($437)
Average gross profit per short ton	$47	3/	$64	$18	$32	$76	$120	$64	$77	$326
Decrease or (increase) in gross profit attributable to—										
Volume—million dollars	607	4	104	140	(6)	51	26	158	63	202
Price—do	(1,580)	(4)	(55)	(1,496)	39	(131)	30	(170)	(54)	(429)
Costs of production—do	4,011	4	406	2,082	(7)	235	90	658	346	1,687
Interaction of volume, price, and costs of production million dollars	(783)	-	(181)	(114)	9	(42)	(39)	(211)	(111)	(818)
Total—do	2,255	4	274	612	35	113	107	435	244	642

1/ Data do not equal those presented in table 29 as some responding producers did not report data on the quantity sold, as asked in the questionnaire. Further, figures for each of the products reported do not add to the total because some producers reported only total data, and did not report product-line data.

2/ Data for all individual products except ingots, blooms, billets, slabs, and sheet bars, and railway-type products, do not equal those presented in app. L because some responding producers did not report data on the quantity sold, as asked in the questionnaire.

3/ Less than $0.50.

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

$4.0 billion drop in gross profit. Interaction of all three factors (volume, price, and cost) contributed a $783 million increase to gross profit.

In table 31, the combined variances shown in table 30 have been allocated to the three main variances (volume, price, and cost) in proportion to their relationship to each other to allow a specific analysis of those items to be made. As shown, the increasing costs of production seem to be the major factor causing the decline in profit for all products except wire rods. For wire rods, a decline in price was the main contributor to the decline in profit. An increase in the volume of sales and a decline in average costs of production, factors which would have offset some of the drop in gross profit, were reported only for wire rods. Selling prices increased between 1979 and 1983 for all of the products except wire rods and railway-type products. However, prices did not keep pace with the increasing costs of production, which occurred partly due to inflation and partly due to declining volume. The decline in the volume of sales accounted for between 13.8 percent of the total decline in gross profit (pipes and tubes) and 32.7 percent (wire and wire products), for an average of 20 percent. For ingots, blooms, billets, slabs, and sheet bars, the decline in volume was the only factor which accounted for the total drop in gross profit, since increased prices completely offset increased costs.

The Question of the Threat of Serious Injury

Foreign producers 1/

Carbon and alloy steel is produced in more than 50 countries. The major non-Communist steel-producing nations include Japan, the United States, West Germany, Italy, France, the United Kingdom, and Brazil, each of which produced over 15 million tons of raw steel in 1983. 2/ Aggregate world raw steel production, capacity, and capacity utilization are shown in table 32. As indicated, output and capacity utilization declined fairly steadily during 1979-82 and then increased in 1983. The trend in world capacity was the reverse of this, rising during 1979-82 and falling slightly in 1983. Growth in capacity was largely due to construction of new steel mills in countries other than those in North America and Western Europe.

1/ The statistical information in this section was compiled from various sources employing different methodologies of data collection; it has been converted from metric tons to short tons by the Commission's staff. It is presented to illustrate the relative significance of the various participants in the world steel market and should not be compared directly with data found in other sections of this report.

2/ American Iron & Steel Institute and International Iron & Steel Institute.

Table 31.--Carbon and alloy steel products: Decrease or (increase) in gross profit between 1979 and 1983 due to changes in volume, price, and costs of production, by products

Item	Volume		Price		Costs of production		Total	
	Contribution to decrease or (increase) in gross profit		Contribution to decrease or (increase) in gross profit		Contribution to decrease or (increase) in gross profit		Contribution to decrease or (increase) in gross profit	
	Million dollars	Percent	Million dollars	Percent	Million dollars	Percent	Million dollars	Percent
Carbon and alloy steel products, total 1/	450	20.0	(1,172)	(52.0)	2,977	132.0	2,255	100.0
Ingots, blooms, billets, slabs, and sheet bars	4	100.0	(4)	(100.0)	4	100.0	4	100.0
Plates	63	23.0	(33)	(12.0)	244	89.0	274	100.0
Sheets and strip	118	19.3	(1,262)	(206.2)	1,756	286.9	612	100.0
Wire rods	(8)	(22.8)	53	151.4	(10)	(28.6)	35	100.0
Wire and wire products	37	32.7	(95)	(84.0)	171	151.3	113	100.0
Railway-type products	19	17.7	22	20.6	66	61.7	107	100.0
Bars	106	24.4	(114)	(26.2)	443	101.8	435	100.0
Structural shapes and units	43	17.6	(37)	(15.1)	238	97.5	244	100.0
Pipe and tubes and blanks therefor	89	13.8	(189)	(29.4)	742	115.6	642	100.0

1/ Figures for each of the products reported herein do not add to the total because some producers reported on their overall operations but not on each product line. Further, some producers did not report quantity data, as requested in the questionnaire, for each product line and/or for the total.

Source: Compiled from the data submitted in response to the questionnaires of the U.S. International Trade Commission and table 30.

Table 32.--World raw steel production, capacity, and capacity utilization, 1979-83

Year	Production	Capacity	Capacity utilization
	Million tons		Percent
1979	824.5	940.3	87.7
1980	790.4	952.7	83.0
1981	779.4	968.7	80.5
1982	710.7	971.5	73.2
1983	1/ 731.6	1/ 961.6	1/ 76.1

1/ Preliminary.

Source: American Iron & Steel Institute, International Iron & Steel Institute, World Steel Dynamics (Paine, Webber, Mitchell, Hutchins, Inc.).

Raw steel production by the world's 10 largest steel producers during 1979-83 is presented in table 33. Major steel-producing countries/country groups are discussed in the following sections.

Table 33.--Raw steel production by the world's 10 largest producers, 1979-83 1/

(In millions of short tons)

Country	1979	1980	1981	1982	1983
U.S.S.R	164.3	163.1	163.7	162.2	167.6
Japan	123.2	122.8	112.1	109.7	107.1
United States	136.3	111.8	120.8	74.6	84.6
Peoples' Republic of China	38.0	40.9	39.2	40.9	44.0
West Germany	50.8	48.3	45.9	39.6	39.4
Italy	26.7	29.2	27.3	26.5	23.9
France	25.8	25.5	23.4	20.3	19.4
Poland	21.2	21.5	17.3	16.3	18.1
Czechoslovakia	16.3	16.5	16.8	16.6	16.6
United Kingdom	23.7	12.4	17.2	15.1	16.5

1/ Data for 1983 are preliminary.

Source: American Iron & Steel Institute and International Iron & Steel Institute.

Canada.--Canada was the 15th largest producer of raw steel in the world in 1983, with total production of 14.0 million tons. It ranked as the second largest supplier (after Japan) of steel products to the United States in that year--2.4 million tons. Production of raw steel in Canada declined steadily during 1979-82, falling by 27 percent to 13.0 million tons in 1982 before rising to 14.0 million tons in 1983 (table 34). Apparent Canadian steel consumption fell by 29 percent from 1980 to 1982. The decline reflected not only a sharp reduction in the use of steel, but also a considerable reduction in consumers' steel inventories, which had risen in the second half of 1981. Apparent consumption * * * in 1983, due principally to * * *. There was an increase in capacity during 1979-81, but it then decreased in 1982 and * * * in 1983. Capacity utilization declined from 91.1 percent in 1979 to *** percent in 1983.

Table 34.--Raw steel: Canada's production, capacity, capacity utilization, and apparent consumption, 1979-83

Year	Production	Production capacity	Capacity utilization	Apparent consumption 1/
	1,000 tons	1,000 tons	Percent	1,000 tons
1979	17,723	19,448	91.1	2/
1980	17,528	19,566	89.6	14,263
1981	16,135	21,715	74.3	14,850
1982	12,966	21,155	61.3	10,067
1983 3/	14,030	***	***	***

1/ Consumption does not equal the total of production plus imports minus exports.
2/ Not available.
3/ Preliminary.

Source: Production, compiled from data of the International Iron & Steel Institute; capacity and apparent consumption, compiled from data in The Iron and Steel Industry, Organization for Economic Cooperation and Development (OECD), various editions, and the OECD, Draft Report on the Steel Market in 1983 and the Outlook for 1984.

Canada maintained a positive trade balance in steel products during 1979-83 despite fluctuations in export and import levels, as shown in the following tabulation (in thousands of tons):

	Exports 1/	Imports 1/
1979	2,523	2,100
1980	3,880	1,329
1981	3,710	2,879
1982	3,689	1,039
1983	*** 2/	***

1/ Data taken from OECD "Steel Committee Quarterly Information System," and The Iron and Steel Industry, various editions.
2/ Estimated on the basis of the OECD, Draft Report on the Steel Market in 1983 and the Outlook for 1984).

The major markets for Canada's exports of steel products in 1982 were the United States, which received 41 percent of the total; the Middle East, 12 percent; and the EC, 11 percent. Canada's steel imports doubled in 1981, as a consequence of a prolonged strike at its largest steel producer, fell by more than 60 percent in 1982, and then * * * by *** percent in 1983.

The Canadian steel industry is dominated by three integrated producers, Stelco, Dofasco, and Algoma Steel, which together accounted for 72 percent of total Canadian raw steel capacity in 1981. The number of workers in the steel industry declined from 53,200 in 1980 to an estimated 47,000 in 1982. Approximately 62 percent of Canada's steel was produced in basic-oxygen furnaces, 24 percent in electric furnaces, and 14 percent in open-hearth furnaces in 1982. About one-third of the raw steel made in Canada is continuously cast. 1/

Stelco is Canada's leading steelmaker, with a raw steel capacity believed to be *** million tons. Stelco produces flat-rolled products and is one of two major suppliers for the Alaska natural gas pipeline project. In September 1980, it opened a fully integrated greenfield plant with an annual capacity of 1.2 million metric tons. The firm was reported to be seeking additions to its bar and rod capacity by investments in distressed U.S. mills. 2/ Raw steel production at Stelco was severely affected in 1981 by a 4-month strike.

Dofasco is Canada's second largest steelmaker, with a reported raw steel capacity of *** million tons in 1981. This capacity is projected to remain about the same through 1984, although the firm plans additions to its finishing facilities.

Algoma is Canada's third largest steelmaker, with a reported raw steel capacity of *** million tons in 1981. This capacity was projected to increase to *** million tons by 1983. Modernization and expansion plans are concentrated in improving continuous casting capacity.

European Community.--Steel producers in the EC 3/ accounted for about 16 percent of total world production of raw steel in 1983. Production by member countries is shown in table 35.

The EC countries as a group supplied 24 percent of the quantity of U.S. imports of carbon and alloy steel products in 1983. Major export markets for the combined output of the 10 EC countries are other western European countries (excluding EC members), which accounted for *** percent of total EC exports in 1983; eastern European countries, which received *** percent; and the United States, which accounted for *** percent. 4/ Exports from the EC to the United States fell during 1982 and 1983, due principally to certain restraints under an arrangement agreed to by both trading partners. The

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1/ OECD, The Iron and Steel Industry in 1982.
2/ Metal Bulletin, Jan. 12, 1982.
3/ Belgium, Denmark, France, Greece, Ireland, Italy, Luxembourg, the Netherlands, the United Kingdom, and West Germany; Greece joined the EC in 1981.
4/ OECD, Draft Report on The Steel Market in 1983 and the Outlook for 1984, Statistical Tables.

Table 35.--EC raw steel production, by countries, 1979-83

(In thousands of short tons)

Country	1979	1980	1981	1982	1/ 1983
West Germany	50,750	48,323	45,863	39,551	39,384
Italy	26,731	29,212	27,309	26,466	23,891
France	25,750	25,547	23,431	20,285	19,414
United Kingdom	23,725	12,431	17,165	15,107	16,527
Belgium and Luxembourg	20,272	18,673	17,716	14,883	14,825
Netherlands	6,400	5,803	6,031	4,799	4,936
Greece	1,100	1,300	1,000	1,000	948
Other 2/	965	811	710	684	698
Total	155,693	142,100	139,225	122,775	120,623

1/ Preliminary.
2/ Denmark and Ireland.

Source: American Iron & Steel Institute and International Iron & Steel Institute.

arrangement stipulates that the EC shall restrain exports to, or destined for consumption in, the United States of products originating in the EC for the period of November 1, 1982, to December 31, 1985. It was conditional on the withdrawal and termination of antidumping and countervailing duty petitions concerning U.S. imports of steel products from the EC, and on a commitment by major U.S. steel producers not to initiate any antidumping or countervailing duty investigations during the effective period of the arrangement. The export ceilings for each product are established in terms of percentages of projected apparent U.S. consumption, and are not to exceed the following levels:

Product	Share of projected U.S. consumption (percent)
Plates	5.36
Hot-rolled sheets and strip	6.81
Cold-rolled sheets	5.11
Coated sheets	3.27
Tinplate	2.20
Wire rods	4.29
Rails	8.90
Hot-rolled bars	2.38
Structurals	9.91
Sheet piling	21.85

The objective of this arrangement is to allow time to permit restructuring of the steel industries in the EC and the United States and to create a period of trade stability. 1/

Raw steel capacity for the EC is estimated annually by the OECD. Such data for 1979-83 (including Greece) are as follows: 2/

	Capacity (million short tons)	Capacity utilization (percent)
1979	227.1	68.6
1980	225.2	63.1
1981	220.9	63.0
1982	215.7	56.9
1983	211.3	57.1

In the post-World-War-II era, the steel industries of the EC member states have been the focus of supranational regulation by the EC Commission and the European Coal and Steel Community (ECSC). EC regulation of its member States' steel industries has become increasingly pervasive, to the extent that the Community regulates production, imports, and pricing of many steel products, and has embarked on an ambitious program to compel member states to restructure their steel industries.

The system of mandatory production quotas and cutbacks in capacity is scheduled to continue through the end of 1985, at which time government subsidies to steel plants are to be eliminated. The theory is that a stable market, avoiding both overproduction and price-cutting, will facilitate the orderly contraction of capacity to the point where it will be in line with foreseeable demand. 3/ In conjunction with this program, capacity reduction targets have been established for hot-rolled steel. The goal sets EC capacity for hot-rolled sheet products at *** million tons in 1985, or *** percent below the 1980 level which served as the basis for the targeted amount. 4/

West Germany.--West Germany was the largest producer of raw steel in the EC (and fifth in the world) in 1983, with total production of 39.4 million tons. Its steel industry is structured somewhat differently than those of other EC members in that only one of the five major producers is Government owned, but is like its EC counterparts in terms of the trend toward rationalization and merger of its large integrated steel producers. Employment was approximately *** workers in 1983, which was * * * percent from that in 1982. Basic-oxygen furnaces accounted for 81 percent of West Germany's output

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1/ Further details concerning this arrangement are provided in 47 F.R. 49601, Oct. 29, 1982.

2/ OECD, The Iron and Steel Industry in 1982.

3/ "Davignon: the going gets still tougher," Financial Times, Jan. 26, 1984.

4/ Information taken from 1983 paper on EC steel policy, OECD Steel Committee. The targeted capacity levels do not include Greece. Hot-rolled products were identified by the EC as the "middle of the road" steel product and, therefore, the most representative.

of raw steel in 1982. Open-hearth furnaces represented only 1.5 percent, and electric furnaces accounted for the remainder. Slightly more than 60 percent of raw steel output in West Germany was continuously cast in 1982, compared with 54 percent in 1981. 1/ Production of raw steel in West Germany fell by 18 percent from 48.3 million tons in 1980 to 39.4 million tons in 1983 (table 36). Capacity utilization was adversely affected, dropping from 66 percent in 1980 to 56 percent in 1983. Apparent consumption fell by 20 percent from 37.2 million tons in 1980 to 29.6 million tons in 1982.

Table 36.--Raw steel: West Germany's production, capacity, capacity utilization, and apparent consumption, 1980-83

Year	Production	Production capacity	Capacity utilization	Apparent consumption
	1,000 tons	1,000 tons	Percent	1,000 tons
1980	48,323	73,744	65.5	17,239
1981	45,863	74,736	61.4	34,159
1982	39,551	72,752	54.4	29,593
1983 1/	39,384	70,575	55.8	2/

1/ Preliminary.
2/ Not available.

Source: Production, compiled from data of the International Iron & Steel Institute; capacity and apparent consumption, compiled from data in OECD, The Iron and Steel Industry, Paris, various issues.

In keeping with the EC's policy of reducing steel capacity by 1985, the West German steel industry has been making restructuring and rationalization efforts since 1980. During 1981-83, steelmaking capacity was reduced by almost *** million tons. 2/ As of June 1983, there were plans providing for a further reduction of West German crude steel capacity of *** million tons per year by 1985. At the same time, rolled steel capacity is to be reduced by more than *** million tons per year by the end of 1985. 3/

There are five major steelmakers in West Germany, all of which are expected to reduce their capacity during 1984. Thyssen is the largest, accounting for about 28 percent of the country's raw steel production in 1983. 4/ Klockner AG is the country's second largest steel producer, with raw steelmaking capacity of about 7.5 million tons per year. Klockner recently retired some of its open-hearth steelmaking facilities and replaced them with a single, more efficient facility which utilizes steel scrap. It was also

1/ OECD, The Iron and Steel Industry in 1982 and Draft Report on the Steel Market in 1983 and the Outlook for 1984.
2/ OECD, Draft Annual Report on the Investment and Disinvestment Notifications Submitted in 1983.
3/ U.S. Department of State telegram, Amembassy, Bonn, June 1983.
4/ American Metal Market, May 23, 1984, p. 2.

forced to close other facilities due to EC production quotas on its hot-strip mill products. The firm plans to reduce its rolling capacity of approximately 6.5 million tons per year by one-third by 1985. 1/ Other major producers include Hoesch, Krupp, and Peine-Salzgitter. During 1983, mergers were proposed between Thyssen and Krupp and between Hoesch, Klockner, and Peine-Salzgitter, but neither merger was accomplished. In addition to the five largest producers, there are a number of smaller steel producers in West Germany, many of which are also closing older facilities and expanding others.

Italy.--Italy was the second largest producer of raw steel in the EC (and sixth in the world) in 1983, with total production of 23.9 million tons. There are more than 100 producers of raw steel in Italy, most of which are small independent producers operating with electric furnaces. The number of workers in the steel industry * * * by *** percent from 93,900 in 1982 to *** in 1983. Approximately 53 percent of Italy's steel was produced in electric furnaces in 1982 and the remainder was from basic-oxygen furnaces; no steel was produced from open-hearth furnaces. Of total raw steel production, 59 percent was continuously cast in 1982, compared with 51 percent in 1981. 2/

Production of raw steel in Italy decreased annually from 29.2 million tons in 1980 to 23.9 million tons in 1983 (table 37). Capacity increased by 4 percent from 1980 to 1981, reaching 45.2 million tons, before falling irregularly to 43.9 million tons in 1983. Capacity utilization in the industry fell from 67 percent in 1980 to 54 percent in 1983.

Table 37.--Raw steel: Italy's production, capacity, capacity utilization, and apparent consumption, 1980-83

Year	Production	Production capacity	Capacity utilization	Apparent consumption 1/
	1,000 tons	1,000 tons	Percent	1,000 tons
1980	29,212	43,431	67.3	28,778
1981	27,309	45,194	60.4	21,763
1982	26,466	43,210	61.2	22,497
1983 2/	23,891	43,872	54.5	3/

1/ Consumption does not equal the total of production plus imports minus exports.
2/ Preliminary.
3/ Not available.

Source: Production, compiled from data of the International Iron & Steel Institute; capacity and apparent consumption, compiled from data in OECD, The Iron and Steel Industry, Paris, various issues.

1/ "German Steel Industry Unhappy with EC Plan," The Journal of Commerce, July 7, 1983.
2/ OECD, The Iron and Steel Industry in 1982 and Draft Report on the Steel Market in 1983 and the Outlook for 1984.

The Italian steel industry has undergone considerable consolidation in recent years as a result of EC decisions urging reductions in the manufacturing capacity of crude and hot-rolled steel. The industry is now dominated by the State-controlled Finsider group, which accounted for 56 percent of raw steel production in 1983. The major component of Finsider is the integrated Italsider company. Italsider alone had a reported capacity of *** million tons in 1981, which accounted for *** percent of aggregate Italian raw steel capacity. In addition to Italsider, the Finsider group encompasses integrated producer Piombino, pipe and tube producer Dalmine, and various specialty steel producers, which together accounted for *** percent of total Italian raw steelmaking capacity. In addition to Finsider, there is one other major steel producer, Falck Works, with a reported capacity of *** million tons in 1981.

France.--France was the third largest producer of raw steel in the EC (and seventh in the world) in 1983, with total production of 19.4 million tons. Almost 81 percent of France's raw steel output is produced in basic-oxygen furnaces, and the remainder is from electric furnaces. In 1981, 51 percent of France's steel was continuously cast, compared with 59 percent in 1982. Total employment in the industry * * * by *** percent from 96,800 workers in 1982 to *** in 1983. 1/ In early 1984, the French Government announced plans for the closure of unprofitable steel plants as a test case of its commitment to restore economic health to the country's steel industry and enhance its ability to compete in world markets. This could result in the loss of up to 25,000 jobs in France's steel industry. 2/

Production of raw steel in France declined by 24 percent from 25.5 million tons in 1980 to 19.4 million tons in 1983 (table 38). Concurrently, France's production capacity fell by 18 percent from 35.8 million tons to 29.4 million tons. The industry operated at 71.3 percent of capacity in 1980. This figure fell to 62.2 percent in 1982, but reached 66.1 percent in 1983.

France's steel industry has undergone continued consolidation and rationalization in recent years, with the result that it is now dominated by two major groups, Union Siderurgique du Nord et de L'Est de la France (Usinor) and Acieries et Laminoirs de Lorraine (Sacilor), both of which produce a wide variety of carbon, alloy, and specialty steel products in their own facilities and through acquired subsidiaries. On November 27, 1981, both Usinor and Sacilor were nationalized by the French Government.

Of the two groups, Usinor is the larger, accounting for about 50 percent of France's raw steel production in 1983. Sacilor accounted for 36 percent of raw steel production in that year. The French Government's commitment to its policy of industrial modernization will result in capacity losses at both firms through 1987, with the targets for that year being to reduce capacity by *** percent and employment by about *** percent from their 1983 levels. This goal is to be achieved by having both companies establish joint production and marketing of certain categories of steel products, such as wire rods and specialty steel structurals. Usinor will phase out steelmaking in the older, less efficient Denain and Longvey sites and replace them with expanded

1/ Ibid.
2/ Washington Post, Apr. 5, 1984.

Table 38.--Raw steel: France's production, capacity, capacity utilization, and apparent consumption, 1980-83

Year	Production	Production capacity	Capacity utilization	Apparent consumption 1/
	1,000 tons	1,000 tons	Percent	1,000 tons
1980	25,547	35,825	71.3	22,099
1981	23,431	32,738	71.6	19,340
1982	20,285	32,628	62.2	19,010
1983 2/	19,414	29,374	66.1	3/

1/ Consumption does not equal the total of production plus imports minus exports.
2/ Preliminary.
3/ Not available.

Source: Production, compiled from data of the International Iron & Steel Institute; capacity and apparent consumption, compiled from data in OECD, The Iron and Steel Industry, Paris, various issues.

capacity at the more modern coastal sites of Dunkirk and Fos. The capacity reductions will be even sharper for Sacilor, the Lorraine-based steelmaker, which is heavily reliant on production of rails, wire rods, and structurals. 1/

The United Kingdom.--The United Kingdom was the fourth largest steelmaker in the EC (and tenth in the world) in 1983, with total production of 16.5 million tons. In 1982, 66 percent of its raw steel output was from basic-oxygen furnaces, and the remainder was produced in electric furnaces. That same year, 39 percent of raw steel production was continuously cast, compared with 32 percent in 1981. Total employment in the industry in 1983 was *** workers, * * * of *** percent from the 82,000 employed in 1982. 2/ Production of raw steel in the United Kingdom rose sharply (by 38 percent) from 12.4 million tons in 1980 to 17.2 million tons in 1981 (table 39). The low level in 1980 was due principally to a 3-month labor strike against the largest British producer in January-March 1980. In 1983, production was 16.5 million tons, or 3.7 percent less than that in 1981. Production capacity declined in 1981 and then remained fairly constant. Capacity utilization rose irregularly from 40.3 percent in 1980 to 59.7 percent in 1983.

The British steel industry is made up of two main groups, State-owned British Steel Corp.(BSC), and numerous small, private companies, represented by the British Independent Steel Producers Association (BISPA). BSC represented 85 percent of the United Kingdom's raw steel output in 1983. BSC's capacity declined by 12 percent from 1979 to 1981, and was projected to drop 11 percent further by 1984. These reductions are being taken across the

1/ U.S. Department of State telegram, Amembassy, Paris, March 1984, and American Metal Market, Mar. 3, 1984.
2/ OECD, The Iron and Steel Industry in 1982 and Draft Report on the Steel Market in 1983 and the Outlook for 1984.

Table 39.--Raw steel: The United Kingdom's production, capacity, capacity utilization, and apparent consumption, 1980-83

Year	Production	Production capacity	Capacity utilization	Apparent consumption 1/
	1,000 tons	1,000 tons	Percent	1,000 tons
1980	12,431	30,864	40.3	15,193
1981	17,165	27,998	61.3	16,424
1982	15,107	27,558	54.8	15,649
1983 2/	16,527	27,668	59.7	3/

1/ Consumption does not equal the total of production plus imports less exports.
2/ Preliminary.
3/ Not available.

Source: Production, compiled from data of the International Iron & Steel Institute; capacity and apparent consumption, compiled from data in OECD, The Iron and Steel Industry, Paris, various issues.

board, in both steelmaking and finishing facilities. Unlike other EC producers, no major modernization plans are scheduled to partially replace the closures, although some mills are modernizing certain production operations. As a consequence of these measures, BSC has become more efficient and competitive. 1/ Private-sector mills, many of which concentrate on the manufacture of steel bars, are also reported to be experiencing some reductions in capacity.

In 1983, a BSC/U.S. Steel joint-venture plan under which BSC would supply slabs for rolling at U.S. Steel's Fairless Works (Fairless Hills, Pa.) was called off after considerable union and political opposition. 2/

Belgium and Luxembourg.--The combined raw steel output of Belgium and Luxembourg 3/ ranked 5th in the EC (and 13th in the world) in 1983, measuring 14.8 million tons. Almost all of the steel production in these two countries (95 percent) was from basic-oxygen furnaces, with only 5 percent originating in electric furnaces. In 1982, 30 percent of their combined output was continuously cast, compared with 25 percent in 1981. The steel industries in the two countries employed a combined total of *** workers in 1983, which was *** percent * * * than the 1982 level of 56,500 workers. 4/ Raw steel production in Belgium and Luxembourg declined continuously during 1980-83, falling by 21 percent from 18.7 million tons in 1980 to 14.8 million tons in 1983 (table 40). There was a concurrent decrease of 11 percent in

1/ Financial Times, Jan. 26, 1984.
2/ Metal Bulletin Monthly, April 1984.
3/ Information and data on the steel industries in Belgium and Luxembourg are generally presented as combined figures and will be so discussed in this report.
4/ OECD, The Iron and Steel Industry in 1982 and Draft Report on the Steel Market in 1983 and the Outlook for 1984.

Table 40.--Raw steel: Belgium and Luxembourg's production, capacity, capacity utilization, and apparent consumption, 1980-83

Year	Production	Production capacity	Capacity utilization	Apparent consumption 1/
	1,000 tons	1,000 tons	Percent	1,000 tons
1980	18,673	28,770	64.9	3,524
1981	17,716	26,786	66.1	3,589
1982	14,883	26,014	57.2	6,485
1983 2/	14,825	25,723	57.6	3/

1/ Consumption does not equal the total of production plus imports minus exports.
2/ Preliminary.
3/ Not available.

Source: Production, compiled from data of the International Iron & Steel Institute; capacity and apparent consumption, compiled from data in OECD, The Iron and Steel Industry, Paris, various issues.

production capacity. Capacity utilization fluctuated during the period, but followed a generally downward trend from 64.9 percent in 1980 to 57.6 percent in 1983. Unlike most of the other EC countries, apparent consumption of raw steel in Belgium and Luxembourg rose from 1980 to 1982, from 3.5 million tons to 6.5 million tons, or by about 85 percent.

The Belgian steel industry has undergone consolidation and rationalization, coupled with increased Government equity participation, in recent years. The result of these actions is likely to be a more concentrated industry, with reduced, but more modern, steelmaking and finishing facilities.

As a result of extensive consolidation of independent steel producers, the Belgian steel industry is now dominated by the integrated Cockerill-Sambre, which was formed in mid-1981 by a merger of Cockerill and Hainaut-Sambre, the nation's largest steelmakers. Cockerill-Sambre, which was 30 percent Government owned in 1981, 1/ had a reported capacity of *** million tons in 1982.

Siderurgie Maritime (Sidmar) is the second largest steel producer in Belgium, with a reported capacity of *** million tons in 1981, which is projected to increase marginally by 1984. Sidmar is controlled by Arbed, the Luxembourg steel producer, but the Belgian Government owned 22 percent of the company in 1981.

Luxembourg's steel industry is dominated by the Arbed group (Acieres Reunies de Burbach-Eich-Dudelange, S.A.), a multinational concern owning production facilities in West Germany, France, Austria, Belgium, and Brazil. The Luxembourg state is the largest single shareholder in Arbed, with a holding of about 22 percent. 2/

1/ Metal Bulletin, Feb. 17, 1981.
2/ Ibid., Sept. 27, 1983.

Arbed's Luxembourg capacity in 1981 was a reported *** million tons, which was projected to increase slightly in 1982 and 1983. This follows a series of capacity reductions and rationalizations from 1977 to 1980, which saw Arbed reduce its capacity by *** percent. These efforts, although resulting in a loss in total capacity, replaced inefficient Bessemer converter plants with more modern BOF facilities and continuous-casting operations, and therefore should improve the firm's competitive posture. As of October 1983, the EC Commission had requested further reductions in annual capacity of 400,000 tons in the Luxembourg steel industry. 1/

Early in 1984 a steel rationalization plan was agreed on between the Governments of Belgium and Luxembourg. The 10-year cross border restructuring agreement calls for a linkup between Belgium's Cockerill-Sambre and Luxembourg's Arbed, which should result in reduced capacity and greater product specialization for the steelworkers involved. 2/

Japan.--Japan was the second largest producer of raw steel in the world in 1983 (behind the U.S.S.R.), with total production of 107 million tons. Japan is the largest foreign source of U.S. imports of carbon and alloy steel mill products, accounting for 25 percent of all U.S. imports in 1983 and 31 percent in 1982. The Japanese steel industry is composed of over 50 companies, but is dominated by 6 large integrated producers.

Japan is almost totally dependent upon imported iron ore and coking coal for steel production, but it has been quite successful in developing dependable long-term sources of supply for its raw-material needs. Australia, Brazil, and India are its principal sources of iron ore, and Australia, the United States, and Canada supply most of the coal.

The Japanese steelmaking facilities are large scale, employing giant blast furnaces; Japan has four of the six largest blast furnaces in the world. About 80 percent of Japan's crude steel capacity has been built since 1960, on land reclaimed from the sea. These mills have spacious plant layouts, which are organized efficiently from raw material inflow through the steelmaking process to product outshipment. Approximately 73 percent of Japanese raw steel production was in basic-oxygen furnaces in 1982, and the remainder was by the electric-furnace process. Part of Japan's electric furnace output consists of higher quality specialty steels which are generally produced to strict specifications in relatively small amounts. 3/ By early 1978, all open-hearth furnaces had been phased out of production. About 86 percent of Japan's production was continuously cast in 1983, making it the world leader in the share of raw steel produced by this method. 4/ Continuous casting provides greater yields, and, as a result, Japan's reported yield 5/

1/ Ibid., Oct. 11, 1983.

2/ Metal Bulletin Monthly, April 1984.

3/ Information from officials of the Japanese steel industry and the Japan Iron and Steel Exporters' Association, Apr. 27, 1984.

4/ OECD, The Iron and Steel Industry in 1982 and Japan Iron and Steel Federation.

5/ Yield estimate is defined as finished steel per ton of raw steel, adjusted for product mix.

in 1982 was estimated to be 86 percent, exceeding that in any other producing country. 1/ Some Japanese producers have the ability to continuously cast steel in a horizontal operation rather than the more widely used vertical method. However, horizontal casting accounts for only about 1 percent of Japanese continuously cast output. 2/

Total employment in the Japanese steel industry was about 269,000 workers in both 1981 and 1982 and an estimated *** workers in 1983. 3/ Steelmakers in Japan rely heavily on contract labor for many tasks associated with the production, finishing, and shipping of steel mill products. Contract workers are not employees of the steel mill, but are employed by both independent and subsidiary firms. Contract workers, who compose between 40 and 50 percent of the Japanese steel labor force, are used in such jobs as furnace repairing, maintenance, and packaging and shipping.

Both production and production capacity in the Japanese steel industry declined during 1980-83, falling by 12.8 percent and 1.4 percent, respectively. Capacity utilization declined from 70.0 percent in 1980 to 61.9 percent in 1983. Apparent consumption fell by 13 percent from 81.0 million tons in 1980 to 70.3 million tons in 1982 (table 41).

Table 41.--Raw steel: Japan's production, capacity, capacity utilization, and apparent consumption, 1980-83

Year	Production	Production capacity	Capacity utilization	Apparent consumption 1/
	1,000 tons	1,000 tons	Percent	1,000 tons
1980	122,791	175,486	70.0	80,955
1981	112,067	174,935	64.1	72,140
1982	109,732	173,943	63.1	70,253
1983 2/	107,109	3/ 173,061	61.9	4/

1/ Consumption does not equal the total of production plus imports minus exports.
2/ Preliminary.
3/ Estimated.
4/ Not available.

Source: Production, compiled from data of the International Iron & Steel Institute; capacity and apparent consumption, compiled from data in OECD, The Iron and Steel Industry, Paris, various issues, and OECD, The Steel Market in 1982 and the Outlook for 1983, Paris, 1983.

1/ Hans Mueller, "Trends in Steel Production and Trade," conference paper presented at the Eastern Economic Association annual meeting, New York, March 1984.

2/ Information from officials of the Japanese steel industry and the Japan Iron and Steel Exporters' Association, Apr. 27, 1984.

3/ OECD, The Iron and Steel Industry in 1982 and Draft Report on the Steel Market in 1983 and the Outlook for 1984.

Japan exports significantly more steel than it imports, as shown in the following tabulation (in thousands of tons):

	Exports 1/	Imports 1/
1979----------------	33,560	1,603
1980----------------	32,496	1,279
1981----------------	31,127	1,710
1982----------------	31,380	2,210
1983----------------	***	***

1/ Data taken from OECD, "Steel Committee Monthly Information System," and The Iron and Steel Industry, various editions.

Total steel exports rose by *** percent from 1981 to 1983, after having fallen in the two previous years. Total steel imports rose by *** percent from 1981 to 1983. The major markets for Japan's exports of steel products in 1983 were Asian countries (other than China and North Korea), which received *** percent of exports; China and North Korea, *** percent; the Middle East, *** percent; and the United States, *** percent. There was a * * * increase in Japan's exports to China from 1982 to 1983, and a concurrent decline of *** percent in exports to the United States. 1/

Nippon Steel Corp., the world's largest steelmaker, accounted for 28 percent of Japan's raw steel production in 1983. It announced major rationalization plans in early 1984, with the goal of reducing the product range at some of its mills and expanding it at others. 2/ In addition to steel, Nippon has a large number of subsidiaries and affiliates involved in other products such as aluminum, chemicals, cement, engineering and construction, and related activities. Sumitomo Metal Industries, Ltd., Japan's leading pipe and tube producer, accounted for 10 percent of Japanese raw steel output in 1983. Nippon Kokan K.K., another major Japanese steel producer, is also a leading company in engineering, fabrication, and construction of steel structures. All three of these companies brought seamless pipe mills on stream in 1983. 3/ In late April 1984, Nippon Kokan agreed to purchase 50 percent of the U.S. firm, National Steel Corp. Details of the proposed acquisition are presented in a later section in this report on mergers. Other large Japanese producers include Kawasaki Steel and Kobe Steel. In 1982, these five major producers operated a total of 21 steelworks. Nippon Steel controlled nine of the facilities; Sumitomo Metal Industries, four; Kawasaki Steel, three; Kobe Steel, three; and Nippon Kokan, two. 4/ A sixth producer, Nissin Steel, recently entered into a joint venture with Wheeling-Pittsburgh Steel Corp. in the United States. 5/ Investment projects to be undertaken by the major producers are expected to concentrate

1/ OECD, Draft Report on the Steel Market in 1983 and the Outlook for 1984, Statistical Tables.
2/ Metal Bulletin Monthly, April 1984.
3/ Ibid.
4/ Metal Bulletin, Sept. 20, 1983.
5/ Ibid, Feb. 14, 1984.

on increased tubular product capacity and cost-cutting efforts aimed at lowering energy costs. Investment efforts are also expected to be focused on the high-quality end of steel products.

Other developed countries.--Steel is produced in at least 15 other developed countries (excluding Communist countries). The major producers among these countries are discussed in the following sections.

Spain.--Production of raw steel in Spain increased by 7 percent from 13.5 million tons in 1979 to 14.5 million tons in 1982, before falling by 3 percent to 14.0 million tons in 1983. Slightly more than half (51.5 percent)of Spain's raw steel production in 1982 was from electric furnaces. Basic-oxygen furnaces accounted for 45.2 percent of production and open-hearth furnaces for 3.3 percent. 1/ Spanish steelmaking capacity increased by 9 percent from 17.8 million tons in 1979 to 19.3 million tons in 1983, resulting in a decline in capacity utilization from 76.1 percent in 1979 to 72.7 percent in 1983. The Spanish Government is reported to be considering a reduction of 14.5 percent in its raw steelmaking capacity in order to satisfy the EC, which Spain is hoping to join. 2/ Apparent consumption of raw steel in Spain fluctuated during 1979-82, as illustrated in table 42.

Table 42.--Raw steel: Spain's production, capacity, capacity utilization, and apparent consumption, 1979-83

Year	Production	Production capacity	Capacity utilization	Apparent consumption 1/
	1,000 tons	1,000 tons	Percent	1,000 tons
1979	13,500	17,750	76.1	8,810
1980	13,936	18,630	74.8	9,850
1981	14,214	19,050	74.6	8,872
1982	14,491	19,158	75.6	9,639
1983 2/	14,033	19,290	72.7	3/

1/ Consumption does not equal the total of production plus imports minus exports.
2/ Preliminary.
3/ Not available.

Source: Production, compiled from data of the International Iron & Steel Institute; capacity and apparent consumption, compiled from data in OECD, The Iron and Steel Industry, Paris, 1984, and OECD, The Steel Market in 1982 and the Outlook for 1983, Paris, 1983.

1/ Ibid, Dec. 2, 1983.
2/ Ibid, Feb. 17, 1984.

Partly due to Spain's relatively stagnant demand for steel products during 1979-83, and its continued growth in steelmaking capability, its exports increased during the period. Imports fluctuated, as shown in the following tabulation (in millions of tons):

	Exports 1/	Imports 1/
1979	4.67	1.18
1980	5.00	1.43
1981	5.54	1.26
1982	5.50	1.51
1983 2/	***	***

1/ Data taken from OECD, The Iron and Steel Industry, various issues.
2/ Estimated on the basis of information in the OECD, Draft Report on the Steel Market in 1983 and the Outlook for 1984.

The major markets for Spain's exports of steel products in 1981 were the Middle East, which acquired *** percent of the total; Africa, *** percent; the EC, *** percent; and the United States, *** percent. * * *.

The industry in Spain consists of three integrated producers and numerous nonintegrated firms. Approximately *** workers are employed; however, this figure represents a * * * from the approximately 90,000 workers in the industry in 1974. The three Spanish integrated producers are Empresa Nacional Siderurgica, S.A. (Ensidesa), Altos Hornos de Vizcaya, S.A. (AHV), and Altos Hornos del Mediterraneo, S.A. (AHM). Ensidesa is the largest, having produced *** million tons of raw steel in 1980. It operates several facilities and produces a wide range of steel-mill products, most notably plates, hot-rolled sheets and strip, cold-rolled sheets, structural shapes, rails, and galvanized sheets. AHV was the second largest Spanish raw steel producer in 1980, with a production total of *** million tons. The firm operates several facilities and primarily markets its products in the Spanish market (84 percent in 1980). AHV produces primarily hot-rolled and cold-rolled sheets, galvanized sheets, tinplate, and pipes and tubes. AHM is an integrated producer that manufactures primarily semifinished products, cold-rolled sheets, and structural shapes. It produced *** tons of raw steel in 1980 and shipped a total of *** tons, with 88 percent going to the Spanish market.

Republic of South Africa.--There are approximately 10 producers of raw steel in the Republic of South Africa. In 1982, an estimated 73 percent of its raw steel output was from basic-oxygen furnaces; electric furnaces accounted for the remainder. 1/ Production of raw steel declined steadily from 9.9 million tons in 1981 to 7.7 million tons in 1983, for a net decrease of 22 percent. Apparent consumption also declined during this period, from

1/ Metal Bulletin, Dec. 2, 1983.

8.8 million tons to 7.1 million tons, or by 20 percent, as shown in the following tabulation:

Year	Production 1/	Apparent consumption 2/
	1,000 tons	1,000 tons
1981	9,923	8,820
1982	9,034	7,607
1983	7,721	7,056

1/ Compiled from data of the International Iron & Steel Institute.
2/ Compiled from data in OECD, The Steel Market in 1982 and the Outlook for 1983, Paris, 1983.

The Republic of South Africa's net trade balance in steel (in ingot equivalents) * * * from * * * million tons in 1981 to *** million tons in 1982 and *** million tons in 1983. 1/ In early May 1984, U.S. Steel Corp. withdrew its antidumping complaints against South African steelmakers following an announcement by the Government of that country that it would limit steel exports to the United States to the level of such exports in 1979 and 1980. 2/

Australia.--There are about a dozen producers of iron and steel in Australia, of which at least two are operated as subsidiaries of the Broken Hill Proprietary Co., the largest steel producer in Australia. An estimated *** workers were employed in 1983, * * * percent from employment in 1982. Basic-oxygen furnaces accounted for about 85 percent of Australia's output of raw steel in 1982. Open-hearth furnaces accounted for slightly more than 13 percent of the total, and electric furnaces were the source of the remainder. Almost 17 percent of Australia's raw steel production was continuously cast in 1982, compared with 13 percent the previous year. 3/ Production fell sharply from about 8.4 million tons in 1980 and 1981 to 6.2 million tons in 1983 (table 43). Capacity utilization was adversely affected, dropping from 87 percent in 1980 to 73 percent in 1983. Although preliminary data for 1983 show a decline in capacity, a new minimill having a capacity of 200,000 tons per year was started up in Melbourne that year, and a second minimill producer planned to set up another mill in Queensland. 4/ Apparent consumption of raw steel showed an overall decline, falling from 6.7 million tons in 1980 to 6.5 million tons in 1982.

1/ OECD, Draft Report on the Steel Market in 1983 and the Outlook for 1984.
2/ Washington Post, May 8, 1984.
3/ OECD, The Iron and Steel Industry in 1982 and Draft Report on the Steel Market in 1983 and the Outlook for 1984.
4/ Metal Bulletin Monthly, April 1984.

Table 43.--Raw steel: Australia's production, capacity, capacity utilization, and apparent consumption, 1980-83

Year	Production	Production capacity	Capacity utilization	Apparent consumption 1/
	1,000 tons	1,000 tons	Percent	1,000 tons
1980	8,365	9,570	87.4	6,709
1981	8,415	9,438	89.2	6,918
1982	7,023	9,810	71.6	6,520
1983 2/	6,178	8,400	73.5	3/

1/ Consumption does not equal the total of production plus imports minus exports.
2/ Preliminary.
3/ Not available.

Source: Production, compiled from data of the International Iron & Steel Institute; capacity and apparent consumption, compiled from data in OECD, The Iron and Steel Industry, Paris, 1984.

Australian exports and imports of steel increased during 1979-82, with the former rising by about 55 percent and the latter by 93 percent, as shown in the following tabulation (in thousands of tons):

	Exports 1/	Imports 1/
1979	1,440	475
1980	2/	563
1981	1,777	542
1982	2,237	916

1/ Data from OECD, The Iron and Steel Industry, various editions.
2/ Not available.

Although the Australian steel industry is privately owned, the Government does provide an investment allowance for capital investment in new plants that are used wholly and exclusively for the production of assessable income in Australia. The initial rate of this investment allowance was 40 percent for plants in use by July 1, 1979. Since July 1978, any eligible new plant construction which results in an operational plant before June 30, 1986, qualifies for a 20-percent investment allowance. This is in addition to the normal depreciation provisions, which allow the steel industry to amortize plant and equipment over a 12-year period.

In January 1984, the Australian Government implemented the Steel Industry Plan, which will run for 5 years and be reviewed after 4 years. In essence, the plan consists of three parts. First, the Government will provide a maximum annual fund of $9 million (Australian) for the production of alloy steel bar products and stainless steel flat products; $40 million (Australian) for the production of hot-rolled strip for use in producing cold-rolled strip and sheets; $22 million (Australian) for the production of hot-rolled strip and plates, other than high alloy, for use in producing pipes and tubes; and $0.6 million (Australian) for the production of hot-rolled plates for use in producing certain quenched and tempered steel. The Government of Australia has also imposed quotas on imports of steel products from developing countries and created a Steel Industry Authority to monitor the plan and advise on the need for additional assistance.

The second part of the plan calls for the Broken Hill Proprietary Co. to continue operation of three integrated steel plants, to provide job security for its employees, and to invest several hundred million dollars over 4 years to modernize facilities in order to increase productivity and improve energy efficiencies.

In the third part of the plan, the steel unions of Australia have agreed to contain wage increases, increase productivity, and adhere to established grievance procedures.

Developing countries.--The economies of several developing countries, particularly those in Latin America, became seriously affected in 1982 and 1983 by such factors as higher debt burdens, increasing difficulties in obtaining foreign credits, restrictive domestic policies, and more limited possibilities for increasing exports to the industrialized world. 1/

These economic conditions lowered domestic steel demand in many developing countries in 1982 and 1983. Available data on steel trade in 1982 suggest that total steel consumption in the developing areas declined by almost 5 percent and that their total net steel imports declined by about 17 percent. Most of these declines occurred in Latin America, where the general decline in net steel imports resulted not only from reduced imports but also from increased steel exports. 2/ * * *. 3/

Apart from Latin America, steel consumption in 1982 probably also declined in developing countries in Africa and the Middle East. In all three areas total steel production in 1982 was little different from that in the previous year. Only in the Asian developing countries was there an increase in total steel output. This increase in production was concentrated in two countries, the Republic of Korea (Korea) and Taiwan, both of which had additional capacity coming on stream. 4/ A number of developing countries have plans for significant expansions of their steel industries over the next few years, as noted in the following discussion. Data on production of raw steel for these developing countries are shown in table 44.

1/ OECD, The Steel Market in 1982 and the Outlook for 1983.
2/ Ibid.
3/ OECD, Draft Report on the Steel Market in 1983 and the Outlook for 1984.
4/ OECD, The Steel Market in 1982 and the Outlook for 1983.

Table 44. Raw steel: Production in selected developing countries, 1979-83

(In thousands of short tons)

Year	Brazil	Mexico	Republic of Korea	Taiwan	India
1979	15,314	7,722	8,389	4,685	11,162
1980	16,875	7,825	9,433	4,657	10,487
1981	14,521	8,382	11,852	3,480	11,865
1982	14,324	7,778	12,961	4,577	12,122
1983 1/	16,159	7,624	13,134	5,530	11,359

1/ Preliminary.

Source: Compiled from data of the International Iron & Steel Institute.

Brazil.--Brazil's production of raw steel declined from 16.9 million tons in 1980 to 14.3 million tons in 1982 before rising to 16.2 million tons in 1983. Approximately 66 percent of Brazil's raw steel output in 1982 was from basic-oxygen furnaces; 26 percent was from electric furnaces, and the remainder originated in open-hearth furnaces. During 1983 and early 1984 new facilities, such as slabbing and rolling mills, became operational. There are proposals for additional new steelworks to come on stream during the next 2 years, as well as plans to integrate existing mills. Brazil has spent $12 billion since the early 1970's on steelmaking capacity, and its new Tubarao Mill raised its annual capacity to about 21 million tons. Approximately one-half of the new capacity is slated for export. 1/

Siderbras, a Government-controlled corporation in charge of federally owned steel corporations in Brazil, was established in 1973 to promote and stimulate new steel projects involving State participation. Its three largest producers, Usinas Siderurgicas de Minas Gerais (Usiminas), Companhia Siderurgica Paulista (Cosipa), and Companhia Siderurgica Nacional (CSN), accounted for more than 90 percent of Siderbras' raw steel production and approximately 58 percent of total Brazilian raw steel production in 1980. All three companies are fully integrated producers making a broad range of steel mill products.

On April 26, 1984, the Government of Brazil announced its decision to implement voluntary export restraints, effective May 1, 1984, on certain carbon steel products shipped to the United States. Such shipments will be limited to 430,000 short tons during the initial year of the restraints. This action is being taken in an effort to resolve steel trade disputes with the United States. The products involved are currently subject to antidumping and countervailing duty investigations in the United States. The restraints cover two-thirds of Brazil's steel exports to the United States and will be in effect for a 3-year period. Implementation of the restraints will be through export licenses issued by CACEX, Banco do Brasil, and will be monitored

1/ Standard and Poor's Industry Surveys, Aug. 11, 1983, p. S-30.

quarterly by the Government. The affected products are hot-rolled sheets, cold-rolled sheets, carbon steel plates cut-to-length, and carbon steel plates in coils.

Mexico.--Mexico's raw steel production rose from 7.7 million tons in 1979 to 8.4 million tons in 1981, then fell to 7.6 million tons in 1983. Electric furnaces accounted for 44 percent of raw steel output in 1982. Basic-oxygen furnaces were the source of 41 percent of production and open-hearth furnaces accounted for 15 percent. 1/ Mexico's steel industry has the capacity to produce some 9 million tons of steel annually, but plant expansions scheduled for the next 2 years are expected to raise that limit to 10 million tons. 2/ Mexico's apparent consumption of raw steel * * * steadily from *** million tons in 1980 to *** million tons in 1983, or by *** percent. Mexico exported slightly more than *** million tons of steel products in 1983, some *** percent of which went to the United States. 3/ The number of workers in the Mexican steel industry rose by *** percent from *** in 1980 to *** in 1982. 4/

The steel industry in Mexico consists of both Government-owned firms and private companies. The State-owned Sidermex conglomerate includes the companies of Altos Hornos de Mexico, S.A. (AHMSA), Fundidora Monterrey, S.A. (FMSA), and Siderurgica Lazaro Cardenas-Las Truchas, S.A. (SICARTSA). These companies accounted for *** percent of Mexico's steel production in 1983. Some *** percent of the country's steel exports are sold by Sidermex. Private companies include Hojalata y Lamina, S.A. (HYLSA) and Tubos de Acero de Mexico, S.A. (TAMSA).

In April 1984, the Mexican Government announced its intention to voluntarily restrict steel exports to the United States to 395,000 metric tons annually for the next 3 years. As a result of Mexico's self-imposed export restrictions, U.S. steel manufacturers withdrew their countervailing duty petitions on Mexican steel products. 5/ The following steel products are included in the program: hot-rolled sheets, galvanized sheets, plates cut-to-length, structural shapes, large diameter wire, seamless pipes, rods, commercial shapes, and plates in coils. 6/

Republic of Korea.--Output of raw steel in the Republic of Korea rose by 57 percent from 8.4 million tons in 1979 to 13.1 million tons in 1983. Basic-oxygen furnaces accounted for three-fourths of Korea's raw steel output in 1982; the remainder was from electric furnaces. In addition to enjoying labor costs that are significantly below those of any industrialized nation, the Republic of Korea has ready access to necessary raw materials and can easily import advanced steelmaking technology and expertise. Pohang Iron

1/ Metal Bulletin, Dec. 2, 1983.
2/ Journal of Commerce, Apr. 20, 1984.
3/ OECD, "Report on Meeting between Mexico and the OECD Steel Committee," April 1984.
4/ OECD, Mexican Steel Industry Outlook (1983-1990).
5/ Journal of Commerce, Apr. 20, 1984.
6/ U.S. Department of State telegram, Amembassy, Mexico, April 1984.

and Steel (POSCO), with 10 million tons of annual steelmaking capacity, is Korea's only integrated steel producer. In addition, a new 3-million-ton-per-year facility is scheduled for completion at Gwangyang by early 1988. 1/

Taiwan.--Production of raw steel in Taiwan increased from 4.7 million tons in 1979 to 5.5 million tons in 1983. In 1982, almost two-thirds of Taiwan's raw steel output originated in basic-oxygen furnaces; the remaining one-third was from electric furnaces. The China Steel Corp. in Taiwan completed the second stage of its expansion project in 1983, increasing raw steel capacity to *** million tons per year and adding flat-rolled products to its production capability. A further expansion of steelmaking facilities, for which the Government of Taiwan will provide 45 percent of the financing, is due to start in July 1984. 2/ The expansion will raise Taiwan's raw steel capacity to *** million tons per year.

India.--India's raw steel production fluctuated during 1979-83, ending the period with a decline in output of 6 percent, from 12.1 million tons in 1982 to 11.4 million tons in 1983. It is estimated that slightly more than 50 percent of India's raw steel output in 1982 was from open-hearth furnaces. India's steel industry announced a number of plans during 1983 to modernize and expand old facilities, in addition to building new ones. 3/ It is expected that capacity will grow by at least 4 million tons by 1987. 4/

CBERA countries.--There are few known raw steelmaking facilities in the CBERA countries. One of the largest, the Iron and Steel Co. of Trinidad and Tobago (ISCOTT), supplies the United States principally with carbon steel wire rods. In 1983, Central Trinidad Steel (Centrin), Trinidad's first private-sector venture, commissioned its 90,000-tons-per-year 10-strand merchant bar mill, which was supplied with billets by ISCOTT. In Honduras, plans for an integrated steelworks were shelved because of the country's financial crisis. 5/

U.S. inventories of imported carbon and alloy steel products

Yearend inventories during 1979-83 of the carbon and alloy steel products included in this investigation held by importers responding to the Commission's questionnaires are shown in table 45. Importers' aggregate inventories of such merchandise declined from 5.7 million tons in 1979 to 779,300 tons in 1983. As indicated in the table, most of the inventories consisted of sheets and strip and pipes and tubes.

1/ Metal Intelligence International, Feb. 22, 1984.
2/ Metal Bulletin Monthly, April 1984.
3/ Ibid.
4/ U.S. Department of the Interior, "Iron and Steel," Bureau of Mines Minerals Yearbook.
5/ Metal Bulletin Monthly, April 1984.

Table 45.--Carbon and alloy steel products: End-of-period inventories held by U.S. importers, by types of products, 1979-83

(In thousands of short tons)

Product	1979	1980	1981	1982	1983
Carbon and alloy steel products, total	5,686.6	2,341.5	983.9	1,329.2	779.3
Ingots, blooms, billets, slabs, and sheet bars	2.1	2.0	8.8	365.5	68.1
Plates	135.2	125.8	119.9	97.1	50.7
Sheets and strip:					
Hot-rolled	1,111.6	983.3	194.7	117.6	93.2
Cold-rolled	2,797.8	871.4	254.8	105.8	106.5
Galvanized	1,438,9	65.6	76.2	45.0	40.1
All other	10.6	5.6	7.5	2.2	3.4
Total	5,358.9	1,925.9	533.2	270.6	243.2
Wire rods	6.6	10.4	4.2	6.0	12.5
Wire and wire products:					
Wire	16.0	16.5	13.5	8.0	7.7
Barbed and twisted wire	1.2	1.0	.4	.2	1.2
Wire strand	4.0	5.6	5.4	7.7	6.7
Wire ropes, cables, and cordage	1.8	1.6	2.1	2.8	.2
Wire fencing	.2	0	0	0	0
Brads, nails, spikes, staples, and tacks	1.6	.7	.9	1.0	1.1
Total	24.8	25.4	22.3	19.7	16.9
Railway-type products:					
Rails	0	1.0	1.0	0	1.0
Joint bars, tie plates, and track spikes	0	0	0	0	0
Wheels and axles	2.4	4.6	4.3	2.3	1.5
Total	2.4	5.6	5.3	2.3	2.5
Bars:					
Concrete reinforcing bars	0	0	0	1.0	3.5
Other, hot rolled	.8	83.6	3.4	6.7	4.6
Other, cold-finished	4.7	7.8	4.2	9.2	5.9
Total	5.5	91.4	7.6	16.9	14.0
Structural shapes and units:					
Sheet piling	9.3	9.6	16.0	19.6	16.5
Light shapes	10.7	3.3	2.3	.3	1.2
Heavy shapes	11.4	21.2	34.3	44.5	28.3
Fabricated units	0	0	0	0	0
Total	31.4	34.1	52.6	64.4	46.0
Pipes and tubes:					
Oil-country goods	41.3	64.9	168.1	379.0	228.9
All other	78.4	56.0	61.9	107.7	96.5
Total	119.7	120.9	230.0	486.7	325.4

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

The Question of Imports as a Substantial Cause of Serious Injury or the Threat Thereof

Market penetration

All steel mill products.--Shares of the U.S. market for steel mill products held by U.S. producers and all foreign sources during the last 20 years are shown in table 2 (page a-39). As indicated, the ratio of aggregate imports to apparent U.S. consumption of steel mill products rose from an average of 11.7 percent in 1964-68 to 18.2 percent in 1979-83. In 1983, imports accounted for 20.5 percent of apparent consumption, compared with the 20-year peak of 21.8 percent in 1982. Table 46 shows market shares held by U.S. producers and selected foreign suppliers during the period.

Table 46.--Steel mill products: U.S. market shares held by U.S. and selected foreign suppliers, 5-year averages 1964-83, and annual 1979-83

(In percent)

Period	Share of U.S. market held by--				
	U.S. producers	Imports from--			
		EC	Japan	Canada	All foreign sources
Average:					
1964-68	88.3	1/ 5.4	4.8	0.8	11.7
1969-73	85.2	1/ 6.5	5.9	1.0	14.8
1974-78	84.5	5.2	6.5	1.4	15.5
1979-83	81.8	5.4	5.9	2.5	18.2
Annual:					
1979	84.8	4.7	5.5	2.0	15.2
1980	83.7	4.1	6.3	2.5	16.3
1981	81.1	6.2	6.0	2.8	18.9
1982	78.2	7.3	6.8	2.4	21.8
1983	79.5	4.9	5.1	2.9	20.5

1/ Excludes imports from Greece.

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

Carbon and alloy steel products.--Table 47 shows, by product categories, the ratios of U.S. imports to apparent U.S. consumption during 1979-83 of the carbon and alloy steel products included in this investigation. 1/ These ratios range from a low of 1.2 percent market penetration by imports of concrete reinforcing bars in 1981 to a high of 70.6 percent market penetration by imports of brads, nails, spikes, staples, and tacks in 1983.

The share of the U.S. market accounted for by imports of all the carbon and alloy steel products included in this investigation increased from 15.6 percent of apparent U.S. consumption in 1979 to 22.2 percent in 1982 and then decreased to 20.9 percent in 1983. The shares of the U.S. market accounted for by imports from Japan and the EC increased irregularly from 5.6 and 4.8 percent, respectively, in 1979 to 7.0 and 7.3 percent in 1982 and then decreased to 5.2 and 5.0 percent, respectively, in 1983 (app. H, table H-34). The share of the U.S. market accounted for by imports from the developing countries increased by a greater margin each year during 1979-83, from 1.7 percent of apparent U.S. consumption in 1979 to 5.4 percent in 1983. Imports from Canada increased irregularly from 2.1 percent of apparent U.S. consumption in 1979 to 3.0 percent in 1983.

Ingots, blooms, billets, slabs, and sheet bars.--The share of the U.S. market accounted for by imports of carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars decreased from 13.6 percent of apparent U.S. consumption in 1979 to 8.4 percent in 1980 and then increased to 48.5 percent in 1983. 2/ The share of the U.S. market accounted for by imports from Canada increased from 2.0 percent in 1979 to 20.3 percent in 1981, decreased to 11.5 percent in 1982, and then increased to 25.9 percent in 1983. The share of the

1/ It is important to note that data on apparent U.S. consumption are derived by adding U.S. producers' shipments and imports for consumption and subtracting exports. Producers' shipments, which are usually the largest component of apparent consumption, are net shipments as reported by the AISI. As indicated previously (see table 2, footnote 1), such net shipments exclude shipments between firms that report data to the AISI. Moreover, they (as well as gross shipments reported by the AISI) do not include products that undergo further processing by the original manufacturer. For example, AISI shipment data for slabs would not include a producer's slabs that are used by that firm to manufacture plate nor would they include its plates used to produce pipes and tubes. Thus, a large proportion of aggregate U.S. output of some of the products included in this investigation--particularly semifinished products such as ingots, blooms, billets, slabs, and wire rods--is "consumed" by the original producer but does not enter into the data on apparent consumption of that semifinished product. The result is, of course, that apparent consumption of such semifinished products is understated and the ratio of imports to consumption is overstated.

2/ As indicated previously, apparent consumption of these semifinished products is understated because of the manner in which it is computed (producers' shipments plus imports minus exports). Consequently, the ratio of imports to consumption is seriously overstated. In comparison, the ratio of imports of ingots, blooms, billets, slabs, and sheet bars to reported domestic production of such merchandise rose irregularly from 0.3 percent in 1979 to 1.3 percent in 1982 and 1983 (table 7).

Table 47.--Carbon and alloy steel products: Ratios of U.S. imports to consumption, by types, 1979-83

(In percent)

Product	1979	1980	1981	1982	1983
Carbon and alloy steel products, total	15.6	16.6	19.2	22.2	20.9
Ingots, blooms, billets, slabs, and sheet bars	13.6	8.4	27.7	44.7	48.5
Plates	17.3	21.1	25.6	29.1	27.7
Sheets and strip:					
Hot-rolled	11.5	10.7	10.6	12.7	14.4
Cold-rolled	11.8	9.8	10.0	13.2	15.2
Galvanized	25.2	20.4	17.9	18.1	21.7
All other	5.0	7.4	6.9	6.8	13.1
Average	12.9	11.4	11.1	13.1	15.9
Wire rods	25.6	24.7	22.8	27.9	28.9
Wire and wire products:					
Wire	21.4	26.5	27.2	33.3	1/ 33.4
Barbed and twisted wire	22.5	23.1	25.7	23.1	23.2
Wire strand	55.1	54.7	39.4	43.1	2/
Wire ropes, cables, and cordage	27.3	24.1	29.1	33.0	31.1
Wire fencing	8.8	8.8	8.7	11.2	19.7
Brads, nails, spikes, staples, and tacks	57.7	64.4	68.7	69.5	70.6
Average	30.4	35.0	35.1	40.3	44.5
Railway-type products:					
Rails	15.1	19.7	23.0	36.9	15.4
Joint bars, tie plates, and track spikes	5.0	12.5	10.8	30.7	21.4
Wheels and axles	20.2	29.1	15.0	15.9	8.4
Average	14.1	20.8	19.4	33.1	16.1
Bars:					
Concrete reinforcing bars	2.2	1.7	1.2	1.3	4.8
Other, hot-rolled	6.6	7.8	8.0	8.7	7.9
Other, cold-finished	6.2	6.8	9.9	15.2	12.6
Average	5.1	5.4	5.9	6.5	7.3
Structural shapes and units:					
Sheet piling	26.4	20.6	26.5	32.0	21.3
Light shapes	13.8	12.8	6.7	6.0	8.9
Heavy shapes and fabricated units	28.4	28.6	30.9	33.2	34.8
Average	25.7	26.1	26.2	28.7	29.9
Pipes and tubes:					
Oil-country goods	21.2	26.5	41.4	57.6	47.8
All other	30.4	32.8	39.0	50.7	49.6
Average	27.9	30.4	40.0	53.4	49.2

1/ Includes wire strand.
2/ Not available separately--included in wire.

Source: App. H, table H-34.

U.S. market accounted for by imports from the EC decreased from 3.4 percent in 1979 to 1.3 percent in 1980 and then increased to 12.3 percent in 1983. The share of the U.S. market accounted for by imports from the developing countries decreased from 5.2 percent in 1979 to 0.7 and 0.5 percent in 1980 and 1981, respectively, increased to 3.6 percent in 1982, and then decreased to 2.5 percent in 1983.

Plates.--The share of the U.S. market accounted for by imports of carbon and alloy steel plates increased from 17.3 percent of apparent U.S. consumption in 1979 to 29.1 percent in 1982 and then decreased to 27.7 percent in 1983. The share of the U.S. market accounted for by imports from the EC increased from 6.5 percent in 1979 to 10.8 percent in 1982 and then decreased to 8.1 percent in 1983. The shares of the U.S. market accounted for by imports from the developing countries and Canada increased irregularly from 3.4 and 2.6 percent, respectively, in 1979 to 7.8 and 5.2 percent, respectively, in 1983. The share of the U.S. market accounted for by imports from Japan increased irregularly from 1.3 percent in 1979 to 2.0 percent in 1982 and then decreased to 0.8 percent in 1983.

Sheets and strip.--The share of the U.S. market accounted for by imports of carbon and alloy steel sheets and strip decreased from 12.9 percent of apparent U.S. consumption in 1979 to 11.1 percent in 1981 and then increased to 15.9 percent in 1983. The share of the U.S. market for the several subcategories of sheets and strip accounted for by imports during 1979-83 ranged from lows of 5.0 to 13.1 percent for sheets and strip further processed past the hot- or cold-rolled stage other than by galvanizing to highs of 17.9 to 25.2 percent for galvanized sheets and strip. The shares of the U.S. market for all sheets and strip accounted for by imports from Japan and the EC fluctuated during 1979-83, ranging from 4.2 to 5.5 percent and from 3.8 to 5.5 percent, respectively. The share of the U.S. market accounted for by imports from the developing countries remained at the 0.4- to 0.5-percent level during 1979-81 and then increased to 3.5 percent in 1983. The share of the U.S. market accounted for by imports from Canada remained relatively constant at 0.9 to 1.1 percent during 1979-83.

Wire rods.--The share of the U.S. market accounted for by imports of carbon and alloy steel wire rods decreased from 25.6 percent of apparent U.S. consumption in 1979 to 22.8 percent in 1981 and then increased to 28.9 percent in 1983. The share of the U.S. market accounted for by imports from Canada increased from 8.9 percent in 1979 to 11.4 percent in 1980 and then decreased irregularly to 7.2 percent in 1983. The share of the U.S. market accounted for by imports from Japan decreased from 9.3 percent in 1979 to 5.5 percent in 1982 and 1983, whereas the share accounted for by imports from the developing countries increased from 0.4 percent in 1979 to 8.0 percent in 1983. The share of the U.S. market accounted for by imports from the EC fluctuated during 1979-83, ranging from a low of 3.4 percent in 1983 to a high of 6.0 percent in 1979.

Wire and wire products.--The share of the U.S. market accounted for by imports of carbon and alloy steel wire and wire products increased from 30.4 percent of apparent U.S. consumption in 1979 to 44.5 percent in 1983. The share of the U.S. market for the several subcategories of wire and wire products accounted for by imports during 1979-83 ranged from lows of 8.8 to

19.7 percent for wire fencing to highs of 57.7 to 70.6 percent for brads, nails, spikes, staples, and tacks. The shares of the U.S. market for all wire and wire products accounted for by imports from the developing countries and Canada increased from 6.3 and 5.1 percent, respectively, in 1979 to 12.4 and 9.2 percent, respectively, in 1983. The share of the U.S. market accounted for by imports from Japan increased from 9.3 percent in 1979 to 10.1 percent in 1980, decreased to 7.2 percent in 1981, and then increased to 8.4 percent in 1983. The share of the U.S. market accounted for by imports from the EC decreased from 6.0 percent in 1979 to 5.5 percent in 1980 and then increased to 8.0 percent in 1983.

Railway-type products.--The share of the U.S. market accounted for by imports of carbon and alloy steel railway-type products increased irregularly from 14.1 percent of apparent U.S. consumption in 1979 to 33.1 percent in 1982 and then decreased to 16.1 percent in 1983. The share of the U.S. market for each of the subcategories of railway-type products accounted for by imports during 1979-83 varied considerably, ranging from 15.1 to 36.9 percent for rails, 5.0 to 30.7 percent for joint bars, tie plates, and track spikes, and 8.4 to 29.1 percent for RR axle bars, and RR wheels and axles and parts thereof. The shares of the U.S. market for railway-type products accounted for by imports from the EC and Japan increased irregularly from 5.8 and 3.0 percent, respectively, in 1979 to 15.3 and 12.4 percent in 1982 and then decreased to 4.9 and 9.1 percent, respectively, in 1983. The share of the U.S. market accounted for by imports from Canada increased from 4.9 percent in 1979 to 6.8 percent in 1981 and then decreased to 1.7 percent in 1983.

Bars.--The share of the U.S. market accounted for by imports of carbon and alloy steel bars increased from 5.1 percent of apparent U.S. consumption in 1979 to 7.3 percent in 1983. The share of the U.S. market for the subcategories of bars accounted for by imports during 1979-83 ranged from lows of 1.2 to 4.8 percent for concrete reinforcing bars to highs of 6.2 to 15.2 percent for cold-finished bars. The shares of the U.S. market for all bars accounted for by imports from Canada and Japan varied only slightly during 1979-83, ranging from 1.2 to 1.8 percent and from 1.3 to 1.8 percent, respectively. The share of the U.S. market accounted for by imports from the EC decreased from 1.2 percent in 1979 to 1.0 percent in 1980, increased to 2.1 percent in 1981, and then decreased to 1.2 percent in 1983. The share of the U.S market accounted for by imports from the developing countries decreased from 0.6 percent in 1979 to 0.4 percent in 1981 and then increased to 2.4 percent in 1983.

Structural shapes and units.--The share of the U.S. market accounted for by imports of carbon and alloy steel structural shapes and units increased from 25.7 percent of apparent U.S. consumption in 1979 to 29.9 percent in 1983. The share of the U.S. market for the subcategories of structural shapes and units accounted for by imports during 1979-83 ranged from lows of 6.0 to 13.8 percent for light structural shapes to highs of 28.4 to 34.8 percent for heavy structural shapes and fabricated structural units. The shares of the U.S. market for all structural shapes and units accounted for by imports from the EC, Japan, and Canada fluctuated during 1979-83, ranging from 8.5 to 10.9 percent, from 8.4 to 9.1 percent, and from 3.7 to 4.6 percent, respectively. The share of the U.S. market accounted for by imports from the developing countries decreased from 1.5 percent in 1979 to 0.4 percent in 1980 and 1981 and then increased to 3.7 percent in 1983.

Pipes and tubes and blanks therefor.--The share of the U.S. market accounted for by imports of carbon and alloy steel pipes and tubes and blanks therefor increased from 27.9 percent of apparent U.S. consumption in 1979 to 53.4 percent in 1982 and then decreased to 49.2 percent in 1983. The share of the U.S. market for the subcategories of oil-country goods (oil well casing, tubing, and drill pipe) and all other pipes, tubes, and blanks therefor accounted for by imports increased from 21.2 and 30.4 percent, respectively, in 1979 to 57.6 and 50.7 percent in 1982 and then decreased to 47.8 and 49.6 percent, respectively, in 1983. The shares of the U.S. market for all pipes and tubes and blanks therefor accounted for by imports from Japan and the EC increased from 14.3 and 2.0 percent, respectively, in 1979 to 24.2 and 14.5 percent in 1982 and then decreased to 12.3 and 8.1 percent, respectively, in 1983. The share of the U.S. market accounted for by imports from the developing countries increased from 6.2 percent in 1979 to 22.8 percent in 1983. The share of the U.S. market accounted for by imports from Canada decreased from 4.0 percent in 1979 to 2.7 percent in 1982 and then increased to 3.9 percent in 1983.

Pricing overview

This section presents general information on pricing practices and the relative movements of prices for steel mill products in the United States. A more detailed discussion of data obtained from Commission questionnaires and import statistics of the Department of Commerce is presented in the following sections.

With one exception, the BLS Producer Price Index (PPI) for steel mill products, which is based on published list prices, rose each quarter from January-March 1978 through April-June 1982 (table 48). The PPI then fell slightly during the second half of 1982, before resuming its steady upward movement during 1983. On an annual basis, the increases in the PPI for steel mill products were 10.2 percent in 1979, 7.9 percent in 1980, 11.6 percent in 1981, 3.6 percent in 1982, and 0.8 percent in 1983.

Although useful in indicating trends in price levels, comparisons of published list prices are not necessarily accurate representations of actual market transaction prices. In the past few years, discounting from list prices was common, with its extent depending on the strength or weakness of the particular product market involved. Extensive discounting reportedly characterized the market by late 1977, 1/ and industry representatives agree that as the steel market softened in 1980 and again in late 1981, discounting was prevalent. Charles Bradford, steel analyst for Merrill Lynch, estimates that in 1981, list price increases for plates and sheets were largely negated by discounts. 2/ Discounting increased during the first half of 1982, 3/ and

1/ David Ignatius, "Who Killed the Steel Industry," The Washington Monthly, 1979, p. 6 (reprint).
2/ Merrill Lynch, Steel Industry Quarterly, February 1982, p. 10.
3/ Merrill Lynch, Steel Industry Quarterly, November 1981, p. 4, and February 1982, p. 11.

Table 48.--Indexes of consumer prices, selected producer prices, and selected steel mill costs, by quarters, January 1978-March 1984, and annual, 1978-83 and January-March 1984

(January-March 1978=100 for quarterly data; 1978=100 for annual data)

Period	Consumer price index	Producer price index		Indexes of steel mill costs					
		All products	Steel mill products	Natural gas	Industrial power 500kw	Petroleum refined	Metallurgical coal	Steam elec. utility	Wages, average hourly earnings
1978:									
Jan.-Mar---	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Apr.-June--	102.6	103.0	103.8	105.5	104.7	100.7	105.8	108.1	100.9
July-Sept--	105.0	104.6	105.8	109.2	103.6	103.4	105.6	114.1	104.8
Oct.-Dec---	107.1	107.0	107.3	113.3	103.9	106.5	104.1	116.1	107.5
1979:									
Jan.-Mar---	109.8	110.8	111.3	122.5	105.5	112.4	103.4	118.0	110.5
Apr.-June--	113.6	114.8	113.6	133.7	110.7	128.2	103.1	122.2	112.9
July-Sept--	117.3	118.4	116.6	145.7	114.8	154.2	103.2	123.9	116.8
Oct.-Dec---	120.8	122.5	118.2	156.9	119.2	174.2	103.2	125.5	119.0
1980:									
Jan.-Mar---	125.5	128.2	120.6	167.6	125.6	198.6	98.2	130.4	121.5
Apr.-June--	130.0	130.8	124.9	178.2	133.7	217.5	98.2	132.9	123.8
July-Sept--	132.5	135.1	123.2	190.5	140.5	222.6	98.0	134.4	128.2
Oct.-Dec---	135.9	138.3	127.0	205.7	143.0	224.4	97.8	137.0	131.7
1981:									
Jan.-Mar---	139.5	142.4	133.0	218.2	146.9	248.6	97.9	139.6	135.0
Apr.-June--	142.8	145.6	135.9	236.5	152.5	267.0	98.3	142.6	137.8
July-Sept--	146.8	146.6	141.3	251.0	161.4	259.7	104.5	145.5	142.2
Oct.-Dec---	148.9	146.5	142.8	257.0	161.9	255.8	104.8	147.7	144.2
1982:									
Jan.-Mar---	149.9	147.7	143.6	268.3	169.8	251.8	105.5	152.9	145.8
Apr.-June--	152.2	147.9	143.9	285.0	174.0	233.0	106.3	155.5	146.6
July-Sept--	155.1	148.5	142.8	303.1	177.9	247.3	105.4	156.9	151.1
Oct.-Dec---	155.5	148.7	142.6	316.5	175.9	241.6	104.8	157.7	152.9
1983:									
Jan.-Mar---	155.3	148.8	142.8	317.9	177.6	221.7	105.0	156.5	149.3
Apr.-June--	157.2	149.3	143.2	315.6	178.6	212.1	103.5	157.4	140.8
July-Sept--	159.0	150.7	144.6	311.5	182.4	221.6	101.3	158.5	141.1
Oct.-Dec---	160.0	151.4	147.0	305.4	181.0	221.3	100.1	160.4	140.4
1984:									
Jan.-Mar---	1/	152.7	1/	309.9	182.0	214.2	97.7	161.8	142.4
Annual:									
1978-------	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1979-------	111.3	112.5	110.2	130.6	109.2	1/	99.4	111.7	111.2
1980-------	126.3	128.4	118.9	173.4	131.7	1/	94.4	122.0	122.3
1981-------	139.4	140.2	132.7	225.0	151.0	1/	97.6	131.3	135.4
1982-------	147.8	143.0	137.5	274.1	169.2	1/	101.6	142.2	144.4
1983-------	152.3	144.8	138.6	292.2	174.5	1/	98.6	144.4	138.4
Jan.-Mar. 1984-----	-	147.4	-	289.7	176.6	1/	94.0	147.7	138.2

1/ Not available.

Source: Compiled from official statistics of the U.S. Bureau of Labor Statistics, and wage data collected by the American Iron & Steel Institute.

became widespread as the year progressed. 1/ In 1983, steel industry analyst Peter Marcus wrote "price cutting in the second half of 1983 was at its worst point since the 1930's, if not in the history of the industry." 2/ In late 1983 and early 1984 the price of flat-rolled products turned upward in response to the strength of the automobile, appliance, and residential construction industries. Voluntary restraint agreements that curbed imports also probably added upward pressure to flat-rolled steel prices. In addition, many other factors affecting the demand for steel products and costs for producing those products have influenced prices in the U.S. market. A number of these factors are discussed in the section of this report entitled "Possible Causes of Injury Other Than Imports."

One other factor, the introduction of the Trigger-Price Mechanism (TPM) 3/ in early 1978, had a singular impact on the structure and pattern of prices for steel mill products. Trigger prices were based on the costs of production in Japanese mills, deemed to be the world's most efficient steel producers, and imports found to be sold below these levels could "trigger" antidumping investigations.

The impact of the TPM on prices became increasingly apparent by the fourth quarter of 1978. By that time, trigger prices covered most carbon steel mill products, grace periods for complying with provisions of the TPM had expired, and transaction prices of imported carbon steel mill products had risen to levels at or slightly above the respective trigger prices. 4/

Under the TPM, higher cost producers (e.g., EC mills) could sell steel mill products in the United States at prices equal to the cost of production in Japanese mills. 5/ This created a potential situation in which a high-cost producer that wanted to export steel to the United States because of depressed home-market demand or the loss of traditional export markets in developing countries could do so at prices that might otherwise have been found to violate the antidumping law.

1/ By yearend 1982 (according to Metals Intelligence International, Carbon Steel Price Track, Paine, Webber, Mitchell, Hutchins, Inc., Dec. 23, 1982, p. 2.), transaction-price discounts from list prices ranged from 3.8 percent for hot-rolled carbon bars to 9.5 percent for galvanized sheets, 18.3 percent for hot-rolled coils, 22 percent for wide-flange beams, 23.3 percent for cold-rolled coils, and 26.3 percent for carbon plates.

2/ World Steel Dynamics, February 1984, p. 13.

3/ For a detailed discussion of the TPM, see Ingo Walter, "Protection of Industries in Trouble," The World Economy, May 1979, pp. 155-171.

4/ For a detailed analysis of the impact of the TPM during this early period, see Conditions of Competition in the Western U.S. Steel Market Between Certain Domestic and Foreign Steel Products: Final Report on Investigation No. 332-87 . . ., USITC Publication 1004, September 1979, pp. 109-115 and C-85 through C-97.

5/ For production cost comparisons, by countries, see Peter F. Marcus and K. Kirsis, World Steel Dynamics, Paine, Webber, Mitchell, Hutchins, Inc., September 1979, pp. J-1 through J-5.

The TPM did not, however, create an absolute floor price for imported steel. In fact, transaction prices below trigger prices could and did occur in certain product markets without triggering antidumping investigations by reason of Commerce Department "preclearance," which permitted specified products to be sold below trigger prices. 1/ Preclearance to sell below trigger price was granted when a foreign producer demonstrated that its costs of production for a specific product were lower than those in Japanese mills.

In March 1980, U.S. Steel filed antidumping petitions against the EC countries and the TPM was suspended. The petitions were withdrawn later that year in return for an antisurge provision in the TPM and a significant increase in the trigger price. Petitions were again filed by U.S. Steel and six other domestic steel producers in January 1982, and the TPM was again suspended. These petitions were withdrawn in October 1982 after an agreement was reached with the EC on a voluntary restraint program.

Price trends

This section analyzes the trends in prices of the steel products subject to this investigation, as measured by the average unit values of domestic shipments and imports. 2/ Data cover the period January 1981-December 1983, by quarters, and are based on questionnaire responses of domestic producers and official import statistics of the Department of Commerce. 3/ Domestic and import average-unit-value trends are presented for the following carbon and alloy steel product groups: all products subject to this investigation; ingots, blooms, billets, slabs, and sheet bars; plates; sheets and strip; wire rods; wire and wire products; railway-type products; bars; structural shapes and units; and pipes and tubes and blanks therefor. In addition, data were collected and compiled for 22 subcategories of products which aggregate into

1/ See American Metal Market, Aug. 5 and 6, 1981. Also see Certain Steel Wire Nails from Japan, the Republic of Korea, and Yugoslavia: Determination of the Commission in Investigations Nos. 731-TA-45, 46, and 47 (Preliminary) . . ., USITC Publication 1175, August 1981, p. A-8.

2/ The Commission has also collected extensive information on actual transaction prices in questionnaires sent to several hundred purchasers of the steel products subject to this investigation. This information is presented later in the report. Those data allow direct comparisons to be made between prices of domestic products and prices of imported products. The average-unit-value data presented in this section do not allow such direct comparisons for two principal reasons: they are calculated on different bases (domestic average unit values are f.o.b. U.S. point of shipment; import average unit values are essentially f.o.b. foreign port of exportation) and they are calculated on broad product groupings which include widely varied, and possibly changing, product mixes. Nevertheless, an analysis of average unit values is generally a reliable indicator of price trends and should reflect any discounting or price reductions that have occurred.

3/ Usable data were provided by 47 domestic producers.

6 of the 9 basic product groups. 1/ Tables containing average unit values and indexes for these subcategories of products are available for reference in the Office of Investigations and the Office of Economics.

Three domestic unit value trends are analyzed: the first covers domestic shipments by integrated producers, the second reflects shipments by nonintegrated producers, and the third covers shipments by firms that process purchased semifinished steel products, but do not produce raw steel. Import unit value trends are analyzed separately for two countries (Canada and Japan) and for four groups of countries (the EC; developed countries other than Canada, Japan, and EC members; developing countries other than CBERA countries; and CBERA countries), as well as for all countries combined.

All products subject to this investigation.--Average unit values of U.S. producers' domestic shipments of all products subject to this investigation, by types of producers, are shown in table 49. Indexes of these average unit values are shown in table 50 and figure 6. As shown, average unit values generally rose during 1981, fell during 1982, and then leveled off in 1983. Although the trends for all three types of producers were similar, average unit values of shipments by nonintegrated producers were consistently higher than those of integrated producers, and average unit values of shipments by steel processors were the highest of all. 2/ Average unit values for all three types of producers were lower in 1983 than they were in 1981, with the largest decline being shown for nonintegrated producers.

Average unit values of imports of all products subject to this investigation are shown in table 51, and indexes of these values are shown in table 52 and figures 7 and 8. Their trend is similar to that of U.S. producers' domestic shipments, and imports from each of the specified sources had lower unit values during 1983 than they did during 1981. The unit value decline was sharpest for imports from developing countries, and least for imports from Canada.

1/ There are no subcategories for ingots, blooms, billets, slabs, and sheet bars; plates; or wire rods. For sheets and strip, the subcategories are hot-rolled, cold-rolled, further advanced--galvanized, and further advanced--other than galvanized. For wire and wire products, the subcategories are wire; barbed and twisted wire; wire strand; wire ropes, cables, and cordage; wire fencing; and brads, nails, spikes, staples, and tacks. For railway-type products, the subcategories are rails; joint bars, tie plates, and track spikes; and RR axles and wheels, parts thereof, and axle bars. For bars, the subcategories are deformed concrete reinforcing bars, other hot-rolled bars, and other cold-finished bars. For structural shapes and units, the subcategories are light structural shapes, heavy structural shapes, sheet piling, and fabricated structural units. And for pipes and tubes and blanks therefor, the subcategories are oil well products and all others.

2/ Since "processors" buy semifinished products and advance them in condition, their product mix generally consists of a greater proportion of higher value products than does the product mix of integrated and nonintegrated steel producers.

Table 51.—Carbon and alloy steel products subject to this investigation: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March	$428	$558	$485	$415	$413	$4104	$478
April-June	433	550	479	421	443	1803	485
July-September	456	591	485	425	449	1599	504
October-December	491	620	486	447	459	302	521
1982:							
January-March	480	645	574	488	459	286	563
April-June	491	704	540	437	438	278	562
July-September	443	658	473	375	385	258	508
October-December	434	537	380	310	349	255	412
1983:							
January-March	381	450	390	301	306	254	375
April-June	367	450	370	317	296	233	362
July-September	388	428	370	302	294	224	355
October-December	377	408	359	317	310	231	358

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table 52.—Carbon and alloy steel products subject to this investigation: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

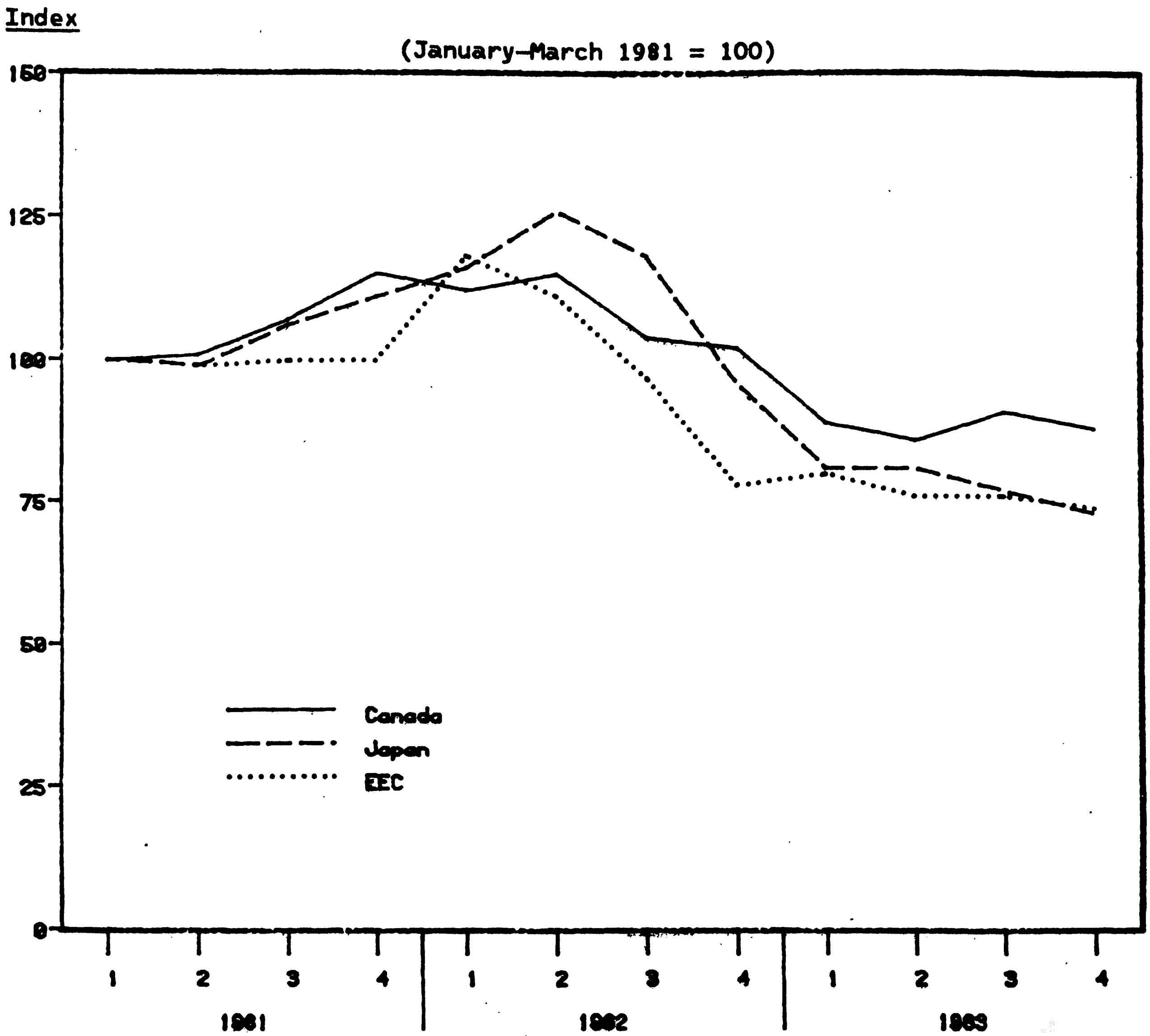
(January–March 1981 = 100)

Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March	100	100	100	100	100	100	100
April-June	101	99	99	101	107	44	101
July-September	107	106	100	102	109	39	105
October-December	115	111	100	108	111	7	109
1982:							
January-March	112	116	118	118	111	7	118
April-June	115	126	111	105	106	7	118
July-September	104	118	97	90	93	6	106
October-December	102	96	78	75	85	6	86
1983:							
January-March	89	81	80	73	74	6	78
April-June	86	81	76	76	72	6	76
July-September	91	77	76	73	71	5	74
October-December	88	73	74	76	75	6	75

1/ Excludes Caribbean Basin (CBERA) countries.

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

Figure 7.—Carbon and alloy steel products subject to this investigation: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



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

Table 49.—Carbon and alloy steel products subject to this investigation: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(Per ton)

Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	$466	$581	$949
April-June	479	598	955
July-September	504	646	982
October-December	507	669	1002
1982:			
January-March	519	687	988
April-June	502	613	889
July-September	471	506	875
October-December	449	504	524
1983:			
January-March	444	493	924
April-June	439	474	814
July-September	438	487	827
October-December	442	468	791

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

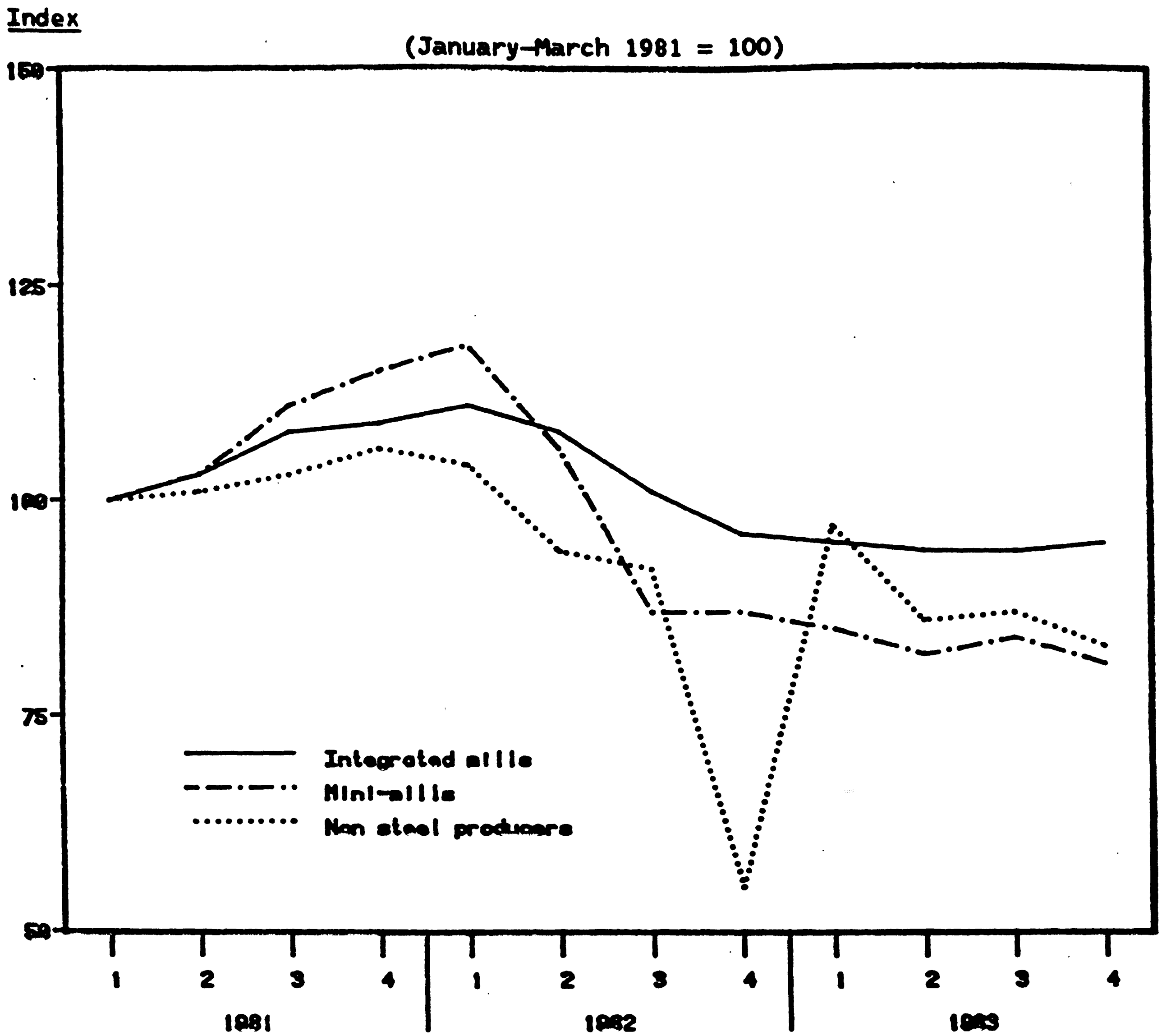
Table 50.—Carbon and alloy steel products subject to this investigation: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(January-March 1981 = 100)

Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	100	100	100
April-June	103	103	101
July-September	108	111	103
October-December	109	115	106
1982:			
January-March	111	118	104
April-June	108	106	94
July-September	101	87	92
October-December	96	87	55
1983:			
January-March	95	85	97
April-June	94	82	86
July-September	94	84	87
October-December	95	81	83

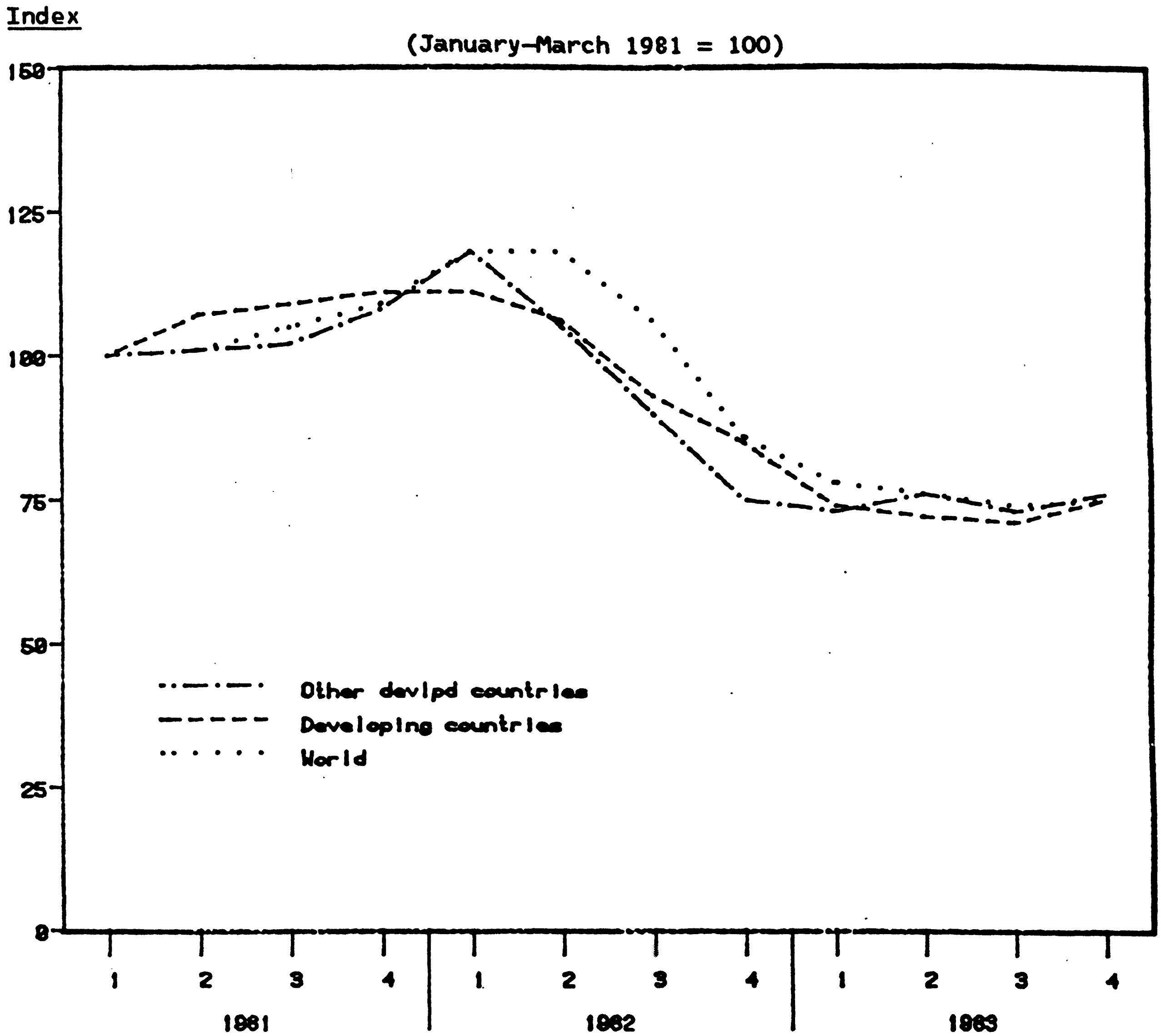
SOURCE: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 6.—Carbon and alloy steel products subject to this investigation: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983



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

Figure 8.—Carbon and alloy steel products subject to this investigation: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



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

Ingots, blooms, billets, slabs, and sheet bars.--Demand for these semifinished carbon and alloy steel products is derived demand directly dependent on the demand for the finished products they are used to produce (plates, sheets and strip, structurals, bars, and so forth). As market conditions impact on the demand for, and prices of, the steel products that create the demand for the semifinished products, such factors also impact on the prices of these basic steel forms.

