CERTAIN SPECIAL QUALITY HOT-ROLLED AND SEMIFINISHED CARBON AND ALLOY STEEL PRODUCTS FROM BRAZIL

Determination of the Commission in Investigation No. 731-TA-572 (Preliminary) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigation

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Note.--Information that would reveal business proprietary operations of individual concerns may not be published and therefore has been deleted from this report. Such deletions are indicated by asterisks.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 731-TA-572 (Preliminary)

Certain Special Quality Carbon and Alloy Hot-Rolled Steel Bars and Rods and Semifinished Products from Brazil

Determination

On the basis of the record[1] developed in the subject investigation, the Commission determines,[2] pursuant to section 733(a) of the Tariff Act of 1930 (19 U.S.C. § 1673b(a)), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports from Brazil of certain special quality carbon and alloy hot-rolled steel bars and rods and semifinished products,[3] covered by subheadings/statistical reporting numbers 7207.11.00, 7207.12.0010, 7207.19.0030, 7207.20.0025, 7207.20.0075, 7214.30.00, 7214.40.00, 7214.50.00, 7214.60.00, 7224.10.0075, 7224.90.0045, 7224.90.0065, and 7228.30.80 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value.

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[1]The record is defined in sec. 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR § 207.2(f)).

[2] Commissioners Brunsdale and Crawford voted in the negative. Commissioner Rohr voted in the negative regarding finished free-machining bars.

[3] For purposes of this investigation, the imports subject to investigation are certain hot-finished carbon and alloy (other than stainless, high speed, silico-manganese, and tool steel) steel bars and rods, which have a uniform solid cross-section along their whole length and are in the shape of circles, segments of circles, ovals, rectangles, or other convex polygons. The subject bars and rods are of special bar quality engineered steel that are described in Society of Automotive Engineers (SAE) standards J403, J404, J411, J1081, J1249, J1268, and modifications thereof. Also included are certain alloy ingots (other than stainless steel, high-speed steel, silico-manganese steel, tool steel, and high-nickel alloy steel), and semifinished products of carbon and alloy steel (other than stainless steel, high-speed steel, silico-manganese steel, tool steel, and high-nickel alloy steel), of circular or rectangular (including square) cross-section with a width measuring less than four times thickness, of special bar quality engineered steel. Excluded from the scope of the investigation are imports of semifinished products or hot-rolled bars and rods which contain by weight 0.03 percent or more of lead or 0.05 percent or more of bismuth; nonalloy steel ingots or other primary forms; semifinished or hot-rolled products of merchant quality steels (American Iron and Steel Institute (AISI) grades M 1000 through M 1044); hot-rolled bars and rods in coiled form; forged bars; and reinforcing bars and rods.

Background

On June 9, 1992, a petition was filed with the Commission and the Department of Commerce by Republic Engineered Steels, Inc., Massillon, OH, and The Timken Company, Canton, OH, alleging that an industry in the United States is materially injured or threatened with material injury by reason of LTFV imports of certain special quality hot-rolled and semifinished carbon and alloy steel products from Brazil. Accordingly, effective June 9, 1992, the Commission instituted preliminary antidumping investigation No. 731-TA-572. Notice of the institution of the Commission's investigation and of a public conference 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, DC, and by publishing the notice in the Federal Register of June 17, 1992 (57 F.R. 27064). The conference was held in Washington, DC, on June 30, 1992, and all persons who requested the opportunity were permitted to appear in person or by counsel.

VIEWS OF CHAIRMAN NEWQUIST, VICE CHAIRMAN WATSON, AND COMMISSIONER NUZUM

Based on the record in this preliminary investigation, we determine that there is a reasonable indication that two industries in the United States -- one producing semifinished special quality carbon and alloy steels, and another producing hot-rolled special quality carbon and alloy bar (coiled and cut-length) and cut-length rod -- are materially injured by reason of imports from Brazil of certain special quality carbon and alloy hot-rolled steel bar and rod and semifinished products thereof that are alleged to be sold at less than fair value (LTFV).

I. THE LEGAL STANDARD FOR PRELIMINARY DETERMINATIONS

The legal standard in preliminary antidumping investigations requires the Commission to determine whether, based on the best information available at the time of the preliminary determination, there is a reasonable indication of material injury or threat thereof to a domestic industry by reason of the subject imports.[1] In this investigation, the Commission considered whether "(1) the record as a whole contains clear and convincing evidence that there is no material injury or threat of such injury; and (2) no likelihood exists that contrary evidence will arise in a final investigation."[2] The U.S. Court of Appeals for the Federal Circuit has held that this interpretation of the standard "accords with clearly discernable (sic) legislative intent and is sufficiently reasonable."[3]

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[1] 19 U.S.C. § 1673b(a).

[2] American Lamb Co. v. United States, 785 F.2d 994, 1004 (Fed. Cir. 1986).

[3] Id.