Domestic unit values.--Quarterly unit values of domestic shipments of ingots, blooms, billets, slabs, and sheet bars by integrated and non-integrated producers are presented in appendix M, table M-1 (these products are not produced by the third type of producer). Indexes of the average values are shown in table M-2 and figure N-1 (app. N). Average unit values for both types of firms reflect a similar general pattern, but with some noticeable differences. An erratic increase in the level of prices carried through 1981 into early 1982. At that point, the downturn in unit values of integrated producers was gradual, but the downturn for nonintegrated producers shows a sharp drop, from an index high of 142 (April-June 1982) to a low of 84 (October-December 1982). In 1983, unit value indexes for integrated firms were from 6 to 34 points below those in January-March 1981 during the first three quarters, but they rose sharply in October-December, to 106. The indexes for nonintegrated firms fluctuated, ending 1983 at 102. Although the general trend is similar, in eleven of twelve quarters the average unit values of shipments by nonintegrated producers were higher than those of integrated producers. Whether because of difference in product mix, the degree of domestic and/or import competition, or strength of product demand, the unit values of shipments by the nonintegrated firms ranged from an annual average of $79 to $168 higher than those of integrated firms.

Import unit values.--Quarterly unit values of imports of ingots, blooms, billets, slabs, and sheet bars are presented in table M-3, and indexed in table M-4; figures N-2 and N-3 show these data in graphic form. Quarterly unit values of products imported from Canada reflect an irregular pattern of increased unit values from the base period through April-June 1982, although the 17-percent overall increase in that period was notched by dips of 3 and 9 percent in two of the six quarters. Canada's indexed average unit values declined by 23 points in July-September 1982, and then slid to a period low of 84 in April-June 1983. The average unit values of imports from Japan show an irregular but continuing increase from a base of 100 in April-June 1981 to a level of 182 in October-December 1983. 1/ The unit values of imports from the EC and other developed countries follow a steady downward trend throughout the period, to levels approximately 65 percent below those of January-March 1981. The overall trend in the unit values of imports from all sources (world) closely tracks that for imports from Canada because of that country's dominant position as a supplier (there is a significant trade in these products between Canada and the United States because of the proximity of firms on either side of the border).

Plates.--Market conditions in sectors that require steel plate as an input, such as machinery and industrial equipment, shipbuilding, and

1/ April-June 1981 was used as the base period because a product mix anomaly distorted the data for January-March.

construction, are associated with demand for carbon steel plate and its price. The aggregate real value (in 1977 dollars) of producer's shipments of machinery and industrial equipment, shipbuilding, and construction put in place for three major plate-using segments of the construction sector--private and public nonresidential building construction and public nonbuilding construction--increased by 2.5 percent from 1980 to 1981, decreased by 5.9 percent in 1982, and continued to decline, by 6 percent, in January-September 1983. During October-December 1983 this trend continued. 1/2/ In a similar fashion, apparent consumption of steel plate increased in 1981, decreased in 1982, and continued to decline in 1983. As demand for plate falls, competition and discounting increase, and the price of plate softens. Plate prices generally increased in 1981, decreased in 1982, and continued to fall in 1983. 3/

Domestic unit values.--Unit values of domestic shipments of plates by integrated and nonintegrated mills are presented in table M-5, and indexed in table M-6 and figure N-4.

Quarterly unit values of domestic shipments of plate by integrated mills increased steadily in 1981, peaked in January-March 1982 at a level 7 percent above the base period (January-March 1981), then decreased gradually but significantly during 1982 and 1983. The index in October-December 1983 was 81 (19 percent, or $82 per ton, below the base-period level).

Average unit values of domestic shipments by nonintegrated mills reflect a quite different trend. They increased steadily in 1981, held at 11 percent above the base period during January-June 1982, then climbed to an index of 115 in July-September 1982, before falling steadily to a period low of 97 in April-June 1983. During July-December 1983, their unit values climbed to 3 to 4 points above the base-period level. Unit values for the nonintegrated mills were sharply higher than unit values for integrated mills in each quarter, ranging from $190 to $292 more per ton.

Import unit values.--Average unit values of imports of plates are presented in table M-7, and indexed in table M-8 and figures N-5 and N-6. Quarterly unit values of imports from Canada increased by 10 percent in April-June 1981, then held at that level through January-March 1982. The trend reversed in April-June 1982 as the unit value of imported Canadian plate fell to 102. It then recovered to end the year at 113. In 1983, however, unit values dropped sharply to end the period 25 percent, or $88 per ton, lower than those in the base period.

1/ Real values for machinery and industrial equipment and shipbuilding were based on current-dollar values reported by the Bureau of Census and deflated by the overall PPI reported by the BLS; real values for construction put in place were based solely on Bureau of Census data.

2/ Shipbuilding includes military tanks. Public nonbuilding construction includes such construction projects as bridges, military facilities, dams, sewer and water supply systems, railways, and subways.

3/ See Certain Carbon Steel Products From Argentina, Australia, Finland, South Africa, and Spain, . . ., USITC Publication 1510, March 1984, pp. I-34 through I-43.

Average unit values of plates imported from Japan reflect a very similar pattern through January-March 1983, but they turned sharply upward after that, to end the period at an index of 109, or $35 per ton above that of the base period. Japan's products had the highest average unit values of imports throughout 1981-83.

Quarterly unit values of plates imported from the EC decreased in 1981 and 1982 and then held fairly steady in 1983 at a level about 30 percent ($100 per ton) below that of the base period. Average unit values of plates imported from other developed countries rose by 10 percent in 1981, but then followed the declining trend of imports from the EC through 1983.

Average unit values of plates imported from developing countries were consistently lower than those of imports from other sources. They held fairly steady in 1981, and then exhibited the sharpest decline of all identified sources through 1983, ending that year at a level 34 percent below that of the base period.

Sheets and strip.--Market conditions in industries that require carbon and alloy steel sheets and strip as an input, such as automobiles, construction, energy, and utilities, have an effect on demand and prices for these products. For example, the automobile industry has experienced declining demand for large cars and has begun to produce smaller, lighter cars. This has reduced the demand for steel sheet and, in turn, has had a dampening effect on sheet prices. The industrial production index for automobiles showed a strengthening market in the beginning of 1981, followed by a 24-percent decline by the first quarter of 1982. Low production levels persisted throughout 1982, although production of automobiles in 1983 rose to a level 30 percent higher than that in the first quarter of 1981.

Other large users of sheets are the household appliance industry and the heating and air-conditioning industry. Industrial production in these markets followed a trend similar to that of the automobile industry--a stable market during 1981, a decreasing market in 1982, and a strengthening market through 1983. According to industry sources, discounting of prices for sheets and strip increased during 1982 and continued during 1983. 1/ Discounts narrowed in recent months, and extras reappeared in galvanized sheet prices early in 1984.

Domestic unit values.--Unit values of domestic shipments of carbon and alloy sheets and strip by integrated mills, nonintegrated mills, and nonsteel producers are presented in table M-9, and indexed in table M-10; figure N-7 shows these data in graphic form.

Quarterly unit values of domestic shipments of sheets and strip by integrated mills increased slightly and irregularly throughout 1981-83, to end the period at a level 3 percent higher than that of the base period. Average

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1/ See Certain Carbon Steel Products from Spain, . . ., USITC Publication 1331, December 1982, pp. A-40 and 41; Hot-Rolled Carbon Steel Products from France, . . ., USITC Publication 1206, January 1982, pp. A-37-40; and Certain Carbon Steel Products from Argentina, Australia, Finland, South Africa and Spain, . . ., USITC Publication 1510, March 1984, pp. II-15-17 and III-16-19.

unit values of shipments by nonintegrated producers were similar, ending the period at a level 2 percent above that of the base period. Unit values of shipments by nonsteel producers, however, rose sharply in early 1983 and ended the period 22 percent above the level of January-March 1981. As shown in table M-9, the average unit values of the nonsteel producers were about two and one-half times greater than the unit values of the other two types of producers, indicating that these products (of nonsteel producers) are specialty items.

Import unit values.--Unit values of imports of sheets and strip are presented in table M-11, and indexed in table M-12 and figures N-8 and N-9. Indexes of average unit values of imports from Canada increased steadily to a period high of 115 in January-March 1982, then turned downward to reach a period low of 100 in July-September 1983. A slight increase to an index of 102 is shown in October-December 1983.

Average unit values of sheets and strip imported from Japan reflect a different pattern. Their index fell to 97 at yearend 1981, 95 at yearend 1982, and 89 at yearend 1983. Average unit values for sheets and strip imported from the EC followed a similar general trend, but fell slightly more, ending 1983 at an index level of 86. The largest drop in average unit values is shown for other developed countries and developing countries, which ended 1983 at index levels of 78 and 77, respectively. The lowest average unit values were consistently those of imports from developing countries.

Wire rods.--Prices of carbon and alloy steel wire rod depend on demand for and supply of wire and wire products. Such products include fencing, welding rods, nails, wire strand, wire rope, springs, and a wide variety of articles used in construction and manufacturing. The mini recession late in 1981 and the major recession that began in mid-1982 impacted on demand for wire products. Soft demand and increased domestic and import competition put downward pressure on sales and prices for wire products and, in turn, on sales and prices for wire rods. Recent Commission investigations covering carbon steel wire rod indicate that domestic producers sold their products for below list prices during 1982 and 1983. Widespread discounting, lower import prices, and freight absorption characterized the market. 1/

Domestic unit values.--Average unit values of domestic shipments of carbon and alloy steel wire rods by integrated and nonintegrated mills are presented in table M-13, and indexed in table M-14 and figure N-10.

Indexes of quarterly unit values of shipments of wire rods by integrated mills increased in 1981 and the first half of 1982 to a period high of 115. The trend then reversed as the recession deepened and competition for scarce orders quickened; the index fell irregularly to 98 in October-December 1983, representing a drop of $9 per ton from the average unit value of shipments in January-March 1981.

1/ See Carbon Steel Wire Rod from Brazil and Trinidad and Tobago, . . ., USITC Publication 1444, April 1984; Carbon Steel Wire Rod from Venezuela, . . ., USITC Publication 1338, February 1983; and Carbon Steel Wire Rod from Argentina, Mexico, Poland, and Spain, . . ., USITC Publication 1476, January 1984.

Average unit values of domestic shipments by nonintegrated producers began falling before those of integrated producers, and fell further, ending 1983 at an index level of 91 ($34 per ton below the average unit value of shipments in January-March 1981).

Import unit values.--Average unit values of imports of wire rods are presented in table M-15, and indexed in table M-16 and figures N-11 and N-12.

Indexes of average unit values of imports from Canada increased irregularly during the early part of the period, reaching a period high of 106 in January-March 1982. The index then fell gradually to 96 by yearend 1983. Indexes of average unit values of imports from Japan and the EC followed the same general trend, although they fell more in 1982 and ended 1983 at somewhat lower levels (92 and 95, respectively). Indexes of average unit values of imports from other developed countries and developing countries also exhibited some increases through mid-1982, but fell precipitously in 1983, closing the year at 61 and 66, respectively. Those levels are $170 and $107 per ton lower than average unit values of January-March 1981. Again, average unit values of imports from developing countries were consistently and significantly below those of imports from other sources.

Wire and wire products.--Market conditions in a broad, diverse group of industries create the demand for carbon and alloy wire and wire products and impact on their prices. Among these are residential construction (nails), nonresidential construction (prestressed concrete steel wire strand and wire rope), consumer durables (hangers), furniture (springs), and the fastener industry (cold-heading wire). The recent cyclical decline in these industries had an impact on the trend in prices of wire and wire products.

Domestic unit values.--Average unit values of domestic shipments of carbon and alloy steel wire and wire products by the three types of producers are presented in table M-17, and indexed in table M-18 and figure N-13.

Indexes of quarterly average unit values of shipments of wire and wire products by integrated mills increased irregularly to a period high of 113 in October-December 1982. The index turned sharply downward in 1983, however, ending that year at 97, or $26 per ton below the level of January-March 1981. Average unit values of shipments by nonintegrated mills drifted irregularly downward throughout the period, ending 1983 at a level 6 percent ($38 per ton) below that of January-March 1981. The nonsteel producers had a similar experience, except that their average unit values fell more sharply during 1982 and 1983. They ended the period at an index level of 79, which represented a drop of $233 per ton.

Throughout the period, the average unit values of shipments by nonintegrated producers were lower than those of the other two types of producers.

Import unit values.--Average unit values of imports of wire and wire products are presented in table M-19, and indexed in table M-20; figures N-14 and N-15 show these data in graphic form.

Quarterly unit values of imports of wire and wire products from Canada increased by 7 percent in 1981, declined by that same amount in 1982, and then recovered somewhat in 1983 to end the period at an index level of 104. Average unit values of imports from Japan reveal a somewhat similar trend, but their increase was less in 1981, their decrease more in 1982, and there was no recovery in 1983. They ended the period at an index level of 90 ($71 per ton less than their average unit value in January-March 1981). Average unit values of imports from the EC fell the most during this 3-year period, ending 1983 at a level 19 percent ($157 per ton) below that of January-March 1981. The average unit values of imports from other developed countries and developing countries fell by 16 percent and 10 percent, respectively, during the period, and those two source groups consistently had the lowest average unit values of those shown.

Railway-type products.--Demand for steel rails and price trends for such products depend largely on the level of activity in the railroad industry. The railroads, in turn, depend heavily on the strength of the economy and the level of Government spending. Furthermore, gasoline and oil prices have had an effect on railroad construction (and concurrent consumption of steel rails). Among the main reasons for the lack of development of domestic railroads during the last several decades were low gasoline and oil prices, the Government's preference to build highways rather than railroads, the lack of investment, and the diversion of funds destined for maintenance of ways. The relatively short revival of interest in investment in railroads in the mid-1970's came about after the sudden increase in oil prices by the Organization of Petroleum Exporting Countries. Recently, however, as a result of lack of capital and high interest rates, the demand for rails has fallen, resulting in an increase in competition among suppliers of steel railway-type products, and discounting and softening of prices for those products.

Domestic unit values.--Average unit values of domestic shipments of carbon and alloy steel railway-type products by integrated and nonintegrated mills are presented in table M-21, and indexed in table M-22 and figure N-16.

Average unit values of shipments by integrated mills increased 10 percent by July-September 1981, then declined to an index level of 104 at yearend. They held at that level through April-June 1982, rose to 109 in July-September, then fell sharply to end the subject period at a level 20 percent ($101 per ton) below that of January-March 1981. Average unit values of shipments by nonintegrated mills varied less than those of integrated mills and often moved in the opposite direction. They also trended downward, however, ending the period at an index level of 92. 1/

Import unit values.--Average unit values of imports of carbon and alloy steel railway-type products are presented in table M-23, and indexed in table M-24 and figures N-17 and N-18. These data show patterns of sharp downturns and upturns in many periods, indicating that product mixes have likely changed. In the aggregate, however, there has been a general decline in average unit values.

1/ Note that unit values for the nonintegrated producers are roughly 50 percent above those of integrated producers, a reflection of a difference in product lines and product mix.

Bars.--Some of the same factors of demand that impact on the prices of plate and sheet are relevant with respect to carbon and alloy steel bars. Market conditions in industries that require carbon and alloy steel bars as an input, such as automobiles, household appliances, and construction, impact on the demand for, and prices of, bars. Activity in the capital equipment market, reflecting demand for producer durable goods, also has a strong effect on the demand for, and prices of, bars. Thus, the cyclical decline in demand for capital equipment in 1981 and 1982, and the following upturn in 1983 had an impact on the trend in prices of bars. New orders in the capital goods industries declined by 22 percent from mid-1981 to the first quarter of 1983 before turning upward. With some variance, the trends in bar shipments and prices reflect this pattern. 1/

Domestic unit values.--Average unit values of domestic shipments of carbon and alloy steel bars by the three types of producers are presented in table M-25, and indexed in table M-26; figure N-19 shows these data in graphic form.

For all three types of producers there was a general pattern of improvement in 1981, decline in 1982, and then stability or slight improvement in 1983. Average unit values for the nonintegrated producers were consistently the lowest, and they also exhibited the largest decline (13 percent) over the entire period. Average unit values for integrated producers ended the period at a level 7 percent below that of January-March 1981, and the nonsteel producers ended at virtually the same level at which they had begun.

Import unit values.--Average unit values of imports of carbon and alloy steel bars are presented in table M-27, and indexed in table M-28 and figures N-20 and N-21. In the aggregate, they showed fairly strong increases through mid-1982, and then sharp declines well into 1983.

Quarterly unit values of imports from Canada followed the general trend through 1982. They rose in each quarter after January-March 1983 to end the period at a level 18 percent above that of January-March 1981.

Average unit values of imports from Japan remained close to the base-period level in 1981, but jumped to an index of 112 in April-June 1982. From that period high, the index slid steadily to a period low of 87 at yearend 1983.

Quarterly unit values of bars imported from the EC reflect a somewhat different pattern than that of imports from Japan. They dipped by 8 percent in 1981, then jumped to 5 percent above the beginning price level in January-March 1982. During the remainder of the period, their index declined steadily to a period low of 72 in April-June 1983, and ended the year at a level 27 percent ($155 per ton) below that of January-March 1981.

Indexes of average unit values of bars imported from other developed countries exhibited the general upward trend through mid-1982 (reaching 124), and they also fell through the first half of 1983 (to 82). Then the trend reversed and they closed the year at 95.

1/ See Certain Carbon Steel Products From Spain, . . ., USITC Publication 1331, pp. A-10 and A-44.

Average unit values of bars imported from developing countries reflected the sharpest increases through April-June 1982, when they reached an index of 135. They then fell by more than imports from the other sources, closing the period at an index level of 88. In addition to their volatile nature, average unit values of imports from these countries were also consistently and markedly the lowest of any source shown.

Structural shapes and units.--Demand and prices for steel structural shapes depend, like those for plate, largely on the level of activity in the construction industry. The construction industry, in turn, is highly influenced by the business cycle, particularly movements in interest rates and the level of Government spending. Because of falling construction levels, demand for carbon steel structural shapes fell sharply in 1982 and continued to decline in 1983. As demand for structural shapes fell, competition and discounting increased and the price of structurals softened. 1/

Domestic unit values.--Average unit values of domestic shipments of carbon and alloy steel structural shapes and units by the three types of producers are presented in table M-29 and indexed in table M-30; figure N-22 shows these data in graphic form.

Quarterly unit values of domestic shipments by integrated mills increased steadily to an index level of 112 in April-June 1982. The index then slipped steadily downward to end 1983 at a period low of 92, or $35 per ton below the level of January-March 1981. Average unit values of shipments by nonintegrated mills did not improve as much as those of integrated mills in 1981, and they began their decline earlier (January-March 1982). They closed the period at an index level of 82 ($64 per ton below the level of January- March 1981). Also of note is the fact that the average unit values of shipments by the nonintegrated producers were consistently and sharply lower than those of the other two types of producers.

Quarterly unit values of shipments by nonsteel producers reflect an irregular but stronger pattern throughout the subject period. Their index jumped 12 points in the first 9 months of 1981, but fell to 97 in October-December of that year. In 1982 and 1983 their index bounced back and forth between 94 and 108. Although it reached 108 as recently as July-September 1983, it closed the period at 94, or $27 per ton below the level of January-March 1981.

Import unit values.--Average unit values of imports of carbon and alloy steel structural shapes and units are presented in table M-31, and indexed in table M-32 and figures N-23 and N-24. The general trend is one of improvement in 1981 and decline in 1982 and 1983.

Quarterly unit values of imports from Canada increased by 15 percent through July-September 1981. They then fell steadily to an index level of 100 in January-March 1982 before turning upward to a yearend level of 117. A

1/ See prehearing report to the Commission on Certain Carbon Steel Products From EC Countries, pp. V-40 through V-57, August 1982; and Certain Carbon Steel Products from Argentina, Australia, Finland, South Africa, and Spain, . . ., USITC Publication 1510, March 1984, pp. IV-16 through IV-21.

sharp drop in the index marks the trend in 1983. The index at yearend stood at 94 ($26 per ton below the level of January-March 1981).

Quarterly unit values of imports from Japan were fairly flat in 1981, but increased from an index of 102 at yearend to a level of 121 in July-September 1982. During the subsequent quarters the index fell steadily to end 1983 at a period low of 79 ($78 per ton lower than the level of January-March 1981).

Average unit values of imports from the EC reflect a weaker pattern, although they also ended 1983 at an index level of 79. Their high point was only an index of 102 (July-September 1981 and January-March 1982) and their decline began earlier, in April-June 1982.

Average unit values of imports from other developed countries increased steadily through 1981 and January-March 1982 to an index level of 116. Then their index trended down to a period low of 71 in July-September 1983. At yearend 1983 it stood at 77, or $81 per ton below the level of January-March 1981. Average unit values of imports from developing countries fluctuated erratically, but were sharply lower in 1983 than they were in 1982 or 1981.

Pipes and tubes and blanks therefor.--Demand for carbon and alloy steel pipes and tubes is a derived demand dependent on a wide range of economic activities such as nonresidential construction (plumbing and sprinkler pipe systems), home- and office-furniture manufacturing (tubing), public construction activity (line pipe), and oil well drilling activity (tubing, casing, and drill pipe). The recession dampened demand for pipes and tubes in all of these areas of economic activity. Further, beginning late in 1982 the oil glut and subsequent decline in prices sharply curtailed new oil exploration and drastically cut the number of drilling rigs in operation. As demand for pipes and tubes declined, domestic and offshore competition stiffened and prices declined. Discounting from list price was a common pattern beginning in 1981, except for oil-country tubular goods, prices for which remained strong through much of 1982. 1/

Domestic unit values.--Average unit values of domestic shipments of carbon and alloy steel pipes and tubes and blanks therefor by integrated and nonintegrated producers are presented in table M-33 and indexed in table M-34; figure N-25 shows these data in graphic form.

Quarterly unit values of domestic shipments of pipes and tubes by integrated mills increased quarter by quarter during 1981 and January-March 1982, reaching an index of 135. The downward trend during the subsequent quarters of 1982 was steep, however, and a period low of 72 was reached in October-December. In 1983, the index climbed and held at a level that averaged about 82 (about $180 per ton below the level of January-March 1981).

Quarterly unit values of shipments by nonintegrated mills did not exhibit the same early period strength as did those of integrated mills, and their decline into 1983 was much sharper. They ended 1983 at a period low index of 62 ($578 per ton below the level of January-March 1981).

1/ See Certain Welded Carbon Steel Pipes and Tubes from the Republic of Korea and Taiwan, . . ., USITC Publication 1389, June 1983, pp. A-31 to A-36.

Import unit values.--Average unit values of imports of carbon and alloy steel pipes and tubes and blanks therefor are presented in table M-35, and indexed in table M-36 and figures N-24 and N-25. In the aggregate, average unit values rose sharply through mid-1982 and then fell by one-half by yearend 1983. Average unit values for imports from each of the specified sources followed a strikingly similar pattern, although their highs and lows varied somewhat. Period-high indexes were reached by imports from each source in January-June 1982. They ranged from 124 for developing countries to 141 forJapan, the EC, and other developed countries. Period-low indexes were reached in July-December 1983 for all sources except developing countries, which reached their low in April-June. Those lows ranged from 65 for other developed countries to 81 for the EC.

Transaction-price comparisons

To enable direct comparisons to be made between imported and domestic products, the Commission requested data from service centers/distributors (SSC's) and end users located in seven market areas 1/ on the prices they paid in specific transactions for 32 representative steel mill products, 2/ by quarters, from July 1982 through December 1983.

Purchasers were asked to provide prices paid, on a delivered basis, for a large representative purchase of the subject product in each quarter. For comparability, the purchasers were identified by location, and questionnaires were sent to more than 600 firms located in the following market areas: Atlanta, Chicago, Detroit, Houston/New Orleans, Los Angeles/San Francisco, Philadelphia/New York, and Portland/Seattle. More than 200 purchasers provided usable transaction price data. These data are the basis for the analysis of price advantage or disadvantage between the specified competing domestic and imported carbon and alloy steel products.

Plates.--Table 53 shows the weighted-average price advantage or disadvantage (-) of imported plates over domestic plates, by class of customer and by market area, in dollars per short ton and in percent. These data reflect a general pattern of lower priced imports or, stated in another way, a deep, broad-based price disadvantage for domestic plates. This pattern extends across all market areas. For purchases of product 1 (plates in cut lengths) by SSC's, 40 of 41 comparisons reflect an import price advantage. In 14 instances that price advantage was more than $100 per ton, or more than 21 percent. The import advantage amounted to more than $50 per ton (14 percent or more) in 29 instances. Averaged over the 6-quarter period, the spread between import prices and domestic prices ranged from 8 to 10 percent in the western market areas and from 17 to 29 percent in the other five areas.

1/ Because of the relatively high freight costs for steel products, delivered purchase prices vary significantly in different geographic markets. This is particularly apparent in the western part of the country, where imports account for about 50 percent of apparent consumption (see app. O).
2/ A list of the specified products is presented in app. P.

Table 53.--Hot-rolled carbon steel plate: Average margins by which imports were priced (above) or below competing domestic products, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 1														
Jul.-Sept 1982--	$115	22	$133	26	$134	26	$130	25	$91	18	$110	22	-$18	-4
Oct.-Dec 1982---	107	23	115	25	-	-	72	17	33	8	78	17	62	14
Jan.-Mar 1983---	108	26	91	21	201	47	134	33	7	2	70	18	48	13
Apr.-Jun 1983---	83	20	104	25	110	25	26	8	23	7	58	14	14	4
Jul.-Sept 1983--	95	23	131	32	127	31	52	16	25	8	92	24	55	15
Oct.-Dec 1983---	57	15	70	19	65	17	12	4	19	6	44	12	14	4
Product 2														
Jul.-Sept 1982--	-	-	-	-	173	31	185	34	62	12	145	27	-43	-10
Oct.-Dec 1982---	156	30	153	29	118	22	177	34	81	16	82	18	-25	-6
Jan.-Mar 1983---	126	27	106	23	148	32	135	30	124	27	73	17	48	12
Apr.-Jun 1983---	105	23	143	31	176	37	135	30	-	-	101	23	60	16
Jul.-Sept 1983--	136	31	165	38	175	39	79	23	-40	-12	106	26	-24	-7
Oct.-Dec 1983---	103	25	87	22	78	20	57	15	-1	0	37	10	-6	-2
Product 3														
Jul.-Sept 1982--	-	-	-$37	-11	$20	5	-	-	-	-	-$39	-12	$9	2
Oct.-Dec 1982---	-	-	35	11	21	4	-	-	-	-	-22	-7	22	6
Jan.-Mar 1983---	-	-	-50	-18	-17	-5	-	-	-	-	22	7	22	7
Apr.-Jun 1983---	-	-	-28	-10	74	19	-	-	$22	7	9	3	-	-
Jul.-Sept 1983--	-	-	-37	-12	-	-	$1	0	6	2	-1	0	25	7
Oct.-Dec 1983---	-	-	-31	-10	-	-	-24	-8	5	1	-13	-4	-	-
End User														
Product 1														
Jul.-Sept 1982--	-	-	67	14	-	-	81	17	-	-	-	-	-	-
Oct.-Dec 1982---	-	-	147	30	-	-	87	18	40	11	-	-	-	-
Jan.-Mar 1983---	14	4	-	-	-	-	58	14	-	-	-	-	-	-
Apr.-Jun 1983---	77	22	-54	-12	-	-	57	13	30	9	-	-	-	-
Jul.-Sept 1983--	-	-	-20	-4	-	-	76	17	-	-	-	-	-	-
Oct.-Dec 1983---	32	9	150	31	-	-	63	15	-	-	-	-	-	-
Product 2														
Jul.-Sept 1982--	-	-	-	-	74	14	-	-	120	21	-	-	-	-
Oct.-Dec 1982---	-	-	173	35	79	15	-	-	-	-	-	-	-	-
Jan.-Mar 1983---	19	5	-	-	-	-	-	-	-	-	-	-	-	-
Apr.-Jun 1983---	-	-	-	-	27	5	-	-	159	34	-	-	-	-
Jul.-Sept 1983--	-	-	-	-	-12	-3	-	-	-	-	-	-	-	-
Oct.-Dec 1983---	67	16	93	23	94	23	-	-	62	15	-	-	-	-
Product 3														
Oct.-Dec 1982---	-	-	-	-	-	-	-	-	60	17	-	-	-	-
Apr.-Jun 1983---	-$57	-20	-	-	-	-	-	-	20	6	-	-	-	-

1/ See app. P for product specifications.

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

The 16 possible comparisons of purchase prices paid for product 1 by end users located in 4 market areas also show a strong pattern of import price advantage. In 10 instances that advantage amounted to $57 per ton (13 percent) or more. The average domestic price was below the import price in only two comparisons.

Purchase prices paid for product 2 (plates in cut lengths) by SSC's reflect a pattern quite similar to that of product 1. The imported product was priced $100 (23 percent) or more below the domestic product in 22 of 32 instances of lower priced imported plates. In five instances, the domestic product was priced from 2 to 12 percent below the competing prices of imported plates. Again, the price spread reflecting the period average import price advantage was less in the two western markets (14 to 20 percent) than in the other five markets (18 to 30 percent).

Comparable data on average purchase prices paid by end users located in 4 market areas show lower import prices in 11 of 12 comparisons. In three instances, the import price advantage was $120 (21 percent) or more. The import advantage ranged from $62 (15 percent) to $94 (23 percent) in six other comparisons.

Purchases by SSC's of plate product 3 (plates in coils) spanned six market areas. These data provided 25 comparisons, which show a mixed pattern of competitive price advantage or disadvantage. In 11 instances, the domestic plate product was purchased at a lower average price than imported plates. The domestic price advantage ranged from $22 (7 percent) to $39 (12 percent) in seven instances and amounted to $50 (18 percent) in one comparison. In nine comparisons, imported plate product 3 enjoyed a price advantage that ranged from $20 per ton (5 percent) to $74 per ton (19 percent).

Two of three comparisons of prices paid by end-user purchasers show import prices $20 per ton (6 percent) and $60 per ton (17 percent) below the competing domestic prices.

Sheets and strip.--Table 54 shows the weighted- average price advantage or disadvantage (-) of imported hot-rolled carbon steel sheets over competing domestic products. Comparisons of data in 37 instances show that purchase prices paid by SSC's for imports were below competing domestic product prices in 24 instances. The spread between import and domestic prices, however, was narrower than in plate prices. In 3 instances, the import price advantage ranged from $56 per ton (14 percent) to $64 per ton (20 percent), and in 11 comparisons, the import price advantage ranged from $17 (5 percent) to $36 per ton (12 percent). Of the 13 instances that show domestic prices to be lower than import prices, 7 are lower by $5 (2 percent) or less and 6 are lower by $9 (3 percent) to $19 (7 percent). The purchase price data from end users located in the Los Angeles market area show three instances of import price advantage and three of domestic price advantage. No clear pattern emerges from the price spreads, which range from a 2- to 13-percent domestic price advantage to one of 4 to 16 percent in favor of the imported product.

Cold-rolled carbon steel sheets.--Table 55 shows the weighted-average price advantage or disadvantage (-) of imported cold-rolled carbon steel sheets over competing domestic products. Comparisons of data in 40 instances

Table 54.--Hot-rolled carbon steel sheet: Average margins by which imports were priced (above) or below competing domestic products, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 4														
Jul.-Sept 1982--	-$5	-2	-$13	-4	-	-	-$19	-7	$14	4	-$3	-1	$7	2
Oct.-Dec 1982---	-4	-1	-13	-4	$31	10	-15	-5	56	14	-5	-2	23	7
Jan.-Mar 1983---	3	1	-	-	-	-	-13	-5	29	9	36	12	32	10
Apr.-Jun 1983---	14	4	60	20	64	20	2	1	5	2	20	6	2	1
Jul.-Sept 1983--	-	-	-3	-1	22	7	-9	-3	0	0	34	10	-2	-1
Oct.-Dec 1983---	11	4	27	9	-	-	5	2	26	7	17	5	-2	-1
End User														
Product 4														
Jul.-Sept 1982--	-	-	-	-	-	-	-	-	17	4	-	-	-	-
Oct.-Dec 1982---	-	-	-	-	-	-	-	-	27	7	-	-	-	-
Jan.-Mar 1983---	1	1	-	-	-	-	-	-	-7	-2	-	-	-	-
Apr.-Jun 1983---	-	-	-	-	-	-	-	-	-1	0	-	-	-	-
Jul.-Sept 1983--	-	-	-	-	-	-	-	-	-44	-13	-	-	-	-
Oct.-Dec 1983---	-	-	-	-	-	-	-	-	64	16	-	-	-	-

1/ See app. P for product specifications.

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

Table 55.--Cold-rolled carbon steel sheet: Average margins by which imports were priced (above) or below competing domestic products, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Imports price advantage or disadvantage (-) over competing domestic product in the - -

Product and Period 1/	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market/area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 5														
Jul.-Sept 1982--	$5	1	$14	3	-	-	$69	15	$0	0	$23	5	$63	13
Oct.-Dec 1982---	7	2	-8	-2	-	-	87	20	44	9	1	0	154	30
Jan.-Mar 1983---	-4	-1	46	12	$17	5	38	9	38	9	9	2	90	18
Apr.-Jun 1983---	44	10	38	9	10	3	80	17	4	1	35	9	82	17
Jul.-Sept 1983--	21	5	39	9	59	14	90	19	49	11	53	13	2	0
Oct.-Dec 1983---	45	10	58	13	16	4	84	17	40	9	60	14	-26	-6
End User														
Product 5														
Jul.-Sept 1982--	-	-	-	-	24	5	-	-	-	-	-	-	-	-
Oct.-Dec 1982---	10	2	-14	-3	-48	-11	13	3	-	-	-	-	-	-
Jan.-Mar 1983---	4	1	-	-	25	5	30	7	-	-	-	-	-	-
Apr.-Jun 1983---	37	9	-	-	28	5	24	6	-	-	213	42	-	-
Jul.-Sept 1983--	-	-	-	-	70	13	53	13	-	-	-	-	-	-
Oct.-Dec 1983---	18	4	-19	-4	-16	-3	74	17	-	-	282	46	-	-

1/ See app. P for product specifications.

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

show that imports were consistently priced below competing domestic products in sales to SSC's in each of the seven market areas. In 24 cases, the import price advantage ranged from $35 to $154 per ton (9 percent to 30 percent). The price spread favored imports by 5 percent or less in 12 instances and prices were equal in 1 instance. In the three other instances, domestic prices were lower than import prices by 1 to 6 percent. The import price advantage was consistently greater in the Houston/New Orleans market area, amounting to an average of $75 per ton (16 percent) for the six quarters.

Purchase prices paid by end users for cold-rolled carbon steel sheets, although more scattered in coverage, reflect a pattern of import prices predominantly lower than domestic prices of competing products. Prices paid in the Detroit area and the Houston/New Orleans area show an import price advantage that largely falls between $24 per ton (5 percent) and $74 per ton (17 percent). Four quarterly comparisons in the Atlanta market area reflect a small import price advantage (1 to 2 percent) in two instances and, in two other instances, an $18 per ton (4 percent) and $37 per ton (9 percent) price advantage. Domestic price advantages appear in four quarterly comparisons. In three comparisons, the advantage ranged from $14 to $19 per ton (3 to 4 percent) and in one instance it was $48 (11 percent).

Galvanized carbon steel sheets.--Table 56 shows the weighted-average price advantage or disadvantage (-) of imported galvanized carbon steel sheets over competing domestic products. Comparable but scattered data permitted price comparisons for product 6 in one market area and for product 7 in all seven market areas. Purchase prices paid in the Los Angeles/San Francisco market area by SSC's for product 6 provide a mixed pattern of competing prices. The domestic product was priced 7 to 8 percent ($36 to $39 per ton) below the average import price in two quarterly comparisons. In four quarters, however, an import price advantage appears, ranging from a low of $26 per ton (5 percent) to a high of $76 per ton (13 percent).

Comparable data for purchase prices paid by SSC's in 6 market areas for product 7 enables price comparisons in 29 instances. Imports were priced below the competing domestic product prices in 22 of these comparisons. In 10 cases, the import price advantage ranged from $12 per ton (or 3 percent) to $38 (or 7 percent). Domestic product 7 faced a greater price disadvantage in nine other instances in which imports were priced from $49 (9 percent) to $146 (26 percent) below the domestic price. In two comparisons domestic prices were 3 percent ($17-$19 per ton) below import prices and in one instance they had a 13 percent ($65 per ton) price advantage.

Nine quarterly comparisons were made of prices paid for product 7 by end users located in two market areas. The domestic price was 5 percent ($25 per ton) below the import price in a single quarter. In the other eight quarters, import prices were below domestic prices by margins ranging from $6 per ton (1 percent) to as much as $79 per ton (14 percent).

Wire rods (integrated producer comparisons).--Table 57 shows the average price advantage or disadvantage (-) of imported wire rods over those sourced from integrated producers. Price comparisons on wire rods are presented separately for products of integrated producers and minimills because their prices differ significantly (the greater efficiency and lower costs of minimills in producing wire rods enable them to sell rods for much lower prices).

Table 56.--Galvanized carbon steel sheet: Average margins by which imports were priced (above) or below competing domestic products, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 6														
Jul.-Sept 1982--	-	-	-	-	-	-	-	-	$76	13	-	-	-	-
Oct.-Dec 1982---	-	-	-	-	-	-	-	-	-39	-8	-	-	-	-
Jan.-Mar 1983---	-	-	-	-	-	-	-	-	-36	-7	-	-	-	-
Apr.-Jun 1983---	-	-	-	-	-	-	-	-	34	6	-	-	-	-
Jul.-Sept 1983--	-	-	-	-	-	-	-	-	72	13	-	-	-	-
Oct.-Dec 1983---	-	-	-	-	-	-	-	-	26	5	-	-	-	-
Product 7														
Jul.-Sept 1982--	-	-	-$19	-3	-	-	$82	14	-	-	-$4	-1	$5	1
Oct.-Dec 1982---	-	-	14	3	-	-	60	11	-	-	38	7	13	2
Jan.-Mar 1983---	$12	3	30	6	-	-	2	0	-	-	16	3	25	5
Apr.-Jun 1983---	28	6	68	12	-	-	146	26	-	-	-17	-3	17	3
Jul.-Sept 1983--	7	1	-65	-13	-	-	70	14	-	-	36	7	-2	0
Oct.-Dec 1983---	-11	-2	66	11	$53	9	49	9	-	-	80	15	8	1
End User														
Product 7														
Oct.-Dec 1982---	-	-	-	-	-25	-5	-	-	23	4	-	-	-	-
Jan.-Mar 1983---	-	-	-	-	38	7	-	-	24	4	-	-	-	-
Apr.-Jun 1983---	-	-	-	-	38	7	-	-	6	1	-	-	-	-
Jul.-Sept 1983--	-	-	-	-	79	14	-	-	-	-	-	-	-	-
Oct.-Dec 1983---	-	-	-	-	8	1	-	-	2	0	-	-	-	-

1/ See app. P for product specifications.

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

Table 57.--Wire rods: Average margins by which imports were priced (above) or below competing domestic products sold by integrated producers, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 11														
Jul.-Sept 1982--	-	-	-	-	-	-	-	-	-	-	-	-	$32	9
Apr.-Jun 1983---	-	-	-	-	-	-	-$20	-8	-	-	-	-	-	-
Oct.-Dec 1983---	-	-	-	-	-	-	-	-	-	-	-	-	28	8
End User														
Product 11														
Jul.-Sept 1982--	-	-	-	-	$52	11	47	15	-$6	-2	$31	8	-	-
Oct.-Dec 1982---	-	-	-$13	-3	48	10	28	9	20	6	69	18	-	-
Jan.-Mar 1983---	-	-	85	21	41	9	-	-	4	2	46	13	-	-
Apr.-Jun 1983---	-	-	2	0	27	6	-	-	10	4	31	9	-	-
Jul.-Sept 1983--	-	-	-109	-31	20	5	59	19	13	4	16	5	-	-
Oct.-Dec 1983---	-	-	-111	-31	13	3	-	-	25	8	-4	-1	-	-

1/ See app. P for product specifications.

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

Data on purchase prices paid by SSC's for wire rods (product 11) sourced from integrated producers provide only three comparisons with import prices. Integrated producers faced a price disadvantage of about $30 per ton (9 percent) in two of the three instances, both in the Portland/Seattle market area.

Comparisons of data in 26 instances on purchase prices paid by end users covered 5 market areas and reflect a pervasive pattern of lower import prices. In 21 quarters imports had a price advantage that averaged 9 percent, or about $33 per ton. In the other five instances integrated producers had price advantages ranging from 1 to 31 percent.

Wire rods (minimill comparisons).--In sharp contrast to the above comparisons, a pervasive pattern of domestic price advantage characterizes the comparison of purchase prices for imported wire rods and those sourced from minimills (table 58). In 21 of 26 quarterly comparisons of prices paid by end users, the minimill product was priced lower than the imported rods. The domestic price advantage averaged 17 percent, or more than $50 per ton. In sales to SSC's, imports had a price advantage in 8 of 11 possible comparisons.

Wire and wire products.--Table 59 shows the weighted-average price advantage or disadvantage (-) of imported carbon and alloy steel wire and wire products over competing domestic products. Scattered responses spanning five market areas for the various wire products covered show that imported products were priced consistently below domestic products.

Comparisons of purchase prices paid by SSC's for galvanized wire (product 26) in five quarters and in two market areas reflect an import price advantage that varied from a low of 2 to 4 percent to a high of 51 percent. Prices paid by end users for galvanized wire also show a pattern of import prices lower than domestic product prices. That price advantage averaged 15 percent, or almost $120 per ton, over a three-quarter period.

Comparisons of prices paid by SSC's for barbed wire (product 27) show a mixed pattern of narrow import price advantage in four quarters and domestic price advantage that averaged nearly 34 percent in four other quarters. In contrast, nine quarterly comparisons of prices paid by SSC's for nails (product 28) all show import prices lower than domestic prices. The average price advantage was 5 percent, or $22 per ton. Four comparisons of prices paid by end users for prestressed concrete steel wire strand (product 31), all in the Atlanta market area, revealed an import price advantage that averaged 7 percent, or $44 per ton.

Bars (integrated producer comparisons).--Table 60 shows the average price advantage or disadvantage (-) of imported bars over bars sourced from integrated producers. As with wire rods, price comparisons on bars are presented separately for integrated producers and minimills.

Data collected on purchases of deformed reinforcing bars (product 8) reflect the market absence of purchases sourced from integrated producers and the absence of purchases from import sources. A single comparison shows domestic rebar priced $39 per ton, or 14 percent, below the price of imported rebar, in the Portland/Seattle area. Domestic minimills have largely replaced integrated mills in producing rebar.

Table 58.--Wire rods: Average margins by which imports were priced (above) or below competing domestic products sold by mini-mills, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 11														
Jul.-Sept 1982--	-	-	-	-	-	-	$17	6	-$16	-5	-	-	-	-
Oct.-Dec 1982---	-	-	-	-	-	-	11	4	19	6	-	-	-	-
Jan.-Mar 1983---	-	-	-	-	-	-	28	11	-7	-2	-	-	-	-
Apr.-Jun 1983---	-	-	-	-	-	-	-16	-6	-	-	-	-	-	-
Jul.-Sept 1983--	-	-	-	-	-	-	3	1	35	12	-	-	-	-
Oct.-Dec 1983---	-	-	-	-	-	-	12	5	13	4	-	-	-	-
End User														
Product 11														
Jul.-Sept 1982--	-	-	-	-	-$56	-16	-19	-7	-27	-9	-$68	-24	-$40	-13
Oct.-Dec 1982---	-	-	-	-	-51	-14	-10	-4	-35	-12	23	7	54	18
Jan.-Mar 1983---	-	-	-	-	-48	-14	-53	-24	13	5	-38	-14	-	-
Apr.-Jun 1983---	-	-	-	-	-48	-14	-	-	5	2	-40	-15	33	12
Jul.-Sept 1983--	-	-	-$173	-59	-58	-16	-10	-4	-9	-3	-33	-13	-	-
Oct.-Dec 1983---	-	-	-170	-57	-	-	-20	-8	-	-	-33	-12	-	-

1/ See app. P for product specifications.

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

Table 59.--Wire and wire products: Average margins by which imports were priced (above) or below competing domestic products, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 26														
Jul.-Sept 1982	-	-	-	-	-	-	-	-	-	-	$221	32	-	-
Oct.-Dec 1982	$391	51	-	-	-	-	-	-	-	-	-	-	-	-
Jan.-Mar 1983	22	4	-	-	-	-	-	-	-	-	-	-	-	-
Apr.-Jun 1983	9	2	-	-	-	-	-	-	-	-	-	-	-	-
Jul.-Sept 1983	-	-	-	-	-	-	-	-	-	-	221	32	-	-
Product 27														
Jul.-Sept 1982	-79	-18	-	-	-	-	-	-	-	-	-	-	-	-
Jan.-Mar 1983	-389	-86	-	-	-	-	-$56	-8	-	-	-	-	-	-
Apr.-Jun 1983	63	12	-	-	-	-	25	4	-	-	-	-	-	-
Jul.-Sept 1983	20	4	-	-	-	-	-157	-23	-	-	-	-	-	-
Oct.-Dec 1983	5	1	-	-	-	-	-	-	-	-	-	-	-	-
Product 28														
Jul.-Sept 1982	-	-	-	-	$22	5	28	6	-	-	-	-	-	-
Oct.-Dec 1982	-	-	-	-	22	5	40	10	-	-	-	-	-	-
Jan.-Mar 1983	-	-	-	-	22	5	48	11	-	-	-	-	-	-
Apr.-Jun 1983	-	-	-	-	9	2	-	-	-	-	-	-	-	-
Jul.-Sept 1983	-	-	-	-	3	1	-	-	-	-	-	-	-	-
Oct.-Dec 1983	-	-	-	-	3	1	-	-	-	-	-	-	-	-
End User														
Product 26														
Jul.-Sept 1982	-	-	-	-	-	-	-1	0	-	-	48	5	-	-
Apr.-Jun 1983	-	-	-	-	-	-	-	-	-	-	158	20	-	-
Jul.-Sept 1983	-	-	-	-	-	-	-	-	-	-	158	20	-	-
Oct.-Dec 1983	-	-	-	-	-	-	-	-	-	-	-69	-12	-	-
Product 27														
Apr.-Jun 1983	-	-	-	-	-	-	-	-	-	-	-	-	$25	4
Jul.-Sept 1983	-	-	-	-	-	-	-	-	-	-	-	-	43	7
Oct.-Dec 1983	-	-	-	-	-	-	-	-	-	-	-	-	27	5
Product 31														
Jan.-Mar 1983	$45	7	-	-	-	-	-	-	-	-	-	-	-	-
Apr.-Jun 1983	43	7	-	-	-	-	-	-	-	-	-	-	-	-
Jul.-Sept 1983	41	7	-	-	-	-	-	-	-	-	-	-	-	-
Oct.-Dec 1983	47	8	-	-	-	-	-	-	-	-	-	-	-	-

1/ See app. P for product specifications.

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

Table 60.--Bars: Average margins by which imports were priced (above) or below competing domestic products sold by integrated producers, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 8														
Apr.-Jun 1983---	-	-	-	-	-	-	-	-	-	-	-	-	-$39	-14
Product 9														
Jul.-Sept 1982--	-	-	$250	43	$62	15	-	-	-	-	$6	1	-25	-7
Oct.-Dec 1982---	-	-	220	40	90	21	-	-	-	-	62	11	-14	-4
Jan.-Mar 1983---	-	-	243	42	134	29	-	-	$183	42	-	-	-29	-10
Apr.-Jun 1983---	-	-	234	41	137	29	-	-	60	17	121	25	-13	-4
Jul.-Sept 1983--	-	-	270	45	-	-	-	-	84	18	250	44	-31	-9
Oct.-Dec 1983---	-	-	-	-	-18	-6	-	-	-	-	-	-	61	15
Product 10														
Jul.-Sept 1982--	$138	16	-15	-2	66	9	$196	26	326	35	2	0	332	33
Oct.-Dec 1982---	98	12	115	14	49	7	27	4	370	39	-13	-2	265	30
Jan.-Mar 1983---	88	12	185	22	16	2	117	17	294	36	13	2	517	48
Apr.-Jun 1983---	21	3	16	2	53	8	42	7	388	44	-38	-6	319	36
Jul.-Sept 1983--	63	9	148	19	1	0	-24	-4	350	41	-27	-4	323	37
Oct.-Dec 1983---	83	11	166	20	56	8	-22	-3	115	18	-11	-2	337	36
End User														
Product 9														
Jul.-Sept 1982--	-	-	98	17	54	9	-	-	-	-	-	-	-	-
Oct.-Dec 1982---	-	-	59	11	51	10	-	-	-	-	-	-	-	-
Jan.-Mar 1983---	-	-	96	18	32	6	-	-	-	-	-	-	-	-
Apr.-Jun 1983---	-	-	147	27	25	4	-	-	-	-	-	-	-	-
Jul.-Sept 1983--	-	-	126	24	12	2	-	-	-	-	-	-	-	-
Oct.-Dec 1983---	-	-	113	22	55	10	-	-	-	-	-	-	-	-
Product 10														
Jul.-Sept 1982--	-	-	-	-	-$101	-14	-	-	-	-	-	-	-	-
Oct.-Dec 1982---	-	-	-	-	36	5	-	-	-	-	-	-	-	-
Jan.-Mar 1983---	-	-	-	-	-48	-7	-	-	-	-	-	-	-	-
Apr.-Jun 1983---	-	-	-	-	-26	-4	-	-	-	-	-	-	-	-
Jul.-Sept 1983--	-	-	-	-	19	3	-	-	-	-	-	-	-	-
Oct.-Dec 1983---	-	-	-	-	120	15	-	-	-	-	-	-	-	-

1/ See app. P for product specifications.

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

Data on purchase prices for hot-rolled carbon steel bars (product 9) were received for five market areas. Seventeen quarterly comparisons of purchases by SSC's, across four of the five market areas (excluding Portland/Seattle), show a clear pattern of average import prices being sharply lower than domestic prices. The margins of price advantage are substantial, ranging from 1 percent to 45 percent. In contrast, purchase prices of domestic hot-rolled bars in the Portland/Seattle market were lower than imported bar prices in five of six quarters. The domestic price advantage ranged from $13 per ton (4 percent) to $31 per ton (9 percent). Twelve comparisons of prices paid by end users (located in the Chicago and Detroit areas) for hot-rolled bars all show import prices below domestic prices. The import price advantage was substantial in nine of these comparisons, ranging from 9 to 27 percent.

Data received from SSC's on purchase prices for cold-formed carbon steel bars (product 10) covered all market areas and all quarters. They reflect a pattern similar to that of hot-rolled bar, i.e., pervasive import price advantage with occasional instances of lower domestic prices. The average import price advantage was substantial (20 percent), whereas the average domestic advantage was small (3 percent).

Six comparisons of end-user purchaser prices for product 10, all in the Detroit area, show three examples of import price advantage (3 to 15 percent) and three instances of domestic price advantage (4 to 14 percent).

Bars (minimill comparisons).--In sharp contrast to the above comparison, a pervasive pattern of domestic price advantage characterizes the data reported for bars sourced from minimills (table 61). In 23 of 24 quarterly comparisons of prices paid by SSC's (located in 6 market areas) for hot-rolled bar (product 9) average domestic prices were lower than import prices. The domestic minimills' price advantage averaged 24 percent. Prices paid by end users for product 9 show a mixed pattern. Data for two market areas (Chicago and Detroit), covering all six quarters of the subject period, show minimill prices lower than imports in six quarters by an average of 14 percent. Imports had an average price advantage of 7 percent in the other six comparisons.

Data received from SSC's on purchases of cold-formed bar reflect the same consistent pattern of domestic minimill prices being lower than competing import prices. Comparisons included five market areas and all six quarters of the subject period. In 23 of 30 quarterly price comparisons the minimill product had a price advantage, which averaged 18 percent.

Structural shapes (integrated-producer comparisons).--Table 62 shows the average price advantage or disadvantage (-) of imported structural shapes over products sourced from integrated producers. As with wire rods and bars, price comparisons on structural shapes are presented separately for integrated producers and minimills.

Data on purchase prices paid by SSC's for wide-flange beams (product 13) sourced from integrated producers provide the basis for 31 quarterly comparisons spanning all 7 market areas. Without exception, import prices were significantly lower than domestic prices. On the average, the import price advantage amounted to about 23 percent, or $94 per ton. Purchase prices

Table 61.--Bars: Average margins by which imports were priced (above) or below competing domestic products sold by mini-mills, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 8														
Apr.-Jun 1983----	-	-	-	-	-	-	$29	12	-	-	-	-	-$10	-3
Oct.-Dec 1983----	-	-	-	-	-	-	52	18	-	-	-	-	-	-
Product 9														
Jul.-Sept 1982---	-	-	-$47	-17	-$51	-17	-	-	-	-	-$218	-75	-107	-38
Oct.-Dec 1982----	-	-	-61	-22	-55	-19	-	-	-	-	-182	-55	-76	-26
Jan.-Mar 1983----	-	-	-52	-18	-66	-25	-	-	$6	2	-	-	-29	-10
Apr.-Jun 1983----	-	-	-48	-17	-59	-22	-	-	-9	-3	-69	-24	-58	-20
Jul.-Sept 1983---	-	-	-65	-24	-	-	-	-	-98	-35	-26	-9	-68	-23
Oct.-Dec 1983----	-	-	-	-	-65	-23	-35	-13	-	-	-	-	-42	-14
Product 10														
Jul.-Sept 1982---	-$134	-23	86	11	-167	-31	-32	-6	-	-	71	9	-	-
Oct.-Dec 1982----	-149	-26	73	9	-144	-26	-101	-19	-	-	52	7	-	-
Jan.-Mar 1983----	-102	-19	135	17	-126	-23	-26	-5	-	-	-5	-1	-	-
Apr.-Jun 1983----	-68	-11	-35	-5	-127	-25	-88	-17	-	-	-70	-12	-	-
Jul.-Sept 1983---	-64	-11	53	8	-164	-33	-157	-30	-	-	-61	-10	-	-
Oct.-Dec 1983----	-75	-13	56	8	-152	-32	-170	-33	-	-	-55	-9	-	-
End User														
Product 9														
Jul.-Sept 1982---	-	-	-27	-6	27	5	-	-	-	-	-	-	-	-
Oct.-Dec 1982----	-	-	-91	-24	52	10	-	-	-	-	-	-	-	-
Jan.-Mar 1983----	-	-	-54	-14	36	7	-	-	-	-	-	-	-	-
Apr.-Jun 1983----	-	-	-31	-9	-81	-17	-	-	-	-	-	-	-	-
Jul.-Sept 1983---	-	-	6	2	-74	-15	-	-	-	-	-	-	-	-
Oct.-Dec 1983----	-	-	48	11	27	5	-	-	-	-	-	-	-	-
Product 10														
Jul.-Sept 1982---	-	-	-	-	-$286	-56	-	-	-	-	-	-	-	-
Oct.-Dec 1982----	-	-	-	-	-431	-143	-	-	-	-	-	-	-	-
Jan.-Mar 1983----	-	-	-	-	-282	-65	-	-	-	-	-	-	-	-
Apr.-Jun 1983----	-	-	-	-	-272	-65	-	-	-	-	-	-	-	-
Jul.-Sept 1983---	-	-	-	-	-280	-74	-	-	-	-	-	-	-	-
Oct.-Dec 1983----	-	-	-	-	-275	-72	-	-	-	-	-	-	-	-

1/ See app. P for product specifications.

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

Table 62.--Structural shapes: Average margins by which imports were priced (above) or below competing domestic products sold by integrated producers, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 13														
Jul.-Sept 1982	$93	21	$66	15	$10	2	$77	18	$61	13	$117	25	-	-
Oct.-Dec 1982	174	36	45	12	59	14	129	30	87	19	93	23	-	-
Jan.-Mar 1983	-	-	-	-	110	27	136	31	87	22	96	23	-	-
Apr.-Jun 1983	-	-	101	25	105	25	127	30	-	-	94	23	-	-
Jul.-Sept 1983	-	-	-	-	80	22	173	39	81	20	87	23	-	-
Oct.-Dec 1983	77	22	67	19	99	25	100	26	67	18	71	19	$142	31
Product 14														
Jan.-Mar 1983	-	-	-	-	-	-	-	-	183	42	-	-	-2	-1
Apr.-Jun 1983	-	-	-	-	-	-	-	-	60	17	-	-	-39	-13
Jul.-Sept 1983	-	-	-	-	-	-	-	-	84	18	301	44	-35	-11
End User														
Product 13														
Jul.-Sept 1982	-	-	-	-	-	-	-	-	15	3	-	-	-	-
Oct.-Dec 1982	-	-	-	-	-	-	80	18	4	1	-	-	-	-
Jan.-Mar 1983	-	-	-	-	-	-	50	12	-	-	-	-	-	-
Apr.-Jun 1983	-	-	-	-	-	-	45	11	-	-	-	-	-	-
Jul.-Sept 1983	58	15	-	-	-	-	80	18	85	20	-	-	-	-
Oct.-Dec 1983	-	-	-	-	-	-	80	18	148	32	-	-	-	-

1/ See app. P for product specifications.

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

paid by end users for this product show virtually the same pattern for comparisons of prices in two market areas. The import price advantage averaged about 15 percent, or $65 per ton.

Data on purchase prices paid by SSC's for angles (product 14) sourced from integrated producers allow comparisons to be made in two market areas--Los Angeles/San Francisco and Portland/Seattle. 1/ In the former market, imports had a price advantage in all three quarters, averaging about 26 percent, or $109 per ton. In the latter market, the domestic price was lower than the import price in all three quarters, by an average of about 8 percent.

Structural shapes (minimill comparisons).--The same pattern of lower prices paid by SSC's for imported wide-flange beams is reflected in comparisons of purchases sourced from minimills (table 63). Twenty-five comparisons of quarterly data show an import price advantage in 20 quarters. That price advantage averaged 19 percent, or about $78 per ton.

Data on purchase prices paid by SSC's for angles (product 14), however, indicate a strong competitive price advantage for domestic minimills. Comparisons of quarterly data, largely in the 2 western market areas, show domestic prices lower than import prices in 9 of 10 quarters, for an average price advantage of 23 percent, or $64 per ton.

Pipes and tubes.--Table 64 shows the weighted-average price advantage or disadvantage (-) of imported carbon steel pipes and tubes over competing domestic products. With only occasional exceptions, the purchase prices paid by SSC's and end users for imports of the various pipe and tube products were lower than the purchase prices of competing domestic products. The import price advantage was substantial in most cases.

Data on purchase prices paid by SSC's for sprinkler pipes (product 19) provide the basis for 18 quarterly comparisons that span 4 market areas. Without exception, import prices were significantly below domestic prices. On average, that price advantage amounted to 30 percent, or $160 per ton. A single SSC price comparison for round fence tubing (product 20) indicates a 32 percent price advantage for the imported tubing.

Data on purchase prices paid by SSC's for square, light-wall mechanical tubing (product 23) provide the basis for 28 quarterly comparisons that span 6 market areas. In 26 of these quarters, import prices were lower than the prices of competing domestic products. The import price advantage averaged 14 percent, or $71 per ton.

Data on purchase prices paid by SSC's for oil-country tubular goods (products 24 and 25) also show a consistent pattern of import prices being sharply lower than domestic prices. The import price advantage in the Houston/New Orleans area for product 24 averaged 28 percent, or about $274 per ton, over most of the subject period. Purchase prices paid by end users for

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1/ One price comparison in Philadephia/New York showed an import price advantage of 44 percent.

Table 63.--Structural shapes: Average margins by which imports were priced (above) or below competing domestic products sold by mini-mills, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 13														
Jul.-Sept 1982--	$58	14	$38	9	-$69	-21	-	-	$27	6	$88	20	-	-
Oct.-Dec 1982---	106	26	13	4	-77	-27	$154	34	-	-	119	28	-	-
Jan.-Mar 1983---	110	27	-	-	-5	-2	112	27	-36	-13	104	24	-	-
Apr.-Jun 1983---	-	-	92	24	18	6	-	-	-	-	-	-	-	-
Jul.-Sept 1983--	-	-	-	-	-8	-3	121	31	55	15	119	29	-	-
Oct.-Dec 1983---	125	31	66	18	8	3	-	-	24	7	-	-	-	-
Product 14														
Jul.-Sept 1982--	-	-	-	-	-	-	-	-	-	-	-	-	-$118	-44
Jan.-Mar 1983---	-	-	-	-	-	-	-	-	6	2	-	-	-2	-1
Apr.-Jun 1983---	-	-	-	-	-	-	-	-	-10	-4	-	-	-69	-25
Jul.-Sept 1983--	-	-	-	-	-	-	-	-	-101	-37	-93	-32	-88	-32
Oct.-Dec 1983---	-	-	-	-	-	-	-	-	-	-	-19	-6	-77	-26
End User														
Product 13														
Jul.-Sept 1982--	-	-	-	-	-	-	-	-	466	52	-	-	-	-
Oct.-Dec 1982---	-	-	-	-	-	-	-	-	467	53	-	-	-	-
Jan.-Mar 1983---	-	-	-	-	-	-	-	-	278	45	-	-	-	-
Apr.-Jun 1983---	-	-	-	-	-	-	-	-	274	46	-	-	-	-
Jul.-Sept 1983--	-	-	-	-	-	-	-	-	259	44	-	-	-	-
Oct.-Dec 1983---	-	-	-	-	-	-	-	-	284	48	-	-	-	-

1/ See app. P for product specifications.

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

Table 64.--Pipes and tubes: Average margins by which imports were priced (above) or below competing domestic products, by products, by types of customers, by market areas, and by quarters, July 1982-December 1983

Product and Period 1/	Imports price advantage or disadvantage (-) over competing domestic product in the - -													
	Atlanta market area		Chicago market area		Detroit market area		Houston/New Orleans market area		Los Angeles/San Francisco market area		Philadelphia-/New York market area		Portland/Seattle market area	
	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent	Per ton	Percent
Service Center/Distributor														
Product 19														
Jul.-Sept 1982	-	-	-	-	-	-	$278	41	$222	36	$102	23	-	-
Oct.-Dec 1982	-	-	-	-	-	-	329	49	258	40	-	-	$82	18
Jan.-Mar 1983	-	-	-	-	-	-	126	27	193	37	84	20	-	-
Apr.-Jun 1983	-	-	-	-	-	-	131	28	272	45	91	21	-	-
Jul.-Sept 1983	-	-	-	-	-	-	141	30	167	33	100	23	-	-
Oct.-Dec 1983	-	-	-	-	-	-	69	14	144	28	99	22	-	-
Product 20														
Apr.-Jun 1983	-	-	-	-	-	-	-	-	229	32	-	-	-	-
Product 23														
Jul.-Sept 1982	-	-	-	-	-	-	104	20	105	19	60	12	64	12
Oct.-Dec 1982	-	-	-	-	-	-	73	15	115	21	-	-	-	-
Jan.-Mar 1983	-	-	-	-	$6	1	81	17	107	20	35	7	106	20
Apr.-Jun 1983	$66	14	-	-	25	5	86	18	148	27	52	11	-	-
Jul.-Sept 1983	55	12	-	-	-5	-1	67	14	142	27	23	5	33	8
Oct.-Dec 1983	25	6	-	-	-5	-1	45	10	113	22	22	5	99	20
Product 24														
Jul.-Sept 1982	-	-	-	-	-	-	264	25	-	-	-	-	-	-
Oct.-Dec 1982	-	-	-	-	-	-	264	25	-	-	-	-	-	-
Jan.-Mar 1983	-	-	-	-	-	-	244	25	-	-	-	-	-	-
Apr.-Jun 1983	-	-	-	-	-	-	244	25	-	-	-	-	-	-
Jul.-Sept 1983	-	-	-	-	-	-	244	25	-	-	-	-	-	-
Oct.-Dec 1983	-	-	-	-	-	-	381	40	-	-	-	-	-	-
Product 25														
Jul.-Sept 1982	$419	25	-	-	-	-	-	-	-	-	-	-	-	-
Oct.-Dec 1982	419	25	-	-	-	-	-	-	-	-	-	-	-	-
Jan.-Mar 1983	334	25	-	-	-	-	-	-	-	-	-	-	-	-
Apr.-Jun 1983	334	25	-	-	-	-	-	-	-	-	-	-	-	-
Jul.-Sept 1983	334	25	-	-	-	-	$41	6	-	-	-	-	-	-
Oct.-Dec 1983	334	25	-	-	-	-	89	12	-	-	-	-	-	-
End User														
Product 19														
Jul.-Sept 1982	-	-	-	-	-	-	-	-	$53	12	-	-	-	-
Oct.-Dec 1982	149	27	-	-	-	-	-	-	-	-	-	-	-	-
Jan.-Mar 1983	-	-	-	-	-	-	-	-	77	18	-	-	-	-
Jul.-Sept 1983	-	-	-	-	-	-	-65	-18	-	-	-	-	-	-
Product 20														
Jul.-Sept 1982	-	-	-	-	-	-	-	-	-68	-13	-	-	-	-
Apr.-Jun 1983	-	-	-	-	-	-	-	-	-9	-2	-	-	-	-
Jul.-Sept 1983	-	-	-	-	-	-	-	-	-62	-13	-	-	-	-
Oct.-Dec 1983	-	-	-	-	-	-	-	-	-34	-7	-	-	-	-
Product 21														
Jul.-Sept 1982	-	-	-	-	-	-	-	-	223	24	-	-	-	-
Oct.-Dec 1982	-	-	-	-	-	-	380	37	292	37	-	-	-	-
Apr.-Jun 1983	-	-	-	-	-	-	329	40	-	-	-	-	-	-
Jul.-Sept 1983	-	-	-	-	-	-	276	33	133	19	-	-	-	-
Oct.-Dec 1983	-	-	-	-	-	-	-	-	198	28	-	-	-	-
Product 23														
Oct.-Dec 1982	-	-	-	-	$358	38	-	-	-	-	-	-	-	-
Apr.-Jun 1983	-	-	-	-	-	-	-	-	$63	15	-	-	-	-
Jul.-Sept 1983	-	-	-	-	-	-	-	-	80	16	-	-	-	-
Oct.-Dec 1983	-	-	-	-	1031	65	-	-	158	31	-	-	-	-
Product 24														
Jul.-Sept 1982	-	-	-	-	-	-	$538	48	-	-	-	-	-	-
Oct.-Dec 1982	-	-	-	-	-	-	25	3	-	-	-	-	-	-
Jan.-Mar 1983	-	-	-	-	-	-	565	51	-	-	-	-	-	-
Apr.-Jun 1983	-	-	-	-	-	-	335	42	-218	-40	-	-	-	-
Jul.-Sept 1983	-	-	-	-	-	-	619	68	-207	-29	-	-	-	-
Oct.-Dec 1983	-	-	-	-	-	-	356	39	-	-	-	-	-	-
Product 25														
Jul.-Sept 1982	-	-	-	-	-	-	358	17	-	-	-	-	-	-
Jan.-Mar 1983	-	-	-	-	-	-	-437	-62	-	-	-	-	-	-
Apr.-Jun 1983	-	-	-	-	-	-	134	14	-	-	-	-	-	-
Jul.-Sept 1983	-	-	-	-	-	-	5	1	-	-	-	-	-	-
Oct.-Dec 1983	-	-	-	-	-	-	44	6	-	-	-	-	-	-

1/ See app. P for product specifications.

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

this imported product were an average of 41 percent below prices for competing domestic pipes. In the Atlanta area, purchase prices paid by SSC's for product25 from import sources were, on the average, 25 percent ($334 per ton) below domestic prices all through 1983. Comparisons of prices paid by end users for product 25 in the Houston/New Orleans area show four instances of import price advantage and one of domestic advantage.

Possible Causes of Injury Other Than Imports

Exchange rates

The value of most foreign currencies in terms of the U.S. dollar has declined significantly since mid-1980. The depreciation of these currencies has led to claims that prices of foreign steel products have declined in the United States largely because of exchange-rate adjustments (because the dollar buys more foreign currency than before, imported steel should be less expensive for U.S. purchasers). Table 65 shows indexes of the nominal exchange rates for the currencies of 13 steel-producing countries vis-a-vis the U.S. dollar during 1979-83. The depreciations of those currencies by October-December 1983 ranged between nil (Trinidad and Tobago) and 98 percent (Brazil). The greatest decline in the value of the currency of each country except Brazil, the Republic of South Korea, and Trinidad and Tobago occurred after 1980.

Despite the strength of the dollar, there are several reasons why the fall in the price of foreign steel may not have been as great as the percentage depreciation of the foreign currencies relative to the dollar. These influences do not act independently of each other and of other economic phenomena and, therefore, are not completely separable in their effects.

First, many foreign producers import raw materials from the United States or from other countries whose currencies are tied to the U.S. dollar. Accordingly, a portion of these producers' costs will rise with the increased value of the dollar.

Second, the TPM may have made exporters reluctant to reduce their prices. If foreign producers were already selling their steel near the trigger price, they may have chosen not to lower their export prices with the depreciation of their home currency. The TPM was based on costs of production in Japan, whose currency remained stronger than those of many other producers.

Third, foreign producers may have chosen to increase their profitability by lowering their dollar prices by less than depreciation would allow. By passing only a portion of the exchange-rate change to consumers, these producers could increase sales volume at the expense of U.S. producers while also increasing their own revenues per unit of steel.

Finally, inflation in many steel-producing countries exceeded that in the United States for much of the period. To the extent that the general inflation rate also reflects the increase in costs of producing steel, the nominal depreciation of the foreign currency would be offset by the increase

Table 65.—Indexes of nominal exchange rates (U.S. dollars per unit of foreign currency) for certain foreign suppliers of carbon steel to the United States, by quarters, January 1979–December 1983

(January–March 1979=100)

Period	Japan	West Germany	France	Spain	United Kingdom	Canada	Brazil	Belgium	Italy	Republic of South Africa	Republic of Korea	Mexico	Trinidad and Tobago 1/
1979:													
Jan.–Mar	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Apr.–June	92.6	97.9	97.6	104.0	103.2	102.4	89.4	96.7	99.1	101.2	100.0	99.7	100.0
July–Sept	92.0	102.1	100.8	105.0	110.7	101.7	80.4	100.6	102.7	102.2	100.0	99.8	100.0
Oct.–Dec	84.4	105.0	103.1	104.6	107.1	101.0	64.5	102.4	102.2	103.4	100.0	99.7	100.0
1980:													
Jan.–Mar	82.7	104.6	102.9	103.1	111.8	101.9	48.7	101.7	101.7	105.1	84.8	99.7	100.0
Apr.–June	86.6	102.4	101.3	98.0	113.4	101.4	44.0	100.8	98.5	108.3	81.5	99.6	99.8
July–Sept	91.5	104.4	103.6	96.2	118.1	102.4	40.1	103.0	99.5	112.8	78.9	99.0	100.0
Oct.–Dec	95.6	97.0	96.5	90.6	118.4	100.2	35.8	95.5	92.6	113.0	74.3	98.4	100.0
1981:													
Jan.–Mar	98.0	88.9	87.8	82.5	114.6	99.4	31.0	86.6	83.8	111.2	72.5	96.9	100.0
Apr.–June	91.6	81.5	78.8	76.1	103.3	99.0	26.2	78.8	74.0	102.2	71.1	94.5	100.0
July–Sept	86.9	76.2	73.5	70.8	91.1	97.9	22.0	73.6	69.0	91.1	70.6	91.8	100.0
Oct.–Dec	89.7	82.6	75.5	72.2	93.5	99.5	18.6	77.6	70.1	89.0	70.1	88.6	100.0
1982:													
Jan.–Mar	86.3	79.1	71.2	68.5	91.6	98.1	15.9	70.6	66.5	86.0	68.2	66.3	100.0
Apr.–June	82.5	78.0	68.0	65.4	88.3	95.3	13.7	65.1	63.6	79.6	66.5	48.7	100.0
July–Sept	77.8	74.7	61.5	61.9	85.6	94.9	11.6	61.6	60.2	74.5	65.3	34.7	100.0
Oct.–Dec	77.6	74.1	60.3	57.8	81.8	96.3	9.5	60.1	58.5	76.0	65.0	31.0	100.0
1983:													
Jan.–Mar	85.5	77.0	62.0	53.4	76.0	96.7	6.7	61.9	60.0	79.0	64.2	22.3	100.0
Apr.–June	84.8	74.6	57.1	49.9	77.2	96.4	4.6	59.0	56.8	78.7	62.9	19.9	100.0
July–Sept	83.1	70.2	53.6	46.2	74.9	96.2	3.4	55.2	53.3	77.3	61.6	18.0	100.0
Oct.–Dec	86.0	69.3	52.3	44.9	72.9	95.8	2.5	53.7	51.6	72.9	60.9	16.5	100.0

1/ The currency of Trinidad and Tobago is pegged to a basket of currencies in which the U.S. dollar has the largest influence.

Source: Compiled from official statistics of the International Monetary Fund.

in relative production costs. 1/ Table 66 shows the indexes of the real exchange rates of the 13 countries relative to the dollar and indicates the probable effects of the wholesale inflation rate for each country on export prices. As shown in the table, the changes in the real value of these countries' currencies from the first quarter of 1979 to the third quarter of 1983 ranged from a decline of 45 percent (Belgium) to an appreciation of 40 percent (Trinidad and Tobago). 2/

Transportation costs

Transportation costs are an important factor in the marketing of steel products in the United States, in part because steel generally has a low value per unit of weight in comparison with other products and because of the geographic pattern of U.S. steel production. 3/ In 1983, 60 percent of all U.S. steel production was accounted for by producers located in Illinois, Indiana, Ohio, and Pennsylvania (the "steel belt"). 4/ The costs of shipping steel from this area to other parts of the country can be significant, and purchasers in many areas will be closer to an importer's port of entry than to a domestic mill. Therefore, the cost of shipping steel within the United States can be an important component of the ability of domestic producers to compete with imports in certain regions.

Steel is shipped primarily by truck or rail. 5/ The choice of mode of transportation depends primarily on the value of the product and the distance to be traveled. Shippers of high-value products prefer faster modes and thus normally ship by truck rather than rail or water. Shippers are more likely to select rail for longer hauls because its cost advantage increases with the length of haul. Table 67 presents data on the modes of transportation used to ship three types of steel products in 1977.

1/ If the inflation rate of a country was greater than that of the United States, the real exchange-rate index shows a smaller depreciation than does the nominal exchange rate, suggesting that prices of steel from that country would not be expected to decline by as much as the nominal depreciation of the foreign currency.

2/ The currency of Trinidad and Tobago is pegged to a basket of currencies in which the U.S. dollar has the largest influence.

3/ In addition, the payment of some freight charges by a steel producer is sometimes used for competitive purposes. This payment, called freight equalization, reduces the freight charges paid by the customer to the level equal to the charges from his nearest supplier. Freight equalization does not necessarily reduce the delivered price to the buyer, but does reduce the net revenues of producers in proportion to the distance of their customers. The practice becomes more common in periods of low demand as producers seek to maintain their sales level by gaining more distant customers. In periods of high demand producers are less likely to absorb freight costs. Accordingly, the practice intensifies the decline of revenues in recessionary periods and bolsters the increase in expansionary ones.

4/ See fig. 1.

5/ It is claimed by some that the Jones Act, restricting shipments between U.S. ports to U.S. bottoms at substantially higher cost, has made shipping steel by ocean-going vessel uncompetitive with other modes of transportation.

Table 66.---Indexes of real exchange rates (U.S. dollars per unit of foreign currency) for certain foreign suppliers of carbon steel to the United States, by quarters, January 1979-December 1983

(January-March 1979=100)

Period	Japan	West Germany	France	Spain	United Kingdom	Canada	Brazil	Belgium	Italy	Republic of South Africa	Republic of Korea	Mexico	Trinidad and Tobago 1/
1979:													
Jan.-Mar	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Apr.-June	93.1	96.4	97.8	103.9	103.7	102.1	97.3	95.4	100.2	102.2	103.5	100.3	100.3
July-Sept	94.2	99.1	100.7	106.6	113.2	101.1	98.0	97.3	105.1	107.1	109.6	101.6	103.1
Oct.-Dec	87.0	99.7	101.3	106.0	109.0	100.5	91.3	97.0	106.7	107.3	108.7	101.8	103.3
1980:													
Jan.-Mar	86.8	97.6	99.8	106.1	114.5	101.7	78.6	95.3	108.2	107.2	101.1	105.7	103.7
Apr.-June	92.4	95.7	97.0	101.5	118.4	100.2	83.6	92.0	106.3	111.9	105.4	108.1	103.3
July-Sept	95.1	95.1	96.5	100.0	121.7	100.7	91.5	91.0	106.3	118.4	102.6	111.8	104.6
Oct.-Dec	96.6	87.8	91.3	94.6	121.2	99.8	98.5	84.6	100.6	122.5	99.7	112.0	107.4
1981:													
Jan.-Mar	95.6	80.0	81.8	87.4	117.0	98.8	100.3	76.6	92.2	118.3	99.8	114.4	108.3
Apr.-June	88.2	73.4	74.8	82.9	106.3	98.2	98.9	70.0	83.5	108.4	100.9	115.7	107.4
July-Sept	84.1	69.5	72.2	78.6	94.2	98.3	95.3	66.7	80.1	99.7	102.6	117.1	110.1
Oct.-Dec	86.6	76.5	75.9	82.3	98.7	101.3	93.5	70.5	84.6	100.6	101.3	120.1	113.9
1982:													
Jan.-Mar	83.0	73.9	72.9	80.4	98.5	100.5	93.2	65.4	82.2	99.3	99.1	99.5	116.8
Apr.-June	79.4	73.5	71.3	78.6	96.2	99.3	96.7	61.9	80.0	95.1	96.8	84.3	118.4
July-Sept	75.2	70.7	65.3	75.1	93.7	99.1	96.1	58.8	77.8	91.4	94.9	71.3	121.2
Oct.-Dec	74.9	70.3	64.8	71.7	90.6	100.9	91.4	57.1	78.1	96.6	94.8	74.8	124.0
1983:													
Jan.-Mar	80.9	72.8	68.1	70.3	85.3	101.9	80.4	58.8	81.3	102.5	94.0	69.5	134.9
Apr.-June	79.2	70.5	65.0	67.3	88.0	102.7	72.7	57.1	77.9	103.8	91.0	75.1	137.5
July-Sept	77.0	66.2	62.7	2/	85.2	102.4	76.9	54.8	74.1	102.7	90.1	76.0	139.6
Oct.-Dec	78.9	2/	2/	2/	2/	2/	79.4	2/	2/	2/	86.6	2/	1/

1/ Based on consumer price index. The currency of Trinidad and Tobago is pegged to a basket of currencies in which the U.S. dollar has the largest influence.
2/ Wholesale price indexes were not available for these periods; real exchange rates were not calculated.

Source: Compiled from official statistics of the International Monetary Fund.

Table 67.--Selected steel products: Percentage distribution of ton-miles traveled, by types and by modes of transportation, 1977

(In percent)

Mode	Iron and steel sheets and strip	Iron and steel bars, bar shapes, and rods	Iron and steel plates
Rail	39.4	46.2	53.4
Truck	59.5	53.7	45.9
Water	1.1	.1	.7
Total	100.0	100.0	100.0

Source: U.S. Bureau of the Census, Census of Transportation, 1980, vol. 1, p. 20.

Limited data on the costs of rail shipments of steel are available from public sources. Estimates of transportation costs in the earlier phase of deregulation of transportation rates are presented in table 68. These estimates include the cost of shipping a ton of selected steel products 1 mile by rail in 1982 and the average costs of shipments of average length for rail movements between the official territory, which includes the major steel-producing States, and other areas of the country. The table focuses on the official territory because most steel shipments by U.S. producers originate there.

Since deregulation, rates have changed to some degree. The following tabulation shows average tariffs in early 1984 for all steel products from the specified point of origin to the territory including all States west of the Rocky Mountains, 1/ according to the Transcontinental Freight Bureau Tariff 3001 Series:

Point of origin	Cost of shipping in 1984 (per ton)
Official territory:	
Baltimore/Bethlehem	$123.80
Pittsburgh/Youngstown	120.60
Southern territory: Birmingham	113.80
Southwestern/Western Trunk territory	116.60

Although official freight rates may be charged in some instances, the negotiation of lower rates by heavy users may significantly reduce the cost of transporting steel. These negotiated rates vary somewhat depending on the type of product, total weight of the shipment, origin, and destination, but available data suggest that discounts of 25 to 35 percent below published rates are available. Nevertheless, such discounts are based on large

1/ Essentially the same as the Mountain Pacific territory in table 68.

Table 68.--Selected steel products: Costs of shipments from the official territory, 1/ by products and by destination territories, July 1982

Product and destination territory 1/	Cost per ton-mile	Average length of haul	Cost of average haul: Amount	Cost of average haul: Percent of price 2/
	Cents	Miles	Per ton	
Iron or steel plates:				
Southern	4.76	718	$34.17	7.4
Southwestern	4.27	965	41.21	8.9
Western Trunk	5.93	523	31.01	6.7
Mountain-Pacific	3.76	2,471	92.91	20.0
Iron or steel sheets:				
Southern	4.14	730	30.22	8.5
Southwestern	4.48	1,114	49.91	18.1
Western Trunk	5.54	591	32.74	9.3
Mountain-Pacific	4.30	2,321	99.80	28.2
Iron or steel bars:				
Southern	4.35	778	33.84	8.6
Southwestern	4.13	1,284	53.03	13.2
Western Trunk	5.47	667	36.48	9.3
Mountain-Pacific	4.71	2,593	122.13	31.2
Iron or steel structural shapes:				
Southern	4.62	746	34.47	7.3
Southwestern	4.24	1,433	60.76	12.9
Western Trunk	5.48	969	53.10	11.2
Mountain-Pacific	4.28	2,610	111.71	22.6

1/ The territories, as defined by the U.S. Department of Transportation, are as follows:

Official.--New England, New York, New Jersey, Pennsylvania, Delaware, Maryland, West Virginia, Illinois, Ohio, Indiana, the lower peninsula of Michigan, the southeastern corner of Wisconsin, and northern Virginia;

Western Trunk.--Missouri, Iowa, Minnesota, North Dakota, South Dakota, Nebraska, Kansas, eastern Colorado, eastern Utah, and the rest of Wisconsin;

Southwestern.--Texas, Oklahoma, Arkansas, Louisiana west of the Mississippi River, and eastern New Mexico;

Southern.--Kentucky, Tennessee, Mississippi, Alabama, Florida, Georgia, South Carolina, North Carolina, Louisiana east of the Mississippi River, and southern Virginia; and

Mountain-Pacific.--The area west of the Southwestern and Western Trunk territories.

2/ Price is defined as the average net selling price during April-June 1982 that domestic producers charged end users for a representative product in each product category. Questionnaire data from earlier investigations were used to determine these prices.

Source: U.S. Department of Transportation, Carload Waybill Statistics, 1979, December 1980, p.146. The BLS index of rail rates for primary iron and steel products was used to adjust the 1979 cost data to reflect the level of rates in July 1982. The data refer to standard transportation commodity codes 33122 (Iron or Steel Plates), 33123 (Iron or Steel Sheet or Strip), 33124 (Iron or Steel Bar, Bar Shapes, or Rods), and 33124 (Iron or Steel Structural Shapes).

shipments and are unlikely to be available for purchases in typical commercial quantities. 1/

Bethlehem and U.S. Steel provided the Commission with data on representative freight rates negotiated with rail and truck carriers for transporting selected steel products from their mills to cities in selected States. 2/ These data, samples of which are shown in the tabulation on the following page, indicate that freight costs of shipments made over shorter distances are generally less expensive by truck than by rail, but shipments made over longer distances are generally less expensive by rail. On the basis of data supplied to the Commission, the quantities shipped by Bethlehem by each mode reflect these economies. 3/

In addition to information provided by the two largest integrated producers, the Commission has gathered data in previous antidumping investigations 4/ regarding transportation costs for other products to Los Angeles. Estimated freight charges per short ton for shipments to Los Angeles in 1983 are shown as follows:

Item	Rail	Truck
Wire rods from Beaumont, Tex	$55	$75-$90
Pipes and tubes from--		
Pittsburgh, Pa	98	116
Chicago, Ill	1/	89
Phoenix, Ariz	1/	16

1/ Not available.

Because a shipment of pipes and tubes occupies more space than many other products, it is possible that costs of shipping other, more compact products may be lower.

A large share of consumption of steel products on the west coast is accounted for by imports. 5/ Importers maintain that two factors create this

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1/ A rail rate of $50 per ton from Chicago for coiled sheets, in quantities not less than 20 railcars (approximately 2,000 tons), has reportedly been negotiated by a west coast steel pipe producer. This amounts to almost a 50-percent discount from published freight rates.

2/ The rail rates provided by Bethlehem are average rates for actual shipments in 1983. They appear to be higher than rates for U.S. Steel, where comparisons are possible, and may represent a mix of published and negotiated rates. In addition, the destinations for which data were provided are primarily those where the firms have facilities.

3/ U.S. Steel did not provide specific quantity data.

4/ Wire rod from Brazil and Trinidad/Tobago, investigations Nos. 731-TA-113 and 114 and carbon steel pipe and tube from Korea and Taiwan, investigations Nos. 731-TA-131, 132, and 138.

5/ See. app. O.

Product and point of shipment	Destination	Freight rates: Rail	Freight rates: Truck
		Per ton	Per ton
Structural shapes:			
Bethlehem, Pa	Alabama	***	***
	California	***	***
	Texas	***	***
	Virginia	***	***
Gary, Ind	Alabama	***	1/
	Texas	***	1/
Homestead, Pa	Florida	***	1/
Plates:			
Sparrows Point, Md	Alabama	***	***
	Florida	***	***
	Texas	***	***
Burns Harbor, Ind	Alabama	***	***
	Texas	***	***
Gary, Ind	Texas	***	1/
Sheets:			
Sparrows Point, Md	Alabama	***	***
	Florida	***	***
	Texas	***	***
Burns Harbor, Ind	Alabama	***	***
	Texas	***	***
	New York	***	***
	Illinois	***	***
Gary, Ind	Alabama	***	1/
	Texas	***	1/
Bars:			
Lackawanna, N.Y	Michigan	***	***
	Texas	***	***
Johnstown, Pa	Michigan	***	***
	Illinois	***	***
Gary, Ind	Alabama	***	1/

1/ Not available.

situation: (1) insufficient production in that region, which forces purchasers to buy imports, and (2) the differential in the cost of shipping internationally by ship and the cost of shipping overland in the United States. The following tabulation shows indexes of international maritime transport costs and U.S. rail transport costs for 1975-83: 1/

1/ The index of voyage charter costs was obtained from the OECD, Maritime Transport, 1982; the index of railroad freight costs for primary metals was obtained from the U.S. Bureau of Labor Statistics.

	Maritime transport (1975=100)	Railroad transport (1975=100)
1975-------------	100	100
1976-------------	94	110
1977-------------	94	118
1978-------------	98	125
1979-------------	126	141
1980-------------	151	163
1981-------------	138	185
1982-------------	112	197
1983-------------	1/	199

1/ Not available.

These indexes show that maritime costs increased by 51 percent from 1975 to 1980 and then declined by 26 percent from 1980 to 1982. Railroad costs, however, increased by 63 percent from 1975 to 1980 and then increased by an additional 21 percent through 1982. The increase in rail charges from 1982 to 1983 was only 1 percent, suggesting that deregulation may have slowed the increase.

The indexes shown do not compare absolute levels of freight costs, but only the rates of change. They suggest that from 1980 to 1982, railroad transport charges increased significantly relative to maritime freight charges. Data provided by counsel to the Japanese steel exporters 1/ show a somewhat different pattern in maritime freight rates after 1979. These data for shipments of coiled sheets from Japan to Los Angeles, based on actual invoiced costs, indicate that rates increased by 38 percent between 1979 and 1980 but declined somewhat in 1983, as shown in the following tabulation:

Period	Rate (per short ton)	Index (January-June 1979=100)
1979:		
January-June-----------	$23.00	100
July-------------------	24.25	105
August-September-------	26.35	115
October-December-------	27.55	120
1980:		
January-March----------	28.85	125
April-December---------	31.65	138
1981:		
January----------------	31.65	138
February-March---------	30.65	133
April-December---------	31.65	138
1982:		
January-December-------	31.65	138

1/ Posthearing brief of the Japan Iron and Steel Exporters' Association, et. al., app. O.

Period	Rate (per short ton)	Index (January-June 1979=100)
1983:		
January-March----------	31.65	138
April-June-------------	26.90	117
July-September---------	29.30	127

The Japanese brief also provided data regarding 1983 rates from European ports to various U.S. ports, as shown below:

Destination	Product	Cost per short ton
Philadelphia, Pa-------	Coils	$34.00
Do------------------	Plates	42.00
Do------------------	Bars	45.00
Do------------------	Tubes	54.00
New Orleans, La--------	Coils	33.00
Do------------------	Plates	41.00
Do------------------	Bars	44.00
Do------------------	Tubes	50.00
Oakland, Calif---------	Coils	38.00
Do------------------	Plates	43.00
Do------------------	Bars	45.00
Do------------------	Tubes	57.00

Bethlehem provided information in its posthearing brief 1/ that under current market conditions it is possible to charter a vessel for shipping steel mill products from Baltimore to Los Angeles for approximately $50 per ton. This rate is based on a single-trip time charter (approximately 35 days, including time for loading and discharge) and on the vessel being filled to maximum practical capacity. 2/ The U.S. Maritime Administration reports that there are no more than six vessels currently qualified under the Jones Act for such trade, and they are not ideally suited for steel products because they are designed for bulk cargo. Moreover, the particular ships specified may not be available on a regular basis during the next several years because of other commitments. Other U.S. carriers (those not normally qualified under the Jones Act) can be granted permission to carry cargo between U.S. ports on a space-available basis, but the shipping rate is considerably higher. 3/ Bethlehem's estimate should, therefore, be considered the best possible rate for such shipments under the best of conditions.

1/ See pp. 108-110. Staff has confirmed that the ships specified are available at the quoted daily rate.

2/ One of the two vessels would be filled only to the point that its draft would not exceed the maximum in the Panama Canal, or about 80 percent of its actual maximum capacity. No adjustment was made for differences in weight/volume ratios of various products.

3/ Respondents report rates of $159 per ton from the east coast to the west coast. See Japanese posthearing brief, p. 62.

Cyclical and long-term trends in consumption

Cyclical trends in consumption refer to the relatively short-term and often violent fluctuations in steel consumption that are generally the result of general economic forces which affect the demand for steel. 1/ 2/ Long-term or secular changes in steel consumption are those that are more specific to the steel industry, rather than the result of general demand forces. Secular changes in steel consumption are generally the result of secular changes in the steel consumption practices of user industries. For example, with regard to the consumption of sheets and strip, the automobile industry's use of less steel per car is a secular factor affecting apparent consumption of sheets and strip.

The observed declines in steel consumption during 1981 and 1982 included both cyclical and secular components, and it is not a straightforward task to separate the cyclical effect from the secular effect. The figures on the following pages show quarterly changes in apparent consumption and a linear trend line for most of the product lines from January-March 1973 to January-March 1984. The following sections discuss the cyclical and secular changes in apparent consumption in more detail.

Cyclical changes.--The steel industry/industries are considered to be cyclical in the sense that periods of expansion are generally followed by relatively sharp and shorter lived contractions, followed by a subsequent expansion phase. The cyclical nature of this industry is due in large part to the fact that demand for steel is derived from the demand for consumer durables and capital goods made from steel. Because of the durable nature of these goods, buyers can exercise a large degree of discretion in the timing of their purchases. When general economic conditions are poor, buyers can generally delay the purchase of products made from steel, whether purchases of consumer durables such as automobiles, or investment in capital equipment. Thus, the business cycle in the steel industry/industries is closely related to the general business cycle of the U.S. economy.

The following tabulation shows the dates of post-World War II business cycle troughs and peaks as determined by the National Bureau of Economic Research (NBER), as well as the lengths of each cycle, contraction, and expansion (in months):

1/ In its prehearing brief, Data Resources, Inc., isolated six examples of outside factors that led to cyclical changes in the U.S. economy, which in turn caused cyclical changes in the demand for steel. These six factors were U.S. fiscal policy, U.S. monetary policy, energy prices, exchange rates, foreign economic activity, and agricultural prices.

2/ Quarterly data are more appropriate than annual data for a discussion of business cycles, since business cycles rarely correspond with calendar years.

Trough	Peak	Length of cycle 1/	Length of expansion 2/	Length of contraction 3/
October 1945	November 1948	-	37	-
October 1949	January 1953	48	39	11
May 1954	August 1957	55	39	16
April 1958	April 1960	47	24	8
February 1961	December 1969	34	106	10
November 1970	November 1973	117	36	11
March 1975	January 1980	52	58	16
July 1980	July 1981	62	12	6
November 1982	-	28	-	16
Average length--------------		55	44	12

1/ Measured as the period between successive troughs.
2/ Measured as the period between trough and peak.
3/ Measured as the period between peak and the previous trough.

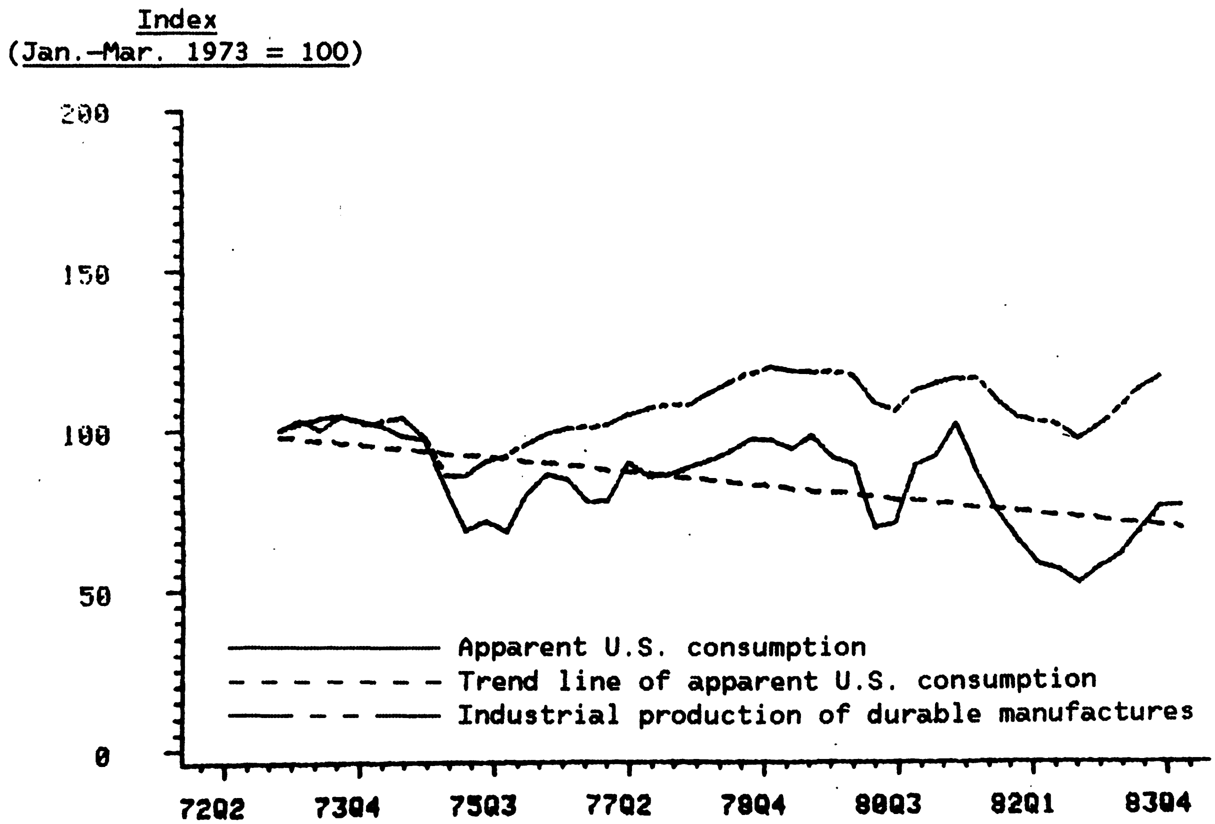
The average length of a business cycle from 1945 to 1983 was 55 months, as measured from trough to trough. However, the length of some business cycles deviated significantly from this average. Most notably, after the 1961 recession there was no official recession until 1970. The absence of a recession throughout this period was probably the result of generally expansive Government fiscal policies at that time.

The 1982 recession was unusual in that it followed so closely after the 1980 recession. The 1980 recession was followed by only a 12-month-expansion period before the beginning of the contraction into the November 1982 trough. By comparison, expansion during the postwar period averaged 44 months. The contraction into the 1982 trough lasted 16 months, compared with an average contraction period of 12 months.

Business cycles for individual product lines generally vary from one another to some degree because of differences in the cyclicality of end-use markets. However, the timing of business cycles in many of the product lines was similar, especially for the most recent 5-year period. Figures 9 to 19 show the relationship between U.S. apparent consumption and an activity variable for total carbon and alloy steel and for 10 individual product groupings. 1/ Peaks and troughs of U.S. apparent consumption generally correspond with peaks and troughs of the relevant activity variable. 2/ Also, the cycles of apparent consumption are generally more violent than those of the corresponding activity variable. This phenomenon has been attributed in

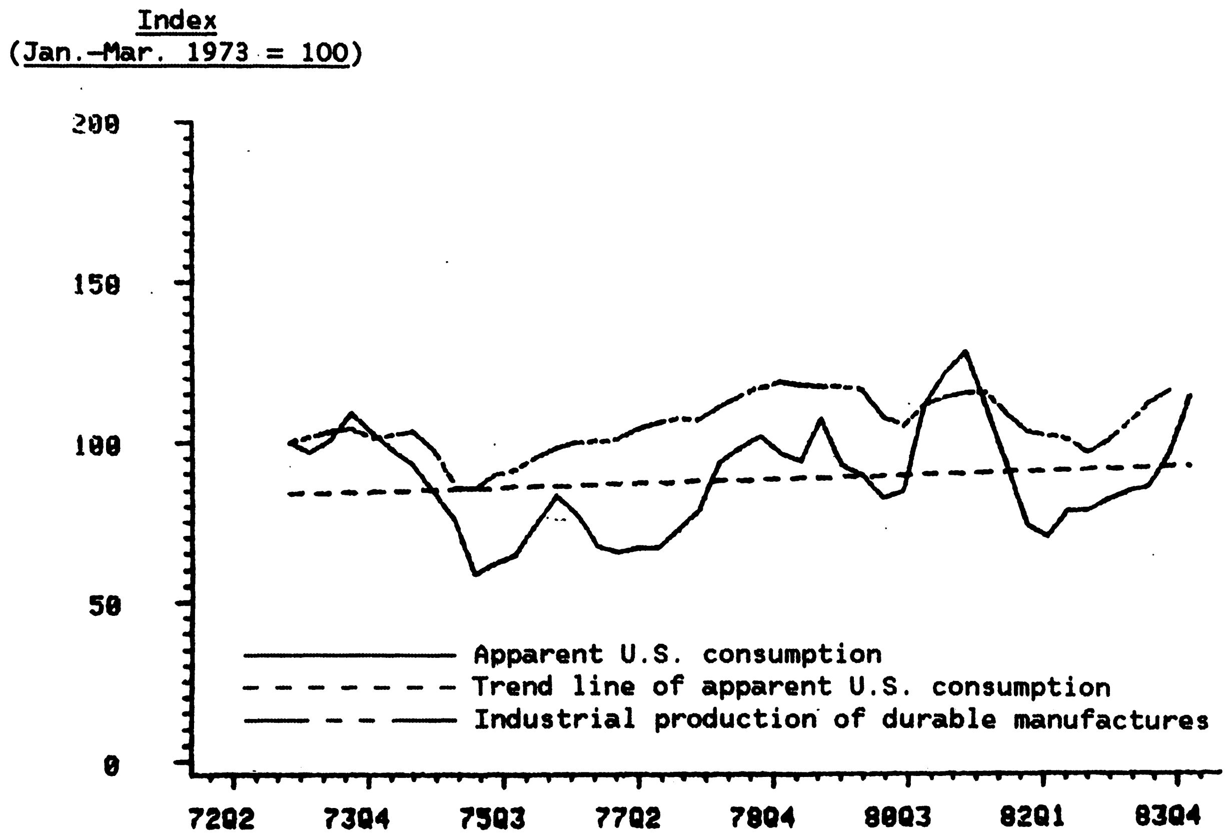
1/ Both apparent consumption and the activity variable are seasonally adjusted and indexed, with January-March 1973 as the base period.
2/ No activity variable was plotted against apparent consumption of oil-country tubular goods because of the volatility of apparent consumption of that product line, especially evident in 1980 and 1981 with speculative purchases of this product.

Figure 9.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel products and industrial production of durable manufactures, by quarters, January 1973–January 1984



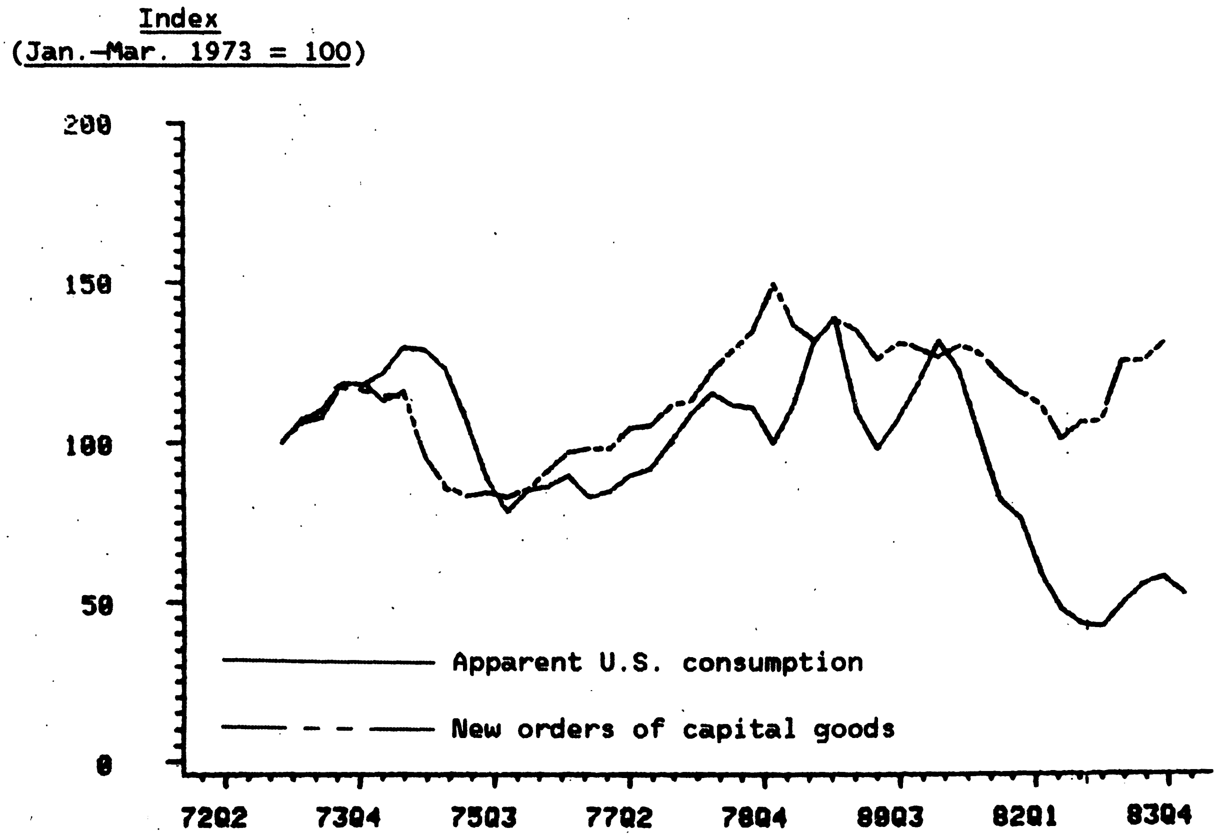
Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 10.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars and industrial production of durable manufactures, by quarters, January 1973–January 1984



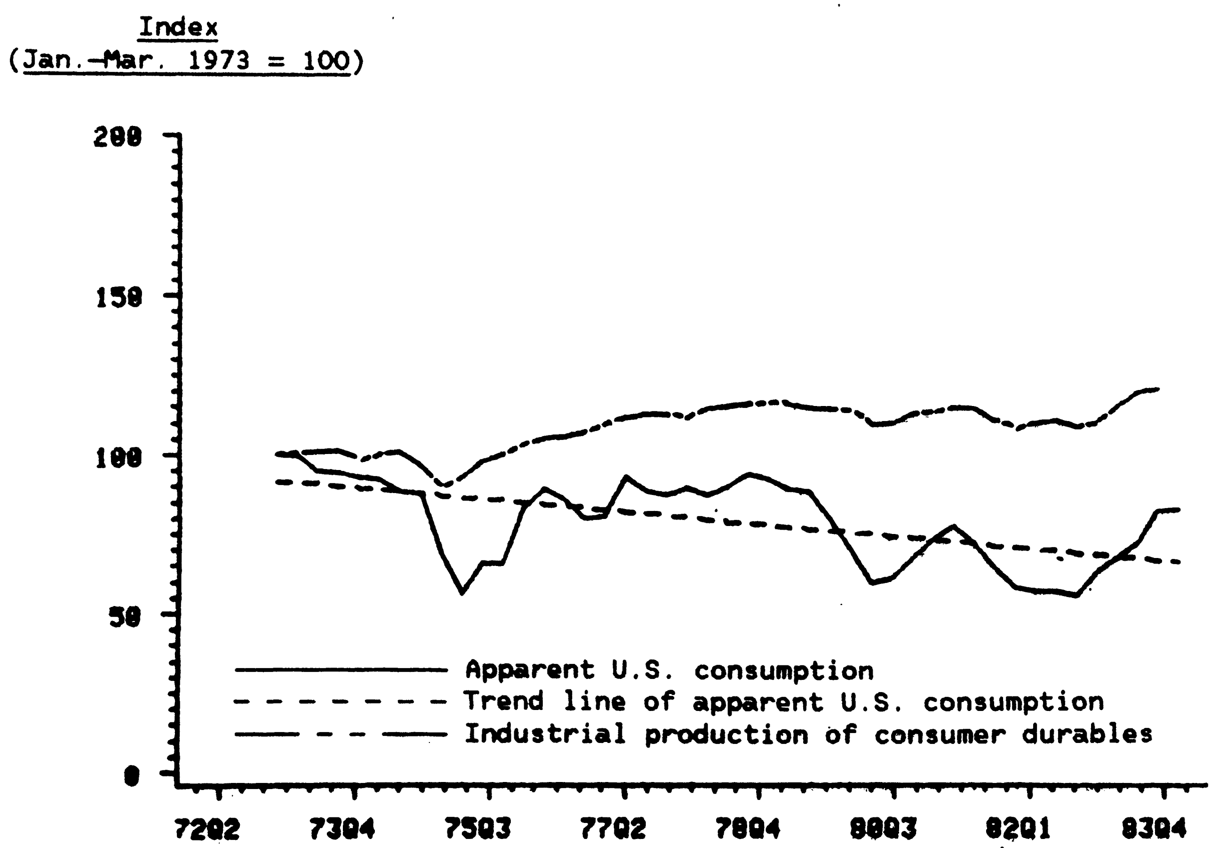
Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 11.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel plates and new orders of capital goods, by quarters, January 1973–January 1984



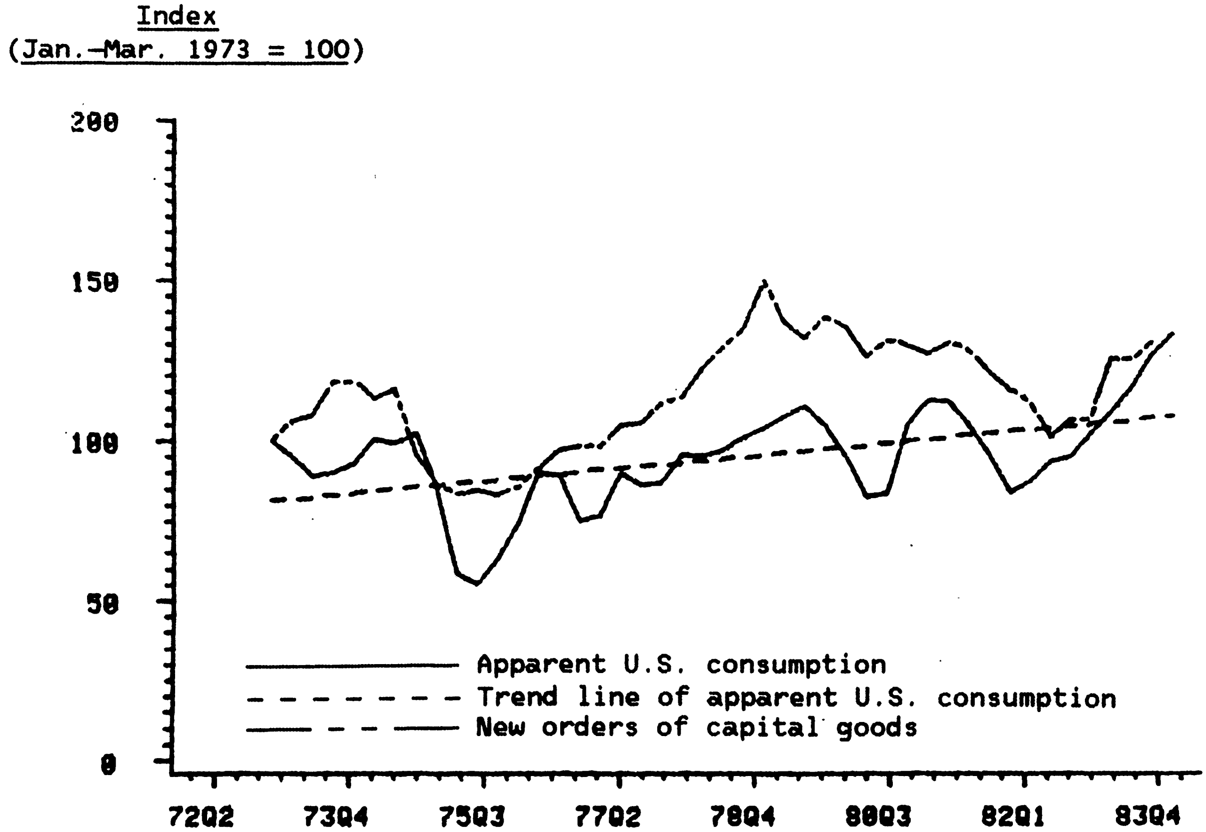
Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 12.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel sheets and strip and industrial production of consumer durables, by quarters, January 1973–January 1984



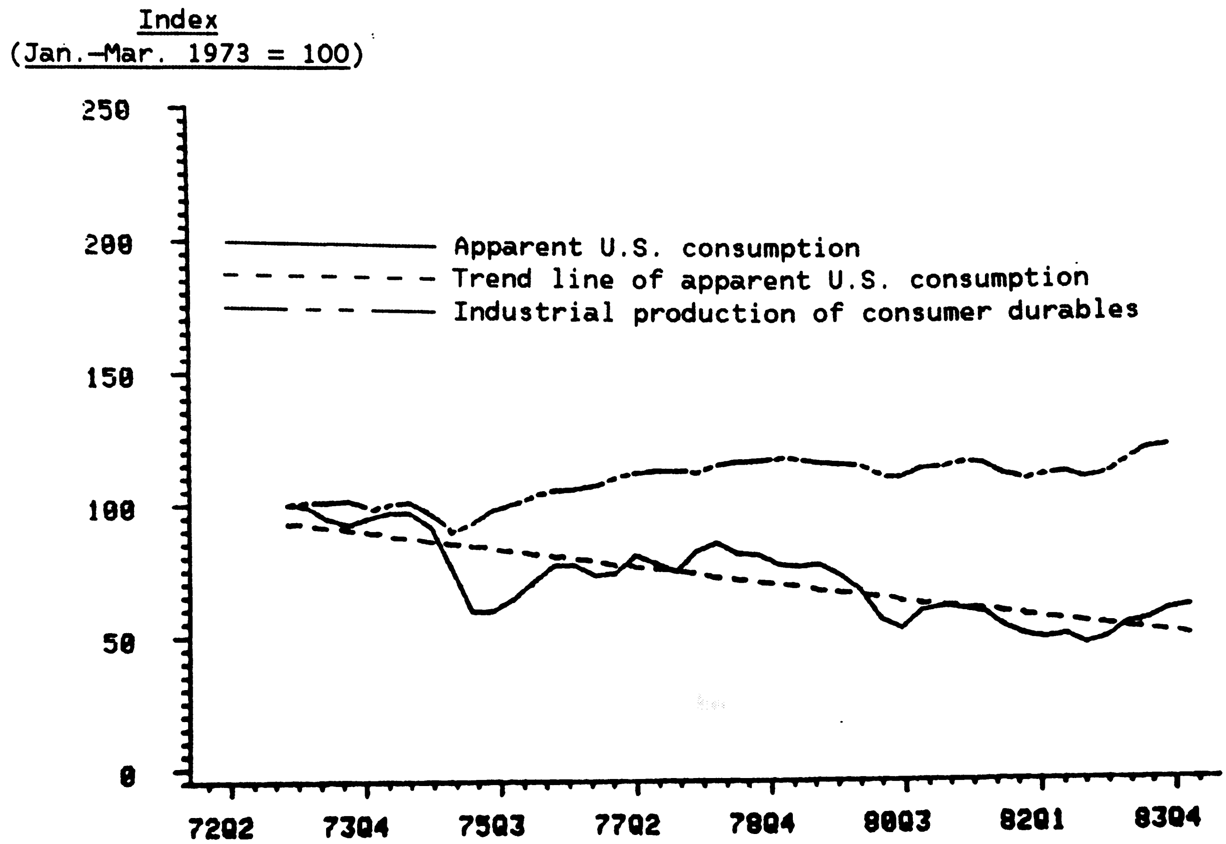
Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 13.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel wire rods and new orders of capital goods, by quarters, January 1973–January 1984



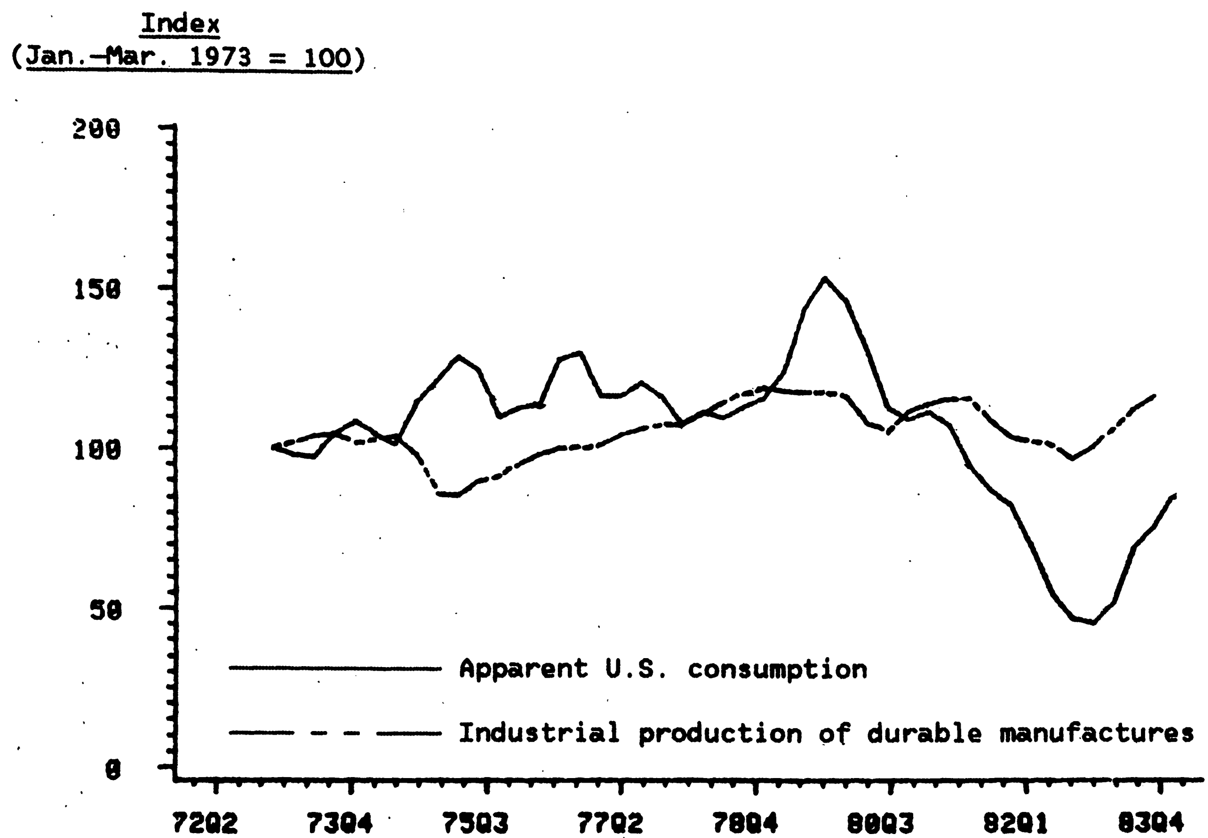
Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 14.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel wire and wire products and industrial production of consumer durables, by quarters, January 1973–January 1984



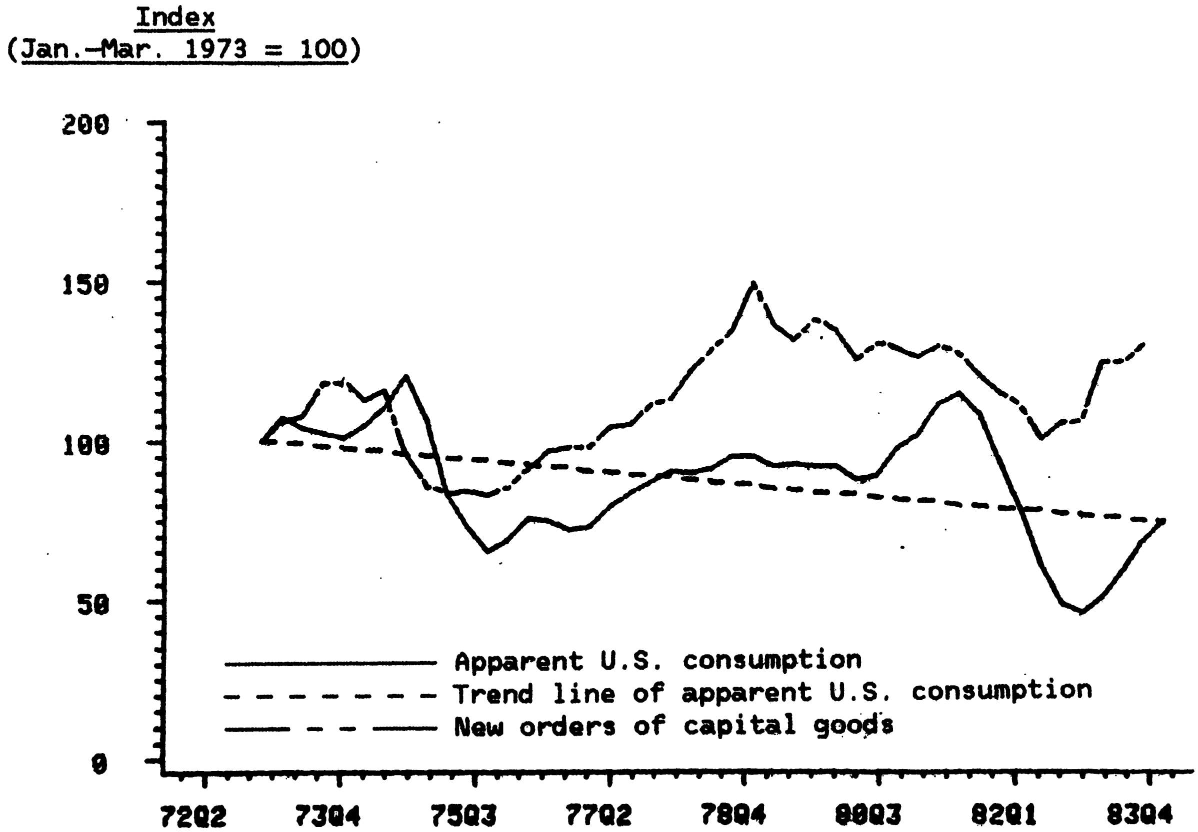
Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 15.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel railway-type products and industrial production of durable manufactures, by quarters, January 1973–January 1984



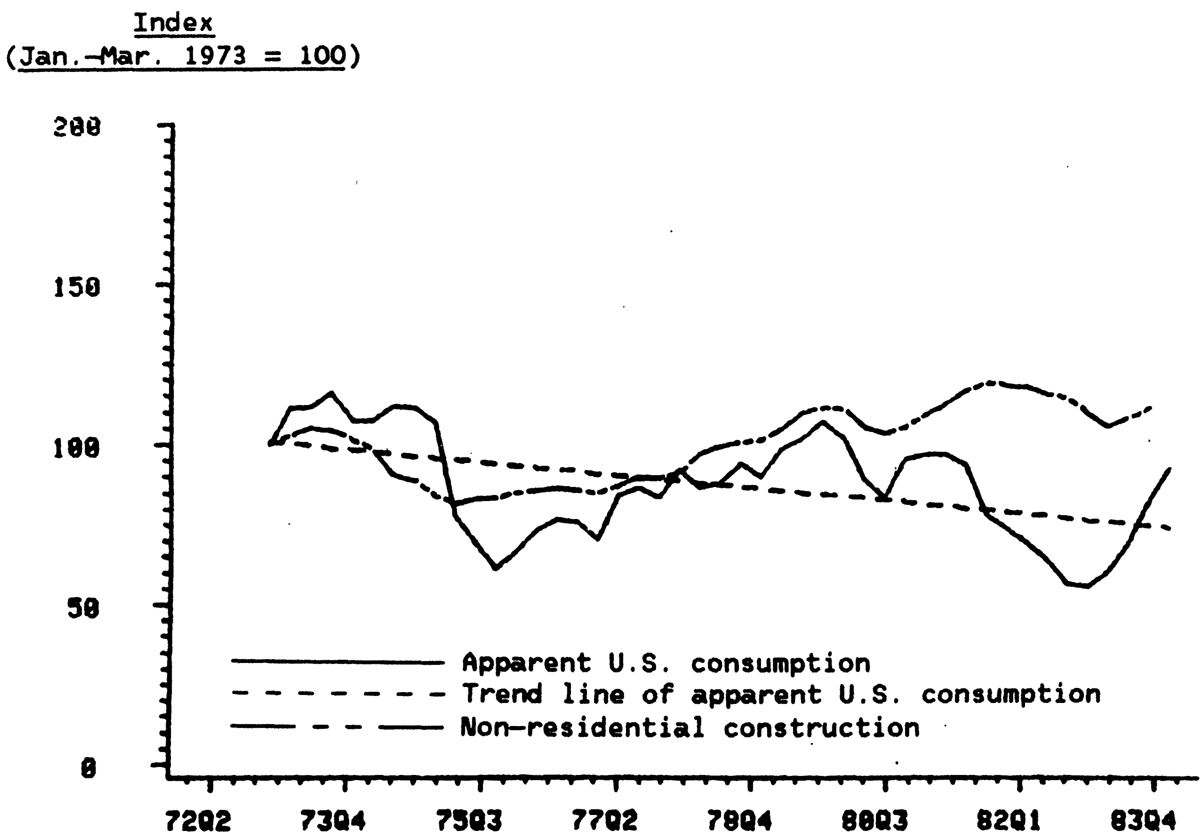
Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 16.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel bars and new orders of capital goods, by quarters, January 1973–January 1984



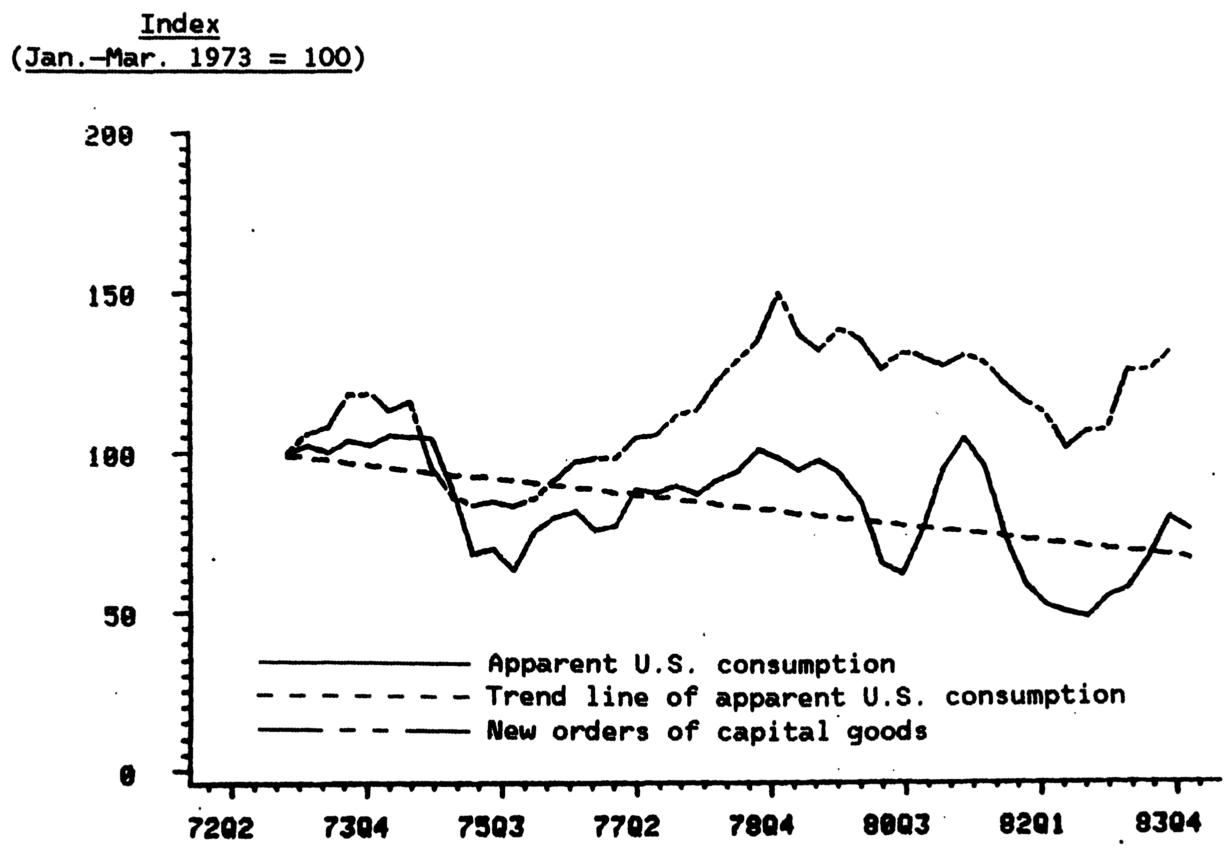
Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 17.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel structural shapes and non-residential construction, by quarters, January 1973-January 1984



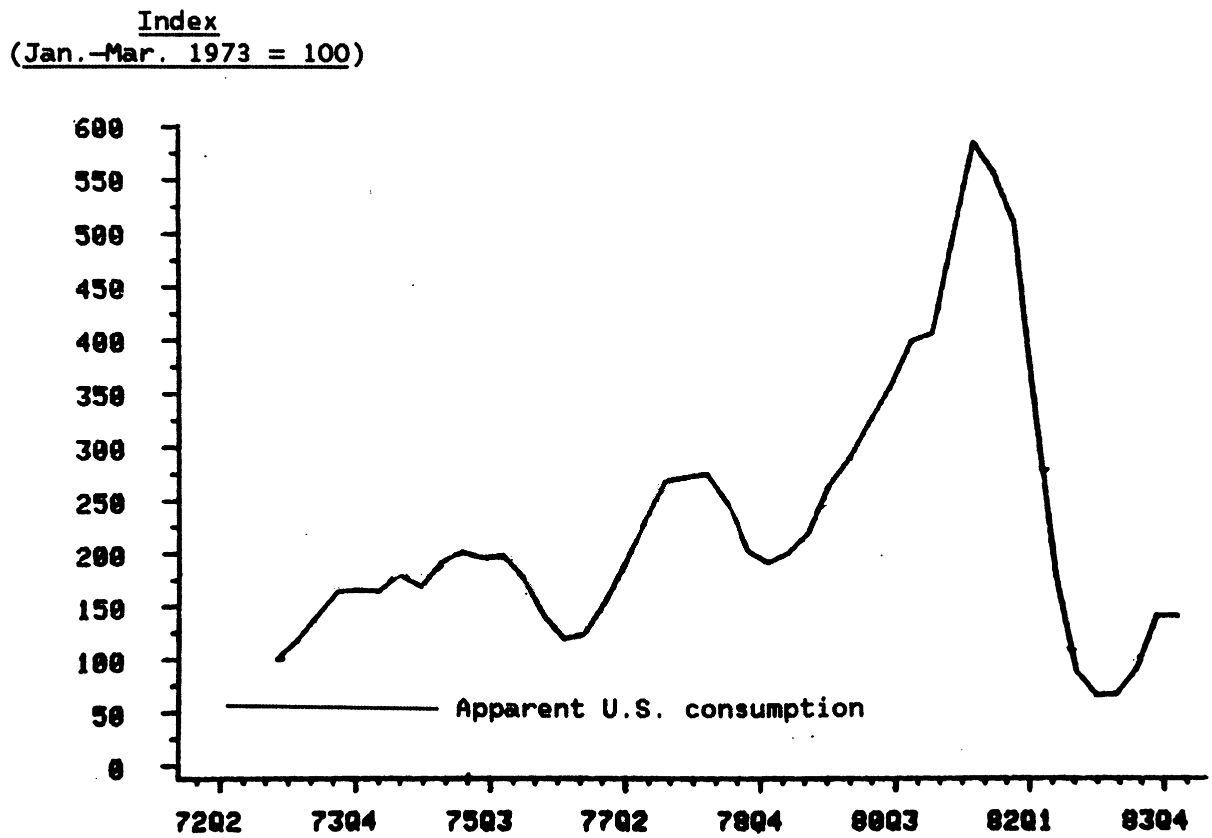
Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 18.—Seasonally adjusted indexes of apparent U.S. consumption of carbon and alloy steel pipes and tubes (except oil-country) and new orders of capital goods, by quarters, January 1973–January 1984



Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

Figure 19.—Seasonally adjusted index of apparent U.S. consumption of carbon and alloy steel oil-country tubular goods, by quarters, January 1973–January 1984



Source: Compiled from statistics of the American Iron & Steel Institute, the U.S. Department of Commerce, and the Bureau of Labor Statistics.

part to inventory adjustment by steel buyers, particularly by steel service centers/distributors. In a downturn in the economy, steel buyers generally selloff inventory, and steel shipments to these buyers decline by more than the general decline in end-use demand for steel. Alternatively, in an upturn in the economy, purchasers generally rebuild inventory and shipments may outpace the expansion in end-use demand for steel.

Apparent consumption for 5 of the 10 product lines--semifinished products (ingots, blooms, billets, slabs, and sheet bars), wire rods, structural shapes, plates, and railway-type products--reached peak levels in the second half of 1979. Those product lines that tend to be more consumer oriented (wire products, bars, pipes and tubes, and sheets and strip) peaked in 1978 or early 1979. With two exceptions (railway-type products and oil-country tubular goods), apparent consumption reached troughs in either the second or third quarter of 1980 and reached cyclical peak levels in the first or second quarter of 1981. 1/ With two exceptions (semifinished products and wire rods), cyclical troughs were reached in the fourth quarter of 1982 or the first quarter of 1983. 2/

For total steel products, apparent consumption declined by 49 percent from the cyclical peak in the second quarter of 1981 to the cyclical trough in the fourth quarter of 1982. However, a portion of this total decline in apparent consumption is also the result of secular factors. From the fourth quarter of 1982, apparent consumption increased to about 75 percent of the 1981 peak level. This cyclical upturn in demand was evident in all product lines, but with varying degrees of strength.

Long-term trends.--With the exception of semifinished products, wire rods, and oil-country tubular goods, apparent consumption of all other product lines showed downward long-term trends from January-March 1973 to January-March 1984. One interesting feature of the trend lines was the similar downward slopes for those products that showed a downward trend. The downward trend was greatest for plates.

It is difficult to determine whether the plotted trend lines represent the actual secular changes in apparent consumption of steel. First, the slope of a trend line can be affected by the period over which the trend line was fit or by wide variations in the data. For three of the product lines (plates, railway-type products, and oil-country tubular goods), trend lines were not fit for the apparent consumption data because wide variations in

---

1/ Apparent consumption of railway-type products declined continuously from the last quarter of 1979 to the first quarter of 1983. Oil-country goods showed continuous growth from the first quarter of 1979 to the third quarter of 1981.

2/ Apparent consumption of wire rods reached a cyclical trough in the first quarter of 1982. Apparent consumption of semifinished shapes reached a cyclical trough in the second quarter of 1982.

apparent consumption made the trend lines unreliable. 1/ Second, secular changes in apparent consumption are not likely to follow a constant linear trend line, but are likely to be more intense in some periods and less intense in others. For example, the oil-price shocks in 1974, 1979, and 1980 probably induced an acceleration of secular changes in those years. The long-term trend line is, therefore, only an approximation of long-term secular influences on apparent consumption of steel.

Each steel product line is dependent on a range of user industries, which themselves are affected by both cyclical and secular factors. To the extent a major user industry is undergoing a secular change, there will likely be a corresponding secular effect on those steel products the user industry purchases. Table 69 shows activity in five user industries that are major users of steel products. Also shown is the portion of total shipments of each of the product lines that was sold to each of these user industries in 1982. 2/

Each of the five user industries showed evidence of cyclical declines in 1982, with two of these industries (automobiles and construction) rebounding in 1983. However, the automobile and construction industries had shown continuous declines from 1978 (construction) or 1979 (automobiles) to 1982, suggesting that secular as well as cyclical forces were at work. Freight car deliveries showed the most dramatic decrease, declining from 90,300 units in 1979 to 8,000 units in 1983. The 1984 U.S. Industrial Outlook characterized 1979 and 1980 as years of "speculative overbuilding" in the freight car industry.

Oil well footage drilled is one proxy for actual consumption of oil well tubular goods, because the footage drilled affects the oil well tubular goods actually used. Oil well footage showed relatively steady increases from 1979 to 1982, before decreasing in 1983. In contrast, apparent consumption of oil well tubular goods increased by 72 percent (2.0 million tons) from 1979 to 1980 and by 48 percent (2.3 million tons) from 1980 to 1981, much more rapidly that the increase in actual consumption. The result was a buildup in user-industry inventories of oil-country tubular goods, which contributed to the low levels of apparent consumption in 1982 and 1983.

1/ Although 1973 was a year of high apparent consumption, apparent consumption in January-March 1973 was generally lower than that in subsequent quarters of the year. Since the choice of a beginning period with a high value will cause the slope of the trend line to be steeper, linear regressions using alternative beginnning quarters were also run. For example, when July-September 1974, rather than January-March 1973, was used as the beginning quarter, the slope of the trend line for all steel mill products decreased from -0.65 to -0.49, and when January-March 1975 was used as the beginning quarter the slope was -0.43. Although it is too early to tell how January-March 1984 will be characterized, it will fall somewhere between the October-December 1983 trough and a future peak (unless it proves to be a peak quarter itself).

2/ These were the latest data available on the distribution of shipments to end-user industries. Changes from year to year in this distribution are likely to be small, and will not significantly affect the analysis.

Table 69.—Activity in major steel-using industries, 1973-83, and share of total shipments to those industries in 1982, by product groupings

Year	Total new con-strucution	Automobile production	Freight car deliveries	Ship-building	Oil well goods	
					Footage	Oilfield machinery
	Billion 1973 dollars	Thousands	Thousands	Million 1973 dollars	1,000 feet	Million 1983 dollars
1973	136.0	9,676	58.3	2,921	2,692	1,211
1974	127.3	7,454	66.6	3,184	1,800	1,575
1975	113.0	7,053	72.8	3,547	1,554	2,029
1976	117.9	8,611	52.5	2,955	1,213	2,108
1977	131.3	9,109	51.7	3,712	1,707	2,190
1978	144.6	9,312	68.0	3,249	1,454	2,324
1979	149.1	8,341	90.3	3,525	1,282	3,162
1980	136.8	6,581	85.9	3,769	1,441	3,863
1981	129.8	6,209	44.9	4,212	1,578	5,489
1982	118.5	5,757	17.2	3,931	1,694	5,331
1983	130.2	6,900	8.0	3,016	1,528	3,699

	Percentage of shipments to—					
Product line	Construc-tion	Automotive	Rail trans-portation	Shipbuilding and marine equipment	Oil and gas industry	Steel serv-ice centers and distributors
Semifinished	2.3	5.1	0.2	1/	3.4	5.3
Plates	24.7	1.7	4.3	7.1	8.3	24.1
Sheets and strip	4.2	27.7	-	.1	1/	30.0
Wire rods	15.4	1.6	-	1/	1/	1.2
Wire and wire products	6.4	2.3	-	1/	1/	20.9
Railway-type products	1.4	-	84.8	1/	-	5.5
Bars	12.2	10.3	9.3	.1	1.5	8.9
Structural shapes	55.7	0.4	1.3	1.6	.1	17.7
Pipes and tubes	1.9	2.8	.3	1/	28.2	37.1
Oil-country goods	.4	-	-	-	80.5	6.9

1/ Less than 0.05 percent.

Source: 1984 Industrial Outlook, American Petroleum Institute.

Production costs

The Commission received usable data from 6 integrated producers, 17 nonintegrated producers, and 17 nonsteel producers on the makeup of their costs of goods sold for their operations producing the carbon and alloy steel products subject to this investigation (table 70). 1/ Four specific costs are examined: raw materials, energy, direct labor, and other factory costs (primarily depreciation).

Raw materials account for about 30 percent of total costs of goods sold for integrated producers and slightly less (5-year average of 27 percent) for nonintegrated producers. The advantage enjoyed by the nonintegrated producers is a function of the price of steel scrap, their primary raw material. Although scrap prices fluctuate widely, they have been relatively low during the last 5 years and have made the operation of electric furnaces attractive. Scrap prices normally rise during periods of expanding steel consumption and fall during periods of reduced demand, thus probably explaining the sharp drop in nonintegrated producers' raw material costs in 1982. Nonsteel producers reported that raw materials accounted for an average of 54 percent of their total costs of goods sold. This high figure (relative to such costs for integrated and nonintegrated steel producers) points out the extent to which the financial performance of the nonsteel producers is dependent on the prices they pay for the products of domestic or foreign steel producers.

Energy costs accounted for an increasing share of total costs for all three types of producers, although the increase was least for integrated steel producers. Integrated producers rely heavily on coal for their energy and coal prices were flat throughout the period. Nonintegrated steel producers and nonsteel producers, on the other hand, have been faced with sharply rising costs for their electricity (see the section on pricing for a presentation of indexes of coal and electric costs).

Direct labor costs have averaged about 25 percent of total costs for integrated producers and about 15 percent for nonintegrated producers. The fact that most nonintegrated producers are not unionized (and pay lower wages) probably accounts for much of this difference, although there are also indications that productivity is higher for some nonintegrated producers. For example, Paine, Webber, Mitchell, Hutchins, Inc., published some comparative data on wage costs for U.S. Steel, the largest integrated producer, and Nucor, the largest nonintegrated producer, which showed Nucor's labor costs per ton of steel produced to be 75 percent below those of U.S. Steel in 1981. Although Paine Webber's data are dated, they provide some interesting comparisons, particularly since they also show data for a number of other steel producers around the world. They are reproduced in tables 71 and 72. Labor costs for nonsteel producers average 9 percent of their total costs.

1/ Although costs of goods sold are not equivalent to costs of production, they are the best primary-source data available and should be useful in examining trends.

Table 70.--Composite cost data for U.S. steel producers on their operations producing the carbon and alloy steel products subject to this investigation, 1/ by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
	Integrated steel producers				
Raw materials-------million dollars--	3,506	3,202	3,727	2,548	2,704
Energy------------------------do----	1,809	1,678	2,039	1,618	1,777
Direct labor------------------do----	2,664	2,719	2,918	2,480	2,179
Other factory costs------------do----	2,942	2,694	3,193	2,632	2,502
Total production costs-----do----	10,921	10,293	11,877	9,278	9,162
As a share of net sales:					
Raw materials-------------percent--	29.5	30.4	30.3	29.5	30.2
Energy----------------------do----	15.2	15.9	16.5	18.7	19.9
Direct labor-----------------do----	22.4	25.8	23.7	28.7	24.4
Other factory costs----------do----	24.8	25.6	25.9	30.4	28.0
Total costs of goods sold--do----	91.9	97.7	96.4	107.3	102.5
As a share of total cost of goods sold:					
Raw materials-------------percent--	32.1	31.1	31.4	27.5	29.5
Energy----------------------do----	16.6	16.3	17.1	17.4	19.4
Direct labor-----------------do----	24.4	26.4	24.6	26.7	23.8
Other factory costs----------do----	26.9	26.2	26.9	28.4	27.3
Total costs of goods sold--do----	100.0	100.0	100.0	100.0	100.0
	Nonintegrated steel producers				
Raw materials-------million dollars--	764	776	910	639	522
Energy------------------------do----	237	264	334	322	295
Direct labor------------------do----	420	411	446	389	317
Other factory costs------------do----	786	830	970	1,068	798
Total production costs-----do----	2,207	2,281	2,660	2,418	1,932
As a share of net sales:					
Raw materials-------------percent--	29.2	29.0	28.7	22.2	25.4
Energy----------------------do----	9.1	9.9	10.5	11.2	14.4
Direct labor-----------------do----	16.1	15.3	14.0	13.5	15.5
Other factory costs----------do----	30.0	31.0	30.6	37.1	38.9
Total cost of goods sold---do----	84.4	85.2	83.8	84.0	94.2
As a share of total cost of goods sold:					
Raw materials-------------percent--	34.6	34.0	34.2	26.4	27.0
Energy----------------------do----	10.8	11.6	12.6	13.3	15.3
Direct labor-----------------do----	19.0	18.0	16.8	16.1	16.4
Other factory costs----------do----	35.6	36.4	36.4	44.2	41.3
Total costs of goods sold--do----	100.0	100.0	100.0	100.0	100.0

See footnote at end of table.

Table 70.--Composite cost data for U.S. steel producers on their operations producing the carbon and alloy steel products subject to this investigation, 1/ by types of producers, 1979-83--Continued

Item	1979	1980	1981	1982	1983
	Nonsteel producers				
Raw materials-------million dollars--:	293	269	306	239	272
Energy------------------------do----:	23	24	28	27	34
Direct labor-------------------do----:	47	45	52	43	47
Other factory costs------------do----:	162	158	177	159	162
Total production costs-----do----:	525	496	563	468	515
As a share of net sales:					
Raw materials-------------percent--:	46.2	44.3	43.9	44.3	45.5
Energy----------------------do----:	3.6	4.0	4.0	5.0	5.7
Direct labor-----------------do----:	7.4	7.4	7.5	8.0	7.8
Other factory costs----------do----:	25.6	26.1	25.4	29.4	27.1
Total costs of goods sold--do----:	82.8	81.8	80.8	86.7	86.1
As a share of total cost of goods sold:					
Raw materials-------------percent--:	55.8	54.2	54.4	51.0	52.8
Energy----------------------do----:	4.4	4.8	5.0	5.8	6.6
Direct labor-----------------do----:	9.0	9.1	9.2	9.2	9.1
Other factory costs----------do----:	30.8	31.9	31.4	34.0	31.5
Total costs of goods sold--do----:	100.0	100.0	100.0	100.0	100.0

1/ Includes only operations in the United States.

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

Note usable data were received from 6 integrated steel producers, 17 nonintegrated steel producers, and 17 nonsteel producers.

Table 71.--Labor costs per employee for selected steel producers, by selected countries and by firms, 1976-81

(In thousands of dollars)

Country and firm	1976	1977	1978	1979	1980	1981
United States:						
U.S. Steel	21.5	23.6	26.9	29.5	32.1	35.9
Nucor	17.3	18.5	20.6	22.9	25.8	27.7
Japan:						
Nippon Steel	13.8	17.3	22.6	22.2	26.7	1/
Kobe Steel	11.8	14.6	19.8	19.2	22.2	1/
West Germany:						
Peine-Salzgitter	13.9	17.5	20.4	24.5	27.0	1/
Krupp	14.2	9.6	12.3	14.0	15.4	1/
France:						
Usinor	12.2	14.3	13.7	25.8	23.2	1/
Sacilor	13.6	14.5	18.9	24.5	32.0	1/
United Kingdom:						
BSC	8.3	9.8	11.8	14.2	21.5	1/
Belgium:						
Cockerill	15.5	19.5	22.9	33.0	35.3	1/
Hainut-Sambre	15.0	19.1	23.4	27.2	31.7	1/
Canada:						
Algoma	17.9	18.5	19.0	22.2	24.3	26.2
Stelco	20.4	20.4	20.7	21.9	23.4	21.4
Spain:						
Ensidesa	10.1	11.8	14.3	18.4	19.3	1/
Mexico:						
Tamsa	5.8	5.0	5.8	7.3	8.0	1/

1/ Not available.

Source: Paine, Webber, Mitchell, Hutchins, Inc., World Steel Dynamics, Core Report P, November 1982.

Table 72.--Labor costs per ton of raw steel produced, as deflated by the wholesale price index (1975=100), by selected countries and by firms, 1976-81

Country and firm	1976	1977	1978	1979	1980	1981
United States:						
U.S. Steel	$113.9	$111.3	$110.0	$109.0	$106.2	$97.3
Nucor	36.4	37.1	35.3	31.6	28.1	24.2
Japan:						
Nippon Steel	26.5	35.3	45.5	39.6	37.2	1/
Kobe Steel	31.5	41.8	55.3	43.4	43.5	1/
West Germany:						
Peine-Salzgitter	59.1	74.8	79.3	81.4	81.7	1/
Krupp	79.2	67.4	78.1	86.2	89.2	1/
France:						
Usinor	56.7	65.4	62.6	78.2	65.8	1/
Sacilor	58.3	55.9	50.9	44.8	41.1	1/
United Kingdom:						
British Steel	64.3	68.5	73.3	82.9	94.9	1/
Belgium:						
Cockerill	80.2	92.9	97.0	106.3	118.2	1/
Hainut-Sambre	48.8	57.5	67.0	67.6	83.4	1/
Canada:						
Algoma	75.2	71.8	64.6	65.1	67.0	73.4
Stelco	80.7	76.4	74.9	69.1	61.0	74.7
Spain:						
Ensidesa	43.5	43.5	47.2	54.8	53.6	1/
Mexico:						
Tamsa	60.4	35.4	31.8	36.5	38.1	1/

1/ Not available.

Source: Paine, Webber, Mitchell, Hutchins, Inc., World Steel Dynamics, Core Report P, November 1982.

Other factory costs, which consist primarily of depreciation, accounted for 26 to 28 percent of integrated producers' total costs, 36 to 44 percent of nonintegrated producers' costs, and 31 to 34 percent of nonsteel producers' costs during 1979-83. Since these costs do not vary with production levels, they increased sharply for all three types of producers in 1982, when production reached a period low.

Mergers

Between 1950 and 1974 there were over 40 mergers involving steel companies. Because they usually took place among smaller firms, however, the impact on the concentration and structure of the domestic market was not significant. As can be seen from table 73, 5 of these mergers were classified as horizontal, 12 as vertical, and 17 as product extensions, with the remainder being classified as conglomerate acquisitions. A few of these mergers are highlighted below.

Table 73.--Principal acquisitions involving steel companies, 1950-74

Date of acquisition	Acquiring company	Assets of acquiring company	Acquired company	Assets of acquired company	Type of acquisition
		Million dollars		Million dollars	
Jan. 4, 1950	Detroit Steel	16.9	Portsmouth Steel	28.5	Vertical
March 1951	Kaiser Steel	157.3	Utah Fuel Co.	21.4	Vertical
Sept. 30, 1953	Timkin Detroit Ax	89.9	Stand Steel Spring	59.8	Product Extension
Dec. 23, 1954	Follansbee Steel	20.5	Consumers Co.	10.3	Conglomerate
Feb. 26, 1954	Merritt Chapman	36.7	Newport Steel Co.	26.5	Conglomerate
Jan. 1, 1955	Babcock & Wilcox	161.5	Globe Steel Tubes	12.6	Product Extension
July 31, 1955	Harrisburg Steel	19.6	Precision Castings	13.0	Conglomerate
July 31, 1956	Youngstown Sheet	573.5	Emsco Mfg. Co.	19.6	Product Extension
Sept. 14, 1956	Acme Steel Co.	60.8	Newport Ste/Merrit	29.4	Product Extension
May 1, 1957	Jessop Steel Co.	11.7	Green River Steel	13.0	Horizontal
Nov. 19, 1957	Carpenter Steel Co.	47.5	Northeastern Steel	14.2	Horizontal
Apr. 30, 1957	Jones & Laughlin	732.1	Rotary Elec. Steel	33.2	Product Extension
Nov. 30, 1957	Copperweld Steel	56.2	Superior Steel	16.5	Vertical
Apr. 30, 1958	Armco Steel Corp.	612.8	National Supply Co.	154.7	Vertical
Jan. 14, 1958	Armco Steel Corp.	612.8	Union Wire Rope	11.6	Vertical
Aug. 31, 1962	Sharon Steel Corp.	99.4	Macomber Inc.	10.6	Product Extension
April 1964	U.S. Steel	5033.5	Certified Inds. Inc.	11.1	Vertical
Dec. 21, 1964	Allegheny Ludlum Steel	196.9	Special Metals Inc.	11.0	Product Extension
Dec. 17, 1964	Interlake Iron	142.6	Acme Steel	134.4	Vertical
Dec. 31, 1964	Screw & Bolt Corp.	19.4	Wyckoff Steel Co.	11.8	Vertical
April 1965	Midland Ross Corp.	130.9	National Casting	43.7	Product Extension
Aug. 24, 1965	Philadelphia & Reading Corp.	145.0	Lone Star Steel Co.	156.0	Product Extension
Oct. 12, 1965	Old Ben Coal Corp.		Interlake Steel		Vertical
Dec. 31, 1967	Teledyne Inc.	170.4	Firth Sterling	22.1	Product Extension
Dec. 5, 1968	U.S. Steel	5609.3	Alside Inc.	26.9	Product Extension
June 24, 1968	Ling-Temco-Vought	485.1	Jones & Laughlin	1092.8	Conglomerate
Dec. 5, 1968	Wheeling Steel	404.9	Pittsburgh Steel	193.6	Horizontal
Dec. 31, 1968	National Steel	1221.8	Republic Fol Inc.	15.9	Product Extension
June 30, 1969	Crane Co.	295.3	CF&I Steel Corp.	235.6	Product Extension
Sept. 30, 1969	Republic Steel	1607.8	Finkl A. & Sons	14.5	Vertical
Oct. 17, 1968	Colt Industries	197.1	Crucible Steel Co.	258.5	Vertical
Mar. 5, 1968	American Cement Corp.	131.5	Pascoe Steel Corp.	11.2	Product Extension
December 1969	Armco Steel Corp.	1633.2	Hitco	60.6	Product Extension
August 1969	Allegheny Ludlum Steel	357.0	Jacobsen Mfg. Co.	21.4	Conglomerate
May 6, 1969	Athlone Industries	61.1	Jessop Steel Co.	48.5	Conglomerate
May 28, 1969	Lykes Corp.	376.9	Youngstown Sheet & Tube	1026.7	Conglomerate
Feb. 7, 1969	NVF Co.	25.2	Sharon Steel Co.	190.3	Conglomerate
June 1970	Cyclops Corp.		Detroit Steel Corp.	145.9	Product Extension
Feb. 27, 1970	Bethlehem Steel	3224.2	Kusan Inc.	14.3	Product Extension
Feb. 17, 1970	Inland Steel Co.	1175.1	Scholz Homes Inc.	25.2	Conglomerate
Dec. 27, 1971	Marathon Mfg. Co.	94.1	Allison Steel Mfg.	17.4	Conglomerate
Aug. 16, 1971	National Steel	1567.6	Granite City Steel	312.7	Horizontal
Jan. 12, 1972	Cyclops Corp.	304.5	Smith, Elvin G. & Co.	13.3	Horizontal
June 1974	Bethlehem Steel	3919.3	Mastic Corp.	10.8	Vertical

Source: Federal Trade Commission, Bureau of Economics, Staff Report on the United States Steel Industry and its International Rivals: Trends and Factors Determining International Competitiveness, November 1977

In 1968, the Wheeling Steel Corp., then the 10th largest producer, and the Pittsburgh Steel Co., then ranked 16th, merged to become the 9th largest producer in the U.S. steel industry. Wheeling-Pittsburgh has since grown to become the 8th largest U.S. producer of raw steel.

LTV Corp. acquired J&L in a 1968 conglomerate merger, but only after a suit was filed by the Justice Department alleging violation of the Clayton Act. A consent decree was negotiated which stipulated that in order to retain the steel company, LTV would have to divest itself of the Okonite Co. and Braniff Airways, Inc.

In a 1969 conglomerate merger, Youngstown Sheet and Tube Co. was acquired by the Lykes Corp., a firm whose principal business had been the operation of a steamship line. Bethlehem had made an attempt to acquire Youngstown in 1956, but the acquisition was blocked by the Justice Department. Ironically, this aborted merger was partly responsible for Bethlehem's later decision to begin construction of a greenfield plant at Burns Harbor, Ind.

One of the steel industry's largest horizontal mergers took place in 1971 with the acquisition of Granite City Steel by National. National was the 4th largest steelmaker in the United States and Granite City was the 11th. This merger moved National into third place, behind U.S. Steel and Bethlehem. Although National and Granite City did not compete geographically, both of their product lines were similar, with concentrations in flat-rolled sheet products and galvanized steel.

In other mergers that took place in the 1970's, Kaiser acquired MSL Tubing and Steel Co.; Interlake Iron Co. and Acme Steel combined to form Interlake Steel Co.; Cyclops acquired Detroit Steel and later negotiated a horizontal merger with Elwin G. Smith and Co.; and Timken Co. acquired Latrobe Steel Co.

Although mergers have not been uncommon in the steel industry in the past, the two most recent merger proposals have been unusual and controversial in that they involved firms already among the largest producers in the country. In a period of less than 5 months, two mergers were proposed which involved four of the seven largest steel firms in the country.

J&L (LTV), the third largest U.S. producer of steel, announced its plans on September 28, 1983, to merge with Republic, the fifth largest producer in the industry, and on February 1, 1984, U.S. Steel announced its intention to purchase National. U.S. Steel and National are the first and seventh largest U.S. producers of steel, respectively. 1/ These two mergers would have resulted in a fairly significant increase in the concentration of the U.S. steel industry, with the top three firms increasing their share of domestic shipments from 38 percent to 66 percent (based on 1983 data).

J&L/Republic.--The J&L/Republic merger was announced on September 28, 1983. The new firm, it was stated, would be able to increase productivity, lower costs, and thus become more competitive. Older plants would be closed and newer ones would be retained in order to lower the breakeven point and

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1/ These rankings are based on the volume of 1983 production of raw steel.

achieve a higher profit margin. Many industry analysts felt that this merger was necessary for the financial survival of these two firms. On February 16, 1984, the Department of Justice denied the merger request, stating that it would increase concentration in the industry, particularly in flat-rolled products, to an "unacceptably high" level. Furthermore, Justice declared that the recent announcement of the proposed merger between U.S. Steel and National (see next section) "only intensified the concern" that led to its decision in the J&L/Republic case. Justice disagreed with the J&L/Republic claim that the merger would reduce operating expenses by $300 million a year, and asserted that some of the efficiencies could be achieved without merging the two firms. It also concluded that imports did not "constitute an effective check on anti-competitive abuses of U.S. companies," particularly since existing voluntary restraints and import quotas inhibited foreign price increases in response to domestic price increases.

The Department of Commerce and the Office of the United States Trade Representative openly disagreed with the Justice Department decision. Malcolm Baldrige, the Secretary of Commerce, summarized his views in a March 11 submission to the New York Times entitled "How to Ruin an Entire Industry," in which he called the Justice Department action a "world class mistake." Secretary Baldrige took issue with Justice's decision to exclude imports from Europe and Japan in determining the size of the U.S. market. Baldrige also argued that substitutes such as plastics and aluminum, which have captured more than 20 percent of the sheet market in the 1980's, make the flat-rolled steel market look artificially low. Finally, he indicated that it was incongruous to rule that J&L/Republic's selling power would be too concentrated, with 20 percent of the market, when the three largest automobile producers account for more than 50 percent of domestic purchases of flat-rolled products. Approval of mergers, said Baldrige, is a better approach to resolving the steel industry's problems than is protectionism.

On March 21, 1984, a revised merger proposal was approved by the Justice Department, clearing the way for the $770 million combination of J&L and Republic. The new firm is called LTV Steel and its formation makes it the second largest steel producer in the nation. In exchange for Justice's approval of the merger, LTV Steel agreed to sell, within 6 months, Republic's stainless steel plant in Massillon, Ohio, and its carbon steel plant in Gadsden, Ala. In addition, LTV Steel must guarantee to supply the Massillon plant with stainless steel bands in a new long-term contract. After LTV Steel phases out some inefficient operations, it should be left with an annual capacity of 19 million tons. The new firm plans to concentrate on production of flat-rolled products, bars, stainless steel, and tubular steel.

U.S. Steel/National.--On February 1, 1984, a month after announcing the closing of more than a dozen plants, U.S. Steel announced its intention to purchase National for $575 million and the assumption of $400 million in long-term debt. U.S. Steel reported a 1983 loss of $1.2 billion. The proposed purchase of National was seen by some industry analysts as an attempt by U.S. Steel to shift its product mix away from capital goods and toward the more profitable sector of flat-rolled steel, which is used in consumer goods such as automobiles and appliances. The merger would have allowed U.S. Steel to acquire three steel mills in addition to National's iron ore and coal mines. The justification for the proposed merger was that it would significantly reduce costs of production, increase cash flow, and improve the ability of the firms to make capital investments. After the Justice Department announced that it would sue to block the J&L/Republic merger, however, U.S. Steel reconsidered its acquisition plans and, on March 9, cancelled the proposed merger. The prospect of another U.S. Steel/National merger attempt is considered to be nil, and some industry sources believe that U.S. Steel is effectively precluded from acquiring any major steel producers until the Government adopts more lenient antitrust rules regarding mergers.

On April 25, 1984, the Washington Post reported that Nippon Kokan, K.K. (NKK), Japan's second largest steel producer had agreed to purchase 50 percent of National. NKK will reportedly pay $273 million in cash and $19 million in notes for National, a subsidiary of National Intergroup, Inc. If the acquisition is approved by the Justice Department, National would become a free-standing company with a board of directors divided equally among representatives of National Intergroup and NKK. Howard M. Love, chairman of National Intergroup, said the cash payment would be used to continue the company's diversification into new growth areas and away from steel. The steel and energy operations in which NKK is investing account for $2.4 billion of National's $3 billion in sales last year, with the firm's aluminum, financial services, materials distribution, and other businesses making up the balance. National had been negotiating a joint venture with NKK, but suspended talks in February when U.S. Steel proposed acquiring all of National's steel making operations. As indicated, however, that plan was abandoned when the two U.S. steelmakers concluded that their proposed merger could not win approval from the Justice Department.

Structural changes in demand and competition from substitute products and downstream imports

Structural changes in the demand for steel are reflected in the secular decline in apparent consumption of various carbon and alloy steel mill products. Perhaps the largest structural effect was reduced steel consumption because of the downsizing of automobiles. Competition from substitute products for steel and competition from downstream imported products made largely of steel have also affected demand for various steel products. Substitute products that have replaced steel include aluminum, plastics, and concrete. This competition has affected demand for products such as hot- and cold-rolled sheets, tinplate, structurals, pipes, and bars. 1/ Important markets in which secular effects have occurred include automobiles, containers, and construction.

A recent study by Chase Econometrics measured the declining use of steel in the United States using the concept of steel intensity (steel consumption divided by real GNP). By this measure, steel intensity fell almost 30 percent from a high of 92.3 in 1970-73 to 56.2 in 1980-83. Chase attributes this drop in steel intensity to a decline in the use of steel in automobiles and a shift from heavy industry to electronics and services. 2/ Rev. William Hogan, a steel industry analyst, calculates that the structural decline in demand for

1/ Can Manufacturers Institute.
2/ American Metal Market, Mar. 13, 1984.

steel reflected by the auto and can markets has amounted to a 12- to 14-million-ton loss of steel shipments. 1/

The downsizing of automobiles and the substitution of competing materials for steel in their production have caused a significant decline in demand for steel sheets. Table 74 presents estimates of these impacts on materials consumed in the construction of a typical U.S.-built automobile between 1976 and 1983. The total weight of such an automobile declined from 3,760 pounds in 1976 to 3,192 pounds in 1983, or by 15 percent. Usage of plain carbon steel dropped by 27 percent from 2,075 pounds to 1,511 pounds. This sharp fall in the use of carbon steel was offset to some extent by an increase of 73 percent in the use of high-strength steel, from 120 pounds per car to 207 pounds, during the same period.

Table 74.--Estimated consumption of materials in a typical U.S.-built automobile, 1976-83

(In pounds)

Material	1976	1978	1980	1982	1983
Plain carbon steel	2,075.0	1,915.0	1,737.0	1,469.0	1,511.0
Iron	562.0	512.0	484.0	461.0	474.0
High-strength steel	120.0	133.0	175.0	203.0	207.0
Plastics	162.5	180.0	195.0	200.0	200.0
Fluids, lubricants	190.0	198.0	178.0	179.0	183.0
Rubber	153.0	146.5	131.0	135.0	137.5
Aluminum	85.5	112.5	130.0	134.0	136.0
Glass	87.5	86.5	83.5	84.0	85.0
Copper	32.0	29.0	28.0	28.0	29.0
Stainless steel	28.0	26.0	27.5	27.0	28.0
Lead	25.0	25.0	23.0	23.5	24.0
Zinc die castings	44.0	31.0	20.0	15.5	17.5
Others (alloy steel, cloth, cardboard, etc.)	196.0	175.0	151.0	155.0	160.0
Total	3,760.5	3,569.5	3,363.0	3,114.0	3,192.0

Source: Ward's Automotive Yearbook, 1983.

The use of aluminum per automobile produced has also increased. Significant applications in automobiles of the 1980's include radiators, engine blocks, and bumpers. According to the Automobile and Truck Committee of the Aluminum Association, Inc., a 2,250-pound 1982 U.S. automobile contained 133 pounds of aluminum. Estimates of 200 pounds of aluminum are forecast for use in the standard automobile by 1990.

An annual survey by the University of Michigan states that not only is the larger car share of the overall automobile market expected to continue to decline (from 45 percent in 1983 to 35 percent by 1992), but that the average

1/ American Metal Market, Feb. 19, 1984.

amount of steel in a car will drop from 2,000 pounds to 1,400 pounds by 1990. 1/ These figures apply mainly to carbon steel; the use of high-tensile-strength steel is expected to increase to more than 300 pounds per vehicle by 1992 as the auto industry moves to using less carbon steel, especially in its smaller cars, and increasing its reliance on high-tensile-strength steels.

The substitution of aluminum and other materials for steel in the production of cans is particularly pronounced. Although shipments of cans by can producers increased by 16 percent from 1972 to 1983, the share accounted for by cans made of steel (tinplate) declined steadily from 82 percent to 37 percent. 2/ Aluminum has taken an increasing portion of this market, more than doubling its share. However, most of the gain by aluminum has been in the beverage container market, whereas steel generally has held its place in the can market for preserved foods. 3/ Aluminum continues to displace tin-plate in the beverage can market. In 1982, the aluminum beverage can industry shipped 51.7 billion aluminum cans, a quantity equivalent to 89 percent of total beverage can shipments; tinplate cans accounted for the residual.

Steel continues to lose tonnage to competing substitute materials in various other markets. For example, reinforced concrete is increasingly used in nonresidential construction. This has been largely at the expense of structural steel. The major development in structural concrete in recent years has been prestressed concrete. Recent achievements include the design and construction of concrete buildings of more than 70 stories using high-strength concrete for columns, prestressed concrete nuclear reactor vessels, ocean oil storage tanks made of concrete, hyperbolic paraboloid cooling towers, and cantilevered, segmental, box-girder bridges. The use of prestressed concrete for piles in ocean ports has now become widespread. Prestressed concrete piling which is earthquake and wind proof is now used for substantially all structures on the west and gulf coasts of the United States.

Reinforced plastic pipe has replaced steel pipe in significant markets. For example, reinforced plastic pipe now accounts for 70 percent of pipe usage for natural gas distribution pipe lines. 4/ This percentage is expected to increase. Reinforced plastics have been successful in replacing steel because finished products made of reinforced plastics contain most of the favorable characteristics of steel and provide additional qualities of weight reduction, formability, and corrosion resistance.

Competition from downstream imported products made largely or in substantial part of steel has also contributed to a decline in demand for both domestic and imported steel. 5/ For example, since steel is the primary raw material input used in automobiles, the quantity of automobiles imported is a

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1/ American Metal Market, February 1984.

2/ Data from the Can Manufacturers Institute.

3/ This may change in the near future. Campbell Soup, the third largest producer of tin cans, has announced its intention to switch to plastic containers for its products.

4/ American Iron & Steel Institute.

5/ Measures of steel intensity understate total steel consumption by not including a measure of indirect steel consumption through imported products made largely of steel.

relevant factor in determining the amount of steel sold to domestic automobile producers.

Imports of automobiles increased by 30 percent from 2.4 million units in 1973 to 3.1 million units in 1983. As U.S. consumption of automobiles declined between 1973 and 1983, the share of the market supplied by imports increased from 21 percent in 1973 to a record 38 percent in 1982 before dropping to 34 percent in 1983 (table 75).

Table 75.--New passenger automobiles: U.S. factory sales, imports for consumption, exports of domestic merchandise, and apparent consumption, 1973-83

Year	U.S. factory sales	U.S. imports	U.S. exports	Apparent U.S consumption	Ratio of imports to apparent consumption
	Units				Percent
1973----	9,675,647	2,437,345	509,194	11,585,798	21.0
1974----	7,331,256	2,572,557	600,902	9,302,911	27.7
1975----	6,712,852	2,074,653	642,028	8,145,477	25.5
1976----	8,497,603	2,536,749	680,666	10,353,686	24.5
1977----	9,198,956	2,790,144	697,925	11,291,175	24.7
1978----	9,165,190	3,024,982	685,194	11,504,978	26.3
1979----	8,419,226	3,005,523	781,619	10,643,130	28.2
1980----	6,399,840	3,116,448	612,723	8,903,565	35.0
1981----	6,255,340	2,856,286	545,164	8,566,462	33.3
1982----	5,049,184	2,926,407	376,524	7,599,067	38.5
1983----	6,739,223	3,133,836	537,839	9,335,220	33.6

Source: Factory sales, compiled from data published by the Motor Vehicle Manufacturers Association of the United States, Inc.; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Other imports made of steel or chiefly of steel that have adversely affected the demand for domestic steel include automobile parts, trucks, motorcycles, railway cars, bicycles, construction equipment, steel containers, fasteners, hand and machine tools, generators, outboard and other motors, industrial machinery, and fabricated steel structures.

U.S. producers' efforts to compete and planned adjustments in the event that relief is granted

In the questionnaire which the Commission sent to producers of the carbon and alloy steel products included in this investigation, the firms were asked to identify:

(1) The primary ways in which imports compete with their products and specify the most important one;

(2) The efforts made by them or their workers since 1979 to compete more effectively in the U.S. market;

(3) The adjustments which they anticipate that they or their workers would make should a relief period of 5 years (with global imports limited to 15 percent of the U.S. market) be granted; and

(4) Whether or not (and why) they would be able to compete successfully with imports after the relief period expires, assuming that such adjustments were made.

Of the 64 producers that returned questionnaires with usable data to the Commission (these firms had domestic shipments totaling 45.0 million tons of steel products, valued at $20.2 billion, in 1983), 15 firms, 1/ accounting for 1983 domestic shipments of 2.0 million tons, valued at $850.5 million, either did not provide any information on items 2, 3, and 4 above, or reported that they compete to only a limited degree, if at all, with the imported products.

Table 76 shows the reported competitive aspects of U.S. imports versus domestic steel products and efforts by domestic firms to increase their competitiveness since 1979, by types of producers. A further breakdown, by individual firms, is provided in table Q-1, appendix Q. Forty-six firms, which accounted for 1983 domestic shipments of 49.5 million tons, valued at $22.8 billion, reported that price was the only or the most important way in which imports compete with their products. Twenty-three firms with domestic shipments accounting for 41.8 million tons, valued at $19.4 billion, in 1983 alleged that imports are unfairly traded at artificially low prices because of Government subsidies or dumping practices. Of the 46 firms reporting prices as the primary way in which imports compete, 10 firms, with 1983 domestic shipments amounting to 22.9 million tons, identified favorable credit terms, usually with extended payment, as another way in which imports compete. Eight firms, with 1983 domestic shipments of 24.1 million tons, reported that imports also compete with their products on the basis of quality. Other ways in which imports compete with domestic products, such as service, consignment and other inventory arrangements, delivery, and long-term contracts, were identified by eight firms accounting for domestic shipments of 27.6 million tons in 1983.

1/ These 15 firms comprise 2 integrated steel producers, 4 nonintegrated steel producers, and 9 nonsteel producers. Although these firms did not identify any efforts made to compete with imports or anticipated adjustments to be made (and their perceived effectiveness) should import relief be granted, five of these firms--accounting for 794,000 tons of domestic shipments, valued at $415.0 million, in 1983--indicated that price was the primary or only way in which imports compete with their products.

Table 76.--Carbon and alloy steel products: Competitive aspects of U.S. imports versus domestic steel products and efforts by U.S. firms to increase their competitiveness since 1979, by type of firm

(Shipment quantities in thousands of short tons; expenditures and shipment values in millions of dollars)

Item	Integrated steel firms				Nonintegrated steel firms				Nonsteel producing firms				Total steel products firms			
	No.	1983 Shipments: Quantity	1983 Shipments: Value	Expenditures	No.	1983 Shipments: Quantity	1983 Shipments: Value	Expenditures	No.	Shipments: Quantity	Shipments: Value	Expenditures	No.	1983 Shipments: Quantity	1983 Shipments: Value	Expenditures
Competitive aspects of imports versus domestic steel products:																
Price identified as only or most important aspect 1/	10	43,086	19,876	2/	23	6,059	2,644	2/	13	338	309	2/	46	49,483	22,829	2/
Other competitive aspects:																
Terms of credit	4	21,842	9,843	2/	6	1,056	675	2/	3/	2/	2/	2/	10	22,898	10,518	2/
Product quality	6	***	***	2/	1	***	***	2/	1	***	***	2/	6	24,069	11,113	2/
Other competitive aspects 4/	5	***	***	2/	2	***	***	2/	1	***	***	2/	8	27,638	12,879	2/
Efforts made since 1979 to make firm more competitive:																
Capital investments:																
Quantified 5/ capital investments: 6/																
Ironmaking 7/	6	35,009	16,148	1,928	2/	2/	2/	2/	2/	2/	2/	2/	6	35,009	16,148	1,928
Steelmaking: 8/																
Continuous casting	7	***	***	***	3	***	***	***	2/	2/	2/	2/	10	33,029	15,193	1,817
Other steelmaking	8	34,118	15,530	649	12	2,908	1,309	215	2/	2/	2/	2/	20	37,026	16,839	863
Total steelmaking	9	***	***	***	14	***	***	***	2/	2/	2/	2/	23	40,687	18,599	2,680
Further processed 9/	8	37,174	16,919	1,358	8	4,153	1,895	259	11	259	223	36	37	41,586	19,036	1,653
Other (not specified as to type operation)	3	***	***	***	6	***	***	***	3/	2/	2/	2/	9	11,182	5,210	708
Total quantified capital investments	9	***	***	***	22	***	***	***	11	259	223	36	42	43,530	19,874	6,969
Nonquantified 10/ capital investments: 6/																
Steelmaking 8/	2	***	***	11/	1	***	***	11/	3/	2/	2/	2/	3	***	***	11/
Further processed 9/	2	***	***	11/	1	***	***	11/	5	170	164	11/	8	***	***	11/
Other (not specified as to type of operation)	4	10,119	4,570	11/	5	1,780	789	11/	3/	2/	2/	2/	9	11,899	5,359	11/
Total nonquantified capital investments	6	20,471	9,359	11/	6	1,796	801	11/	5	170	164	11/	17	22,437	10,323	11/
Total capital investments	10	43,086	19,876	11/	22	5,798	2,496	11/	14	382	340	11/	46	49,266	22,711	11/
Organizational/operational efforts:																
Personnel:																
Employment 12/	8	***	***	11/	12	3,401	1,616	11/	5	53	78	11/	25	39,721	18,466	11/
Wages 13/	9	***	***	11/	9	2,097	1,181	11/	6	161	144	11/	24	39,731	18,481	11/
Benefits 14/	8	***	***	11/	9	***	***	11/	2	***	***	11/	19	39,122	18,085	11/
Total personnel	9	***	***	11/	16	4,088	1,906	11/	9	***	***	11/	34	41,752	19,247	11/
Marketing:																
Pricing 15/	8	***	***	11/	13	***	***	11/	2	***	***	11/	23	45,242	20,976	11/
Product mix 16/	7	***	***	11/	4	***	***	11/	2	***	***	11/	13	41,466	19,486	11/
Inventorying 17/	5	26,844	12,559	11/	2	***	***	11/	1	***	***	11/	8	27,132	12,866	11/
Other marketing 18/	6	31,229	14,465	11/	5	2,237	798	11/	5	156	148	11/	16	33,622	15,411	11/
Total marketing	9	***	***	11/	17	5,376	2,377	11/	10	227	248	11/	36	47,483	22,117	11/

See footnotes at end of table.

Table 76.--Carbon and alloy steel products: Competitive aspects of U.S. imports versus domestic steel products and efforts by U.S. firms to increase their competitiveness since 1979, by type of firm--Continued

(Shipment quantities in thousands of short tons; expenditures and shipment values in millions of dollars)

Item	Integrated steel firms				Nonintegrated steel firms				Nonsteel producing firms				Total steel products firms			
	No.	1983 Shipments Quantity	1983 Shipments Value	Expenditures	No.	1983 Shipments Quantity	1983 Shipments Value	Expenditures	No.	Shipments Quantity	Shipments Value	Expenditures	No.	1983 Shipments Quantity	1983 Shipments Value	Expenditures
Efforts made since 1979 to make firm more competitive--Con.:																
Organizational/operational efforts--Continued:																
Restructuring:																
Quality teams 19/	5	***	***	11/	1	***	***	11/	3/	2/	2/	2/	6	30,438	14,309	11/
Other restructuring 20/	10	43,086	19,876	11/	9	1,460	891	11/	8	134	152	11/	27	44,680	20,919	11/
Total restructuring	10	43,086	19,876	11/	9	1,460	891	11/	8	134	152	11/	27	44,680	20,919	11/
Other organizational/operational areas 21/	6	27,400	12,403	11/	3	***	***	11/	1	***	***	11/	10	28,148	12,894	11/
Total organizational/operational efforts	10	43,086	19,876	11/	21	5,801	2,583	11/	13	335	318	11/	44	49,222	22,776	11/

1/ 8 integrated steel producers, 12 nonintegrated steel producers, and 3 nonsteel producers indicated that imports were frequently unfairly priced as a result of such trade law violations as dumping or Government subsidies.

2/ Not applicable.

3/ No firms of this type reported for this item.

4/ Includes long-term contracts, consigned inventories (as well as other inventory arrangements), and service.

5/ Includes only capital expenditures for which firms specified a dollar amount expended.

6/ Capital expenditures were identified as being made by most firms for such reasons as to reduce costs; to improve technology, quality, or productivity; to increase capacity; or to develop new products.

7/ Includes such aspects as raw materials handling of coal and iron ore, sintering, coke oven and blast furnace operations, iron desulfurization, and transport of iron to the steelmaking facilities.

8/ Includes all aspects of raw steel production, including such items as raw materials handling of scrap, ladle transport of molten metal, steelmaking furnace operations, ladle metallurgy, and casting into solid form.

9/ Includes all functions of further processing, handling, and marketing of the steel products.

10/ Many companies listed various investments but did not provide a dollar amount for the expenditures.

11/ Not available.

12/ Usually reflects reported decreases in employment levels. Does not reflect reported facility or plant closures unless firms specifically reported employment decreases; for such closures, see also portion of table entitled "restructuring" and footnote No. 20.

13/ Reflects reductions or concessions in scheduled increases in wage and/or salary levels.

14/ Includes reductions in such benefits as cost of living allowances, holidays, Sunday premiums, vacation bonuses, and medical and dental plans.

15/ Includes price reductions, price suppressions, longer term price commitments, and increased discounts or allowances from list price.

16/ Includes such changes in product mix as movement toward higher value-added products, targeting of import-resistant markets--e.g., defense and bridge construction, and emphasis on identifying needs for and marketing of newly developed products.

17/ Reflects such practices as increased inventories and/or increased "roll and hold" marketing of products.

18/ Includes such marketing changes as extended or special financing arrangements, improved customer service, advertising campaigns, shorter lead or delivery times, and targeting of specific geographic areas.

19/ Includes utilization of technical and labor-management teams designed to identify problems or inefficient practices and examine ways to remedy.

20/ Includes such restructuring efforts as elimination or consolidation of equipment and functions within the organization, accounting changes--e.g., to profit-center accounting, crossover or merging of individual job responsibilities, crew size reductions, outside contracting of work previously performed in-house, and time schedule changes to take advantage of off-peak electricity rates. Plant or facility closures were reported by 9 integrated steel firms, 3 nonintegrated steel producers, and 1 nonsteel producer.

21/ Includes such other efforts to compete as increased training, increased emphasis on management techniques, performance- or quality-related incentive programs, increased computerization and mechanization, participation in unfair trade practice petitions, and sale of assets and stock to generate operating or investment capital.

Source: Table Q-1, app. Q

Note.--Totals reflecting number of firms and shipments data have been netted duplicate counting of individual firms; because of rounding, may not add to totals shown.

Efforts reportedly made by domestic firms since 1979 to compete more effectively in the U.S. market 1/ were divided into two broad categories--(1) capital investments in equipment and technology, including expenditures for environmental controls and modifications of existing equipment to effect operational cost reductions, and (2) operational and organizational efforts, including significant personnel alterations, management-worker role and compensation modifications, marketing changes, and operational or organizational restructuring at all levels. Although most firms itemized their capital investments in equipment and technology by process, project, or plant and assigned a dollar amount to the investment, others either assigned a dollar value to a broad range of investments and/or assigned no dollar value at all. Consequently, table 76 and appendix Q provide for both quantified capital investments for which expense data were reported and nonquantified capital investments. 2/ Each of these categories is further divided into ironmaking, 3/ steelmaking, 4/ further processing, 5/ and nonspecified (whenever categorizing of expense by the staff was not possible from data supplied) subcategories.

Forty-two firms accounting for 43.5 million tons of domestic shipments in 1983 reported expenses of $7 billion for capital investment in equipment and technology since 1979. Of the quantified expenses, 28 percent was for ironmaking activities, 38 percent was for steelmaking activities, 24 percent was for further processing, and 10 percent was nonspecified. Additionally, 17 firms, which accounted for 22.4 million tons of domestic shipments in 1983, reported additional capital investment in equipment and technology since 1979 but did not quantify a dollar expense.

1/ Although efforts to compete more effectively in the U.S. market do not necessarily reflect actions taken as a result of import penetration or pricing influence, many reporting firms specifically identified certain efforts as being made as a direct or indirect result of imports influence in the marketplace. One of the several firms which identified pricing policies as one of their competitive efforts stated ". . . the lowest foreign price for a particular steel product soon becomes the market price. Therefore, any change undertaken by . . . any . . . domestic steel producer to lower its cost of production to enable it to offer steel at a price meeting or approaching the market price set by the foreign goods, while at the same time attempting to maximize any profit potential, can only be construed as an effort to combat imports".

2/ If a firm quantified with a dollar expense certain reported capital investments but did not quantify others, it was included in both of these breakouts.

3/ Includes such aspects as raw materials handling of coal and iron ore, sintering, coke oven and blast furnace operations, iron desulfurization, and transport of iron to the steelmaking facilities.

4/ Includes all aspects of raw steel production, including such items as raw materials handling of scrap, ladle transport of molten metal, steelmaking furnace operations, ladle metallurgy, and casting into solid form.

5/ Includes all functions of further processing, handling, and marketing of the steel products.

Forty-four firms, which accounted for 49.2 million tons of domestic shipments in 1983, reported making some effort(s) since 1979 along organizational or operational lines in an attempt to improve their competitiveness. Marketing adjustments were reported by 36 firms, accounting for 47.5 million tons of 1983 domestic shipments. Of these marketing adjustments, price concessions of various kinds were reported by 23 firms, changes of product mix by 13 firms, varied inventory practices by 8 firms, and such other marketing efforts as special financing arrangements, improved customer service, and targeting of specific geographic areas by 16 firms.

Thirty-four firms, accounting for 41.8 million tons of 1983 domestic shipments, reported making some changes in personnel policies since 1979 in attempts to improve competitiveness. Of these 34 firms, 25 reported changes in levels of employment (all but 1 firm reported reductions), 24 reported reductions or concessions in wage or salary levels, and 19 reported reductions in employee benefits.

Twenty-seven firms, accounting for 44.7 million tons of domestic shipments in 1983, reported implementing such restructuring efforts as elimination or consolidation of equipment, cross-over or merging of individual job responsibilities, and time-schedule changes to take advantage of off-peak electricity rates. Of these 27 firms, 6 reported the utilization of technical or labor-management quality teams.

Ten firms, accounting for 28.1 million tons of domestic shipments in 1983, reported implementing such other organizational/operational efforts to improve competitiveness as participation in unfair trade practice petitions, increased computerization and mechanization, and increased emphasis on management techniques.

Thirty-one firms, which accounted for 1983 domestic shipments of 40.3 million tons, valued at $18.8 billion, responded that, given relief, they would be able to compete successfully with imports after the relief expired. Of these, 13 firms (7 integrated steel producers and 6 nonintegrated steel producers) qualified these affirmative responses with such statements as:

> ". . .This proposed relief most likely will not effect the corrections necessary to eliminate the entire import problem. As long as foreign Governments use their steel production to combat domestic economic problems such as to provide employment and generate foreign exchange rather than to satisfy a real demand for the product, . . . as long as developing countries continue to expand capacity without regard for demand, subsidize production, and continue to be given free access into the United States, then our domestic market will remain the world's dumping ground. The domestic industry does need relief, but it also desperately needs strict enforcement of fair trade laws."

> " . . .All the adjustments . . . made during the period 1979 to 1983 in addition to efforts that could be made during the period of import relief would enable our firm to compete more successfully with imports after the relief period has expired. All of the changes . . . have largely been geared toward reductions in the overall cost of production, reduction in corporate overhead

> expenses, steelmaking efficiencies, and state-of-the-art technology. However it must be noted that even a five year period to increase our competitiveness will not change the ability of government-owned and/or controlled steel producers to sell in this country at virtually any price, as long as their Governments are willing to cover operating losses. We know of no cost-saving measures to be instituted that can possibly compete with unfair competition of that nature."

Seven firms, accounting for 2.7 million tons of 1983 domestic shipments, valued at $997 million, responded that despite relief they would not be competitive with imports after the relief expired. Three firms responded that despite relief they would not be competitive with imports and gave as the reason continued (and presumed to be continuing 5 years hence) unfair trade practices. * * *. Eight firms, accounting for 6.5 million tons of 1983 domestic shipments, valued at $3.1 billion, reported that they were uncertain as to their ability to compete if given relief. Table 77 shows a breakdown of these firms by types of producers. A further breakdown, by individual firms, is provided in table Q-2 .

Twenty-four firms accounting for 28.5 million tons of domestic shipments in 1983 reported that if import relief is granted they anticipate expenditures of $6 billion for capital investment in equipment and technology to increase their competitiveness in the U.S. market. Of the quantified expenses, *** percent was for ironmaking activities, 39 percent was for steelmaking activities (nearly *** percent of which was reported for continuous casting), 42 percent was for further processing, and *** percent was nonspecified. Additionally, 32 firms, which accounted for 41.2 million tons of domestic shipments in 1983, reported anticipated additional capital investment in equipment and technology but did not quantify a dollar expense.

Nineteen firms, which accounted for 27.8 million tons of domestic shipments in 1983, reported anticipating making effort(s) along organizational or operational lines in an attempt to improve their competitiveness. Planned marketing adjustments were reported by 14 firms, accounting for 26.1 million tons of 1983 domestic shipments. Of these marketing adjustments, changes of product mix were reported by 10 firms, 1 firm reported anticipated price increases, and such other marketing efforts as special financing arrangements, improved customer service, and advertising campaigns were listed by 4 firms.

Eight firms, accounting for *** of 1983 domestic shipments, reported anticipated changes in personnel policies to improve competitiveness. Of these firms, six reported anticipated changes in levels of employment (three reported anticipated increases, the remaining three reported anticipated decreases), three reported anticipated reductions or concessions in wage or salary levels, and two anticipated reductions in employee benefits.

Eight firms, accounting for 21.6 million tons of domestic shipments in 1983, anticipated implementing such restructuring efforts as elimination or consolidation of equipment and functions within the organization, cross-over or merging of individual job responsibilities, and acquisition of technical, marketing, and sales staff.

Table 77.--Carbon and alloy steel products: Anticipated ability of U.S. firms to compete with imports if import relief is granted and anticipated efforts which would be made by U.S. firms to increase their competitiveness, by type of firm

(Shipment quantities in thousands of short tons; expenditures and shipment values in millions of dollars)

Item	Integrated steel firms				Nonintegrated steel firms				Nonsteel producing firms				Total steel products firms			
	No.	1983 Shipments		Expen-ditures	No.	1983 Shipments		Expen-ditures	No.	Shipments		Expen-ditures	No.	1983 Shipments		Expen-ditures
		Quantity	Value			Quantity	Value			Quantity	Value			Quantity	Value	
Assuming import relief under section 201, projected ability of U.S. firms to compete with imports after relief expires: 1/																
Firm reportedly would be competitive	8	36,297	16,934	2/	16	3,826	1,704	2/	7	219	206	2/	31	40,342	18,844	2/
Firm reportedly would not be competitive	1	***	***	2/	4	***	***	2/	2	***	***	2/	7	2,709	997	2/
Firm reportedly uncertain as to ability to compete	1	***	***	2/	3	***	***	2/	4	***	***	2/	8	6,537	3,106	2/
Assuming import relief, efforts which would reportedly be made to make firm more competitive:																
Quantified 3/ capital investments: 4/																
Ironmaking 5/	2	***	***	***	2/	2/	2/	2/	2/	2/	2/	2/	2	***	***	***
Steelmaking: 6/																
Continuous casting	5	***	***	***	7	***	***	***	2/	2/	2/	2/	12	***	***	***
Other steelmaking	4	***	***	***	4	***	***	***	2/	2/	2/	2/	8	***	***	***
Total steelmaking	6	***	***	***	9	***	***	***	2/	2/	2/	2/	15	27,915	12,916	2,376
Further processed 7/	5	25,786	11,803	2,401	9	1,775	835	84	7	153	118	17	21	27,714	12,756	2,502
Other (not specified as to type operation)	3	***	***	***	8/	2/	2/	2/	8/	2/	2/	2/	3	***	***	***
Total quantified capital investments	6	***	***	***	11	2,219	1,035	195	7	153	118	17	24	28,457	13,194	5,999
Nonquantified 9/ capital investments: 4/																
Continuous casting	1	***	***	10/	8/	2/	2/	2/	8/	2/	2/	2/	1	***	***	10/
Further processed 7/	1	***	***	10/	2	***	***	10/	8/	2/	2/	2/	3	***	***	10/
Other (not specified as to type of operation)	4	***	***	10/	6	***	***	10/	8/	2/	2/	2/	10	***	***	10/
Total nonquantified capital investments	5	19,512	8,972	10/	7	1,899	955	10/	8/	2/	2/	2/	12	21,411	9,927	10/
Total capital investments	9	37,503	17,317	10/	16	3,587	1,772	10/	7	153	118	10/	32	41,243	19,207	10/
Organizational/operational efforts:																
Personnel:																
Employment 11/	3	***	***	10/	3	***	***	10/	8/	2/	2/	2/	6	***	***	10/
Wages 12/	1	***	***	10/	2	***	***	10/	8/	2/	2/	2/	3	***	***	10/
Benefits 13/	1	***	***	10/	1	***	***	10/	8/	2/	2/	2/	2	***	***	10/
Total personnel	4	***	***	10/	4	***	***	10/	8/	2/	2/	2/	8	***	***	10/
Marketing:																
Pricing	8/	2/	2/	2/	8/	2/	2/	2/	1	***	***	10/	1	***	***	10/
Product mix 14/	3	***	***	10/	5	***	***	10/	2	***	***	10/	10	***	***	10/
Other marketing 15/	2	***	***	10/	2	***	***	10/	8/	2/	2/	2/	4	***	***	10/
Total marketing	4	***	***	10/	7	***	***	10/	3	***	***	10/	14	***	***	10/

See footnotes at end of table.

Table 77.--Carbon and alloy steel products: Anticipated ability of U.S. firms to compete with imports if import relief is granted and anticipated efforts which would be made by U.S. firms to increase their competitiveness, by type of firm--Continued

(Shipment quantities in thousands of short tons; expenditures and shipment values in millions of dollars)

Item	Integrated steel firms				Nonintegrated steel firms				Nonsteel producing firms				Total steel products firms			
	No.	1983 Shipments: Quantity	1983 Shipments: Value	Expenditures	No.	1983 Shipments: Quantity	1983 Shipments: Value	Expenditures	No.	Shipments: Quantity	Shipments: Value	Expenditures	No.	1983 Shipments: Quantity	1983 Shipments: Value	Expenditures
Assuming import relief, efforts which would reportedly be made to make firm more competitive--Continued:																
Organizational/operational efforts--Continued:																
Restructuring:																
Quality teams	8/	2/	2/	2/	8/	2/	2/	2/	1	***	***	10/	1	***	***	10/
Other restructuring 16/	4	***	***	10/	2	***	***	10/	1	***	***	10/	7	***	***	10/
Total restructuring	4	***	***	10/	2	***	***	10/	2	***	***	10/	8	***	***	10/
Other organizational/operational areas	8/	2/	2/	2/	8/	2/	2/	2/	1	***	***	10/	1	***	***	10/
Total organizational/operational efforts	6	26,085	12,041	10/	9	1,640	962	10/	4	122	104	10/	19	27,847	13,106	10/

1/ Whether or not a firm anticipated being able to compete frequently was qualified with assumptions regarding the fairness of trade with regards to countervailing duty and dumping laws. 7 integrated steel firms and 6 nonintegrated steel firms qualified their affirmative ability to compete by the provision that they would not necessarily be competitive with unfairly traded imports; likewise, 2 nonintegrated steel firms and 1 nonsteel firm elaborated on their anticipated inability to compete by expecting that the imports would be unfairly traded.

2/ Not applicable.

3/ Includes only anticipated capital expenditures for which firms specified a dollar amount expended.

4/ Capital expenditures were identified as being anticipated by most firms for such reasons as to reduce costs; to improve technology, quality, or productivity; to increase capacity; or to develop new products.

5/ Includes such aspects as raw materials handling of coal and iron ore, sintering, coke oven and blast furnace operations, iron desulfurization, and transport of iron to the steelmaking facilities.

6/ Includes all aspects of raw steel production including such items as raw materials handling of scrap, ladle transport of molten metal, steelmaking furnace operations, ladle metallurgy, and casting into solid form.

7/ Includes all functions of further processing, handling, and marketing of the steel products.

8/ No firms of this type reported for this item.

9/ Many companies listed various anticipated investments but did not provide a dollar amount for the expenditures.

10/ Not available.

11/ 1 integrated steel firm and 2 nonintegrated steel firms anticipated increases in employment levels; 2 integrated steel firms and 1 nonintegrated firm anticipated workforce reductions.

12/ Reflects anticipated reductions or concessions in scheduled increases in wage and/or salary levels.

13/ Includes reductions in such benefits as cost of living allowances.

14/ Includes such anticipated changes in product mix as movement toward higher value-added products, emphasis on identifying needs for and marketing of newly developed products, and general expansion of product lines.

15/ Includes such anticipated marketing changes as extended or special financing arrangements, improved customer service, advertising campaigns, shorter lead or delivery times, and targeting of specific geographic areas.

16/ Includes such anticipated restructuring efforts as acquisition of technical, marketing, and sales staff; sale of properties and equipment of closed facilities; elimination or consolidation of equipment and functions within the organization, and crossover or merging of individual job responsibilities.

Source: Table Q-2, app. Q.

Note.--Totals reflecting number of firms and shipments data have been netted duplicate counting of individual firms; because of rounding, may not add to totals shown.

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CARBON AND CERTAIN ALLOY STEEL PRODUCTS

Volume II

Appendixes to the Report to the President on Investigation No. TA-201-51 Under Section 201 of the Trade Act of 1974

USITC PUBLICATION 1553

JULY 1984

United States International Trade Commission / Washington, D.C. 20436

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APPENDIX A

NOTICE OF THE COMMISSION'S INVESTIGATION AND LIST OF WITNESSES APPEARING AT THE HEARINGS

[Investigation No. TA-201-51]

Carbon and Certain Alloy Steel Products

AGENCY: International Trade Commission.

ACTION: Institution of an investigation under section 201 of the Trade Act of 1974 (19 U.S.C. 2251) and scheduling of hearings to be held in connection with the investigation.

EFFECTIVE DATE: January 24, 1984.

SUMMARY: Following receipt of a petition filed on January 24, 1984, on behalf of the United Steelworkers of America, AFL-CIO/CLC, and Bethlehem

Federal Register / Vol. 49, No. 32 / Wednesday, February 15, 1984 / Notices 5839

Steel Corp., the Commission instituted investigation No. TA-201-51 under section 201 of the Trade Act of 1974 to determine whether the following products of alloy and other than alloy steel (except those of stainless steel, of heat resisting steel, or of tool steel, but including those of tool steel of the type described in headnote 2(h)(vii) to part 2B of schedule 6 of the Tariff Schedules of the United States (TSUS)), provided for in the following parts of schedule 6 of the TSUS, are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing articles like or directly competitive with the imported articles:

Products provided for in part 2B:

Ingots, blooms, billets, slabs, and sheet bars;

Bars and wire rods;

Hollow drill steel;

Plates, sheets, and strip;

Wire;

Angles, shapes, and sections, hot rolled, or, if cold rolled, weighing over 0.29 pound per linear foot;

Sheet piling;

Rails; joint bars, and tie plates; and

Pipes and tubes and blanks therefor;

Products provided for in part 3B:

Barbed wire provided for in TSUS item 642.02;

Wire strand provided for in TSUSA items 642.1105, 642.1120, 642.1142, 642.1144, and 642.1146;

Wire ropes, cables, and cordage provided for in TSUS items 642.12 and 642.16;

Galvanized wire fencing provided for in TSUS item 642.35;

Bale ties made from wire provided for in TSUS items 642.90 and 642.91; and

Milliners' wire and other wire provided for in TSUS items 642.96 and 642.97;

Products provided for in part 3D:

Brads, nails, spikes, staples, and tacks, of round wire, of one-piece construction, provided for in TSUS items 646.25 and 646.26; and

Railway track spikes provided for in TSUSA item 646.3020;

Products provided for in part 3F:

Columns, pillars, posts, beams, girders, and similar structural units provided for in TSUS items 652.94 and 652.96; and

Products provided for in part 6A:

Railway wheels and axles, and parts thereof, and railway axle bars, provided for in TSUS items 690.25 and 690.30.