II. LIKE PRODUCT AND DOMESTIC INDUSTRY

In determining whether an industry in the United States is materially injured or is threatened with material injury by reason of the subject imports, the Commission must first define the "like product" and the "industry." Section 771(4)(A) of the Tariff Act of 1930 (the "Act") defines the relevant industry as the "domestic producers as a whole of a like product, or those producers whose collective output of the like product constitutes a major proportion of the total domestic production of that product . . . ."[4] In turn, the statute defines "like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation . . . ."[5]

A. Background and Products Subject to Investigation

In its notice of initiation,[6] the Department of Commerce (Commerce) defined the class or kind of merchandise subject to investigation as follows:

> [H]ot-finished carbon and alloy (other than stainless, high speed, silico-manganese, and tool steel) steel bars and rods, other than forged, which have a uniform solid cross-section along their whole length and are in the shape of circles, segments of circles, ovals, rectangles, triangles, or other convex polygons, and do not conform to the definitions for semifinished steel, flat-rolled products, hot-rolled bars and rods in irregularly wound coils, reinforcing bars and rods, and wire. The subject bars and rods are of special bar quality engineered steel . . . other than merchant quality

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4 19 U.S.C. § 1677(4)(A).

5 19 U.S.C. § 1677(10). The Commission's determination of what is the appropriate like product or products in an investigation is a factual determination, to which we apply the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis. In defining the like product, the Commission generally considers a number of factors including: (1) physical characteristics and uses; (2) interchangeability of the products; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) the use of common manufacturing facilities and production employees; and where appropriate, (6) price.

6 57 Fed. Reg. 29703-04 (July 6, 1992).

> grades . . . not containing .03 percent or more of lead or 0.05 percent of bismuth. . . .
>
> Also included in the scope of this investigation are certain alloy ingots (other than stainless steel, high-speed steel, silico-manganese steel, tool steel, and high-nickel alloy steel), and semifinished products of carbon and alloy (other than stainless steel, high-speed steel, silico-manganese steel, tool steel, and high-nickel alloy steel) steel, of circular or rectangular (including square) cross-section with a width measuring less than four times thickness, of special bar quality engineered steel . . . not containing 0.03 percent or more of lead or 0.05 percent or more of bismuth . . . .

This class or kind of merchandise **excludes** the following categories of special quality steels:

1. semifinished carbon ingots
2. alloy silico-manganese steels
3. lead, bismuth, tellurium, or selenium hot-rolled carbon and alloy bar and rod (lead and bismuth steels)
4. coiled carbon and alloy hot-rolled bar and rod
5. forged carbon and alloy bar
6. flat-rolled products.[7]

The products covered by these investigations are all "special quality" steels. The Commission recently defined "special quality bar and rod" to include the following:

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[7] Commerce's initiation notice also stated:

> given (1) the clear distinction normally maintained in the steel trade between semifinished products and finished products such as bars and rods, and (2) an examination of the criteria used to evaluate class or kind of merchandise . . . , we question petitioners' assertion that the subject merchandise comprises one class or kind of merchandise. Therefore, we are requesting all interested parties to comment on the scope of these proceedings, particularly whether the subject merchandise in this case comprises one class or kind of merchandise or more.

Id. at 29704.

> Special quality bar and rod is used where the steel is required to be hot-forged, heat-treated, cold-drawn, machined, or used in particular structural applications or in high product liability applications. . . Special quality bar and rod is produced to be as free from visible surface defects and excessive chemical segregation as is possible given the particular metallurgy. Special quality carbon steel bar and rod generally is subjected to rigorous product analysis and chemical uniformity which are not typical of merchant quality hot-rolled carbon steel bar and rod. . . Special quality hot-rolled carbon steel bar and rod is used in the specialized manufacturing operations for critical components in high performance machinery.[8]

The special quality steel products subject to this investigation fall into two types of categories: "semifinished" ingots, blooms and billets, and "hot-rolled" bar and rod. The term "semifinished" in this investigation means the products which are the result of both conventional ingot teeming[9] and continuous casting: ingots, blooms, or billets.[10] These semifinished products are normally of much greater diameter than finished hot-rolled bar or rod. They have not been further worked as hot steel other than undergoing initial hot-rolling or rough shaping by forging (pressing). Most U.S. producers classify any product greater than 4 inches in cross section as "semifinished" steel.[11]

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[8] Certain Hot-Rolled Lead and Bismuth Carbon Steel Products from Brazil, France, Germany, and the United Kingdom, Invs. Nos. 701-TA-314 through 317 (Preliminary), and Invs. Nos. 731-TA-552 through 555 (Preliminary), USITC Pub. 2512 (June 1992) (Lead and Bismuth Investigations) at 7-8.

[9] For a discussion of "ingot teeming" and "continuous casting," see the Staff Report to the Commission (July 16, 1992) in this investigation ("Report") at I-13 - I-15.

[10] An "ingot" is the largest semifinished form. It is produced by pouring liquid steel into a large round shaped mould. When the steel has cooled, the mould is removed and the ingot is then reheated and hot-rolled into a bloom. There are no widely accepted precise definitions for a "bloom" or "billet"; the principal distinction is one of size -- blooms are larger than billets in cross-sectional area and commonly include products greater than 7 inches in diameter. Billets normally include circular, square or rounded corner square products typically greater than 4 inches in diameter. Report I-15 n.15. Semifinished "slabs" used to make flat-rolled products are not included within this investigation.

[11] Questionnaire responses.

The second major category of special quality steels subject to this investigation are certain imports of "hot-rolled" bar and rod. These products are manufactured by heating (usually to above 2,200 degrees F) and reducing a semifinished billet to a final thickness and shape by passing it through a series of rolls.[12] A "cold-finished" or "cold-formed" bar is a hot-rolled product which is descaled (submerged in an acid solution or shot blast) to remove oxide scale formed during the hot-rolling process, and which then undergoes additional processing at ambient temperatures in the form of polishing, turning, grinding, and/or straightening.[13]

Hot-rolled "bar" includes hot-rolled products both in cut-lengths and irregularly wound coils.[14] Bar may be round, rectangular, and hexagonal, and consist of various diameters from 1/2 to 12 inches, with the upper limit for coiled bar being 2 inches.[15] The subject imports include cut-length hot-rolled bar, but not coiled hot-rolled bar. Hot-rolled "rod" includes coiled, hot-rolled product of a solid, approximately round cross section, not under 0.20 inches nor over 0.74 inches in diameter.[16] The subject imports include cut-length rod, but not coiled rod. There were no cut-length special quality rod products manufactured by U.S. producers during the period of investigation.[17]

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[12] Report C-4.

[13] Lead and Bismuth Investigations at 5.

[14] Report C-4.

[15] Id.

[16] Id. As used herein, neither hot-rolled carbon steel bar nor hot-rolled carbon steel rod include reinforcing bar or rod, which is part of "merchant" quality hot-rolled carbon steel bar and rod. Id.

[17] Questionnaire responses; Report D-14. There were very small amounts of imports of special quality cut-length rod from Brazil during the period of investigation.

The special quality steels subject to investigation include both carbon and alloy steels. "Carbon steel" means all nonalloy steel that contains less than 2 percent carbon.[18] "Alloy steel" is defined in the Harmonized Tariff System of the United States (HTSUS) as steels which contain a number of different elements in specified amounts including aluminum, boron, chromium, cobalt, copper, lead, manganese, molybdenum, nickel, niobium, silicon, titanium, tungsten, vanadium, zirconium, and other elements with 0.1 percent or more of other elements.[19]

A subcategory of special quality steels is "free-machining" steels.[20] Hot-rolled free-machining steels are primarily carbon steel bar (only small amounts of rod) that contain properties that allow end-users of cold-finished bar to machine, forge, or cut more easily than other types of carbon steel. "Machinability" is that combination of physical and metallurgical properties of a steel that determines how easily metal may be removed by a cutting tool.[21] Free-machining steels are either resulphurized (sulphur added), and/or rephosphorized (phosphorus added), renitrogenized (nitrogen added), or contain lead, bismuth, selenium or tellurium additives.[22]

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[18] Report C-3.

[19] HTSUS Chapter 72, Note 1(f), at 72-2.

[20] The term "free-machining" is typically used in the United States and "free-cutting" is also used interchangeably in other countries. A subcategory of free-machining steels is lead and bismuth steels which are used for more intensive cutting (when more than 30 percent of the stock must be removed), while non-leaded free-machining steels are used where less intensive cutting is required. Lead and Bismuth Investigations at 10-11.

[21] Report C-5.

[22] Transcript of Preliminary Conference, June 30, 1992 ("Tr.") at 77. In addition, in higher carbon steels, calcium is added to facilitate the cutting with carbide tools. See also, HTSUS, Chapter 72, subheading Note 1(b).

B. Like Product Analysis

Based on the information available to the Commission in this preliminary investigation, we find that there are two like products: (1) semifinished special quality carbon and alloy steel, and (2) hot-rolled special quality carbon and alloy bar, including cut-length and coiled bar, and cut-length rod. Set forth below is our analysis of the parties' arguments and the relevant issues.

Petitioners are Republic Engineered Steels, Inc. (Republic), and The Timken Company (Timken)(collectively referred to herein as "petitioners").[23] They assert that there should be one like product which consists of the same products as the subject imports and silico-manganese and semifinished high-nickel alloy steels (which are not included within the class or kind of imported merchandise).[24]

Five Brazilian producers of the products subject to investigation appeared as respondents ("Brazilian respondents").[25] They generally agree with much of the petitioners' proposed like product, including the combining of carbon and

[23] Inland Steel Industries (Inland) and Bethlehem Steel Corporation (Bethlehem) -- petitioners in the recent Lead and Bismuth Investigations -- entered appearances as interested U.S. producers.

[24] Post-Conference Brief on behalf of Republic Engineered Steels, Inc. and The Timken Company, July 6, 1992 ("Petitioners' Br.") at 1, 6-7. Petitioners also assert that lead and bismuth steels (found by the Commission in the earlier investigations to be a segment of special quality steels), large special quality forged bar (in excess of 12 inch diameter), and coiled special quality bar and rod should be excluded from the like product definition.

[25] These respondents include Acos Anhanguera (Villares) SA, Acesita - Cia Acos Especiais Itabiera, Mannesman S/A, Acos Finos Piratini SA, and Villares Industrias de Base SA. Several of these Brazilian respondents were also respondents in the Lead and Bismuth Investigations. Also entering appearances are two importers of the subject imports, Caterpillar Inc. (U.S. manufacturer of heavy equipment), and Raritan River Steel Company (U.S. wire rod manufacturer).

alloy, and of semifinished with hot-rolled special quality products in one like product.[26] However, the Brazilian respondents contend that lead and bismuth steels and coiled special quality hot-rolled bar and rod also should be included with the other special quality steels within a single like product.