For purposes of this investigation, the terms in the above enumeration shall have the meanings assigned to them by the applicable headnotes in the TSUS. The Commission must report its determination to the President by July 24, 1984.

FOR FURTHER INFORMATION CONTACT: Robert Eninger (202/523-0312) or Lynn Featherstone (202/523-0242), U.S. International Trade Commission Office of Investigations, Washington, D.C. 20436.

SUPPLEMENTARY INFORMATION:

Participation in the Investigation

Persons wishing to participate in this investigation as parties must file an entry of appearance with the Secretary to the Commission, as provided in § 201.11 of the Commission's Rules of Practice and Procedure (19 CFR 201.11), not later than 21 days after the publication of this notice in the **Federal Register.** Any entry of appearance filed after that date will be referred to the Chairman, who shall determine whether to accept the late entry for good cause shown by the person desiring to file the entry.

Upon the expiration of the period for filing entries of appearance, the Secretary shall prepare a service list containing the names and addresses of all persons, or their representatives, who are parties to the investigation (19 CFR 201.11(d)). Each document filed by a party to this investigation must be served on all other parties to the investigation (as identified by the serivce list), and a certificate of service must accompany the document. The Secretary will not accept a document for filing without a certificate of service (19 CFR 201.16(c)).

Public Hearing

The Commission will hold a public hearing in connection with the injury phase of this investigation beginning at 10:00 a.m., on May 9, 1984, in the Auditorium of the U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, D.C. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission no later than the close of business (5:15 p.m.) on April 16, 1984.

Prehearing Procedures

To facilitate the hearing process, it is requested that persons wishing to appear at the injury hearing on May 9, 1984, submit prehearing briefs enumerating and discussing the issues which they wish to raise at the hearing. An original and 22 copies of such prehearing briefs should be submitted to the Secretary no later than the close of business on May 3, 1984. Confidential submissions should be in accordance with the requirements of § 201.6 of the Commission's rules (19 CFR 201.6). Copies of any prehearing briefs submitted will be made available for public inspection in the Office of the Secretary. Any prepared statements submitted will be made a part of the transcript. Oral presentations at the hearing should, to the extent possible, be limited to issues raised in the prehearing briefs.

A prehearing conference will be held on April 30, 1984, at 10:00 a.m., in Room 117 of the U.S. International Trade Commission Building, 701 E Street, NW., Washington, D.C.

Persons not represented by counsel or public officials who have relevant matters to present may give testimony without regard to the suggested prehearing procedures outlined above.

Written Submissions

As mentioned, parties to this investigation may file prehearing briefs by the date shown above. Posthearing briefs must be submitted no later than the close of business on May 18, 1984. In addition, any person who has not entered an appearance as a party to the investigation may submit a written statement of information pertinent to the subject of the investigation on or before May 15, 1984. A signed original and 22 copies of each submission must be filed with the Secretary to the Commission. All written submissions, except for confidential business information, will be available for public inspection during regular business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary to the Commission.

Commercial or financial data and any information for which confidential treatment is desired should be submitted separately. The envelope and all pages of such submission must be clearly marked "Confidential Business Information." Confidential submissions and requests for confidential treatment must conform with the requirements of § 201.6 of the Commission's Rules (19 CFR 201.6).

Remedy

In the event that the Commission makes an affirmative injury determination in this investigation, a public hearing on the subject of remedy recommendations will be held beginning at 10:00 a.m., on June 21, 1984, in the Hearing Room of the U.S. International Trade Commission Building. A prehearing conference will be held June 15, 1984, beginning at 10:00 a.m., in Room 117 of the U.S. International Trade Commission Building. Prehearing brief will be due to the Secretary no later than the close of business on June 15, 1984, and must conform with the requirements of section 201.6 of the

Commission's rules. Posthearing briefs will be due to the Secretary no later than the colse of business on June 29, 1984.

Inspection of Petition

The petition filed in this case is available for public inspecton at the Office of the Secretary, U.S. International Trade Commission.

For further information concerning the conduct of the investigation, hearing process, and rules of general application, consult the Commission's Rules of Practice and Procedure, Part 201 (19 CFR Part 201) and Part 206, Subparts A and B (19 CFR Part 206, Subparts A and B).

Issued: February 10, 1984.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 84-[illegible] Filed 2-14-84; 8:45 am]

BILLING CODE 7020-02-M

CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnsses at the United States International Trade Commission's hearing:

Subject : Carbon and Certain Alloy Steel Products

Inv. No. : TA-201-51

Date and time: May 9, 1984 - 10:00 a.m.

Sessions were held in connection with the investigation in the Auditorium of the U. S. Department of Commerce, 14th Street and Constitution Avenue, N.W., in Washington.

Congressional, State and County appearances:

Honorable John Heinz, United States Senator, State of Pennsylvania

Honorable Arlen Specter, United States Senator, State of Pennsylvania

Honorable John P. Murtha, United States Congressman, State of Pennsylvania

Honorable Gene Chappie, United States Congressman, State of California

Honorable George W. Gekas, United States Congressman, State of Pennsylvania

Honorable Robert D. Orr, Governor, State of Indiana

Honorable Richard L. Thornburgh, Governor, State of Pennsylvania

Honorable Jay Rockefeller, Governor, State of West Virginia

Honorable Allen Pate, Commissioner of Labor, State of Alabama

Honorable Frank Vicencia, Speaker Pro Tempore, Assembly-- California Legislature

Honorable Richard S. Caliguiri, Mayor, City of Pittsburgh, Pennsylvania

County Executive Edward Rutkowski, Erie County, New York

- more -

Government witnesses:

Federal Trade Commission, Washington, D.C.

Benjamin Cohen, Attorney, Division of International Antitrust, Bureau of Competition

Dr. David G. Tarr

(LUNCH)

WEDNESDAY AFTERNOON:

In support of the petition:

Stewart and Stewart--Counsel
Washington, D.C.
Collier, Shannon, Rill & Scott--Counsel
Washington, D.C.
on behalf of

Bethlehem Steel Corporation and the United Steelworkers of America, AFL-CIO/CLC

Donald H. Trautlein, Chairman and Chief Executive Officer, Bethlehem Steel Corporation

Lane Kirkland, President, American Federation of Labor and Congress of Industrial Organizations

Lynn R. Williams, President, United Steel Workers of America, AFL-CIO/CLC

Leon Lynch, International Vice President (Human Affairs), United Steel Workers of America, AFL-CIO/CLC

Howard Samuels, President, Industrial Union Department, AFL/CIO

Walter F. Williams, President

D. Sheldon Arnot, Group Executive Vice President, Steel Group

- more -

Stewart and Stewart-Counsel
Collier, Shannon, Rill & Scott-Counsel

Gary L. Millenbruch, Vice President, Accounting and Controller

Robert C. Wilkins, Vice President, Finance, Bethlehem Steel Corporation

Dr. Roger E. Brinner, Group Vice President, Director, U.S. Economic Services

Walter F. Carter, Vice President, Steel Services, Data Resources, Inc.

Dr. Paul W. Marshall, Marshall Bartlett, Incorporated

Stanley Nehmer, President, Economic Consulting Services, Inc.

Curtis H. Barnette, Esq.--General Counsel

Laird D. Patterson, Esq.--General Attorney, Bethlehem Steel Corp

Carl B. Frankel, Esq.--Associate General Counsel, United Steelworkers of America

Stewart and Stewart

Eugene L. Stewart)
Terence P. Stewart)--OF COUNSEL
David A. Hirsh)

Collier, Shannon, Rill & Scott

Thomas F. Shannon)
David A. Hartquist)--OF COUNSEL
Paul C. Rosenthal)

QUESTIONS AND ANSWERS

- more -

THURSDAY - May 10, 1984 - 9:30 a.m.

In support of the petition (continued):

Heller, Ehrman, White & McAuliffe--Counsel
San Francisco, California
on behalf of

Gilmore Steel Corporation and its Oregon Steel Mills Division

Thomas B. Boklund, President

John H. Cutler--OF COUNSEL

Cravath, Swaine & Moore--Counsel
New York, N.Y.
on behalf of

Inland Steel Company, Chicago, Illinois

John B. Judkins, Jr., Vice President, Sales

Theodore A. Myers, Vice President, Finance

Alan J. Hruska--OF COUNSEL

- more -

Lukens Steel Company, Coatesville, Pennsylvania

John J. King, Jr., Vice President, Sales

James Slattery, Esq., General Counsel

Collier, Shannon, Rill & Scott--Counsel
Washington, D.C.
on behalf of

Weirton Steel

William Doepken, Vice President Legal and Public Affairs, and Secretary, Weirton Steel

David A. Hartquist--OF COUNSEL

QUESTIONS AND ANSWERS

Harris, Berg & Creskoff--Counsel
Washington, D.C.
on behalf of

The Committee of Domestic Steel Wire Rope and Specialty Cable Manufacturers

Charles W. Salanski, Executive Vice President, Wire Rope Corporation of America, Inc.

Matthew Breightenberg, Economist, Marshall Barlett, Inc.

Herbert E. Harris, II--OF COUNSEL

- more -

Thompson, Hine and Flory--Counsel
Washington, D.C.
on behalf of

The Committee on Pipe and Tube Imports (CPTI)

Henry Weiss, Vice President, Wheatland Tube Corporation

Perry Block, General Counsel, Wheatland Tube Corporation

Gerald Stein, Group Vice President, Allied Tube and Conduit Corporation

Roger B. Schagrin)
Mark Roy Sandstrom)--OF COUNSEL

West Coast Fabricators and Steel Industry Association, Washington, D.C.

William P. Helm, President, Riverside Steel Company

Joseph L. Lang, Government Affairs Representative

QUESTIONS AND ANSWERS

In opposition to the petition:

Graubard, Moskovitz & McCauley--Counsel
Washington, D.C.
on behalf of

American Institute for Imported Steel, Inc.

ICF, Incorporated

John Reilly, Principal

Lance Graef

F. Lamesch, President, AIIS Director and President, Hoesch America, Inc.

Lloyd Greenhouse, Senior Vice President, Gary Steel Distributor, National Vice President, Association of Steel Distributors, Western Region

J. Bellamy, AIIS Director and President, Ferrostahl Metals Corporation

H. J. Damp, Vice President, AIIS and President, Hoesch America, Inc.

D. Ericson, President, West Coast Metal Importers Association and President, C. D. Ericson

A. Gordon, AIIS Director and President, Port Everglades Steel Corporation

D. Milikowsky, President, The Jordan International Company

C. Parkinson, Manager, Strand Department, D. B. Orban Company

Alfred R. McCauley--OF COUNSEL

QUESTIONS AND ANSWERS

Arnold & Porter--Counsel
Washington, D.C.
on behalf of

Center of the Steel Industry of Argentina

Lawrence Schneider--OF COUNSEL

Preston, Thorgrimson, Ellis & Holman--Counsel
Washington, D.C.
Sullivan & Cromwell--Counsel
Washington, D.C.
on behalf of

John Lysaght (Australia) Limited

Preston, Thorgrimson, Ellis & Holman

Kermit W. Almstedt)
Robert H. Ruxin)--OF COUNSEL
F. Amanda DeBusk)

Sullivan & Cromwell

Margaret Pfeiffer)
Ruth Bourquin)--OF COUNSEL

- more -

Wald, Harkrader & Ross--Counsel
Washington, D.C.
on behalf of

Companhia Siderurgica Paulista (COSIPA)
Usinas Siderurgicas de Minas Gerais (USIMINAS)
Companhia Siderurgica Nacional (CSN)
Companhia Siderurgica Guanabara

William H. Barringer)
Bruce R. Stewart)--OF COUNSEL
Mark Schattner

QUESTIONS AND ANSWERS

Dow, Lohnes & Albertson--Counsel
Washington, D.C.
on behalf of

Hugh Krentz, President, Canadian Institute of Steel Construction

Roger Phillips, President & Chief Executive Officer, Interprovincial Steel & Pipe Corporation, Ltd.

Barry A. Herring, Vice Prsident, Marketing, Laurel Steel Products Ltd.

John D. Allan, President & Chief Operating Officer, Stelco Inc.

Professor John Meyer, Economist, Harvard University

Robert Leone, Economist, Lecturer in Public Policy, Kennedy School of Government, Harvard University

John Tullock, Director of Marketing, IPSCO, Inc.

Robert C. Varah, Director, Commercial Development, DOFASCO, Inc.

Donald K. Belch, Marketing Manager, Commercial Development, STELCO, Inc.

William Silverman)
Edward M. Lebow)--OF COUNSEL
John C. Yost)

- more -

Wilmer, Cutler & Pickering--Counsel
Washington, D.C.
on behalf of

The Commission of the European Communities (EC)

Richard Boyce, Economic Consultant

Ludwig Briet, Secretary, Commercial Affairs, Delegation of the Commission of the European Community

Robert C. Cassidy, Jr.)
John D. Greenwald)--OF COUNSEL

O'Melveny & Myers--Counsel
Washington, D.C.
on behalf of

The Japan Iron and Steel Exporters' Association

Gary N. Horlick--OF COUNSEL

QUESTIONS AND ANSWERS

Daniels, Houlihan & Palmeter--Counsel
Washington, D.C.
on behalf of

Korea Iron & Steel Association

Donald B. Cameron--OF COUNSEL

Hale, Russell & Gray--Counsel
Washington, D.C.
on behalf of

Swedish Ironmasters Association (Jernkontoret)

R. S. D. Veal, President, Uddelholm Steel Corporation

Louis H. Kurrelmeyer--OF COUNSEL

- more -

Rode & Qualey--Counsel
New York, N.Y.
on behalf of

Sandik, Inc. (Sweden)

Edward J. Mayle, Vice President, Steel Strip Division

Robert C. Tuttle, Traffic Mnager, Sandvik, Inc.

Terry Brumwell, President, Spear & Jackson, Inc.

Roy Bell, Vice President, Spear & Jackson, Inc.

Frank Gray, President, Nationwide Die Steel & Machinery, Inc.

Patrick D. Gill--OF COUNSEL

Coudert Brothers--Counsel
Washington, D.C.
on behalf of

John A. Greenaway, Chairman of the Board

W. F. Ruzicka, Corporate Director of Purchases, Hoover Universal, Inc.

Sherman E. Katz)
Mark D. Herlach)--OF COUNSEL
Michael Quinttus)

Arent, Fox, Kintner, Plotkin & Kahn--Counsel
Washington, D.C.
on behalf of

INA Bearing Company, Inc.

Lewis E. Leibowitz--OF COUNSEL

The Torrington Company, Torrington, Connecticut

Richard W. Klingerman, Chairman, Purchasing Council

C. E. Harwood, Corporate Counsel

- more -

Bregman, Abell & Kay--Counsel
Washington, D.C.
on behalf of

Taiwan Steel & Iron Industry Association (TSIIA)

Chung Yu Wang, Vice-Chairman, Sales and Production Coordinating Committee

C. Y. Tang, Advisor

K. L. Du, Representative

David Simon--OF COUNSEL

Briger & Associates--Counsel
New York, N.Y.
on behalf of

Helisod de Venezuela, S.A.

Peter L. Briger)
Andrew Scheldrick)--OF COUNSEL

QUESTIONS AND ANSWERS

Bellsey & Baker--Counsel
San Francisco, California
on behalf of

The West Coast Metal Importers Association, Inc.

C. Duane Ericson, President

Steven W. Baker--OF COUNSEL

- more -

Finley, Kumble, Wagner, Heine, Underberg & Casey--Counsel
Washington, D.C.
on behalf of

Pinole Point Steel Company, Pittsburg, California

Alfred Perry, Vice President for Public Affairs

Michael J. Calhoun)
Alexander P. Haig)--COUNSEL

Cadwalader, Wickersham & Taft--Counsel
Washington, D.C.
on behalf of

The American Wire Producers Association

George B. Hynson, Chairman, Philadelphia Steel & Wire Corp.

Leo F. Buckley, Managing Director, National-Standard Export Corporation

Ed McNew, Vice President, Davis Walker Corporation

Lawrence O. Selhorst, President & Chairman of the Board, American Spring Wire Corporation

Frederick P. Waite--OF COUNSEL

Sharretts, Paley, Carter & Blauvelt--Counsel
Washington, D.C.
on behalf of

West Coast Ad Hoc Steel Wire Producers Committee

E. D. McNew, Vice President, Davis Walker Corporation

Peter O. Suchman--OF COUNSEL

- more -

Arent, Fox, Kintner, Plotkin & Kahn--Counsel
Washington, D.C.
on behalf of

Berg Steel Pipe Corporation, Panama City, Florida

Carl Seigler, Controller, Berg Steel Pipe Corporation

Steve Fugatt, Manager, Plate Purchasing, Berg Steel Pipe Corporation

Lewis E. Leibowitz--OF COUNSEL

Tubular Corporation of America, Inc., Muskogee, Oklahoma

Robert Alpert, Chief Executive Officer

Sharretts, Paley, Carter & Blauvelt--Counsel
Washington, D.C.
on behalf of

Caterpillar Tractor Company

Steven Hoffman, Attorney, Legal Department

F. A. George, Steel Commodities Manager

Peter O. Suchman--OF COUNSEL

Ohio River Steel Corporation, Calvert City, Kentucky

Wolfgang L. Jansen, Chairman of the Board

QUESTIONS AND ANSWERW

- more -

OTHER INTERESTED PARTIES:

Bekitam International Trade-America, Inc., Atlanta, Georgia

Guido Van Linden, Vice President & General Manager

Peabody, Lambert & Meyers--Counsel
Washington, D.C.
on behalf of

R. Hoe & Company, Inc.

James W. Taylor, President

Roy Bell, Vice President, Spear & Jackson

Terry Brumwell, Spear & Jackson

Peter J. Sommer, Vice President, Viking Products, Inc.

Ray Cannell, Vice President, Hannaco Knives & Saws

Ralph C. Fox, Purchasing Manager, Simonds Cutting Tools

Glen R. Reichardt--OF COUNSEL

Peabody, Lambert & Meyers--Counsel
Washington, D.C.
on behalf of

Simonds Cutting Tools, Fitchburg, Massachusetts

Ralph C. Fox, Purchasing Manager

Glen R. Reichardt--OF COUNSEL

- more -

Schwartz, Klink & Schreiber--Counsel
New York, N.Y.
on behalf of

J.B. & S. Lees, Ltd.

J. Roger Miles, Vice President

Utz Toepke--OF COUNSEL

Sharretts, Paley, Carter & Blauvelt--Counsel
Washington, D.C.
on behalf of

Pacific Steel Corporation, Long Beach, California

Howard Wilkinson

Peter O. Suchman--OF COUNSEL

Thompson & Mitchell--Counsel
Washington, D.C.
on behalf of

The Cold Finished Steel Bar Institute

Murray J. Belman--OF COUNSEL

QUESTIONS AND ANSWERS

CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing on:

Subject : REMEDY PHASE--Carbon and Certain Alloy Steel Products

Inv. No. : TA-201-51

Date and time: June 21, 1984 - 10:00 a.m.

Sessions were held in connection with the investigation in the Hearing Room of the United States International Trade Commission, 701 E Street, N.W., in Washington.

<u>Congressional appearances</u>:

Honorable John Heinz, United States Senator, State of Pennsylvania, Chairman, Senate Steel Caucus

Honorable John P. Murtha, United States Representative, State of Pennsylvania, Chairman, Congressional Steel Caucus

Honorable Ralph S. Regula, United States Representative, State of Ohio, Vice Chairman, Congressional Steel Caucus

Honorable Richard S. Caliguri, Mayor, City of Pittsburgh, Pennsylvania

Honorable Mark Dayton, Commissioner of the Department of Energy and Economic Development, State of Minnesota

<u>Government witnesses</u>:

Federal Trade Commission, Washington, D.C.

Benjamin Cohen, Attorney, Division of International Antitrust, Bureau of Competition

Ms. Deirdre Shanahan, Attorney, Bureau of Competition

Dr. David G. Tarr, Economist, Bureau of Competition

- more -

PARTIES IN SUPPORT OF THE IMPOSITION OF
IMPORT RELIEF MEASURES

Stewart and Stewart--Counsel
Washington, D.C.
Collier, Shannon, Rill & Scott--Counsel
Washington, D.C.
on behalf of

Bethlehem Steel Corporation and the United Steelworkers of America, AFL-CIO/CLC

Lynn R. Williams, President, United Steelworkers of America, Pittsburgh, Pennsylvania

James W. Smith, Assistant to the President, United Steelworkers of America, Pittsburgh, Pennsylvania

Donald H. Trautlein, Chairman and Chief Executive Officer, Bethlehem Steel Corporation, Bethlehem, Pennsylvania

Robert C. Wilkins, Vice President-Finance, Bethlehem Steel Corporation, Bethlehem, Pennsylvania

Richard P. Simmons, President and Chief Executive Officer, Allegheny-Ludlum Steel Company, Pittsburgh, Pennsylvania

Felix G. Rohatyn, Lazard Freres, New York, N.Y.

Dr. Paul W. Marshall, President, Marshall Bartlett, Lexington, Massachusetts

Walt F. Williams, President

D. Sheldon Arnot, Group Executive Vice President, Steel Group

Gary L. Millenbruch, Vice President, Accounting and Controller

Curtis H. Barnette, Esq., Vice-President and General Counsel, Bethlehem Steel Corp.

Eugene L. Stewart, Esq., Stewart & Stewart

David A. Hartquist, Esq., Collier, Shannon, Rill & Scott

- more -

For the United Steelworkers of America:

Carl B. Frankel, Esq., Associate General Counsel, United Steelworkers of America, Pittsburgh, Pa.

Thomas F. Shannon, Esq.

David A. Hartquist, Esq.

Paul C. Rosenthal, Esq.

Collier, Shannon, Rill & Scott

For Bethlehem Steel Corporation:

Curtis H. Barnett, Esq., General Counsel

Laird D. Patterson, Esq., General Attorney, Bethlehem Steel Corporation, Bethlehem, Pa.

Eugene L. Stewart, Esq.

Terence P. Stewart, Esq.

David A. Hirsh, Esq.

Stewart and Stewart

Heller, Ehrman, White & McAuliffe--Counsel
San Francisco, California
on behalf of

Gilmore Steel Corporation and its Oregon Steel Mills Division

Thomas B. Boklund, President

John H. Cutler--OF COUNSEL

Cravath, Swaine & Moore--Counsel
New York, N.Y.
Davis, Markel, Dywer & Edwards--Counsel
New York, N.Y.
on behalf of

Inland Steel Company, Chicago, Illinois

John B. Judkins, Jr., Vice President, Sales

Robert Powell, Vice President, Planning

Cravath, Swaine & Moore

Alan J. Hruska--OF COUNSEL

Davis, Markel, Dywer & Edwards

Morris Waisbrot--OF COUNSEL

Collier, Shannon, Rill & Scott--Counsel
Washington, D.C.
on behalf of

Weirton Steel Corporation

William L. Doepken, Jr., Vice President,
Legal and Public Affairs, and Secretary
of Weirton Steel Corporation

David A. Hartquist--OF COUNSEL

Harris, Berg & Creskoff--Counsel
Washington, D.C.
on behalf of

The Committee of Domestic Steel Wire Rope and
Specialty Cable Manufacturers

Charles W. Salanski, Executive Vice President,
Wire Rope Corporation of America, Inc.

Matthew Breitenberg, Economist, Marshall Bartlett, Inc.

Herbert E. Harris, II--OF COUNSEL

- more -

Thompson & Mitchell--Counsel
Washington, D.C.
on behalf of

Nelsen Wire Company

Michael Harrington, Vice President and General Manager

Stephen Kendziorski, Chief Metallurgist

Murray J. Belman--OF COUNSEL

West Coast Fabricators and Steel Industry Association,
Washington, D.C.

Steven Schwartz, Vice President and General Manager, Palm Iron & Bridge Works

Joseph L. Lang, Government Relations

American Institute of Steel Construction, Inc.
Washington, D.C.

Ronald W. Shaw, Board of Directors, AISC and President, Cives Steel Company, Atlanta, Georgia

William P. Helm, Board of Directors, AISC and President, Riverside Steel Construction, Santa Fe Spring, California

William Y. Epling, Director of Government Affairs

- more -

PARTIES IN OPPOSITION TO THE IMPOSITION
OF IMPORT RELIEF MEASURES

Dow, Lohnes & Albertson--Counsel
Washington, D.C.
on behalf of

The Canadian Steel Industries Committee (CSIC)

Gerard Docquier, National Director for Canada, United Steelworkers of America

Peter Nixon, President and Chief Operating Officer, The Algoma Steel Corporation, Limited

Ross Craig, Vice Chairman, Dofasco, Inc.

Donald K. Belch, Marketing Manager, Commercial Planning, Stelco, Inc.

Hugh Krentz, President, Canadian Institute of Steel Construction

Professor John R. Meyer, Professor of Capital Formation and Economic Growth, Harvard Unitersity

Robert A. Leone, Lecturer in Public Policy, Kennedy School of Government, Harvard University

William Silverman)
Edward M. Lebow)--OF COUNSEL

- more -

Arnold & Porter--Counsel
Washington, D.C.
on behalf of

Center of the Steel Industry of Argentina

Lawrence Schneider--OF COUNSEL

Preston, Thorgrimson, Ellis & Holman--Counsel
Washington, D.C.
Sullivan & Cromwell--Counsel
Washington, D.C.
on behalf of

Johy Lysaght (Australia) Limited

Preston, Thorgrimson, Ellis & Holman

Kermit W. Almstedt--OF COUNSEL

Sullivan & Cromwell

Ms. Margaret Pfeiffer--OF COUNSEL

George V. Egge, Jr.--Counsel
Washington, D.C.
on behalf of

Union de Empresas Siderurgicas (UNESID), The
Spanish Steel Producers' Association

George V. Egge, Jr.--OF COUNSEL

- more -

Bregman, Abell & Kay--Counsel
Washington, D.C.
on behalf of

Taiwan Steel & Iron Industry Association (TSIIA)

David Simon--OF COUNSEL

Briger & Associates--Counsel
New York, N.Y.
on behalf of

Helisod de Venezuela, S.A.

CVG Siderurgica del Orinoco, C.A. - Sidor

Peter L. Briger)
Andrew W. Sheldrick)--OF COUNSEL

Wilmer, Cutler & Pickering--Counsel
Washington, D.C.
on behalf of

The Commission of the European Communities (EC)

Claus-Dieter Ehlermann, Director General
of the Legal Service of the EC

Robert C. Casssidy, Jr.)
John D. Greenwald)--OF COUNSEL

Donovan, Leisure, Newton & Irvine--Counsel
New York, N.Y.
on behalf of

SACILOR, Acieries et Laminoirs de Lorraine
(French producer)

Pierre F. de Ravel d'Esclapon--OF COUNSEL

- more -

Coudert Brothers--Counsel
Washington, D.C.
on behalf of

West German Iron and Steel Federation

Milo G. Coerper--OF COUNSEL

O'Melveny & Myers--Counsel
Washington, D.C.
on behalf of

The Japan Iron and Steel Exporters' Association

Stephen Siwek, Economists, Inc.

Gary N. Horlick--OF COUNSEL

Daniels, Houlihan & Palmeter--Counsel
Washington, D.C.
on behalf of

Korea Iron & Steel Association

Donald B. Cameron--OF COUNSEL

Wald, Harkrader & Ross--Counsel
Washington, D.C.
on behalf of

Companhia Siderurgica Paulista (COSIPA)
Usinas Siderurgicas de Minas Gerais (USIMINAS)
Companhia Siderurgica Nacional (CSN)
Companhia Siderurgica Belo-Minerira
Companhia Siderurgica Guanabara

William H. Barringer--OF COUNSEL

Hale, Russell & Gray--Counsel
Washington, D.C.
on behalf of

Swedish Ironmasters Association (Jernkontoret)

Louis H. Kurrelmeyer--OF COUNSEL

Rode & Qualey--Counsel
New York, N.Y.
on behalf of

Sandvik, Inc. (Sweden)

Edward J. Mayle, Vice President, Steel Strip Div.

Terry Brumwell, President, Spear & Jackson, Inc.

Roy Bell, Vice President, Spear & Jackson, Inc.

Frank Gray, President, Nationwide Die Steel and Machinery, Inc.

Patrick D. Gill--OF COUNSEL

Coudert Brothers--Counsel
Washington, D.C.
on behalf of

SKF Steel, Inc., and SKF Industries, Inc.

John A. Greenaway, Chairman of the Board

Sherman E. Katz)
Mark D. Herlach)--OF COUNSEL
Michael L.M. Quinttus)

- more -

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Washington, D.C.
on behalf of

INA Bearing Company, Inc.

Lewis E. Leibowitz)
Christopher Smith)--OF COUNSEL

Torrington Company, Torrington, Connecticut

Richard W. Klingerman, Chairman, Purchasing Council

C. E. Harwood, Corporate Counsel

Busby, Rehm and Leonard--Counsel
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on behalf of

The South African Steel Industry

David Busby)
John B. Rehm)--OF COUNSEL
Jonathan Hemenway Glazier)

Bellsey & Baker--Counsel
San Francisco, California
on behalf of

The West Coast Metal Importers Association, Inc.

Benson B. Murphy, Executive Director, Port of Vancouver

Ms. Carol Wink, Vice President, Harbor Terminal Services

- more -

Finley, Kumble, Wagner, Heine, Underberg,
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on behalf of

Pinole Point Steel Company, Pittsburg, California

Alfred Perry, Vice President

Michael J. Calhoun)--OF COUNSEL
Alexander P. Haig)

Sharretts, Paley, Carter & Blauvelt--Counsel
Washington, D.C.
on behalf of

California Steel Corporation

Howard Wilkinson, Vice President

Peter O. Suchman--OF COUNSEL

Kaiser Steel Corporation

John W. Feist, Esq.

Harold Halterman, Vice President, Fabricated Products Group

Arent, Fox, Kintner, Plotkin & Kahn--Counsel
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on behalf of

Berg Steel Pipe Corporation, Panama City, Florida

Carl Seigler, Controller, Berg Steel Pipe Corp.

Steve Fugatt, Manager, Plate Purchasing, Berg Steel
Pipe Corporation

Lewis E. Leibowitz--OF COUNSEL

- more -

Sharretts, Paley, Carber & Blauvelt--Counsel
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on behalf of

Caterpillar Tractor Company

F. A. George, Steel Commodities Manager

Peter O. Suchman--OF COUNSEL

Ohio River Steel Corporation, Calvert City, Kentucky

Fred Herlitz, Director

General Electric Company
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Dr. Roland P. Carreker, Material Resource Analyst, Corporate Purchasing, Bridgeport, Conn.

Edward R. Uhlig, Manager, Engineering, Large Transformer Operation, Pittsfield, Mass.

Donald J. Bailey, Manager, Marketing and Product Technology Distribution Transformer Business Department, Hickory, North Carolina

Leonard P. Roberts, General Manager, Medium Transformer Department, Rome, Georgia

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Washington, D.C.
on behalf of

R. Hoe & Company, Inc.

James W. Taylor, President

Glenn R. Reichardt)
Peter N. Hiebert)--OF COUNSEL

- more -

Hack and Band Saw Manufacturers Association of America,
Cleveland, Ohio

James Mitchell, President, Milford Products Corporation

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Washington, D.C.
on behalf of

Ralph C. Fox, Purchasing Manager

Glenn R. Reichardt)--OF COUNSEL
Peter N. Hiebert)

Schwartz, Klink & Schreiber--Counsel
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on behalf of

J.B. & S. Lees, Ltd.

Utz Toepke--OF COUNSEL

APPENDIX B

U.S. RATES OF DUTY FOR THE PRODUCTS SUBJECT TO THIS INVESTIGATION

Carbon and alloy steel products: U.S. rates of duty, present and negotiated, by TSUS items

(Cents per pound, percent ad valorem)

TSUS item No. 1/	Description	Col. 1 rate of duty effective Jan. 1-- 1984	Col. 1 rate of duty effective Jan. 1-- 1987 2/	Col. 2 rate of duty
	Ingots, blooms, billets, slabs, and sheet bars:			
606.67	Of carbon steel	5.1%	4.2%	20%.
606.69	Of alloy steel	3/ 6.6%	3/ 5.1%	3/ 28%.
	Bars:			
	Deformed concrete reinforcing bars:			
606.79	Of carbon steel	6.2%	4.9%	20%.
606.81	Of alloy steel	3/ 7.6%	3/ 5.7%	3/ 28%.
	Other:			
	Of carbon steel:			
	Not cold formed:			
606.83	Not coated or plated with metal	5.9%	4.7%	20%.
606.86	Coated or plated with metal	5.6%	3.2%	0.2¢ + 20%.
606.88	Cold formed	7.5%	4/	0.125¢ + 20%.
	Of alloy steel:			
606.91	Of certain tool steel 5/	3/ 8.3%	3/ 6%	3/ 28%.
	Other:			
606.97	Not cold formed	3/ 8.3%	3/ 6%	3/ 28%.
606.99	Cold formed	3/ 9%	3/ 7.5%	3/ 28%.
	Hollow drill steel:			
	Of carbon steel:			
607.05	Valued not over 8¢ per pound	6.9%	5.3%	23%.
607.07	Valued over 8¢ per pound	6.2%	4.9%	22%.
607.09	Of alloy steel	3/ 7.6%	3/ 5.7%	3/ 30%.
	Wire rods:			
	Of carbon steel:			
	Not tempered, not treated, and not partly manufactured:			
607.14	Valued not over 4¢ per pound	1.4%	4/	4.5%.
607.17	Valued over 4¢ per pound	2%	1.9%	5.5%.
	Tempered, treated, or partly manufactured:			
607.22	Valued not over 4¢ per pound	7.9%	5.8%	29.5%.
607.23	Valued over 4¢ per pound	2.3%	4/	6%.
	Of alloy steel:			
	Not tempered, not treated, and not partly manufactured:			
607.32	Of certain tool steel 5/	3/ 3.5%	3/ 2%	3/ 11%.
607.41	Other	3/ 5%	3/ 4.5%	3/ 11%.
	Tempered, treated, or partly manufactured:			
607.48	Of certain tool steel 5/	3/ 4.9%	3/ 4.1%	3/ 10%.
607.59	Other	3/ 5%	3/ 4.5%	3/ 10%.
	Plates and sheets, not cut, not pressed, and not stamped to nonrectangular shape, all the foregoing not electrolytically coated or plated with base metal other than tin, lead, or zinc:			
	Not coated or plated with metal and not clad:			
	Black plate:			
607.62	Corrugated or crimped	7.3%	5.5%	20%.
607.64	Other	5.6%	3.2%	20%.
	Other:			
	Not pickled and not cold rolled:			
	Of carbon steel:			
607.66	Plates	6.8%	6%	20%.
607.67	Sheets	6.2%	4.9%	20%.
	Of alloy steel:			
607.69	Of certain tool steel 5/	3/ 6.7%	3/ 3.8%	3/ 28%.
	Other:			
607.78	Plates	3/ 6.7%	3/ 3.8%	3/ 28%.
607.81	Sheets	3/ 9.5%	4/	3/ 28%.

See footnotes at end of table.

Carbon and alloy steel products: U.S. rates of duty, present and negotiated, by TSUS items--Continued

(Cents per pound, percent ad valorem)

TSUS item No. 1/	Description	Col. 1 rate of duty effective Jan. 1-- 1984	1987 2/	Col. 2 rate of duty
	Plates and sheets, not cut, etc.,--continued:			
	Not coated or plated, etc.--continued:			
	Other--continued:			
	Pickled or cold rolled:			
607.83	Of carbon steel	6.6%	5.1%	0.2¢ + 20%
	Of alloy steel:			
607.86	Of certain tool steel 5/	3/ 7%	3/ 4%	3/ 0.2¢ + 28%.
	Other:			
607.91	Plates	3/ 7.9%	3/ 5.8%	3/ 0.2¢ + 28%.
	Sheets:			
607.92	Of silicon electrical steel	3/ 7.9%	3/ 5.8%	3/ 0.2¢ + 28%.
607.93	Other	3/ 7%	3/ 4%	3/ 0.2¢ + 28%.
607.94	Clad	9.3%	6.5%	30%.
	Coated or plated with metal:			
	Tin plate and tin coated sheets:			
607.96	Imported for use in the manufacture of maple sap evaporators.	Free	4/	1¢.
	Other:			
607.97	Valued not over 10¢ per pound	6.6%	5.1%	1¢.
607.99	Valued over 10¢ per pound	3.9%	3.5%	6%.
608.01	Tern plate and tern coated sheets	4.8%	4%	6%.
	Other:			
	Of carbon steel:			
608.07	Valued not over 10¢ per pound	7.3%	5.5%	0.2¢ + 20%.
	Valued over 10¢ per pound:			
608.11	Plates	7.1%	5.4%	21.5%.
608.13	Sheets	7.6%	6.5%	21.5%.
608.14	Of alloy steel	3/ 8.6%	3/ 6.2%	3/ 0.2¢ + 28%.
	Strip, not cut, not pressed, and not stamped to nonrectangular shape, all the foregoing not electrolytically coated or plated with base metal other than tin, lead, or zinc:			
	Of carbon steel:			
608.19	Not over 0.01 inch in thickness	4.2%	2.4%	25%.
608.21	Over 0.01 but not over 0.05 inch in thickness	6%	3.4%	25%.
608.23	Over 0.05 inch in thickness	7.6%	5.7%	25%.
	Of alloy steel:			
	Not over 0.01 inch in thickness:			
608.31	Of certain tool steel 5/	3/ 6.6%	3/ 5.1%	3/ 33%.
608.38	Other	3/ 6.6%	3/ 5.1%	3/ 33%.
	Over 0.01 but not over 0.05 inch in thickness:			
608.39	Silicon electrical steel	3/ 8.8%	3/ 7%	3/ 33%.
608.47	Certain tool steel 5/	3/ 8.3%	3/ 6%	3/ 33%.
608.55	Other	3/ 8.3%	3/ 6%	3/ 33%.
	Over 0.05 inch in thickness:			
608.59	Of certain tool steel 5/	3/ 8.9%	3/ 6.3%	3/ 33%.
608.67	Other	3/ 8.9%	3/ 6.3%	3/ 33%.
	Plates, sheets, and strip, all the foregoing cut, pressed, or stamped to nonrectangular shape and not electrolytically coated or plated with base metal other than tin, lead, or zinc:			
609.14A	Of carbon steel	6.6%	5.1%	20%.
609.15A	Of alloy steel	3/ 7.9%	3/ 5.8%	3/ 28%.
609.17	Plates, sheets, and strip, all the foregoing whether or not cut, pressed, or stamped to nonrectangular shape, if electrolytically coated or plated with base metal other than tin, lead or zinc.	7.6%	5.7%	45%.

See footnotes at end of table.

Carbon and alloy steel products: U.S. rates of duty, present and negotiated, by TSUS items--Continued

(Cents per pound, percent ad valorem)

TSUS item No. 1/	Description	Col. 1 rate of duty effective Jan. 1-- 1984	1987 2/	Col. 2 rate of duty
	Wire:			
	Flat wire:			
	Of carbon steel:			
	Not coated or plated with metal:			
609.20	Not over 0.01 inch in thickness	5.1%	4.2%	25%.
609.21	Over 0.01 inch but not over 0.05 inch in thickness.	5.6%	3.2%	25%.
609.22	Over 0.05 inch in thickness	6.6%	5.1%	25%.
	Coated or plated with metal:			
609.25	Not over 0.01 inch in thickness	5.2%	4.2%	25.5%.
609.28	Over 0.01 inch in thickness	6.7%	5.2%	26%.
	Of alloy steel:			
	Not coated or plated with metal:			
609.30	Not over 0.01 inch in thickness	3/ 5.6%	3/ 3.2%	3/ 33%.
609.33	Over 0.01 inch in thickness	3/ 7.9%	3/ 5.8%	3/ 33%.
	Coated or plated with metal:			
609.35	Not over 0.01 inch in thickness	3/ 6.7%	3/ 5.2%	3/ 34%.
609.36	Over 0.01 inch but not over 0.05 inch in thickness.	3/ 8.1%	3/ 5.9%	3/ 34%.
609.37	Over 0.05 inch in thickness	3/ 8.3%	3/ 6%	3/ 12.5%.
	Round wire:			
	Of carbon steel:			
609.40	Under 0.060 inch in diameter	6.9%	5.3%	25%.
	0.060 inch or more in diameter:			
609.41	Containing not over 0.25% by weight of carbon.	1.5%	4/	7%.
609.43	Containing over 0.25% by weight of carbon	6.9%	5.3%	25%.
609.45	Of alloy steel	3/ 9.8%	3/ 9%	3/ 33%.
	Other wire:			
	Of carbon steel:			
609.70	Not coated or plated with metal	7.3%	5.5%	25%.
609.72	Coated or plated with metal	7.4%	5.6%	26%.
	Of alloy steel:			
609.75	Not coated or plated with metal	3/ 8.6%	3/ 6.2%	3/ 33%.
609.76	Coated or plated with metal	3/ 8.6%	3/ 6.2%	3/ 33%.
	Angles, shapes, and sections, all the foregoing hot rolled, forged, extruded, or drawn, or cold formed or cold finished if weighing over 0.29 pound per linear foot:			
	Not drilled, not punched, and not otherwise advanced:			
609.80	Of carbon steel	0.9%	4/	2%.
609.82	Of alloy steel	3/ 2.2%	3/ 2%	3/ 9%.
	Drilled, punched, or otherwise advanced:			
609.84	Of carbon steel	5.5%	4.4%	20%.
609.86	Of alloy steel	3/ 6.9%	3/ 5.3%	3/ 28%.
	Sheet piling:			
609.96	Of carbon steel	0.8%	4/	2%.
609.98	Of alloy steel	3/ 1.9%	3/ 1.8%	3/ 8%.
	Rails:			
610.20	Of carbon steel	0.3%	4/	1%.
610.21	Of alloy steel	3/ 4.1%	3/ 3.5%	3/ 9%.
	Joint bars and tie plates:			
610.25	Of carbon steel	0.9%	4/	2%.
610.26	Of alloy steel	3/ 3.6%	3/ 3.1%	3/ 8%.

See footnotes at end of table.

Carbon and alloy steel products: U.S. rates of duty, present and negotiated, by TSUS items--Continued

(Cents per pound, percent ad valorem)

TSUS item No. 1/	Description	Col. 1 rate of duty effective Jan. 1-- 1984	Col. 1 rate of duty effective Jan. 1-- 1987 2/	Col. 2 rate of duty
	Pipes and tubes and blanks therefor:			
	Welded, jointed, or seamed, with walls not thinner than 0.065 inch, and of circular cross section:			
	Of carbon steel:			
610.30	Under 0.25 inch in outside diameter	5.5%	4.5%	13%.
610.31	0.25 inch or more but under 0.375 inch in outside diameter.	2.9%	2.6%	6.5%.
610.32	0.375 inch or more in outside diameter	1.9%	4/	5.5%.
	Of alloy steel:			
610.35	Under 0.25 inch in outside diameter	3/ 4.4%	3/ 3.7%	3/ 10%.
610.36	0.25 inch or more but under 0.375 inch in outside diameter.	3/ 4.1%	3/ 3.5%	3/ 9.5%.
610.37	0.375 inch or more in outside diameter	3/ 4.9%	4/	3/ 10%.
	Other:			
	Pipe conforming to the A.P.I. specifications for oil well casing; and pipes and tubes of rectangular cross section, whether welded or seamless, having a wall thickness not less than 0.156 inch:			
	Not threaded and not otherwise advanced:			
610.39	Of carbon steel	0.5%	4/	1%.
610.40	Of alloy steel	3/ 3.8%	3/ 3.3%	3/ 8.5%.
	Threaded or otherwise advanced:			
610.42	Of carbon steel	6.8%	6%	20%.
610.43	Of alloy steel	3/ 8.6%	3/ 6.2%	3/ 28%.
	Other:			
	Suitable for use in the manufacture of ball or roller bearings:			
610.45	Of carbon steel	8.6%	6.2%	25%.
610.46	Of alloy steel	3/ 9.9%	3/ 6.7%	3/ 33%.
	Other:			
	Of carbon steel:			
610.48	Hollow bars	8.6%	6.2%	22%.
610.49	Other	9.3%	8%	25%.
	Of alloy steel:			
610.51	Hollow bars	3/ 10.3%	3/ 7.5%	3/ 30%.
610.52	Other	3/ 10.3%	3/ 7.5%	3/ 35%.
642.02	Barbed wire, of carbon or alloy steel	Free	4/	Free.
	Strands, ropes, cables, and cordage, all the foregoing, of carbon or alloy steel wire, whether or not cut to length, not fitted with fittings, not made into articles, and not covered with nonmetallic material:			
642.11	Wire strand	5.9%	4.9%	35%.
	Ropes, cables, and cordage other than wire strand:			
642.12	Valued under 13¢ per pound	4%	3.5%	40%.
642.16A*	Valued 13¢ or more per pound, not of brass plated wire.	4%	4/	35%.
642.35	Galvanized wire fencing wholly of round carbon or alloy steel wire measuring not over 0.20 inch and not under 0.075 inch in diameter, whether or not such wire is covered with plastics.	0.1¢	4/	0.5¢.
	Bale ties, of carbon or alloy steel wire, with or without buckles or fastenings and whether or not coated with paint or other substance:			
642.90	Single loop ties made of round wire over 0.055 but not over 0.082 inch in diameter, and 7.5 or more but not over 10.5 feet in length.	Free	4/	Free.
642.91	Other	7.1%	5.7%	45%.

See footnotes at end of table.

Carbon and alloy steel products: U.S. rates of duty, present and negotiated, by TSUS items--Continued

(Cents per pound, percent ad valorem)

TSUS item No. 1/	Description	Col. 1 rate of duty effective Jan. 1-- 1984	Col. 1 rate of duty effective Jan. 1-- 1987 2/	Col. 2 rate of duty
	Milliners' wire and other carbon or alloy steel wire covered with textile or other material not wholly of metal:			
642.96	Galvanized wire wholly of round carbon or alloy steel wire measuring not over 0.20 inch and not under 0.075 inch in diameter, if covered with plastics.	0.9%	4/	2%.
642.97	Other	6.9%	5.3%	35%.
	Brads, nails, spikes, staples, and tacks, all the foregoing, of one piece construction, of carbon or alloy steel, excluding thumb tacks, staples in strip form, corrugated fasteners, glaziers' points, hook nails, ring nails, and fasteners suitable for use in power-actuated tools:			
	Made of round wire:			
646.25	Under 1 inch in length and under 0.065 inch in diameter.	0.5%	4/	2%.
646.26	1 inch or more in length and 0.065 inch or more in diameter.	0.5%	4/	3.5%.
646.30A	Railway track spikes	3.5%	3.2%	5.5%.
	Columns, pillars, posts, beams, girders, and similar structural units, of carbon or or alloy steel:			
652.94	Not in part of alloy steel	3.1%	2.8%	20%.
652.96	In part of alloy steel	4.5%	3.9%	28%.
	Parts of rail locomotives and tenders, or self-propelled rail vehicles, or railroad and railway rolling stock, all the foregoing of carbon or alloy steel:			
690.25	Axles and parts thereof, and axle bars	0.5%	4/	3%.
690.30	Wheels and parts thereof; and any of such wheels or parts imported with axles fitted in them.	Free	4/	1¢.

1/ The designation "A" or "A*" indicates that the item is currently designated as an eligible article for duty-free treatment under the GSP. "A" indicates that all beneficiary developing countries specified in general headnote 3(c)(i) of the TSUSA are eligible for the GSP. "A*" indicates that certain of these countries, specified in general headnote 3(c)(iii) of the TSUSA, are not eligible.

2/ Rate of duty negotiated under the Multilateral Trade Negotiations (MTN) (Tokyo round). This rate is currently applicable to products from countries designated as LDDC's in general headnote 3(d)(i) of the TSUSA.

3/ Imports of alloy steel products which contain, by weight, one or more of the elements listed below in the quantity, by weight, respectively indicated are subject to additional cumulative duties (as specified in headnote 4, subpt. B, pt. 2, schedule 6 of the TSUSA and provided for in items 606.00, 606.02, 606.04, and 606.06 of the TSUS) on the specified element contents as follows:

Element and quantity	Additional duties Col. 1.	Additional duties Col. 2.
	-----ad valorem-----	
Chromium, over 0.2 percent, by weight	0.1%	1%
Molybdenum, over 0.1 percent, by weight	0.3%	1%
Tungsten, over 0.3 percent, by weight	0.4%	1%
Vanadium, over 0.1 percent, by weight	0.2%	1%

4/ No reduction from the current col. 1 rate of duty was negotiated in the MTN. Imports from LDDC's are dutiable at the current col. 1 rate of duty.

5/ Described in headnote 2(h)(vii) of subpt. B, pt. 2, schedule 6 of the TSUSA.

APPENDIX C

PAST AND PENDING INVESTIGATIONS ON THE SUBJECT PRODUCTS AND PAST AND CURRENT IMPORT RESTRAINTS

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries

Product group and source 1/	Action	Cite	Orders issued/ outstanding agreements
PLATE:			
BELGIUM	TERMINATION BEFORE PRELIMINARY DETERMINATION; CASE FILED WITH TREASURY ONLY [TPM] 2/		
	Carbon Steel Plate	Terminated: 44 F.R. 37105, (June 25, 1979); Initiated: 44 F.R. 2053, (Jan. 9, 1979)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Carbon Steel Plate	Terminated: 45 F.R. 66833, (Oct. 8, 1980); 731-TA-18(P), USITC Pub. 1064 (1980)	
	Hot-Rolled Carbon Steel Plate	Terminated: 47 F.R. 5754 (Feb. 8, 1982); 701-TA-83(P), USITC Pub. 1207 (1982)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Plate	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-53(P) and 701-TA-86(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
	RESCISSION OF INVESTIGATION NOTICE BY ITA AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC 3/		
	Hot-Rolled Carbon Steel Plate	Dismissed: 49 F.R. 3503, (Jan. 27, 1984); 731-TA-146(P), USITC Pub. 1451 (1983)	
BRAZIL	SUSPENSION AFTER AFFIRMATIVE FINAL DETERMINATION BY USITC 4/		
	Hot-Rolled Carbon Steel Plate	Suspended: 48 F.R. 11190 (Mar. 16, 1983); 701-TA-87(F), USITC Pub. 1356 (1983)	BRAZILIAN AGREEMENT
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Hot-Rolled Carbon Steel Plate	Terminated: 47 F.R. 5754 (Feb. 8, 1982); 701-TA-84(P), USITC Pub. 1208 (1982)	
	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Flat-Rolled Carbon Steel Plate in Coils or Cut-to-length, whether or not coated with metal	731-TA-123(F), USITC Pub. 1499 (1984)	Outstanding antidumping duty order by ITA: 49 F.R. 10692 (Mar. 22, 1984) and 49 F.R. 18023 (Apr. 26, 1984)--allowance of security in place of estimated antidumping duties.
	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WAS AMENDED]		
	Flat-Rolled Carbon Steel Plate	Terminated: 48 F.R. 54401 (Dec. 2, 1983); Initiated: 48 F.R. 52782 (Nov. 22, 1983), 701-TA-204	
	FINAL DETERMINATION PENDING BY USITC		
	Hot-Rolled Carbon Steel Plate in Coils	701-TA-205(P), USITC Pub. 1470 (1983)	

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
PLATE--Continued			
FEDERAL REPUBLIC OF GERMANY-----	TERMINATION BEFORE PRELIMINARY DETERMINATION; CASE FILED WITH TREASURY ONLY [TPM] Carbon Steel Plate	Terminated: 44 F.R. 37105, (June 25, 1979); Initiated: 44 F.R. 2053, (Jan. 9, 1979)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Carbon Steel Plate	Terminated: 45 F.R. 66833, (Oct. 8, 1980); 731-TA-19(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER PRELIMINARY AFFIRMATIVE DETERMINATION BY USITC Hot-Rolled Carbon Steel Plate	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-60(P) and 701-TA-93(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
	RECISSION OF INVESTIGATION NOTICE BY ITA AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC 5/ Hot-Rolled Carbon Steel Plate Including Coiled Plate	Dismissed: 49 F.R. 3503 (Jan. 27, 1984); 731-TA-147(P), USITC Pub. 1451 (1983)	
FINLAND----------	FINAL DETERMINATION PENDING BY USITC Carbon Steel Plate Not In Coils	731-TA-169(P), USITC Pub. 1510 (1984)	
FRANCE-----------	TERMINATION BEFORE PRELIMINARY DETERMINATION; CASE FILED WITH TREASURY ONLY [TPM] Carbon Steel Plate	Terminated: 44 F.R. 37105, (June 25, 1979); Initiated: 44 F.R. 2053, (Jan. 9, 1979)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Carbon Steel Plate	Terminated: 45 F.R. 66833, (Oct. 8, 1980); 731-TA-20(P), USITC Pub. 1064 (1980)	
	NEGATIVE PRELIMINARY DETERMINATION BY USITC Hot-Rolled Carbon Steel Plate	731-TA-54(P) and 701-TA-88(P), USITC Pub. 1221 (1981)	
ITALY------------	TERMINATION BEFORE PRELIMINARY DETERMINATION; CASE FILED WITH TREASURY ONLY [TPM] Carbon Steel Plate	Terminated: 44 F.R. 37105, (June 25, 1979); Initiated 44 F.R. 2053, (Jan. 9, 1979)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Carbon Steel Plate	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-21(P), USITC Pub. 1064, (1980)	

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
PLATE--Continued			
ITALY (Con't)----	NEGATIVE PRELIMINARY DETERMINATION BY USITC Hot-Rolled Carbon Steel Plate	731-TA-55(P) and 701-TA-89(P), USITC Pub. 1221 (1982)	
JAPAN------------	AFFIRMATIVE FINAL DETERMINATION BY USITC Carbon Steel Plate	AA1921-179, USITC Pub. 882 (1978)	Administrative review of dumping finding by ITA: Preliminary determination of existence of margins for certain firms, 48 F.R. 41472 (Sept. 15, 1983)
LUXEMBOURG-------	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Carbon Steel Plate	Terminated: 45 F.R. 66833, (Oct. 8, 1980); 731-TA-22(P), USITC Pub. 1064 (1980)	
	NEGATIVE PRELIMINARY DETERMINATION BY USITC Hot-Rolled Carbon Steel Plate	731-TA-56(P) and 701-TA-90(P), USITC Pub. 1221 (1982)	
MEXICO-----------	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY ITA ONLY 6/ Carbon Steel Plate	Terminated: 49 F.R. 17790 (Apr. 25, 1984); Initiated: 48 F.R. 55013 (Dec. 8, 1983)	MEXICAN AGREEMENT
NETHERLANDS------	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Carbon Steel Plate	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-23(P), USITC Pub. 1064 (1980)	
	NEGATIVE PRELIMINARY DETERMINATION BY USITC Hot-Rolled Carbon Steel Plate	731-TA-57(P) and 701-TA-91(P), USITC Pub. 1221 (1982)	
POLAND-----------	NEGATIVE PRELIMINARY DETERMINATION BY USITC Carbon Steel Plate	AA1921-203, USITC Pub. 984 (1979)	
REPUBLIC OF KOREA----------	FINAL DETERMINATION PENDING BY USITC Hot-Rolled Carbon Steel Plate	731-TA-151(P), USITC Pub. 1459 (1983)	
	AFFIRMATIVE FINAL DETERMINATION BY USITC Hot-Rolled Carbon Steel Plate	701-TA-170(F), USITC Pub. 1346 (1983)	Outstanding countervailing duty order by ITA: 48 F.R. 7241 (Feb. 18, 1983)
ROMANIA----------	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Hot-Rolled Carbon Steel Plate	Terminated: 47 F.R. 5754 (Feb. 8, 1982); 731-TA-51(P), USITC Pub. 1208 (1982)	
	SUSPENSION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC 7/	Suspended: 48 F.R. 317, Jan. 4, 1983); 731-TA-58(P), USITC Pub. 1221 (1982)	ROMANIAN AGREEMENT

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
PLATE--Continued			
SOUTH AFRICA-----	FINAL DETERMINATION PENDING BY USITC		
	Carbon Steel Plate Not in Coils	731-TA-170(P), USITC Pub. 1510 (1984)	
	Carbon Steel Plate in Coils	731-TA-172(P), USITC Pub. 1510 (1984)	
	FINAL AFFIRMATIVE COUNTERVAILING DUTY DETERMINATION BY ITA ONLY 8/		
	Hot-Rolled Carbon Steel Plate	Final determination: 47 F.R. 39379 (Sept. 7, 1982); Initiated: 47 F.R. 5751 (Feb. 8, 1982)	Outstanding countervailing duty order by ITA: 47 F.R. 39379 (Sept. 7, 1982)
SPAIN------------	FINAL DETERMINATION PENDING BY USITC		
	Carbon Steel Plate Not in Coils	731-TA-171(P), USITC Pub. 1510 (1984)	
	Carbon Steel Plate in Coils	731-TA-173(P), USITC Pub. 1510 (1984)	
	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Plate	701-TA-155(F), USITC Pub. 1331 (1982)	Outstanding countervailing duty order by ITA: 48 F.R. 51 (Jan. 3, 1983)
TAIWAN-----------	AFFIRMATIVE FINAL DETERMINATION BY USITC [INSTITUTED UNDER TPM]		
	Carbon Steel Plate	AA1921-197, USITC Pub. 970 (1979); Treasury institution: 43 F.R. 49875 (Oct. 25, 1978)	Administrative review of dumping finding by ITA: Final determination of no margins, 48 F.R. 43366 (Sept. 23, 1983)
UNITED KINGDOM---	TERMINATION BEFORE PRELIMINARY DETERMINATION; CASE FILED WITH TREASURY ONLY [TPM]		
	Carbon Steel Plate	Terminated: 44 F.R. 11285, (Feb. 28, 1979); Initiated: 44 F.R. 2053, (Jan. 9, 1979)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Carbon Steel Plate	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-24(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Plate	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-59(P) and 701-TA-92(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
SHEET AND STRIP:			
ARGENTINA--------	FINAL DETERMINATION PENDING BY USITC		
	Cold-Rolled Carbon Steel Sheet	731-TA-175(P), USITC Pub. 1510 (1984)	
	AFFIRMATIVE FINAL COUNTERVAILING DUTY DETERMINATION; CASE FILED FILED WITH ITA ONLY 9/		
	Cold-Rolled Carbon Steel Sheet	Final determination: 49 F.R. 18006 (Apr. 26, 1984); Initiated: 48 F.R. 55014 (Dec. 8, 1983)	Outstanding countervailing duty order by ITA: 49 F.R. 18006 (Apr. 26, 1984)

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
SHEET AND STRIP--Continued			
AUSTRALIA--------	FINAL DETERMINATION PENDING BY USITC		
	Galvanized Carbon Steel Sheet	731-TA-178(P)and 701-TA-212(P), USITC Pub. 1510 (1984)	
BELGIUM----------	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Cold-Rolled Carbon Steel Sheet and Strip	731-TA-68(P) and 701-TA-102(P), USITC 1221 (1982)	
	Galvanized Carbon Steel Sheet	731-TA-75(P) and 701-TA-110(P), USITC Pub. 1221 (1982)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Hot-Rolled, Cold-Rolled and Galvanized Carbon Steel Sheet	Terminated: 47 F.R. 66833 (Oct. 8, 1980); 731-TA-18(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 49058, (Oct. 29, 1982); 731-TA-61(P) and 701-TA-94(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
BRAZIL-----------	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet	701-TA-95(P), USITC Pub. 1221 (1982)	
	Cold-Rolled Carbon Steel Sheet and Strip	701-TA-103(P), USITC Pub. 1221 (1982)	
	FINAL DETERMINATION PENDING BY USITC		
	Hot-Rolled Carbon Steel Sheet	731-TA-153(P) and 701-TA-206(P): USITC Pub. 1470 (1983)	Outstanding countervailing duty order by ITA: 49 F.R. 10692 (Mar. 22, 1984)
	FINAL DETERMINATION PENDING BY USITC		
	Cold-Rolled Carbon Steel Sheet	731-TA-154(P) and 701-TA-207(P): USITC Pub. 1470 (1983)	
FEDERAL REPUBLIC OF GERMANY------	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Galvanized Carbon Steel Sheet	731-TA-81 and 701-TA-116(P), USITC Pub. 1221 (1982)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Hot-Rolled, Cold-Rolled and Galvanized Carbon Steel Sheet	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-19(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 49058, (Oct. 29, 1982); 731-TA-67(P) and 701-TA-101(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
	Cold-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 49058, (Oct. 29, 1982); 731-TA-74(P) and 701-TA-109(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
SHEET AND STRIP--Continued			
FRANCE-----------	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Galvanized Carbon Steel Sheet	731-TA-76(P) and 701-TA-111(P), USITC Pub. 1221 (1982)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Hot-Rolled, Cold-Rolled and Galvanized Carbon Steel Sheet	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-20(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 49058, (Oct. 29, 1982); 731-TA-62(P) and 701-TA-96(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
	Cold-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 49058, (Oct. 29, 1982); 731-TA-69(P) and 701-TA-104(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
ITALY------------	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Galvanized Carbon Steel Sheet	731-TA-77(P) and 701-TA-112(P), USITC Pub. 1221 (1982)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Hot-Rolled, Cold-Rolled and Galvanized Carbon Steel Sheet	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-21(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-63(P) and 701-TA-97(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
	Cold-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-70(P) and 701-TA-105(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
LUXEMBOURG-------	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Hot-Rolled, Cold-Rolled and Galvanized Carbon Steel Sheet	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-22(P), USITC Pub. 1064 (1980)	
	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet and Strip	731-TA-64(P) and 701-TA-98(P), USITC Pub. 1221 (1982)	
	Cold-Rolled Carbon Steel Sheet and Strip	731-TA-71(P) and 701-TA-106(P), USITC Pub. 1221 (1982)	
	Galvanized Carbon Steel Sheet	731-TA-78(P) and 701-TA-113(P), USITC Pub. 1221 (1982)	

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
SHEET AND STRIP--Continued			
MEXICO	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY ITA ONLY 6/		
	Hot-Rolled, Cold-Rolled and Galvanized Carbon Sheet	Terminated: 49 F.R. 17790 (Apr. 25, 1984); Initiated: 48 F.R. 55013 (Dec. 8, 1983)	MEXICAN AGREEMENT
NETHERLANDS	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Galvanized Carbon Steel Sheet	731-TA-79(P) and 701-TA-114(P), USITC Pub. 1221 (1982)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Hot-Rolled, Cold-Rolled and Galvanized Carbon Steel Sheet	Terminated: 45 F.R. 66833, (Oct. 8, 1980); 731-TA-23(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [NEG. FINAL DETERMINATION BY ITA]		
	Cold-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 40725 (Sept. 15, 1982); 701-TA-107(P), USITC Pub. 1221 (1982)	
	Hot-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 40725 (Sept. 15, 1982); 701-TA-99(P), USITC Pub. 1221 (1982)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-65(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
	Cold-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-72(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
REPUBLIC OF KOREA	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet	701-TA-171(F), USITC Pub. 1346 (1983)	Outstanding countervailing duty order by ITA: 48 F.R. 7241 (Feb. 18, 1983)
	Galvanized Carbon Steel Sheet	701-TA-173(F), USITC Pub. 1346 (1983)	Outstanding countervailing duty order by ITA: 48 F.R. 7241 (Feb. 18, 1983)
	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Cold-Rolled Carbon Steel Sheet	701-TA-172(P), USITC Pub. 1261 (1983)	
SOUTH AFRICA	FINAL DETERMINATION PENDING BY USITC		
	Hot-Rolled Carbon Steel Sheet	731-TA-174(P), USITC Pub. 1510 (1984)	
	Cold-Rolled Carbon Steel Sheet	731-TA-176(P), USITC Pub. 1510 (1984)	
	Galvanized Carbon Steel Sheet	731-TA-179(P), USITC Pub. 1510 (1984)	

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
SHEET AND STRIP--Continued SOUTH AFRICA--(Con't)	AFFIRMATIVE FINAL COUNTERVAILING DUTY DETERMINATION, FILED WITH ITA ONLY 8/		
	Hot- and Cold-Rolled Carbon Sheet and Strip, and Galvanized Carbon Steel Sheet	Final determination: 47 F.R. 39379 (Sept. 7, 1982); Initiated: 47 F.R. 5751 (Feb. 8, (1982)	Outstanding countervailing duty order by ITA: 47 F.R. 39379 (Sept. 7, 1982)
SPAIN	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet	701-TA-156(P), USITC Pub. 1255 (1982)	
	FINAL DETERMINATION PENDING BY USITC		
	Cold-Rolled Carbon Steel Sheet	731-TA-177(P), USITC Pub. 1510 (1984)	
	Galvanized Carbon Steel Sheet	731-TA-180(P), USITC Pub. 1510 (1984)	
	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Cold-Rolled Carbon Steel Sheet	701-TA-157(F), USITC Pub. 1331 (1982)	Outstanding countervailing duty order by ITA: 48 F.R. 51 (Jan. 3, 1983)
	Galvanized Carbon Steel Sheet	701-TA-158(F), USITC Pub. 1331 (1982)	Outstanding countervailing duty order by ITA: 48 F.R. 51 (Jan. 3, 1983)
UNITED KINGDOM	NEGATIVE ANTIDUMPING DETERMINATION BY USITC		
	Carbon Steel Strip	AA1921-Inq. 9, USITC Pub. 855 (1978)	
	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Sheet and Strip	701-TA-100(P), USITC Pub. 1221 (1982)	
	Cold-Rolled Carbon Steel Sheet and Strip	731-TA-73(P) and 701-TA-108(P), USITC Pub. 1221 (1982)	
	Galvanized Carbon Steel Sheet	731-TA-80(P) and 701-TA-115(P), USITC Pub. 1221 (1982)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Hot-Rolled, Cold-Rolled and Galvanized Carbon Steel Sheet	Terminated: 45 F.R. 66833, (Oct. 8, 1980); 731-TA-24(P), USITC Pub. 1064 (1980)	
	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN]		
	Hot-Rolled Carbon Steel Sheet and Strip	Terminated: 47 F.R. 6117, (Feb. 10, 1982); Initiated: 47 F.R. 2955 (Jan. 20, 1982), 731-TA-66	
WIRE ROD: ARGENTINA	FINAL DETERMINATION PENDING BY USITC		
	Carbon Steel Wire Rod	731-TA-157(P), USITC Pub. 1476 (1984)	

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Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
WIRE ROD--Continued ARGENTINA--Continued	SUSPENSION AFTER AFFIRMATIVE COUNTERVAILING DUTY DETERMINATION, FILED WITH ITA ONLY 10/ Carbon Steel Wire Rod	Suspended: 47 F.R. 42393 (Sept. 27, 1982); Initiated: 47 F.R. 9261 (Mar. 4, 1982)	ARGENTINIAN AGREEMENT
BELGIUM	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN] Carbon Steel Wire Rod	Terminated: 47 F.R. 50732 (Nov. 9, 1982): 701-TA-149(P), USITC Pub. 1230 (1982)	
BRAZIL	SUSPENSION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC 11/ Carbon Steel Wire Rod	Suspended: 47 F.R. 42399 (Sept. 27, 1982); 701-TA-148(P), USITC Pub. 1230 (1982)	BRAZILIAN AGREEMENT
	AFFIRMATIVE FINAL DETERMINATION BY USITC Carbon Steel Wire Rod	731-TA-113(P), USITC Pub. 1316 (1983)	Outstanding antidumping duty order by ITA: 49 F.R. 14156 (Apr. 10, 1984)
CZECHOSLOVAKIA	NEGATIVE FINAL COUNTERVAILING DUTY DETERMINATION, FILED WITH ITA ONLY 12/ Carbon Steel Wire Rod	Final determination: 49 F.R. 19370 (May 7, 1984); Initiated: 48 F.R. 56419 (Dec. 21, 1983)	
FRANCE	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN] Carbon Steel Wire Rod	Terminated: 47 F.R. 50732 (Nov. 9, 1982); 701-TA-150(P), USITC: Pub. 1230 (1982)	
MEXICO	FINAL DETERMINATION PENDING BY USITC Carbon Steel Wire Rod	731-TA-158(P), USITC Pub. 1476 (1984)	
POLAND	FINAL DETERMINATION PENDING BY USITC Carbon Steel Wire Rod	731-TA-159(P), USITC Pub. 1476 (1984)	
	NEGATIVE PRELIMINARY COUNTERVAILING DUTY DETERMINATION, FILED WITH ITA ONLY 13/ Carbon Steel Wire Rod	Preliminary determination: 49 F.R. 6768 (Feb. 12, 1984); Initiated: 48 F.R. 56419 (Dec. 21, 1983)	
SOUTH AFRICA	AFFIRMATIVE FINAL COUNTERVAILING DUTY DETERMINATION, FILED WITH ITA ONLY 8/ Carbon Steel Wire Rod	Final determination: 47 F.R. 42396 (Sept. 27, 1982); Initiated: 47 F.R. 9263 (Mar. 4, 1982)	Outstanding countervailing duty order by ITA: 47 F.R. 42396 (Sept. 27, 1982)

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
WIRE ROD--Continued			
SPAIN	FINAL DETERMINATION PENDING BY USITC		
	Carbon Steel Wire Rod	731-TA-160(P) and 701-TA-209(P): USITC Pub. 1476 (1984)	
TRINIDAD AND TOBAGO	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Carbon Steel Wire Rod	731-TA-114(F), USITC Pub. 1444 (1983)	Antidumping duty order by ITA: 48 F.R. 52111, (Nov. 16, 1983)
	FINAL AFFIRMATIVE COUNTERVAILING DUTY DETERMINATION, FILED WITH ITA ONLY 14/		
	Carbon Steel Wire Rod	Final determination: 49 F.R. 480 (Jan. 4, 1984); Initiated: 48 F.R. 27415 (June 15, 1983)	Countervailing duty order issued by ITA: 49 F.R. 480 (Jan. 4, 1984)
VENEZUELA	NEGATIVE FINAL DETERMINATION BY USITC		
	Carbon Steel Wire Rod	731-TA-88(F), USITC Pub. 1348 (1983)	
WIRE AND WIRE ROD PRODUCTS:			
BRAZIL	NEGATIVE FINAL DETERMINATION BY USITC		
	Prestressed Concrete Steel Wire Strand	701-TA-152(F), USITC Pub. 1358 (1983)	
FRANCE	NEGATIVE FINAL DETERMINATION BY USITC		
	Prestressed Concrete Steel Wire Strand	701-TA-153(F), USITC Pub. 1325 (1982)	
JAPAN	AFFIRMATIVE FINAL ANTIDUMPING DETERMINATION BY USITC		
	Steel Wire Rope	AA1921-124, TC Pub. 608 (1973)	Administrative review of dumping finding by ITA: Final determination of existence of margins, 49 F.R. 12294 (Mar. 28, 1984)
	AFFIRMATIVE FINAL ANTIDUMPING DETERMINATION BY USITC		
	Steel Wire Strand for Prestressed Concrete	AA1921-188, USITC Pub. 928 (1978)	Administrative review of dumping finding by ITA: Final determination of existence of margins, 48 F.R. 45586 (Oct. 6, 1983)
	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN]		
	Certain Nuts, Bolts, and Screws of Iron or Steel	Terminated: 47 F.R. 12703, (Mar. 24, 1982); Initiated: 47: 9297 (Mar. 4, 1982), 701-TA-151	
	TERMINATION BEFORE AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [INITIATED UNDER TPM] 15/		
	Steel Wire Nails	Terminated: 46 F.R. 41122 (Aug. 14, 1981); Initiated: 46 F.R. 34613 (July 2, 1981), 731-TA-45	

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Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
WIRE AND WIRE ROD PRODUCTS--Continued			
REPUBLIC OF KOREA-----------	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [NEGATIVE FINAL DETERMINATION BY ITA]		
	Steel Wire Nails	Final determination: 47 F.R. 39549 (Sept. 8, 1982), 701-TA-145(P), USITC Pub. 1223 (1982)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [NEGATIVE FINAL DETERMINATION BY ITA]		
	Steel Wire Rope	Final determination: 48 F.R. 19447 (Apr. 29, 1983) 731-TA-112(P), USITC Pub. 1314 (1982)	
	NEGATIVE FINAL DETERMINATION BY USITC [INITIATED UNDER TPM]		
	Steel Wire Nails	731-TA-26(F), USITC Pub. 1088 (1980); [Transition case: AA1921-Inq.-26],	
	AFFIRMATIVE FINAL DETERMINATION BY USITC [INITIATED UNDER TPM]		
	Steel Wire Nails	731-TA-46(F), USITC Pub. 1274 (1982); ITA initiated: 46 F.R. 34615, (July 2, 1981)	Antidumping Duty Order by ITA: 47 F.R. 35266, (Aug. 13, 1982)
	TERMINATION OF COUNTERVAILING DUTY INVESTIGATION BY USTR [PETITION WITHDRAWN]		
	Steel Wire Rope	Terminated: 48 F.R. 55790, (Dec. 15, 1983); Initiated: 48 F.R. 20529, (May 6, 1983)	
SOUTH AFRICA-----	SUSPENSION OF COUNTERVAILING DUTY INVESTIGATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION, FILED WITH ITA ONLY 16/		
	Steel Wire Rope	Suspended: 47 F.R. 54130 (Dec. 1, 1982); Initiated: 47 F.R. 29867 (July 9, 1982)	Administrative review of suspension agreement by ITA: Final determination of compliance: 49 F.R. 14775 (Apr. 13, 1984)
	Galvanized Steel Wire Strand	Suspended: 48 F.R. 19451 (Apr. 29, 1983); Initiated: 47 F.R. 55986 (Dec. 14, 1982)	Administrative review of suspension agreement by ITA: Preliminary determination of compliance: 49 F.R. 14776 (Apr. 13, 1984)
	AFFIRMATIVE FINAL DETERMINATION IN COUNTERVAILING DUTY INVESTIGATION, FILED WITH ITA ONLY 17/		
	Prestressed Concrete Steel Wire Strand	Final determination: 47 F.R. 33310 (Aug. 2, 1982); Initiated: 46 F.R. 59283 (Dec. 4, (1981)	Administrative review of suspension agreement by ITA: Final determination of compliance, 49 F.R. 17061 (Apr. 23, 1984)
SPAIN------------	NEGATIVE FINAL DETERMINATION BY USITC		
	Prestressed Concrete Steel Wire Strand	701-TA-164(F), USITC Pub. 1281 (1982)	
UNITED KINGDOM---	NEGATIVE FINAL DETERMINATION BY USITC		
	Prestressed Concrete Steel Wire Strand	731-TA-89(F), USITC Pub. 1343 (1983)	

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
WIRE AND WIRE ROD PRODUCTS--Continued			
YUGOSLAVIA-------	NEGATIVE PRELIMINARY DETERMINATION BY USITC [INITIATED UNDER TPM] Steel Wire Nails	731-TA-47(P), USITC Pub. 1175 (1981)	
RAILWAY-TYPE PRODUCTS:			
EUROPEAN COMMUNITY------	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN] Steel Rails	Terminated: 47 F.R. 35364 (Aug. 13, 1982); Initiated: 47 F.R. 33345 (Aug. 2, 1982) 701-TA-186	
	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [TO CONFORM SCOPE OF USITC'S INVESTIGATIONS WITH ITA'S INVESTIGATIONS] Steel Rails	Terminated: 47 F.R. 43812 (Oct. 4, 1982); Initiated: 47 F.R. 40724 (Sept. 15, 1982); 701-TA-189 [Refiled as 701-TA-191-194(P)]	
FEDERAL REPUBLIC OF GERMANY------	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN] Steel Rails	Terminated: 47 F.R. 35364 (Aug. 13, 1982), Initiated: 47 F.R. 33345 (Aug. 2, 1982) 731-TA-97	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC Steel Rails	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-104(P) and 701-TA-191(P), USITC Pub. 1301 (1982)	U.S./E.C. STEEL ARRANGEMENT
FRANCE----------	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN] Steel Rails	Terminated: 47 F.R. 35364 (Aug. 13, 1982), Initiated: 47 F.R. 33345 (Aug. 2, 1982) 731-TA-98	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC Steel Rails	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-105(P) and 701-TA-192(P), USITC Pub. 1301 (1982)	U.S./E.C. STEEL ARRANGEMENT
LUXEMBOURG-------	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC Steel Rails	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 701-TA-194(P), USITC Pub. 1301 (1982)	U.S./E.C. STEEL ARRANGEMENT
UNITED KINGDOM--	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN] Steel Rails	Terminated: 47 F.R. 35364 (Aug. 13, 1982), Initiated: 47 F.R. 33345 (Aug. 2, 1982) 731-TA-99	

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
RAILWAY-TYPE PRODUCTS--Continued UNITED KINGDOM--Continued	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Steel Rails	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-106(P) and 701-TA-193(P), USITC Pub. 1301 (1982)	U.S./E.C. STEEL ARRANGEMENT
BARS: AUSTRALIA	AFFIRMATIVE ANTIDUMPING DETERMINATION BY TARIFF COMMISSION		
	Steel Bars, Reinforcing Bars and Shapes	AA1921-62, TC Pub. 314 (1970)	Administrative review of dumping finding by ITA: Previous findings of dumping margins revoked, 46 F.R. 22754 (Apr. 21, 1981)
BELGIUM	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Bar	701-TA-125(P), USITC Pub. 1221 (1982)	
	Cold-Formed Carbon Steel Bar	701-TA-134(P), USITC Pub. 1221 (1982)	
	Cold-Formed Alloy Steel Bar	701-TA-140(P), USITC Pub. 1221 (1982)	
BRAZIL	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Bar	701-TA-126(P), USITC Pub. 1221 (1982)	
	Cold-Formed Carbon Steel Bar	701-TA-135(P), USITC Pub. 1221 (1982)	
CANADA	AFFIRMATIVE ANTIDUMPING DETERMINATION BY TARIFF COMMISSION		
	Carbon Steel Bar	AA1921-39, TC Pub. 135 (1964)	Administrative review of dumping finding by ITA: 49 F.R. 13567 (Apr. 5, 1984)
	AFFIRMATIVE ANTIDUMPING DETERMINATION BY TARIFF COMMISSION		
	Steel Reinforcing Bars	AA1921-33, TC Pub. 122 (1964)	Administrative review of dumping finding by ITA: Preliminary determination: no known shipments; cash deposit required on future entries, 49 F.R. 7642 (Mar. 1, 1984)
FEDERAL REPUBLIC OF GERMANY	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Bar	701-TA-129(P), USITC Pub. 1221 (1982)	
	Hot-Rolled Alloy Steel Bar	701-TA-133(P), USITC Pub. 1221 (1982)	
	Cold-Formed Carbon Steel Bar	701-TA-139(P), USITC Pub. 1221 (1982)	
	Cold-Formed Alloy Steel Bar	701-TA-144(P), USITC Pub. 1221 (1982)	

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
BARS--Continued			
FRANCE	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Bar	701-TA-127(P), USITC Pub. 1221 (1982)	
	Hot-Rolled Alloy Steel Bar	701-TA-130(P), USITC Pub. 1221 (1982)	
	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Cold-Formed Alloy Steel Bar	701-TA-141(P), USITC Pub. 1221 (1982)	
	Cold-Formed Carbon Steel Bar	701-TA-136(P), USITC Pub. 1221 (1982)	
ITALY	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Bar	701-TA-146(P), USITC Pub. 1221 (1982)	
	Hot-Rolled Alloy Steel Bar	701-TA-131(P), USITC Pub. 1221 (1982)	
	Cold-Formed Carbon Steel Bar	701-TA-137(P), USITC Pub. 1221 (1982)	
	Cold-Formed Alloy Steel Bar	701-TA-142(P), USITC Pub. 1221 (1982)	
LUXEMBOURG	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Bar	701-TA-147(P), USITC Pub. 1221 (1982)	
SOUTH AFRICA	AFFIRMATIVE FINAL COUNTERVAILING DUTY DETERMINATION, FILED WITH ITA ONLY 8/		
	Hot-Rolled Carbon, Cold-Formed Carbon and Hot-Rolled Alloy Steel Bar	Final determination: 47 F.R. 39379 (Sept. 7, 1982); Initiated: 47 F.R. 5751 (Feb. 8, 1982)	Countervailing Duty Order Issued by ITA: 47 F.R. 39379 (Sept. 7, 1982)
	Deformed Steel Bars for Concrete Reinforcement	Final determination: 47 F.R. 47900 (Oct. 28, 1982); Initiated: 47 F.R. 25174 (June 10, 1982)	Administrative review of countervailing duty order by ITA: Final determination: bounty or grant zero percent, deposit required, 49 F.R. 14777 (Apr. 13, 1984)
SPAIN	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Bar	701-TA-160(P), USITC Pub. 1331 (1982)	Countervailing duty order by ITA: 48 F.R. 51 (Jan. 3, 1983)
	Cold-Formed Carbon Steel Bar	701-TA-162(P), USITC Pub. 1331 (1982)	Countervailing duty order by ITA: 48 F.R. 51 (Jan. 3, 1983)
	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Alloy Steel Bar	701-TA-161(P), USITC Pub. 1255 (1982)	
	Cold-Formed Alloy Steel Bar	701-TA-163(P), USITC Pub. 1255 (1982)	

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
BARS--Continued			
UNITED KINGDOM---	AFFIRMATIVE ANTIDUMPING DETERMINATION BY USITC		
	Carbon Steel Bar	AA1921-Inq. 8, USITC Pub. 855 (1978)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Carbon Steel Bar	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 701-TA-128(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [NEG. FINAL DETERMINATION BY ITA]		
	Cold-Formed Carbon Steel Bar	Terminated: 47 F.R. 40725 (Sept. 15, 1982), 701-TA-138 (P), USITC Pub. 1221 (1982)	
	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Hot-Rolled Alloy Steel Bar	701-TA-132(P), USITC Pub. 1221 (1982)	
	Cold-Formed Alloy Steel Bar	701-TA-143(P), USITC Pub. 1221 (1982)	
STRUCTURAL SHAPES AND UNITS:			
BELGIUM----------	NEGATIVE FINAL DETERMINATION BY TREASURY		
	Steel I Beams	Final determination: 44 F.R. 54579 (Sept. 20, 1979); Initiated: 44 F.R. 8408 (Feb. 9, 1979)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Angles, Shapes and Sections	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-18(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Carbon Steel Structural Shapes	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 701-TA-117(P) and 731-TA-82(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
BRAZIL-----------	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Carbon Steel Structural Shapes	701-TA-118(P), USITC Pub. 1221 (1982)	
CANADA-----------	SUSPENSION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC 18/ [INITIATED UNDER TPM]		
	Sheet Piling	Suspended: 47 F.R. 41886 (Sept. 22, 1982); 731-TA-52(P), USITC Pub. 1212 (1982)	
	AFFIRMATIVE ANTIDUMPING DETERMINATION BY TARIFF COMMISSION		
	Carbon Steel Structural Shapes	AA1921-39, TC Pub. 135 (1964)	Administrative review of dumping finding by ITA: Dumping margins found to exist upon final determination, 49 F.R. 13567 (Apr. 5, 1984)

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
STRUCTURAL SHAPES AND UNITS--Continued			
FEDERAL REPUBLIC OF GERMANY	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Angles, Shapes and Sections	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-19(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC Carbon Steel Structural Shapes	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 731-TA-86(P) and 701-TA-124(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
FRANCE	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Angles, Shapes and Sections	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-20(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC Carbon Steel Structural Shapes	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 701-TA-119(P) and 731-TA-83(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
ITALY	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Angles, Shapes and Sections	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-21(P), USITC Pub. 1064 (1980)	
	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN IN EXCHANGE FOR AN ANTIDUMPING INVESTIGATION] Carbon Steel Structural Shapes	Terminated: 47 F.R. 6117 (Feb. 10, 1982), Initiated: 47 F.R. 2950 (Jan. 20, 1982) 701-TA-120	
LUXEMBOURG	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Angles (not shapes and sections)	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-22(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC Carbon Steel Structural Shapes	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 701-TA-121(P) and 731-TA-84(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
MEXICO	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY ITA ONLY 6/ Carbon Steel Structural Shapes	Terminated: 49 F.R. 17790 (Apr. 25, 1984); Initiated: 48 F.R. 55013 (Dec. 8, 1983)	MEXICAN AGREEMENT
NETHERLANDS	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM] Shapes and Sections (not angles)	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-23(P), USITC Pub. 1064 (1980)	

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
STRUCTURAL SHAPES AND UNITS--Continued			
NETHERLANDS--Continued	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN IN EXCHANGE FOR AN ANTIDUMPING INVESTIGATION]		
	Carbon Steel Structural Shapes	Terminated: 47 F.R. 6117 (Feb. 10, 1982); Initiated: 47 F.R. 2950 (Jan. 20, 1982), 701-TA-122	
SOUTH AFRICA	FINAL DETERMINATION PENDING BY USITC		
	Carbon Steel Angles, Shapes and Sections	731-TA-181(P), USITC Pub. 1510 (1984)	
	AFFIRMATIVE FINAL COUNTERVAILING DUTY DETERMINATION, FILED WITH ITA ONLY 8/		
	Carbon Steel Structural Shapes	Final determination: 47 F.R. 39379 (Sept. 7, 1982); Initiated: 47 F.R. 5751 (Feb. 8, 1982)	Final countervailing duty review by ITA: 47 F.R. 39379 (Sept. 7, 1982)
SPAIN	FINAL DETERMINATION PENDING BY USITC		
	Carbon Steel Angles, Shapes and Sections	731-TA-182(P), USITC Pub. 1510 (1984)	
	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Carbon Steel Angles, Shapes and Sections	701-TA-159(F), USITC Pub. 1331 (1982)	Countervailing duty orders by ITA: 48 F.R. 51 (Jan. 3, 1983)
UNITED KINGDOM	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC [TPM]		
	Angles, Shapes and Sections	Terminated: 45 F.R. 66833 (Oct. 8, 1980); 731-TA-24(P), USITC Pub. 1064 (1980)	
	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Carbon Steel Structural Shapes	Terminated: 47 F.R. 49058 (Oct. 29, 1982); 701-TA-123(P) and 731-TA-85(P), USITC Pub. 1221 (1982)	U.S./E.C. STEEL ARRANGEMENT
PIPES AND TUBES:			
BRAZIL	AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Large Diameter Carbon Steel Welded Pipes	731-TA-183(P), USITC Pub. 1524 (1984)	
	SUSPENSION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC 19/		
	Small Diameter Welded Carbon Steel Pipes and Tubes	Suspended: 48 F.R. 1360 (Jan. 12, 1983); 701-TA-165(P), USITC Pub. 1262 (1982)	BRAZILIAN AGREEMENT
FEDERAL REPUBLIC OF GERMANY	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Large Diameter Carbon Steel Welded Pipes and Tubes	Terminated: 47 F.R. 49058 (Oct. 29, 1980); 701-TA-169(P), USITC Pub. 1262 (1982)	U.S./E.C. STEEL ARRANGEMENT

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
PIPES AND TUBES-- Continued			
FRANCE-----------	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION BY USITC		
	Large Diameter Carbon Steel Welded Pipes and Tubes	Terminated: 47 F.R. 49058 (Oct. 29, 1980); 701-TA-166(P), USITC Pub. 1262 (1982)	U.S./E.C. STEEL ARRANGEMENT
ITALY------------	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Welded Carbon Steel Pipes and Tubes (large and small)	701-TA-167(P), USITC Pub. 1262 (1982)	
JAPAN------------	FINAL AFFIRMATIVE DETERMINATION BY USITC		
	Seamless Heat Resisting Pipes and Tubes	731-TA-87(F), USITC Pub. 1347 (1983)	Early determination of antidumping duty by ITA: 48 F.R. 26496 (June 8, 1983)
	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Welded Pipes and Tubes of Iron or Steel and Seamless Pipes and Tubes of Iron or Steel	731-TA-15(P), USITC Pub. 1058 (1980)	
	TERMINATION BEFORE PRELIMINARY DETERMINATION BY USITC [PETITION WITHDRAWN]		
	Malleable Pipe Fittings of Iron or Steel	Terminated: 45 F.R. 21753 (Apr. 2, 1980); Initiated: 44 F.R. 50424 (Aug. 28, 1979) 701-TA-9	
MEXICO-----------	TERMINATION AFTER AFFIRMATIVE PRELIMINARY DETERMINATION, FILED WITH ITA ONLY 6/		
	Carbon Steel Welded Pipe (small diameter)	Terminated: 49 F.R. 17791 (Apr. 25, 1984); Initiated: 48 F.R. 55013 (Dec. 8, 1983)	MEXICAN AGREEMENT
REPUBLIC OF KOREA-----------	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Small Diameter Carbon Steel Welded Pipes and Tubes	701-TA-168(F), USITC Pub. 1345 (1983)	Countervailing Duty Order by ITA: 48 F.R. 7241 (Feb. 18, 1983)
	Small Diameter Circular Welded Carbon Steel Pipes and Tubes	731-TA-131(F), USITC Pub. 1519 (1984)	
	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Welded Carbon Steel Pipes and Tubes of Heavy-Walled and Light-Walled (including square) Cross Section	731-TA-131(P), USITC Pub. 1389 (1983) [INDUSTRY REFILED THIS AS 731-TA-138]	
	NEGATIVE FINAL DETERMINATION BY USITC		
	Welded Carbon Steel Pipes and Tubes of Heavy-Walled Rectangular (including square) Cross Section	731-TA-138(F), USITC Pub. 1519 (1984)	
	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Welded Carbon Steel Pipes and Tubes of Light-Walled Rectangular (including square) Cross Section	731-TA-138(F), USITC Pub. 1519 (1984)	Antidumping duty order by ITA: 49 F.R. 20045 (May 11, 1984)

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
PIPES AND TUBES--Continued			
TAIWAN	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Small Diameter Circular Welded Carbon Steel Pipes and Tubes	731-TA-132(F), USITC Pub. 1519 (1984)	
	NEGATIVE PRELIMINARY DETERMINATION BY USITC		
	Heavy-walled Rectangular and Light-walled Rectangular (including square) Cross Section Welded Carbon Steel Pipes and Tubes	731-TA-132(P), USITC Pub. 1389 (1983)	
SOUTH AFRICA	AFFIRMATIVE FINAL COUNTERVAILING DETERMINATION, FILED WITH ITA ONLY 20/		
	Carbon Steel Pipe and Tube	Final determination: 48 F.R. 40928 (Sept. 12, 1983); Suspension agreement: 48 F.R. 24407 (June 1, 1983)	SOUTH AFRICAN AGREEMENT
PIG IRON: 21/			
BRAZIL	AFFIRMATIVE FINAL DETERMINATION BY USITC		
	Pig Iron	701-TA-2, USITC Pub. 1048 (1980)	Administrative review of countervailing duty order by ITA: final determination of assessment rates, 49 F.R. 9923 (Mar. 16, 1984)
CANADA	AFFIRMATIVE FINAL ANTIDUMPING DETERMINATION BY TARIFF COMMISSION		
	Pig Iron	AA1921-72, TC Pub. 398 (1971)	Administrative review of countervailing duty order by ITA: Final determination: margins exist; but no margins for Stelco, Inc., 48 F.R. 43704 (Sept. 26, 1983)
CZECHOSLOVAKIA	AFFIRMATIVE FINAL ANTIDUMPING DETERMINATION BY TARIFF COMMISSION		
	Pig Iron	AA1921-53, TC Pub. 265 (1968)	Administrative review of dumping finding by ITA: finding revoked, 49 F.R. 10694 (Mar. 22, 1984)
EAST GERMANY	AFFIRMATIVE FINAL ANTIDUMPING DETERMINATION BY TARIFF COMMISSION		
	Pig Iron	AA1921-52, TC Pub. 265 (1968)	Administrative review of dumping finding by ITA: Final determination: cash deposits required, 49 F.R. 1261 (Jan. 10, 1984)
FEDERAL REPUBLIC OF GERMANY	AFFIRMATIVE FINAL ANTIDUMPING DETERMINATION BY TARIFF COMMISSION		
	Pig Iron	AA1921-74, TC Pub. 398 (1971)	Administrative review of dumping finding by ITA: Final determination: antidumping findings revoked, 48 F.R. 45586 (Oct. 6, 1983)
FINLAND	AFFIRMATIVE FINAL ANTIDUMPING DETERMINATION BY TARIFF COMMISSION		
	Pig Iron	AA1921-73, TC Pub. 398 (1971)	Administrative review of dumping finding by ITA: Final determination: antidumpings revoked, 48 F.R. 45586 (Oct. 6, 1983)

See footnotes at end of table.

Past and pending investigations on the subject products and past and current import restraints, by product groups and by countries--Continued

Product group and source	Action	Cite	Orders issued/ outstanding agreements
PIG IRON--Continued			
ROMANIA	AFFIRMATIVE FINAL ANTIDUMPING DETERMINATION BY TARIFF COMMISSION Pig Iron	AA1921-54, TC Pub. 265 (1968)	Administrative review of dumping finding by ITA: Final determination: cash deposits required, 49 F.R. 1261 (Jan. 10, 1984)
U.S.S.R	AFFIRMATIVE FINAL ANTIDUMPING DETERMINATION BY TARIFF COMMISSION Pig Iron	AA1921-55, TC Pub. 265 (1968)	Administrative review of dumping finding by ITA: Final determination: cash deposits required, 49 F.R. 1261 (Jan. 10, 1984)

1/ Each product designation used in this chart is based on the product description used initially in the investigation.

2/ TPM is the abbreviation for Trigger Price Mechanism.

3/ ITA determined that petitioner did not represent the national hot-rolled carbon steel plate industry.

4/ A suspension agreement was negotiated in which the Government of Brazil agreed to offset with an export tax all benefits which were found to constitute subsidies on tool steel exported to the United States. 48 F.R. 11721 (Mar. 21, 1983). However, petitioners requested ITA to continue the investigation. An affirmative final determination was reached by ITA and USITC. The suspension agreement remains in effect unless terminated or violated. 48 F.R. 11190 (Mar. 16, 1983).

5/ ITA determined that petitioner did not represent the national hot-rolled carbon steel plate industry. The U.S. Court of International Trade has reversed ITA's dismissal of the regional industry in its antidumping petition and has remanded the case back to ITA for further proceedings.

6/ This case was filed with ITA only since Mexico is not a "country under the Agreement" within the meaning of section 701(b) of the Tariff Act of 1930. The Government of Mexico adopted an export restraint policy whereby steel shipments to the United States are subject to quantitative limitations over the next 3 years. 49 F.R. 17790 (Apr. 25, 1984).

7/ An agreement was reached with Metalimportexport, an exporter, in which Metalimportexport agreed to revise its prices to eliminate sales of this merchandise to the United States at less than fair value. 48 F.R. 317 (Jan. 4, 1983).

8/ This case was filed with ITA only since South Africa is not a "country under the agreement" within the meaning of section 701(b) of the Tariff Act of 1930.

9/ This case was filed with ITA only since Argentina is not a "country under the Agreement" within the meaning of section 701(b) of the Tariff Act of 1930.

10/ This case was filed with ITA only since Argentina is not a "country under the Agreement" within the meaning of section 701(b) of the Tariff Act of 1930. The Government of Argentina agreed to eliminate all benefits which are found to be bounties or grants on carbon steel wire rod exported to the United States. 47 F.R. 50732 (Nov. 9, 1982).

11/ The Government of Brazil agreed to offset with an export tax all benefits which were found to be subsidies on exports of carbon steel wire rod to the United States.

12/ This case was filed with ITA only since Czechoslovakia is not a "country under the Agreement" within the meaning of section 701(b) of the Tariff Act of 1930.

13/ This case was filed with ITA only since Poland is not a "country under the Agreement" within the meaning of section 701(b) of the Tariff Act of 1930.

14/ This case was filed with ITA only since Trinidad and Tobago are not "countries under the Agreement" within the meaning of section 701(b) of the Tariff Act of 1930.

15/ ITA terminated this investigation based on a cessation of sales below trigger prices substantially prior to initiation of this investigation. In addition, the Japanese manufacturers have assured ITA that all sales of this product will be made at prices at or above relevant trigger price for a 2 year period beginning Aug. 11, 1981.

16/ These cases were filed with ITA only since South Africa is not a "country under the Agreement" within the meaning of section 701(b) of the Tariff Act of 1930. ITA suspended these investigations based on agreements reached with the South African manufacturer. The manufacturer agreed to renounce all benefits which were found to be bounties or grants on exports of the subject products to the United States. 47 F.R. 54130 (Dec. 1, 1982).

17/ This case was filed with ITA only since South Africa is not a "country under the Agreement" within the meaning of section 701(b) of the Tariff Act of 1930. A suspension agreement was negotiated. 47 F.R. 22137 (May 21, 1982). However, petitioner requested that the investigation be continued. The investigation was continued and an affirmative final determination was made. The suspension agreement will remain in effect and no countervailing duty order will be issued. 47 F.R. 33310 (Aug. 2, 1982).

18/ The manufacturer agreed to revise his prices to eliminate sales at less than fair value.

19/ The Government of Brazil agreed to offset with an export tax all benefits determined by ITA to be subsidies on the subject products exported to the United States.

20/ This case was filed with ITA only since South Africa is also not a "country under the agreement" within the meaning of section 701(b) of the Tariff Act. In addition, ITA reached an affirmative preliminary determination. A suspension agreement was negotiated by the only known manufacturer of the carbon steel pipe and tube products under investigation, however, the petitioners requested ITA to continue the investigation. An affirmative final determination was made by ITA. ITA will not issue a countervailing duty order as long as the conditions of the suspension agreement are met.

21/ Pig iron is not subject to this investigation. Information on investigations involving pig iron are presented for information only.