Caterpillar concurs with the Brazilian respondents, but argues that large diameter forged (too large to be hot-rolled) bar should be included within a single like product of special quality steels.[27]

Inland and Bethlehem repeat many of the same arguments they raised in the Lead and Bismuth Investigations, i.e., that special quality lead and bismuth hot-rolled bar and rod should not be included in the same like product with other types of special quality steels.[28] However, they now offer an alternative position that free-machining steels (lead and non-lead) should be a separate like product. The Cold Finished Steel Bar Institute argues that free-machining steels (defined to include only 1200 series carbon steels) should be a separate like product apart from other special quality steels.[29] Finally, the Raritan River Steel Company maintains that semifinished special quality steel billets should be a separate like product.[30]

None of the parties asserts that the like product should include

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[26] Post-Conference Brief of Brazilian Respondents, July 6, 1992 ("Brazilian Br.") at 5.

[27] Post-Conference Brief of Caterpillar Inc., July 6, 1992 ("Caterpillar Br.") at 6-7.

[28] Post-Conference Brief of Bethlehem Steel Corp. Bar Rod & Wire Division and Inland Steel Bar Company, July 6, 1992 ("Bethlehem and Inland Br.") at 21-25.

[29] Post-Conference Brief by the Cold Finished Steel Bar Institute, July 6, 1992 ("Institute Br.") at 2-6.

[30] Post-Conference Brief Submitted on Behalf of Raritan River Steel Company, July 6, 1992 ("Raritan Br.") at 1-14.

"merchant" quality carbon steel bar and rod. Many of the parties have indicated their agreement with the Commission's preliminary determination in the Lead and Bismuth Investigations separating merchant from special quality hot-rolled bar and rod. Evidence gathered in this investigation lends further support to that conclusion.[31] Indeed, both the petitioners and the Brazilian respondents in the Lead and Bismuth Investigations have indicated in this investigation that they support excluding merchant quality carbon steel bar and rod from the like product in this investigation.[32]

Similarly, none of the parties argue that the like product should not include both carbon and alloy special quality steel products.[33] To the contrary, petitioners and the Brazilian respondents contend that carbon and alloy special quality steels should be combined in a single like product. The record in this investigation strongly indicates that there is no bright line distinction

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[31] Report E-6. Transcript of preliminary conference, June 30, 1992 ("Tr.") 94-100.

[32] Petitioners' Br. at 1; Brazilian Br. at 7-8. There is a substantial dispute between petitioners and the Brazilian respondents concerning whether a large portion of the subject imports are "merchant" or "special quality." Based on discussions with industry experts and metallurgists, it would appear that the majority of the products are special quality. Report I-122. However, it is difficult to make a definitive finding without knowledge of the end use or the specifications -- information not provided to the Commission. Thus, in this preliminary investigation, we have given petitioners the benefit of any doubt concerning the categorization of these imports. We will investigate this issue further in any final investigation.

[33] A decade ago, the Commission found that carbon and alloy hot-rolled bars were separate like products. Certain Steel Products from Belgium, Brazil, France, Italy, Luxembourg, the Netherlands, Romania, the United Kingdom, and West Germany, Invs. Nos. 701-TA-86 through 144, 701-TA-146 and 147 (Preliminary), and Invs. Nos. 731-TA-53 through 86 (Preliminary), USITC Pub. 1221 (Feb. 1982) Vol. I at 11. However, the Commission did not provide a detailed analysis of the distinctions between carbon and alloy hot-rolled bars either in its 1982 decision or in the Commission report.

between carbon and alloy special quality steels.[34]

1. Semifinished special quality carbon and alloy steel as a separate like product[35]

We determine in this investigation that <u>semifinished</u> special quality steels should not be combined in the same like product with <u>hot-rolled</u> special quality steel bar. In analyzing whether a semifinished product should be included in the same like product with a finished product, the Commission typically examines five factors, including: 1) the necessity for, and costs of, further processing; 2) the degree of interchangeability of articles at different stages of production; 3) whether the article at an earlier stage of production is dedicated to use in the finished article; 4) whether there are significant independent uses or markets for the finished and unfinished articles; and 5)

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[34] Physical characteristics of both carbon and alloy special quality steels involve similar high levels of cleanliness, soundness and uniformity of chemical consistency. Both also have surface quality suitable for rerolling or forging. Carbon and alloy special quality steels are produced in similar sizes, shapes, and configurations. Both are sold to the same end use markets, whether it be to cold finishers, forgers, or auto and appliance manufacturers. The end uses for both carbon and alloy steels products are very similar -- both are used for hot forging, and rerolling into special quality bars and rods. End products include forgings, bolts, fasteners, tools & construction applications. For discussion of above, <u>see</u> Tr. 94-100.

A number of U.S. steel producers manufacture both carbon and alloy special quality semifinished and hot-rolled bar using the same workers, processes and equipment. Both alloy and carbon steels can be heat-treated, and the internal quality chemistry control for carbon steel is as demanding as for alloy steel. Finally, carbon and alloy special quality steels are priced similarly, except for the additional costs associated with the specific alloying elements added. <u>Id</u>.; Report E-3 - E-4.