APPENDIX D

STEEL COMPANY/PLANT SHUTDOWNS IN 1974-83 AND JANUARY-MARCH 1984

Steel company/plant shutdowns, 1974-83 and January-March 1984

Company	Location	Facility	1/ Date
Alan-Wood Steel	Conshohocken, Pa.	Integrated company 2/	1979
Armco	Hamilton, Ohio	Coke plant	1982
	Houston, Tex.	Plant	1984
	LaHabra, Calif.	Misc. steel products	1977
	Marion, Ohio	Rebar and shapes	1981
Babcock & Wilcox	Koppel, Pa.	Fittings and forging operations.	1981
Bethlehem	Baltimore, Md.	Shipyard	1982
	Bethlehem, Pa.	No. 9 machine shop	1982
	Bethlehem, Pa.	Forge No. 2	1982
	Bethlehem, Pa.	Press forge No. 14	1982
	Bethlehem, Pa.	Steel foundry	1982
	Bethlehem, Pa.	12-inch and 14-inch bar mill.	1981
	Bethlehem, Pa.	Bar finishing operations.	1981
	Bethlehem, Pa.	Tool steel department	1981
	Bethlehem, Pa.	1 tool steel hammer	1978
	Bethlehem, Pa.	12-inch structural mill	1977
	Bethlehem, Pa.	9-inch No. 3 bar mill	1977
	Bethlehem, Pa.	12-inch No. 3 bar mill	1977
	Bethlehem, Pa.	35-inch blooming mill	1977
	Bethlehem, Pa.	18-inch blooming mill	1977
	Bethlehem, Pa.	22-inch bar mill	1977
	Bethlehem, Pa.	Fabricating works	1976
	Bethlehem, Pa.	Coke oven battery	1975
	Boston, Mass.	Shipyard	1982
	Boston, Mass.	Rebar shop	1978
	Burns Harbor, Ind.	Tin mill halogen line	1983
	Chicago, Ill.	Fabricating works	1975
	Cornwall, Pa.	Ore mine	1977
	Dunellen, N.J.	Tank plant	1980
	East Chicago, Ind.	Bolt and forge plant	1977
	Hallendale, Fla.	Tank plant	1978
	Hoboken, N.J.	Shipyard	1982
	Johnstown, Pa.	Coke battery	1982
	Johnstown, Pa.	Blast furnace	1981
	Johnstown, Pa.	6 open-hearth furnaces	1981
	Johnstown, Pa.	Sintering plant	1980

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
Bethlehem--Continued	Johnstown, Pa.	Specialty products shop	1978
	Johnstown, Pa.	Wheel mill No. 2	1978
	Johnstown, Pa.	13-inch bar mill	1977
	Johnstown, Pa.	4 coke batteries	1977
	Johnstown, Pa.	Blast furnace	1977
	Johnstown, Pa.	36-inch universal plate mill.	1977
	Johnstown, Pa.	Blast furnace	1977
	Johnstown, Pa.	134-inch plate mill	1976
	Johnstown, Pa.	Hot metal station	1976
	Johnstown, Pa.	2 open-hearth furnaces	1976
	Johnstown, Pa.	Open-hearth furnace	1975
	Johnstown, Pa.	8-inch No. 1 bar mill	1974
	Kayford, W.Va.	Coal mine	1982
	Lackawanna, N.Y.	Specialty product shop	1983
	Lackawanna, N.Y.	3 basic-oxygen vessels	1983
	Lackawanna, N.Y.	45-inch x 90-inch slab mill.	1983
	Lackawanna, N.Y.	Sinter plant	1983
	Lackawanna, N.Y.	79-inch hot-strip mill	1983
	Lackawanna, N.Y.	44-inch blooming mill	1983
	Lackawanna, N.Y.	30-inch billet mill	1983
	Lackawanna, N.Y.	21-inch billet mill	1983
	Lackawanna, N.Y.	4 blast furnaces	1983
	Lackawanna, N.Y.	Lime plant	1981
	Lackawanna, N.Y.	12-inch bar mill	1981
	Lackawanna, N.Y.	Brass foundry	1980
	Lackawanna, N.Y.	Steel foundry	1980
	Lackawanna, N.Y.	Iron foundry	1980
	Lackawanna, N.Y.	Scrap melter	1978
	Lackawanna, N.Y.	10-inch bar mill	1977
	Lackawanna, N.Y.	Cold strip mill	1977
	Lackawanna, N.Y.	54-inch blooming mill	1977
	Lackawanna, N.Y.	28-inch structural mill	1977
	Lackawanna, N.Y.	4 coke batteries	1977
	Lackawanna, N.Y.	Blast furnace	1977
	Lackawanna, N.Y.	32-inch rail mill	1977
	Lackawanna, N.Y.	40-inch blooming mill	1976
	Lackawanna, N.Y.	48-inch structural mill	1975
	Lackawanna, N.Y.	No. 2 open-hearth furnace.	1974
	Leesdale, Pa.	Tower shop	1978
	Leesdale, Pa.	Fabricating works	1976

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
Bethlehem--Continued	Los Angeles, Calif.	Rebar shop	1983
	Los Angeles, Calif.	12-inch bar mill	1983
	Los Angeles, Calif.	10-inch bar and rod mill.	1982
	Los Angeles, Calif.	32-inch blooming mill	1982
	Los Angeles, Calif.	22-inch billet mill	1982
	Los Angeles, Calif.	Industrial fastener department.	1981
	Los Angeles, Calif.	Wire rope department	1978
	Los Angeles, Calif.	Wire mill	1978
	Marion, W. Va.	Coal mine	1982
	Morgantown, Pa.	Ore mine	1977
	Pinole Point, Calif.	Galvanizing line	1974
	Pottstown, Pa.	Fabricating works	1976
	San Francisco, Calif.	Shipyard	1982
	San Francisco, Calif.	Rebar shop	1980
	San Francisco, Calif.	18-inch bar mill	1977
	San Francisco, Calif.	12-inch bar mill	1977
	San Francisco, Calif.	9-inch bar mill	1977
	San Pedro, Calif.	Shipyard	1980
	Sparrows Point, Md.	Galvalume coated wire	1983
	Sparrows Point, Md.	2 butt-weld pipe mills	1983
	Sparrows Point, Md.	Strand division	1983
	Sparrows Point, Md.	Wire drawing mill	1983
	Sparrows Point, Md.	2 coke batteries	1983
	Sparrows Point, Md.	Flange mill	1982
	Sparrows Point, Md.	2 coke batteries	1982
	Sparrows Point, Md.	2 coke batteries	1980
	Sparrows Point, Md.	Chromizing operation	1978
	Sparrows Point, Md.	3 blast furnaces	1978
	Sparrows Point, Md.	2 coke batteries	1977
	Sparrows Point, Md.	6 sintering strands	1976
	Sparrows Point, Md.	Blast furnace	1976
	Sparrows Point, Md.	Blast furnace	1975
	Sparrows Point, Md.	10-inch rod mill No. 2	1975
	Sparrows Point, Md.	2 blast furnaces	1974
	Steelton, Pa.	Iron foundry	1976
	Torrance, Calif.	Fabricating works	1976

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
Bliss & Laughlin	Los Angeles, Calif.	Cold-finished bar plant	1983
Ceco Corp	Birmingham, Ala.	Rebar facility	1977
CF&I	Pueblo, Colo.	4 blast furnaces	1983
	Pueblo, Colo.	2 basic-oxygen furnaces	1983
	Pueblo, Colo.	Coke ovens	1983
	Pueblo, Colo.	Wide-flange mill	1983
Cleveland Cliffs	Coleraine, Minn.	Ore mine	1981
Connors Steel	Birmingham, Ala.	Plant 3/	1983
	Huntington, W. Va.	Plant 4/	1982
Copperweld	Glassport, Pa.	Alumoweld products division.	1983
Crucible	Midland, Pa.	Plant (stainless steel division). 5/	1982
Cyclops	Portsmouth, Ohio	Plant	1980
Guterl Steel	Lockport, N.Y.	Specialty plant 6/	1983
Hunt Steel	Youngstown, Ohio	Plant	1983
H.K. Porter	Prospect Park, Pa.	Alloy wire plant 7/ pellet plant.	1982
Inland	Black River Falls, Wisc.	Iron ore mine and pellet plant.	1983
	Barnsboro, Pa.	Metallurgical coal mine	1983
	Bishop, W. Va.	Metallurgical coal mine	1983
Interlake	Newport, Ken. 8/	Plant	1980
	Wilder, Ken.	Plant	1980
ITT Harper	Morton Grove, Ill.	Extrusion plant	1980
J&L	Aliquippa, Pa.	Rod and wire mill	1982
	Aliquippa, Pa.	South Mills boiler house.	1981

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
J&L--Continued	Aliquippa, Pa.	Welded tube department	1981
	Aliquippa, Pa.	Seamless tube department.	1980
	Aliquippa, Pa.	A-5 blast furnace	1980
	Aliquippa, Pa.	Sinter plant	1979
	Aliquippa, Pa.	Coke-oven battery	1979
	Aliquippa, Pa.	Coke-oven battery	1977
	Brier Hill	Plant 9/	1977-80
	Campbell, Ohio	Coke plant	1982
	Campbell, Ohio	Plant (partial) 9/	1977-80
	Cleveland, Ohio	Sinter plant	1976
	Cleveland, Ohio	Oil and inspection line	1974
	Hill Annex	Ore mine	1978
	Indiana Harbor, Ind.	No. 1 tin mill 9/	1981
	Indiana Harbor, Ind.	No. 1 blooming mill 9/	1979
	Indiana Harbor, Ind.	CBW 9/	1978
	Indiana Harbor, Ind.	Bar mill 9/	1975
	Indiana Harbor, Ind.	Open-hearth furnace 9/	1975
	Lancaster, Ohio	Steel service center	1978
	Lancaster, Ohio	Container plant	1975
	Los Angeles, Calif.	Stainless and strip plant.	1974
	New York, N.Y.	Ore Division	1978
	Niles, Ohio	Tube mill	1978
	Pittsburgh, Pa.	Hot-strip and finishing operations.	1981
	Pittsburgh, Pa.	Ingot-mould foundry	1981
	Pittsburgh, Pa.	Blast furnace, open-hearth, and maintenance units.	1979
	Pittsburgh, Pa.	Spike operations	1978
	Pittsburgh, Pa.	Billet scarfing and pickling operations.	1977
	Pittsburgh, Pa.	Cold strip-mill units	1974
	Struthers, Ohio	Spike mill and roof-bolt operations. 9/	1979
	Toledo, Ohio	Container plant	1974
	Union Dock	Transporation	1978
	Warren, Ohio	Bar, rod, and wire plant.	1977
	Youngstown, Ohio	Metal-products plant 9/	1981

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
Kaiser	Fontana, Calif.	Integrated company	1984
Keystone Steel & Wire	Peoria, Ill.	Electric furnace	1982
Levinson	Pittsburgh, Pa.	Fabricating plant	1980
McLouth Steel	Trenton, Mich.	Integrated company 10/	1981
National	Buffalo, N.Y.	Hanna furnace and coke plant.	1982
	Ecorse, Mich.	Coke battery	1982
	Ecorse, Mich.	Basic-oxygen furnace	1981
	Ecorse, Mich.	Blooming mill	1981
	Granite City, Ill.	Coke battery	1983
	Houston, Tex.	National Pipe & Tube	1983
	Houston, Tex.	National Steel Products	1983
	Huntington, Ark.	Coal mine	1980
	LaGrange, Ga.	National Steel Products. 11/	1983
	Pilot Knob, Mo.	Iron ore pellet plant	1982
	Pineville, W.Va.	Coal mine	1982
	Portage, Ind.	Steel flooring operations.	1982
	Reels Corners, W.Va.	Coal mine	1982
	Terre Haute, Ind.	National Steel Products	1981
	Weirton, W.Va.	Plant 12/	1983
Pacific States Steel Corp.	Union City, Calif.	Steelmaking and bar operations.	1979
Penn-Dixie Steel	Kokomo, Ind.	Integrated company 13/	1980
Phoenix Steel	Claymont, Del.	Company (plate and seamless tubing). 14/	1983
Republic	Buffalo, N.Y.	2 blast furnaces	1984
	Buffalo, N.Y.	Basic-oxygen vessels	1984
	Buffalo, N.Y.	38-inch blooming mill	1984
	Buffalo, N.Y.	21-inch billet mill	1984
	Buffalo, N.Y.	18-inch bar mill	1984
	Buffalo, N.Y.	10-inch bar mill	1984
	Buffalo, N.Y.	8-inch bar mill	1984

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
Republic--Continued	Canton, Ohio	Jobbing and hot-sheet mills.	1981
	Chicago, Ill.	Open-hearth furnaces	1977
	Cleveland, Ohio	98-inch hot-strip mill	1977
	Cleveland, Ohio	No. 5 coke oven battery	1976
	Cleveland, Ohio	Open-hearth furnaces	1976
	Cleveland, Ohio	Sinter plant	1974
	Massillon, Ohio	Coke plant	1981
	Massillon, Ohio	12-inch bar mill	1977
	Niles, Ohio	Door plant	1983
	Niles, Ohio	Annealer	1979
	Niles, Ohio	Tandem mill	1976
	Niles, Ohio	Joist plant	1976
	Pennsylvania, Pa.	Banning Coal Mine	1982
	Warren, Ohio	Sinter plant	1980
	Warren, Ohio	No. 1 galvanizing line	1974
	Youngstown, Ohio	Fabricating and coil	1982
	Youngstown, Ohio	Sinter plant	1975
	Youngstown, Ohio	10-inch skelp mill	1975
	Youngstown, Ohio	10-inch bar mill coating.	1975
	Youngstown, Ohio	22-inch bar mill	1974
	Youngstown, Ohio	19-inch bar mill	1974
	Youngstown, Ohio	Plastic-coating line	1974
Southwest Steel Rolling Mills, Inc.	Los Angeles, Calif.	Plant	1977
A.O. Smith Corp----------	Milwaukee, Wis.	Pipe and tubing	1974
Teledyne-----------------	McKeesport, Pa.	Specialty steel	1981
Tonawanda Iron-----------	N. Tonawanda, N.Y.	Blast furnace	1974
U.S. Steel---------------	Alameda	Container plant	1977
	Ambridge, Pa.	Fabricating plant	1983
	Antioch, Calif.	Fabricating plant	1978
	Atlanta, Ga.	Service center warehouse.	1982
	Atlantic City, Wyo.	Iron ore operations	1983
	Berwick, Pa.	Plant	1974
	Boston, Mass.	Service center warehouse.	1982

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
U.S. Steel--Continued	Braddock, Pa.	Foundry	1983
	Braddock, Pa.	No. 5 blast furnace	1982
	Braddock, Pa.	Sinter plant	1978
	Braddock, Pa.	No. 6 blast furnace	1978
	Camden, N.J.	Container plant	1979
	Canton, Ohio	Plant	1982
	Chicago, Ill.	Sinter plant	1983
	Chicago, Ill.	Blast furnace department.	1983
	Chicago, Ill.	Basic-oxygen furnace shop.	1983
	Chicago, Ill.	Billet caster and billet conditioning operations.	1983
	Chicago, Ill.	Rod mill	1983
	Chicago, Ill.	Rail mill	1983
	Chicago, Ill.	53/34-inch mills	1983
	Chicago, Ill.	44/96-inch mills	1983
	Chicago, Ill.	30-inch mill	1983
	Chicago, Ill.	Joliet splice bar mill	1983
	Chicago, Ill.	Air separation plant	1983
	Chicago, Ill.	No. 4 dock	1983
	Chicago, Ill.	No. 1 electic furnace	1981
	Chicago, Ill.	No. 10 blast furnace	1980
	Chicago, Ill.	Foundry	1979
	Chicago, Ill.	Container plant	1979
	Chicago, Ill.	Alloy bar mill	1978
	Chicago, Ill.	Nos. 1-6 blast furnaces	1978
	Clairton, Pa.	18/22-inch rolling mills.	1983
	Clairton, Pa.	21-inch mill	1983
	Clairton, Pa.	Miscellaneous coke, chemical, and steel operations.	1982
	Clairton, Pa.	Coke batteries Nos. 10, 11, 16, & 17.	1982
	Clairton, Pa.	Coke batteries Nos. 12, 12A, & 18.	1980
	Clairton, Pa.	No. 1 blast furnace	1978
	Clairton, Pa.	14-inch bar mill	1977
	Cleveland, Ohio	No. 5 hot-strip mill	1980
	Cleveland, Ohio	Blast furnaces	1979

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
U.S. Steel--Continued	Cuyahoga, Ohio	Plant	1983
	Desert Mound, Utah	Iron ore operations	1983
	Dravosburg, Pa.	Miscellaneous sheet and tin operations.	1983
	Dravosburg, Pa.	36-inch pickle line	1982
	Dravosburg, Pa.	36-inch pickle line	1982
	Dravosburg, Pa.	3-stand temper mills Nos. 1 and 4.	1980
	Duluth, Minn.	Coke plant	1978
	Duquesne, Pa.	No. 3 blast furnace	1983
	Duquesne, Pa.	No. 6 blast furnace	1983
	Duquesne, Pa.	Basic-oxygen furnace shop.	1983
	Duquesne, Pa.	Maintenance shops	1983
	Duquesne, Pa.	No. 1 blast furnace	1982
	Duquesne, Pa.	No. 4 blast furnace	1980
	Duquesne, Pa.	Sinter plant	1978
	Duquesne, Pa.	No. 6 blast furnace	1978
	Ellwood City, Pa.	Plant	1975
	Elmire, N.Y.	Fabricating plant	1983
	Fairfield, Ala.	No. 6 blast furnace	1983
	Fairfield, Ala.	Ensley plant	1983
	Fairfield, Ala.	45-inch blooming mill	1983
	Fairfield, Ala.	Tie plate and spike facilities.	1983
	Fairfield, Ala.	Galvanizing operations (excluding the No.4 line).	1983
	Fairfield, Ala.	Structural mill	1983
	Fairfield, Ala.	Mold and stool foundry	1982
	Fairfield, Ala.	No. 3 galvanizing line	1982
	Fairfield, Ala.	21-inch billet mill	1982
	Fairfield, Ala.	Pig iron unit	1982
	Fairfield, Ala.	Coke batteries 3 thru 8	1982
	Fairfield, Ala.	Sinter lines 1, 2, and 3.	1981
	Fairfield, Ala.	Axle mill	1981
	Fairfield, Ala.	No. 3 electrolytic tinning line.	1981
	Fairfield, Ala.	Merchant mill	1980
	Fairfield, Ala.	Wire mill	1980
	Fairfield, Ala.	140-inch plate mill	1980

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
U.S. Steel--Continued	Fairfield, Ala.	Cotton tie mill	1977
	Fairfield, Ala.	Ensley steelmaking	1976
	Fairfield, Ala.	Bessemer rolling mill	1975
	Fairless Hills, Pa.	Rod mill	1983
	Fairless Hills, Pa.	Wire mill	1983
	Fairless Hills, Pa.	No. 1 electrolytic tinning line.	1983
	Fairless Hills, Pa.	No. 1 continuous-anneal line.	1980
	Fairless Hills, Pa.	56-inch CR shear	1980
	Gary, Ind.	No. 10 blast furnace	1983
	Gary, Ind.	Rail mill	1983
	Gary, Ind.	Billet mill	1983
	Gary, Ind.	Foundry and pattern shop.	1983
	Gary, Ind.	Forge shop	1983
	Gary, Ind.	No. 2 10-inch bar mill	1983
	Gary, Ind.	No. 1 20-inch bar mill	1983
	Gary, Ind.	18/14-inch bar mill	1983
	Gary, Ind.	Tie plate facilities	1983
	Gary, Ind.	44-inch blooming mill	1983
	Gary, Ind.	42-inch continuous pickler.	1983
	Gary, Ind.	Miscellaneous hot-rolling sheet and tin equipment.	1983
	Gary, Ind.	54-inch shear line	1982
	Gary, Ind.	No. 9 blast furance	1982
	Gary, Ind.	No. 14 coke battery	1982
	Gary, Ind.	Blackplate shear line	1982
	Gary, Ind.	Open-coil annealing furnace.	1980
	Gary, Ind.	40-inch blooming mill	1980
	Gary, Ind.	4 bar mills	1980
	Gary, Ind.	5-stand CR mill	1980
	Gary, Ind.	4 blast furances	1980
	Gary, Ind.	Hot-rolled shear line	1980
	Gary, Ind.	No. 7 galvanize line	1980
	Gary, Ind.	No. 4 electrolytic tinning line.	1980
	Gary, Ind.	No. 2 sinter plant	1980
	Gary, Ind.	80-inch hot-strip mill	1980

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
U.S. Steel--Continued	Gary, Ind.	Fabricating plant	1979
	Gary, Ind.	2 blast furnaces	1978
	Gary, Ind.	2 bar mills	1978
	Gary, Ind.	No. 4 open-hearth shop	1975
	Gary, Ind.	No. 1 open-hearth shop	1974
	Hartford, Conn.	Warehouse	1978
	Homestead, Pa.	No. 3 sinter line, Saxonburg.	1983
	Homestead, Pa.	Forge shop roll facility.	1983
	Homestead, Pa.	No. 3 blast furnace	1982
	Homestead, Pa.	No. 4 blast furnace	1982
	Homestead, Pa.	No. 6 blast furnace	1982
	Homestead, Pa.	No. 7 blast furnace	1982
	Homestead, Pa.	No. 5 open-hearth furnace.	1982
	Homestead, Pa.	48-inch plate mill	1980
	Homestead, Pa.	Wheel facilities	1980
	Homestead, Pa.	Sinter plant and pig machine.	1977
	Homestead, Pa.	No. 4 open-hearth furnace.	1974
	Johnstown, Pa.	Plant	1983
	Indianapolis, Ind.	Service center warehouse.	1980
	Joliet, Ill.	Plant, except No. 3 rod mill.	1979
	Lorain, Ohio	Burnt lime plant	1983
	Lorain, Ohio	Electrolytic galvanizing line and coupling.	1983
	Lorain, Ohio	Foundry	1983
	Lorain, Ohio	Hulett unloaders	1983
	Lorain, Ohio	Slag crusher	1983
	Lorain, Ohio	CW hot mill	1982
	Lorain, Ohio	CW galvanizing facility.	1982
	Lorain, Ohio	No. 3 seamless rotary expander.	1982
	Lorain, Ohio	Coke batteries K and L	1982
	Lorain, Ohio	No. 5 blast furnace	1980
	Los Angeles, Calif.	Fabricating plant	1979

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
U.S. Steel--Continued	McKeesport, Pa.	No. 1 blast furnace	1983
	McKeesport, Pa.	40/32-inch blooming mills.	1983
	McKeesport, Pa.	No. 1 seamless mill	1983
	McKeesport, Pa.	Maintenance shops	1983
	McKeesport, Pa.	Coupling shop	1983
	McKeesport, Pa.	Scrap shear line	1983
	McKeesport, Pa.	No. 2 blooming mill	1980
	McKeesport, Pa.	No. 2 blast furnace	1978
	McKeesport, Pa.	No. 4 blast furnace	1978
	Moline, Ill.	Service center warehouse.	1982
	Mt. Iron, Minn.	Minntac Maintenance	1983
	Mt. Iron, Minn.	Pilotac Plant	1979
	Mt. Iron, Minn.	Sherman Mine Plant	1979
	New Haven, Conn.	Plant	1979
	Pittsburg, Calif.	Wire rope facility	1983
	Pittsburg, Calif.	Pipe finishing facility	1979
	Pittsburg, Calif.	Rod mill	1979
	Provo, Utah	Foundry	1983
	San Francisco, Calif.	Fabricating plant	1983
	Shiffler, Pa.	Fabricating plant	1983
	Torrance, Calif.	Plant	1979
	Trenton, N.J.	Plant	1983
	Trenton, N.J.	Fabricating plant	1976
	Vandergrift, Pa.	80-inch CR mill	1982
	Vandergrift, Pa.	80-inch 2-high temper mill.	1982
	Vandergrift, Pa.	80-inch Drever Roll hearth.	1982
	Vandergrift, Pa.	No. 5 continuous-anneal line.	1982
	Vandergrift, Pa.	Fibercon unit	1982
	Waukegan, Ill.	Plant	1979
	Worcester, Mass.	Cable Division	1977
	Youngstown, Ohio	Ohio Steel Works Plant	1979
	Youngstown, Ohio	McDonald Mills Plant	1979
Vesco Metals Corp	Latrobe, Pa.	Plant	1974
Washburn Wire	Phillipsdale, R.I.	Wire operations 15/	1981

See footnotes at end of table.

Steel company/plant shutdowns, 1974-83 and January-March 1984--Continued

Company	Location	Facility	1/ Date
Wisconsin Steel	Chicago, Ill.	Integrated company	1980
Wyckoff Steel	Ambridge, Pa.	Cold-finished bar plant	1983
	Newark, N.J.	Cold-finished bar plant	1983
Yale Steel	Wallingford, Conn.	Plant	1980
Youngstown Steel	Youngstown, Ohio	Track spikes	1983

1/ Date authorized or shutdown.
2/ Lukens purchased and is operating Alan-Wood's 110-inch plate mill.
3/ Plant purchased by Commercial Metals and now operated as SMI Steel, Inc.
4/ Plant purchased by and now operated as Steel of West Virginia.
5/ Plant purchased by and portion now operated by J&L.
6/ Facilities purchased by Allegheny Ludlum Steel Corp.
7/ Sold to liquidation firm.
8/ Plant purchased by and now operated as Newport Steel Co.
9/ Former Youngstown Sheet & Tube Co. operations.
10/ Plants purchased by and now operated as McLouth Steel Products Co.
11/ Facility sold.
12/ Plant purchased by and now operated as Weiton Steel Co.
13/ Facilities currently operate under the name of Continental Steel.
14/ Reorganized under Chapter 11 provisions of the Federal Bankruptcy Code.
15/ Plant purchased by and now operated as Rhode Island Forging Steel, Inc.

Source: Compiled from data of the American Iron & Steel Institute.

APPENDIX E

INTEGRATED STEEL PRODUCERS

Table E-1.--Integrated steel producers' company names and plant locations, types of plants and products, and raw steel capacity, by companies and by plants, Jan. 1, 1983

Company and plant locations	Types of plants 1/ and products	Raw steel capacity: By plant	Raw steel capacity: By company
		-----1,000 tons-----	
Armco:			9,941
Ashland, Ky	Integrated; sheet and strip	2,100	
Baltimore, Md	Scrap-based; high-alloy, aerospace, and stainless slab, bar, rod, and wire.	100	
Butler, Pa	Scrap-based; carbon, high-alloy, stainless, and silicon sheet and strip.	996	
Houston, Tex	Integrated; plate, merchant bar, structurals, and pipe.	1,620	
Kansas City, Mo	Scrap-based; merchant bar, rod, wire, and structurals.	1,600	
Middletown, Ohio	Integrated; sheet, strip, and galvanized pipe and tubing.	3,490	
Torrance, Calif	Scrap-based; carbon, alloy, and stainless forgings.	35	
Bethlehem:			21,910
Bethlehem, Pa	Integrated; structurals, forgings, and castings.	3,360	
Burns Harbor, Ind	Integrated; sheet, strip, and plate.	5,300	
Johnstown, Pa	Integrated; bar, wire rod, wire, special sections, and RR cars.	1,200	
Lackawanna, N.Y	Integrated; sheet, strip, and bar.	3,500	
Seattle, Wash	Scrap-based; merchant and reinforcing bar, structurals, and plate.	500	
Sparrows Point, Md	Integrated; sheet, strip, rod, plate, pipe, and wire.	6,700	
Steelton, Pa	Scrap-based; rails and accessories, merchant and reinforcing bar, and line and water pipe.	1,350	

See footnotes at end of table.

Table E-1.--Integrated steel producers' company names and plant locations, types of plants and products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of plants 1/ and products	Raw steel capacity By plant	Raw steel capacity By company
		-----1,000 tons-----	
CF&I; Pueblo, Colo.	Integrated; structurals, bar, rail, pipe, wire, and castings.		1,900
Inland; East Chicago, Ind.	Integrated; sheet, strip, bar, galvanized sheet, aluminized sheet, plate, and structurals.		9,300
Interlake; Riverdale, Ill.	Integrated; sheet, strip, bar, and plate.		900
J&L:			12,960
Aliquippa, Pa	Integrated; sheet, strip, tinplate, bar, and pipe and tubing.	3,250	
Cleveland, Ohio	Integrated; sheet, strip, and plate.	3,622	
East Chicago, Ind	Integrated; sheet, strip, galvanized, tinplate, bar, and pipe and tubing.	4,109	
Pittsburgh, Pa	Scrap-based; sheet, strip, galvanized, and bar.	1,708	
Warren, Mich	Scrap-based; alloy and stainless bar.	278	
Kaiser; Fontana, Calif.	Integrated; sheet, strip, tinplate, galvanized, plate, and pipe.		2,600
Lone Star Steel Co; Lone Star, Tex.	Integrated; skelp, strip, bar, and pipe and tubing.		1,780
McLouth Steel Products Corp.; Trenton, Mich.	Integrated; sheet, strip, and plate.		2,400
National:			7,000
Ecorse, Mich	Integrated; sheet, strip, and plate.	4,000	
Granite City, Ill	Integrated; sheet, strip, galvanized, and plate.	3,000	

See footnotes at end of table.

Table E-1.--Integrated steel producers' company names and plant locations, types of plants and products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of plants 1/ and products	Raw steel capacity By plant	Raw steel capacity By company
		-----1,000 tons-----	
Republic:			12,300
Buffalo, N.Y	Integrated: bar	1,000	
Canton, Ohio	Scrap-based; high- and low-alloy bar, sheet, strip, and specials.	1,500	
Cleveland, Ohio	Integrated; sheet, strip, bar, galvanized, and plate.	3,600	
Gadsden, Ala	Integrated; sheet, strip, galvanized, plate, and pipe.	1,500	
South Chicago, Ill	Integrated; bar, rod, wire, and seamless tube.	2,000	
Warren, Ohio	Integrated; sheet, strip, tinplate, galvanized, bar, and pipe and tubing.	2,700	
Rouge Steel Co (Ford Motor Co.) Dearborn, Mich.	Integrated; sheet and strip		3,800
Sharon Farrell, Pa.	Integrated; alloy, carbon, and galvanized sheet and strip.		1,600
U.S. Steel: 2/			33,644
Gary Works Dravosburg, Pa. Gary, Ind. South Chicago, Ill. Vandergrift, Pa.	Integrated; sheet, strip, galvanized, tinplate, plate, structurals, and rails.	11,720	
Geneva Works Provo, Utah	Integrated; sheet, strip, tinplate, structurals, rod, and wire.	2,600	
Fairfield Works Fairfield, Ala.	Integrated; sheet, strip, tinplate, galvanized, structurals, and rails.	2,868	
Fairless Works Fairless Hills, Pa.	Integrated; sheet, strip, tinplate, bar, wire, and pipe.	3,979	

See footnotes at end of table.

Table E-1.--Integrated steel producers' company names and plant locations, types of plants and products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of plants 1/ and products	Raw steel capacity By plant	Raw steel capacity By company
		-----1,000 tons-----	
U.S. Steel--Continued			
Johnstown Works--------- Johnstown, Pa.	Scrap-based; heavy equipment.	66	
Lorain Works------------ Lorain, Ohio	Integrated; pipe, seamless tubing, bar, wire rod, and wire.	2,842	
Mon Valley Works-------- Braddock, Pa. Clairton, Pa. Duquesne, Pa. Homestead, Pa. McKeesport, Pa.	Integrated; plates, structurals, bar, and pipe and tubing.	8,429	
Texas Works------------- Baytown, Tex.	Scrap-based; plate and pipe	1,140	
Weirton Steel 3/---------- Weirton, W.V.	Integrated; sheet, strip, and tinplate.		4,000
Wheeling-Pittsburgh:			4,400
Monessen, Pa------------	Integrated; sheet, strip, seamless tubing, and rails.	1,600	
Steubenville, Ohio------	Integrated; sheet, strip, tinplate, galvanized, and pipe.	2,800	

1/ Integrated plants are those with blast-furnace capability, whereas scrap-based plants are those with electric furnaces only.
2/ U.S. Steel data are capability figures as defined by AISI.
3/ The Weirton plant of National was sold to its employees at the end of 1983 and now operates as Weirton Steel.

Source: Institute for Iron & Steel Studies, "IISS Commentary," January 1983.

Table E-2.--Integrated steel producers' facilities wherein steel products are processed but no raw steel is produced: Company and plant names, plant locations, and types of products, by companies and by plants

Company and plant 1/	Plant location	Types of products
Armco:		
Armco Tubular Div	Ambridge, Pa.	Seamless tubular products.
Zanesville Plant	Zanesville, Ohio	Electric sheet and strip.
Bethlehem:		
Industrial Fastener Div	Lebanon, Pa.	Industrial fasteners.
Williamsport Plant	Williamsport, Pa.	Wire and wire products.
J&L:		
Campbell Works	Campbell, Ohio	Seamless pipe.
Detroit Plant	Detroit, Mich.	Cold-rolled products.
Hennepin Works	Hennepin, Ill.	Galvanized products.
Louisville Plant	Louisville, Ohio	
Mahoning Cold Finished Bar Plant	Youngstown, Ohio	Cold-drawn bar.
National:		
Midwest Steel Div	Portage, Ind.	Electrolytic tinplate, galvanized sheet and coils.
Republic:		
Steel and Tubes Div	Brooklyn, N.Y.	Pipe and tubing.
	Cedar Springs, Ga.	
	Cleveland, Ohio	
	Counce, Tenn.	
	Detroit, Mich.	
	Elyria, Ohio	
	Ferndale, Mich.	
Union Drawn Steel Div	Beaver Falls, Pa.	Hot- and cold-drawn bars and coils.
	East Hartford, Conn.	
	Gary, Ind.	
	Los Angeles, Calif.	
	Massillon, Ohio	
Sharon:		
Dearborn Div	Detroit, Mich.	Cold-rolled sheet and strip.
Union Steel Corp. (subsidiary)	Union, N.J.	Strip.
U.S. Steel:		
Pittsburg Works	Pittsburg, Calif.	Tin mill products.

See footnote at end of table.

Table E-2.--Integrated steel producers' facilities wherein steel products are processed but no raw steel is produced: Company and plant names, plant locations, and types of products, by companies and by plants--Continued

Company and plant 1/	Plant location	Types of products
Wheeling-Pittsburgh:		
Allenport Plant	Allenport, Pa.	Mechanical tubing, oil-country casing, drill pipe, line pipe, and hot- and cold-rolled sheet.
Benwood Plant	Benwood, W.V.	Pipe.
Martins Ferry Plant	Martins Ferry, Ohio	Galvanized sheet and coils.
LaBelle Works	Wheeling, W.V.	Cut nails.
Yorkville Plant	Yorkville, Ohio	Blackplate, electrolytic tinplate, galvanized sheet and strip.

1/ The plants listed are those that manufacture products subject to this investigation.

Source: Association of Iron & Steel Engineers, Directory of Iron and Steel Plants, 1983.

APPENDIX F

NONINTEGRATED STEEL PRODUCERS

Table F-1.--Nonintegrated steel producers' company names and plant locations, types of products, and raw steel capacity, by companies and by plants, Jan. 1, 1983

Company and plant locations	Types of products	Raw steel capacity	
		By plant	By company
		-----1,000 tons-----	
Al Tech Specialty Steel Corp.	High-alloy, stainless, tool steel, and aerospace bars, tubing, and wire.		120
Dunkirk, N.Y.			
Watervliet, N.Y.			
Allegheny Ludlum Steel Corp.	High-alloy, stainless, and silicon sheet and strip, laminations, and tubular products.		1,040
Brackenridge, Pa.			
Ameron Steel & Wire Div---	Merchant and reinforcing bar, rod, and wire.		300
Etiwanda, Calif.			
Atlantic Steel Co.:			700
Atlanta, Ga-------------	Strip, structurals, hot-rolled and reinforcing bar, rod, and wire.	450	
Cartersville, Ga--------	Strip, structurals, hot-rolled and reinforcing bar.	250	
Auburn Steel Co------------	Merchant and special-quality reinforcing bar.		240
Auburn, N.Y.			
Babcock & Wilcox----------	Special steel tubing and extruded shapes.		625
Beaver Falls, Pa.			
Bayou Steel Corp----------	Merchant and special-quality bar, and structurals.		650
Laplace, La.			
Border Steel Mills, Inc---	Merchant and reinforcing bar, and forged-steel grinding balls.		200
El Paso, Tex.			
Braeburn Alloy Steel Div--	High-alloy, aerospace, and stainless bar and forgings.		25
Braeburn, Pa.			

See footnote at end of table.

Table F-1.--Nonintegrated steel producers' company names and plant locations, types of products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of products	Raw steel capacity	
		By plant	By company
		-----1,000 tons-----	
BW Steel, Inc (Calumet Steel Co.) Chicago Heights, Ill.	Merchant, special-quality, and reinforcing bar.		150
Cameron Iron Works Houston, Tex.	Special steels, die forgings, and heavy pipe.		160
Carpenter Technology Corp.:			250
Bridgeport, Conn	High-alloy and stainless bar and rod.	114	
Reading, Pa	High-alloy, aerospace, and stainless bar, rod, and strip, and cold-drawn bar and wire.	136	
Cascade Rolling Mills, Inc. McMinnville, Oreg.	Merchant and reinforcing bar		275
Ceco Corp Lemont Manufacturing Lemont, Ill.	Merchant and reinforcing bar		220
Champion Steel Co Orwell, Ohio	High- and low-alloy, tool steel, and stainless forgings, castings, billets, and ingots.		8
Chaparral Midlothian, Tex.	Merchant, special and reinforcing bar, and structurals.		1,100
Charter Electric Melting, Inc. Chicago, Ill.	Billets for rolling elsewhere in the company.		135
Columbia Tool Steel Co Chicago Heights, Ill.	High- and low-alloy tool and die steel, bar, forgings, and castings.		10

See footnote at end of table.

Table F-1.--Nonintegrated steel producers' company names and plant locations, types of products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of products	Raw steel capacity	
		By plant	By company
		-----1,000 tons-----	
Colt Industries, Inc------ Syracuse, N.Y.	Tool and valve steels, high-temperature and stainless bar, rod, and wire.		70
Connors Steel Co---------- Birmingham, Ala.	Hot-rolled and special-quality bar, special sections, structurals, and cold-drawn bar.		275
Continental Steel Corp---- Kokomo, Ind.	Hot-rolled bar, rod, and wire and wire products.		650
Copperweld---------------- Warren, Ohio	Hot-rolled, special-quality, and processed bar.		824
Cyclops:			520
Bridgeville, Pa---------	Stainless and tool steels, high-temperature and electronic alloy bar and sheet.	100	
Mansfield, Ohio---------	Stainless, carbon and silicon steel sheet, strip, and plate.	400	
Titusville, Pa----------	High-temperature alloy bar	20	
Edgewater Steel Co-------- Oakmont, Pa.	Rolled and forged rings and locomotive wheels.		95
Electralloy Corp---------- Oil City, Pa.	High-alloy and stainless ingots for forging, rolling, and extrusion; stainless and tool-steel billets, plate, and bar.		70
A. Finkl & Sons, Inc------ Chicago, Ill.	Alloy steel forgings		100

See footnote at end of table.

Table F-1.--Nonintegrated steel producers' company names and plant locations, types of products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of products	Raw steel capacity: By plant	Raw steel capacity: By company
		-----1,000 tons-----	
Florida Steel:			1,578
Charlotte, N.C----------	Merchant and reinforcing bar	280	
Indiantown, Fla---------	Merchant and reinforcing bar	218	
Jackson, Tenn-----------	Merchant and reinforcing bar	400	
Jacksonville, Fla-------	Merchant and reinforcing bar	400	
Tampa, Fla--------------	Merchant and reinforcing bar	280	
Gilmore Steel Corp-------- (Oregon Steel Mills Div.) Portland, Oreg.	Carbon, alloy, and heat-treated plate.		400
Green River Steel Corp---- Owensboro, Ky.	Alloy and specialty carbon steel billets and bar.		180
Guterl Special Steel Corp. Lockport, N.Y.	High-alloy, aerospace, stainless, and tool-steel sheet, strip, plate, and bar.		100
Hawaiian Western Steel, Ltd. Ewa, Hawaii	Merchant and reinforcing bar		60
Hunt Steel Co. 1/--------- Youngstown, Ohio	Seamless tubing		360
Hurricane Industries, Inc. Sealy, Tex.	Merchant and reinforcing bar		100
Illinois Birmingham Bolt Co. Kankakee, Ill.	Merchant bar and mine bolts		100
Ingersoll-Johnson Steel Co. New Castle, Ind.	Stainless plate, and carbon and alloy sheet.		30

See footnote at end of table.

Table F-1.--Nonintegrated steel producers' company names and plant locations, types of products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of products	Raw steel capacity: By plant	Raw steel capacity: By company
		-----1,000 tons-----	
Ingersoll-Rand Oilfield Products Co. Pampa, Tex.	Alloy steel forgings		30
Intercoastal Steel Corp---: Chesapeake, Va.	Merchant and reinforcing bar and angles.		80
Jessop Steel Co------------: Washington, Pa.	Stainless, special, and nickle-base alloy plate and plate products, and tool steels.		60
Earle M. Jorgensen Co------: Seattle, Wash.	Forgings		80
Judson Steel Corp----------: Emeryville, Calif.	Reinforcing bar		150
Kentucky Electric Steel Co. Coalton, Ky.	Special-quality and alloy bar, and flats.		250
Keystone Steel & Wire Co--: Peoria, Ill.	Rod, wire, and wire products		300
Knoxville Iron Div---------: Knoxville, Tenn.	Merchant and reinforcing bar and track spikes.		210
Korf:			1,600
Georgetown Steel Corp---: Georgetown, S.C.	DRI, wire rod, and reinforcing bar.	700	
Georgetown-Texas Steel--: Beaumont, Tex.	DRI, wire rod, and reinforcing bar.	900	
Laclede--------------------: Alton, Ill.	Hot-rolled bar, rod, plate, pipe, sheet, and strip.		800
Lukens---------------------: Coatesville, Pa.	Carbon, alloy, clad and floor plate and plate components.		1,000

See footnote at end of table.

Table F-1.--Nonintegrated steel producers' company names and plant locations, types of products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of products	Raw steel capacity: By plant	Raw steel capacity: By company
		-----1,000 tons-----	
Marathon-LeTourneau Co----: Longview, Tex.	Slab, plate, and forgings		100
Marathon Steel Co----------: Tempe, Ariz.	Merchant and reinforcing bar and grinding balls.		175
Marion Steel Co-----------: Marion, Ohio	Merchant and reinforcing bar		250
Milton Manufacturing Co---: Milton, Pa.	Merchant and reinforcing bar		185
Mississippi Steel Div-----: Jackson, Miss.	Merchant and reinforcing bar		180
National Forge Co.:			237
Erie, Pa-----------------	Forgings	150	
Irvine, Pa---------------	Forgings	75	
Philadelphia, Pa---------	Remelt ingots	12	
Newport Steel Corp--------: Newport, Ky.	Plate and electric-weld pipe.		480
New Jersey Steel Corp-----: Sayreville, N.J.	Merchant and reinforcing bar and light structurals.		200
North Star Steel Co.:			1,140
Monroe, Mich-------------	Special-quality bar	400	
St. Paul, Minn-----------	Merchant, special, and reinforcing bar.	440	
Wilton, Iowa-------------	Merchant and reinforcing bar (including flats).	300	
Northwest Steel Rolling Mills Seattle, Wash.	Merchant and reinforcing bar		240
Northwestern--------------: Sterling, Ill.	Hot-rolled bar, structurals, rod, wire, and wire products.		2,400

See footnote at end of table.

Table F-1.--Nonintegrated steel producers' company names and plant locations, types of products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of products	Raw steel capacity	
		By plant	By company
		-----1,000 tons-----	
Nucor:			2,000
Darlington, S.C	Hot-rolled bar, light structurals, and cold-drawn bar.	500	
Jewett, Tex	Hot-rolled bar and light structurals.	550	
Norfolk, Nebr	Hot-rolled bar, light structurals, and cold-drawn bar.	550	
Plymouth, Utah	Hot-rolled and reinforcing bar and light structurals.	400	
Owen Electric Steel Co. Cayce, S.C.	Merchant and reinforcing bar		150
Phoenix Steel Corp.:			496
Claymont, Del	Carbon, alloy, and clad plate and plate components.	400	
Phoenixville, Pa	Seamless pipe and tubing	96	
Quanex Corp.:			440
Fort Smith, Ark	Tube rounds, special-quality carbon and alloy rounds, and bar.	280	
Jackson, Mich	Tube rounds	160	
Raritan River Steel Perth Amboy, N.J.	Wire rod		600
Razorback Steel Co. Newport, Ark.	Merchant bar and light structurals.		160
Roanoke Electric Steel Roanoke, Va.	Merchant and reinforcing bar		300
Roblin Steel Co. Dunkirk, N.Y.	Special-quality and alloy hot-rolled bar, rod, and wire.		200

See footnote at end of table.

Table F-1.--Nonintegrated steel producers' company names and plant locations, types of products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of products	Raw steel capacity	
		By plant	By company
		-----1,000 tons-----	
Ross Steel Works, Inc----- Amite, La.	Merchant and reinforcing bar and castings.		100
Sheffield Steel Corp------ Sand Springs, Okla.	Reinforcing bar and fence		340
Soule Steel Corp---------- Carson, Calif.	Merchant and reinforcing bar		120
Southern United Steel Corp. Birmingham, Ala.	Merchant and reinforcing bar		100
Standard Steel:			328
Burnham, Pa-------------	Rolled rings, tires, forgings, and RR wheels and axles.	250	
Latrobe, Pa-------------	Forgings and spring products	78	
Steel of West Virginia, Inc. Huntington, W.V.	Special sections, I-beams, billets, and light rails.		300
Structural Metals--------- Seguin, Tex.	Merchant, special-quality, and reinforcing bar and special shapes.		360
Teledyne Vasco------------ Latrobe, Pa.	High-speed, high-alloy and vacuum-melted steel billets, bar, rod, shapes, forgings, wire, and sheet.		30
Tennessee Forging Steel Corp. Harriman, Tenn.	Merchant bar, light structurals, and billets.		160
Texas Steel Co------------ Forth Worth, Tex.	Merchant and reinforcing bar and castings.		200

See footnote at end of table.

Table F-1.--Nonintegrated steel producers' company names and plant locations, types of products, and raw steel capacity, by companies and by plants, Jan. 1, 1983--Continued

Company and plant locations	Types of products	Raw steel capacity	
		By plant	By company
		-----1,000 tons-----	
Timken Co.:			1,151
Canton, Ohio	Alloy and stainless bar and carbon, alloy, and stainless tubing.	1,051	
Latrobe, Pa	Tool steels and vacuum-melted alloy bar and rod.	100	
Union Electric Steel Corp. Carnegie, Pa.	Forgings		50

1/ Hunt Steel Co. has not operated since November 1983 and filed under chapter 11 in February 1984. Additional information on plant closings is provided in app. D.

Source: Institute for Iron & Steel Studies, "IISS Commentary," January 1983.

Table F-2.--Nonintegrated steel producers' facilities wherein steel products are processed but no raw steel is produced: Company and plant names, plant locations, and types of products, by companies and by plants

Company and plant 1/	Plant location	Types of products
Allegheny Ludlum Steel Corp.:		
West Leechburg Works	West Leechburg, Pa.	Alloy sheet, strip, and stampings.
Wallingford Steel Div	Wallingford, Conn.	
BW Steel, Inc.:		
Franklin Steel Co	Franklin, Pa.	Merchant and reinforcing bar.
Carpenter Technology Corp.:		
Tube Div	Union, N.J.	Alloy pipe and tube
Special Products Div	El Cajon, Calif.	Thin-wall alloy tubing.
Continental Steel Corp.:		
Joliet Bar Mill Div	Joliet, Ill.	Merchant and reinforcing bar.
Copperweld Corp.:		
Alumoweld Products Div	Glassport, Pa.	Aluminum-covered rod, wire, and strand.
American Seamless Tubing, Inc	Baltimore, Md.	Oil country tubular goods.
Flexo Wire Div	Oswego, N.Y.	Fine specialty wire.
Ohio Steel Tube Co	Shelby, Ohio	Welded and seamless mechanical tubing.
Regal Tube Co	Chicago, Ill.	Welded tubing.
Crucible, Inc.:		
Trent Tube Div	East Troy, Wisc.	Welded pipe and tubing and seamless products.
Cyclops Corp.:		
Detroit Strip Div	Detroit, Mich., and New Haven, Conn.	Cold-rolled strip.
Empire-Detroit Steel Div	Dover, Ohio	Galvanized sheet and coil.
Sawhill Tubular Div	Sharon, Pa. and Minneapolis, Minn.	Welded pipe and welded and seamless tubing.
Tex-Tube Div	Houston, Tex.	Line pipe, oil-well casing, and mechanical and structural tubing.
Universal-Cyclops Specialty Steel Div	Coshocton, Ohio	Electronic steel cold-rolled strip and sheet coils.

See footnote at end of table.

Table F-2.--Nonintegrated steel producers' facilities wherein steel products are processed but no raw steel is produced: Company and plant names, plant locations, and types of products, by companies and by plants--Continued

Company and plant 1/	Plant location	Types of products
Georgetown Steel Corp.:		
Andrews Wire Corp. Div-----	Andrews, S.C.	Galvanized wire and nails and carbon wire.
Andrews Wire of Tennessee Div.-----------	Gallatin, Tenn.	Carbon wire.
Keycon Industries, Inc.: (subsidiary of Keystone Consolidated Industries, Inc.)		
Chicago Heights Bar Products Div-------------	Chicago Heights, Ill.	Angles, channels, and special bar-size shapes.
Chicago Steel & Wire Div--	Chicago, Ill.	Wire.
Key-West Wire Div----------	Santa Clara, Calif.	Wire and wire products.
Midstates Wire Div---------	Crawfordsville, Ind.	Wire and wire products.
Sherman Wire Div-----------	Sherman, Tex.	Drawn industrial wire.
Knoxville Iron Co.:		
Rockwood Iron & Metal Co--	Rockwood, Tenn.	Railroad spikes.
Lukens:		
Lukens Conshohocken--------	Conshohocken, Pa.	Floor plate.
Roblin Industries, Inc.:		
Roblin Steel Co. Div-------	North Tonawanda, N.Y.	Bar.

1/ The plants listed are those that manufacture products subject to this investigation.

Source: Association of Iron & Steel Engineers, Directory of Iron and Steel Plants, 1983.

APPENDIX G

DATA ON APPARENT U.S. CONSUMPTION FOR 9 GROUPS AND 25 SUBGROUPS OF CARBON AND ALLOY STEEL PRODUCTS

Table G-1.--All carbon and alloy steel products subject to this investigation: 1/ U.S. producers' shipments, imports for consumption, exports of domestically produced merchandise, and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	98,807	17,704	2,856	113,654	17.9	15.6
1980	82,647	15,650	4,123	94,174	18.9	16.6
1981	87,219	19,983	2,946	104,257	22.9	19.2
1982	60,630	16,766	1,891	75,505	27.7	22.2
1983	66,271	17,228	1,213	82,286	26.0	20.9
January-March--						
1983	15,031	3,397	273	18,154	22.6	18.7
1984	19,051	6,502	248	25,304	34.1	25.7

1/ For a list of the AISI product groups, TSUSA items, and schedule B numbers included in the investigation see the following tables in app. G.

Source: See the following tables in appendix G.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-2.--Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	2,532	342	356	2,518	13.5	13.6
1980	2,572	152	908	1,816	5.9	8.4
1981	2,588	786	535	2,839	30.4	27.7
1982	1,244	712	361	1,595	57.3	44.7
1983	973	821	101	1,693	84.4	48.5
January-March--						
1983	193	254	24	423	131.9	60.1
1984	321	285	22	584	89.0	48.8

1/ AISI product groups 1A and 1B.
2/ TSUSA items 606.6700, 606.6705, 606.6710, 606.6715, 606.6720, 606.6725, 606.6730, 606.6735, 606.6740, 606.6926, 606.6929, 606.6932, 606.6935, 606.6938, 606.6940, 606.6941, 606.6944, 606.6947, 608.1500, 608.1600, and 608.1840.
3/ Schedule B Nos. 608.1210, 608.1230, 608.2010, and 608.2030.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-3.--Carbon and alloy steel plates: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	8,889	1,820	222	10,487	20.5	17.3
1980	7,956	2,063	227	9,792	25.9	21.1
1981	7,318	2,446	205	9,559	33.4	25.6
1982	4,049	1,611	122	5,537	39.8	29.1
1983	3,731	1,394	101	5,024	37.4	27.7
January-March--						
1983	828	264	12	1,080	31.9	24.5
1984	1,120	475	10	1,585	42.5	30.0

1/ AISI product group 6.

2/ TSUSA items 607.6610, 607.6615, 607.6620, 607.6625, 607.6900, 607.7800, 607.7803, 607.7806, 607.8320, 607.8600, 607.9100, 607.9400, 608.0710, 608.1100, 608.1420, 608.8410, 608.8415, 608.8507, 608.8525, 608.8720, 608.8807, 608.8825, 608.8900, 608.9410, 608.9510, 608.9620, 609.1200, 609.1300, 609.1400, and 609.1500.

3/ Schedule B Nos. 608.8112, 608.8121, and 609.1605.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-4.--Carbon and alloy steel sheets and strip: 1/ U.S. producers' shipments, imports for consumption, exports of domestically produced merchandise, and apparent U.S. consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	48,977	7,121	928	55,171	14.5	12.9
1980	38,627	4,807	1,403	42,031	12.4	11.4
1981	41,110	5,014	919	45,206	12.2	11.1
1982	31,655	4,683	515	35,823	14.8	13.1
1983	38,322	7,153	432	45,043	18.7	15.9
January-March--						
1983	8,728	1,336	101	9,962	15.3	13.4
1984	10,657	2,681	99	13,238	25.2	20.2

1/ For a list of the AISI product groups, TSUSA items, and schedule B numbers included in this group of products see tables G-5 through G-8.

Source: Tables G-5 through G-8.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-5.--Hot-rolled carbon and alloy steel sheets and strip: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	16,981	2,187	103	19,064	12.9	11.5
1980	12,773	1,499	199	14,073	11.7	10.7
1981	14,090	1,643	218	15,514	11.7	10.6
1982	9,534	1,369	83	10,819	14.4	12.7
1983	12,231	2,057	53	14,235	16.8	14.4
January-March--						
1983	2,719	367	13	3,073	13.5	12.0
1984	3,682	798	16	4,464	21.7	17.9

1/ AISI product groups 2, 31, and 36.
2/ TSUSA items 607.6700, 607.6710, 607.6720, 607.6730, 607.6740, 607.8100, 607.8342, 608.1920, 608.2120, 608.2320, 608.5900, 608.6720, 608.8440, 608.8565, 608.8742, 609.0220, 609.0320, 609.0420, 609.0855, and 609.0874.
3/ Schedule B Nos. 608.8610, 608.8620, 609.0910, and 609.0920.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-6.--Cold-rolled carbon and alloy steel sheets and strip: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	18,998	2,493	279	21,213	13.1	11.8
1980	14,683	1,567	339	15,911	10.7	9.8
1981	15,756	1,723	203	17,275	10.9	10.0
1982	12,057	1,810	130	13,737	15.0	13.2
1983	14,755	4/ 2,618	120	4/ 17,254	4/ 17.7	4/ 15.2
January-March--						
1983	3,378	452	25	3,805	13.4	11.9
1984	4,032	997	29	5,000	24.7	19.9

1/ AISI product groups 28, 32, 35, and 37.

2/ TSUSA items 607.6200, 607.6400, 607.8344, 607.8355, 607.8360, 607.9205, 607.9210, 607.9320, 608.1940, 608.2140, 608.2145, 608.2150, 608.2340, 608.3100, 608.3820, 608.3900, 608.4700, 608.5520, 608.8100, 608.8200, 608.8744, 608.8847, 608.8849, 608.8870, 609.0240, 609.0340, 609.0440, 609.0655, 609.0674, 609.0725, 609.0755, and 609.0774.

3/ Schedule B Nos. 608.9110, 608.9115, 608.9120, 608.9130, 608.9135, 609.1010, 609.1020, and 609.1025.

4/ Estimated by the staff of the U.S. International Trade Commission.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-7.--Galvanized carbon and alloy steel sheets and strip: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	6,342	2,117	41	8,418	33.4	25.2
1980	5,244	1,334	36	6,542	25.4	20.4
1981	5,923	1,283	50	7,156	21.7	17.9
1982	5,369	1,183	21	6,531	22.0	18.1
1983	6,434	1,771	35	8,170	27.5	21.7
January-March--						
1983	1,451	310	8	1,753	21.4	17.7
1984	1,752	692	6	2,437	39.5	28.4

1/ AISI product groups 33A and 33B.
2/ TSUSA items 608.1300, 608.1310, 608.1320, 608.1330, and 608.9530.
3/ Schedule B No. 609.1620.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-8.--All other carbon and alloy steel sheets and strip: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	6,656	323	504	6,476	4.9	5.0
1980	5,927	407	829	5,504	6.9	7.4
1981	5,342	365	447	5,260	6.8	6.9
1982	4,696	321	281	4,735	6.8	6.8
1983	4,902	707	225	5,383	14.4	13.1
January-March--						
1983	1,180	206	54	1,332	17.5	15.5
1984	1,191	194	48	1,338	16.3	14.5

1/ AISI product groups 29, 29A, 30, and 34.
2/ TSUSA items 607.8350, 607.9600, 607.9700, 607.9900, 608.0100, 608.0730, 608.1340, 608.1350, 608.1440, 608.9000, 608.9100, 608.9200, 608.9300, 608.9430, 608.9640, 609.1700, 609.1710, and 609.1790.
3/ Schedule B Nos. 609.1610, 609.1613, 609.1615, 609.1625, 609.1630, and 609.1635.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-9.--Carbon and alloy steel wire rods: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to--	
					Shipments	Consumption
	1,000 short tons				Percent	
1979	2,821	963	26	3,757	34.1	25.6
1980	2,652	801	212	3,241	30.2	24.7
1981	3,009	858	101	3,766	28.5	22.8
1982	2,389	4/ 915	24	4/ 3,280	4/ 38.3	4/ 27.9
1983	2,851	1,159	5	4,004	40.6	28.9
January-March--						
1983	599	291	2	888	48.6	32.8
1984	877	432	2	1,308	49.3	33.1

1/ AISI product group 3.

2/ TSUSA items 607.1400, 607.1700, 607.2200, 607.2300, 607.3200, 607.4100, 607.4800, 607.5900, 608.7000, 608.7100, 608.7300, 608.7500, 608.7665, 608.7680, 608.7865, and 608.7880.

3/ Schedule B Nos. 608.7400 and 608.7720.

4/ Estimated by the staff of the U.S. International Trade Commission.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-10.--Carbon and alloy steel wire and wire products: 1/ U.S. producers' shipments, imports for consumption, exports of domestically produced merchandise, and apparent U.S. consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	2,416	1,030	63	3,383	42.6	30.4
1980	1,744	898	78	2,565	51.5	35.0
1981	1,790	926	76	2,640	51.7	35.1
1982	1,291	837	53	2,075	64.8	40.3
1983	1,357	1,057	41	2,373	77.9	44.5
January-March--						
1983	326	228	10	545	70.0	41.9
1984	348	339	11	676	97.4	50.1

1/ For a list of the AISI product groups, TSUSA items, and schedule B numbers included in this group of products see tables G-11 through G-16.

Source: Tables G-11 through G-16.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-11.--Carbon and alloy steel wire: 1/ U.S. producers' shipments, imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	4/ 1,633	436	32	2,037	26.7	21.4
1980	4/ 1,075	374	37	1,412	34.8	26.5
1981	4/ 1,037	373	37	1,373	36.0	27.2
1982	4/ 671	323	25	969	48.1	33.3
1983	5/ 911	448	21	1,339	49.2	33.4
January-March--						
1983	5/ 216	92	5	303	42.6	30.4
1984	5/ 240	154	5	388	64.2	39.7

1/ Includes wire bale ties, milliner's wire, and other wire covered with textile or other material not wholly of metal.

2/ TSUSA items 609.2000, 609.2100, 609.2200, 609.2500, 609.2600, 609.2700, 609.2800, 609.3040, 609.3140, 609.3240, 609.3340, 609.3500, 609.3600, 609.3700, 609.4010, 609.4040, 609.4055, 609.4065, 609.4105, 609.4120, 609.4125, 609.4165, 609.4305, 609.4315, 609.4365, 609.4530, 609.4560, 609.7000, 609.7005, 609.7015, 609.7200, 609.7500, 609.7600, 642.9000, 642.9100, 642.9600, and 642.9700.

3/ Schedule B Nos. 609.1805, 609.1810, 609.1905, 609.1910, 609.2405, 609.2410, and 642.9500.

4/ Data are AISI shipments of product groups 23 and 27 less shipments of wire strand (table G-13) and wire ropes, cables, and cordage (table G-14).

5/ Data are AISI shipments of product groups 23 and 27 less shipments of wire ropes, cables, and cordage, but without reductions for shipments of wire strand.

Source: Shipments, compiled from data of the American Iron & Steel Institute, except where noted; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from rounded data.

Table G-12.--Carbon and alloy steel barbed and twisted wire: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	67	19	3	83	27.8	22.5
1980	70	19	6	83	27.4	23.1
1981	82	27	3	106	33.5	25.7
1982	65	18	3	80	28.5	23.1
1983	98	29	2	126	29.8	23.2
January-March--						
1983	29	6	1	35	22.1	18.3
1984	20	8	4/	27	39.7	28.8

1/ AISI product group 25.
2/ TSUSA items 642.0200 and 642.1105.
3/ Schedule B No. 642.0300.
4/ Less than 500 short tons.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-13.--Carbon and alloy steel wire strand: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	133	152	9	276	114.3	55.1
1980	128	140	12	256	109.4	54.7
1981	207	126	13	320	60.9	39.4
1982	200	146	7	339	73.0	43.1
1983	4/	135	4	4/	4/	4/
January-March--						
1983	4/	35	1	4/	4/	4/
1984	4/	33	1	4/	4/	4/

1/ Data do not include shipments of alloy steel wire strand.
2/ TSUSA items 642.1120, 642.1140, 642.1142, 642.1144, and 642.1146.
3/ Schedule B Nos. 642.0920 and 642.0935.
4/ Not available.

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

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from rounded data.

Table G-14.--Carbon and alloy steel wire ropes, cables, and cordage: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	204	75	4	275	36.8	27.3
1980	206	64	4	266	31.1	24.1
1981	220	88	6	302	40.0	29.1
1982	158	76	4	230	48.1	33.0
1983	136	60	3	193	44.1	31.1
January-March--						
1983	32	14	4/	46	43.8	30.4
1984	38	18	1	55	47.4	32.7

1/ Data include shipments of stainless steel wire ropes, cables, and cordage.
2/ TSUSA items 642.1200, 642.1600, 642.1610, 642.1630, and 642.1650.
3/ Schedule B No. 642.1520.
4/ Less than 500 short tons.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from rounded data.

Table G-15.--Carbon and alloy steel wire fencing: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	122	11	5	4/ 128	9.3	4/ 8.8
1980	92	8	6	4/ 95	9.0	4/ 8.8
1981	95	8	6	4/ 97	8.9	4/ 8.7
1982	74	8	7	4/ 76	11.4	4/ 11.2
1983	49	11	5	4/ 55	22.1	4/ 19.7
January-March--						
1983	15	2	1	4/ 16	16.4	4/ 15.3
1984	10	3	2	4/ 11	32.3	4/ 28.4

1/ AISI product group 26, which comprises only woven and welded wire fencing; it does not include chain-link fencing.

2/ TSUSA items 642.3510, 642.3530, 642.3560, and 642.3570.

3/ Schedule B No. 642.4400. Exports shown above (in tons) are estimated; official statistics of the U.S. Department of Commerce are given in square feet.

4/ Estimated by the staff of the U.S. International Trade Commission.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce, except as noted.

Note.--Ratios of imports to shipments were computed from unrounded data.

Table G-16.--Carbon and alloy steel brads, nails, spikes, staples, and tacks: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	257	337	10	584	130.9	57.7
1980	173	292	12	454	168.9	64.4
1981	150	303	12	442	202.1	68.7
1982	123	264	7	380	214.8	69.5
1983	163	374	7	530	229.6	70.6
January-March--						
1983	34	79	2	111	231.5	70.8
1984	41	123	2	161	302.0	76.0

1/ AISI product group 24.

2/ TSUSA items 646.2500, 646.2622, 646.2624, 646.2626, 646.2628, 646.2642, 646.2644, 646.2646, and 646.2648.

3/ Schedule B No. 646.2320.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-17.--Carbon and alloy steel railway-type products: 1/ U.S. producers' shipments, imports for consumption, exports of domestically produced merchandise, and apparent U.S. consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	2,026	314	113	2,226	15.5	14.1
1980	1,797	414	222	1,989	23.0	20.8
1981	1,469	319	144	1,643	21.7	19.4
1982	782	340	94	1,028	43.5	33.1
1983	883	159	55	987	18.0	16.1
January-March--						
1983	178	53	10	221	29.8	23.9
1984	345	94	14	426	27.3	22.1

1/ For a list of the AISI product groups, TSUSA items, and schedule B numbers included in this group of products see tables G-18 through G-20.

Source: Tables G-18 through G-20.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-18.-Carbon and alloy steel rails: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	1,170	190	100	1,261	16.2	15.1
1980	1,138	229	206	1,161	20.1	19.7
1981	955	247	126	1,076	25.9	23.0
1982	517	255	82	690	49.3	36.9
1983	633	4/ 107	43	4/ 697	4/ 16.9	4/ 15.4
January-March--						
1983	126	4/ 40	6	4/ 160	31.6	4/ 24.8
1984	263	62	12	312	23.4	19.7

1/ AISI product groups 7 and 8.
2/ TSUSA items 610.2010, 610.2020, and 610.2100.
3/ Schedule B Nos. 610.2205, 610.2215, and 610.2230.
4/ Estimated by the staff of the U.S. International Trade Commission.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-19.--Carbon and alloy steel joint bars, tie plates, and track spikes: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	458	24	11	470	5.2	5.0
1980	307	42	11	337	13.7	12.5
1981	304	36	11	329	11.7	10.8
1982	157	65	10	212	41.6	30.7
1983	178	45	10	212	25.6	21.4
January-March--						
1983	36	11	4	43	31.7	26.2
1984	60	30	1	88	50.0	33.7

1/ AISI product groups 9, 10, and 11.
2/ TSUSA items 610.2500, 610.2600, and 646.3020.
3/ Schedule B Nos. 610.1800 and 610.2400.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-20.-Carbon and alloy steel railway wheels and axles: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	398	100	3	495	25.1	20.2
1980	353	143	5	491	40.5	29.1
1981	210	36	7	238	17.0	15.0
1982	108	20	3	125	18.4	15.9
1983	72	7	2	77	9.0	8.4
January-March--						
1983	17	2	4/	18	11.9	10.9
1984	23	3	1	25	12.3	11.2

1/ AISI product groups 12 and 13.
2/ TSUSA items 690.2500 and 690.3000.
3/ Schedule B Nos. 690.2500 and 690.3000.
4/ Less than 500 short tons.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-21.--Carbon and alloy steel bars: 1/ U.S. producers' shipments, imports for consumption, exports of domestically produced merchandise, and apparent U.S. consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	15,887	846	232	16,502	5.3	5.1
1980	12,085	665	397	12,354	5.5	5.4
1981	13,005	798	311	13,492	6.1	5.9
1982	9,724	663	205	10,182	6.8	6.5
1983	10,594	818	140	11,272	7.7	7.3
January-March--						
1983	2,406	143	35	2,514	6.0	5.7
1984	2,992	367	29	3,330	12.3	11.0

1/ For a list of the AISI product groups, TSUSA items, and schedule B numbers included in this group of products see tables G-22 through G-24.

Source: Tables G-22 through G-24.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-22.-Carbon and alloy steel concrete reinforcing bars: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	5,303	117	86	5,334	2.2	2.2
1980	4,684	79	166	4,596	1.7	1.7
1981	4,612	53	137	4,528	1.1	1.2
1982	4,049	52	115	3,986	1.3	1.3
1983	4,138	208	35	4,312	5.0	4.8
January-March--						
1983	948	28	13	964	3.0	2.9
1984	1,063	110	2	1,171	10.3	9.4

1/ AISI product group 15.
2/ TSUSA items 606.7900. 606.8100, 608.4000, 608.4100, and 608.4200.
3/ Schedule B No. 608.3800.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-23.-Hot-rolled carbon and alloy steel bars: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	8,447	589	119	8,917	7.0	6.6
1980	5,913	481	206	6,188	8.1	7.8
1981	6,847	579	147	7,280	8.5	8.0
1982	4,726	444	75	5,095	9.4	8.7
1983	5,332	450	87	5,695	8.4	7.9
January-March--						
1983	1,224	87	19	1,292	7.1	6.8
1984	1,560	188	23	1,725	12.1	10.9

1/ AISI product group 14 (includes alloy steel bar-size light shapes).
2/ TSUSA items 606.8310, 606.8330, 606.8350, 606.8600, 606.9105, 606.9700, 607.0500, 607.0700, 607.0900, 608.4520, 608.4540, 608.4560, 608.4620, 608.4640, 608.4660, 608.4800, 608.5225, 608.5240, 608.6000, 608.6100, and 608.6200.
3/ Schedule B Nos. 608.4310, 608.4340, and 608.5800.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-24.-Cold-finished carbon and alloy steel bars: 1/ U.S. producers' shipments, 2/ imports for consumption, 3/ exports of domestically produced merchandise, 4/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	2,137	140	27	2,251	6.6	6.2
1980	1,488	106	25	1,570	7.1	6.8
1981	1,545	166	26	1,685	10.8	9.9
1982	948	167	15	1,100	17.6	15.2
1983	1,124	160	19	1,265	14.2	12.6
January-March--						
1983	234	27	3	258	11.8	10.7
1984	370	68	4	434	18.5	15.8

1/ Excludes carbon and alloy steel deformed concrete reinforcing bars.
2/ AISI product group 16.
3/ TSUSA items 606.8805, 606.8815, 606.9110, 606.9900, 608.5005, 608.5015, 608.5265, and 608.5280.
4/ Schedule B Nos. 608.4710 and 608.4740.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-25.--Carbon and alloy steel structural shapes and units: 1/ U.S. producers' shipments, imports for consumption, exports of domestically produced merchandise, and apparent U.S. consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	7,062	2,370	198	9,234	33.6	25.7
1980	6,157	2,097	224	8,030	34.0	26.1
1981	6,684	2,299	197	8,786	34.4	26.2
1982	4,511	1,778	98	6,190	39.4	28.7
1983	4,373	1,825	86	6,112	41.7	29.8
January-March--						
1983	1,059	330	20	1,368	31.1	24.1
1984	1,418	673	18	2,073	47.5	32.5

1/ For a list of the AISI product groups, TSUSA items, and schedule B numbers included in this group of products see tables G-26 through G-29.

Source: Tables G-26 through G-29.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-26.-Carbon and alloy steel sheet piling: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	293	103	7	389	35.0	26.4
1980	346	89	3	433	25.8	20.6
1981	282	99	8	373	35.0	26.5
1982	250	115	6	359	46.0	32.0
1983	258	69	2	325	26.8	21.3
January-March--						
1983	44	19	1	62	43.3	30.5
1984	72	15	3	85	21.1	18.0

1/ AISI product group 5; includes H-bearing piles.
2/ TSUSA items 609.9600 and 609.9800.
3/ Schedule B No. 609.9700.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-27.-Carbon and alloy steel light structural shapes: 1/ U.S. producers' shipments, 2/ imports for consumption, 3/ exports of domestically produced merchandise, 4/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	1,466	232	16	1,682	15.8	13.8
1980	950	137	22	1,065	14.4	12.8
1981	1,473	105	13	1,566	7.2	6.7
1982	948	60	9	998	6.3	6.0
1983	925	88	20	993	9.5	8.9
January-March--						
1983	255	14	3	266	5.4	5.2
1984	332	40	4	368	12.0	10.8

1/ Excluding those which have been drilled, punched, or otherwise advanced.

2/ AISI product group 14A; excludes alloy light structural shapes, data for which are included in table G-23 (hot-rolled carbon and alloy steel bars).

3/ TSUSA items 609.8050, 609.8070, 609.8090, 609.8235, and 609.8240.

4/ Schedule B Nos. 609.8510 and 609.8520.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-28.-Carbon and alloy steel heavy structural shapes: 1/ U.S. producers' shipments, 2/ imports for consumption, 3/ exports of domestically produced merchandise, 4/ and apparent U.S. consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	5,303	1,882	139	7,046	35.5	26.7
1980	4,861	1,740	151	6,449	35.8	27.0
1981	4,929	1,977	131	6,774	40.1	29.2
1982	3,313	1,483	56	4,740	44.8	31.3
1983	3,190	1,489	47	4,632	46.7	32.1
January-March--						
1983	760	269	13	1,016	35.4	26.5
1984	1,014	567	7	1,574	56.0	36.1

1/ Excluding those which have been drilled, punched, or otherwise advanced.
2/ AISI product group 4; excludes H-bearing piles, data for which are included in table G-26 (carbon and alloy sheet piling).
3/ TSUSA items 609.8005, 609.8015, 609.8035, 609.8041, 609.8045, 609.8200, 609.8225, 609.8230.
4/ Schedule B Nos. 609.8110, 609.8120, and 609.8130.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-29.-Carbon and alloy steel fabricated structural units: 1/ U.S. producers' shipments, 2/ imports for consumption, 3/ exports of domestically produced merchandise, 4/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	2/	154	36	5/	5/	5/
1980	2/	131	48	5/	5/	5/
1981	2/	118	45	5/	5/	5/
1982	2/	120	27	5/	5/	5/
1983	2/	178	16	5/	5/	5/
January-March--						
1983	2/	28	4	5/	5/	5/
1984	2/	51	5	5/	5/	5/

1/ Including light and heavy structural shapes which have been drilled, punched, or otherwise advanced.

2/ Shipments data are not available; however, fabricated structural units largely comprise heavy structural shapes. Shipments of heavy structural shapes (table G-28) have not been reduced to account for shipments of fabricated structural units.

3/ TSUSA items 609.8400, 609.8600, 652.9400, and 652.9600.

4/ Schedule B No. 652.9180.

5/ Not available.

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

Table G-30.--Carbon and alloy steel pipes and tubes and blanks therefor: 1/ U.S. producers' shipments, imports for consumption, exports of domestically produced merchandise, and apparent U.S. consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	8,196	2,898	717	10,377	35.4	27.9
1980	9,055	3,753	454	12,355	41.4	30.4
1981	10,246	6,537	459	16,325	63.8	40.0
1982	4,985	5,227	417	9,795	104.8	53.4
1983	3,186	2,843	251	5,778	89.2	49.2
January-March--						
1983	715	498	59	1,154	69.6	43.1
1984	973	1,154	44	2,084	118.6	55.4

1/ For a list of the AISI product groups, TSUSA items, and schedule B numbers included in this group of products see tables G-31 and G-32.

Source: Tables G-31 and G-32.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-31.-Carbon and alloy steel oil-well tubing, casing, and drill pipe: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	2,458	585	285	2,758	23.8	21.2
1980	3,612	1,252	134	4,730	34.7	26.5
1981	4,241	2,905	128	7,018	68.5	41.4
1982	1,759	2,180	153	3,786	123.9	57.6
1983	677	565	61	1,181	83.4	47.8
January-March--						
1983	124	111	16	220	89.5	50.7
1984	265	316	12	570	119.4	55.5

1/ AISI product group 19.

2/ TSUSA items 610.3216 (1982 and 1983), 610.3219, 610.3721, 610.3722, 610.3735, 610.3920, 610.3925, 610.3935, 610.4020, 610.4025, 610.4035, 610.4220, 610.4225, 610.4235, 610.4320, 610.4325, 610.4335, 610.4925, 610.4942, 610.4944, 610.4946, 610.5221, 610.5222, 610.5226, 610.5270, and 610.5275.

3/ Schedule B Nos. 610.3030, 610.3035, 610.3470, 610.3930, 610.3935, 610.3940, 610.4542, 610.4545, and 610,4548.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table G-32.-All other carbon and alloy steel pipe and tubing: U.S. producers' shipments, 1/ imports for consumption, 2/ exports of domestically produced merchandise, 3/ and apparent consumption, 1979-83, January-March 1983, and January-March 1984

Period	Shipments	Imports	Exports	Apparent consumption	Ratio of imports to-- Shipments	Ratio of imports to-- Consumption
	1,000 short tons				Percent	
1979	5,738	2,314	433	7,619	40.3	30.4
1980	5,444	2,501	320	7,625	45.9	32.8
1981	6,005	3,632	331	9,307	60.5	39.0
1982	3,226	3,047	264	6,009	94.5	50.7
1983	2,508	2,278	190	4,596	90.8	49.6
January-March--						
1983	591	386	43	934	65.4	41.4
1984	708	838	32	1,514	118.2	55.3

1/ AISI product groups 18, 20, 21A, 21B, and 22.

2/ TSUSA items 610.3000, 610.3100, 610.3205, 610.3208, 610.3209, 610.3211, 610.3216 (1979-81), 610.3218, 610.3221, 610.3226, 610.3227, 610.3228, 610.3231, 610.3232, 610.3235, 610.3241, 610.3244, 610.3246, 610.3247, 610.3248, 610.3250, 610.3251, 610.3255, 610.3265, 610.3500, 610.3600, 610.3704, 610.3711, 610.3712, 610.3713, 610.3725, 610.3728, 610.3732, 610.3751, 610.3755, 610.3775, 610.3945, 610.3955, 610.4045, 610.4055, 610.4245, 610.4255, 610.4345, 610.4355, 610.4500, 610.4600, 610.4800, 610.4920, 610.4930, 610.4931, 610.4933, 610.4934, 610.4936, 610.4938, 610.4948, 610.4951, 610.4952, 610.4960, 610.4961, 610.4965, 610.4970, 610.4975, 610.5160, 610.5206, 610.5208, 610.5209, 610.5211, 610.5214, 610.5216, 610.5229, 610.5241, 610.5246, 610.5247, and 610.5285.

3/ Schedule B Nos. 610.3010, 610.3020, 610.3040, 610.3050, 610.3060, 610.3070, 610.3460, 610.3480, 610.3485, 610.3490, 610.3910, 610.3920, 610.3945, 610.3950, 610.3960, 610.3970, 610.4540, 610.4550, 610.4560, 610.4570, 610.4620, and 610.4660.

Source: Shipments, compiled from data of the American Iron & Steel Institute; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Note.--Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

APPENDIX H

DATA ON U.S. IMPORTS FOR CONSUMPTION DURING 1979-83 OF 9 GROUPS AND 25 SUBGROUPS OF CARBON AND ALLOY STEEL PRODUCTS

Table H-1.--Carbon and alloy steel products: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Republic of Korea	1,042	1,100	1,303	1,139	1,811
Brazil	437	459	549	602	1,258
Mexico	160	66	40	114	657
Other developing-country sources	253	294	700	450	1/ 733
Total	1,893	1,919	2,592	2,305	1/ 4,460
Japan	6,395	6,069	6,246	5,248	4,276
European Community:					
Federal Republic of Germany	1,861	1,280	2,134	2,042	1,378
France	1,326	952	1,272	1/ 948	886
Belgium and Luxembourg	955	867	1,104	927	617
Other EC sources	1,306	819	1,922	1,615	1/ 1,209
Total	5,447	3,918	6,432	1/ 5,532	1/ 4,089
Canada	2,439	2,416	2,936	1,877	2,440
Spain	384	463	726	550	606
Republic of South Africa	506	463	388	550	572
Other sources	639	402	662	706	786
Total	17,704	15,650	19,983	1/ 16,766	1/ 17,228
	Value (1,000 dollars)				
Developing countries:					
Republic of Korea	399,174	443,218	597,017	504,244	614,564
Brazil	125,731	154,917	226,867	222,330	333,081
Mexico	61,446	32,599	23,138	41,073	183,237
Other developing-country sources	97,190	118,199	300,534	177,615	206,100
Total	683,540	748,933	1,147,557	945,262	1,336,981
Japan	2,714,551	2,892,668	3,632,137	3,390,807	1,840,960
European Community:					
Federal Republic of Germany	648,936	511,306	1,134,914	1,056,101	529,450
France	459,729	362,506	558,197	480,129	318,366
Belgium and Luxembourg	331,461	310,142	457,139	366,113	205,084
Other EC sources	494,423	347,632	962,254	866,860	466,888
Total	1,934,548	1,531,586	3,112,503	2,769,203	1,519,787
Canada	968,065	1,001,590	1,312,866	869,991	922,507
Spain	136,351	175,934	317,472	229,905	179,565
Republic of South Africa	164,151	157,590	148,373	175,836	160,984
Other sources	241,771	182,532	293,340	326,261	266,261
Total	6,842,977	6,690,833	9,964,247	8,707,265	6,227,045
	Unit value (per short ton)				
Developing countries:					
Republic of Korea	$383	$403	$458	$443	$339
Brazil	287	337	413	369	265
Mexico	384	490	576	362	279
Other developing-country sources	384	402	429	395	1/ 281
Average	361	390	443	410	1/ 300
Japan	424	477	582	646	431
European Community:					
Federal Republic of Germany	349	399	532	517	384
France	347	381	439	1/ 506	359
Belgium and Luxembourg	347	358	414	395	333
Other EC sources	379	425	501	537	1/ 386
Average	355	391	484	1/ 501	1/ 372
Canada	397	415	447	464	378
Spain	355	380	437	418	297
Republic of South Africa	324	341	382	320	282
Other sources	379	454	443	462	339
Average	387	428	499	1/ 519	1/ 361

1/ Estimated by the staff of the U.S. International Trade Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-2.--Carbon and alloy steel products: U.S. imports for consumption from CBERA countries, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (short tons)				
Trinidad and Tobago	0	0	6,010	56,338	65,945
Dominican Republic	687	89	109	94	30
Jamaica	0	0	0	5	8
Netherlands Antilles	0	0	0	0	6
Honduras	0	0	0	0	2
El Salvador	0	0	0	0	1/
Guatemala	0	0	0	0	1/
Belize	0	0	0	21	0
Panama	1/	13	4	18	0
Costa Rica	0	26	0	1/	0
Dominica	0	124	0	0	0
Total	687	252	6,124	56,476	65,990
	Value (1,000 dollars)				
Trinidad and Tobago	-	-	1,806	14,824	15,474
Dominican Republic	334	73	97	45	11
Jamaica	-	-	-	36	9
Netherlands Antilles	-	-	-	-	11
Honduras	-	-	-	-	2
El Salvador	-	-	-	-	1
Guatemala	-	-	-	-	2/
Belize	-	-	-	18	-
Panama	2/	20	18	34	-
Costa Rica	-	34	-	2/	-
Dominica	-	51	-	-	-
Total	334	178	1,921	14,957	15,508
	Unit value (per short ton)				
Trinidad and Tobago	-	-	$300	$263	$235
Dominican Republic	$486	$824	891	475	387
Jamaica	-	-	-	6,654	1,089
Netherlands Antilles	-	-	-	-	1,839
Honduras	-	-	-	-	1,044
El Salvador	-	-	-	-	2,975
Guatemala	-	-	-	-	2,647
Belize	-	-	-	868	-
Panama	25,714	1,455	4,343	1,862	-
Costa Rica	-	1,305	-	25,200	-
Dominica	-	410	-	-	-
Average	487	703	314	265	235

1/ Less than 0.5 short tons.
2/ Less than $500.

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

Note--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-3.--Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Canada	51	100	576	184	438
European Community:					
Federal Republic of Germany	3	3	34	97	131
Netherlands	0	0	1/	21	41
France	2	1/	1/	5	24
United Kingdom	74	19	55	61	10
Other EC Sources	6	1	22	3	1
Total	85	23	112	186	208
Sweden	72	12	26	112	58
Developing countries:					
Brazil	59	13	14	45	41
Other developing-country sources	71	0	1/	14	1
Total	130	13	14	58	42
Other sources	5	5	59	171	75
Total	342	152	786	712	821
	Value (1,000 dollars)				
Canada	15,698	24,212	141,370	45,098	92,754
European Community:					
Federal Republic of Germany	3,007	2,293	9,437	25,244	27,159
Netherlands	-	-	77	4,483	9,147
France	548	133	231	1,152	4,084
United Kingdom	26,045	8,773	27,232	22,573	3,787
Other EC Sources	1,333	537	4,174	1,061	908
Total	30,933	11,736	41,151	54,514	45,085
Sweden	17,277	3,409	6,238	24,353	11,453
Developing countries:					
Brazil	10,460	3,642	4,028	13,453	10,288
Other developing-country sources	12,073	-	12	2,581	313
Total	22,533	3,642	4,040	16,034	10,601
Other sources	2,903	3,501	13,809	36,597	14,815
Total	89,344	46,499	206,607	176,596	174,709
	Unit value (per short ton)				
Canada	$306	$243	$246	$245	$212
European Community:					
Federal Republic of Germany	1,029	801	276	260	207
Netherlands	-	-	1,339	213	223
France	359	531	583	248	172
United Kingdom	352	459	491	372	365
Other EC Sources	218	533	191	397	708
Average	366	505	368	293	217
Sweden	240	294	242	217	197
Developing countries:					
Brazil	176	286	284	300	249
Other developing-country sources	171	-	4,627	190	268
Average	173	286	285	274	250
Other sources	641	722	236	214	198
Average	261	306	263	248	213

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-4.--Carbon and alloy steel plates: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
European Community:					
Belgium and Luxembourg	218	291	342	204	141
Federal Republic of Germany	236	241	222	192	121
France	130	139	135	49	56
Other EC sources	103	50	178	155	86
Total	686	721	876	600	405
Developing countries:					
Brazil	216	324	309	167	220
Republic of Korea	123	224	133	130	130
Other developing-country sources	19	37	266	14	39
Total	358	585	708	311	390
Canada	273	283	266	169	259
Finland	96	24	63	85	107
Spain	76	111	101	77	69
Republic of South Africa	48	82	74	134	48
Sweden	43	24	66	84	46
Japan	139	165	152	110	38
Other sources	101	70	139	42	34
Total	1,820	2,063	2,446	1,611	1,394
	Value (1,000 dollars)				
European Community:					
Belgium and Luxembourg	66,766	94,076	124,518	69,873	36,831
Federal Republic of Germany	70,300	73,308	82,574	60,178	33,406
France	39,566	46,584	46,481	21,221	16,179
Other EC sources	29,617	13,886	58,393	44,604	21,100
Total	206,249	227,854	311,966	195,876	107,517
Developing countries:					
Brazil	64,421	102,243	112,878	52,443	50,015
Republic of Korea	36,840	71,460	46,608	42,470	28,764
Other developing-country sources	5,938	11,647	93,882	4,188	8,857
Total	107,200	185,349	253,368	99,100	87,636
Canada	90,122	98,235	101,177	64,638	68,636
Finland	27,867	7,633	22,200	26,644	26,509
Spain	24,892	36,899	38,518	26,077	14,971
Republic of South Africa	13,897	24,117	25,467	42,022	11,688
Sweden	16,591	11,747	26,672	34,025	14,559
Japan	49,280	57,747	61,576	45,534	13,826
Other sources	21,135	20,975	45,633	11,764	8,984
Total	557,233	670,555	886,576	545,681	354,325
	Unit value (per short ton)				
European Community:					
Belgium and Luxembourg	$306	$323	$364	$342	$261
Federal Republic of Germany	298	305	372	313	276
France	305	335	345	432	287
Other EC sources	288	277	328	288	245
Average	300	316	356	326	266
Developing countries:					
Brazil	298	315	365	314	227
Republic of Korea	300	319	352	327	222
Other developing-country sources	307	318	353	304	226
Average	299	317	358	319	225
Canada	330	348	380	383	265
Finland	291	312	352	315	249
Spain	329	334	381	340	215
Republic of South Africa	291	296	344	315	244
Sweden	384	484	404	405	320
Japan	355	350	406	415	369
Other sources	210	301	328	277	266
Average	306	325	362	339	254

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-5.--Carbon and alloy steel sheets and strip: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	2,969	2,297	1,884	1,601	2,336
European Community:					
Federal Republic of Germany	1,263	643	791	890	805
France	824	498	613	397	502
Other EC sources	797	477	671	690	662
Total	2,884	1,618	2,075	1,978	1,968
Developing countries:					
Brazil	27	7	23	90	621
Republic of Korea	246	138	198	220	537
Other developing-country sources	22	11	21	132	1/ 436
Total	295	156	242	442	1/ 1,594
Canada	490	432	473	331	505
Other sources	483	305	341	331	749
Total	7,121	4,807	5,014	4,683	1/ 7,153
	Value (1,000 dollars)				
Japan	1,170,446	977,536	845,444	712,427	994,171
European Community:					
Federal Republic of Germany	417,869	236,568	323,035	347,273	312,641
France	265,394	165,723	220,848	159,076	171,029
Other EC sources	263,767	157,496	252,265	248,178	213,269
Total	947,030	559,788	796,149	754,527	696,940
Developing countries:					
Brazil	7,164	1,896	9,205	27,393	163,508
Republic of Korea	80,553	44,824	74,050	75,722	169,497
Other developing-country sources	7,513	4,131	6,418	41,257	123,678
Total	95,230	50,851	89,674	144,421	456,683
Canada	174,784	168,785	199,692	147,599	212,930
Other sources	172,478	115,008	137,934	128,459	238,802
Total	2,559,969	1,871,968	2,068,893	1,887,434	2,599,526
	Unit value (per short ton)				
Japan	$394	$426	$449	$445	$426
European Community:					
Federal Republic of Germany	331	368	409	490	388
France	322	333	360	400	341
Other EC sources	331	330	376	360	322
Average	328	346	384	382	354
Developing countries:					
Brazil	262	282	402	304	263
Republic of Korea	328	326	374	344	315
Other developing-country sources	342	366	309	313	1/ 284
Average	323	327	371	327	1/ 286
Canada	357	391	422	446	422
Other sources	357	377	405	388	319
Average	360	389	413	403	1/ 363

1/ Estimated by the staff of the U.S. International Trade Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-6.--Hot-rolled carbon and alloy steel sheets and strip: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
European Community:					
France	422	292	351	165	263
Federal Republic of Germany	405	207	220	268	229
Netherlands	241	175	198	107	146
Other EC sources	78	39	111	113	126
Total	1,147	713	880	653	764
Developing countries:					
Brazil	18	5	4	45	252
Republic of Korea	27	25	56	113	181
Other developing-country sources	6	6	14	18	130
Total	52	36	74	176	563
Japan	668	527	435	345	363
Canada	190	145	155	105	179
Other sources	131	79	99	90	189
Total	2,187	1,499	1,643	1,369	2,057
	Value (1,000 dollars)				
European Community:					
France	113,966	78,651	105,851	51,749	69,446
Federal Republic of Germany	107,655	56,317	69,254	81,756	63,038
Netherlands	68,142	47,413	62,485	31,651	41,654
Other EC sources	20,588	10,580	34,809	31,521	30,307
Total	310,351	192,961	272,400	196,676	204,446
Developing countries:					
Brazil	4,646	1,382	1,386	11,919	53,827
Republic of Korea	7,171	6,972	17,299	33,108	44,800
Other developing-country sources	1,656	1,463	3,470	3,760	27,610
Total	13,472	9,817	22,154	48,787	126,237
Japan	198,437	166,829	147,479	115,881	113,357
Canada	56,117	45,757	52,708	34,975	59,327
Other sources	35,084	22,023	30,342	25,785	44,565
Total	613,461	437,388	525,083	422,105	547,932
	Unit value (per short ton)				
European Community:					
France	$270	$269	$302	$315	$264
Federal Republic of Germany	266	272	315	305	276
Netherlands	283	270	316	296	285
Other EC sources	262	274	314	279	241
Average	271	271	310	301	268
Developing countries:					
Brazil	251	265	361	265	214
Republic of Korea	266	281	309	293	247
Other developing-country sources	274	243	242	214	213
Average	261	272	298	278	224
Japan	297	317	339	336	313
Canada	295	316	341	334	332
Other sources	268	280	306	285	236
Average	281	292	320	308	266

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-7.--Cold-rolled carbon and alloy steel sheets and strip: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
European Community:					
Federal Republic of Germany	610	274	404	422	339
France	244	127	160	147	143
Netherlands	170	120	155	170	116
Other EC sources	190	118	143	228	211
Total	1,213	639	863	967	809
Developing countries:					
Brazil	9	1	19	45	344
Republic of Korea	179	104	101	66	190
Argentina	0	0	1/	104	2/ 130
Other developing-country sources	9	1/	2	1	84
Total	197	106	122	216	2/ 748
Japan	858	658	473	410	724
Other sources	225	164	265	217	337
Total	2,493	1,567	1,723	1,810	2/ 2,618
	Value (1,000 dollars)				
European Community:					
Federal Republic of Germany	210,572	108,538	172,509	168,425	140,190
France	86,539	49,602	62,083	62,101	56,744
Netherlands	57,850	40,965	58,596	61,913	41,365
Other EC sources	68,451	46,917	62,861	89,540	71,994
Total	423,411	246,022	356,050	381,979	310,293
Developing countries:					
Brazil	2,481	508	7,739	15,467	100,982
Republic of Korea	58,174	34,297	38,910	24,470	60,819
Argentina	-	-	27	33,214	36,695
Other developing-country sources	3,021	181	693	494	24,202
Total	63,676	34,987	47,369	73,645	222,698
Japan	316,752	261,822	202,065	185,841	290,579
Other sources	92,782	73,378	121,389	102,031	129,194
Total	896,622	616,209	726,872	743,496	952,763
	Unit value (per short ton)				
European Community:					
Federal Republic of Germany	$345	$396	$427	$399	$414
France	355	391	387	422	395
Netherlands	340	340	377	364	356
Other EC sources	361	398	438	394	341
Average	349	385	412	395	383
Developing countries:					
Brazil	283	341	410	343	294
Republic of Korea	324	330	384	370	319
Argentina	-	-	2,027	321	2/ 282
Other developing-country sources	335	410	323	425	290
Average	323	331	387	341	2/ 298
Japan	369	398	428	453	401
Other sources	413	449	459	469	384
Average	360	393	422	411	2/ 364

1/ Less than 500 short tons.
2/ Estimated by the staff of the U.S. International Trade Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-8.--Galvanized carbon and alloy steel sheets and strip: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	1,218	824	752	662	857
Developing countries:					
Republic of Korea	39	9	37	41	144
Mexico	1	1/	1/	9	62
Other developing-country sources	5	4	4	1	40
Total	46	14	41	50	246
European Community:					
Federal Republic of Germany	217	119	123	148	148
France	132	46	64	44	48
Other EC Sources	112	20	59	66	35
Total	461	185	246	257	231
Canada	166	152	140	114	174
Australia	56	51	48	36	99
Republic of South Africa	100	67	31	33	79
Other sources	70	42	26	31	85
Total	2,117	1,334	1,283	1,183	1,771
	Value (1,000 dollars)				
Japan	540,336	387,773	360,385	313,724	396,150
Developing countries:					
Republic of Korea	15,208	3,555	17,318	18,121	56,098
Mexico	751	379	146	3,492	24,113
Other developing-country sources	2,083	2,105	2,141	294	13,773
Total	18,042	6,038	19,606	21,907	93,983
European Community:					
Federal Republic of Germany	81,064	46,157	53,736	63,922	61,137
France	51,481	18,603	28,981	19,315	20,117
Other EC Sources	45,815	8,876	30,492	29,463	14,996
Total	178,359	73,637	113,208	112,700	96,249
Canada	67,173	64,750	62,966	55,210	80,490
Australia	22,119	20,325	19,736	15,324	37,219
Republic of South Africa	36,463	25,961	13,781	13,870	27,655
Other sources	26,925	16,454	12,411	14,193	29,997
Total	889,417	594,940	602,093	546,928	761,743
	Unit value (per short ton)				
Japan	$444	$471	$479	$474	$462
Developing countries:					
Republic of Korea	386	395	472	446	389
Mexico	533	814	1,055	400	386
Other developing-country sources	380	483	499	430	349
Average	389	437	477	437	382
European Community:					
Federal Republic of Germany	374	387	437	433	413
France	389	407	453	443	421
Other EC Sources	409	444	521	448	423
Average	387	398	461	439	416
Canada	405	426	450	482	464
Australia	396	401	415	428	375
Republic of South Africa	364	386	445	420	349
Other sources	384	392	477	459	352
Average	420	446	469	462	430

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-9.--Further processed carbon and alloy steel sheets and strip, excluding galvanized: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	225	288	224	184	393
European Community:					
Federal Republic of Germany	31	43	43	52	90
France	26	33	38	42	48
Other EC sources	6	5	5	7	27
Total	63	81	87	101	164
Developing countries:					
Republic of Korea	0	0	4	1/	21
Mexico	1/	1/	0	1/	14
Other developing-country sources	1/	1/	1/	0	2
Total	1/	1/	4	1/	37
Canada	34	37	50	32	50
Republic of South Africa	1	1/	1/	1/	36
Australia	1/	1/	1	3	19
Other sources	1/	1/	1/	1/	6
Total	323	407	365	321	707
	Value (1,000 dollars)				
Japan	114,921	161,113	135,516	96,980	194,086
European Community:					
Federal Republic of Germany	18,578	25,556	27,536	33,171	48,276
France	13,409	18,867	23,934	25,911	24,723
Other EC sources	2,922	2,744	3,022	4,091	12,953
Total	34,908	47,167	54,491	63,172	85,952
Developing countries:					
Republic of Korea	-	-	524	73	7,780
Mexico	1	2	-	10	5,193
Other developing-country sources	38	7	22	-	793
Total	40	8	545	82	13,765
Canada	10,155	15,057	23,806	13,604	22,872
Republic of South Africa	301	15	3	111	9,907
Australia	57	71	483	936	7,720
Other sources	87	1	1	18	2,785
Total	160,469	223,432	214,845	174,904	337,088
	Unit value (per short ton)				
Japan	$511	$559	$605	$527	$494
European Community:					
Federal Republic of Germany	592	598	635	635	538
France	519	573	632	617	519
Other EC sources	499	530	573	623	483
Average	554	583	630	627	524
Developing countries:					
Republic of Korea	-	-	131	586	364
Mexico	488	1,276	-	166	382
Other developing-country sources	726	861	2,136	-	341
Average	715	920	137	453	369
Canada	300	404	478	423	454
Republic of South Africa	398	196	634	287	275
Australia	173	458	468	334	396
Other sources	544	34,327	15,972	222	448
Average	497	550	588	546	477

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-10.--Carbon and alloy steel wire rods: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Mexico	1/	1/	0	31	107
Brazil	1/	0	33	111	77
Argentina	0	0	21	16	68
Trinidad and Tobago	0	0	6	56	64
Other developing-country sources	15	22	26	6	5
Total	15	22	86	220	321
Canada	334	370	330	295	290
Japan	349	237	212	181	222
European Community:					
France	108	100	113	2/ 117	75
Other EC sources	116	44	85	72	63
Total	224	144	197	2/ 189	138
Spain	1	4	2	7	83
Other sources	39	24	31	23	105
Total	963	801	858	2/ 915	1,159
	Value (1,000 dollars)				
Developing countries:					
Mexico	157	1	-	7,077	22,481
Brazil	10	-	10,553	32,151	16,374
Argentina	-	-	7,063	3,850	13,847
Trinidad and Tobago	-	-	1,806	14,824	15,015
Other developing-country sources	4,660	6,741	8,206	2,064	961
Total	4,827	6,743	27,628	59,965	68,678
Canada	100,919	115,783	109,883	98,456	93,165
Japan	136,498	93,843	94,650	77,334	86,264
European Community:					
France	35,215	32,526	40,424	38,326	23,809
Other EC sources	39,672	15,679	33,326	24,476	22,127
Total	74,887	48,205	73,749	62,803	45,936
Spain	198	1,698	854	2,987	21,963
Other sources	14,696	8,908	13,536	7,800	24,115
Total	332,027	275,181	320,299	309,344	340,121
	Unit value (per short ton)				
Developing countries:					
Mexico	$316	$584	-	$232	$210
Brazil	307	-	$324	290	213
Argentina	-	-	334	240	203
Trinidad and Tobago	-	-	300	263	235
Other developing-country sources	312	304	315	333	193
Average	312	304	322	272	214
Canada	302	313	333	334	321
Japan	391	397	447	427	389
European Community:					
France	327	327	358	2/ 329	318
Other EC sources	341	355	393	339	353
Average	334	335	373	2/ 333	333
Spain	289	453	507	437	265
Other sources	375	372	436	338	230
Average	345	344	373	2/ 338	294

1/ Less than 500 short tons.
2/ Estimated by the staff of the U.S. International Trade Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-11.--Carbon and alloy steel wire and wire products: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Republic of Korea	157	156	222	191	214
Other developing-country sources	56	35	32	36	81
Total	213	190	254	227	295
Canada	174	190	187	181	218
Japan	315	259	189	161	199
European Community:					
Belgium and Luxembourg	77	58	57	53	68
France	50	41	45	35	50
Other EC sources	76	43	60	62	71
Total	203	142	162	151	189
People's Republic of China	19	18	27	28	47
Spain	30	24	36	40	39
Other sources	76	75	72	51	70
Total	1,030	898	926	837	1,057
	Value (1,000 dollars)				
Developing countries:					
Republic of Korea	98,661	93,283	130,698	116,336	116,240
Other developing-country sources	29,526	18,874	18,973	18,638	33,811
Total	128,186	112,157	149,671	134,974	150,051
Canada	99,940	109,624	113,172	108,501	131,590
Japan	208,690	173,285	132,282	106,995	120,427
European Community:					
Belgium and Luxembourg	55,589	44,778	46,106	40,600	45,418
France	29,817	27,668	31,387	24,115	29,233
Other EC sources	63,140	41,677	54,836	53,087	56,832
Total	148,545	114,124	132,330	117,802	131,483
People's Republic of China	7,822	8,125	12,718	13,023	19,980
Spain	15,634	12,980	19,745	21,238	19,252
Other sources	49,649	46,405	48,831	35,530	37,903
Total	658,467	576,700	608,749	538,062	610,687
	Unit value (per short ton)				
Developing countries:					
Republic of Korea	$628	$600	$589	$609	$543
Other developing-country sources	530	546	587	522	417
Average	602	590	589	596	508
Canada	574	577	605	601	604
Japan	663	670	701	666	606
European Community:					
Belgium and Luxembourg	723	772	803	765	663
France	591	673	704	689	588
Other EC sources	836	972	911	850	802
Average	732	804	816	783	695
People's Republic of China	407	450	476	464	427
Spain	518	542	551	534	495
Other sources	656	616	683	699	540
Average	639	642	657	643	578

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-12.--Carbon and alloy steel wire 1/: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
European Community:					
Belgium and Luxembourg	65	51	47	48	58
France	48	39	39	32	43
Federal Republic of Germany	19	14	17	16	23
Other EC sources	34	22	28	18	19
Total	166	126	130	114	144
Canada	82	97	106	98	132
Japan	147	116	106	87	131
Other sources	40	35	31	25	41
Total	436	374	373	323	448
	Value (1,000 dollars)				
European Community:					
Belgium and Luxembourg	48,000	39,023	38,599	36,846	39,324
France	27,848	25,976	26,530	22,080	26,148
Federal Republic of Germany	17,330	13,803	16,375	16,015	18,043
Other EC sources	26,333	19,554	24,612	16,395	15,648
Total	119,511	98,357	106,115	91,335	99,162
Canada	42,903	52,456	57,819	53,346	73,428
Japan	91,756	79,236	74,439	59,291	77,348
Other sources	32,422	27,821	29,228	20,915	24,875
Total	286,592	257,870	267,602	224,887	274,813
	Unit value (per short ton)				
European Community:					
Belgium and Luxembourg	$735	$768	$823	$775	$676
France	586	667	680	689	604
Federal Republic of Germany	920	961	991	1,000	798
Other EC sources	772	891	888	897	803
Average	721	780	815	802	691
Canada	520	539	547	547	556
Japan	623	685	701	680	589
Other sources	806	795	952	851	602
Average	658	689	718	695	613

1/ Includes wire bale ties, and milliner's wire and other wire covered with textile or other material not wholly of metal.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-13.--Carbon and alloy steel barbed and twisted wire: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Mexico	3	1	2	2	5
Brazil	1/	0	1	3	5
Republic of Korea	3	6	10	6	5
Argentina	4	1	1	1	4
Other developing-country sources	1	1	1/	1/	1/
Total	11	9	13	12	19
Poland	2	4	5	1	5
European Community:					
Belgium and Luxembourg	4	5	8	4	4
Other EC sources	1/	1/	1/	1/	1/
Total	4	5	8	4	4
Other sources	1	2	1	1	2
Total	19	19	27	18	29
	Value (1,000 dollars)				
Developing countries:					
Mexico	1,175	767	950	1,070	2,090
Brazil	30	-	268	1,219	2,031
Republic of Korea	1,330	3,000	4,567	2,925	1,921
Argentina	1,884	422	566	294	1,461
Other developing-country sources	327	225	9	32	120
Total	4,746	4,413	6,359	5,540	7,623
Poland	960	1,593	2,213	445	1,649
European Community:					
Belgium and Luxembourg	2,710	3,605	5,890	2,495	2,770
Other EC sources	22	52	148	218	127
Total	2,733	3,657	6,038	2,713	2,898
Other sources	595	848	764	658	790
Total	9,034	10,511	15,374	9,356	12,959
	Unit value (per short ton)				
Developing countries:					
Mexico	$445	$546	$550	$472	$409
Brazil	374	-	416	458	414
Republic of Korea	433	479	476	453	420
Argentina	423	641	676	581	383
Other developing-country sources	348	432	1,175	837	1,134
Average	424	499	497	465	412
Poland	445	454	482	434	354
European Community:					
Belgium and Luxembourg	676	717	714	653	658
Other EC sources	538	638	616	508	480
Average	675	716	711	638	648
Other sources	468	486	555	517	489
Average	484	547	564	507	443

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-14.--Carbon and alloy steel wire strand: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	88	80	42	49	35
Developing countries:					
Republic of Korea	10	17	28	26	22
Argentina	0	0	1/	4	7
Other developing-country sources	8	5	8	6	4
Total	18	23	36	35	33
European Community:					
Italy	1	1/	2	11	11
France	3	2	4	2	4
Federal Republic of Germany	3	1	2	3	4
Other EC sources	7	1	7	7	10
Total	13	3	15	23	29
Spain	7	8	12	17	18
Republic of South Africa	21	21	16	18	14
Other sources	6	5	4	4	5
Total	152	140	126	146	135
	Value (1,000 dollars)				
Japan	56,453	50,685	26,319	28,266	19,017
Developing countries:					
Republic of Korea	5,640	11,434	17,621	16,509	11,713
Argentina	-	-	56	1,633	2,693
Other developing-country sources	4,037	3,033	4,261	3,006	1,821
Total	9,677	14,467	21,938	21,149	16,227
European Community:					
Italy	374	68	920	5,425	5,038
France	1,600	948	2,822	1,281	2,398
Federal Republic of Germany	2,930	853	1,764	3,532	7,771
Other EC sources	3,661	1,252	3,927	3,849	4,834
Total	8,566	3,121	9,434	14,087	20,041
Spain	3,635	4,060	6,345	8,379	8,481
Republic of South Africa	11,380	12,201	9,756	10,672	7,930
Other sources	3,443	3,423	2,397	2,795	3,409
Total	93,153	87,956	76,189	85,348	75,105
	Unit value (per short ton)				
Japan	$645	$631	$629	$583	$548
Developing countries:					
Republic of Korea	583	661	632	644	524
Argentina	-	-	481	438	392
Other developing-country sources	503	557	513	491	429
Average	547	636	604	596	485
European Community:					
Italy	610	2,036	544	506	458
France	612	632	657	600	554
Federal Republic of Germany	1,040	1,369	733	1,072	1,846
Other EC sources	560	1,131	558	555	507
Average	680	956	611	610	689
Spain	491	508	515	502	472
Republic of South Africa	537	589	592	581	548
Other sources	607	669	669	687	689
Average	613	628	605	584	558

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-15.--Carbon and alloy steel wire ropes, cables, and cordage: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Republic of Korea	45	45	62	54	41
Brazil	1	1/	0	1/	3
Other developing-country sources	6	3	4	2	2
Total	52	49	65	57	46
European Community:					
France	1/	1/	1	1/	2
Other EC sources	4	2	4	5	3
Total	4	3	5	5	4
Japan	12	5	8	5	3
Spain	1	1	2	2	3
Canada	4	3	5	4	2
Other sources	3	4	4	4	2
Total	75	64	88	76	60
	Value (1,000 dollars)				
Developing countries:					
Republic of Korea	37,831	36,950	49,648	45,666	33,739
Brazil	1,348	113	-	20	1,341
Other developing-country sources	5,435	3,447	4,374	2,759	2,580
Total	44,615	40,510	54,021	48,444	37,660
European Community:					
France	250	605	1,538	590	532
Other EC sources	6,927	4,482	6,484	6,554	3,115
Total	7,177	5,087	8,022	7,143	3,647
Japan	12,191	6,281	8,506	5,655	3,391
Spain	952	507	1,222	1,520	1,900
Canada	5,857	4,121	7,377	5,593	3,410
Other sources	2,872	4,586	3,973	3,800	2,265
Total	73,664	61,092	83,121	72,156	52,273
	Unit value (per short ton)				
Developing countries:					
Republic of Korea	$842	$816	$806	$840	$825
Brazil	973	886	-	871	517
Other developing-country sources	985	1,095	1,176	1,244	1,244
Average	861	834	827	856	827
European Community:					
France	1,570	1,242	2,074	1,289	288
Other EC sources	1,761	1,946	1,560	1,326	1,212
Average	1,754	1,823	1,638	1,323	825
Japan	1,059	1,188	1,133	1,164	1,207
Spain	765	765	735	759	710
Canada	1,417	1,578	1,543	1,464	1,505
Other sources	1,070	1,094	1,005	1,079	992
Average	976	953	944	947	871

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-16.--Carbon and alloy steel wire fencing: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Mexico	3	3	2	2	4
Other developing-country sources	1/	0	0	1/	1/
Total	3	3	2	2	4
Canada	4	4	4	4	4
European Community:					
Belgium and Luxembourg	3	1	2	1	2
Other EC sources	1/	1/	1/	1	1/
Total	3	1	2	2	2
Other sources	1/	1/	1/	1/	1/
Total	11	8	8	8	11
	Value (1,000 dollars)				
Developing countries:					
Mexico	1,644	1,512	1,293	1,279	2,249
Other developing-country sources	27	-	-	1/	42
Total	1,671	1,512	1,293	1,279	2,291
Canada	4,031	4,071	3,904	3,537	3,077
European Community:					
Belgium and Luxembourg	1,871	670	867	668	1,245
Other EC sources	147	68	203	86	130
Total	2,017	738	1,070	755	1,375
Other sources	129	110	151	254	249
Total	7,848	6,430	6,419	5,825	6,992
	Unit value (per short ton)				
Developing countries:					
Mexico	$506	$547	$587	$552	$519
Other developing-country sources	1,116	-	-	1,857	812
Average	511	547	587	552	522
Canada	918	968	940	931	867
European Community:					
Belgium and Luxembourg	612	626	561	571	552
Other EC sources	488	717	705	113	605
Average	601	634	584	390	557
Other sources	524	590	588	617	699
Average	697	773	760	689	650

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-17.--Carbon and alloy steel brads, nails, spikes, staples, and tacks: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Republic of Korea	92	76	115	100	143
Other developing-country sources	25	17	12	12	34
Total	117	93	127	113	177
Canada	80	82	70	74	77
People's Republic of China	19	18	27	28	46
Japan	68	57	33	20	30
Poland	17	26	26	9	21
Spain	19	12	19	19	17
Other sources	16	4	1	2	6
Total	337	292	303	264	374
	Value (1,000 dollars)				
Developing countries:					
Republic of Korea	49,646	35,937	54,546	48,530	67,154
Other developing-country sources	10,997	6,608	4,799	4,953	11,470
Total	60,642	42,544	59,344	53,483	78,624
Canada	45,075	46,136	42,178	44,577	48,847
People's Republic of China	7,804	8,116	12,675	12,837	19,732
Japan	48,149	37,043	22,965	13,705	20,620
Poland	6,732	9,321	10,079	3,530	7,048
Spain	9,597	6,156	11,064	10,260	8,544
Other sources	10,176	3,524	1,739	2,098	5,130
Total	188,176	152,841	160,045	140,491	188,545
	Unit value (per short ton)				
Developing countries:					
Republic of Korea	$541	$473	$473	$485	$469
Other developing-country sources	435	387	393	397	342
Average	518	457	466	475	445
Canada	564	564	605	605	638
People's Republic of China	407	450	475	462	426
Japan	704	648	697	692	691
Poland	389	352	392	373	330
Spain	500	528	568	540	488
Other sources	640	875	1,162	945	890
Average	589	523	527	531	504

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-18.--Carbon and alloy steel railway-type products: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	66	115	82	127	90
European Community:					
Federal Republic of Germany	47	71	67	63	27
France	62	61	38	65	13
United Kingdom	11	7	5	19	1/ 4
Other EC sources	10	10	12	10	3
Total	130	150	122	157	1/ 48
Canada	109	123	111	50	17
Other sources	8	27	5	6	4
Total	313	414	319	340	1/ 159
	Value (1,000 dollars)				
Japan	32,824	64,581	45,792	63,631	37,361
European Community:					
Federal Republic of Germany	16,280	30,582	28,935	28,737	11,489
France	31,070	40,195	18,409	28,101	4,650
United Kingdom	4,089	2,989	2,608	8,031	1,923
Other EC sources	3,898	5,162	5,502	5,070	1,624
Total	55,337	78,927	55,454	69,939	19,686
Canada	39,838	47,180	35,909	16,846	3,860
Other sources	5,212	16,726	3,589	3,711	2,649
Total	133,211	207,414	140,743	154,127	63,557
	Unit value (per short ton)				
Japan	$497	$563	$561	$500	$413
European Community:					
Federal Republic of Germany	344	429	432	458	425
France	503	657	489	431	345
United Kingdom	361	428	552	420	1/ 496
Other EC sources	400	495	449	504	476
Average	425	527	456	445	1/ 412
Canada	366	385	325	340	222
Other sources	643	622	769	586	720
Average	425	501	442	453	1/ 399

1/ Estimated by the staff of the U.S. International Trade Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-19.--Carbon and alloy steel rails: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
European Community:					
Federal Republic of Germany	47	70	66	62	27
France	18	13	29	57	13
United Kingdom	11	7	5	19	1/ 4
Other EC sources	8	8	12	10	3
Total	84	98	112	148	1/ 47
Japan	27	43	42	65	44
Canada	77	87	91	40	15
Other sources	2	2	3	2	1
Total	190	229	247	255	1/ 107
	Value (1,000 dollars)				
European Community:					
Federal Republic of Germany	16,099	27,763	27,926	28,082	11,083
France	6,225	5,263	11,909	22,122	4,478
United Kingdom	3,862	2,585	2,216	7,774	1,109
Other EC sources	2,924	3,195	5,213	4,881	1,354
Total	29,111	38,806	47,265	62,859	18,024
Japan	10,908	19,532	21,698	34,835	20,530
Canada	25,054	30,408	25,079	11,050	2,885
Other sources	581	745	1,073	1,022	512
Total	65,654	89,491	95,115	109,766	41,952
	Unit value (per short ton)				
European Community:					
Federal Republic of Germany	$341	$399	$421	$450	$416
France	345	392	407	391	336
United Kingdom	346	382	485	409	1/ 315
Other EC sources	376	410	440	490	446
Average	346	398	422	425	1/ 387
Japan	399	457	519	535	465
Canada	326	350	276	279	186
Other sources	347	390	390	430	411
Average	345	391	385	430	1/ 390

1/ Estimated by the staff of the U.S. International Trade Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except where noted.

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-20.--Carbon and alloy steel joint bars, tie plates, and track spikes: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	8	22	22	58	44
Canada	15	19	13	7	1
Other sources	1	1	1/	1/	1/
Total	24	42	36	65	45
	Value (1,000 dollars)				
Japan	3,477	8,269	8,963	22,343	13,825
Canada	4,934	7,152	5,420	3,111	385
Other sources	268	1,352	290	225	365
Total	8,680	16,773	14,673	25,679	14,575
	Unit value (per short ton)				
Japan	$431	$374	$410	$384	$316
Canada	328	384	407	453	335
Other sources	527	1,016	716	732	788
Average	367	399	412	393	321

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-21.--Carbon and alloy steel RR axle bars, and RR axles and wheels and parts thereof: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	31	50	18	4	2
Developing countries:					
Brazil	3	25	1	3	2
Other developing-country sources	3	1/	1/	1/	1/
Total	6	25	1	3	2
European Community:					
Italy	1	2	1/	1/	1/
United Kingdom	1/	1/	1/	1/	1/
Federal Republic of Germany	1/	1	1	1/	1/
France	44	48	8	9	1/
Other EC sources	1/	1/	1/	1/	1/
Total	45	51	9	9	1
Canada	17	17	7	3	1
Other sources	1/	1/	1	1/	1/
Total	100	143	36	20	6
	Value (1,000 dollars)				
Japan	18,439	36,779	15,131	6,453	3,006
Developing countries:					
Brazil	1,976	15,554	705	1,527	910
Other developing-country sources	2,365	245	56	39	158
Total	4,342	15,799	762	1,566	1,068
European Community:					
Italy	583	1,676	174	20	223
United Kingdom	203	362	315	216	734
Federal Republic of Germany	176	1,800	929	572	284
France	24,843	34,904	6,478	5,979	172
Other EC sources	191	54	10	115	3
Total	25,996	38,797	7,906	6,902	1,417
Canada	9,850	9,620	5,410	2,685	590
Other sources	250	154	1,747	1,076	949
Total	58,877	101,150	30,955	18,682	7,030
	Unit value (per short ton)				
Japan	$602	$739	$842	$1,577	$1,203
Developing countries:					
Brazil	637	634	744	453	491
Other developing-country sources	739	782	2,483	1,465	1,579
Average	689	636	784	461	547
European Community:					
Italy	464	757	701	2,426	644
United Kingdom	1,660	2,136	4,536	2,948	2,608
Federal Republic of Germany	4,215	1,972	1,553	2,343	1,128
France	568	731	775	696	966
Other EC sources	601	8,009	20,349	5,264	6,232
Average	571	760	852	773	1,338
Canada	577	561	825	880	775
Other sources	5,175	1,728	1,874	2,333	4,160
Average	591	708	867	937	1,081

1/ Less then 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-22.--Carbon and alloy steel bars: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Brazil	55	31	17	46	89
Mexico	12	3	1	5	81
Republic of Korea	12	14	19	11	56
Other developing-country sources	20	12	14	19	45
Total	99	60	52	83	272
Canada	191	191	182	172	206
Japan	280	227	188	161	146
European Community:					
United Kingdom	102	72	151	78	76
Federal Republic of Germany	15	15	19	32	22
France	49	30	98	53	21
Other EC sources	33	12	21	18	13
Total	198	129	288	181	132
Spain	36	29	56	50	35
Other sources	43	29	32	16	27
Total	846	665	798	663	818
	Value (1,000 dollars)				
Developing countries:					
Brazil	14,964	9,349	4,683	13,435	20,446
Mexico	3,198	633	263	1,138	16,223
Republic of Korea	2,736	4,601	5,367	4,501	13,309
Other developing-country sources	6,921	6,094	6,739	7,756	12,603
Total	27,820	20,677	17,052	26,830	62,581
Canada	63,655	69,045	75,540	76,746	88,189
Japan	113,108	96,302	89,358	79,127	59,779
European Community:					
United Kingdom	40,893	30,481	72,680	38,819	31,577
Federal Republic of Germany	6,643	7,313	11,313	17,542	10,979
France	23,753	16,546	59,823	36,906	10,884
Other EC sources	10,519	4,799	9,666	8,822	3,978
Total	81,808	59,138	153,481	102,089	57,418
Spain	12,809	11,231	24,960	25,132	13,759
Other sources	17,196	13,679	16,997	9,507	11,330
Total	316,396	270,073	377,389	319,431	293,057
	Unit value (per short ton)				
Developing countries:					
Brazil	$273	$305	$275	$290	$229
Mexico	262	201	177	208	199
Republic of Korea	232	323	282	395	237
Other developing-country sources	346	500	466	399	281
Average	282	343	328	325	230
Canada	334	361	415	447	428
Japan	403	425	475	490	409
European Community:					
United Kingdom	403	422	480	497	417
Federal Republic of Germany	447	494	600	546	501
France	487	546	612	702	511
Other EC sources	320	413	470	481	310
Average	413	459	532	563	435
Spain	357	381	449	503	391
Other sources	404	471	527	587	421
Average	374	406	473	482	358

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-23.--Carbon and alloy steel deformed concrete reinforcing bars: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Mexico	12	3	1	4	71
Republic of Korea	0	9	5	7	48
Brazil	29	16	9	23	47
Venezuela	0	0	0	0	16
Other developing-country sources	1	1/	1/	2	4
Total	42	28	16	35	186
Republic of South Africa	19	9	7	3	11
Japan	33	25	7	5	6
Canada	8	16	5	3	4
Other sources	15	1	17	7	2
Total	117	79	53	52	208
	Value (1,000 dollars)				
Developing countries:					
Mexico	2,946	604	197	572	12,714
Republic of Korea	-	2,641	1,711	2,649	9,927
Brazil	7,611	4,922	2,121	4,461	7,703
Venezuela	-	-	-	-	2,963
Other developing-country sources	323	115	9	389	887
Total	10,880	8,283	4,037	8,071	34,194
Republic of South Africa	5,114	2,738	2,256	538	1,963
Japan	9,931	7,472	2,443	1,080	1,118
Canada	2,647	4,965	1,864	1,270	1,149
Other sources	4,591	312	4,815	1,742	701
Total	33,164	23,770	15,415	12,700	39,126
	Unit value (per short ton)				
Developing countries:					
Mexico	$253	$196	$163	$146	$180
Republic of Korea	-	310	311	387	208
Brazil	260	309	231	197	164
Venezuela	-	-	-	-	187
Other developing-country sources	267	359	2,280	205	208
Average	258	297	254	229	184
Republic of South Africa	264	312	316	210	184
Japan	305	299	327	224	200
Canada	319	305	361	507	257
Other sources	316	472	283	267	370
Average	284	302	293	246	188

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-24.--Hot-rolled carbon and alloy steel bars (excluding concrete reinforcing bars): U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Canada	180	171	170	151	179
European Community:					
United Kingdom	89	64	123	66	61
Federal Republic of Germany	13	14	16	28	14
Belgium and Luxembourg	20	9	15	10	11
Other EC sources	14	10	48	14	3
Total	137	97	201	118	89
Japan	180	141	125	103	77
Developing countries:					
Brazil	25	14	7	16	33
Argentina	4	1/	1	7	11
Mexico	1/	1/	1/	1	10
Other developing-country sources	25	16	26	10	15
Total	54	31	34	34	70
Spain	28	25	38	30	23
Other sources	11	16	11	8	11
Total	589	481	579	444	450
	Value (1,000 dollars)				
Canada	59,390	61,788	69,023	64,201	74,174
European Community:					
United Kingdom	33,921	26,202	54,100	30,515	23,657
Federal Republic of Germany	5,566	6,156	8,481	13,816	5,955
Belgium and Luxembourg	5,573	2,886	4,749	3,207	2,683
Other EC sources	6,461	4,430	27,129	8,287	1,287
Total	51,522	39,674	94,460	55,825	33,582
Japan	67,646	56,015	53,408	46,680	30,011
Developing countries:					
Brazil	7,041	4,004	2,246	4,899	8,809
Argentina	1,173	311	387	2,014	2,927
Mexico	2	29	4	495	3,142
Other developing-country sources	7,387	6,682	9,584	4,582	6,171
Total	15,603	11,025	12,220	11,991	21,049
Spain	8,749	8,666	15,141	14,642	8,100
Other sources	6,242	7,648	6,432	5,280	6,629
Total	209,153	184,817	250,684	198,619	173,545
	Unit value (per short ton)				
Canada	$331	$361	$407	$425	$415
European Community:					
United Kingdom	382	406	441	462	385
Federal Republic of Germany	417	455	539	492	414
Belgium and Luxembourg	275	323	321	308	243
Other EC sources	459	444	570	601	508
Average	377	409	471	472	376
Japan	376	396	427	454	390
Developing countries:					
Brazil	283	286	306	312	264
Argentina	322	678	321	297	261
Mexico	206	475	1,961	342	315
Other developing-country sources	292	414	369	450	403
Average	290	360	354	352	301
Spain	314	350	393	489	347
Other sources	548	487	588	651	581
Average	355	385	433	447	386

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-25.--Cold-finished carbon and alloy steel bars: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	68	60	56	54	64
European Community:					
France	35	21	44	40	19
United Kingdom	13	8	28	12	14
Federal Republic of Germany	1	1	3	4	6
Other EC sources	3	2	4	4	1
Total	51	31	79	60	41
Canada	3	4	7	18	23
Developing countries:					
Brazil	1	1	1/	8	9
Republic of Korea	1/	1/	1	2	3
Other developing-country sources	2	1	1/	3	4
Total	3	2	2	13	16
Spain	8	5	15	16	12
Other sources	8	5	8	6	5
Total	140	106	166	167	160
	Value (1,000 dollars)				
Japan	35,530	32,815	33,507	31,367	28,649
European Community:					
France	17,774	12,414	31,444	30,186	9,994
United Kingdom	6,968	4,279	18,462	8,302	7,868
Federal Republic of Germany	542	1,000	2,745	3,673	4,376
Other EC sources	1,713	1,466	3,866	3,272	898
Total	26,997	19,159	56,518	45,434	23,136
Canada	1,617	2,292	4,653	11,275	12,866
Developing countries:					
Brazil	311	423	316	4,075	3,933
Republic of Korea	42	59	365	996	1,760
Other developing-country sources	983	887	114	1,696	1,644
Total	1,336	1,369	795	6,768	7,338
Spain	3,992	2,558	9,282	9,579	5,659
Other sources	4,606	3,293	6,534	3,689	2,737
Total	74,078	61,487	111,290	108,111	80,386
	Unit value (per short ton)				
Japan	$523	$545	$603	$582	$450
European Community:					
France	502	601	720	759	514
United Kingdom	549	557	652	689	547
Federal Republic of Germany	801	931	920	912	770
Other EC sources	635	776	898	769	828
Average	525	612	713	756	570
Canada	542	602	654	624	566
Developing countries:					
Brazil	474	583	638	506	442
Republic of Korea	462	437	455	535	516
Other developing-country sources	479	1,050	330	506	409
Average	477	802	484	510	450
Spain	511	544	615	591	479
Other sources	612	726	855	667	570
Average	527	578	669	647	503

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-26.--Carbon and alloy steel structural shapes and units: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	792	733	742	531	535
European Community:					
Belgium and Luxembourg	443	348	444	361	231
United Kingdom	115	88	166	104	129
Federal Republic of Germany	165	156	124	143	92
Other EC sources	106	92	90	64	80
Total	830	684	824	672	533
Canada	400	352	327	232	284
Developing countries:					
Republic of Korea	34	11	6	20	115
Mexico	58	18	4	15	76
Other developing-country sources	43	5	24	9	34
Total	134	35	34	44	226
Spain	100	174	240	173	125
Republic of South Africa	108	97	112	122	112
Other sources	7	21	20	4	11
Total	2,370	2,097	2,299	1,778	1,825
	Value (1,000 dollars)				
Japan	270,123	271,907	279,032	224,811	169,363
European Community:					
Belgium and Luxembourg	135,402	112,954	162,195	125,141	66,960
United Kingdom	45,408	34,368	66,022	41,751	40,239
Federal Republic of Germany	55,647	56,103	51,857	57,678	30,024
Other EC sources	36,816	37,673	37,830	26,314	28,774
Total	273,272	241,098	317,904	250,885	165,997
Canada	171,360	149,147	145,622	101,517	116,714
Developing countries:					
Republic of Korea	9,976	3,903	2,198	10,584	42,945
Mexico	20,378	8,205	1,995	4,739	19,446
Other developing-country sources	11,901	2,002	7,985	2,959	8,076
Total	42,254	14,111	12,178	18,283	70,466
Spain	28,094	55,816	87,035	61,350	30,122
Republic of South Africa	31,832	29,634	40,820	38,141	28,571
Other sources	5,918	10,021	7,735	6,003	4,625
Total	822,853	771,734	890,325	700,990	585,858
	Unit value (per short ton)				
Japan	$341	$371	$376	$424	$317
European Community:					
Belgium and Luxembourg	306	324	365	346	290
United Kingdom	395	390	398	403	312
Federal Republic of Germany	336	359	417	402	325
Other EC sources	347	411	421	414	359
Average	329	352	386	373	312
Canada	429	424	446	438	411
Developing countries:					
Republic of Korea	297	358	376	521	373
Mexico	353	448	505	318	254
Other developing-country sources	277	369	330	341	237
Average	315	407	358	416	312
Spain	282	320	362	354	242
Republic of South Africa	295	305	365	313	256
Other sources	870	468	384	1,392	402
Average	347	368	387	394	321

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-27.--Carbon and alloy steel sheet piling: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
European Community:					
Belgium and Luxembourg	33	29	25	29	19
France	28	29	26	28	17
United Kingdom	11	10	17	16	14
Federal Republic of Germany	29	17	13	17	10
Other EC sources	0	0	1	0	0
Total	101	85	81	90	59
Canada	2	2	16	23	10
Other sources	1/	2	1	2	1/
Total	103	89	99	115	69
	Value (1,000 dollars)				
European Community:					
Belgium and Luxembourg	12,909	10,459	10,958	13,692	7,508
France	9,661	11,300	10,250	11,681	6,442
United Kingdom	3,847	3,475	6,093	5,940	4,406
Federal Republic of Germany	10,806	6,831	5,434	7,987	3,943
Other EC sources	-	-	180	-	-
Total	37,223	32,064	32,916	39,300	22,299
Canada	492	980	7,213	10,839	4,439
Other sources	106	706	384	671	6
Total	37,822	33,750	40,512	50,810	26,744
	Unit value (per short ton)				
European Community:					
Belgium and Luxembourg	$388	$362	$441	$465	$400
France	346	387	401	423	384
United Kingdom	345	343	349	370	326
Federal Republic of Germany	377	396	422	475	386
Other EC sources	-	-	236	-	-
Average	368	375	404	437	376
Canada	321	441	442	463	454
Other sources	468	403	421	440	404
Average	368	377	410	442	387

1/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-28.--Light carbon and alloy steel structural shapes: 1/ U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Taiwan	2	2	3	3	12
Mexico	2	2/	0	2	11
Republic of Korea	22	8	4	4	5
Other developing-country sources	9	2	1	1	4
Total	34	11	8	10	32
Canada	57	34	34	19	23
European Community:					
Belgium and Luxembourg	30	26	16	13	12
Other EC sources	6	5	5	2	6
Total	35	31	21	16	18
Japan	97	56	37	12	12
Other sources	9	5	5	4	4
Total	232	137	105	60	88
	Value (1,000 dollars)				
Developing countries:					
Taiwan	678	555	886	752	2,524
Mexico	463	1	-	568	2,801
Republic of Korea	6,783	3,015	1,669	1,407	1,533
Other developing-country sources	2,546	620	459	362	1,049
Total	10,469	4,191	3,014	3,089	7,908
Canada	18,586	12,251	13,712	7,350	8,655
European Community:					
Belgium and Luxembourg	10,242	9,635	5,810	4,820	4,008
Other EC sources	4,087	3,938	3,024	1,782	4,222
Total	14,329	13,574	8,835	6,601	8,231
Japan	30,514	18,282	10,642	3,323	3,070
Other sources	2,264	1,662	1,825	1,368	1,435
Total	76,162	49,960	38,027	21,732	29,298
	Unit value (per short ton)				
Developing countries:					
Taiwan	$281	$354	$323	$262	$211
Mexico	302	392	-	263	252
Republic of Korea	309	382	404	354	283
Other developing-country sources	295	344	324	312	293
Average	304	372	363	304	247
Canada	329	362	403	392	368
European Community:					
Belgium and Luxembourg	347	369	362	359	338
Other EC sources	688	766	661	832	742
Average	404	434	428	424	469
Japan	316	327	288	288	265
Other sources	262	359	334	374	396
Average	329	365	361	364	332

1/ Excluding those which have been drilled, punched, or otherwise advanced.
2/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-29.--Heavy carbon and alloy steel structural shapes: 1/ U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	647	626	656	449	457
European Community:					
Belgium and Luxembourg	380	293	403	317	198
United Kingdom	98	74	143	85	114
Federal Republic of Germany	135	137	110	125	77
Other EC sources	71	47	54	32	54
Total	683	550	709	559	443
Canada	256	259	225	152	187
Developing countries:					
Republic of Korea	7	2	1	13	78
Mexico	55	18	4	12	62
Other developing-country sources	32	1	17	4	18
Total	94	21	22	29	159
Spain	96	174	238	173	125
Republic of South Africa	103	93	108	118	108
Other sources	3	16	19	3	11
Total	1,882	1,740	1,977	1,483	1,489
	Value (1,000 dollars)				
Japan	208,038	218,671	241,143	181,026	142,192
European Community:					
Belgium and Luxembourg	112,098	92,762	145,189	105,860	54,315
United Kingdom	36,787	27,084	55,234	31,841	33,507
Federal Republic of Germany	42,862	46,821	44,742	48,268	23,110
Other EC sources	21,411	14,912	19,714	11,240	13,762
Total	213,158	181,578	264,879	197,209	124,694
Canada	86,281	91,240	81,594	55,363	57,871
Developing countries:					
Republic of Korea	2,085	498	341	3,792	20,281
Mexico	19,500	8,181	1,984	3,893	14,951
Other developing-country sources	8,441	416	5,528	1,149	4,282
Total	30,026	9,095	7,853	8,834	39,514
Spain	27,480	55,640	86,210	61,342	30,121
Republic of South Africa	30,196	28,259	39,681	36,930	27,200
Other sources	1,591	5,278	6,310	3,845	3,965
Total	596,769	589,762	727,669	544,550	425,558
	Unit value (per short ton)				
Japan	$321	$349	$368	$403	$311
European Community:					
Belgium and Luxembourg	295	316	360	334	274
United Kingdom	376	368	387	376	295
Federal Republic of Germany	318	343	408	386	299
Other EC sources	303	319	366	349	256
Average	312	330	373	353	282
Canada	337	352	363	364	310
Developing countries:					
Republic of Korea	286	308	378	302	259
Mexico	352	447	503	318	240
Other developing-country sources	268	329	321	263	236
Average	319	429	356	303	249
Spain	285	320	362	354	242
Republic of South Africa	294	303	366	312	252
Other sources	576	330	339	1,282	354
Average	317	339	368	367	286

1/ Excluding those which have been drilled, punched, or otherwise advanced.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-30.--Fabricated carbon and alloy steel structural units: 1/ U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	48	50	48	69	66
Canada	86	57	52	38	64
Developing countries:					
Republic of Korea	4	1	1	4	31
Other developing-country sources	1	1	3	1	4
Total	6	2	4	5	35
European Community:					
Italy	6	14	8	3	8
Other EC sources	4	3	5	4	5
Total	10	18	13	7	13
Other sources	4	5	1	1	2/
Total	154	131	118	120	178
	Value (1,000 dollars)				
Japan	31,465	34,295	26,934	39,791	24,095
Canada	66,001	44,675	43,103	27,965	45,749
Developing countries:					
Republic of Korea	1,108	390	188	5,385	21,130
Other developing-country sources	651	434	1,123	975	1,914
Total	1,759	825	1,311	6,360	23,044
European Community:					
Italy	3,518	9,360	5,853	2,644	7,110
Other EC sources	5,044	4,522	5,421	5,130	3,664
Total	8,562	13,882	11,274	7,775	10,774
Other sources	4,313	4,585	1,493	2,008	595
Total	112,100	98,262	84,116	83,898	104,257
	Unit value (per short ton)				
Japan	$650	$692	$557	$577	$364
Canada	767	787	832	745	718
Developing countries:					
Republic of Korea	254	284	234	1,430	676
Other developing-country sources	561	532	391	1,243	546
Average	318	377	357	1,398	662
European Community:					
Italy	628	648	768	796	852
Other EC sources	1,175	1,444	1,067	1,250	726
Average	865	790	887	1,047	805
Other sources	1,079	934	1,092	1,676	1,897
Average	729	750	713	701	584

1/ Including light and heavy structural shapes which have been drilled, punched, or otherwise advanced.

2/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-31.--Carbon and alloy steel pipes and tubes and blanks therefor: U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Republic of Korea	397	540	724	559	756
Mexico	74	39	29	41	174
Brazil	46	55	126	125	167
Taiwan	77	73	121	106	149
Other developing-country sources	48	127	199	84	71
Total	642	834	1,200	916	1,317
Japan	1,481	2,034	2,791	2,369	708
European Community:					
Italy	50	100	542	401	161
Federal Republic of Germany	49	120	836	588	132
Other EC sources	108	87	397	428	177
Total	207	308	1,775	1,418	469
Canada	417	376	485	264	223
Other sources	150	202	286	260	126
Total	2,898	3,753	6,537	5,227	2,843
	Value (1,000 dollars)				
Developing countries:					
Republic of Korea	157,305	220,175	337,718	251,893	242,869
Mexico	29,089	19,807	16,999	18,626	58,708
Brazil	16,170	19,278	74,695	76,246	58,077
Taiwan	28,671	30,664	58,535	44,628	44,690
Other developing-country sources	19,894	49,570	104,860	52,073	24,421
Total	251,129	339,494	592,807	443,465	428,767
Japan	730,786	1,154,757	2,081,012	2,077,549	359,013
European Community:					
Italy	25,449	56,791	350,220	329,526	96,812
Federal Republic of Germany	36,277	83,360	599,310	491,985	69,417
Other EC sources	54,760	50,564	280,788	339,258	83,496
Total	116,486	190,716	1,230,318	1,160,768	249,725
Canada	211,749	219,579	390,502	210,590	114,668
Other sources	63,326	96,162	170,025	183,227	53,034
Total	1,373,477	2,000,707	4,464,665	4,075,600	1,205,206
	Unit value (per short ton)				
Developing countries:					
Republic of Korea	$396	$408	$466	$450	$321
Mexico	394	513	580	457	338
Brazil	349	352	593	609	349
Taiwan	373	419	483	420	301
Other developing-country sources	416	391	526	619	342
Average	391	407	494	484	326
Japan	493	568	746	877	507
European Community:					
Italy	511	566	646	821	602
Federal Republic of Germany	741	695	717	836	527
Other EC sources	505	578	707	792	472
Average	562	620	693	819	532
Canada	507	584	805	797	515
Other sources	421	477	595	703	422
Average	474	533	683	780	424

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-32.--Carbon and alloy steel oil-well tubing, casing, and drill pipe: 1/ U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Japan	501	995	1,465	1,046	235
European Community:					
Italy	12	62	274	279	129
Federal Republic of Germany	13	52	520	265	38
Other EC sources	20	36	191	205	38
Total	45	150	986	748	205
Developing countries:					
Republic of Korea	2/	2	52	106	36
Other developing-country sources	19	27	114	95	36
Total	19	29	166	201	72
Canada	15	54	170	75	24
Spain	2	16	97	52	21
Other sources	3	8	21	58	9
Total	585	1,252	2,905	2,180	565
	Value (1,000 dollars)				
Japan	289,562	656,609	1,331,428	1,003,381	133,184
European Community:					
Italy	8,410	37,336	198,872	237,594	78,671
Federal Republic of Germany	11,834	37,965	375,156	248,942	17,853
Other EC sources	9,228	18,455	141,171	162,835	21,261
Total	29,473	93,756	715,199	648,371	117,785
Developing countries:					
Republic of Korea	31	1,346	26,095	54,045	12,135
Other developing-country sources	9,557	13,500	73,681	73,258	17,681
Total	9,589	14,846	99,776	127,303	29,817
Canada	14,684	53,508	226,920	113,798	18,971
Spain	2,063	8,539	59,956	35,746	9,626
Other sources	1,345	3,590	14,290	48,349	6,362
Total	346,716	830,848	2,447,569	1,976,948	315,745
	Unit value (per short ton)				
Japan	$578	$660	$909	$959	$568
European Community:					
Italy	728	606	725	849	608
Federal Republic of Germany	887	725	722	940	473
Other EC sources	451	513	737	795	566
Average	650	625	726	866	575
Developing countries:					
Republic of Korea	687	641	502	511	341
Other developing-country sources	504	494	645	769	488
Average	505	504	600	633	415
Canada	994	991	1,334	1,513	785
Spain	1,095	540	615	692	478
Other sources	401	464	680	838	682
Average	593	664	843	907	559

1/ Includes only products conforming with specifications of the American Petroleum Institute.

2/ Less than 500 short tons.

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-33.--Carbon and alloy steel pipes and tubes and blanks therefor (excluding oil-well tubing, casing, and drill pipe): U.S. imports for consumption, by principal sources, 1979-83

Source	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Developing countries:					
Republic of Korea	398	538	672	454	721
Mexico	72	36	28	40	164
Brazil	42	55	84	71	157
Taiwan	77	73	121	103	148
Other developing-country sources	35	102	129	47	55
Total	623	804	1,034	715	1,245
Japan	981	1,039	1,327	1,323	474
European Community:					
Federal Republic of Germany	36	68	316	324	94
France	3	6	123	141	60
Italy	38	39	268	123	31
Other EC sources	85	45	83	83	79
Total	162	158	789	670	265
Canada	403	322	315	189	198
Spain	48	71	62	26	39
Republic of South Africa	61	57	55	51	35
Other sources	36	50	50	74	23
Total	2,314	2,501	3,632	3,047	2,278
	Value (1,000 dollars)				
Developing countries:					
Republic of Korea	157,274	218,829	311,623	197,847	230,734
Mexico	28,054	18,366	16,039	16,798	54,105
Brazil	14,049	19,278	43,416	34,258	54,020
Taiwan	28,671	30,664	58,533	42,846	44,530
Other developing-country sources	13,493	37,511	63,420	24,413	15,561
Total	241,541	324,648	493,031	316,162	398,950
Japan	441,224	498,147	749,584	1,074,169	225,829
European Community:					
Federal Republic of Germany	24,443	45,396	224,155	243,043	51,564
France	3,083	4,437	84,672	112,121	28,265
Italy	17,038	19,456	151,348	92,932	18,141
Other EC sources	42,449	27,672	54,944	64,301	33,970
Total	87,014	96,960	515,119	512,397	131,940
Canada	197,065	166,071	163,582	96,792	95,697
Spain	20,204	37,075	40,899	15,923	15,551
Republic of South Africa	21,623	22,192	24,162	20,523	10,869
Other sources	18,091	24,765	30,718	62,687	10,626
Total	1,026,761	1,169,859	2,017,096	2,098,652	889,461
	Unit value (per short ton)				
Developing countries:					
Republic of Korea	$396	$407	$463	$436	$320
Mexico	388	505	574	421	331
Brazil	335	352	519	480	344
Taiwan	373	419	483	416	300
Other developing-country sources	388	369	491	522	282
Average	388	404	477	442	320
Japan	450	480	565	812	477
European Community:					
Federal Republic of Germany	686	672	710	751	548
France	1,021	690	687	798	470
Italy	446	503	566	758	577
Other EC sources	500	615	665	777	430
Average	538	615	653	765	499
Canada	489	516	520	512	482
Spain	424	519	656	613	401
Republic of South Africa	354	393	440	404	313
Other sources	496	494	614	843	467
Average	444	468	555	689	390

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

Note.--Because of rounding, may not add to totals shown; unit values calculated from unrounded figures.

Table H-34.--Carbon and alloy steel products: Ratios of U.S. imports to consumption, by types and by sources, 1979-83

(In percent)

Product and source	1979	1980	1981	1982	1983
Average, all carbon and alloy steel products:					
Canada	2.1	2.6	2.8	2.5	3.0
Japan	5.6	6.4	6.0	7.0	5.2
EC	4.8	4.2	6.2	7.3	5.0
Developing countries	1.7	2.0	2.5	3.1	5.4
All other sources	1.3	1.4	1.7	2.4	2.4
Total	15.6	16.6	19.2	22.2	20.9
Ingots, blooms, billets, slabs, and sheet bars:					
Canada	2.0	5.5	20.3	11.5	25.9
EC	3.4	1.3	3.9	11.7	12.3
Developing countries	5.2	.7	.5	3.6	2.5
All other sources	3.1	.9	3.0	17.8	7.9
Total	13.6	8.4	27.7	44.7	48.5
Plates:					
Canada	2.6	2.9	2.8	3.1	5.2
Japan	1.3	1.7	1.6	2.0	.8
EC	6.5	7.4	9.2	10.8	8.1
Developing countries	3.4	6.0	7.4	5.6	7.8
All other sources	3.5	3.2	4.6	7.6	6.0
Total	17.3	21.1	25.6	29.1	27.7
Sheets and strip:					
Hot-rolled:					
Canada	1.0	1.0	1.0	1.0	1.3
Japan	3.5	3.7	2.8	3.2	2.6
EC	6.0	5.1	5.7	6.0	5.4
Developing countries	.3	.3	.5	1.6	4.0
All other sources	.7	.6	.6	.8	1.3
Total	11.5	10.7	10.6	12.7	14.4
Cold-rolled:					
Japan	4.0	4.1	2.7	3.0	4.2
EC	5.7	4.0	5.0	7.0	4.7
Developing countries	.9	.7	.7	1.6	4.3
All other sources	1.0	1.0	1.5	1.6	2.0
Total	11.8	9.8	10.0	13.2	15.2
Further processed, galvanized:					
Canada	2.0	2.3	2.0	1.7	2.1
Japan	14.5	12.6	10.5	10.1	10.5
EC	5.5	2.8	3.4	3.9	2.8
Developing countries	.5	.2	.6	.8	3.0
All other sources	2.7	2.4	1.5	1.5	3.2
Total	25.2	20.4	17.9	18.1	21.7

See footnotes at end of table.

Table H-34.--Carbon and alloy steel products: Ratios of U.S. imports to consumption, by types and by sources, 1979-83--Continued

(In percent)

Product and source	1979	1980	1981	1982	1983
Sheets and strip--Continued					
Further processed, other:					
Canada	0.5	0.7	1.0	0.7	0.9
Japan	3.5	5.2	4.3	3.9	7.3
EC	1.0	1.5	1.7	2.1	3.0
Developing countries	1/	1/	.1	1/	.7
All other sources	1/	1/	1/	.1	1.1
Total	5.0	7.4	6.9	6.8	13.1
Average, sheets and strip:					
Canada	0.9	1.0	1.0	0.9	1.1
Japan	5.4	5.5	4.2	4.5	5.2
EC	5.2	3.8	4.6	5.5	4.4
Developing countries	.5	.4	.5	1.2	3.5
All other sources	.9	.7	.8	.9	1.7
Total	12.9	11.4	11.1	13.1	15.9
Wire rods:					
Canada	8.9	11.4	8.8	9.0	7.2
Japan	9.3	7.3	5.6	5.5	5.5
EC	6.0	4.4	5.2	5.8	3.4
Developing countries	.4	.7	2.3	6.7	8.0
All other sources	1.1	.9	.9	.9	4.7
Total	25.6	24.7	22.8	27.9	28.9
Wire and wire products:					
Wire:					
Canada	4.0	6.9	7.7	10.1	2/ 9.8
Japan	7.2	8.2	7.7	9.0	2/ 9.8
EC	8.1	8.9	9.5	11.8	2/ 10.8
All other sources	2.0	2.5	2.2	2.6	2/ 3.1
Total	21.4	26.5	27.2	33.3	2/ 33.4
Barbed and twisted wire:					
EC	4.9	6.1	8.0	5.4	3.6
Developing countries	13.5	10.7	12.1	14.9	14.7
All other sources	4.1	6.4	5.6	2.9	5.0
Total	22.5	23.1	25.7	23.1	23.2
Wire strand:					
Japan	31.7	31.4	13.1	14.3	3/
EC	4.6	1.3	4.8	6.8	3/
Developing countries	6.4	8.9	11.3	10.5	3/
All other sources	12.4	13.2	10.1	11.5	3/
Total	55.1	54.7	39.4	43.1	3/

See footnotes at end of table.

Table H-34.--Carbon and alloy steel products: Ratios of U.S. imports to consumption, by types and by sources, 1979-83--Continued

(In percent)

Product and source	1979	1980	1981	1982	1983
Wire and wire products--Continued					
Wire ropes, cables, and cordage:					
Canada	1.4	1.1	1.6	1.7	1.0
Japan	4.4	1.9	2.6	2.2	1.6
EC	1.4	1.1	1.6	2.2	2.1
Developing countries	18.9	18.4	21.5	24.8	23.8
All other sources	1.4	1.9	2.0	2.6	2.6
Total	27.3	24.1	29.1	33.0	31.1
Wire fencing:					
Canada	3.4	4.4	4.3	5.0	6.5
EC	2.6	1.2	1.9	2.5	4.5
Developing countries	2.6	2.9	2.3	3.0	8.0
All other sources	.2	.2	.3	.5	.6
Total	8.8	8.8	8.7	11.2	19.7
Brads, nails, spikes, staples, and tacks:					
Canada	13.7	18.0	15.8	19.4	14.5
Japan	11.7	12.6	7.5	5.2	5.6
Developing countries	20.0	20.5	28.9	29.6	33.3
All other sources	12.3	13.3	16.6	15.4	17.2
Total	57.7	64.4	68.7	69.5	70.6
Average, wire and wire products:					
Canada	5.1	7.4	7.1	8.7	9.2
Japan	9.3	10.1	7.2	7.8	8.4
EC	6.0	5.5	6.1	7.3	8.0
Developing countries	6.3	7.4	9.6	10.9	12.4
All other sources	3.7	4.6	5.1	5.7	6.6
Total	30.4	35.0	35.1	40.3	44.5
Railway-type products:					
Rails:					
Canada	6.1	7.5	8.5	5.8	2.2
Japan	2.1	3.7	3.9	9.4	6.3
EC	6.7	8.4	10.4	21.4	6.7
All other sources	.2	.1	.2	.3	.1
Total	15.1	19.7	23.0	36.9	15.4
Joint bars, tie plates, and track spikes:					
Canada	3.2	5.5	4.0	3.2	.5
Japan	1.7	6.6	6.7	27.4	20.6
All other sources	.1	.4	.1	.1	.2
Total	5.0	12.5	10.8	30.7	21.4

See footnotes at end of table.

Table H-34.--Carbon and alloy steel products: Ratios of U.S. imports to consumption, by types and by sources, 1979-83--Continued

(In percent)

Product and source	1979	1980	1981	1982	1983
Railway-type products--Continued					
RR axle bars, and RR wheels and axles and parts thereof:					
Canada	3.5	3.5	2.8	2.4	.9
Japan	6.2	10.1	7.6	3.3	3.2
EC	9.2	10.4	3.9	7.1	1.4
Developing countries	1.3	5.0	.4	2.7	2.6
All other sources	1/	1/	.4	.4	.3
Total	20.2	29.1	15.0	15.9	8.4
Average, railway-type products:					
Canada	4.9	6.2	6.8	4.9	1.7
Japan	3.0	5.8	5.0	12.4	9.1
EC	5.8	7.5	7.4	15.3	4.9
All other sources	.4	1.4	.3	.6	.4
Total	14.1	20.8	19.4	33.1	16.1
Bars:					
Concrete reinforcing bars:					
Canada	.2	.3	.1	.1	.1
Japan	.6	.5	.2	.1	.1
Developing countries	.8	.6	.4	.9	4.3
All other sources	.6	.2	.6	.2	.3
Total	2.2	1.7	1.2	1.3	4.8
Other, hot-rolled:					
Canada	2.0	2.8	2.3	3.0	3.1
Japan	2.0	2.3	1.7	2.0	1.4
EC	1.5	1.6	2.8	2.3	1.6
Developing countries	.6	.5	.5	.7	1.2
All other sources	.4	.7	.7	.7	.6
Total	6.6	7.8	8.0	8.7	7.9
Other, cold-finished:					
Canada	.1	.3	.4	1.6	1.8
Japan	3.0	3.8	3.3	4.9	5.1
EC	2.3	2.0	4.7	5.5	3.2
Developing countries	.1	.1	.1	1.2	1.3
All other sources	.7	.6	1.4	2.0	1.3
Total	6.2	6.8	9.9	15.2	12.6
Average, bars:					
Canada	1.2	1.5	1.3	1.7	1.8
Japan	1.7	1.8	1.4	1.6	1.3
EC	1.2	1.0	2.1	1.8	1.2
Developing countries	.6	.5	.4	.8	2.4
All other sources	.5	.5	.7	.6	.6
Total	5.1	5.4	5.9	6.5	7.3

See footnotes at end of table.

Table H-34.--Carbon and alloy steel products: Ratios of U.S. imports to consumption, by types and by sources, 1979-83--Continued

(In percent)

Product and source	1979	1980	1981	1982	1983
Structural shapes and units:					
Sheet piling:					
Canada	0.4	0.5	4.4	6.5	3.0
EC	26.0	19.7	21.8	25.0	18.2
All other sources	.1	.4	.2	.4	1/
Total	26.4	20.6	26.5	32.0	21.3
Light structural shapes:					
Canada	3.4	3.2	2.2	1.9	2.3
Japan	5.8	5.3	2.4	1.2	1.2
EC	2.1	2.9	1.3	1.6	1.8
Developing countries	2.0	1.0	.5	1.0	3.2
All other sources	.5	.5	.3	.4	.4
Total	13.8	12.8	6.7	6.0	8.9
Heavy structural shapes and fabricated structural units: 4/					
Canada	4.8	4.8	4.1	3.9	5.2
Japan	9.7	10.3	10.4	10.7	10.9
EC	9.7	8.7	10.7	11.7	9.5
Developing countries	1.4	.3	.4	.7	4.0
All other sources	2.9	4.4	5.4	6.1	5.1
Total	28.4	28.6	30.9	33.2	34.8
Average, structural shapes and units:					
Canada	4.3	4.4	3.7	3.7	4.6
Japan	8.6	9.1	8.4	8.6	8.8
EC	9.0	8.5	9.4	10.9	8.7
Developing countries	1.5	.4	.4	.7	3.7
All other sources	2.3	3.6	4.2	4.8	4.1
Total	25.7	26.1	26.2	28.7	29.8
Pipes and tubes and blanks therefor:					
Oil-well tubing, casing, and drill pipe:					
Canada	.5	1.1	2.4	2.0	2.0
Japan	18.2	21.0	20.9	27.6	19.9
EC	1.6	3.2	14.0	19.8	17.4
Developing countries	.7	.6	2.4	5.3	6.1
All other sources	.2	.5	1.7	2.9	2.5
Total	21.2	26.5	41.4	57.6	47.8

See footnotes at end of table.

Table H-34.--Carbon and alloy steel products: Ratios of U.S. imports to consumption, by types and by sources, 1979-83--Continued

(In percent)

Product and source	1979	1980	1981	1982	1983
Pipes and tubes and blanks therefor--Continued					
All other pipes and tubes and blanks therefor:					
Canada	5.3	4.2	3.4	3.1	4.3
Japan	12.9	13.6	14.3	22.0	10.3
EC	2.1	2.1	8.5	11.1	5.8
Developing countries	8.2	10.5	11.1	11.9	27.1
All other sources	1.9	2.3	1.8	2.5	2.1
Total	30.4	32.8	39.0	50.7	49.6
Average, pipes and tubes and blanks therefor:					
Canada	4.0	3.0	3.0	2.7	3.9
Japan	14.3	16.5	17.1	24.2	12.3
EC	2.0	2.5	10.9	14.5	8.1
Developing countries	6.2	6.8	7.4	9.4	22.8
All other sources	1.4	1.6	1.8	2.7	2.2
Total	27.9	30.4	40.0	53.4	49.2

1/ Less than 0.05 percent.
2/ Includes wire strand.
3/ Not available separately--included in wire category.
4/ Shipment data for fabricated structural units are not available (table G-23), however, fabricated structural units largely comprise heavy structural shapes (which shipment data (table G-22) have not been netted shipments of fabricated structural units); therefore, both categories have been combined.

Source: App. G, tables G-1 through G-32, and app. H, tables H-1 through H-33.

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

APPENDIX I

DATA ON U.S. PRODUCERS' REPORTED PRODUCTION, PRACTICAL CAPACITY, CAPACITY UTILIZATION, SHIPMENTS, AND END-OF-PERIOD INVENTORIES FOR RAW STEEL AND 24 SUBGROUPS OF CARBON AND ALLOY STEEL PRODUCTS

Table I-1.--Raw carbon and alloy steel: U.S. producers' reported production, practical capacity, and capacity utilization, by types of firms and by types of furnaces, 1979-83

Item	1979	1980	1981	1982	1983
	Capacity (1,000 short tons)				
Integrated producers:					
Basic-oxygen furnaces	78,870	76,124	76,677	78,042	76,825
Electric furnaces	***	***	13,402	14,563	14,123
Open-hearth furnaces	***	***	18,891	17,620	14,940
Total	112,529	108,837	108,970	110,225	105,888
Nonintegrated producers:					
Electric furnaces	***	***	14,426	14,452	15,170
Open-hearth furnaces 1/	***	***	0	0	0
Total	13,012	12,030	14,426	14,452	15,170
Total:					
Basic-oxygen furnaces	78,870	76,124	76,677	78,042	76,825
Electric furnaces	26,033	25,383	27,828	29,015	29,293
Open-hearth furnaces	20,638	19,360	18,891	17,620	14,940
Total	125,541	120,867	123,396	124,677	121,058
	Production (1,000 short tons)				
Integrated producers:					
Basic-oxygen furnaces	67,812	57,222	60,585	38,500	44,092
Electric furnaces	***	***	9,882	5,715	7,375
Open-hearth furnaces	***	***	13,346	6,060	5,951
Total	96,306	77,414	83,813	50,275	57,418
Nonintegrated producers:					
Electric furnaces	***	***	11,396	8,190	8,867
Open-hearth furnaces 1/	***	***	0	0	0
Total	10,756	9,591	11,396	8,190	8,867
Total:					
Basic-oxygen furnaces	67,812	57,222	60,585	38,500	44,092
Electric furnaces	20,290	18,407	21,278	13,905	16,242
Open-hearth furnaces	18,960	11,376	13,346	6,060	5,951
Total	107,062	87,005	95,209	58,465	66,285
	Capacity utilization (percent)				
Integrated producers:					
Basic-oxygen furnaces	86.0	75.2	79.0	49.3	57.4
Electric furnaces	***	***	73.7	39.2	52.2
Open-hearth furnaces	***	***	70.6	34.4	39.8
Average	85.6	71.1	76.9	45.6	54.2
Nonintegrated producers:					
Electric furnaces	***	***	79.0	56.7	58.5
Open-hearth furnaces 1/	***	***	-	-	-
Average	82.7	79.7	79.0	56.7	58.5
Total:					
Basic-oxygen furnaces	86.0	75.2	79.0	49.3	57.4
Electric furnaces	77.9	72.5	76.5	47.9	55.4
Open-hearth furnaces	91.9	58.8	70.6	34.4	39.8
Average	85.3	72.0	77.2	46.9	54.8

1/ Represents data for Cyclops Corp., which discontinued its open-hearth opeartions in 1980.

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

Table I-2.-Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: U.S. producers' reported production, shipments, and end-of-period inventories, by types of firms, 1979-83

(In thousands of short tons)

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production:					
Continuously cast	18,862	14,837	16,328	11,578	15,309
Other	75,207	60,515	65,104	37,392	40,395
Total	94,069	75,352	81,432	48,970	55,704
Purchases:					
Imports	***	***	***	***	***
Other	***	***	***	***	***
Total	***	161	***	***	324
Intracompany and intercompany transfers	90,821	73,487	79,174	48,769	56,274
Domestic shipments	212	350	299	109	81
Export shipments	***	***	***	***	***
End-of-period inventories	3,113	2,684	3,445	3,017	1,953
Nonintegrated steel producers:					
Production:					
Continuously cast	2,755	2,935	4,070	3,947	4,862
Other	7,717	6,362	7,015	3,996	3,809
Total	10,472	9,297	11,085	7,943	8,671
Purchases:					
Imports	***	***	***	***	***
Other	***	***	***	***	***
Total	***	46	***	***	225
Intracompany and intercompany transfers	9,720	8,605	10,362	7,817	8,389
Domestic shipments	355	242	315	136	173
Export shipments	***	***	***	***	***
End-of-period inventories	292	386	475	376	432
Total:					
Production:					
Continuously cast	21,617	17,772	20,398	15,525	20,171
Other	82,924	66,877	72,119	41,388	44,204
Total	104,541	84,649	92,517	56,913	64,375
Purchases:					
Imports	***	***	424	211	456
Other	***	***	96	35	93
Total	172	207	520	246	549
Intracompany and intercompany transfers	100,541	82,092	89,536	56,586	64,663
Domestic shipments	567	592	614	245	254
Export shipments	143	247	222	82	29
End-of-period inventories	3,405	3,070	3,920	3,393	2,385

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 11 integrated steel producers and 26 nonintegrated steel producers.

Table I-3.--Carbon and alloy steel plates: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	6,781	6,354	6,849	3,490	3,647
Capacity------------------do----:	8,832	8,422	8,525	8,133	8,061
Capacity utilization---percent--:	76.8	75.4	80.3	42.9	45.2
Intracompany and intercompany transfers---1,000 short tons--:	***	***	1,104	***	***
Domestic shipments--------do----:	5,695	5,635	5,692	2,888	2,805
Export shipments----------do----:	42	***	***	***	***
End-of-period inventories 1,000 short tons--:	281	364	358	200	188
Nonintegrated steel producers:					
Production----1,000 short tons--:	886	859	836	632	634
Capacity------------------do----:	1,119	1,119	1,125	1,132	1,145
Capacity utilization---percent--:	79.2	76.8	74.3	55.8	55.4
Intracompany and intercompany transfers---1,000 short tons--:	***	***	0	***	***
Domestic shipments--------do----:	857	843	812	588	596
Export shipments----------do----:	18	***	***	***	***
End-of-period inventories 1,000 short tons--:	67	63	55	56	56
Total:					
Production----------------do----:	7,667	7,213	7,685	4,122	4,281
Capacity------------------do----:	9,951	9,541	9,650	9,265	9,206
Capacity utilization---percent--:	77.0	75.6	79.6	44.5	46.5
Intracompany and intercompany transfers---1,000 short tons--:	1,101	989	1,104	763	937
Domestic shipments--------do----:	6,552	6,478	6,504	3,476	3,401
Export shipments----------do----:	60	78	90	38	23
End-of-period inventories 1,000 short tons--:	348	427	413	256	244

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

Note.--Usable data were obtained from 9 integrated steel producers and 6 nonintegrated steel producers; no data were reported by nonsteel producers. Ratios were computed from unrounded data.

Table I-4.--Hot-rolled carbon and alloy steel sheets and strip: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Total:					
Production----------------do----:	25,551	20,667	22,747	16,358	21,191
Capacity------------------do----:	34,390	34,291	33,549	33,941	34,278
Capacity utilization---percent--:	74.3	60.3	67.8	48.2	61.8
Intracompany and intercompany transfers---1,000 short tons--:	13,673	11,444	12,312	9,766	11,897
Domestic shipments--------do----:	12,016	9,077	10,338	6,757	9,001
Export shipments----------do----:	132	167	143	31	10
End-of-period inventories 1,000 short tons--:	1,072	1,051	1,006	813	1,038

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

Note.--Usable data were obtained from 10 integrated steel producers and 2 nonintegrated steel producers; no nonsteel producers reported producing hot-rolled carbon or alloy steel sheets and strip. Ratios were computed from unrounded data.

Table I-5.--Cold-rolled carbon and alloy steel sheets and strip: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--	18,837	15,255	16,059	12,424	15,849
Capacity------------------do----	19,819	19,819	19,515	19,515	19,049
Capacity utilization---percent--	95.0	77.0	82.3	63.7	83.2
Intracompany and intercompany transfers---1,000 short tons--	6,547	5,653	5,478	4,876	5,757
Domestic shipments--------do----	12,433	9,584	10,398	7,897	9,779
Export shipments----------do----	41	36	47	***	***
End-of-period inventories 1,000 short tons--	1,228	1,218	1,358	998	1,295
Nonintegrated steel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity------------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Nonsteel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity------------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Total:					
Production----------------do----	19,107	15,438	16,229	12,554	16,022
Capacity------------------do----	20,421	20,421	20,117	20,117	19,651
Capacity utilization---percent--	93.6	75.6	80.7	62.4	81.5
Intracompany and intercompany transfers---1,000 short tons--	6,558	5,661	5,486	4,880	5,759
Domestic shipments--------do----	12,697	9,775	10,569	8,025	9,971
Export shipments----------do----	42	37	48	20	22
End-of-period inventories 1,000 short tons--	1,287	1,262	1,396	1,035	1,332

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

Note.--Usable data were obtained from 9 integrated steel producers, 1 non-integrated steel producer, and 4 nonsteel producers. Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table I-6.--Galvanized carbon and alloy steel sheets and strip: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity------------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity------------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Total:					
Production----------------do----	5,129	4,213	4,938	4,178	5,209
Capacity------------------do----	7,302	7,302	6,794	6,794	7,121
Capacity utilization---percent--	70.2	57.7	72.7	61.5	73.1
Intracompany and intercompany transfers---1,000 short tons--	576	523	562	458	517
Domestic shipments--------do----	4,562	3,707	4,294	3,866	4,593
Export shipments----------do----	11	8	10	8	***
End-of-period inventories 1,000 short tons--	384	370	461	335	445

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

Note.--Usable data were obtained from 7 integrated steel producers and 1 nonintegrated steel producer; no data were reported by nonsteel producers. Ratios were computed from unrounded data.

Table I-7.--All other carbon and alloy steel sheets and strip: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity-----------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Nonsteel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity-----------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Total:					
Production----------------do----	5,321	4,619	4,786	3,937	4,222
Capacity-----------------do----	6,559	6,559	6,680	6,680	6,317
Capacity utilization---percent--	81.1	70.4	71.6	58.9	66.8
Intracompany and intercompany transfers---1,000 short tons--	0	***	***	0	0
Domestic shipments--------do----	5,143	4,359	4,528	4,178	4,346
Export shipments----------do----	202	420	186	100	106
End-of-period inventories 1,000 short tons--	407	350	431	326	385

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 5 integrated steel producers and 1 nonsteel producer; no data were reported by nonintegrated steel producers. Ratios were computed from unrounded data.

Table I-8.--Carbon and alloy steel wire rods: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	2,993	2,237	2,080	1,124	1,328
Capacity-----------------do----:	4,767	4,035	3,639	3,639	3,561
Capacity utilization---percent--:	62.8	55.4	57.2	30.9	37.3
Intracompany and intercompany transfers---1,000 short tons--:	1,135	638	746	421	403
Domestic shipments--------do----:	1,889	***	1,325	709	921
Export shipments----------do----:	***	***	15	***	***
End-of-period inventories 1,000 short tons--:	94	64	58	51	55
Nonintegrated steel producers:					
Production----1,000 short tons--:	1,410	1,244	2,068	1,780	2,085
Capacity-----------------do----:	1,698	1,898	2,635	2,573	2,655
Capacity utilization---percent--:	83.0	65.5	78.5	69.2	78.5
Intracompany and intercompany transfers---1,000 short tons--:	752	577	786	569	700
Domestic shipments--------do----:	653	***	1,259	1,229	1,471
Export shipments----------do----:	0	***	30	***	***
End-of-period inventories 1,000 short tons--:	70	92	100	99	114
Total:					
Production---------------do----:	4,403	3,481	4,148	2,904	3,413
Capacity-----------------do----:	6,465	5,933	6,274	6,212	6,216
Capacity utilization---percent--:	68.1	58.7	66.1	46.7	54.9
Intracompany and intercompany transfers---1,000 short tons--:	1,887	1,215	1,532	990	1,103
Domestic shipments--------do----:	2,542	2,233	2,584	1,938	2,392
Export shipments----------do----:	***	71	45	***	1/
End-of-period inventories 1,000 short tons--:	164	156	158	150	169

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 5 integrated steel producers and 9 nonintegrated steel producers; no nonsteel producers reported producing carbon or alloy steel wire rods. Ratios were computed from unrounded data.

Table I-9.--Carbon and alloy steel wire: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	511	350	359	213	153
Capacity-----------------do----:	839	852	579	439	439
Capacity utilization---percent--:	60.9	41.1	62.0	48.5	34.9
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	420	291	294	170	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--:	738	607	735	566	686
Capacity-----------------do----:	826	823	1,126	1,140	1,132
Capacity utilization---percent--:	89.4	73.8	65.3	49.7	60.6
Intracompany and intercompany transfers---1,000 short tons--:	471	396	488	373	428
Domestic shipments--------do----:	346	280	366	296	***
Export shipments----------do----:	0	0	0	0	0
End-of-period inventories 1,000 short tons--:	34	39	35	27	42
Nonsteel producers:					
Production----------------do----:	457	392	436	358	443
Capacity-----------------do----:	659	651	650	679	691
Capacity utilization---percent--:	69.4	60.1	67.1	52.8	64.1
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	389	337	368	316	395
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	82	72	75	66	64
Total:					
Production----------------do----:	1,706	1,349	1,530	1,138	1,282
Capacity-----------------do----:	2,324	2,326	2,355	2,258	2,262
Capacity utilization---percent--:	73.4	58.0	65.0	50.4	56.7
Intracompany and intercompany transfers---1,000 short tons--:	708	585	670	512	522
Domestic shipments--------do----:	1,154	908	1,027	782	885
Export shipments----------do----:	7	4	9	4	5
End-of-period inventories 1,000 short tons--:	147	135	134	112	121

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 4 integrated steel producers, 6 non-integrated steel producers, and 20 nonsteel producers. Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table I-10.--Carbon and alloy steel barbed and twisted wire: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity------------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity------------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Nonsteel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity------------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Total:					
Production----------------do----	42	47	77	58	62
Capacity------------------do----	89	89	121	104	98
Capacity utilization---percent--	47.2	52.8	63.6	55.8	63.3
Intracompany and intercompany transfers---1,000 short tons--	1/	1/	1/	1/	1/
Domestic shipments--------do----	44	48	79	61	63
Export shipments----------do----	0	1/	1/	1/	1/
End-of-period inventories 1,000 short tons--	3	4	7	5	6

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 2 integrated steel producers; 4 nonintegrated steel producers, and 1 nonsteel producer. Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table I-11.--Carbon and alloy steel wire strand: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonsteel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Total:					
Production----------------do----:	86	68	64	48	50
Capacity------------------do----:	90	91	91	93	93
Capacity utilization---percent--:	95.9	74.7	70.5	51.7	53.8
Intracompany and intercompany transfers---1,000 short tons--:	***	0	0	0	0
Domestic shipments--------do----:	81	70	64	48	51
Export shipments----------do----:	1/	1/	1/	1/	1/
End-of-period inventories 1,000 short tons--:	***	13	14	13	11

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 3 integrated steel producers and 4 nonsteel producers; no data were reported by nonintegrated steel producers. Ratios were computed from unrounded data.

Table I-12.--Carbon and alloy steel wire ropes, cables, and cordage: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity-----------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Nonsteel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity-----------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Total:					
Production---------------do----	146	156	167	104	93
Capacity-----------------do----	202	210	220	231	233
Capacity utilization---percent--	72.3	74.3	75.7	45.1	39.8
Intracompany and intercompany transfers---1,000 short tons--	9	8	5	7	3
Domestic shipments--------do----	138	145	156	108	95
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	48	51	58	48	43

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 2 integrated steel producers and 6 nonsteel producers; no data were reported by nonintegrated steel producers. Ratios were computed from unrounded data.

Table I-13.--Carbon and alloy steel wire fencing: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonsteel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Total:					
Production----------------do----:	71	66	94	75	79
Capacity------------------do----:	140	140	180	153	153
Capacity utilization---percent--:	50.8	46.8	52.1	48.8	51.8
Intracompany and intercompany transfers---1,000 short tons--:	0	0	0	0	0
Domestic shipments--------do----:	73	66	96	75	79
Export shipments----------do----:	0	1/	0	0	0
End-of-period inventories 1,000 short tons--:	9	11	9	9	9

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 2 integrated steel producers, 4 non-integrated steel producers, and 2 nonsteel producers. Because of rounding, figures may not add to the totals shown. Ratios were computed from unrounded data.

Table I-14.--Carbon and alloy steel brads, nails, spikes, staples, and tacks: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--	101	50	42	38	33
Capacity-----------------do----	265	132	97	71	62
Capacity utilization---percent--	38.1	37.9	43.3	53.5	53.2
Intracompany and intercompany transfers---1,000 short tons--	0	0	0	0	0
Domestic shipments--------do----	108	56	43	40	38
Export shipments----------do----	1/	1/	0	0	0
End-of-period inventories 1,000 short tons--	15	9	8	6	***
Nonintegrated steel producers:					
Production----1,000 short tons--	110	90	107	86	129
Capacity-----------------do----	139	149	203	200	198
Capacity utilization---percent--	79.1	60.6	52.5	43.1	64.9
Intracompany and intercompany transfers---1,000 short tons--	0	0	0	0	0
Domestic shipments--------do----	110	91	104	87	122
Export shipments----------do----	0	0	0	0	0
End-of-period inventories 1,000 short tons--	12	13	15	15	***
Total:					
Production---------------do----	211	140	148	124	162
Capacity-----------------do----	404	281	300	271	260
Capacity utilization---percent--	52.2	49.9	49.5	45.8	62.2
Intracompany and intercompany transfers---1,000 short tons--	0	0	0	0	0
Domestic shipments--------do----	218	147	147	127	160
Export shipments----------do----	1/	1/	0	0	0
End-of-period inventories 1,000 short tons--	27	22	23	21	22

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 4 integrated steel producers and 4 nonintegrated steel producers; no data were reported by nonsteel producers. Ratios were computed from unrounded data.

Table I-15.--Carbon and alloy steel rails: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, 1979-83

Item	1979	1980	1981	1982	1983
Production------1,000 short tons--:	1,143	1,106	913	473	620
Capacity-------------------do----:	1,405	1,595	1,595	1,920	1,944
Capacity utilization-----percent--:	81.4	69.3	57.2	24.6	31.9
Intracompany and intercompany transfers-----1,000 short tons--:	***	***	***	***	***
Domestic shipments----------do----:	1,015	908	802	449	588
Export shipments------------do----:	24	***	67	26	***
End-of-period inventories---do----:	***	***	***	26	32

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

Note.--Usable data were obtained from 4 integrated steel producers; no data were reported by nonintegrated steel producers or nonsteel producers.

Table I-16.--Carbon and alloy steel joint bars, tie plates, and track spikes: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity-----------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity-----------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Total:					
Production----------------do----:	***	***	***	***	***
Capacity-----------------do----:	353	355	358	358	362
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 3 integrated steel producers and 1 nonintegrated steel producer; no data were reported by nonsteel producers.

Table I-17.--Carbon and alloy steel railway wheels and axles: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Total:					
Production----------------do----:	279	265	189	86	***
Capacity------------------do----:	319	319	319	300	315
Capacity utilization---percent--:	87.5	83.1	59.2	28.7	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	24	25	27	14	15

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 1 integrated steel producer and 2 non-integrated steel producers; no data were reported by nonsteel producers.

Table I-18.--Carbon and alloy steel concrete reinforcing bars: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--:	972	942	884	868	922
Capacity------------------do----:	1,474	1,512	1,381	1,417	1,488
Capacity utilization---percent--:	65.9	62.3	64.0	61.2	62.0
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	975	988	863	822	929
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	95	89	102	111	98
Nonsteel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Total:					
Production----------------do----:	2,092	1,940	1,866	1,641	1,510
Capacity------------------do----:	2,824	2,861	2,739	2,757	2,550
Capacity utilization---percent--:	74.1	67.8	68.1	59.5	59.2
Intracompany and intercompany transfers---1,000 short tons--:	608	494	539	430	291
Domestic shipments--------do----:	1,547	1,478	1,306	1,205	1,252
Export shipments----------do----:	27	21	8	4	2
End-of-period inventories 1,000 short tons--:	160	169	180	183	152

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

Note.--Usable data were obtained from 5 integrated steel producers, 10 nonintegrated steel producers, and 1 nonsteel producer. Ratios were computed from unrounded data.

Table I-19.--Hot-rolled carbon and alloy steel bars: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	3,774	2,401	2,521	1,452	1,773
Capacity------------------do----:	6,269	5,689	5,549	5,549	5,162
Capacity utilization---percent--:	60.2	42.2	45.4	26.2	34.3
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	3,633	2,294	2,437	1,471	1,754
Export shipments----------do----:	15	11	39	10	17
End-of-period inventories 1,000 short tons--:	228	205	177	148	151
Nonintegrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonsteel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Total:					
Production----------------do----:	6,007	4,254	4,867	2,965	3,341
Capacity------------------do----:	8,776	8,191	8,376	8,372	8,091
Capacity utilization---percent--:	68.4	51.9	58.1	35.4	41.3
Intracompany and intercompany transfers---1,000 short tons--:	688	572	629	347	252
Domestic shipments--------do----:	5,359	3,705	4,162	2,607	3,060
Export shipments----------do----:	16	12	44	13	20
End-of-period inventories 1,000 short tons--:	411	390	444	337	382

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

Note.--Usable data were obtained from 7 integrated steel producers, 11 non-integrated steel producers, and 1 nonsteel producer. Ratios were computed from unrounded data.

Table I-20.--Cold-finished carbon and alloy steel bars: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity-----------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity-----------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Nonsteel producers:					
Production----1,000 short tons--	***	***	***	***	***
Capacity-----------------do----	***	***	***	***	***
Capacity utilization---percent--	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--	***	***	***	***	***
Domestic shipments--------do----	***	***	***	***	***
Export shipments----------do----	***	***	***	***	***
End-of-period inventories 1,000 short tons--	***	***	***	***	***
Total:					
Production---------------do----	340	245	291	217	244
Capacity-----------------do----	525	551	708	700	699
Capacity utilization---percent--	64.8	44.5	41.1	31.0	34.9
Intracompany and intercompany transfers---1,000 short tons--	7	6	5	4	3
Domestic shipments--------do----	347	252	273	215	244
Export shipments----------do----	1/	1/	1/	1/	1/
End-of-period inventories 1,000 short tons--	41	30	46	43	40

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 1 integrated steel producer, 3 non-integrated steel producers, and 1 nonsteel producer. Ratios were computed from unrounded data.

Table I-21.--Carbon and alloy steel sheet piling: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, 1979-83

Item	1979	1980	1981	1982	1983
Production------1,000 short tons--:	***	125	85	81	112
Capacity--------------------do----:	201	201	201	201	204
Capacity utilization-----percent--:	***	62.2	42.3	40.3	54.9
Intracompany and intercompany transfers-----1,000 short tons--:	***	***	***	***	***
Domestic shipments----------do----:	***	***	***	***	***
Export shipments------------do----:	***	***	***	***	***
End-of-period inventories---do----:	***	***	6	11	12

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 3 integrated steel producers; no data were reported by nonintegrated steel producers or nonsteel producers.

Table I-22.--Carbon and alloy steel light structural shapes: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity-----------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--:	412	347	387	501	666
Capacity-----------------do----:	466	425	481	596	867
Capacity utilization---percent--:	88.5	81.6	80.5	84.0	76.8
Intracompany and intercompany transfers---1,000 short tons--:	0	0	0	0	0
Domestic shipments--------do----:	417	346	382	471	672
Export shipments----------do----:	0	0	0	0	***
End-of-period inventories 1,000 short tons--:	24	25	29	59	56
Nonsteel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity-----------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Total:					
Production---------------do----:	759	596	641	646	823
Capacity-----------------do----:	892	856	910	1,028	1,297
Capacity utilization---percent--:	85.1	69.6	70.4	62.8	63.4
Intracompany and intercompany transfers---1,000 short tons--:	129	82	93	43	39
Domestic shipments--------do----:	630	519	550	580	785
Export shipments----------do----:	0	***	***	0	***
End-of-period inventories 1,000 short tons--:	50	45	42	65	67

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 3 integrated steel producers, 6 non-integrated steel producers, and 1 nonsteel producer.

Table I-23.--Carbon and alloy steel heavy structural shapes: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	3,693	3,528	3,254	2,011	1,927
Capacity------------------do----:	5,420	5,396	5,396	5,396	4,979
Capacity utilization---percent--:	68.1	65.4	60.3	37.3	38.7
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	3,508	3,329	3,089	1,984	1,827
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	224	204	189	140	145
Nonintegrated steel producers:					
Production----1,000 short tons--:	840	795	920	580	322
Capacity------------------do----:	1,230	1,239	1,257	1,213	1,162
Capacity utilization---percent--:	68.3	64.2	73.2	47.8	27.7
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	825	770	865	597	328
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	44	59	100	77	68
Total:					
Production----------------do----:	4,533	4,323	4,174	2,591	2,249
Capacity------------------do----:	6,650	6,635	6,653	6,609	6,141
Capacity utilization---percent--:	68.2	65.2	62.7	39.2	36.6
Intracompany and intercompany transfers---1,000 short tons--:	194	140	138	58	73
Domestic shipments--------do----:	4,333	4,099	3,954	2,581	2,155
Export shipments----------do----:	75	89	55	24	25
End-of-period inventories 1,000 short tons--:	268	263	289	217	213

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 7 integrated steel producers and 6 nonintegrated steel producers; no data were reported by nonsteel producers. Ratios were computed from unrounded data.

Table I-24.--Carbon and alloy steel oil-well tubing, casing, and drill pipe: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Nonintegrated steel producers:					
Production----1,000 short tons--:	***	***	***	***	***
Capacity------------------do----:	***	***	***	***	***
Capacity utilization---percent--:	***	***	***	***	***
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	***	***	***	***	***
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	***	***	***	***	***
Total:					
Production----------------do----:	1,340	1,862	2,440	1,071	220
Capacity------------------do----:	1,991	2,042	2,482	2,513	2,448
Capacity utilization---percent--:	67.3	91.2	93.3	42.8	9.0
Intracompany and intercompany transfers---1,000 short tons--:	0	0	25	10	13
Domestic shipments--------do----:	1,331	1,989	2,478	990	367
Export shipments----------do----:	118	25	46	23	7
End-of-period inventories 1,000 short tons--:	122	88	128	248	102

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

Note.--Usable data were obtained from 5 integrated steel producers and 3 non-integrated steel producers; no data were reported by nonsteel producers.

Table I-25.--All other carbon and alloy steel pipe and tubing: U.S. producers' reported production, practical capacity, capacity utilization, shipments, and end-of-period inventories, by types of firms, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Production----1,000 short tons--:	1,640	1,644	1,917	754	634
Capacity-----------------do----:	3,064	2,966	3,056	3,056	2,614
Capacity utilization---percent--:	53.5	55.4	62.7	24.7	24.3
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	1,607	1,677	1,861	872	590
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	255	210	246	135	182
Nonintegrated steel producers:					
Production----1,000 short tons--:	856	722	882	523	561
Capacity-----------------do----:	973	990	1,069	1,089	1,089
Capacity utilization---percent--:	88.0	72.9	82.5	48.9	51.5
Intracompany and intercompany transfers---1,000 short tons--:	***	***	***	***	***
Domestic shipments--------do----:	663	560	724	471	445
Export shipments----------do----:	***	***	***	***	***
End-of-period inventories 1,000 short tons--:	49	51	61	47	55
Total:					
Production---------------do----:	2,496	2,366	2,799	1,287	1,195
Capacity-----------------do----:	4,037	3,956	4,125	4,450	3,703
Capacity utilization---percent--:	61.8	59.8	67.9	31.0	32.3
Intracompany and intercompany transfers---1,000 short tons--:	219	201	193	76	104
Domestic shipments--------do----:	2,270	2,237	2,585	1,343	1,035
Export shipments----------do----:	118	30	25	12	16
End-of-period inventories 1,000 short tons--:	304	261	307	182	237

1/ Less than 500 short tons.

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

Note.--Usable data were obtained from 7 integrated steel producers and 5 non-integrated steel producers; no data were reported by nonsteel producers.

APPENDIX J

DATA ON U.S. PRODUCERS' REPORTED DOMESTIC SHIPMENTS OF 9 GROUPS AND 24 SUBGROUPS OF CARBON AND ALLOY STEEL PRODUCTS

Carbon and alloy steel products: Domestic shipments, by types, 1979-83

Product, type, and number of firms	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
All carbon and alloy steel products:					
Integrated firms	54,860	45,900	48,681	33,009	37,350
Nonintegrated firms	7,529	6,712	8,118	6,320	6,949
Nonsteel firms	764	670	721	585	728
Total	63,152	53,281	57,520	39,914	45,027
Ingots, blooms, billets, slabs, and sheet bars:					
Integrated firms (11)	212	350	299	109	81
Nonintegrated firms (25)	355	242	315	136	173
Total (36)	567	592	614	245	254
Plates:					
Integrated firms (9)	5,695	5,635	5,692	2,888	2,805
Nonintegrated firms (6)	857	843	812	588	596
Total (15)	6,552	6,478	6,504	3,476	3,401
Sheets and strip:					
Hot-rolled:					
Integrated firms (10)	***	***	***	***	***
Nonintegrated firms (2)	***	***	***	***	***
Total (12)	12,016	9,077	10,338	6,757	9,001
Cold-rolled:					
Integrated firms (9)	12,433	9,584	10,398	7,897	9,779
Nonintegrated firms (1)	***	***	***	***	***
Nonsteel firms (4)	***	***	***	***	***
Total (14)	12,697	9,775	10,569	8,025	9,971
Further processed, galvanized:					
Integrated firms (7)	***	***	***	***	***
Nonintegrated firms (1)	***	***	***	***	***
Total (8)	4,562	3,707	4,294	3,866	4,593
Further processed, other:					
Integrated firms (5)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (6)	5,143	4,359	4,528	4,178	4,346
Total, sheets and strip:					
Integrated firms	33,982	26,618	29,408	22,542	27,491
Nonintegrated firms	***	***	***	***	***
Nonsteel firms	***	***	***	***	***
Total	34,419	26,918	29,730	22,827	27,910
Wire rods:					
Integrated firms (5)	1,889	***	1,325	709	921
Nonintegrated firms (9)	653	***	1,259	1,229	1,471
Total (14)	2,542	2,233	2,584	1,938	2,392
Wire and wire products:					
Wire: 1/					
Integrated firms (4)	420	291	294	170	***
Nonintegrated firms (6)	346	280	366	296	***
Nonsteel firms (19)	389	337	368	316	395
Total (29)	1,154	908	1,027	782	885

See footnotes at end of table.

Carbon and alloy steel products: Domestic shipments, by types, 1979-83--Continued

Product, type, and number of firms	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Wire and wire products--Continued:					
Barbed and twisted wire:					
Integrated firms (2)	***	***	***	***	***
Nonintegrated firms (4)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (7)	44	48	79	61	63
Wire strand:					
Integrated firms (3)	***	***	***	***	***
Nonsteel firms (3)	***	***	***	***	***
Total (6)	81	70	64	48	51
Wire ropes, cables, and cordage:					
Integrated firms (2)	***	***	***	***	***
Nonsteel firms (6)	***	***	***	***	***
Total (8)	138	145	156	108	95
Wire fencing:					
Integrated firms (2)	***	***	***	***	***
Nonintegrated firms (4)	***	***	***	***	***
Nonsteel firms (2)	***	***	***	***	***
Total (8)	73	66	96	75	79
Brads, nails, spikes, staples, and tacks:					
Integrated firms (4)	108	56	43	40	38
Nonintegrated firms (4)	110	91	104	87	122
Total (8)	218	147	147	127	160
Total, wire and wire products:					
Integrated firms	700	504	504	330	268
Nonintegrated firms	503	420	567	456	564
Nonsteel firms	505	461	498	416	502
Total	1,709	1,384	1,569	1,202	1,334
Railway-type products:					
Rails--integrated firms (4)	1,015	908	802	449	588
Joint bars, tie plates, and track spikes:					
Integrated firms (4)	***	***	***	***	***
Nonintegrated firms (1)	2/	***	***	***	3/
Total (5)	***	***	***	***	***
RR axle bars, and RR wheels and axles and parts thereof:					
Integrated firms (1)	***	***	***	***	***
Nonintegrated firms (2)	***	***	***	***	***
Total (3)	***	***	***	***	***
Total, railway-type products:					
Integrated firms	***	***	***	***	***
Nonintegrated firms	***	***	***	***	***
Total	1,455	1,271	1,108	627	712
Bars:					
Concrete reinforcing bars:					
Integrated firms (5)	***	***	***	***	***
Nonintegrated firms (10)	975	988	863	822	929
Nonsteel firms (1)	***	***	***	***	***
Total (16)	1,547	1,478	1,306	1,205	1,252

See footnotes at end of table.

Carbon and alloy steel products: Domestic shipments, by types, 1979-83--Continued

Product, type, and number of firms	1979	1980	1981	1982	1983
	Quantity (1,000 short tons)				
Bars--Continued:					
Other, hot-rolled:					
Integrated firms (7)	3,633	2,294	2,437	1,471	1,754
Nonintegrated firms (11)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (19)	5,359	3,705	4,162	2,607	3,060
Other, cold-finished:					
Integrated firms (2)	***	***	***	***	***
Nonintegrated firms (4)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (7)	347	252	273	215	244
Total, bars:					
Integrated firms	***	***	***	***	***
Nonintegrated firms	2,728	2,427	2,629	1,970	2,250
Nonsteel firms	***	***	***	***	***
Total	7,253	5,435	5,741	4,027	4,556
Structural shapes: 4/					
Sheet piling--integrated firms (3)	***	***	***	***	***
Structural shapes, light:					
Integrated firms (3)	***	***	***	***	***
Nonintegrated firms (7)	417	346	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (11)	630	519	***	***	***
Structural shapes, heavy:					
Integrated firms (7)	3,508	3,329	3,089	1,984	1,827
Nonintegrated firms (6)	825	770	865	597	328
Total (13)	4,333	4,099	3,954	2,581	2,155
Total, structural shapes:					
Integrated firms	3,771	3,587	3,301	2,129	1,999
Nonintegrated firms	1,243	1,117	1,266	1,078	1,022
Nonsteel firms	***	***	***	***	***
Total	***	***	***	***	***
Pipes and tubes and blanks therefor:					
Oil-well tubing, casing, and drill pipe: 5/					
Integrated firms (5)	***	***	***	***	***
Nonintegrated firms (2)	***	***	***	***	***
Total (7)	1,331	1,989	2,478	990	367
All other:					
Integrated firms (7)	1,607	1,677	1,861	872	590
Nonintegrated firms (6)	***	***	***	***	***
Total (13)	***	***	***	***	***
Total, pipes and tubes and blanks therefor:					
Integrated firms	***	***	***	***	***
Nonintegrated firms	***	***	***	***	***
Total	***	***	***	***	***

See footnotes at end of table.

Carbon and alloy steel products: Domestic shipments, by types, 1979-83--Continued

Product, type, and number of firms	1979	1980	1981	1982	1983
	Value (1,000 dollars)				
All carbon and alloy steel products:					
Integrated firms	22,926,917	20,536,320	24,875,894	16,533,516	16,689,089
Nonintegrated firms	3,436,588	3,317,786	4,403,209	3,122,016	2,881,248
Nonsteel firms	656,990	613,211	708,664	553,881	623,150
Total	27,020,495	24,467,317	29,987,767	20,209,413	20,193,487
Ingots, blooms, billets, slabs, and sheet bars:					
Integrated firms (11)	67,070	97,381	121,283	47,825	23,106
Nonintegrated firms (25)	94,948	75,742	113,633	51,345	61,393
Total (36)	162,018	173,123	234,916	99,170	84,499
Plates:					
Integrated firms (9)	2,285,394	2,266,162	2,592,461	1,302,380	1,062,334
Nonintegrated firms (6)	428,816	469,429	519,968	377,209	344,659
Total (15)	2,714,210	2,735,591	3,112,429	1,679,589	1,406,993
Sheets and strip:					
Hot-rolled:					
Integrated firms (10)	***	***	***	***	***
Nonintegrated firms (2)	***	***	***	***	***
Total (12)	3,934,538	2,988,188	3,794,408	2,412,672	3,034,214
Cold-rolled:					
Integrated firms (9)	5,031,366	4,020,772	4,764,060	3,630,736	4,454,253
Nonintegrated firms (1)	***	***	***	***	***
Nonsteel firms (4)	***	***	***	***	***
Total (14)	5,178,849	4,135,627	4,885,384	3,721,885	4,585,613
Further processed, galvanized:					
Integrated firms (7)	***	***	***	***	***
Nonintegrated firms (1)	***	***	***	***	***
Total (8)	2,219,541	1,834,332	2,327,483	2,061,640	2,453,643
Further processed, other:					
Integrated firms (5)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (6)	2,537,264	2,344,584	2,592,874	2,447,067	2,502,769
Total, sheets and strip:					
Integrated firms	13,647,088	11,136,840	13,402,897	10,476,612	12,341,863
Nonintegrated firms	***	***	***	***	***
Nonsteel firms	***	***	***	***	***
Total	13,870,192	11,302,731	13,600,149	10,643,264	12,576,239
Wire rods:					
Integrated firms (5)	679,751	***	555,022	302,074	344,087
Nonintegrated firms (9)	199,895	***	398,741	376,759	415,188
Total (14)	879,646	789,025	953,763	678,833	759,275
Wire and wire products:					
Wire: 1/					
Integrated firms (4)	227,990	171,264	189,918	111,814	***
Nonintegrated firms (6)	172,301	147,300	211,812	169,877	***
Nonsteel firms (19)	338,868	293,526	342,555	273,954	325,319
Total (29)	739,159	612,090	744,285	555,645	604,000

See footnotes at end of table.

Carbon and alloy steel products: Domestic shipments, by types, 1979-83--Continued

Product, type, and number of firms	1979	1980	1981	1982	1983
	Value (1,000 dollars)				
Wire and wire products--Continued:					
Barbed and twisted wire:					
Integrated firms (2)	***	***	***	***	***
Nonintegrated firms (4)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (7)	26,450	32,525	54,549	43,297	44,505
Wire strand:					
Integrated firms (3)	***	***	***	***	***
Nonsteel firms (3)	***	***	***	***	***
Total (6)	71,863	65,882	65,044	48,300	47,436
Wire ropes, cables, and cordage:					
Integrated firms (2)	***	***	***	***	***
Nonsteel firms (6)	***	***	***	***	***
Total (8)	217,922	250,624	289,453	210,038	152,364
Wire fencing:					
Integrated firms (2)	***	***	***	***	***
Nonintegrated firms (4)	***	***	***	***	***
Nonsteel firms (2)	***	***	***	***	***
Total (8)	43,443	44,841	65,859	53,272	54,930
Brads, nails, spikes, staples, and tacks:					
Integrated firms (4)	67,641	36,446	29,892	27,383	23,314
Nonintegrated firms (4)	68,061	58,898	69,798	56,879	77,901
Total (8)	135,702	95,344	99,690	84,262	101,215
Total, wire and wire products:					
Integrated firms	472,690	394,141	428,933	288,284	216,977
Nonintegrated firms	266,756	235,420	344,594	275,025	326,162
Nonsteel firms	495,093	471,745	545,353	431,505	461,311
Total	1,234,539	1,101,306	1,318,880	994,814	1,004,450
Railway-type products:					
Rails--Integrated firms (4)	391,566	403,817	398,330	218,956	234,918
Joint bars, tie plates, and track spikes:					
Integrated firms (4)	***	***	***	***	***
Nonintegrated firms (1)	2/	***	***	***	3/
Total (5)	***	***	***	***	***
RR axle bars, and RR wheels and axles and parts thereof:					
Integrated firms (1)	***	***	***	***	***
Nonintegrated firms (2)	***	***	***	***	***
Total (3)	***	***	***	***	***
Total, railway-type products:					
Integrated firms	***	***	***	***	***
Nonintegrated firms	***	***	***	***	***
Total	628,752	645,300	598,864	331,562	308,469
Bars:					
Concrete reinforcing bars:					
Integrated firms (5)	***	***	***	***	***
Nonintegrated firms (10)	306,812	312,751	267,778	225,029	235,603
Nonsteel firms (1)	***	***	***	***	***
Total (16)	474,528	460,480	399,114	330,351	312,883

See footnotes at end of table.