[35] We have included carbon semifinished ingots within the semifinished special quality like product in this investigation. The record indicates that there continues to be some production of carbon ingots dedicated to the production of special quality hot-rolled bar. It is neither customary nor practicable for U.S. integrated producers of carbon steel ingots to transfer special quality ingots from hot-rolled bar and rod products to flat rolled products, and vice versa. Office of Industries Memorandum, July 17, 1992. Furthermore, there is no distinction in chemistry between special quality carbon ingots and special quality carbon blooms, billets and hot-rolled products of the same grade of steel.

whether the article at an earlier stage of production embodies or imparts to the finished article an essential characteristic or function.[36]

In applying these factors, the record indicates that approximately 85 percent of the semifinished special quality steel -- ingots, blooms and billets -- produced in the United States is further hot-rolled into bar or rod by the same steel manufacturers producing the semifinished product.[37] The remaining 15 percent of semifinished steel not consumed internally is sold by U.S. producers in an independent U.S. market to the forging industry,[38] to several wire rod producers, and at least one bar producer.[39] This independent market in semifinished special quality steels is also the destination of the subject imports of semifinished special quality steels. These semifinished imports enter the United States under separate headings in the HTSUS for semifinished steels.[40] Generally, however, most U.S. producers of special quality bar and rod produce their own semifinished steel.[41]

The processing costs incurred in transforming a semifinished special quality steel product into a hot-rolled product are relatively significant.[42] The Commission previously has found a separate like product where the costs of

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[36] See, e.g., Fresh and Chilled Atlantic Salmon from Norway, Inv. Nos. 701-TA-302, 731-TA-454 (Final), USITC Pub. 2371 at 8-9 (April 1991) (semifinished product analysis used to determine whether salmon smolt and adult salmon should be included in same like product).

[37] Report, Table 8C, at I-67.

[38] Id. at I-60.

[39] Id. at I-32; Tr. 14.

[40] Petition at 7.

[41] Report I-34 - I-39.

[42] Petitioners' Br. at 4-5.

completing a finished product were significant.[43]

Because of the necessity for further processing, semifinished billets or blooms and the finished hot-rolled bar generally are not interchangeable in use. The finished bar product normally has a considerably smaller cross section than a semifinished billet, bloom, or much larger ingot. Most purchasers of bar do not have the facilities to reheat and re-roll billets or blooms into bar.[44] Thus, the billet, bloom, or ingot cannot be used for the same purposes as the finished hot-rolled product without additional heating and hot-rolling.

The hot-rolling process, which transforms the semifinished product into a finished bar or rod, enhances the mechanical qualities (tensile strength, toughness, and resistance to fatigue) of the steel.[45] Nevertheless, the steel chemistry, which largely determines resulting mechanical qualities, is present in both the semifinished steel and the hot-rolled bar and rod.[46] However, semifinished steels generally have distinctly larger and rougher physical shapes than the variety of shapes found in smaller hot-rolled finished products.

In light of the fact that (1) there is an important independent market for semifinished special quality steel, (2) significant costs are involved in transforming semifinished special quality steel into finished hot-rolled special

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[43] See Tart Cherry Juice and Tart Cherry Juice Concentrate from Germany and Yugoslavia, Invs. Nos. 731-TA-512 and 513 (Preliminary), USITC Pub. 2378 (May 1991) at 10-12 (raw cherries treated as separate like product where cost of picking and sorting was a small percentage of the total cost of processed cherry juice concentrate); Cf. Magnesium from Canada and Norway, Inv. Nos. 731-TA-528 and 529 (Preliminary), USITC Pub. 2443 (October 1991) at I-11 (no separate like product found where, inter alia, further processing of pure magnesium into alloy is minimal compared to cost of processing raw materials into pure magnesium).

[44] Tr. 92-93.

[45] Tr. 89-90.

[46] See Report I-17.

quality bar, and (3) many essential characteristics of the semifinished special quality steel are distinct from those of hot-rolled special quality bar, we find that semifinished special quality steel should be a separate like product.[47]

2. Hot-rolled special quality carbon and alloy bar and cut-length rod as a separate like product[48]

We further determine that a second like product is special quality hot-rolled bar (both coiled and cut-length) and cut-length rod.[49] Petitioners argue that coiled hot-rolled special quality bar and rod should be excluded from the like product.[50] The Brazilian respondents assert there are no significant

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[47] In finding a separate like product for semifinished special quality steel, we also have considered the fact that semifinished special quality steel ingots, blooms and billets can and are used to produce both special quality bar and coiled rod. Data collected by the Commission in this investigation with respect to semifinished steel could not be broken out by (a) semifinished steel used to produce bar and (b) semifinished steel used to produce rod. Because coiled rod is not subject to investigation, or included with any like product in this investigation, we cannot logically combine semifinished special quality steel (used to make bar and rod) with hot-rolled bar.

[48] We have not included "forged bars" within either like product. Forged bars are very large bars in excess of 12 inch square or round which are too large to be rolled by any facility in the United States. Forged bars represent a very small segment of the special quality steel market, are specialized, expensive products for a limited number of particular customers, and are produced by a completely different process than hot-rolled bar, i.e., by means of "hammering" a heated ingot.

[49] By combining cut-length rod with bar in this investigation, we do not intend to suggest that coiled rod and bar are part of the same domestic industry. Unlike the Lead and Bismuth Investigations, the Commission obtained considerable evidence in this investigation indicating that bar and coiled rod are distinct industries. Special quality bar and special quality coiled rod have somewhat different physical characteristics, distinct end uses, are produced in different mills, using related but somewhat different processes, are perceived as different products, are generally not interchangeable, and coiled rod is less expensive. Report D-11 - D-14.

[50] One U.S. producer indicated that "if you were to uncoil a coiled product and cut it into straight lengths, you would have cut-length products." Another U.S. producer stated that "[g]enerally, special quality bar products up to approximately 2" in diameter may be supplied in straights or in coil." Questionnaire responses.

differences between coiled and uncoiled bar and rod in either production processes or end uses.[51]

Given the fact that the subject imports specifically include only cut-length bar and cut-length rod, there is an issue whether either coiled bar and/or coiled rod should be included in the like product.

a. Combining coiled bar with cut-length bar[52]

Hot-rolled special quality bar in coiled form is essentially identical to cut-length bar of a similar metallurgy in terms of physical characteristics and surface condition. Coiled and cut-length bar are both available in the same sizes and shapes up to two inches in diameter; greater diameters are only available in cut-lengths.[53] Both cut-length and coiled bar are used by cold-finishers and in cold-heading operations.[54] Some cold-finishers prefer coiled bar because its length permits more efficient processing.[55] However, some users require cut-length because they may not have the equipment to handle heavier coil, or need bar in diameters in excess of two inches. Thus, the choice of whether to use cut-length or coiled bar is a function of the customer's equipment, facilities and preferences.[56] A number of U.S. producers and

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[51] Brazilian Br. at 11.

[52] Petitioners have presented no arguments to justify the exclusion of coiled special quality bar from comparable cut-length special quality bar. Indeed, Republic and Inland produce both cut-length and coiled special quality bar in the same bar mill. Tr. 111, 119. U.S. producers Bethlehem and Inland state that "[t]here are no important differences between coiled and uncoiled bar products." Bethlehem Br. Exhibit 1 at 4.

[53] Report D-9.

[54] Id. at I-54-55, Table 6.

[55] Questionnaire response.

[56] Report E-8 - E-9.

importers of the products under investigation have confirmed that both cut-length and coiled bar are perceived by purchasers to be essentially similar products.[57]

Many bar manufacturers use exactly the same equipment, processes and workers for production of all of their bar, with the diversion to cutting or coiling facilities made only as the last step.[58] After hot-rolling, the bar is either cut to convenient shipping lengths or rolled into coils. The steel is the same in either case, with the only possible difference being greater incidental hardness for coiled steel due to the more gradual cooling times it requires.[59] Finally, the prices of coiled and cut-length bar are comparable.

In short, the record indicates that the domestic product most like the subject imports of cut-length special quality bar is both cut-length and coiled special quality bar. Accordingly, we hold that hot-rolled special quality bar products, both cut-length and coiled, should be included in the same like product.[60]

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[57] Questionnaire responses.

[58] Report E-9; Questionnaire responses. Cut-length products require cooling beds, shears, length measuring devices, and yield planning while coils require coiling tubs and coil handling facilities. Id.

[59] Id.

[60] We have also included silico-manganese and high-nickel alloy steels within both the semifinished and hot-rolled special quality bar like products. Based on the limited information available to the Commission, there appears to be no justification to exclude these alloy steels from other types of special quality steels. We will revisit this issue in any final investigation.

b. Excluding coiled rod from the like product of hot-rolled special quality bar and cut-length rod

We further determine that cut-length rod, but not coiled rod, is included in the same like product with special quality hot-rolled carbon and alloy bar. Commerce's class or kind notice includes special quality cut-length rod. Unlike cut-length bar, the record indicates that none of the U.S. steel manufacturers responding to the questionnaires produce special quality cut-length rod.[61] Rather, these manufacturers report that they make and sell cut-length and coiled bar, or coiled rod.[62]

The record suggests that cut-length rod has certain similar characteristics to cut-length bar of a comparable size. Rod sizes range from 7/32 inch to 47/64 inch, with the great majority of rod being produced to 7/32 inch diameters. Bar sizes generally begin at 1/2 inch and can increase up to 12 inches in diameter.[63] Thus, in the grey area between 1/2 inch and 3/4 inch in which the size of bar and rod overlap, a rod between 1/2 inch and 3/4 inch is similar to a bar of a similar cross-section diameter in terms of metallurgy, and physical characteristics.[64] Both bar and rod of similar cross section shape

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[61] There appears to be only a very small amount of imports of special quality cut-length rod during the period of investigation. There is very limited production of lower merchant type quality rod which is cut-to-length after the rod has already been cooled and coiled in the rod mill. Report D-14.

[62] There is evidence that small quantities of low quality merchant grade rod (less than 1 percent of total rod production) are produced by several U.S. rod producers in cut-length form. This product is used in construction for low stress applications. Report D-14.

[63] Report C-4, D-13.

[64] Report I-20. Less than five percent of all rod (including coiled) is produced to diameters between 1/2 inch and 3/4 inch, and the amount produced over 3/4 inch is minimal. Bar is typically produced in diameters above 1/2 inch, with a very small amount produced below 1/2 inch. Report D-12 - D-13.

and diameter are produced with rolling equipment and techniques which are somewhat comparable.[65]

Finally, the record indicates that rod products are almost always coiled, and over 95 percent of coiled rod products are further processed into wire rod for redraw application for end use products such as tire cord wire or valve spring wire.[66] Coiled rod is not interchangeable with cut-length rod for the purposes of making wire rod.[67]

Accordingly, we find that cut-length special quality rod, but not coiled rod, is part of one like product together with special quality hot-rolled bar, both cut-length and coiled.