Carbon and alloy steel products: Domestic shipments, by types, 1979-83--Continued

Product, type, and number of firms	1979	1980	1981	1982	1983
	Value (1,000 dollars)				
Bars--Continued:					
Other, hot-rolled:					
Integrated firms (7)	1,619,718	1,101,712	1,305,069	786,766	879,834
Nonintegrated firms (11)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (19)	2,341,405	1,738,771	2,137,357	1,289,032	1,401,539
Other, cold-finished:					
Integrated firms (2)	***	***	***	***	***
Nonintegrated firms (4)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (7)	234,187	182,914	218,796	170,633	182,705
Total, bars:					
Integrated firms	***	***	***	***	***
Nonintegrated firms	1,068,537	987,200	1,149,468	751,368	783,638
Nonsteel firms	***	***	***	***	***
Total	3,050,120	2,382,165	2,755,267	1,790,016	1,897,127
Structural shapes: 4/					
Sheet piling--integrated firms (3)	***	***	***	***	***
Structural shapes, light:					
Integrated firms (3)	***	***	***	***	***
Nonintegrated firms (7)	121,927	103,967	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Total (11)	202,021	172,956	***	***	***
Structural shapes, heavy:					
Integrated firms (7)	1,330,228	1,351,453	1,371,539	922,877	740,842
Nonintegrated firms (6)	277,150	268,611	314,280	197,975	94,733
Total (13)	1,607,378	1,620,064	1,685,819	1,120,852	835,575
Total, structural shapes:					
Integrated firms	1,435,984	1,467,182	1,467,594	991,325	813,126
Nonintegrated firms	399,077	372,578	438,954	331,175	296,359
Nonsteel firms	***	***	***	***	***
Total	***	***	***	***	***
Pipes and tubes and blanks therefor:					
Oil-well tubing, casing, and drill pipe: 5/					
Integrated firms (5)	***	***	***	***	***
Nonintegrated firms (2)	***	***	***	***	***
Total (7)	1,129,244	1,925,906	3,340,220	1,523,945	262,992
All other:					
Integrated firms (7)	852,379	949,422	1,299,438	567,595	324,146
Nonintegrated firms (6)	***	***	***	***	***
Total (13)	***	***	***	***	***
Total, pipes and tubes and blanks therefor:					
Integrated firms	***	***	***	***	***
Nonintegrated firms	***	***	***	***	***
Total	***	***	***	***	***

See footnotes at end of table.

Carbon and alloy steel products: Domestic shipments, by types, 1979-83--Continued

Product, type, and number of firms	1979	1980	1981	1982	1983
	Unit value (per short ton)				
All carbon and alloy steel products:					
Integrated firms	$418	$447	$511	$501	$447
Nonintegrated firms	456	494	542	494	415
Nonsteel firms	860	916	983	946	856
Average	428	459	521	506	448
Ingots, blooms, billets, slabs, and sheet bars:					
Integrated firms (11)	317	279	405	439	285
Nonintegrated firms (25)	267	313	361	378	354
Average (36)	286	293	383	405	332
Plates:					
Integrated firms (9)	401	402	455	451	379
Nonintegrated firms (6)	500	557	640	642	578
Average (15)	414	422	479	483	414
Sheets and strip:					
Hot-rolled:					
Integrated firms (10)	***	***	***	***	***
Nonintegrated firms (2)	***	***	***	***	***
Average (12)	327	329	367	357	337
Cold-rolled:					
Integrated firms (9)	405	420	458	460	455
Nonintegrated firms (1)	***	***	***	***	***
Nonsteel firms (4)	***	***	***	***	***
Average (14)	408	423	462	464	460
Further processed, galvanized:					
Integrated firms (7)	***	***	***	***	***
Nonintegrated firms (1)	***	***	***	***	***
Average (8)	487	495	542	533	534
Further processed, other:					
Integrated firms (5)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Average (6)	493	538	573	586	576
Average, sheets and strip:					
Integrated firms	402	418	456	465	449
Nonintegrated firms	***	***	***	***	***
Nonsteel firms	***	***	***	***	***
Average	403	420	457	466	451
Wire rods:					
Integrated firms (5)	360	***	419	426	374
Nonintegrated firms (9)	306	***	317	307	282
Average (14)	346	353	369	350	317

See footnotes at end of table.

Carbon and alloy steel products: Domestic shipments, by types, 1979-83--Continued

Product, type, and number of firms	1979	1980	1981	1982	1983
	Unit value (per short ton)				
Wire and wire products:					
Wire: 1/					
Integrated firms (4)	543	589	646	658	***
Nonintegrated firms (6)	499	526	580	573	***
Nonsteel firms (19)	871	871	931	867	824
Average (29)	640	674	724	710	682
Barbed and twisted wire:					
Integrated firms (2)	***	***	***	***	***
Nonintegrated firms (4)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Average (7)	598	672	693	706	708
Wire strand:					
Integrated firms (3)	***	***	***	***	***
Nonsteel firms (3)	***	***	***	***	***
Average (6)	889	944	1,019	1,010	934
Wire ropes, cables, and cordage:					
Integrated firms (2)	***	***	***	***	***
Nonsteel firms (6)	***	***	***	***	***
Average (8)	1,579	1,725	1,852	1,939	1,599
Wire fencing:					
Integrated firms (2)	***	***	***	***	***
Nonintegrated firms (4)	***	***	***	***	***
Nonsteel firms (2)	***	***	***	***	***
Average (8)	597	685	687	710	694
Brads, nails, spikes, staples, and tacks:					
Integrated firms (4)	626	651	695	685	614
Nonintegrated firms (4)	616	647	669	653	637
Average (8)	621	649	676	663	632
Average, wire and wire products:					
Integrated firms	675	782	851	874	810
Nonintegrated firms	530	561	607	603	578
Nonsteel firms	979	1,024	1,095	1,038	920
Average	723	796	840	828	753
Railway-type products:					
Rails--integrated firms (4)	386	445	497	488	400
Joint bars, tie plates, and track spikes:					
Integrated firms (4)	***	***	***	***	***
Nonintegrated firms (1)	2/	***	***	***	3/
Average (5)	***	***	***	***	***
RR axle bars, and RR wheels and axles and parts thereof:					
Integrated firms (1)	***	***	***	***	***
Nonintegrated firms (2)	***	***	***	***	***
Average (3)	***	***	***	***	***

See footnotes at end of table.

Carbon and alloy steel products: Domestic shipments, by types, 1979-83--Continued

Product, type, and number of firms	1979	1980	1981	1982	1983
	Unit value (per short ton)				
Railway-type products--Continued:					
Average, railway-type products:					
Integrated firms	***	***	***	***	***
Nonintegrated firms	***	***	***	***	***
Average	432	508	540	529	433
Bars:					
Concrete reinforcing bars:					
Integrated firms (5)	***	***	***	***	***
Nonintegrated firms (10)	315	317	310	274	254
Nonsteel firms (1)	***	***	***	***	***
Average (16)	307	312	306	274	250
Other, hot-rolled:					
Integrated firms (7)	446	480	536	535	502
Nonintegrated firms (11)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Average (19)	437	469	514	495	458
Other, cold-finished:					
Integrated firms (2)	***	***	***	***	***
Nonintegrated firms (4)	***	***	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Average (7)	675	726	801	794	749
Average, bars:					
Integrated firms	***	***	***	***	***
Nonintegrated firms	392	407	437	381	348
Nonsteel firms	***	***	***	***	***
Average	421	438	480	445	416
Structural shapes: 4/					
Sheet piling--integrated firms (3)	***	***	***	***	***
Structural shapes, light:					
Integrated firms (3)	***	***	***	***	***
Nonintegrated firms (7)	292	300	***	***	***
Nonsteel firms (1)	***	***	***	***	***
Average (11)	320	333	***	***	***
Structural shapes, heavy:					
Integrated firms (7)	379	406	444	465	405
Nonintegrated firms (6)	336	349	363	332	289
Average (13)	371	395	426	434	388
Average, structural shapes:					
Integrated firms	381	409	445	466	407
Nonintegrated firms	321	334	347	307	290
Nonsteel firms	***	***	***	***	***
Average	***	***	***	***	***

See footnotes at end of table.

Carbon and alloy steel products: Domestic shipments, by types, 1979-83--Continued

Product, type, and number of firms	1979	1980	1981	1982	1983
	Unit value (per short ton)				
Pipes and tubes and blanks therefor:					
Oil-well tubing, casing, and drill pipe: 5/					
Integrated firms (5)	***	***	***	***	***
Nonintegrated firms (2)	***	***	***	***	***
Average (7)	848	968	1,348	1,539	717
All other:					
Integrated firms (7)	530	566	698	651	549
Nonintegrated firms (6)	***	***	***	***	***
Average (13)	***	***	***	***	***
Average, pipes and tubes and blanks therefor:					
Integrated firms	***	***	***	***	***
Nonintegrated firms	***	***	***	***	***
Average	***	***	***	***	***

1/ Includes wire bale ties, and milliner's wire and other wire covered with textile or other material not wholly of metal.

2/ No domestic sales reported.

3/ Not available.

4/ There were no domestic shipments of fabricated structural units reported.

5/ Includes only products conforming with specifications of the American Petroleum Institute.

Source: Compiled from responses to the questionnaires of the U.S. International Trade Commission.

Note.--Because of rounding, figures may not add to the totals shown; unit values calculated from unrounded figures.

APPENDIX K

DATA ON THE AVERAGE NUMBER OF PRODUCTION AND RELATED WORKERS AND HOURS WORKED BY, WAGES AND TOTAL COMPENSATION PAID TO, AND PRODUCTIVITY OF SUCH EMPLOYEES FOR RAW CARBON AND ALLOY STEEL AND 24 SUBGROUPS OF CARBON AND ALLOY STEEL PRODUCTS

Table K-1.--Raw carbon and alloy steel: 1/ Average number of production and related workers employed in U.S. producing establishments and hours worked by and wages and total compensation paid to such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated producers:					
Average number employed----	32,265	26,959	28,484	19,042	18,067
Hours worked--1,000 hours--	67,603	55,529	59,312	37,506	37,059
Wages paid--1,000 dollars--	831,078	771,017	887,561	605,681	543,119
Total compensation paid 1,000 dollars--	1,046,573	998,041	1,148,221	839,164	773,547
Average hourly wages-------	$12.29	$13.88	$14.96	$16.15	$14.66
Nonintegrated producers:					
Average number employed----	2,384	2,231	2,796	2,119	2,098
Hours worked--1,000 hours--	4,778	4,363	5,622	3,958	4,192
Wages paid--1,000 dollars--	55,029	55,458	78,804	56,343	57,078
Total compensation paid 1,000 dollars--	72,504	74,960	104,839	80,181	80,368
Average hourly wages-------	$11.52	$12.71	$14.02	$14.24	$13.62
Total:					
Average number employed----	34,649	29,190	31,280	21,161	20,165
Hours worked--1,000 hours--	72,381	59,892	64,934	41,464	41,251
Wages paid--1,000 dollars--	886,107	826,475	966,365	662,024	600,197
Total compensation paid 1,000 dollars--	1,119,077	1,073,001	1,253,060	919,345	853,915
Average hourly wages-------	$12.24	$13.80	$14.88	$15.97	$14.55

1/ Carbon and alloy steelmaking, including the production of raw carbon and alloy steel through the production of ingots, blooms, billets, slabs, and sheet bars.

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

Note.--Usable data were obtained from 17 integrated steel producers and 6 non-integrated steel producers.

Table K-2.--Carbon and alloy steel plates: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed--------	***	***	***	***	***
Hours worked------1,000 hours--	***	***	***	***	***
Wages paid------1,000 dollars--	***	***	***	***	***
Total compensation paid 1,000 dollars--	***	***	***	***	***
Average hourly wages-----------	***	***	***	***	***
Labor productivity tons per hour--	***	***	***	***	***
Unit labor costs------per ton--	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed--------	***	***	***	***	***
Hours worked------1,000 hours--	***	***	***	***	***
Wages paid------1,000 dollars--	***	***	***	***	***
Total compensation paid 1,000 dollars--	***	***	***	***	***
Average hourly wages-----------	***	***	***	***	***
Labor productivity tons per hour--	***	***	***	***	***
Unit labor costs------per ton--	***	***	***	***	***
Total:					
Average number employed--------	17,761	16,907	16,748	9,252	7,949
Hours worked------1,000 hours--	35,723	32,785	32,965	17,809	16,263
Wages paid------1,000 dollars--	413,299	422,128	462,826	265,872	218,883
Total compensation paid 1,000 dollars--	526,050	548,887	603,421	365,876	334,065
Average hourly wages-----------	$11.57	$12.88	$14.04	$14.93	$13.46
Labor productivity tons per hour--	.1851	.1908	.2032	.2009	.2334
Unit labor costs------per ton--	$79.57	$87.75	$90.09	$102.29	$87.87

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

Note.--Usable data were obtained from 5 integrated steel producers and 3 nonintegrated steel producers.

Table K-3.--Hot-rolled carbon and alloy steel sheets and strip: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Total:					
Average number employed	14,501	11,772	12,381	8,485	10,465
Hours worked------1,000 hours	29,751	23,232	24,780	16,487	21,562
Wages paid------1,000 dollars	354,156	311,288	356,471	255,689	305,538
Total compensation paid 1,000 dollars	446,345	400,616	457,113	346,734	446,546
Average hourly wages	$11.90	$13.40	$14.39	$15.51	$14.17
Labor productivity tons per hour	.5287	.5557	.5797	.6091	.6201
Unit labor costs------per ton	$28.38	$31.03	$31.82	$34.52	$33.40

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

Note.--Usable data were obtained from 7 integrated steel producers.

Table K-4.--Cold-rolled carbon and alloy steel sheets and strip: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonsteel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	25,050	20,602	22,482	17,150	19,145
Hours worked------1,000 hours	49,343	38,883	43,220	32,344	39,410
Wages paid------1,000 dollars	587,944	504,729	627,756	497,466	541,556
Total compensation paid 1,000 dollars	745,332	671,398	812,827	675,394	804,589
Average hourly wages	$11.92	$12.98	$14.52	$15.38	$13.74
Labor productivity tons per hour	.2552	.2709	.2628	.2694	.2868
Unit labor costs------per ton	$59.19	$63.73	$71.56	$77.52	$71.24

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

Note.--Usable data were obtained from 6 integrated steel producers and 3 nonsteel producers.

Table K-5.--Galvanized carbon and alloy steel sheets and strip: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, 1979-83

Item	1979	1980	1981	1982	1983
Total:					
Average number employed	7,390	6,661	7,369	6,135	6,803
Hours worked------1,000 hours	14,680	12,810	14,366	14,436	14,035
Wages paid------1,000 dollars	175,711	169,865	204,447	165,026	190,609
Total compensation paid 1,000 dollars	215,244	213,235	257,503	240,044	293,031
Average hourly wages	$11.97	$13.26	$14.23	$11.43	$13.58
Labor productivity tons per hour	.2020	.1938	.2019	.1690	.2172
Unit labor costs------per ton	$72.57	$85.88	$88.76	$98.42	$96.11

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

Note.--Usable data were obtained from 5 integrated steel producers.

Table K-6.--All other further worked carbon and alloy steel sheets and strip: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonsteel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	6,687	5,887	5,575	4,958	4,463
Hours worked------1,000 hours	12,533	10,304	10,167	7,917	7,762
Wages paid------1,000 dollars	157,176	148,448	154,908	144,870	124,491
Total compensation paid 1,000 dollars	203,228	199,186	208,387	206,110	188,777
Average hourly wages	$12.54	$14.41	$15.24	$18.30	$16.04
Labor productivity tons per hour	.2297	.2206	.2509	.2616	.3016
Unit labor costs------per ton	$70.57	$87.60	$81.70	$99.53	$80.63

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

Note.--Usable data were obtained from 3 integrated steel producers and 1 nonsteel producer.

Table K-7.--Carbon and alloy steel wire rods: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	6,645	4,847	4,613	2,666	2,835
Hours worked------1,000 hours	13,305	9,297	8,833	5,134	5,820
Wages paid------1,000 dollars	155,974	121,014	127,427	70,695	76,419
Total compensation paid 1,000 dollars	197,433	157,391	166,971	105,595	120,556
Average hourly wages	$11.72	$13.02	$14.43	$13.77	$13.13
Labor productivity tons per hour	.2265	.2482	.3300	.3861	.4112
Unit labor costs------per ton	$65.51	$68.22	$57.28	$53.28	$50.38

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

Note.--Usable data were obtained from 4 integrated steel producers and 4 nonintegrated steel producers.

Table K-8.--Carbon and alloy steel wire: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonsteel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	5,200	4,528	5,351	4,250	3,917
Hours worked------1,000 hours	10,330	8,357	9,764	7,676	7,352
Wages paid------1,000 dollars	104,198	91,966	114,589	91,501	85,607
Total compensation paid 1,000 dollars	133,643	121,310	158,159	133,538	126,131
Average hourly wages	$10.09	$11.00	$11.74	$11.92	$11.64
Labor productivity tons per hour	.1087	.1060	.1142	.1119	.1303
Unit labor costs------per ton	$119.33	$136.90	$141.91	$155.46	$131.65

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

Note.--Usable data were obtained from 3 integrated steel producers, 2 nonintegrated steel producers, and 17 nonsteel producers.

Table K-9.--Carbon and alloy steel barbed and twisted wire: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	74	63	121	90	74
Hours worked------1,000 hours	128	117	209	158	137
Wages paid------1,000 dollars	1,392	1,436	2,922	2,117	1,670
Total compensation paid 1,000 dollars	1,737	1,828	3,793	2,959	2,383
Average hourly wages	$10.88	$12.27	$13.98	$13.40	$12.19
Labor productivity tons per hour	.2188	.2479	.2632	.2975	.3431
Unit labor costs------per ton	$62.04	$63.03	$68.96	$62.96	$50.70

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

Note.--Usable data were obtained from 2 integrated steel producers and 2 non-integrated steel producers.

Table K-10.--Carbon and alloy steel wire strand: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonsteel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	417	424	386	320	291
Hours worked------1,000 hours	848	786	730	571	551
Wages paid------1,000 dollars	8,459	8,618	8,747	7,236	6,841
Total compensation paid 1,000 dollars	10,693	10,495	11,366	9,748	9,469
Average hourly wages	$9.98	$10.96	$11.98	$12.67	$12.42
Labor productivity tons per hour	.1012	.0863	.0874	.0837	.0904
Unit labor costs------per ton	$124.63	$154.79	$178.15	$203.93	$190.14

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

Note.--Usable data were obtained from 3 integrated steel producers and 3 nonsteel producers.

Table K-11.--Carbon and alloy steel wire ropes, cables, and cordage: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed--------	***	***	***	***	***
Hours worked------1,000 hours--	***	***	***	***	***
Wages paid------1,000 dollars--	***	***	***	***	***
Total compensation paid 1,000 dollars--	***	***	***	***	***
Average hourly wages-----------	***	***	***	***	***
Labor productivity tons per hour--	***	***	***	***	***
Unit labor costs------per ton--	***	***	***	***	***
Nonsteel producers:					
Average number employed--------	***	***	***	***	***
Hours worked------1,000 hours--	***	***	***	***	***
Wages paid------1,000 dollars--	***	***	***	***	***
Total compensation paid 1,000 dollars--	***	***	***	***	***
Average hourly wages-----------	***	***	***	***	***
Labor productivity tons per hour--	***	***	***	***	***
Unit labor costs------per ton--	***	***	***	***	***
Total:					
Average number employed--------	2,099	2,117	2,115	1,646	1,353
Hours worked------1,000 hours--	4,110	4,099	4,109	3,067	2,651
Wages paid------1,000 dollars--	36,475	41,334	44,897	34,500	28,621
Total compensation paid 1,000 dollars--	45,313	51,875	56,511	45,520	38,095
Average hourly wages-----------	$8.87	$10.08	$10.93	$11.25	$10.80
Labor productivity tons per hour--	.0355	.0380	.0407	.0339	.0350
Unit labor costs------per ton--	$311.00	$332.96	$337.98	$437.69	$410.95

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

Note.--Usable data were obtained from 2 integrated steel producers and 6 nonsteel producers.

Table K-12.--Carbon and alloy steel wire fencing: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed--------	***	***	***	***	***
Hours worked------1,000 hours--	***	***	***	***	***
Wages paid------1,000 dollars--	***	***	***	***	***
Total compensation paid 1,000 dollars--	***	***	***	***	***
Average hourly wages-----------	***	***	***	***	***
Labor productivity tons per hour--	***	***	***	***	***
Unit labor costs------per ton--	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed--------	***	***	***	***	***
Hours worked------1,000 hours--	***	***	***	***	***
Wages paid------1,000 dollars--	***	***	***	***	***
Total compensation paid 1,000 dollars--	***	***	***	***	***
Average hourly wages-----------	***	***	***	***	***
Labor productivity tons per hour--	***	***	***	***	***
Unit labor costs------per ton--	***	***	***	***	***
Nonsteel producers:					
Average number employed--------	***	***	***	***	***
Hours worked------1,000 hours--	***	***	***	***	***
Wages paid------1,000 dollars--	***	***	***	***	***
Total compensation paid 1,000 dollars--	***	***	***	***	***
Average hourly wages-----------	***	***	***	***	***
Labor productivity tons per hour--	***	***	***	***	***
Unit labor costs------per ton--	***	***	***	***	***
Total:					
Average number employed--------	151	141	184	140	133
Hours worked------1,000 hours--	295	276	338	263	260
Wages paid------1,000 dollars--	3,277	3,344	4,600	3,466	3,023
Total compensation paid 1,000 dollars--	4,140	4,379	6,077	4,911	4,347
Average hourly wages-----------	$11.11	$12.12	$13.61	$13.18	$11.63
Labor productivity tons per hour--	.1607	.1558	.2166	.2259	.2342
Unit labor costs------per ton--	$87.34	$101.84	$83.02	$82.68	$71.38

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

Note.--Usable data were obtained from 2 integrated steel producers, 2 nonintegrated steel producers, and 1 nonsteel producer.

Table K-13.--Carbon and alloy steel brads, nails, spikes, staples, and tacks: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	972	450	440	364	396
Hours worked------1,000 hours	1,900	814	797	645	765
Wages paid------1,000 dollars	24,323	11,814	11,671	9,463	9,526
Total compensation paid 1,000 dollars	30,792	14,873	15,500	13,496	13,928
Average hourly wages	$12.80	$14.51	$14.64	$14.67	$12.45
Labor productivity tons per hour	.0726	.0971	.1180	.1209	.1281
Unit labor costs------per ton	$223.13	$188.26	$164.89	$173.03	$142.12

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

Note.--Usable data were obtained from 4 integrated steel producers and 2 nonintegrated steel producers.

Table K-14.--Other wire products of carbon and alloy steel: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonsteel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	316	264	494	388	387
Hours worked------1,000 hours	583	497	879	729	758
Wages paid------1,000 dollars	6,851	6,243	12,641	9,757	9,278
Total compensation paid 1,000 dollars	8,555	8,058	16,943	14,409	13,550
Average hourly wages	$11.75	$12.56	$14.38	$13.38	$12.24
Labor productivity tons per hour	.2384	.2113	.2844	.1536	.1570
Unit labor costs------per ton	$61.55	$76.74	$67.77	$128.65	$113.86

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

Note.--Usable data were obtained from 1 integrated steel producer, 2 nonintegrated steel producers, and 1 nonsteel producer.

Table K-15.--Carbon and alloy steel rails: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Total:					
Average number employed	798	774	762	501	679
Hours worked------1,000 hours	1,565	1,470	1,479	929	1,278
Wages paid------1,000 dollars	19,624	21,271	24,007	14,693	17,644
Total compensation paid 1,000 dollars	25,160	27,638	31,585	20,116	25,142
Average hourly wages	$12.54	$14.47	$16.23	$15.87	$13.81
Labor productivity tons per hour	.3246	.4211	.4023	.5108	.4851
Unit labor costs------per ton	$49.53	$44.65	$53.08	$42.53	$40.55

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

Note.--Usable data were obtained from 3 integrated steel producers.

Table K-16.--Carbon and alloy steel joint bars, tie plates, and track spikes: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	725	553	524	384	325
Hours worked------1,000 hours	1,383	1,007	966	622	549
Wages paid------1,000 dollars	16,262	13,157	13,657	9,329	7,047
Total compensation paid 1,000 dollars	20,486	16,946	17,689	12,563	10,367
Average hourly wages	$11.76	$13.07	$14.14	$15.00	$12.83
Labor productivity tons per hour	.1800	.1876	.1877	.1730	.1366
Unit labor costs------per ton	$82.27	$89.71	$97.57	$116.76	$138.23

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

Note.--Usable data were obtained from 3 integrated steel producers and 1 nonintegrated steel producer.

Table K-17.--Carbon and alloy steel RR axles and wheels, parts thereof, and axle bars: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	1,064	1,036	784	438	325
Hours worked------1,000 hours	2,143	2,030	1,592	872	662
Wages paid------1,000 dollars	23,409	25,315	21,395	12,120	9,459
Total compensation paid 1,000 dollars	29,527	32,647	27,793	17,213	14,184
Average hourly wages	$10.92	$12.47	$13.44	$13.90	$14.29
Labor productivity tons per hour	.1302	.1305	.1187	.0986	.1012
Unit labor costs------per ton	$106.55	$123.20	$147.05	$200.15	$211.70

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

Note.--Usable data were obtained from 1 integrated steel producer and 2 nonintegrated steel producers.

Table K-18.--Carbon and alloy steel deformed concrete reinforcing bars: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonsteel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	2,136	2,022	1,756	1,429	852
Hours worked------1,000 hours	4,075	3,635	3,079	2,295	1,533
Wages paid------1,000 dollars	45,941	46,570	43,801	35,968	20,273
Total compensation paid 1,000 dollars	58,636	60,992	57,685	49,406	29,582
Average hourly wages	$11.27	$12.81	$14.23	$15.67	$13.22
Labor productivity tons per hour	.3519	.3538	.4082	.4357	.5675
Unit labor costs------per ton	$40.89	$47.43	$45.89	$49.41	$34.00

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

Note.--Usable data were obtained from 4 integrated steel producers, 6 nonintegrated steel producers, and 1 nonsteel producer.

Table K-19.--Hot-rolled carbon and alloy steel bars: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonsteel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	14,642	9,708	10,111	6,095	6,161
Hours worked------1,000 hours	28,164	17,607	18,956	11,068	12,117
Wages paid------1,000 dollars	334,650	242,631	284,755	164,751	171,947
Total compensation paid 1,000 dollars	434,639	318,923	375,995	252,767	280,307
Average hourly wages	$11.88	$13.78	$15.02	$14.89	$14.19
Labor productivity tons per hour	.1607	.1742	.1793	.1644	.1848
Unit labor costs------per ton	$96.05	$103.99	$110.62	$138.73	$125.19

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

Note.--Usable data were obtained from 4 integrated steel producers, 6 nonintegrated steel producers, and 1 nonsteel producer.

Table K-20.--Cold-finished carbon and alloy steel bars: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonsteel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***

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

Note.--Usable data were obtained from 1 nonintegrated steel producer and 1 nonsteel producer.

Table K-21.--Carbon and alloy steel sheet piling: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, 1979-83

Item	1979	1980	1981	1982	1983
Total:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***

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

Note.--Usable data were obtained from 2 integrated steel producers.

Table K-22.--Carbon and alloy steel light structural shapes: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked-------1,000 hours	***	***	***	***	***
Wages paid-------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs-------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked-------1,000 hours	***	***	***	***	***
Wages paid-------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs-------per ton	***	***	***	***	***
Nonsteel producers:					
Average number employed	***	***	***	***	***
Hours worked-------1,000 hours	***	***	***	***	***
Wages paid-------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs-------per ton	***	***	***	***	***
Total:					
Average number employed	754	734	653	550	692
Hours worked-------1,000 hours	1,488	1,388	1,341	1,011	1,416
Wages paid-------1,000 dollars	15,932	16,507	16,896	14,745	18,493
Total compensation paid 1,000 dollars	19,497	20,802	20,739	18,628	22,001
Average hourly wages	$10.71	$11.89	$12.60	$14.58	$13.06
Labor productivity tons per hour	.3810	.3401	.3654	.3660	.2867
Unit labor costs-------per ton	$34.39	$42.32	$42.32	$50.35	$54.19

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

Note.--Usable data were obtained from 3 integrated steel producers, 4 nonintegrated steel producers, and 1 nonsteel producer.

Table K-23.--Carbon and alloy steel heavy structural shapes: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	12,066	11,223	10,560	6,904	6,252
Hours worked------1,000 hours	24,253	21,654	20,392	14,902	12,379
Wages paid------1,000 dollars	283,105	282,347	290,141	183,697	165,031
Total compensation paid 1,000 dollars	353,811	359,452	373,458	268,141	254,746
Average hourly wages	$11.67	$13.04	$14.23	$12.33	$13.33
Labor productivity tons per hour	.1483	.1510	.1441	.1186	.1397
Unit labor costs------per ton	$98.36	$109.89	$127.11	$151.77	$147.28

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

Note.--Usable data were obtained from 5 integrated steel producers and 1 non-integrated steel producer.

Table K-24.--Carbon and alloy steel oil-well tubing, casing, and drill pipe: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed--------	***	***	***	***	***
Hours worked------1,000 hours--	***	***	***	***	***
Wages paid------1,000 dollars--	***	***	***	***	***
Total compensation paid 1,000 dollars--	***	***	***	***	***
Average hourly wages-----------	***	***	***	***	***
Labor productivity tons per hour--	***	***	***	***	***
Unit labor costs------per ton--	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed--------	***	***	***	***	***
Hours worked------1,000 hours--	***	***	***	***	***
Wages paid------1,000 dollars--	***	***	***	***	***
Total compensation paid 1,000 dollars--	***	***	***	***	***
Average hourly wages-----------	***	***	***	***	***
Labor productivity tons per hour--	***	***	***	***	***
Unit labor costs------per ton--	***	***	***	***	***
Total:					
Average number employed--------	5,006	5,105	5,896	3,589	1,290
Hours worked------1,000 hours--	10,126	10,456	11,960	6,688	2,339
Wages paid------1,000 dollars--	111,107	126,163	164,449	99,473	35,156
Total compensation paid 1,000 dollars--	143,241	163,096	213,961	135,934	53,621
Average hourly wages-----------	$10.97	$12.07	$13.74	$14.87	$15.03
Labor productivity tons per hour--	.0830	.1040	.1134	.1032	.0560
Unit labor costs------per ton--	$170.53	$148.67	$157.79	$197.01	$409.32

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

Note.--Usable data were obtained from 4 integrated steel producers and 1 non-integrated steel producer.

Table K-25.--All other carbon and alloy steel pipe and tubing: Average number of production and related workers employed in U.S. producing establishments and hours worked by, wages and total compensation paid to, and productivity of such employees, by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Nonintegrated steel producers:					
Average number employed	***	***	***	***	***
Hours worked------1,000 hours	***	***	***	***	***
Wages paid------1,000 dollars	***	***	***	***	***
Total compensation paid 1,000 dollars	***	***	***	***	***
Average hourly wages	***	***	***	***	***
Labor productivity tons per hour	***	***	***	***	***
Unit labor costs------per ton	***	***	***	***	***
Total:					
Average number employed	8,876	9,273	9,613	5,441	3,177
Hours worked------1,000 hours	17,071	17,484	18,107	10,123	6,425
Wages paid------1,000 dollars	207,307	230,731	265,706	146,840	86,526
Total compensation paid 1,000 dollars	266,677	305,911	350,760	216,716	143,133
Average hourly wages	$12.14	$13.20	$14.67	$14.51	$13.47
Labor productivity tons per hour	.0832	.0839	.0958	.0692	.0928
Unit labor costs------per ton	$187.80	$208.67	$202.28	$309.15	$240.16

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

Note.--Usable data were obtained from 5 integrated steel producers and 2 nonintegrated steel producers.

APPENDIX L

DATA ON THE FINANCIAL EXPERIENCE OF U.S. PRODUCERS ON THEIR OPERATIONS ON 9 GROUPS OF CARBON AND ALLOY STEEL PRODUCTS DURING 1979-83

Table L-1.--Income-and loss experience of U.S. producers on their operations producing carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers				
Net sales--------million dollars--	***	***	***	***	***
Cost of goods sold----------do----	***	***	***	***	***
Gross profit----------------do----	***	***	***	***	***
General, selling, and administrative expenses--million dollars--	***	***	***	***	***
Operating income or (loss)--do----	***	***	***	***	***
Operating income or (loss) margin percent--	***	***	***	***	***
	Nonintegrated producers				
Net sales--------million dollars--	***	***	***	***	***
Cost of goods sold----------do----	***	***	***	***	***
Gross profit----------------do----	***	***	***	***	***
General, selling, and administrative expenses--million dollars--	***	***	***	***	***
Operating income or (loss)--do----	***	***	***	***	***
Operating income or (loss) margin percent--	***	***	***	***	***
	Total				
Net sales--------million dollars--	***	***	***	***	***
Cost of goods sold----------do----	***	***	***	***	***
Gross profit----------------do----	***	***	***	***	***
General, selling, and administrative expenses--million dollars--	***	***	***	***	***
Operating income or (loss)--do----	***	***	***	***	***
Operating income or (loss) margin percent--	***	***	***	***	***

1/ The number of firms reporting data was as follows: 1 integrated producer, 1 nonintegrated producer, and no nonsteel producers.

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

Table L-2.--Income-and loss experience of U.S. producers on their operations producing carbon and alloy steel plates, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers 2/				
Net sales--------million dollars--	2,625	2,631	2,869	1,454	1,186
Cost of goods sold----------do----	2,436	2,541	2,730	1,567	1,372
Gross profit----------------do----	189	90	139	(113)	(186)
General, selling, and administrative expenses--million dollars--	62	72	84	64	49
Operating income or (loss)--do----	127	18	55	(177)	(235)
Operating income or (loss) margin percent--	4.8	0.7	1.9	(12.2)	(19.8)
	Nonintegrated producers				
Net sales--------million dollars--	486	537	584	424	345
Cost of goods sold----------do----	444	501	529	397	347
Gross profit----------------do----	42	36	55	28	(2)
General, selling, and administrative expenses--million dollars--	35	31	35	34	30
Operating income or (loss)--do----	7	5	20	(7)	(32)
Operating income or (loss) margin percent--	1.4	0.9	3.4	(1.7)	(9.3)
	Total				
Net sales--------million dollars--	3,111	3,168	3,453	1,878	1,531
Cost of goods sold----------do----	2,880	3,042	3,259	1,964	1,719
Gross profit----------------do----	231	126	194	(86)	(188)
General, selling, and administrative expenses--million dollars--	97	103	119	98	79
Operating income or (loss)--do----	134	23	75	(184)	(267)
Operating income or (loss) margin percent--	4.3	0.7	2.2	(9.8)	(17.4)

1/ The number of firms reporting data was as follows: 8 integrated producers, 3 nonintegrated producers, and no nonsteel producers.

2/ U.S. steel reported data for only cut-to-length plates in 1979. CF&I stopped producing plates in 1983.

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

Table L-3.--Income-and loss experience of U.S. producers on their operations producing carbon and alloy steel sheets and strip, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers				
Net sales--------million dollars--	14,958	12,413	14,699	11,392	13,363
Cost of goods sold-----------do----	14,252	12,665	14,660	12,346	13,436
Gross profit----------------do----	706	(252)	39	(954)	(73)
General, selling, and administrative expenses--million dollars--	500	502	556	582	540
Operating income or (loss)--do----	206	(754)	(517)	(1,536)	(613)
Operating income or (loss) margin percent--	1.4	(6.1)	(3.5)	(13.5)	(4.6)
	Nonintegrated producers				
Net sales--------million dollars--	***	***	***	***	***
Cost of goods sold-----------do----	***	***	***	***	***
Gross profit----------------do----	***	***	***	***	***
General, selling, and administrative expenses--million dollars--	***	***	***	***	***
Operating income or (loss)--do----	***	***	***	***	***
Operating income or (loss) margin percent--	***	***	***	***	***
	Nonsteel producers				
Net sales--------million dollars--	***	***	***	***	***
Cost of goods sold-----------do----	***	***	***	***	***
Gross profit----------------do----	***	***	***	***	***
General, selling, and administrative expenses--million dollars--	***	***	***	***	***
Operating income or (loss)--do----	***	***	***	***	***
Operating income or (loss) margin percent--	***	***	***	***	***
	Total				
Net sales--------million dollars--	15,183	12,575	14,889	11,555	13,595
Cost of goods sold-----------do----	14,468	12,831	14,843	12,504	13,656
Gross profit----------------do----	715	(256)	46	(949)	(61)
General, selling, and administrative expenses--million dollars--	509	510	568	592	553
Operating income or (loss)--do----	206	(766)	(522)	(1,541)	(614)
Operating income or (loss) margin percent--	1.4	(6.1)	(3.5)	(13.3)	(4.5)

1/ The number of firms reporting data was as follows: 9 integrated producers, 1 nonintegrated producer, and 3 nonsteel producers.

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

Table L-4.--Income-and loss experience of U.S. producers on their operations producing carbon and alloy steel wire rods, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers 2/				
Net sales--------million dollars--	717	602	619	354	403
Cost of goods sold----------do----	719	642	643	422	461
Gross profit----------------do----	(2)	(40)	(24)	(68)	(58)
General, selling, and administrative expenses--million dollars--	21	20	21	14	15
Operating income or (loss)--do----	(23)	(60)	(45)	(82)	(73)
Operating income or (loss) margin percent--	(3.2)	(10.0)	(7.3)	(23.2)	(18.1)
	Nonintegrated producers 3/				
Net sales--------million dollars--	242	237	379	358	377
Cost of goods sold----------do----	217	217	354	333	346
Gross profit----------------do----	25	20	25	25	31
General, selling, and administrative expenses--million dollars--	6	7	17	18	16
Operating income (loss)-----do----	19	13	8	7	15
Operating income (loss) margin percent--	7.9	5.5	2.1	2.0	4.0
	Total				
Net sales--------million dollars--	959	839	998	712	780
Cost of goods sold----------do----	936	859	997	755	807
Gross profit----------------do----	23	(20)	1	(43)	(27)
General, selling, and administrative expenses--million dollars--	27	27	38	32	31
Operating income or (loss)--do----	(4)	(47)	(37)	(75)	(58)
Operating income or (loss) margin percent--	(0.4)	(5.6)	(3.7)	(10.5)	(7.4)

1/ The number of firms reporting data was as follows: 5 integrated producers, 5 nonintegrated producers, and no nonsteel producers.
2/ J&L stopped production of wire rods in November 1981.
3/ Raritan started production of wire rods in 1981.

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

Table L-5.--Income-and loss experience of U.S. producers on their operations producing carbon and alloy steel wire and wire products, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers 2/				
Net sales--------million dollars--:	***	***	***	***	***
Cost of goods sold----------do----:	***	***	***	***	***
Gross profit----------------do----:	***	***	***	***	***
General, selling, and administrative expenses--million dollars--:	***	***	***	***	***
Operating income or (loss)--do----:	***	***	***	***	***
Operating income or (loss) margin percent--:	***	***	***	***	***
	Nonintegrated producers				
Net sales--------million dollars--:	***	***	***	***	***
Cost of goods sold----------do----:	***	***	***	***	***
Gross profit----------------do----:	***	***	***	***	***
General, selling, and administrative expenses--million dollars--:	***	***	***	***	***
Operating income or (loss)--do----:	***	***	***	***	***
Operating income or (loss) margin percent--:	***	***	***	***	***
	Nonsteel producers 3/				
Net sales--------million dollars--:	472	455	518	410	422
Cost of goods sold----------do----:	391	377	422	356	365
Gross profit----------------do----:	81	78	96	54	57
General, selling, and administrative expenses--million dollars--:	52	57	66	70	62
Operating income or (loss)--do----:	29	21	30	(16)	(5)
Operating income or (loss) margin percent--:	6.1	4.6	5.8	(3.9)	(1.2)
	Total				
Net sales--------million dollars--:	1,104	1,020	1,102	821	760
Cost of goods sold----------do----:	960	906	971	794	728
Gross profit----------------do----:	144	114	131	27	32
General, selling, and administrative expenses--million dollars--:	88	93	103	104	89
Operating income or (loss)--do----:	56	21	28	(77)	(57)
Operating income or (loss) margin percent--:	5.1	2.1	2.5	(9.4)	(7.5)

1/ The number of firms reporting data was as follows: 4 integrated producers, 2 nonintegrated producers, and 18 nonsteel producers.

2/ J&L stopped production of wire and wire products in November 1981.

3/ Muskegon Wire started production of wire and wire products in 1980.

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

Table L-6.--Income and loss experience of U.S. producers on their operations producing carbon and alloy steel railway-type products, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers 2/				
Net sales--------million dollars--:	***	***	***	***	***
Cost of goods sold----------do----:	***	***	***	***	***
Gross profit----------------do----:	***	***	***	***	***
General, selling, and administrative expenses--million dollars--:	***	***	***	***	***
Operating income or (loss)--do----:	***	***	***	***	***
Operating income or (loss) margin percent--:	***	***	***	***	***
	Nonintegrated producers				
Net sales--------million dollars--:	***	***	***	***	***
Cost of goods sold----------do----:	***	***	***	***	***
Gross profit----------------do----:	***	***	***	***	***
General, selling, and administrative expenses--million dollars--:	***	***	***	***	***
Operating income or (loss)--do----:	***	***	***	***	***
Operating income or (loss) margin percent--:	***	***	***	***	***
	Total				
Net sales--------million dollars--:	474	557	516	282	299
Cost of goods sold----------do----:	394	456	441	304	326
Gross profit----------------do----:	80	101	75	(22)	(27)
General, selling, and administrative expenses--million dollars--:	14	13	17	17	18
Operating income or (loss)--do----:	66	88	58	(39)	(45)
Operating income or (loss) margin percent--:	13.9	15.8	11.2	(13.8)	(15.1)

1/ The number of firms reporting data was as follows: 4 integrated producers, 2 nonintegrated producers, and no nonsteel producers.

2/ J&L stopped production of railway-type products at the end of 1979. Wheeling-Pittsburgh started production of such products in 1981.

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

Table L-7.--Income-and loss experience of U.S. producers on their operations producing carbon and alloy steel bars, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers 2/				
Net sales--------million dollars--:	2,845	2,183	2,562	1,672	1,672
Cost of goods sold----------do----:	2,592	2,135	2,418	1,896	1,786
Gross profit----------------do----:	253	48	144	(223)	(115)
General, selling, and administrative expenses--million dollars--:	84	81	91	102	77
Operating income or (loss)--do----:	169	(33)	54	(326)	(192)
Operating income or (loss) margin percent--:	6.0	(1.5)	2.1	(19.5)	(11.5)
	Nonintegrated producers				
Net sales--------million dollars--:	***	***	***	***	***
Cost of goods sold----------do----:	***	***	***	***	***
Gross profit----------------do----:	***	***	***	***	***
General, selling, and administrative expenses--million dollars--:	***	***	***	***	***
Operating income or (loss)--do----:	***	***	***	***	***
Operating income or (loss) margin percent--:	***	***	***	***	***
	Nonsteel producers				
Net sales--------million dollars--:	***	***	***	***	***
Cost of goods sold----------do----:	***	***	***	***	***
Gross profit----------------do----:	***	***	***	***	***
General, selling, and administrative expenses--million dollars--:	***	***	***	***	***
Operating income or (loss)--do----:	***	***	***	***	***
Operating income or (loss) margin percent--:	***	***	***	***	***
	Total				
Net sales--------million dollars--:	3,555	2,854	3,350	2,200	2,146
Cost of goods sold----------do----:	3,170	2,684	3,061	2,358	2,207
Gross profit----------------do----:	386	170	289	(159)	(61)
General, selling, and administrative expenses--million dollars--:	127	133	152	156	133
Operating income or (loss)--do----:	259	37	136	(314)	(194)
Operating income or (loss) margin percent--:	7.3	1.3	4.1	(14.3)	(9.0)

1/ The number of firms reporting data was as follows: 7 integrated producers, 10 nonintegrated producers, and 1 nonsteel producer.

2/ Rouge and Armco stopped production of bars in 1980 and 1982, respectively.

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

Table L-8.--Income-and loss experience of U.S. producers on their operations producing carbon and alloy steel structural shapes and units, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers				
Net sales--------million dollars--:	1,467	1,478	1,488	996	823
Cost of goods sold----------do----:	1,396	1,473	1,499	1,131	956
Gross profit----------------do----:	70	5	(11)	(136)	(133)
General, selling, and administrative expenses--million dollars--:	49	54	56	55	49
Operating income or (loss)--do----:	21	(49)	(67)	(191)	(182)
Operating income or (loss) margin percent--:	1.4	(3.3)	(4.5)	(19.1)	(22.1)
	Nonintegrated producers 2/				
Net sales--------million dollars--:	***	***	***	***	***
Cost of goods sold----------do----:	***	***	***	***	***
Gross profit----------------do----:	***	***	***	***	***
General, selling, and administrative expenses--million dollars--:	***	***	***	***	***
Operating income or (loss)--do----:	***	***	***	***	***
Operating income or (loss) margin percent--:	***	***	***	***	***
	Nonsteel producers				
Net sales--------million dollars--:	***	***	***	***	***
Cost of goods sold----------do----:	***	***	***	***	***
Gross profit----------------do----:	***	***	***	***	***
General, selling, and administrative expenses--million dollars--:	***	***	***	***	***
Operating income or (loss)--do----:	***	***	***	***	***
Operating income or (loss) margin percent--:	***	***	***	***	***
	Total				
Net sales--------million dollars--:	1,810	1,795	1,888	1,325	1,077
Cost of goods sold----------do----:	1,664	1,738	1,831	1,435	1,214
Gross profit----------------do----:	146	57	57	(111)	(137)
General, selling, and administrative expenses--million dollars--:	66	72	80	76	71
Operating income or (loss)--do----:	79	(14)	(23)	(186)	(208)
Operating income or (loss) margin percent--:	4.4	(0.8)	(1.2)	(14.1)	(19.3)

1/ The number of firms reporting data was as follows: 6 integrated producers, 5 nonintegrated producers, and 1 nonsteel producer.
2/ West Virginia Steel started its operation in August 1982.

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

Table L-9.--Income-and loss experience of U.S. producers on their operations producing carbon and alloy steel pipes and tubes and blanks therefor, by types of producers, accounting years 1979-83 1/

Item	1979	1980	1981	1982	1983
	Integrated producers				
Net sales--------million dollars--	2,457	3,356	5,111	2,256	772
Cost of goods sold----------do----	2,227	3,027	4,006	2,072	1,159
Gross profit----------------do----	230	329	1,105	184	(387)
General, selling, and administrative expenses--million dollars--	76	96	123	120	88
Operating income or (loss)--do----	154	233	982	64	(475)
Operating income or (loss) margin percent--	6.3	6.9	19.2	2.8	(61.5)
	Nonintegrated producers 2/				
Net sales--------million dollars--	651	707	889	1,133	532
Cost of goods sold----------do----	541	575	661	763	478
Gross profit----------------do----	110	132	228	370	54
General, selling, and administrative expenses--million dollars--	34	37	47	72	54
Operating income or (loss)--do----	76	95	181	298	0
Operating income or (loss) margin percent--	11.7	13.4	20.4	26.3	-
	Total				
Net sales--------million dollars--	3,108	4,063	6,000	3,389	1,304
Cost of goods sold----------do----	2,768	3,602	4,667	2,835	1,637
Gross profit----------------do----	340	461	1,333	554	(333)
General, selling, and administrative expenses--million dollars--	110	133	170	192	142
Operating income or (loss)--do----	230	328	1,163	362	(475)
Operating income or (loss) margin percent--	7.4	8.1	19.4	10.7	(36.4)

1/ The number of firms reporting data was as follows: 8 integrated producers, 4 nonintegrated producers, and no nonsteel producers.
2/ Newport started producing pipes and tubes in 1981.

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

APPENDIX M

DATA ON THE AVERAGE UNIT VALUES OF U.S. PRODUCERS' DOMESTIC SHIPMENTS AND U.S. IMPORTS FOR CONSUMPTION DURING 1981-83 OF 9 GROUPS OF CARBON AND ALLOY STEEL PRODUCTS

Table M-1.—Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981—December 1983

(Per ton)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	$298	$429	-
April-June	292	341	-
July-September	431	494	-
October-December	352	453	-
1982:			
January-March	456	600	-
April-June	433	609	-
July-September	418	445	-
October-December	390	360	-
1983:			
January-March	281	465	-
April-June	196	352	-
July-September	234	448	-
October-December	317	437	-

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

Table M-2.—Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981—December 1983

(January-March 1981 = 100)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	100	100	-
April-June	98	79	-
July-September	144	115	-
October-December	118	106	-
1982:			
January-March	153	140	-
April-June	145	142	-
July-September	140	104	-
October-December	131	84	-
1983:			
January-March	94	108	-
April-June	66	82	-
July-September	78	105	-
October-December	106	102	-

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

Table M-3.—Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Product and period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	$245	-	$565	$499	-	$4520	$260
April-June--------	238	$414	475	220	-	-	254
July-September----	244	463	271	226	$318	-	252
October-December--	263	364	488	214	280	-	293
1982:							
January-March-----	239	465	422	269	232	-	278
April-June--------	286	486	357	235	311	-	305
July-September----	231	440	280	202	324	-	238
October-December--	253	557	227	205	281	-	222
1983:							
January-March-----	214	594	229	205	332	-	217
April-June--------	207	560	224	171	291	-	209
July-September----	217	953	247	191	215	-	222
October-December--	212	759	200	167	281	-	206

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-4.—Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(January-March 1981 = 100)

Product and period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	100	-	100	100	-	100	100
April-June--------	97	100	84	44	-	-	97
July-September----	100	112	48	45	100	-	97
October-December--	107	88	86	43	90	-	112
1982:							
January-March-----	98	112	75	54	75	-	107
April-June--------	117	118	63	47	100	-	117
July-September----	94	106	50	40	105	-	91
October-December--	103	133	40	41	91	-	85
1983:							
January-March-----	87	142	40	41	107	-	83
April-June--------	84	136	40	34	94	-	80
July-September----	89	230	44	38	69	-	85
October-December--	87	182	35	34	91	-	79

1/ Excludes Caribbean Basin (CBERA) countries.
2/ Data or computation error.

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

Table M-5.—Carbon and alloy steel plate: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March-----	$444	$634	-
April-June--------	456	674	-
July-September----	465	708	-
October-December--	469	705	-
1982:			
January-March-----	477	700	-
April-June--------	460	704	-
July-September----	439	729	-
October-December--	419	664	-
1983:			
January-March-----	396	635	-
April-June--------	393	617	-
July-September----	378	659	-
October-December--	362	654	-

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

Table M-6.—Carbon and alloy steel plates: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(January-March 1981 = 100)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March-----	100	100	-
April-June--------	103	106	-
July-September----	105	110	-
October-December--	106	111	-
1982:			
January-March-----	107	110	-
April-June--------	103	111	-
July-September----	99	115	-
October-December--	94	105	-
1983:			
January-March-----	89	100	-
April-June--------	88	97	-
July-September----	85	104	-
October-December--	81	103	-

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

Table M-7.—Carbon and alloy steel plate: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Product and period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	$357	$373	$372	$347	$354	-	$357
April-June--------	391	413	354	357	352	-	364
July-September----	388	430	346	349	358	-	358
October-December--	391	395	364	382	366	-	371
1982:							
January-March-----	394	411	344	383	347	-	365
April-June--------	362	422	340	340	325	-	345
July-September----	381	424	314	314	301	-	324
October-December--	403	402	291	293	274	-	306
1983:							
January-March-----	316	333	275	256	248	-	269
April-June--------	240	348	260	264	217	-	248
July-September----	261	385	265	241	211	-	242
October-December--	269	408	267	258	234	-	264

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-8.—Carbon and alloy steel plate: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	100	100	100	100	100	-	100
April-June--------	110	111	95	103	99	-	102
July-September----	109	115	93	101	101	-	100
October-December--	110	106	98	110	103	-	104
1982:							
January-March-----	110	110	92	110	98	-	102
April-June--------	102	113	91	98	92	-	97
July-September----	107	114	84	90	85	-	91
October-December--	113	108	78	84	77	-	86
1983:							
January-March-----	89	89	74	74	70	-	75
April-June--------	67	93	70	76	61	-	69
July-September----	73	103	71	69	60	-	68
October-December--	75	109	72	74	66	-	74

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-9.—Carbon and alloy steel sheets and strip: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	$438	$452	$1161
April-June	447	471	1201
July-September	462	495	1139
October-December	453	487	1209
1982:			
January-March	469	480	1105
April-June	459	436	1185
July-September	463	468	1205
October-December	440	447	1091
1983:			
January-March	436	424	1403
April-June	437	454	1308
July-September	442	446	1354
October-December	450	463	1415

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

Table M-10.—Carbon and alloy steel sheets and strip: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	100	100	100
April-June	102	104	103
July-September	105	110	98
October-December	103	108	104
1982:			
January-March	107	106	95
April-June	105	97	102
July-September	106	104	104
October-December	101	99	94
1983:			
January-March	100	94	121
April-June	100	100	113
July-September	101	99	117
October-December	103	102	122

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

Table M-11.—Carbon and alloy steel sheets and strip: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March	$408	$457	$409	$409	$370	-	$427
April-June	420	444	383	412	378	-	417
July-September	430	453	383	401	363	$1698	413
October-December	446	445	379	403	373	-	404
1982:							
January-March	469	433	411	393	355	-	416
April-June	439	459	380	380	308	-	403
July-September	435	457	395	389	323	-	414
October-December	447	434	356	386	328	-	383
1983:							
January-March	437	421	368	331	291	858	376
April-June	431	440	349	316	292	-	369
July-September	406	441	349	315	290	-	362
October-December	418	408	353	319	284	-	355

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-12.—Carbon and alloy steel sheets and strip: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(January-March 1981 = 100)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March	100	100	100	100	100	-	100
April-June	103	97	94	101	102	-	98
July-September	105	99	94	98	98	2/	97
October-December	109	97	93	99	101	-	95
1982:							
January-March	115	95	101	96	96	-	98
April-June	108	100	93	93	83	-	94
July-September	107	100	97	95	87	-	97
October-December	110	95	87	94	89	-	90
1983:							
January-March	107	92	90	81	79	2/	88
April-June	106	96	85	77	79	-	87
July-September	100	96	85	77	78	-	85
October-December	102	89	86	78	77	-	83

1/ Excludes Caribbean Basin (CBERA) countries.
2/ Data or computation error.

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

Table M-13.—Carbon and alloy steel wire rods: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	$412	$367	-
April-June	424	366	-
July-September	464	358	-
October-December	464	357	-
1982:			
January-March	474	355	-
April-June	475	345	-
July-September	468	350	-
October-December	460	308	-
1983:			
January-March	449	322	-
April-June	461	312	-
July-September	400	309	-
October-December	403	333	-

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

Table M-14.—Carbon and alloy steel wire rods: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	100	100	-
April-June	103	100	-
July-September	113	98	-
October-December	112	97	-
1982:			
January-March	115	97	-
April-June	115	94	-
July-September	114	95	-
October-December	111	84	-
1983:			
January-March	109	88	-
April-June	112	85	-
July-September	97	84	-
October-December	98	91	-

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

Table M-15.—Carbon and alloy steel wire rods: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Product and period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	$332	$431	$347	$431	$317	-	$357
April-June--------	339	447	387	401	321	-	377
July-September----	340	455	390	493	311	-	385
October-December--	313	446	364	553	338	$300	372
1982:							
January-March-----	351	441	220	501	304	286	334
April-June--------	338	446	337	476	327	271	352
July-September----	326	407	320	369	267	258	332
October-December--	326	417	318	294	226	255	313
1983:							
January-March-----	328	381	307	244	212	254	280
April-June--------	325	389	360	233	209	233	294
July-September----	315	385	351	246	202	224	294
October-December--	318	396	329	261	210	231	305

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-16.—Carbon and alloy steel wire rods: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(January-March 1981 = 100)

Product and period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	100	100	100	100	100	-	100
April-June--------	102	104	111	93	101	-	105
July-September----	102	106	112	114	98	-	108
October-December--	94	104	105	128	106	2/	104
1982:							
January-March-----	106	102	63	116	96	2/	93
April-June--------	102	104	97	110	103	2/	98
July-September----	98	94	92	85	84	2/	93
October-December--	98	97	92	68	71	2/	88
1983:							
January-March-----	99	89	88	57	67	2/	78
April-June--------	98	90	104	54	66	2/	82
July-September----	95	89	101	57	64	2/	82
October-December--	96	92	95	61	66	2/	85

1/ Excludes Caribbean Basin (CBERA) countries.
2/ Data or computation error.

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

Table M-17.—Carbon and alloy steel wire and wire products: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981-December 1983

(Per ton)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	$912	$588	$1095
April-June	923	587	1071
July-September	988	588	1070
October-December	958	557	1123
1982:			
January-March	966	587	1103
April-June	967	567	977
July-September	971	557	967
October-December	1033	553	519
1983:			
January-March	893	575	1030
April-June	866	547	890
July-September	844	548	904
October-December	886	550	862

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

Table M-18.—Carbon and alloy steel wire and wire products: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981-December 1983

(January-March 1981 = 100)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	100	100	100
April-June	101	100	98
July-September	108	100	98
October-December	105	95	103
1982:			
January-March	106	100	101
April-June	106	97	89
July-September	107	95	88
October-December	113	94	47
1983:			
January-March	98	98	94
April-June	95	93	81
July-September	93	93	83
October-December	97	94	79

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

Table M-19.—Carbon and alloy steel wire and wire products: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March	$582	$693	$812	$617	$574	$3742	$648
April-June	608	693	826	601	564	2343	648
July-September	623	718	815	582	597	1559	663
October-December	620	700	808	635	617	2371	671
1982:							
January-March	616	680	843	594	627	1895	668
April-June	605	689	793	640	611	1862	663
July-September	681	681	724	564	570	–	624
October-December	585	621	772	557	560	3271	613
1983:							
January-March	591	600	717	495	519	2975	581
April-June	607	604	710	477	499	950	577
July-September	606	595	705	492	501	–	575
October-December	607	622	655	520	514	–	579

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-20.—Carbon and alloy steel wire and wire products: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March	100	100	100	100	100	100	100
April-June	103	100	102	97	98	63	100
July-September	107	104	100	94	104	42	102
October-December	107	101	100	103	107	63	104
1982:							
January-March	106	98	104	96	109	51	103
April-June	104	99	98	104	106	50	102
July-September	103	98	89	91	99	–	96
October-December	100	90	95	90	98	87	95
1983:							
January-March	102	87	88	80	91	80	90
April-June	104	87	87	77	87	25	89
July-September	104	86	87	80	87	–	89
October-December	104	90	81	84	90	–	89

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-21.—Carbon and alloy steel railway-type products: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March-----	$497	$765	-
April-June--------	532	733	-
July-September----	545	788	-
October-December--	519	710	-
1982:			
January-March-----	514	713	-
April-June--------	516	692	-
July-September----	539	737	-
October-December--	456	740	-
1983:			
January-March-----	457	748	-
April-June--------	428	681	-
July-September----	403	768	-
October-December--	396	701	-

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

Table M-22.—Carbon and alloy steel railway-type products: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March-----	100	100	-
April-June--------	107	96	-
July-September----	110	103	-
October-December--	104	93	-
1982:			
January-March-----	104	93	-
April-June--------	104	90	-
July-September----	109	96	-
October-December--	92	97	-
1983:			
January-March-----	92	98	-
April-June--------	86	89	-
July-September----	81	100	-
October-December--	80	92	-

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

Table M-23.—Carbon and alloy steel railway-type products: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March	$416	$609	$442	$1101	$876	-	$475
April-June	431	525	467	859	595	-	479
July-September	219	559	499	834	426	-	389
October-December	173	591	423	763	440	-	395
1982:							
January-March	280	491	463	746	475	-	438
April-June	382	481	441	939	455	-	449
July-September	451	486	483	3673	398	-	485
October-December	422	590	399	4168	680	-	474
1983:							
January-March	234	462	211	830	545	-	313
April-June	151	409	554	1021	543	-	401
July-September	205	334	479	1729	473	$2647	365
October-December	335	406	373	2874	481	-	403

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-24.—Carbon and alloy steel railway-type products: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March	100	100	100	100	100	-	100
April-June	104	86	106	78	68	-	101
July-September	53	92	113	76	49	-	82
October-December	42	97	96	69	50	-	83
1982:							
January-March	67	81	105	68	54	-	92
April-June	92	79	100	85	52	-	94
July-September	108	80	109	334	46	-	102
October-December	102	97	90	379	78	-	100
1983:							
January-March	56	76	48	75	62	-	66
April-June	36	67	126	93	62	-	84
July-September	49	55	108	157	54	2/	77
October-December	81	67	84	261	55	-	85

1/ Excludes Caribbean Basin (CBERA) countries.
2/ Data or computation error.

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

Table M-25.—Carbon and alloy steel bars: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981—December 1983

(Per ton)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	$496	$439	$584
April-June	496	444	623
July-September	527	460	674
October-December	525	448	641
1982:			
January-March	511	468	641
April-June	499	435	633
July-September	481	383	565
October-December	473	387	518
1983:			
January-March	482	382	588
April-June	458	381	609
July-September	463	391	538
October-December	463	383	583

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

Table M-26.—Carbon and alloy steel bars: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981—December 1983

(January—March 1981 = 100)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	100	100	100
April-June	100	101	107
July-September	106	105	115
October-December	106	102	110
1982:			
January-March	103	107	110
April-June	100	99	108
July-September	97	87	97
October-December	95	88	89
1983:			
January-March	97	87	101
April-June	92	87	104
July-September	93	89	92
October-December	93	87	100

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

Table M-27.—Carbon and alloy steel bars: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	$390	$468	$576	$438	$281	-	$436
April-June--------	414	478	524	497	389	$544	478
July-September----	439	472	524	489	334	-	478
October-December--	452	478	532	473	330	-	489
1982:							
January-March-----	427	491	606	539	335	-	502
April-June--------	464	526	584	545	379	-	517
July-September----	455	478	523	488	294	-	450
October-December--	439	452	483	492	311	-	434
1983:							
January-March-----	396	426	443	397	243	7477	367
April-June--------	424	402	417	359	210	-	348
July-September----	428	405	474	475	224	-	356
October-December--	459	407	421	418	246	231	364

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-28.—Carbon and alloy steel bars: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	100	100	100	100	100	-	100
April-June--------	106	102	91	113	139	2/	110
July-September----	113	101	91	112	119	-	110
October-December--	116	102	92	108	118	-	112
1982:							
January-March-----	110	105	105	123	119	-	115
April-June--------	119	112	102	124	135	-	119
July-September----	117	102	91	111	105	-	103
October-December--	113	97	84	112	111	-	100
1983:							
January-March-----	102	91	77	91	86	2/	84
April-June--------	109	86	72	82	75	-	80
July-September----	110	87	82	108	80	-	82
October-December--	118	87	73	95	88	2/	84

1/ Excludes Caribbean Basin (CBERA) countries.
2/ Data or computation error.

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

Table M-29.—Carbon and alloy steel structural shapes and units: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	$426	$348	$484
April-June	446	359	513
July-September	456	362	544
October-December	470	350	470
1982:			
January-March	473	332	514
April-June	475	317	476
July-September	475	305	501
October-December	461	320	513
1983:			
January-March	450	304	502
April-June	418	304	458
July-September	397	304	522
October-December	391	284	457

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

Table M-30.—Carbon and alloy steel structural shapes and units: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	100	100	100
April-June	105	103	106
July-September	107	104	112
October-December	110	101	97
1982:			
January-March	111	96	106
April-June	112	91	98
July-September	111	88	104
October-December	108	92	106
1983:			
January-March	106	87	104
April-June	98	87	95
July-September	93	88	108
October-December	92	82	94

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

Table M-31.—Carbon and alloy steel structural shapes and units: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	$417	$376	$384	$347	$396	-	$381
April-June--------	442	382	386	358	356	-	387
July-September----	479	366	393	377	346	-	392
October-December--	448	382	377	384	350	-	389
1982:							
January-March-----	416	413	391	402	483	-	406
April-June--------	428	406	382	366	367	-	390
July-September----	429	457	366	324	446	-	396
October-December--	488	421	355	289	394	-	384
1983:							
January-March-----	426	352	330	265	287	$355	339
April-June--------	407	332	315	256	274	-	319
July-September----	431	310	297	246	314	-	313
October-December--	391	298	304	266	341	472	319

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-32.—Carbon and alloy steel structural shapes and units: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	100	100	100	100	100	-	100
April-June--------	106	101	100	103	90	-	102
July-September----	115	97	102	109	87	-	103
October-December--	107	102	98	111	88	-	102
1982:							
January-March-----	100	110	102	116	122	-	107
April-June--------	103	108	99	106	93	-	103
July-September----	103	121	95	93	113	-	104
October-December--	117	112	92	83	99	-	101
1983:							
January-March-----	102	94	86	76	72	2/	89
April-June--------	98	88	82	74	69	-	84
July-September----	103	83	77	71	79	-	82
October-December--	94	79	79	77	86	2/	84

1/ Excludes Caribbean Basin (CBERA) countries.
2/ Data or computation error.

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

Table M-33.—Carbon and alloy steel pipes and tubes and blanks therefor: Average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	$1016	$1538	-
April-June	1086	1319	-
July-September	1226	1522	-
October-December	1342	1586	-
1982:			
January-March	1368	1707	-
April-June	1233	1687	-
July-September	831	1384	-
October-December	731	1271	-
1983:			
January-March	843	1216	-
April-June	800	1073	-
July-September	850	950	-
October-December	838	960	-

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

Table M-34.—Carbon and alloy steel pipes and tubes and blanks therefor: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983

(January-March 1981 = 100)

Product and Period	Integrated mills	Nonintegrated mills	Nonsteel producers
1981:			
January-March	100	100	-
April-June	107	86	-
July-September	121	99	-
October-December	132	103	-
1982:			
January-March	135	111	-
April-June	121	110	-
July-September	82	90	-
October-December	72	83	-
1983:			
January-March	83	79	-
April-June	79	70	-
July-September	84	62	-
October-December	82	62	-

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

Table M-35.—Carbon and alloy steel pipes and tubes and blanks therefor: Average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(Per ton)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	$711	$659	$594	$544	$438	-	$605
April-June--------	807	689	633	574	483	-	642
July-September----	822	780	714	597	512	-	705
October-December--	894	838	784	652	524	$394	757
1982:							
January-March-----	918	859	838	765	544	25200	794
April-June--------	875	930	829	690	518	787	824
July-September----	704	877	773	684	430	-	765
October-December--	560	778	757	546	369	-	626
1983:							
January-March-----	527	592	658	480	343	-	503
April-June--------	511	566	499	517	309	-	415
July-September----	503	466	534	352	321	-	397
October-December--	521	453	480	409	336	-	410

1/ Excludes Caribbean Basin (CBERA) countries.

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

Table M-36.—Carbon and alloy steel pipes and tubes and blanks therefor: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983

(January–March 1981 = 100)

Product and Period	Canada	Japan	EEC	Other developed countries	Developing countries 1/	CBERA	World
1981:							
January-March-----	100	100	100	100	100	-	100
April-June--------	113	105	107	105	110	-	106
July-September----	115	118	120	110	117	-	117
October-December--	126	127	132	120	120	2/	125
1982:							
January-March-----	129	130	141	141	124	2/	131
April-June--------	123	141	140	127	118	2/	136
July-September----	99	133	130	126	98	-	127
October-December--	79	118	127	100	84	-	104
1983:							
January-March-----	74	90	111	88	78	-	83
April-June--------	72	86	84	95	71	-	69
July-September----	71	71	90	65	73	-	66
October-December--	73	69	81	75	77	-	68

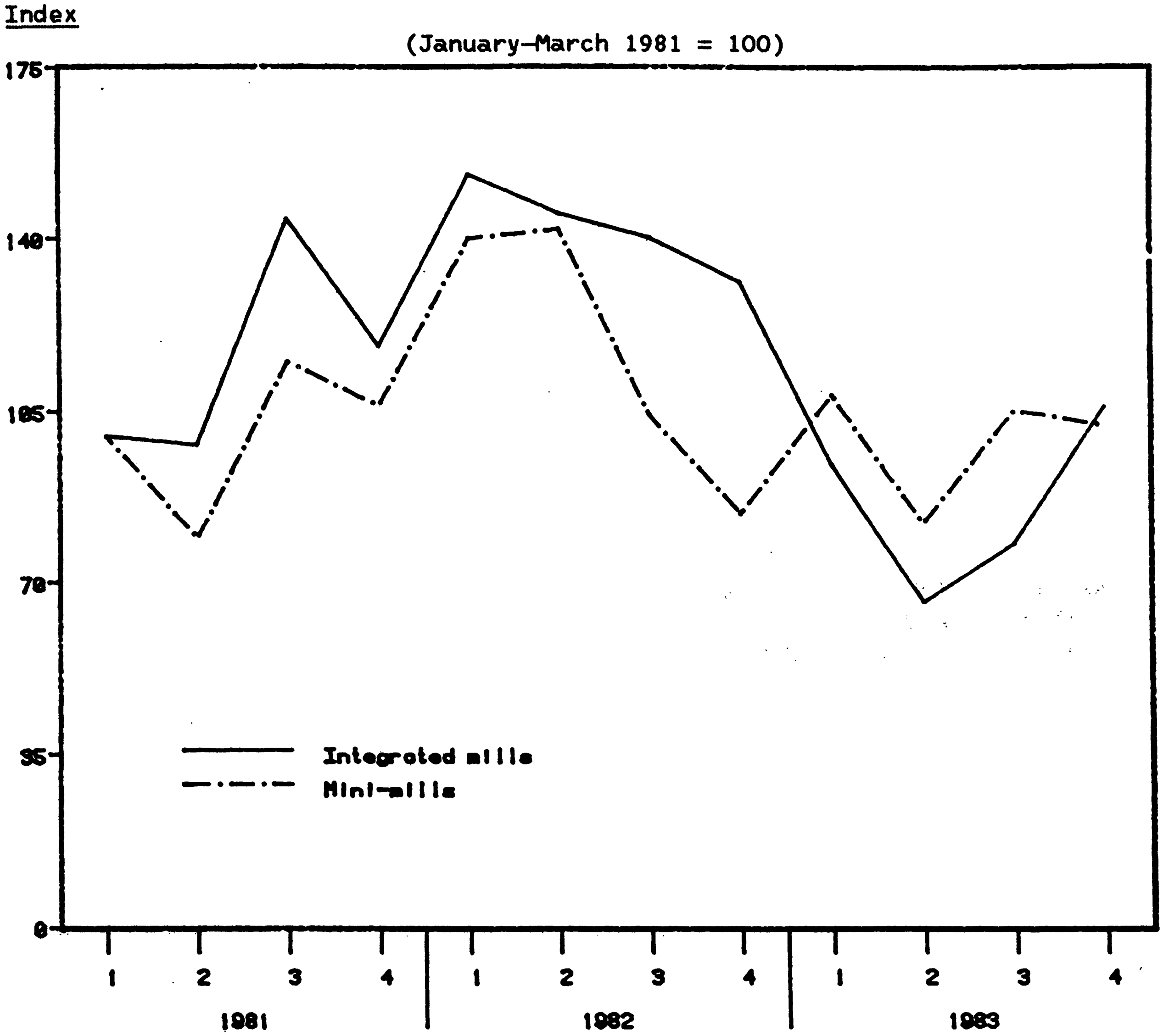
1/ Excludes Caribbean Basin (CBERA) countries.
2/ Data or computation error.

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

APPENDIX N

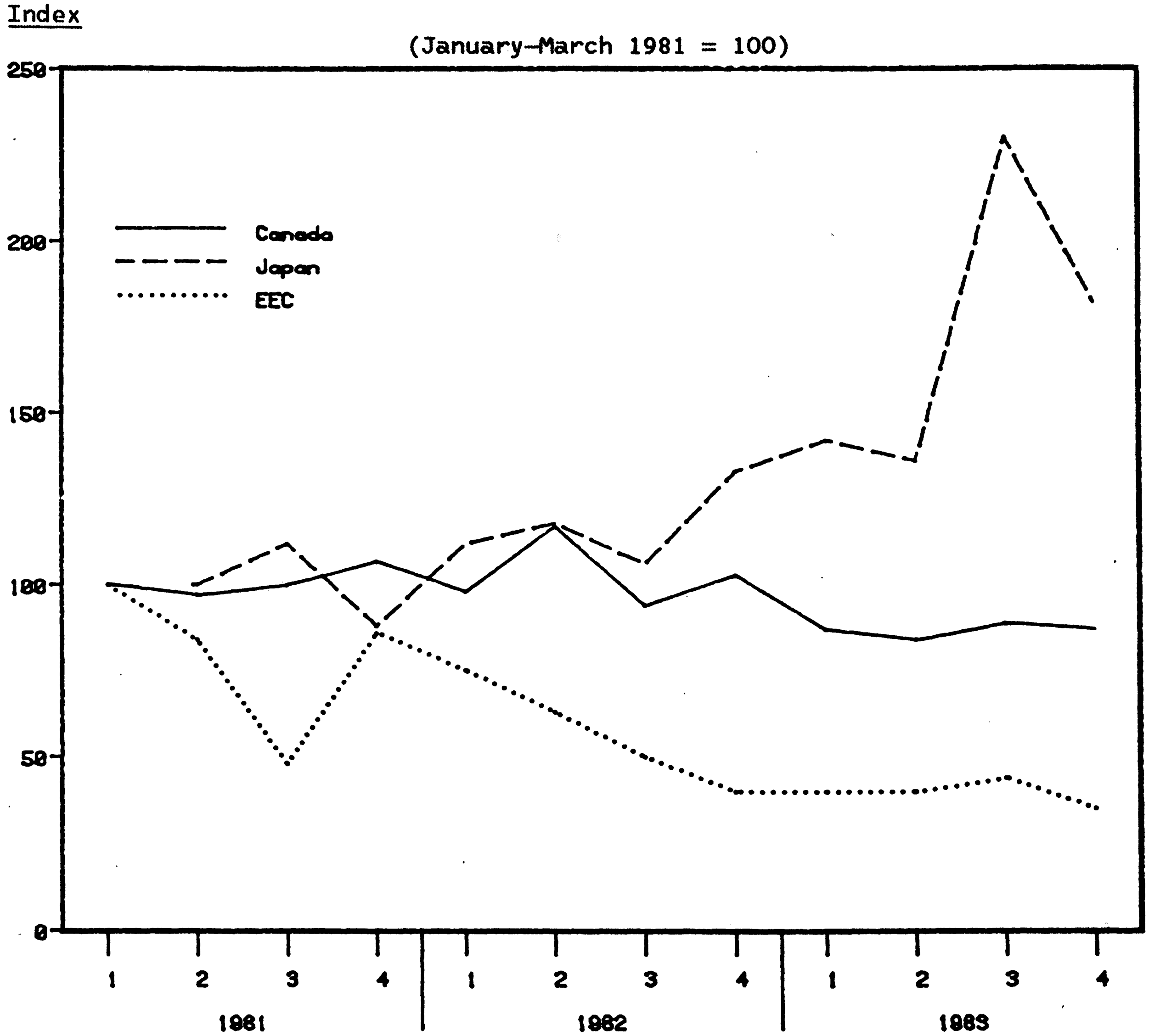
GRAPHIC PRESENTATIONS OF THE AVERAGE UNIT VALUES OF U.S. PRODUCERS' DOMESTIC SHIPMENTS AND U.S. IMPORTS FOR CONSUMPTION DURING 1981-83 OF 9 GROUPS OF CARBON AND ALLOY STEEL PRODUCTS

Figure N-1.—Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983



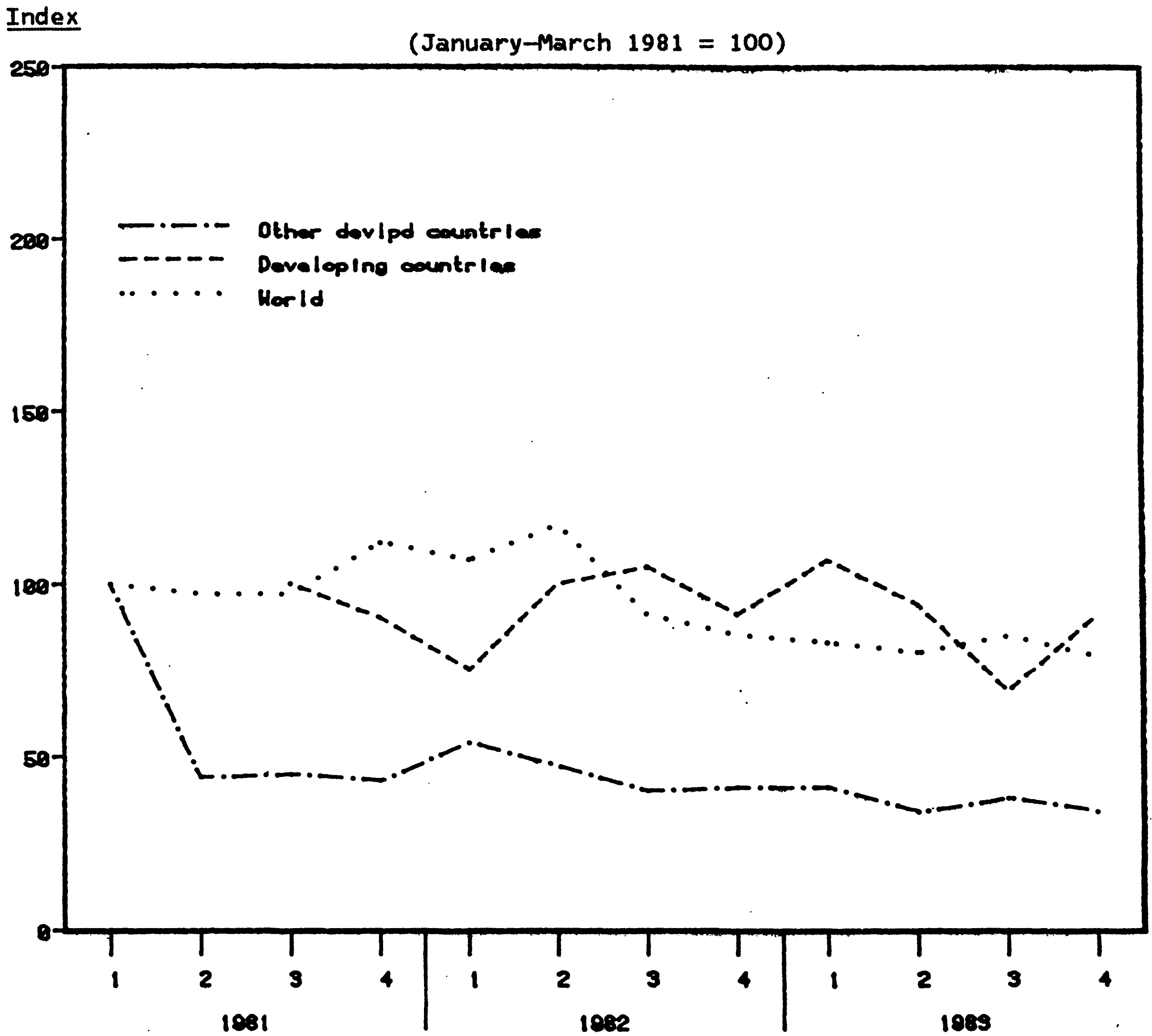
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure N-2.—Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



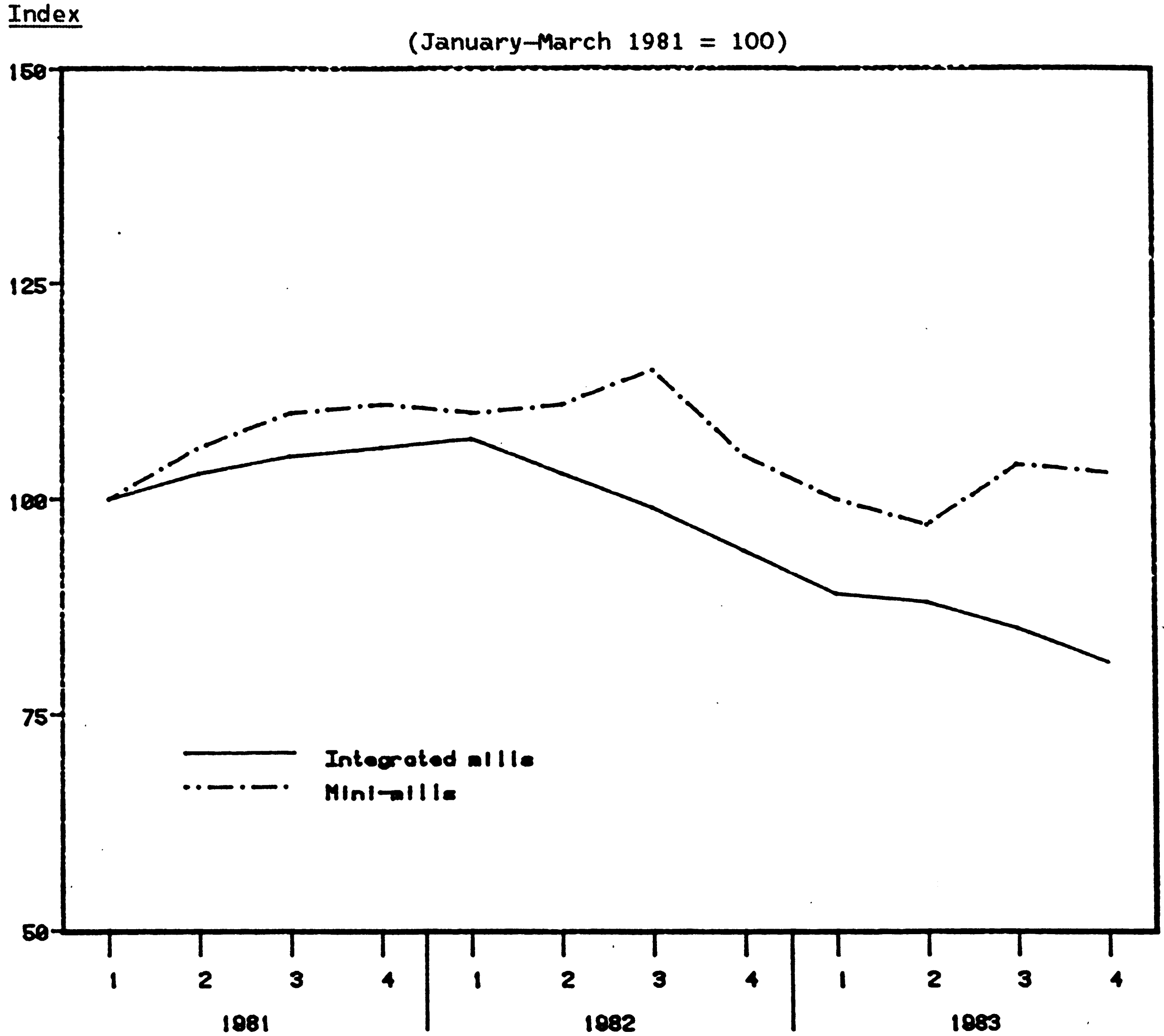
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-3.—Carbon and alloy steel ingots, blooms, billets, slabs, and sheet bars: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981—December 1983



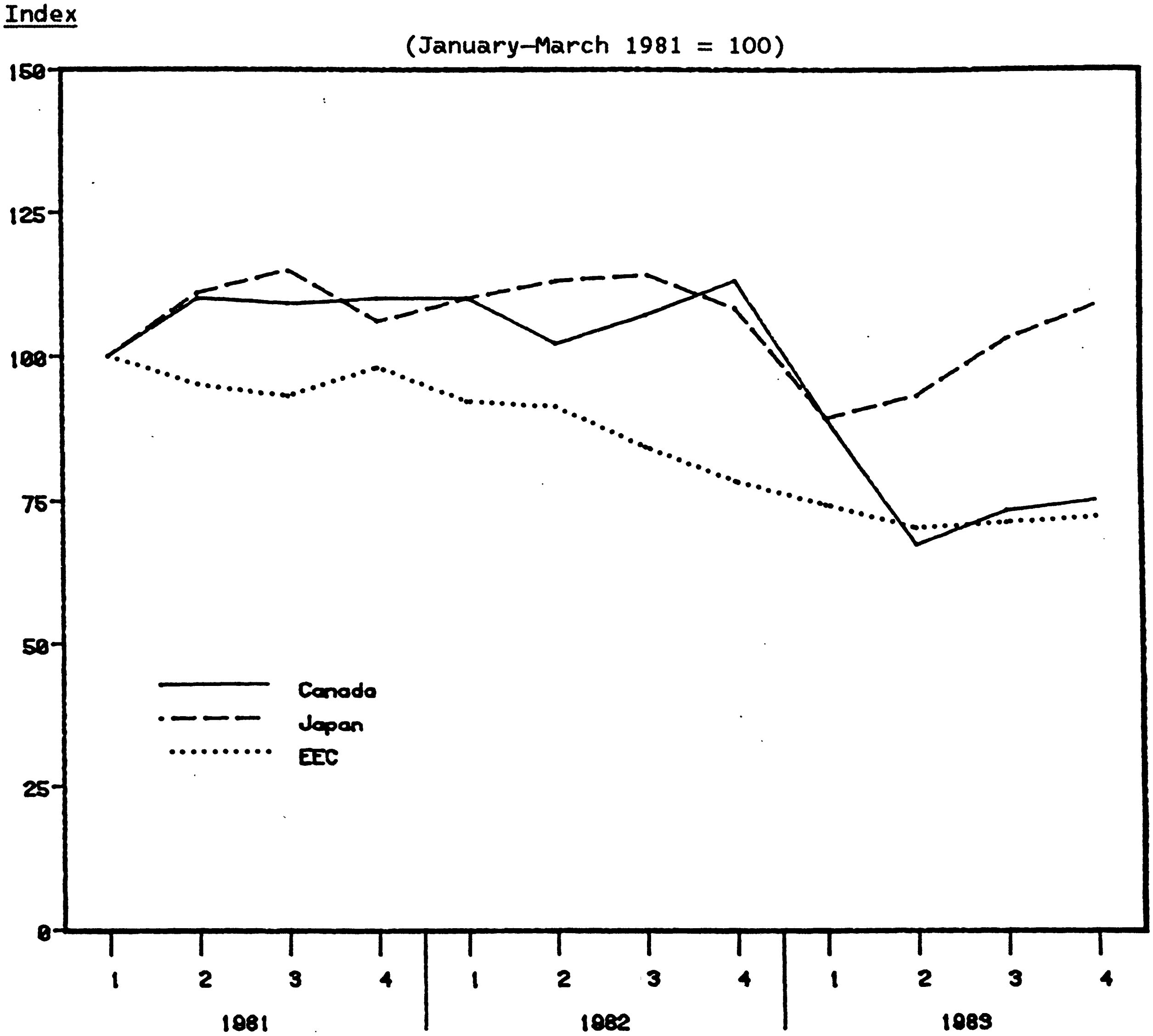
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-4.—Carbon and alloy steel plate: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983



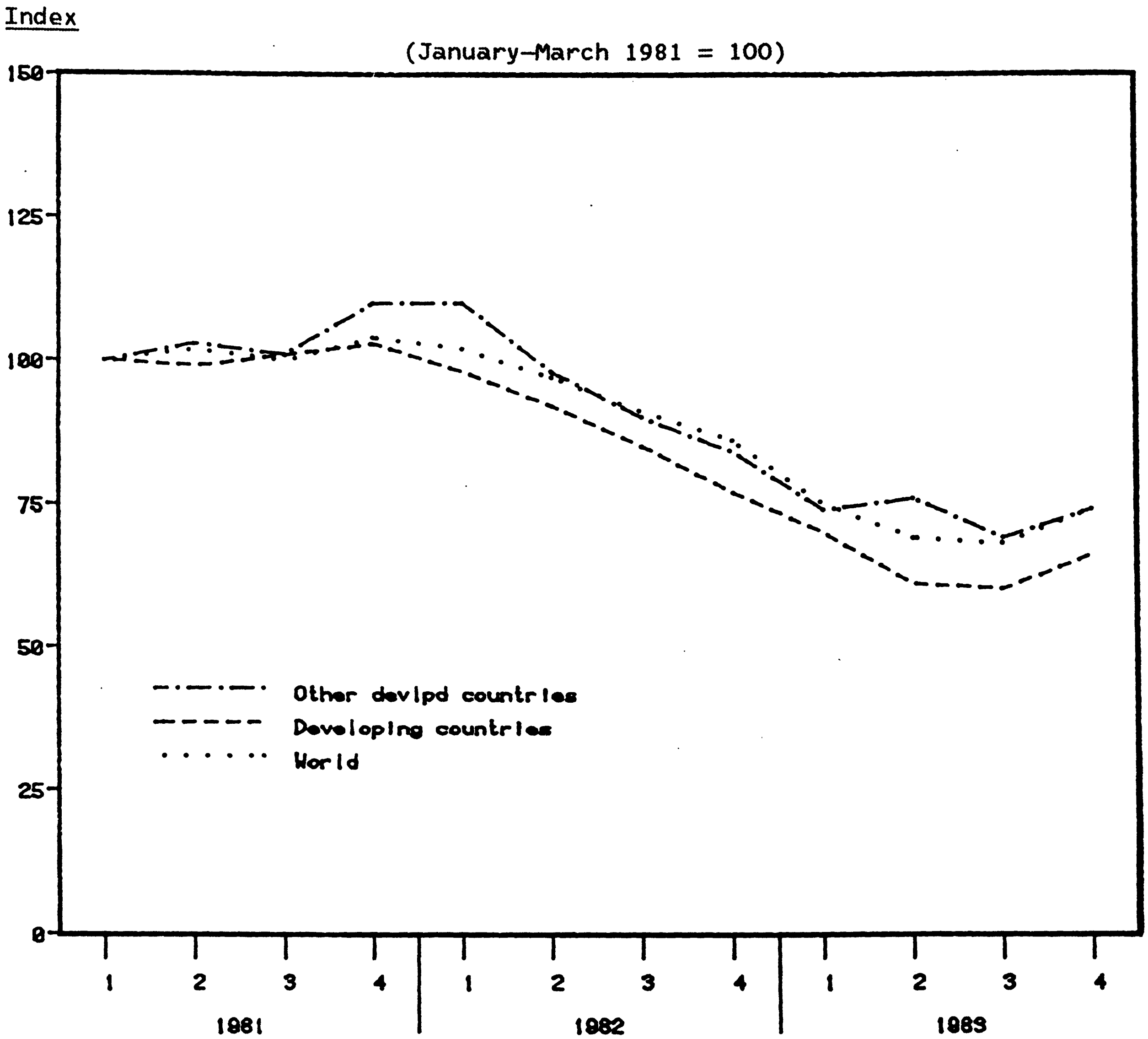
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure N-5.—Carbon and alloy steel plate: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



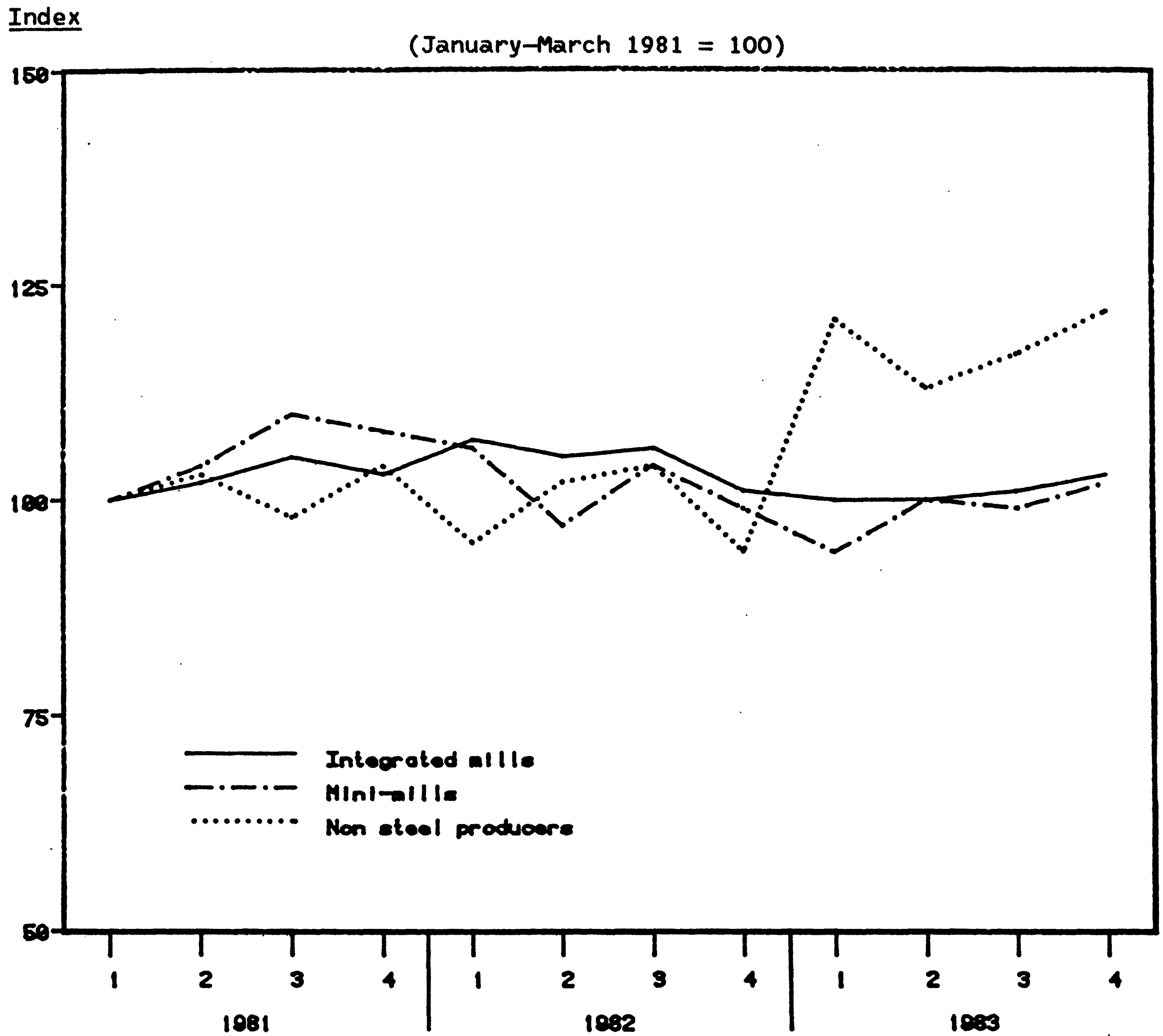
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-6.—Carbon and alloy steel plate: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



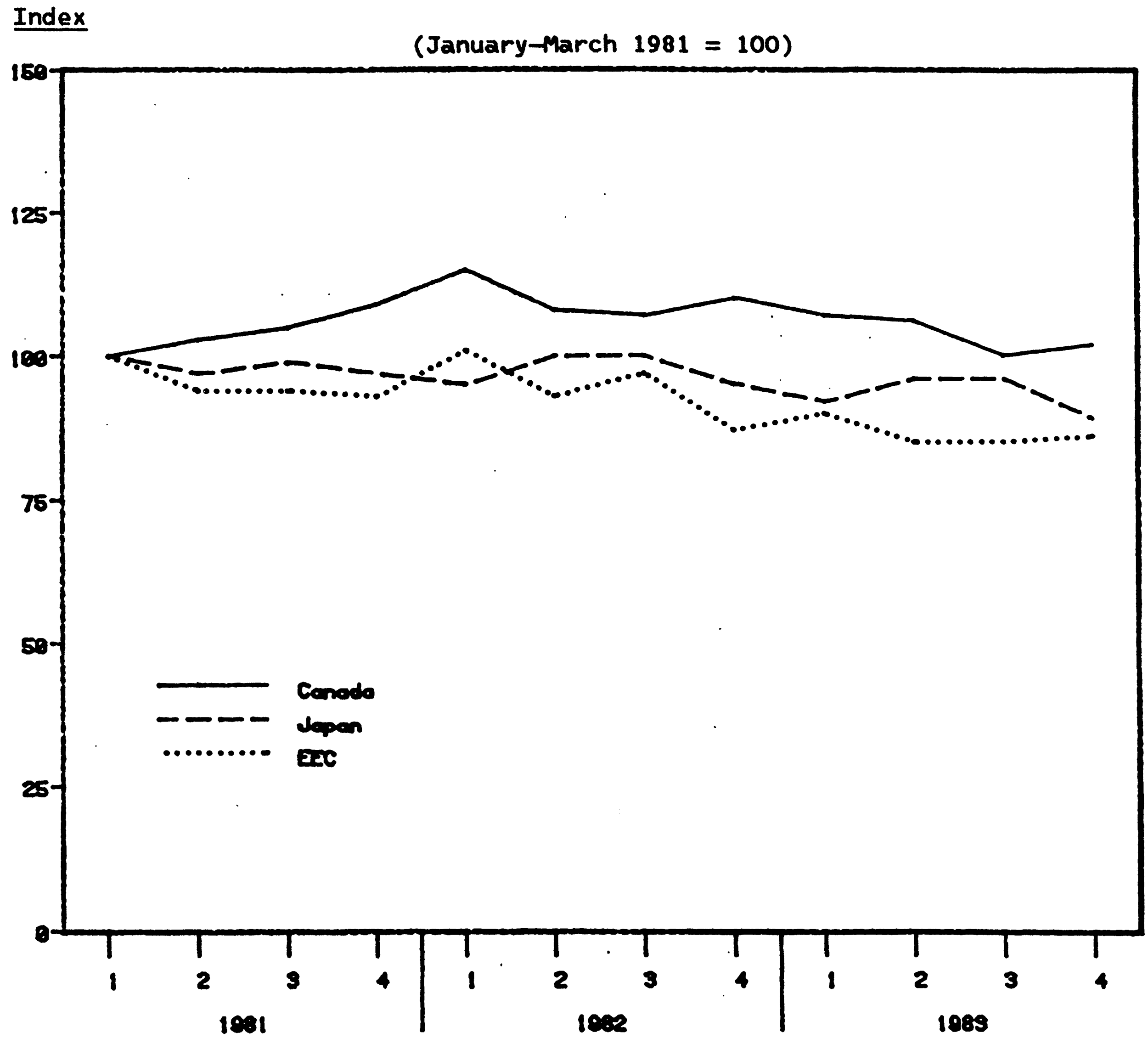
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-7.—Carbon and alloy steel sheets and strip: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983