3. Proposed like product of free-machining hot-rolled carbon and alloy steel bar and cut-length rod

We are not persuaded, based on the record in this preliminary investigation, that there should be a separate like product limited to hot-rolled free-machining carbon steel bar and rod. Several parties have argued that free-machining steels[68] should be a separate like product apart from other types of special quality steels.[69]

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[65] Report I-18.

[66] Questionnaire response.

[67] Tr. 140-41.

[68] The definitions of free-machining and free-cutting steels are set forth in the Report in detail at I-8. The Report details the apparent lack of agreement concerning the definition and scope of "free-machining" and "free-cutting" steels among foreign and U.S. producers, and the U.S. cold finishers.

[69] The Cold Finished Steel Bar Institute ("Institute"), Bethlehem and Inland, and a number of importers and producers provided information on free-machining steels. The Institute argues that the Commission should find a separate like product of free-machining steels, which they define to include all carbon steels which have been resulphurized and rephosphorized in the 1200 carbon series (including lead/bismuth steels). Such a definition is narrower than that proposed by Bethlehem and Inland and as defined by the Commission in the Lead

This record indicates that free-machining steels in the 1100 and 1200 carbon series grades are distributed primarily to cold-finishers, while approximately 15 percent of non-free-machining special quality steels are purchased by cold-finishers.[70] However, both free-machining and other types of special quality steels are also distributed to forgers, steel service centers, and other purchasers.[71] Free-machining steels are less likely than other special quality steels to be used in high strength or fatigue critical applications.[72]

Some of the new evidence indicates that producers and customers perceive free-machining steels as a distinct product with distinct uses. Bethlehem and Inland note that steel producers market free-machining steels as a separate category (like stainless and tool steel).[73]

There are some differences in production processes between free-machining steels and other types of special quality steels, particularly with respect to leaded steels. However, the majority of the processes for teeming, pouring, hot-rolling, inspecting, conditioning, and shipping for both non-free-machining and free-machining steel(including leaded steel) are identical.[74] All of the U.S. producers of free-machining steels also produce other types of special

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and Bismuth Investigations. Id. at 10 n.29. Bethlehem and Inland raise an argument in the alternative that the Commission should find free-machining steels (including lead and bismuth steels) to be a separate like product from other special quality steels. Petitioners state that free-machining steels other than lead and bismuth should be included in the one like product based on similar methods of manufacturing, channels of distribution and customer perceptions. Petitioners' Br. at 3.

[70] Report Table 6, at I-55.

[71] Id.

[72] Questionnaire response.

[73] Bethlehem and Inland Br. at 19.

[74] Questionnaire response.

quality steels.[75] The same workers generally are used in manufacturing all types of special quality steels. Finally, the record indicates that while the prices for free-machining steel move together and at a premium as compared to less machinable grades, the prices for certain types of special quality steel can be more expensive than free-machining steels.[76]

D. **Like Product Summary**

Thus, for the purposes of this preliminary investigation, we find two separate like products of semifinished special quality carbon and alloy steel, and hot-rolled special quality carbon and alloy bar (coiled and cut-length) and cut-length rod. The semifinished special quality like product includes carbon and alloy ingots, blooms, and billets, lead and bismuth,[77] high-nickel alloy, and silico-manganese semifinished steels, but does not include semifinished forged bar or semifinished stainless and tool steels. The hot-rolled special quality like product includes lead and bismuth free-machining, silico-manganese, and high-nickel alloy steels, coiled and cut-length bar, and cut-

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75 Report I-40.

76 In the Lead and Bismuth Investigations, five of the six Commissioners determined not to adopt a like product of free-machining steels, but instead determined that the like product should be the broader category of special quality steels. However, these Commissioners indicated that such a like product would be examined in detail in any final investigation in this case. Id. at 22. Similarly, in the event of a final investigation, we intend to examine in greater detail whether free-machining steels should be considered a separate like product of special quality semifinished and/or special quality hot-rolled bar and cut-length rod.

77 We also are not persuaded that any substantial new evidence has been presented by petitioners or Bethlehem and Inland regarding whether lead and bismuth steels should be considered separately from all other types of special quality steels. Most of the information provided in this investigation was available in the record of the Lead and Bismuth Investigations. For the reasons stated in the Commission's preliminary determination in Lead and Bismuth Investigations at 14-19, and in this decision, we include lead and bismuth special quality bar and cut-length rod in the same like product with other types of special quality hot-rolled bar and cut-length rod.

length rod, but does not include coiled rod, stainless steels, and tool steels. We, therefore, determine that the relevant domestic industries for the purposes of our analysis consist of the domestic producers of semifinished special quality steels, and the domestic producers of hot-rolled special quality bar and cut-length rod.[78]

III. CONDITION OF THE INDUSTRY

In assessing whether there is a reasonable indication of material injury to a domestic industry by reason of allegedly dumped imports, the Commission is instructed to consider "all relevant economic factors which have a bearing on the state of the industry in the United States . . . ."[79] In undertaking that assessment, we consider, among other relevant factors, U.S. consumption, production, shipments, capacity utilization, employment, wages, financial performance, capital investment, and research and development expenses.[80] No single factor is considered dispositive in evaluating the condition of the industry. In each investigation, the Commission considers the particular nature of each of the industries under investigation[81] in the "context of the business cycle and conditions of competition that are distinctive to the affected

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[78] We note that there is a related parties issue pursuant to 19 U.S.C. § 1677(4)(B) for one U.S. producer, Raritan River Steel Company ("Raritan") of semifinished special quality steel (dedicated to the production of wire rod) who is also importing substantial quantities of special quality semifinished billets. None of the parties has raised the related parties issue. In this preliminary investigation we determine not to exclude Raritan from our consideration of the domestic industry. We intend to investigate this issue further in any final investigation, including whether Raritan's role as an importer shields it from the effects of the unfair imports.