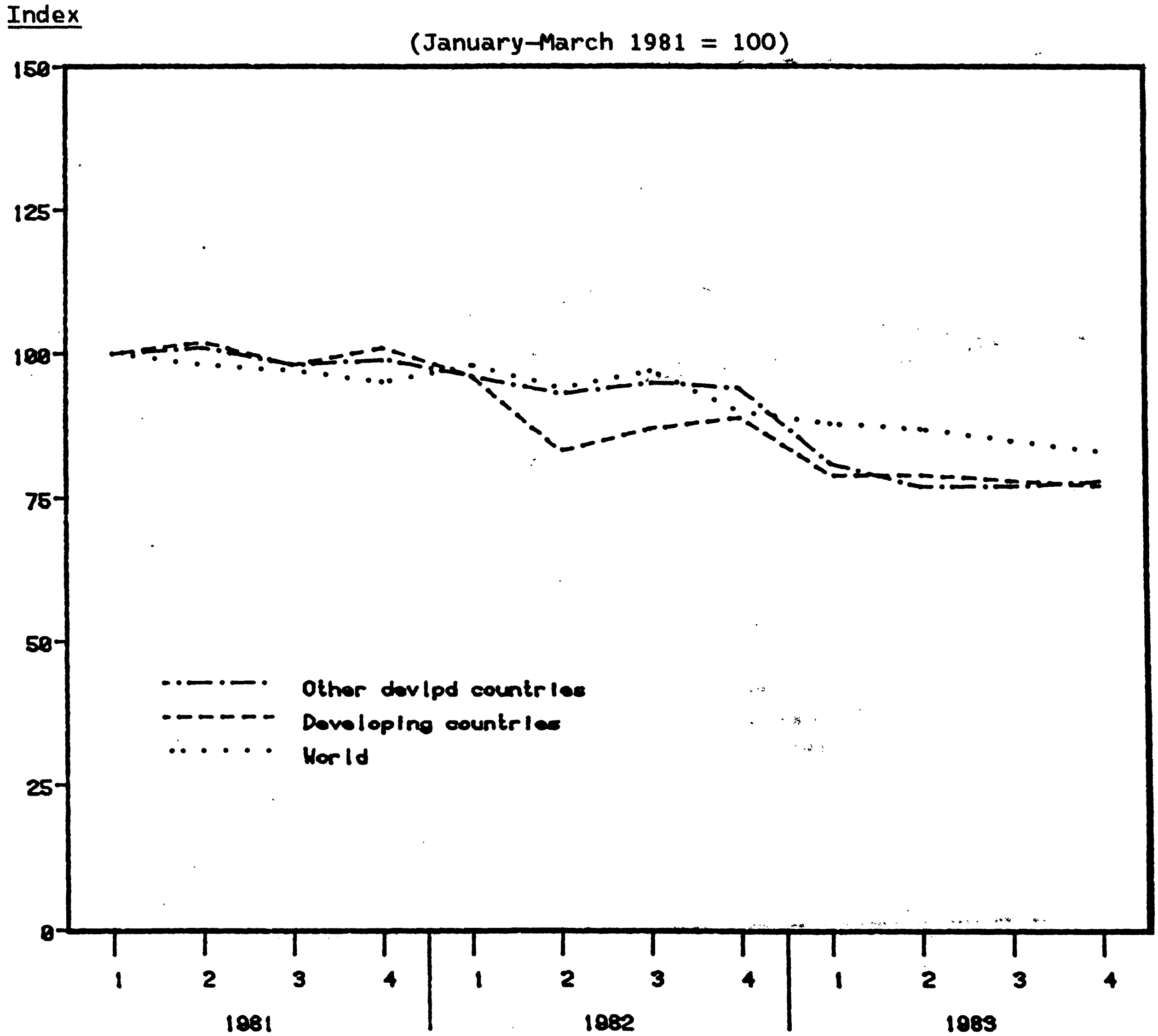
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure N-8.—Carbon and alloy steel sheets and strip: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



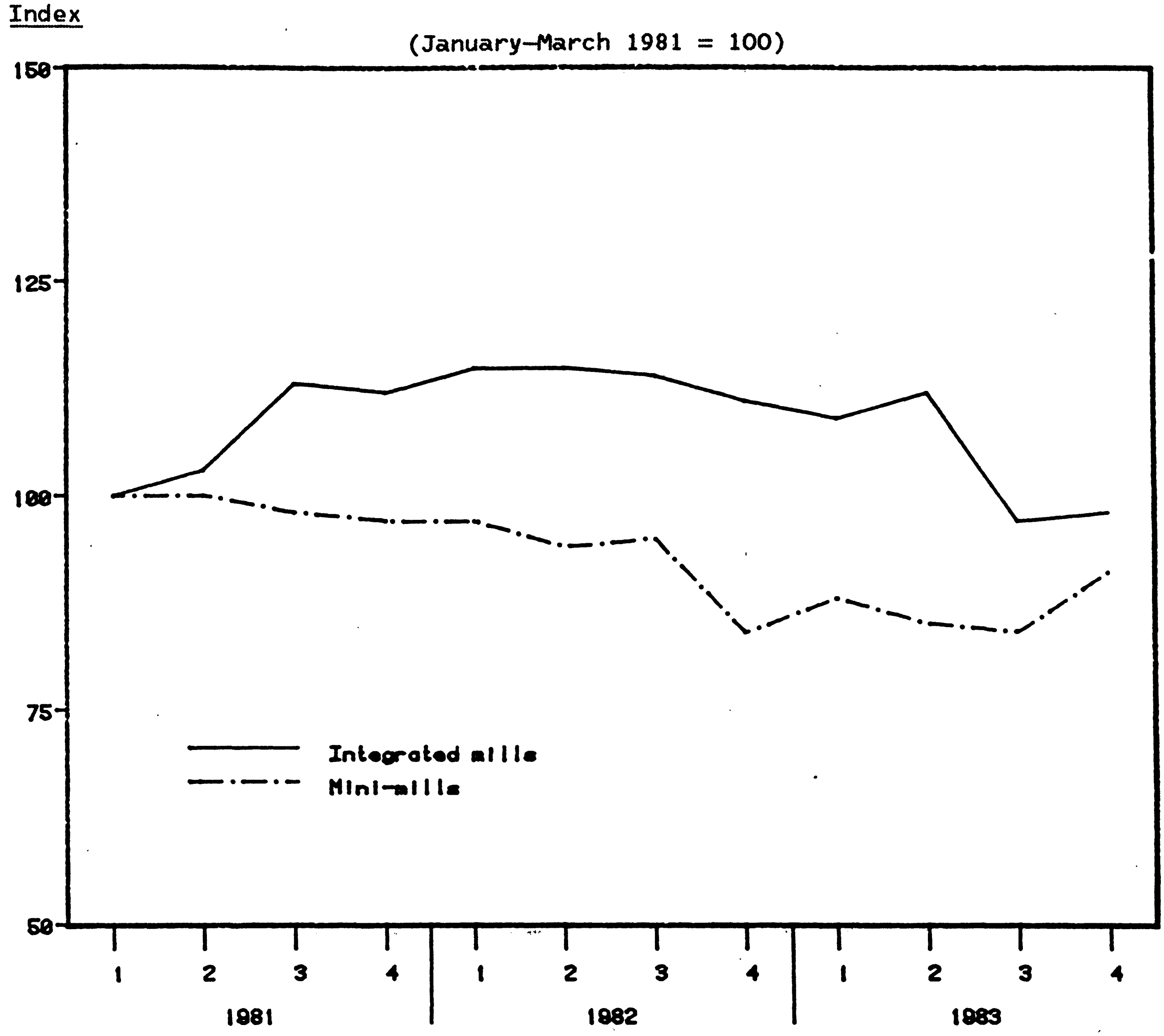
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-9.—Carbon and alloy steel sheets and strip: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



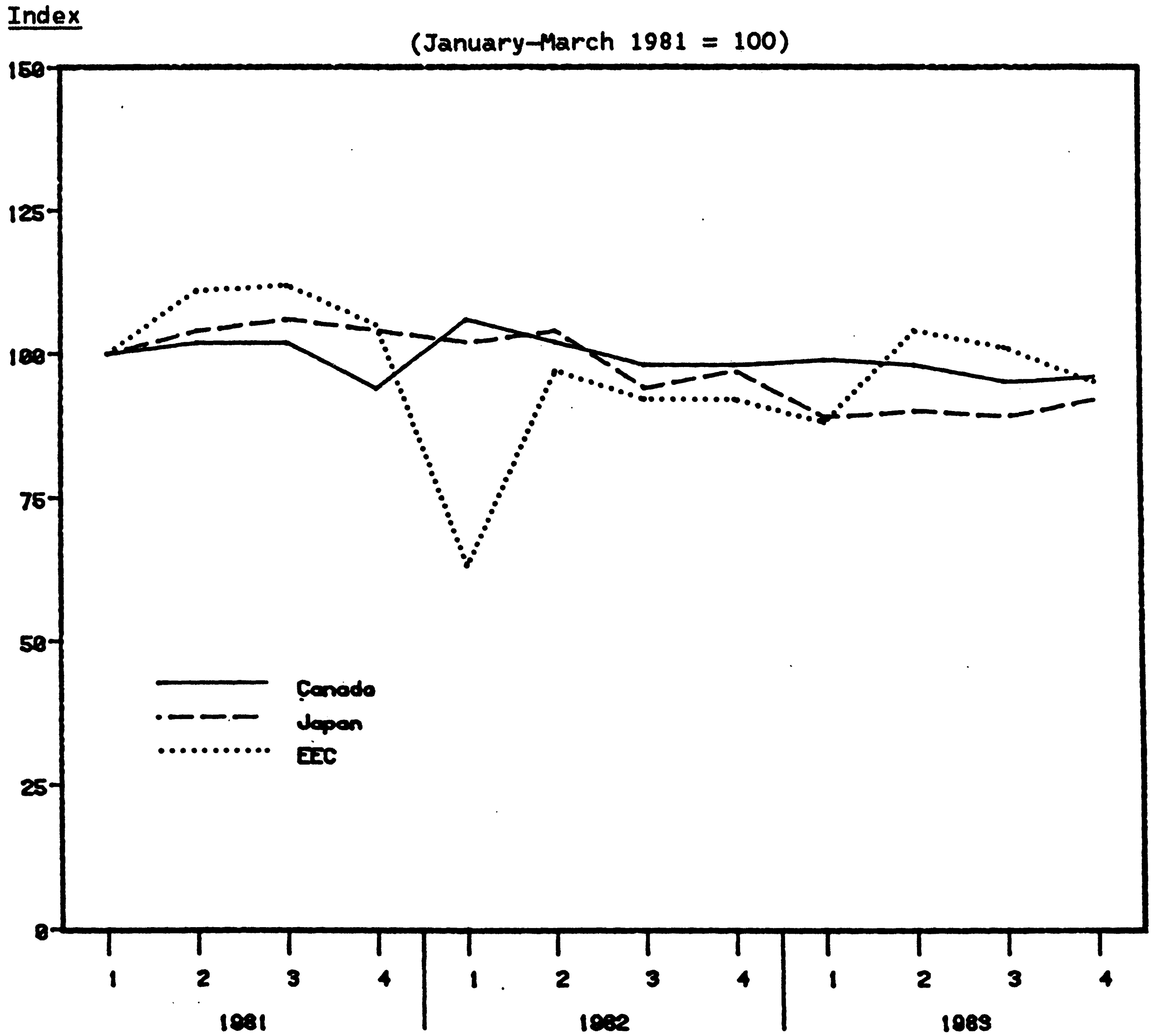
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-10.—Carbon and alloy steel wire rods: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983



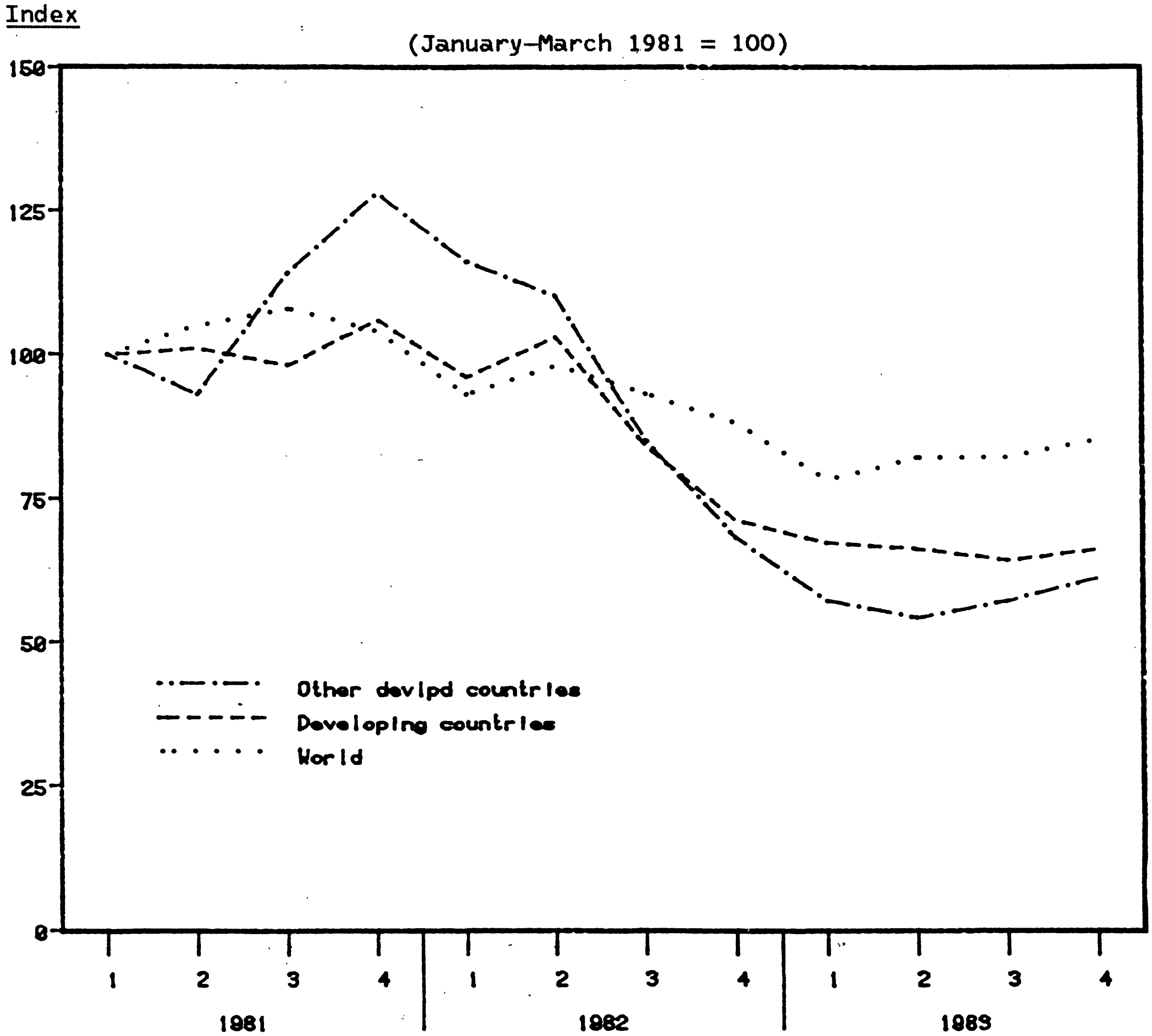
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure N-11.—Carbon and alloy steel wire rods: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



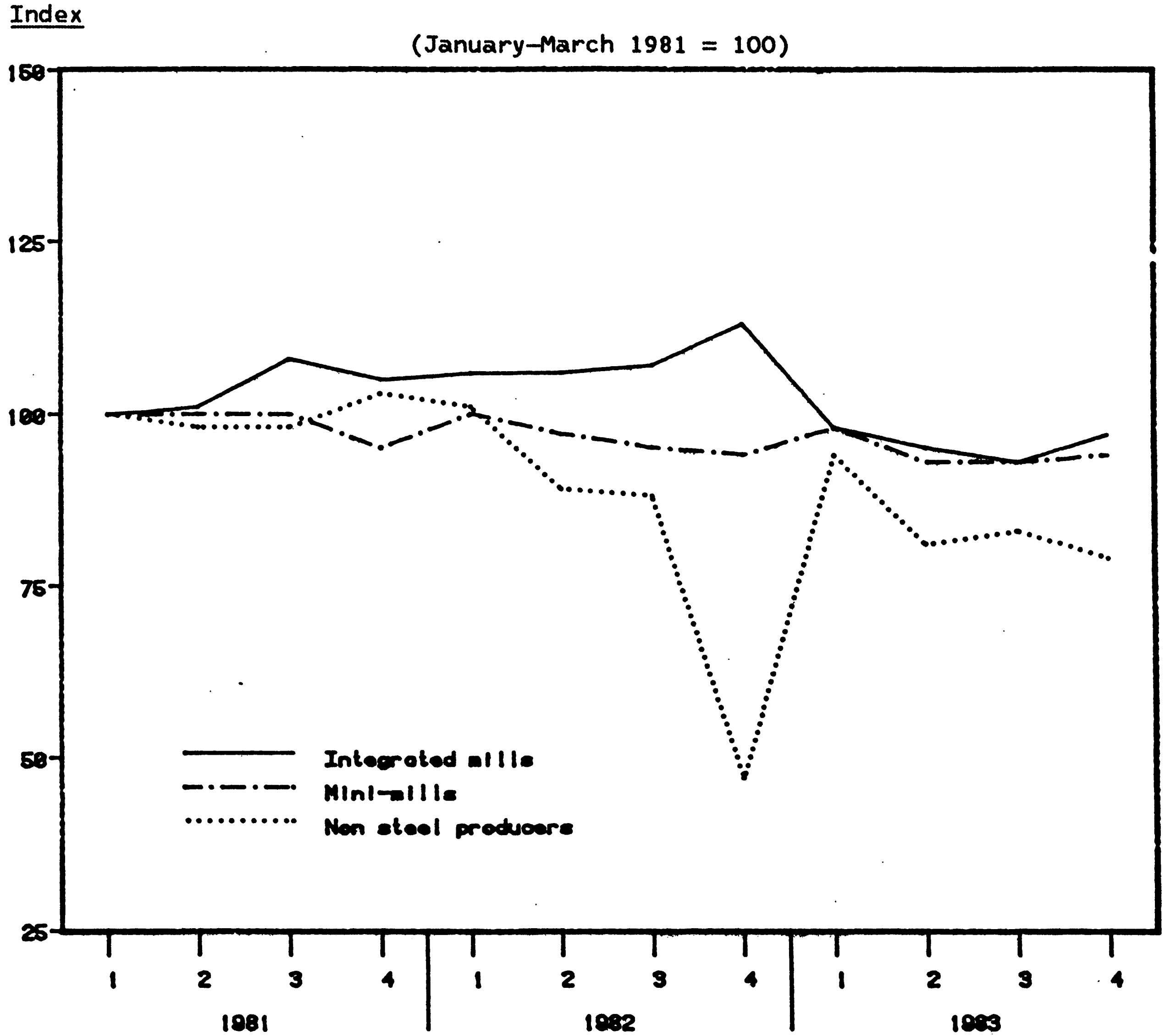
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-12.—Carbon and alloy steel wire rods: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



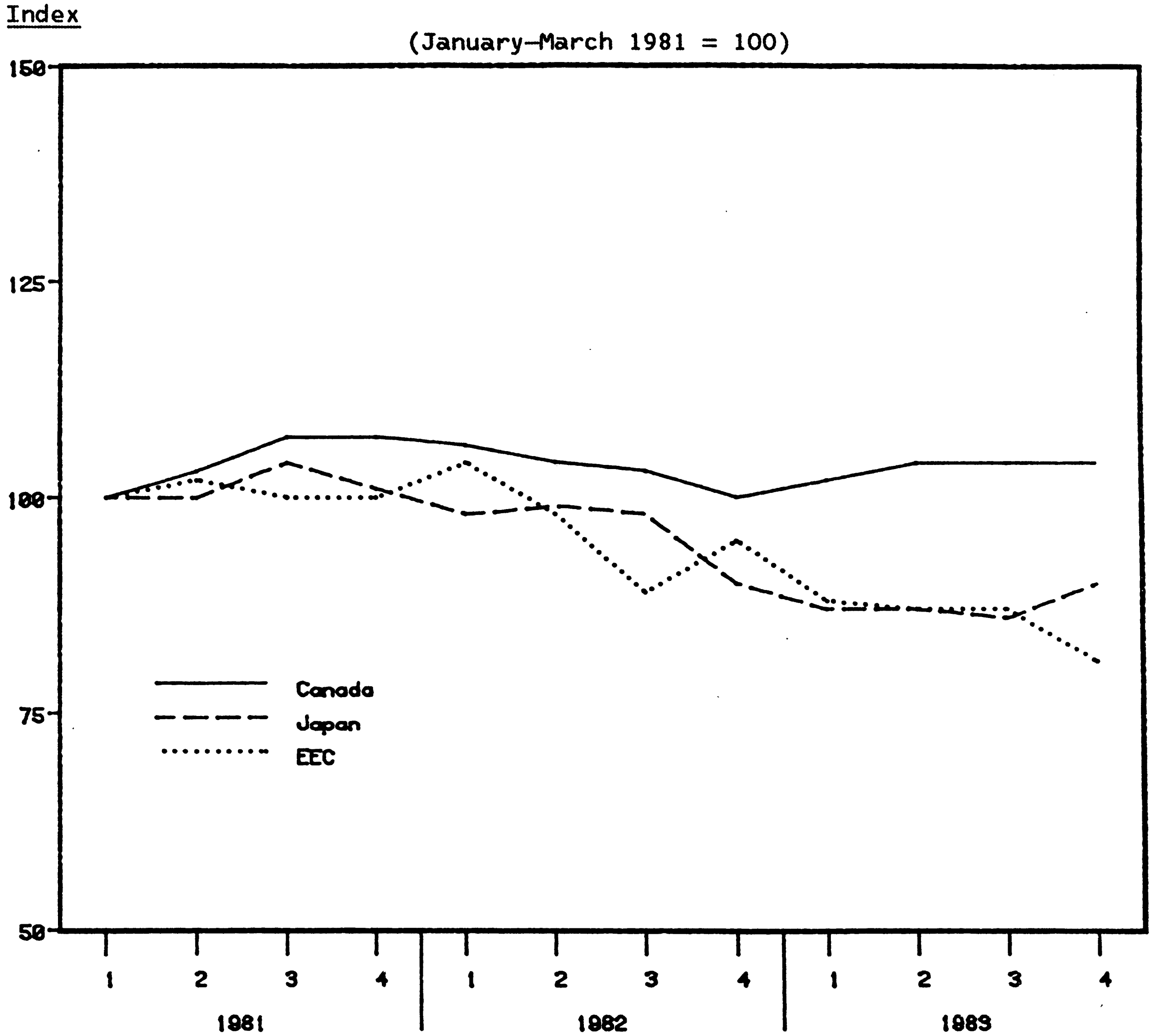
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-13.—Carbon and alloy steel wire and wire products: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983



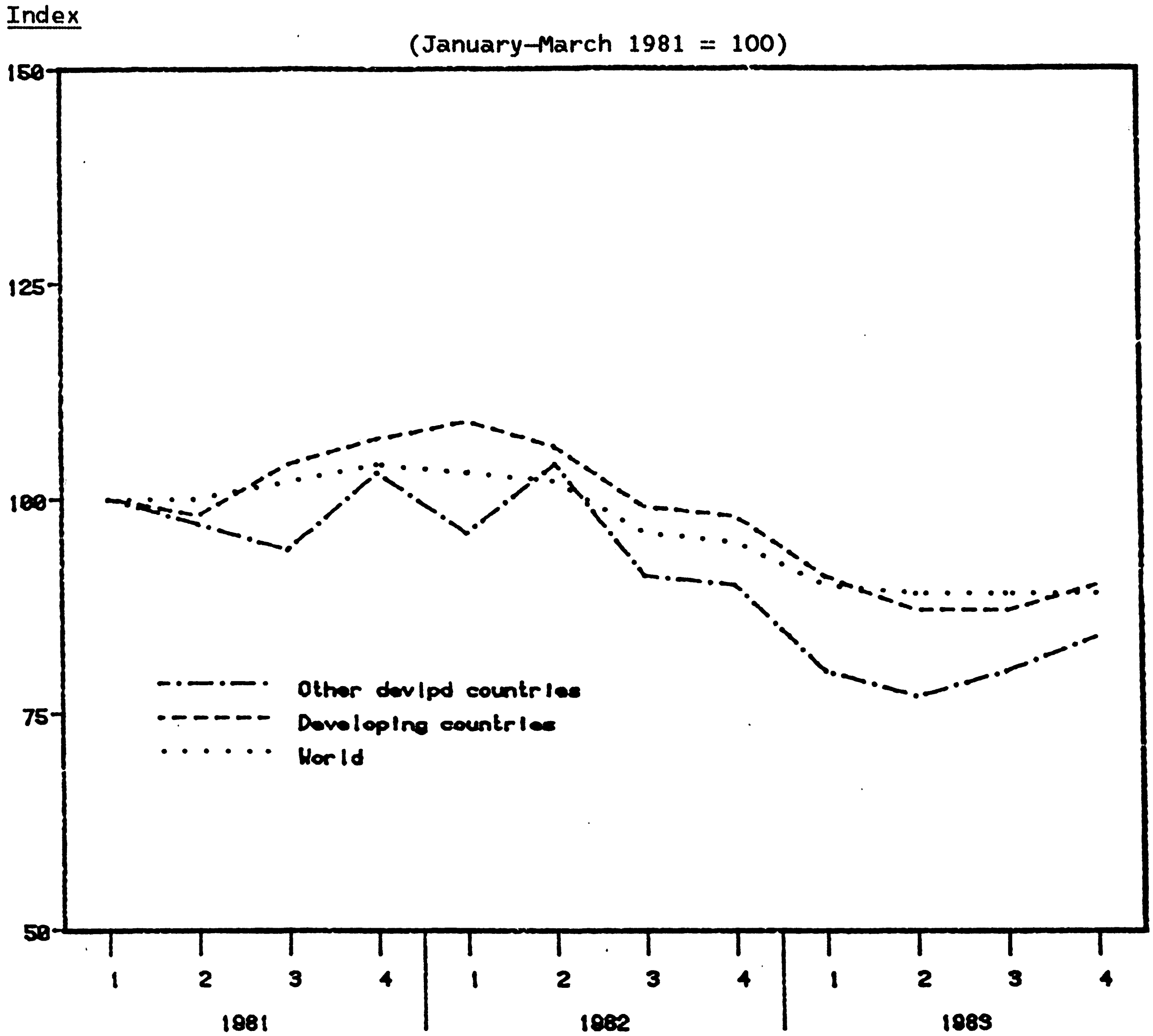
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure N-14.—Carbon and alloy steel wire and wire products: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



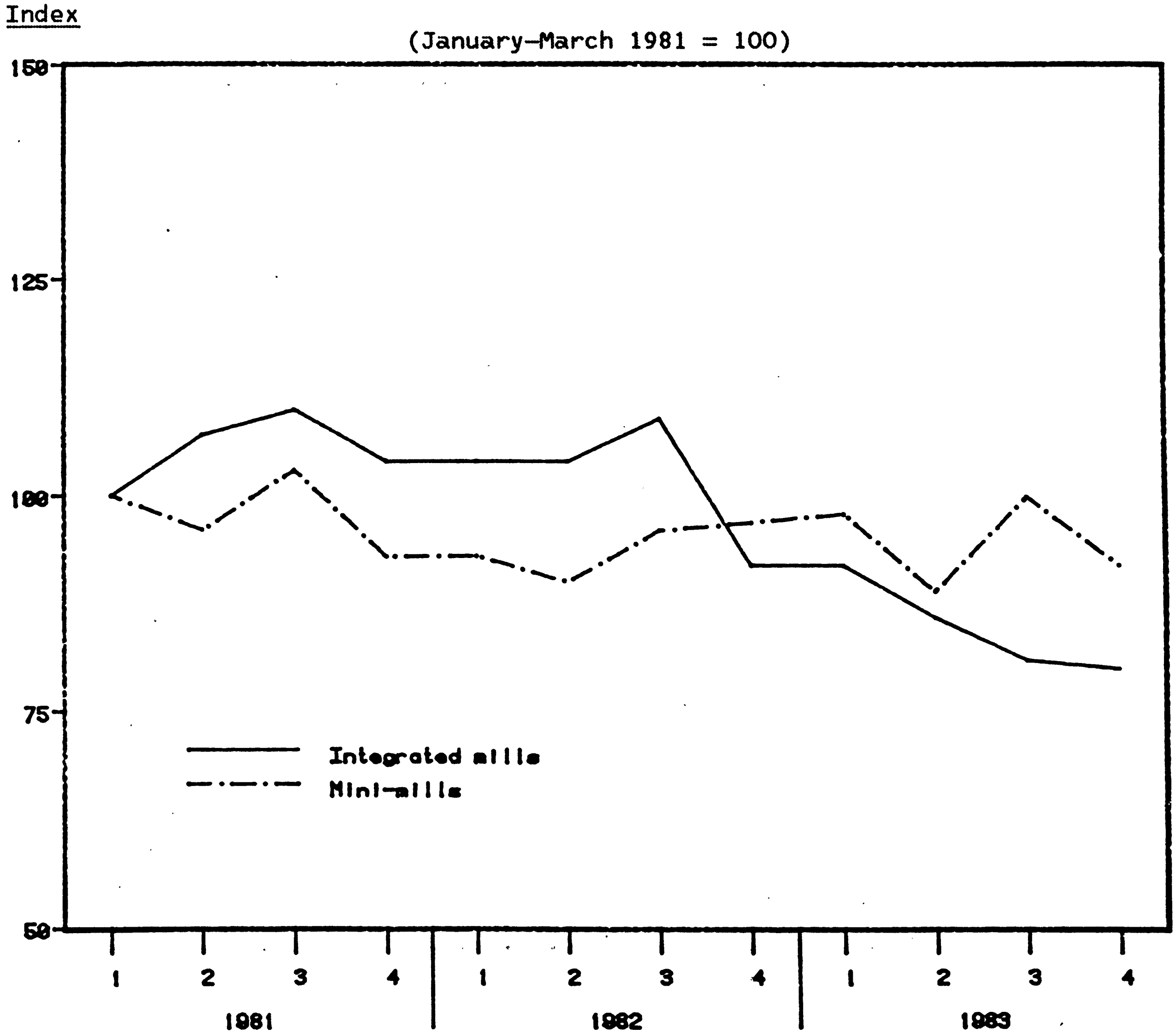
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-15.—Carbon and alloy steel wire and wire products: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



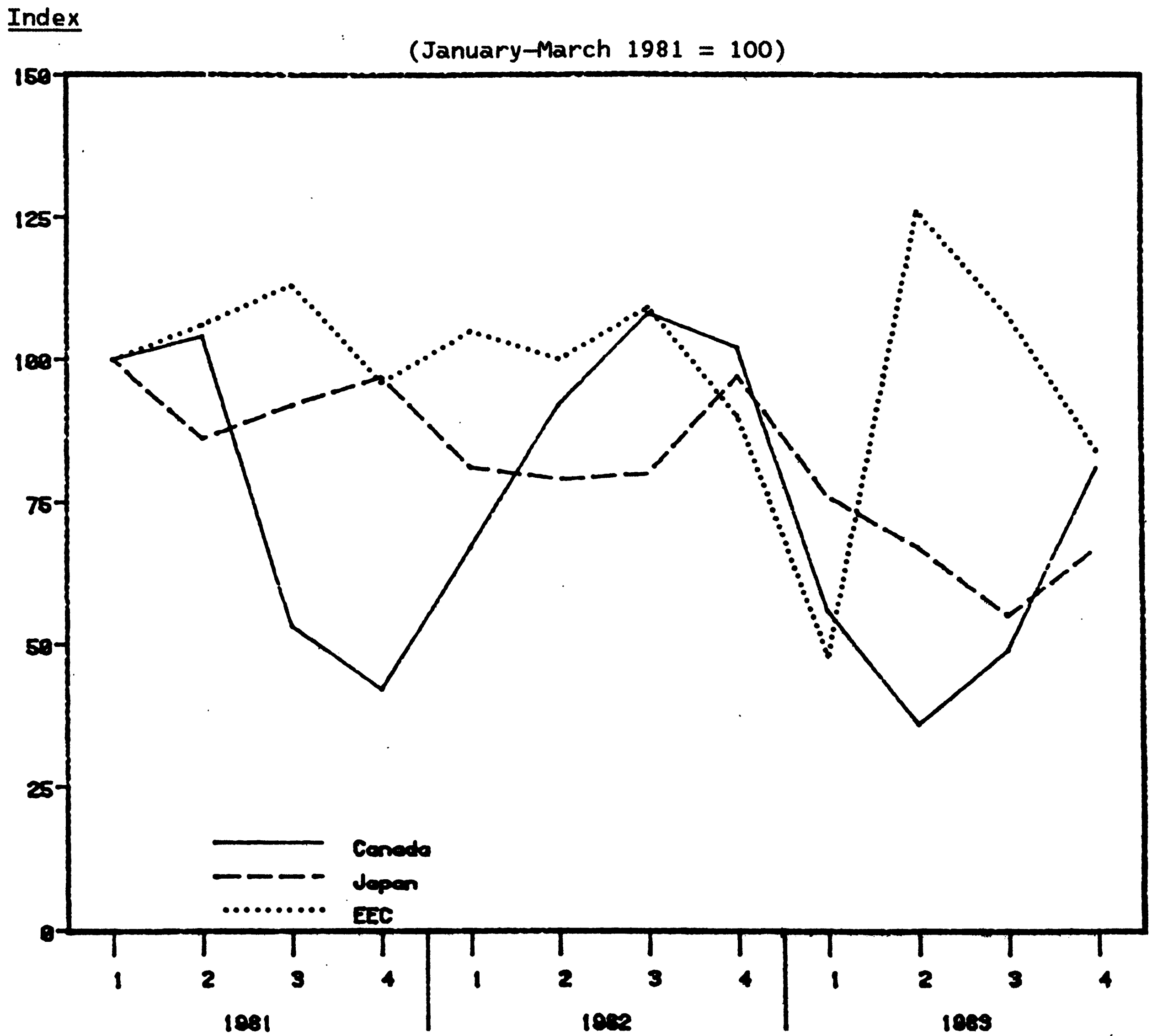
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-16.—Carbon and alloy steel railway-type products: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983



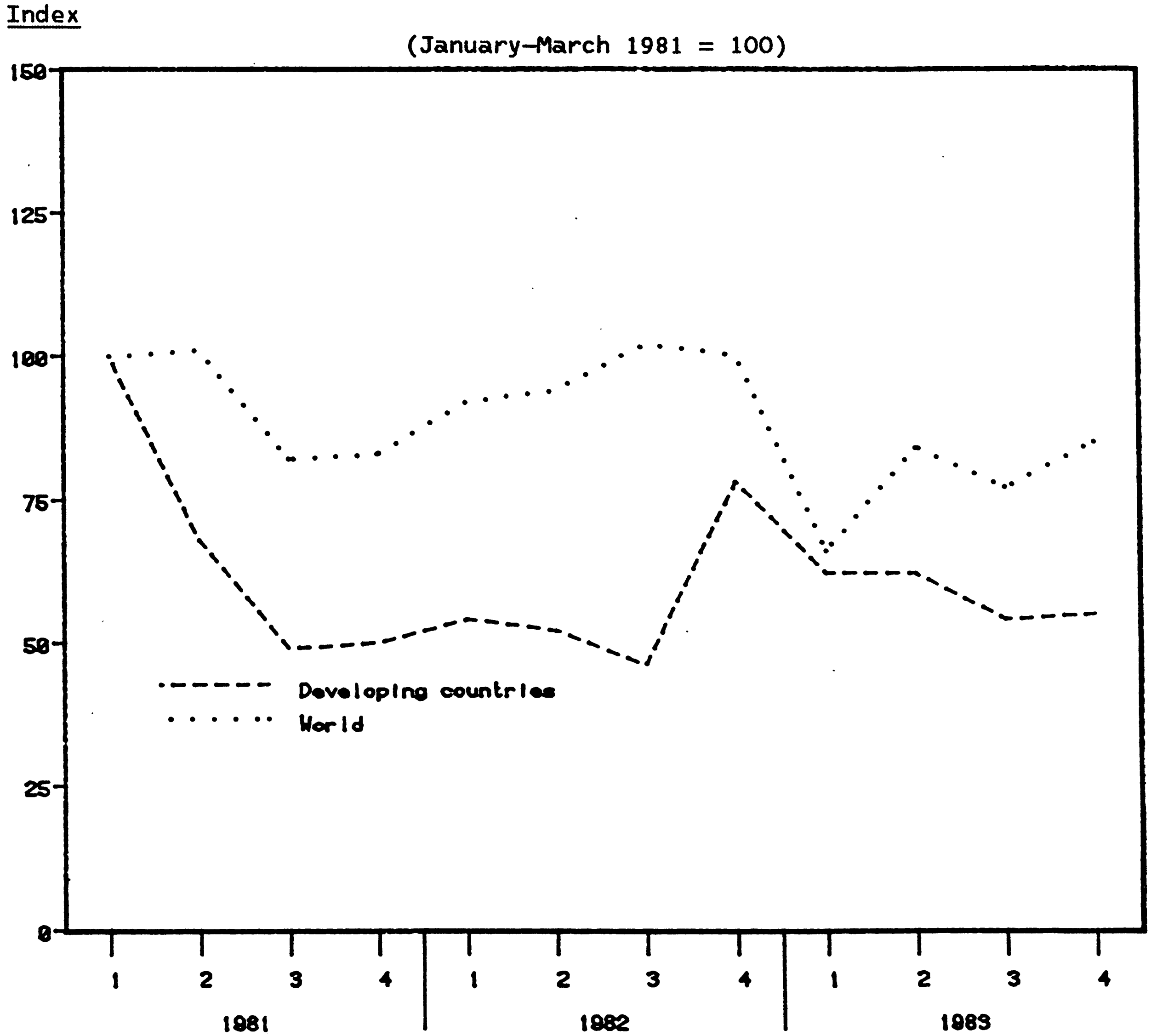
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure N-17.—Carbon and alloy steel railway-type products: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



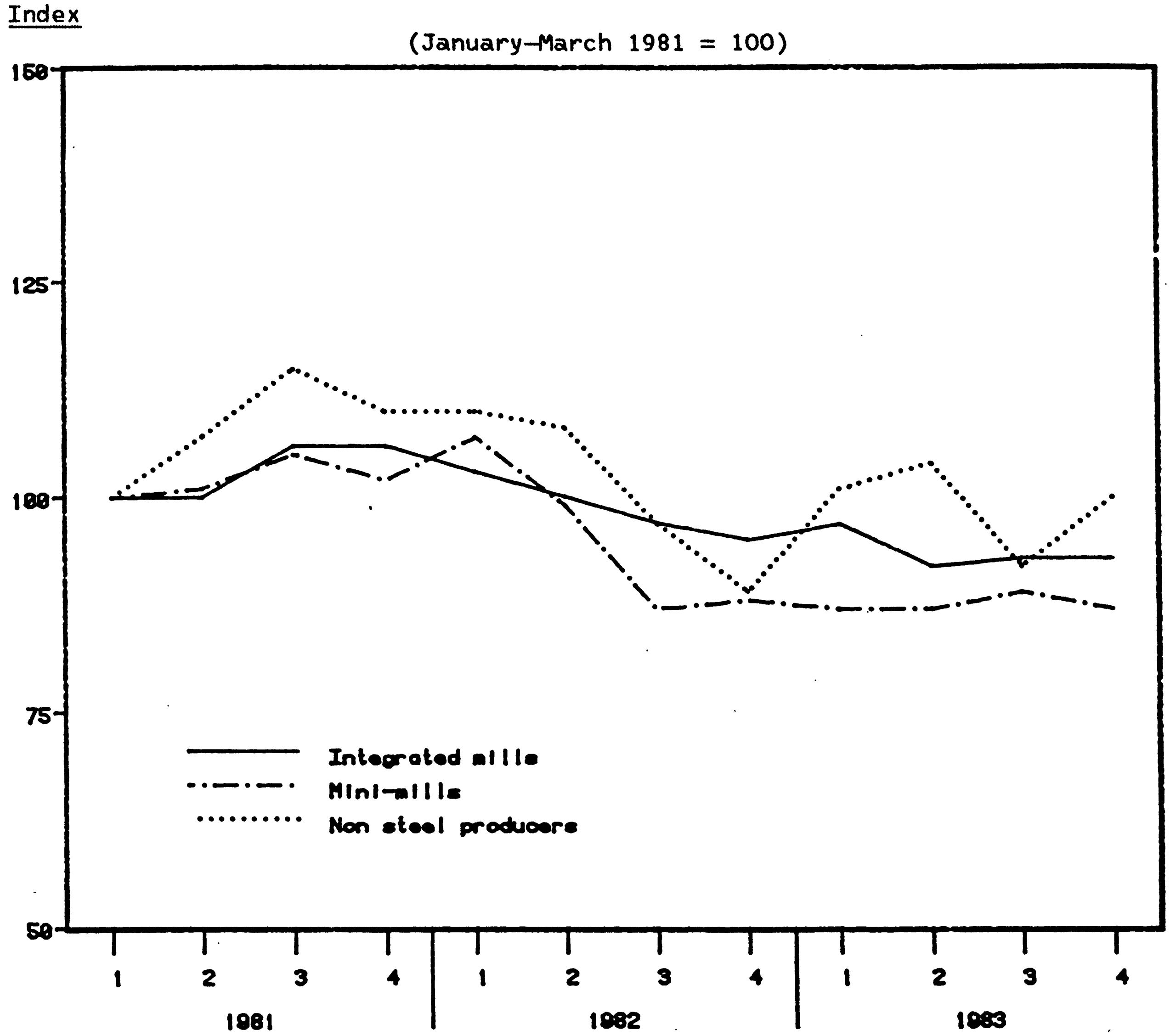
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-18.—Carbon and alloy steel railway-type products: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



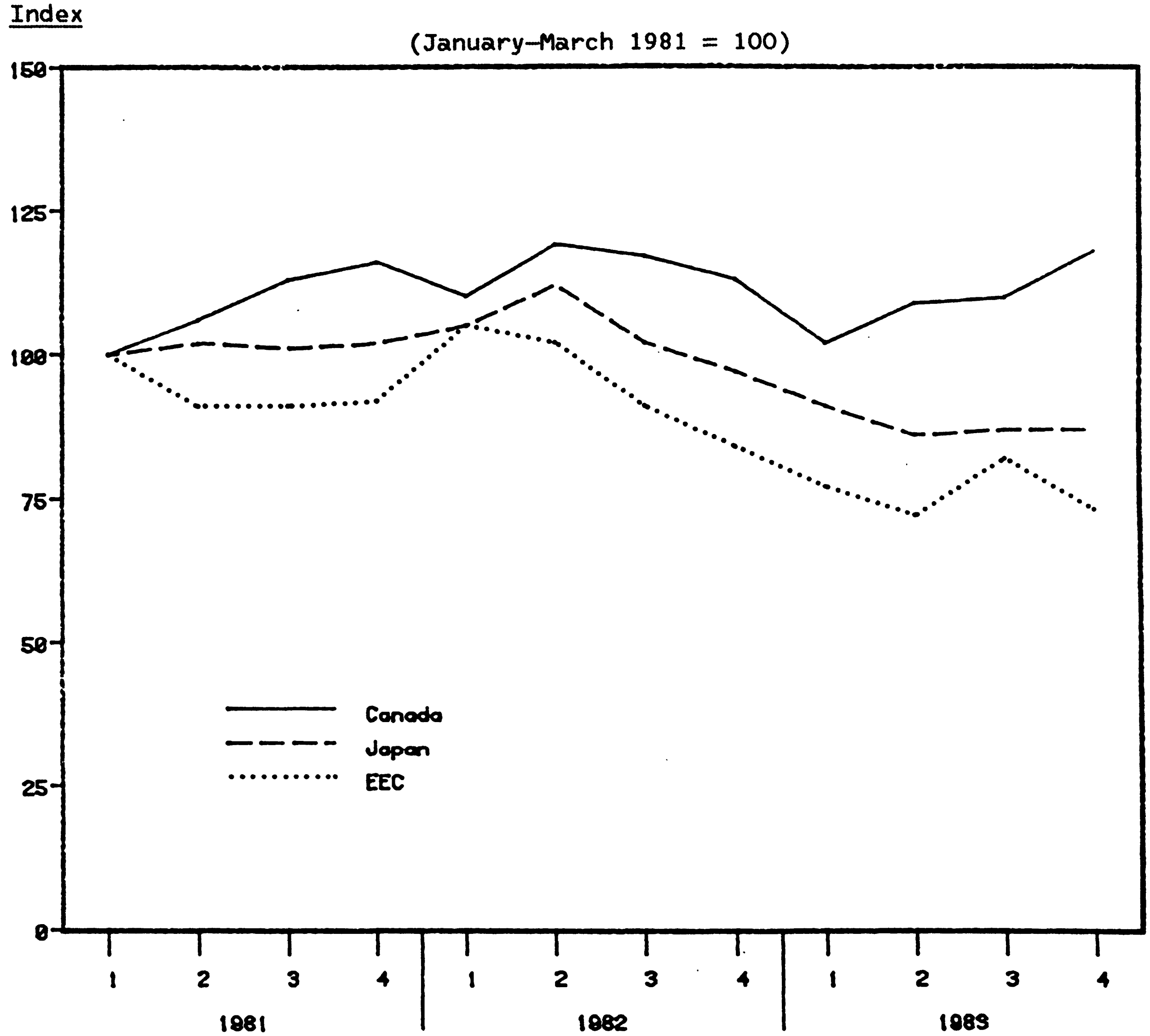
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-19.—Carbon and alloy steel bars: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981—December 1983



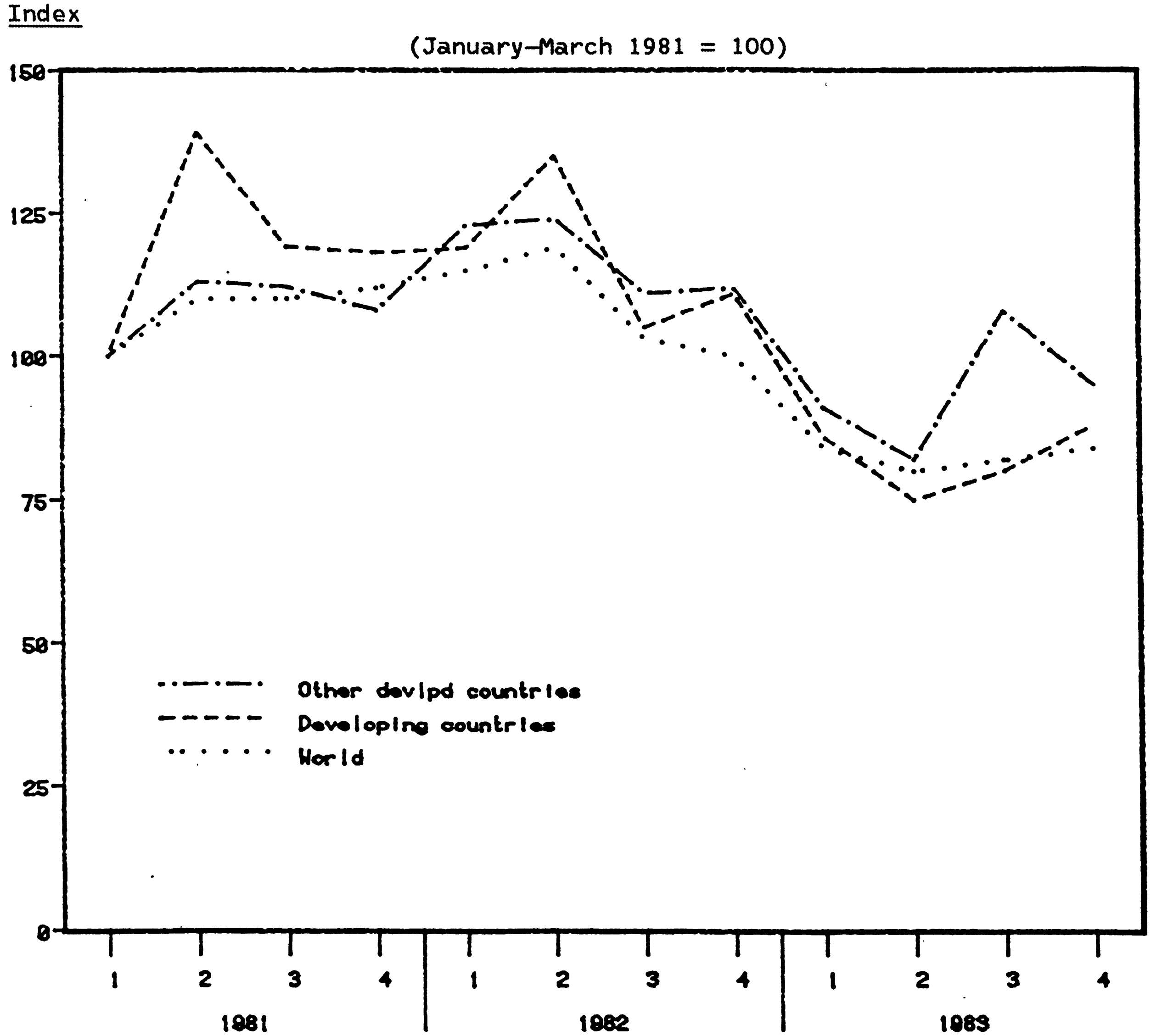
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure N-20.—Carbon and alloy steel bars: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



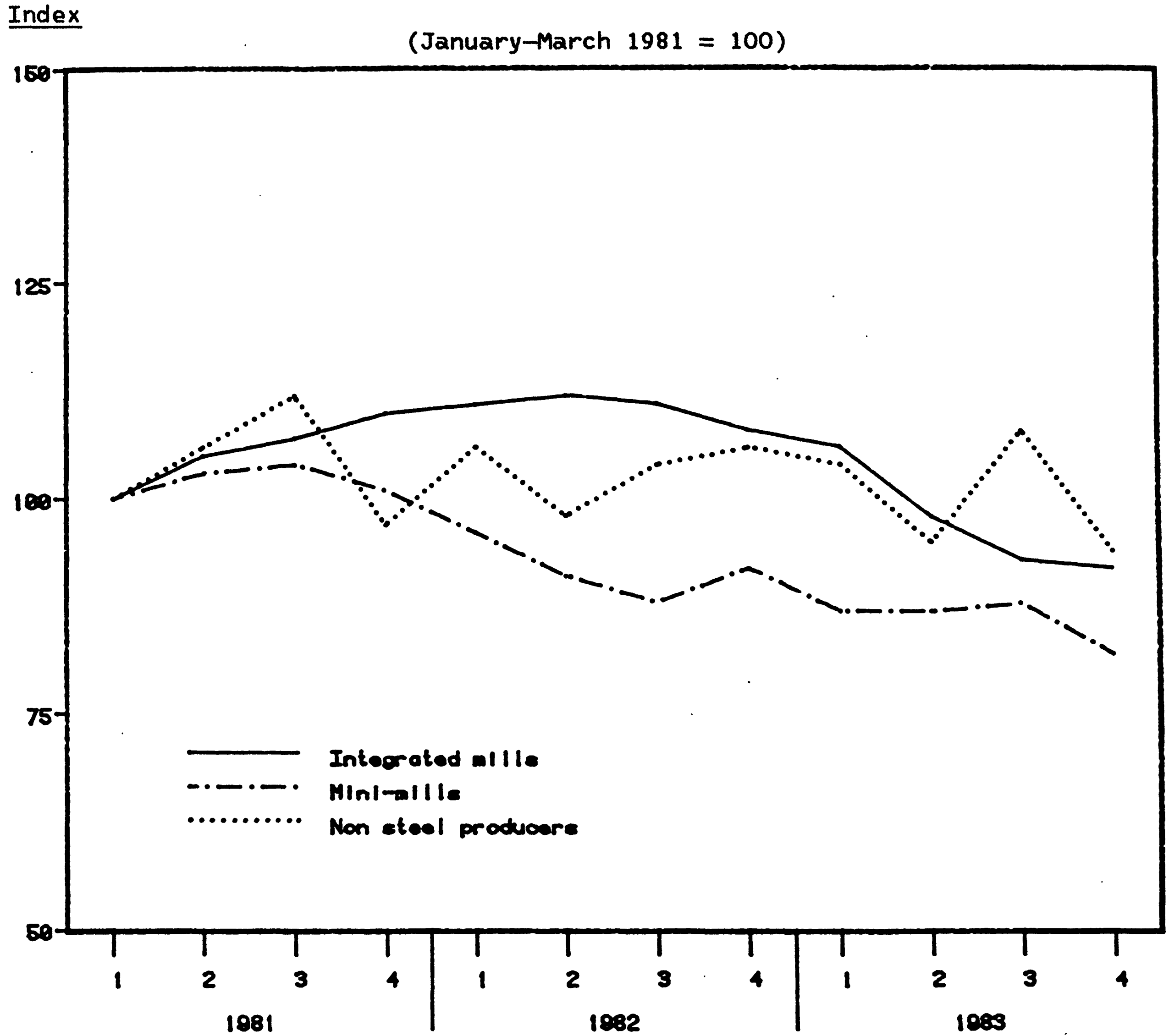
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-21.—Carbon and alloy steel bars: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



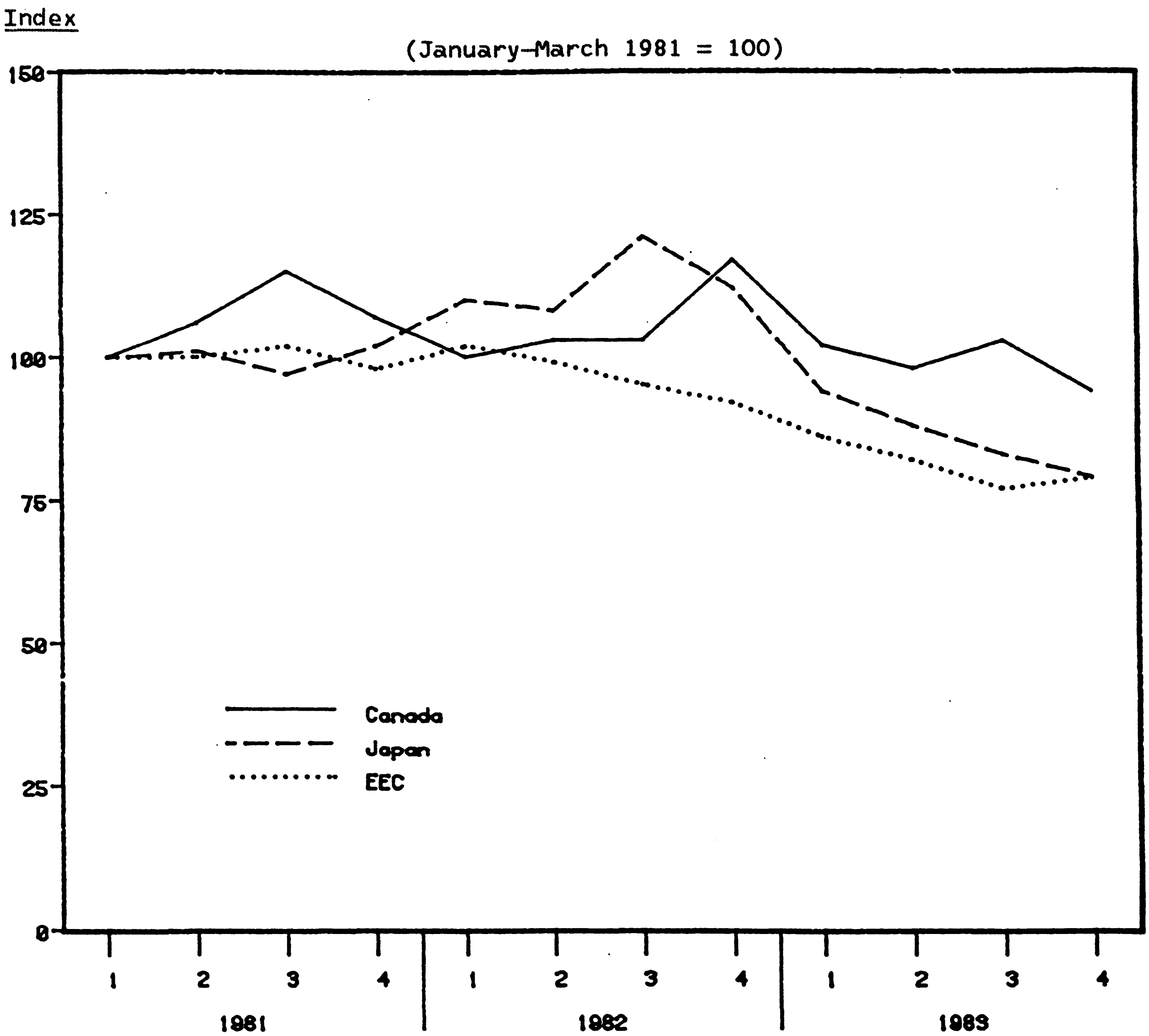
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-22.—Carbon and alloy steel structural shapes and units: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981–December 1983



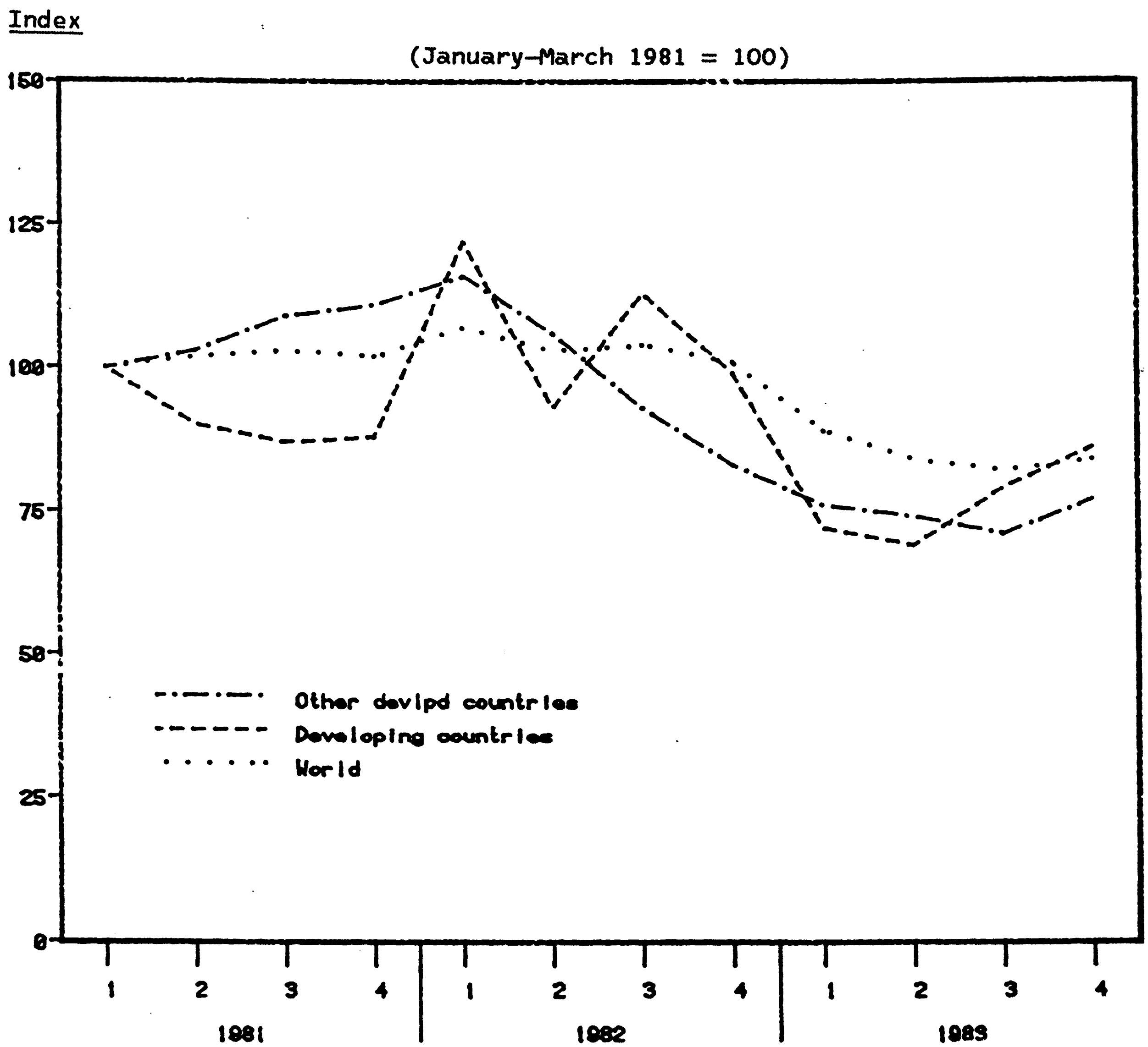
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure N-23.—Carbon and alloy steel structural shapes and units: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



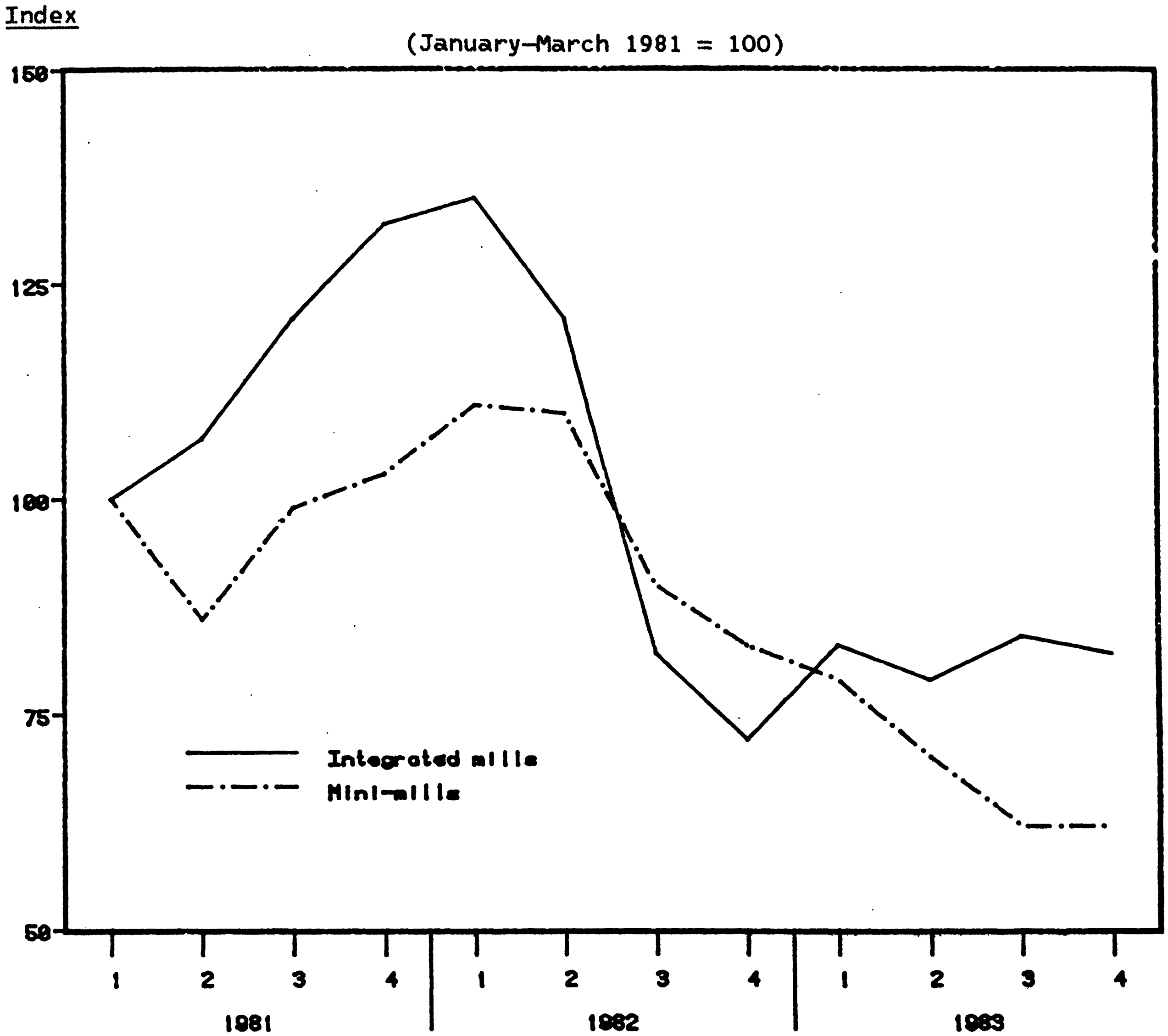
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-24.—Carbon and alloy steel structural shapes and units: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



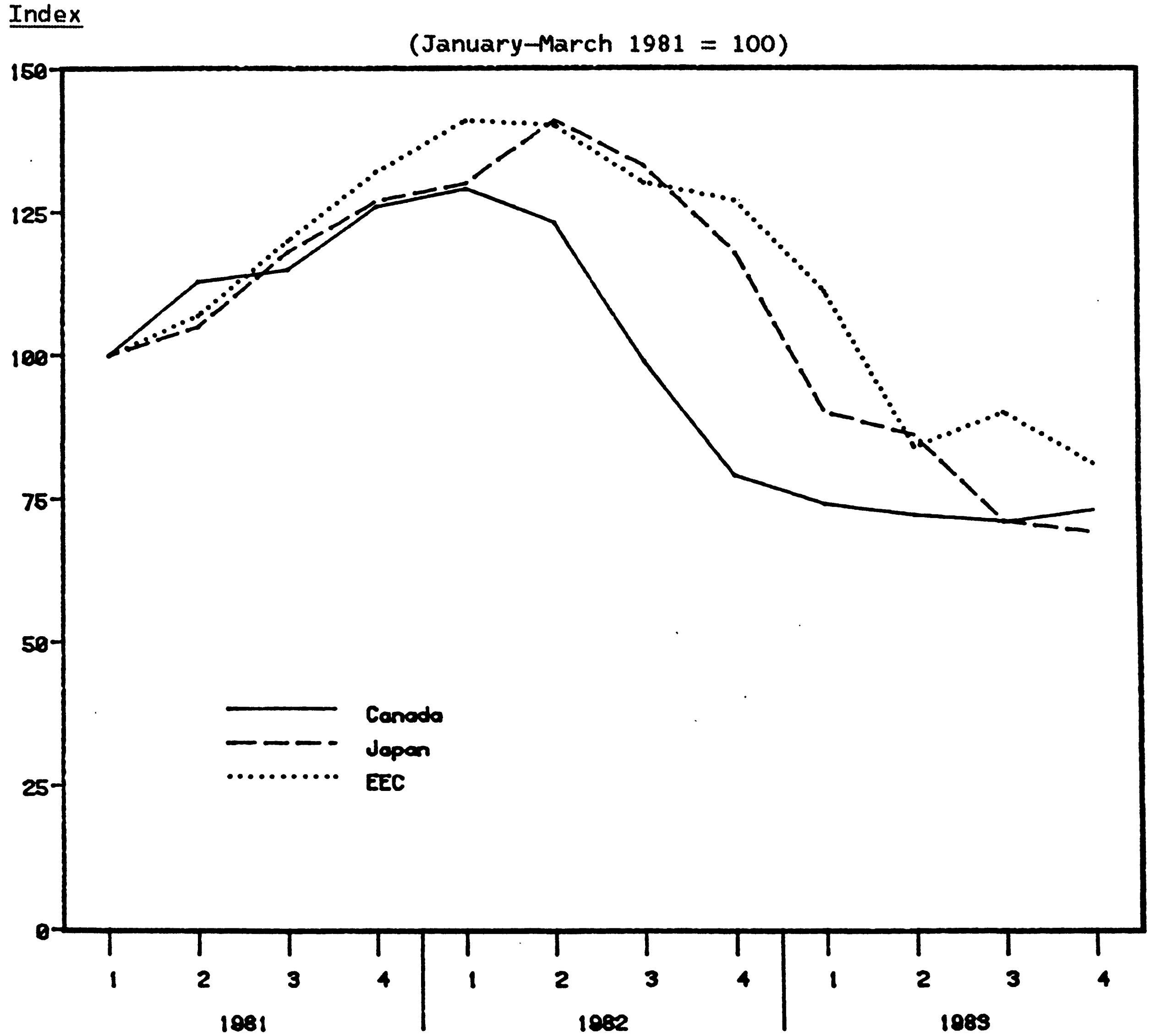
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure N-25.—Carbon and alloy steel pipes and tubes and blanks therefor: Indexes of average unit values of U.S. producers' domestic shipments, by types of producers and by quarters, January 1981-December 1983



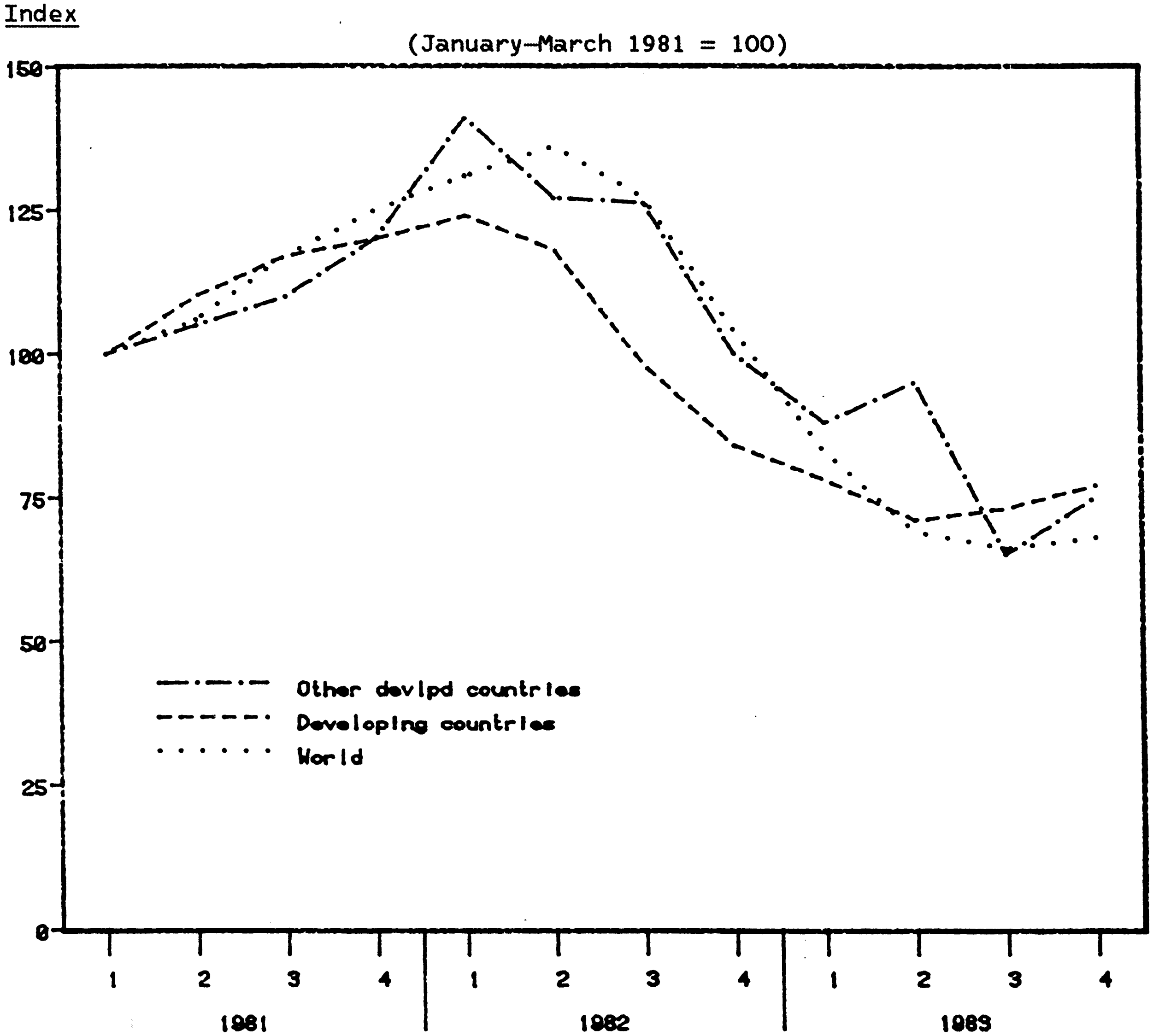
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure N-26.—Carbon and alloy steel pipes and tubes and blanks therefor: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



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

Figure N-27.—Carbon and alloy steel pipes and tubes and blanks therefor: Indexes of average unit values of U.S. imports, by selected sources and by quarters, January 1981–December 1983



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

APPENDIX O

THE WESTERN AREA

The Western Area

The 13 States in or west of the Rocky Mountains 1/ accounted for *** to *** percent of apparent U.S. consumption of the carbon and alloy steel products subject to this investigation during 1979-83 (table O-1). They accounted for 21 to 26 percent of imports during that period, however, reflecting the fact that there are a limited number of domestic producers in the area. The discrepancies vary significantly by product groups, as shown in the following tabulation, which presents 5-year averages of imports and apparent consumption in the 13 western States as a share of total U.S. imports and apparent consumption (in percent):

Product group	Western area, share of imports	Western area, share of apparent consumption
Average, all carbon and alloy steel products	23	***
Ingots, blooms, billets, slabs, and sheet bars	14	***
Plates	16	***
Sheets and strip	28	***
Wire rods	18	***
Wire and wire products	20	***
Railway-type products	32	***
Bars	19	***
Structural shapes and units	30	***
Pipes and tubes and blanks therefor	21	***

Market shares held by imports in the 13 western States were, on average, *** times greater than market shares held by imports in the country as a whole during that period (table O-2). Again, the discrepancies were more pronounced for those products for which there is limited production in the western area (sheets and structurals, for example). Five-year averages of market shares held by imports in the 13 western States and in the country as a whole are shown in the following tabulation (in percent):

Product group	Western area	Total United States
Average, all carbon and alloy steel products	***	19
Ingots, blooms, billets, slabs, and sheet bars	***	29
Plates	***	24
Sheets and strip	***	13
Wire rods	***	26
Wire and wire products	***	37
Railway-type products	***	21
Bars	***	6
Structural shapes and units	***	27
Pipes and tubes and blanks therefor	***	40

1/ Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Table O-1.--Carbon and certain alloy steel products: Imports and apparent consumption in 13 western States 1/ as a share of imports and apparent consumption in the country as a whole, by product groups, 1979-83

(In percent)

Product group	1979	1980	1981	1982	1983
	Imports				
All carbon and alloy steel products	20.9	25.6	21.5	23.7	24.4
Ingots, blooms, billets, slabs, and sheet bars	1.2	2.8	1.5	47.0	15.2
Plates	11.4	15.8	15.3	19.1	18.3
Sheets and strip	21.7	33.6	32.3	26.8	25.4
Wire rods	13.9	17.6	16.1	11.7	28.2
Wire and wire products	20.9	20.6	18.6	19.4	21.1
Railway-type products	26.0	26.2	25.3	36.8	43.6
Bars	22.0	23.0	14.9	14.4	19.0
Structural shapes and units	28.5	32.2	28.9	31.7	27.8
Pipes and tubes and blanks therefor	22.4	21.2	17.1	19.5	25.3
	Apparent consumption				
All carbon and alloy steel products	***	***	***	***	***
Ingots, blooms, billets, slabs, and sheet bars	***	***	***	***	***
Plates	***	***	***	***	***
Sheets and strip	***	***	***	***	***
Wire rods	***	***	***	***	***
Wire and wire products	***	***	***	***	***
Railway-type products	***	***	***	***	***
Bars	***	***	***	***	***
Structural shapes and units	***	***	***	***	***
Pipes and tubes and blanks therefor	***	***	***	***	***

1/ Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

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

Table O-2.--Carbon and certain alloy steel products: Ratios of imports to apparent consumption in 13 western States 1/ and in the country as a whole, by product groups, 1979-83

(In percent)

Product group	1979	1980	1981	1982	1983
All carbon and alloy steel products:					
Western area	***	***	***	***	***
Country as a whole	15.6	16.1	19.2	22.2	20.9
Ingots, blooms, billets, slabs, and sheet bars:					
Western area	***	***	***	***	***
Country as a whole	13.6	8.4	27.7	44.7	48.5
Plates:					
Western area	***	***	***	***	***
Country as a whole	17.3	21.1	25.6	29.1	27.7
Sheets and strip:					
Western area	***	***	***	***	***
Country as a whole	12.9	11.4	11.1	13.1	15.9
Wire rods:					
Western area	***	***	***	***	***
Country as a whole	25.6	24.7	22.8	27.9	28.9
Wire and wire products:					
Western area	***	***	***	***	***
Country as a whole	30.4	35.0	35.1	40.3	44.5
Railway-type products:					
Western area	***	***	***	***	***
Country as a whole	14.1	20.8	19.4	33.1	16.1
Bars:					
Western area	***	***	***	***	***
Country as a whole	5.1	5.4	5.9	6.5	7.3
Structural shapes and units:					
Western area	***	***	***	***	***
Country as a whole	25.7	26.1	26.2	28.7	29.9
Pipes and tubes and blanks therefor:					
Western area	***	***	***	***	***
Country as a whole	27.9	30.4	40.0	53.4	49.2

1/ Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

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

Detailed statistics on imports, U.S. producers' domestic shipments, and apparent consumption in the 13-State western area are presented in table O-3. Ratios of imports to consumption for that area are shown in table O-4.

Because imports account for a significantly larger share of consumption in the western area of the country than they do in the country as a whole, it is also the case that imports account for a somewhat smaller share of consumption in the eastern area of the country than they do in the country as a whole. Comparative import market shares are shown below for all carbon and alloy steel products subject to this investigation (in percent of consumption):

	Country as a whole	Western area 1/	Eastern area 2/
1979------------	15.6	***	***
1980------------	16.6	***	***
1981------------	19.2	***	***
1982------------	22.2	***	***
1983------------	20.9	***	***

1/ Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
2/ All States other than those identified in footnote 1.

Table O-3.--Carbon and certain alloy steel products: U.S. imports for consumption, producers' domestic shipments, and apparent consumption in 13 western States, 1/ by product groups, 1979-83

(In thousands of short tons)

Product group	1979	1980	1981	1982	1983
	U.S. imports				
Carbon and alloy steel products, total	3,701.8	4,002.6	4,299.4	3,970.8	4,196.0
Ingots, blooms, billets, slabs, and sheet bars	4.1	4.3	11.7	334.6	124.6
Plates	208.0	325.8	373.5	307.5	255.1
Sheets and strip:					
Hot-rolled	453.2	481.4	531.5	408.9	517.6
Cold-rolled 2/	462.1	510.8	570.9	436.4	656.3
Further processed, galvanized	468.1	419.6	339.2	287.1	408.3
Further processed, other 3/	164.6	201.1	178.6	123.3	233.4
Total	1,548.0	1,612.9	1,620.2	1,255.7	1,815.6
Wire rods	134.3	141.0	138.3	107.2	326.3
Wire and wire products:					
Wire 4/	58.5	54.1	45.4	47.7	82.8
Barbed and twisted wire	3.8	3.8	4.7	2.8	3.6
Wire strand	43.1	36.3	28.2	31.3	30.5
Wire ropes, cables, and cordage	19.5	17.0	19.6	16.7	16.6
Wire fencing	.4	.4	.7	.4	.4
Brads, nails, spikes, staples, and tacks	89.7	73.0	74.0	63.9	89.1
Total	215.0	184.6	172.6	162.8	223.0
Railway-type products:					
Rails	50.2	65.6	61.6	82.2	40.1
Joint bars, tie plates, and track spikes	8.8	23.0	10.3	41.8	26.9
RR axle bars, and RR wheels and axles and parts thereof	22.5	19.8	8.8	1.0	2.3
Total	81.5	108.4	80.7	125.0	69.3
Bars:					
Concrete reinforcing bars	39.9	22.1	9.6	11.1	69.8
Other, hot-rolled	110.0	99.8	82.7	51.3	47.2
Other, cold-finished	36.4	31.2	26.4	32.9	38.3
Total	186.3	153.1	118.7	95.3	155.3
Structural shapes and units:					
Sheet piling	12.3	9.2	10.7	19.6	9.8
Structural shapes, light 5/	91.9	70.9	51.3	21.3	35.7
Structural shapes, heavy 5/	528.8	568.5	571.0	479.8	401.0
Fabricated structural units 6/	42.9	27.4	32.0	43.2	61.9
Total	675.9	676.0	665.0	563.9	508.4
Pipes and tubes and blanks therefor:					
Oil-well tubing, casing, and drill pipe 7/	58.6	145.0	268.8	204.4	75.7
All other	589.9	651.4	849.7	814.4	643.0
Total	648.5	796.4	1,118.5	1,018.8	718.7

See footnotes at end of table.

Table O-3.--Carbon and certain alloy steel products: U.S. imports for consumption, producers' domestic shipments, and apparent consumption in 13 western States, 1/ by product groups, 1979-83--Continued

(In thousands of short tons)

Product group	1979	1980	1981	1982	1983
	U.S. producers' domestic shipments				
Carbon and alloy steel products, total	***	***	***	***	***
Ingots, blooms, billets, slabs, and sheet bars	***	***	***	***	***
Plates	***	***	***	***	***
Sheets and strip:					
Hot-rolled	***	***	***	***	***
Cold-rolled	***	***	***	***	***
Further processed, galvanized	***	***	***	***	***
Further processed, other	***	***	***	***	***
Total	***	***	***	***	***
Wire rods	***	***	***	***	***
Wire and wire products:					
Wire	***	***	***	***	***
Wire products	***	***	***	***	***
Total	***	***	***	***	***
Railway-type products	***	***	***	***	***
Bars:					
Concrete reinforcing bars	***	***	***	***	***
Other, hot-rolled 8/	***	***	***	***	***
Other, cold-finished	***	***	***	***	***
Total	***	***	***	***	***
Structural shapes and units:					
Sheet piling	***	***	***	***	***
Structural shapes, light	***	***	***	***	***
Structural shapes, heavy 9/	***	***	***	***	***
Total	***	***	***	***	***
Pipes and tubes and blanks therefor:					
Oil-well tubing, casing, and drill pipe	***	***	***	***	***
All other	***	***	***	***	***
Total	***	***	***	***	***

See footnotes at end of table.

Table O-3.--Carbon and certain alloy steel products: U.S. imports for consumption, producers' domestic shipments, and apparent consumption in 13 western States, 1/ by product groups, 1979-83--Continued

(In thousands of short tons)

Product group	1979	1980	1981	1982	1983
	Apparent consumption				
Carbon and alloy steel products, total	***	***	***	***	***
Ingots, blooms, billets, slabs, and sheet bars	***	***	***	***	***
Plates	***	***	***	***	***
Sheets and strip:					
Hot-rolled	***	***	***	***	***
Cold-rolled	***	***	***	***	***
Further processed, galvanized	***	***	***	***	***
Further processed, other	***	***	***	***	***
Total	***	***	***	***	***
Wire rods	***	***	***	***	***
Wire and wire products:					
Wire	***	***	***	***	***
Wire products	***	***	***	***	***
Total	***	***	***	***	***
Railway-type products	***	***	***	***	***
Bars:					
Concrete reinforcing bars	***	***	***	***	***
Other, hot-rolled	***	***	***	***	***
Other, cold-finished	***	***	***	***	***
Total	***	***	***	***	***
Structural shapes and units:					
Sheet piling	***	***	***	***	***
Structural shapes, light	***	***	***	***	***
Structural shapes, heavy 9/	***	***	***	***	***
Total	***	***	***	***	***
Pipes and tubes and blanks therefor:					
Oil-well tubing, casing, and drill pipe	***	***	***	***	***
All other	***	***	***	***	***
Total	***	***	***	***	***

1/ Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
2/ Includes electric sheets and strip.
3/ Includes black plate and tin-mill products.
4/ Includes wire bale ties, milliner's wire, and other wire covered with textile or other material not wholly of metal.
5/ Excludes structural shapes which have been drilled, punched, or otherwise advanced.
6/ Includes light and heavy structural shapes which have been drilled, punched, or otherwise advanced.
7/ Includes only products conforming with specifications of the American Petroleum Institute.
8/ Includes light shapes of alloy steel.
9/ Includes structural units.

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

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

Table O-4.--Carbon and certain alloy steel products: Ratios of imports to apparent consumption in 13 western States, 1/ by product groups, 1979-83

(In percent)

Product group	1979	1980	1981	1982	1983
Carbon and alloy steel products, average	***	***	***	***	***
Ingots, blooms, billets, slabs, and sheet bars	***	***	***	***	***
Plates	***	***	***	***	***
Sheets and strip:					
Hot-rolled	***	***	***	***	***
Cold-rolled	***	***	***	***	***
Further processed, galvanized	***	***	***	***	***
Further processed, other	***	***	***	***	***
Average	***	***	***	***	***
Wire rods	***	***	***	***	***
Wire and wire products:					
Wire	***	***	***	***	***
Wire products	***	***	***	***	***
Average	***	***	***	***	***
Railway-type products	***	***	***	***	***
Bars:					
Concrete reinforcing bars	***	***	***	***	***
Other, hot-rolled	***	***	***	***	***
Other, cold-finished	***	***	***	***	***
Average	***	***	***	***	***
Structural shapes and units:					
Sheet piling	***	***	***	***	***
Structural shapes, light	***	***	***	***	***
Structural shapes, heavy	***	***	***	***	***
Average	***	***	***	***	***
Pipes and tubes and blanks therefor:					
Oil-well tubing, casing, and drill pipe	***	***	***	***	***
All other	***	***	***	***	***
Average	***	***	***	***	***

1/ Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Source: Table O-3.

APPENDIX P

SPECIFICATIONS FOR THE PRODUCTS REFERENCED IN THE PRICING SECTION

The products identified below are those used by the Commission to collect pricing information in its purchaser questionnaires:

<u>Hot-rolled carbon steel plate in cut lengths</u>

<u>Product 1</u>. Hot-rolled carbon steel plate, in cut lengths, A-36 or equivalent, sheared edge, not heat treated, not cleaned or oiled, 3/8 inch to under 1/2 inch in thickness, over 90 inches through 100 inches in width.

<u>Product 2</u>. Hot-rolled carbon steel plate, in cut lengths, A-36 or equivalent, sheared edge or gas cut, not heat treated, not cleaned or oiled, over 1-1/2 inches through 3 inches in thickness, over 90 inches through 100 inches in width.

<u>Hot-rolled carbon steel plate in coils</u>

<u>Product 3</u>. Hot-rolled carbon steel bands, in coils, structural quality, mill edge, 0.20 percent carbon maximum, 58,000 pounds tensile strength minimum, 36,000 pounds yield strength minimum, not pickled, not killed, over 1/4 inch through 1/2 inch in thickness, over 36 inches through 72 inches in width.

<u>Hot-rolled carbon steel sheet and strip</u>

<u>Product 4</u>. Hot-rolled carbon steel bands, in coils, mill edge, commercial quality, 0.25 percent carbon maximum, not pickled, 0.1210 inches through 0.1875 inch in thickness, over 36 inches through 72 inches in width.

<u>Cold-rolled carbon steel sheet</u>

<u>Product 5</u>. Cold-rolled carbon steel bands, in coils, commercial quality, class 1, 0.0280 inch through 0.0630 inch in thickness, 45 inches through 60 inches in width.

<u>Galvanized carbon steel sheet</u>

<u>Product 6</u>. Galvanized carbon steel sheet, in coils, commercial or lock-forming quality, A-40 coating, regular or minimum spangle, 0.028 inch through 0.035 inch in thickness, 24 inches through 72 inches in width.

<u>Product 7</u>. Galvanized carbon steel sheet, in coils, commercial or lock-forming quality, G-90 coating, regular or minimum spangle, 0.014 inch through 0.024 inch in thickness, 24 inches through 48 inches in width.

Bars

Product 8. Deformed reinforcing bars, ASTM 615, Grade 60, No. 4.

Product 9. Hot-rolled carbon steel bars, in cut lengths or coils, 1/2 inch through 6-1/8 inches in diameter/thickness, all shapes except flats, 1000 series, not thermal treated.

Product 10. Cold-formed carbon steel bars, in cut lengths or coils, 1/2 inch through 6 inches in diameter/thickness, all shapes including flats, 1000 series, not thermal treated.

Wire rods

Product 11. Hot-rolled carbon steel wire rod, in coils, standard quality, AISI specifications C-1008 through C-1022, 7/32 inch in diameter.

Structural shapes

Product 12. Sheet piling, U.S. domestic type PZ-27 or comparable imported piling (for example, Canadian piling CZ-128), Z web, 27 pounds per square foot of wall, or equivalent.

Product 13. Wide-flange carbon steel beams, A-36 or equivalent, 8 inches by 8 inches, 31 through 67 pounds per foot, 40 through 60 feet in length, item order of 5 tons and over.

Product 14. Angles, 2-1/2 inches x 2-1/2 inches x 1/2 inch, A-36 or M1015 or M1020.

Railway products

Product 15. Carbon steel rails, standard quality, 39 feet in length, 115 lbs. through 140 lbs. per yard.

Product 16. AAR freight car wheels.

Product 17. AAR railroad freight car axles, 6 x 11 or 6-1/2 x 12.

Product 18. Tie plates, AREA standard.

Pipes and tubes

Product 19. Round sprinkler pipe meeting specification ASTM-A120, schedule 40 (heavy wall), black (not galvanized, 2 inch nominal diameter, 0.154 inch" wall thickness, plain end.

Pipes and tubes--Continued

Product 20. Round fence tubing, light wall, galvanized, 1.315 inch outside diameter, black (not galvanized), 2 inch nominal diameter, 0.154 inch wall thickness, plain end.

Product 21. Line pipe, API 5L, Grade X42, 8-5/8 inches outside diameter, 0.322 wall thickness, 28.55 pounds per foot.

Product 22. Line pipe, API 5LX, Grade X60, 36 inches outside diameter, 0.375 wall thickness, 142.68 pounds per foot.

Product 23. Square light wall mechanical tubing meeting specification ASTM-A513 (mechanical) or ASTM-A500 (ornamental), 1 inch square, 16 gauge (0.058 inch to 0.065 inch) wall thickness, 20 to 24 foot mill lengths.

Product 24. Oil-country tubular goods, API 5A, Grade K-55, 7 inches outside diameter, 0.317 inch wall thickness, 23 pounds per foot, PE.

Product 25. Oil-country tubular goods, API 5A, Grade N-80, 5-1/2 inch outside diameter, 0.304 inch wall thickness, 17 pounds per foot, PE, T&C.

Wire and wire products

Product 26. Galvanized wire, 12 gauge, soft industrial quality.

Product 27. Barbed wire, 12-1/2 gauge, 2 point, 4 inch, 2 ply, 80 rod reel.

Product 28. Nails, 16d, common bright.

Product 29. Galvanized farm fence wire, 1047 X 9.

Product 30. Baling wire, 14-1/2 gauge, ASAE No. 5600.

Product 31. Prestressed concrete steel wire strand, 1/2 inch, 270K, stress relieved, 7 wire.

Product 32. Steel wire rope, IPS, 5/8 inch, 6 x 19, IWRC.

APPENDIX Q

U.S. PRODUCERS' EFFORTS TO COMPETE AND PLANNED ADJUSTMENTS IF RELIEF IS GRANTED

* * * * * * *

APPENDIX R

U.S. PRODUCERS' CAPITAL EXPENDITURES AND RESEARCH AND DEVELOPMENT EXPENSES

Capital Expenditures

Steel versus nonsteel capital expenditures

AISI reports that steel companies have made $17.5 billion in capital expenditures between 1979 and 1983, 65 percent of which were for the steel segments of their overall operations (table R-1). However, this proportion is somewhat misleading because an examination of yearly expenditures indicates that the share of total expenditures utilized in the steel segment has been decreasing. For example, during 1979 the steel segment received 71 percent of all capital expenditures; by 1983 that figure had dropped to 58 percent.

Table R-1.--Steel companies' capital expenditures in their steel and nonsteel business segments, 1979-83

Item	1979	1980	1981	1982	1983
	Value (million dollars)				
Steel segments	2,358	2,606	2,367	2,200	1,882
Nonsteel segments	915	744	959	1,974	1,316
Unallocated corporate	39	40	39	45	37
Total	3,312	3,390	3,365	4,219	3,235
	Percent of total value				
Steel segments	71.2	76.9	70.3	52.1	58.2
Nonsteel segments	27.6	21.9	28.5	46.8	40.7
Unallocated corporate	1.2	1.2	1.2	1.1	1.1

Source: American Iron & Steel Institute, 1982 Annual Statistical Report, p. 13, and unpublished 1983 statistics of the American Iron & Steel Institute.

Specific data on total yearly industry investments in nonsteel segments of the steel companies' businesses are not available. However, it is known that the steel companies have made sizable investments in nonsteel businesses, such as the 1982 acquisition of Marathon Oil Co. by U.S. Steel. Table R-2 shows the aggregated steel and nonsteel identifiable asset base of the steel companies. The trend evidenced in this table is that steel companies have become more diversified over the past 5 years. Table R-3 shows the aggregated contribution to sales and operating income of the steel and nonsteel segments of the steel industry. It shows what management is attempting to accomplish via diversification. In 1982 and 1983 the nonsteel segments' operating income offset a substantial portion of the losses which were incurred in the steel operations.

Table R-2.--Steel and nonsteel components of steel companies' indentifiable asset base, 1979-83

Item	1979	1980	1981	1982	1983
	Value (million dollars) 1/				
Steel segments	27,206	28,227	28,524	25,721	25,605
Nonsteel segments	10,426	11,706	13,332	20,468	19,610
Unallocated corporate	2,577	3,764	4,996	3,270	3,779
Total	40,189	43,697	46,852	49,459	48,994
	Percent of total value				
Steel segments	67.7	64.6	60.9	52.0	52.3
Nonsteel segments	25.9	26.8	28.5	41.4	40.0
Unallocated corporate	6.4	8.6	10.7	6.6	7.7

1/ Figures are net of depreciation.

Source: American Iron & Steel Institute, 1982 Annual Statistical Report, p. 13, and unpublished 1983 statistics of the American Iron & Steel Institute.

Table R-3.--Contribution to sales and operating income of steel and nonsteel business segments of steel industry, 1979-83

Item	1979	1980	1981	1982	1983
Sales:					
Steel segment--million dollars	42,859	38,211	43,863	28,870	27,260
Nonsteel segments---do	16,029	18,751	21,231	26,232	23,205
Intersegment eliminations-do	(3,748)	(4,133)	(4,921)	(2,799)	(2,016)
Total---do	55,140	52,829	60,173	52,323	48,449
Operating income:					
Steel segment---do	1,962	777	2,362	(2,764)	(1,920)
Nonsteel segments---do	1,227	1,567	1,634	1,581	1,209
Unallocated corporate items million dollars	(201)	(214)	(274)	(218)	(355)
Total---do	2,988	2,130	3,722	(1,401)	(1,066)
Steel sales as a share of total sales---percent	77.7	72.3	72.9	55.2	56.3
Steel operating income as a share of total operating income percent	65.7	36.5	63.5	1/	1/

1/ Percentage is not meaningful.

Source: American Iron & Steel Institute, 1982 Annual Statistical Report, p. 13, and unpublished 1983 statistics of the American Iron & Steel Institute.

The Commission also collected data on capital expenditures in its questionnaires. These data differ somewhat from those reported by AISI, but are presented in table R-4 for comparison, and to show the share of total expenditures accounted for by integrated producers, nonintegrated producers, and nonsteel producers. Because not all nonintegrated and nonsteel producers responded to the questionnaire, their shares are understated to some degree.

Table R-4.--Capital expenditures of U.S. producers of carbon and alloy steel products (including raw carbon and alloy steel), 1/ by types of producers, 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers million dollars--	2,819	2,874	2,979	3,211	3,060
Nonintegrated steel producers million dollars--	323	417	627	494	349
Nonsteel producers----------do----	87	101	89	74	35
Total------------------do----	3,230	3,393	3,695	3,780	3,444
As a share of total capital expenditures:					
Integrated steel producers percent--	87.3	84.7	80.6	84.9	88.9
Nonintegrated steel producers percent--	10.0	12.3	17.0	13.1	10.1
Nonsteel producers--------do----	2.7	3.0	2.4	2.0	1.0

1/ Includes only operations in the United States.

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

Expenditures for environmental facilities

Since 1951 the steel industry has expended a total of $5.8 billion on plant and equipment to maintain and enhance environmental quality (table R-5). Between 1976 and 1983, the industry has spent as much as $651 million in one year. In 1982, the industry spent its smallest amount, $140 million, since 1976.

Table R-5.--Steel companies' capital expenditures for environmental facilities, 1951-83

(In millions of dollars)

Period	Water	Air	Total
1951-65	209.6	238.8	448.4
1969-70	315.9	256.9	572.8
1971-75	439.3	790.6	1,229.9
1976	158.7	330.5	489.2
1977	205.7	329.1	534.8
1978	180.8	277.2	458.0
1979	201.2	449.6	650.8
1980	168.2	342.3	510.5
1981	119.4	369.8	489.2
1982	104.6	157.3	261.9
1983	55.6	84.6	140.2
Total	2,159.8	3,626.7	5,785.7
Authorized for 1984 or later	112.7	99.5	212.2

Source: American Iron & Steel Institute 1982 Annual Statistical Report, p. 10, and unpublished 1983 statistics of the American Iron & Steel Institute.

Research and Development

Research and development expenditures for those companies that reported such expenditures in the Commission's questionnaire are presented in table R-6. Such expenditures more than doubled from 1979 to 1982 and then fell sharply in 1983.

Table R-6.--Research and development expenditures for all carbon and alloy steel products (including raw carbon and alloy steel), 1/ 1979-83

Item	1979	1980	1981	1982	1983
Integrated steel producers million dollars	54.0	61.7	98.7	116.0	75.4
Nonintegrated steel producers million dollars	6.8	11.3	14.3	18.6	20.7
Nonsteel producers do	6.7	7.3	7.7	7.3	6.1
Total do	67.5	80.3	120.7	141.9	102.2
As a share of research and development expenditures:					
Integrated steel producers percent	80.1	76.9	81.8	81.7	73.7
Nonintegrated steel producers percent	10.1	14.0	11.8	13.1	20.3
Nonsteel producers do	9.8	9.1	6.4	5.2	6.0

1/ Includes only operations in the United States.

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

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