[79] 19 U.S.C. § 1677(7)(C)(iii).

[80] See 19 U.S.C. § 1677(7)(C)(iii).

[81] See 19 U.S.C. § 1677(7)(C)(iii). See also H.R. Rep. No. 317, 96th Cong., 1st Sess. 36; S. Rep. No. 249, 96th Cong., 1st Sess. 88.

industry."[82]

A. **Market characteristics**

The Commission has identified at least twenty U.S. producers of semifinished special quality products.[83] Hot-rolled special quality bar is manufactured by at least nineteen different U.S. producers.[84] Integrated steel producers account for approximately two-thirds of special quality steel production in the United States.[85] These integrated producers traditionally have made special quality steel by processing iron ore, making coke, and iron prior to refining special quality steel.[86] Many of these integrated producers "teem" or pour hot liquid special quality steel into ingots.[87]

The other group of U.S. producers of special quality steel, accounting for approximately one-third of production, are the so-called minimills. These minimills use electric arc furnaces and scrap as the primary raw material, and generally use continuous casting equipment to cast billets and blooms directly, bypassing the ingot process.[88] Because some integrated producers now also use electric arc furnaces, scrap and continuous casting equipment, there increasingly is a blurring of the lines between the two types of producers.

The semifinished special quality and hot-rolled special quality bar products manufactured by these producers and the subject imports are used in

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82 19 U.S.C. § 1677(7)(C)(iii).

83 Report I-40, Table 4.

84 Id.

85 Id. at H-3.

86 Id. at I-41.

87 Id.

88 Id.

the automobile, heavy equipment, and farm machinery industries. While large quantities of these steel products are sold directly to large manufacturers to be further processed for use in final products, significant quantities are also sold to independent forgers, cold finishers, steel distributors, and other classes of customers. Producers and importers have indicated that demand for these products has generally declined since 1989 as a result of the recession and the declining U.S. market share of the major domestic auto producers.[89]

B. Domestic industry of semifinished special quality steel

Apparent U.S. consumption of semifinished special quality steel increased by 15 percent from 5.67 million tons to 6.52 million tons between 1989 and 1990, but decreased by 12.6 percent to 5.70 million tons in 1991.[90] The U.S. producers' market share by quantity rose from 91.1 percent in 1989 to 91.5 percent in 1990, before declining to 89.2 percent in 1991 and 87.4 percent in the first quarter of 1992.[91] The U.S. producers' market share by value increased from 91 percent in 1989 to 91.7 percent in 1990, before decreasing to 89.9 percent in 1991, and falling further to 88.2 percent in the first quarter of 1992.[92]

The domestic semifinished special quality steel industry's capacity utilization increased from 65.1 percent in 1989 to 69 percent in 1990, before falling to 60.5 percent in 1991. The U.S. industry's shipments by quantity increased by 15.5 percent between 1989 and 1990, but declined by 14.7 percent between 1990 and 1991. U.S. shipments by value increased from $1.83 billion in

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89 Id. at I-137.

90 Id. at G-17, Table G-14.

91 Id.

92 Id.

1989 to $1.96 billion in 1990, but fell to $1.72 billion in 1991. Productivity declined from 1989 through 1991. The number of production workers, hours worked, and total compensation increased between 1989 and 1990, but declined in 1991. Total hourly compensation declined between 1989 and 1990, but rose in 1991. End-of-period inventories declined steadily from 1989 to 1991.

Overall profitability, as measured by operating losses, declined substantially by 290.5 percent between 1989 and 1991.[93] Net sales increased between 1989 and 1990, but declined by a greater amount between 1990 and 1991 resulting in a net decrease during the overall period of investigation.[94] The cost of goods sold increased throughout the period of investigation. A number of U.S. producers indicated that the subject imports had a negative effect on their revenue and thus, a negative impact on their development and production efforts.[95] In fact, there was a major decline in capital expenditures for production of semifinished special quality steels during the period of investigation.[96] Research and development expenses for these semifinished steels increased between 1989 and 1990, but fell between 1990 and 1991.

We note that production of special quality steel, both semifinished and hot-rolled bar, is highly capital intensive, and producers must have access to sufficient capital to be able to invest large sums in modern facilities, such as continuous bloom and billet casters, automated slag removal systems, and quality control inspection and conditioning equipment.[97] Thus, weak operating

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[93] Id.

[94] Id. at Table G-14.

[95] Id. at Appendix I-3 - I-7.

[96] Id. at A-107.

[97] See Report I-10 - I-16; Timken trip report memorandum.

results are particularly significant to the performance of this industry, as they indicate producers lack the internal resources to fund necessary capital development programs. In addition, poor financial performance may also limit access to external funding.

C. Domestic industry producing hot-rolled special quality bar and cut-length rod

Apparent U.S. consumption of special quality hot-rolled bar (including cut-length rod) increased by 4 percent to 4.63 million tons between 1989 and 1990, but decreased by 10.8 percent to 4.13 million tons between 1990 and 1991.[98] The U.S. producers' market share by quantity rose steadily from 88.9 percent in 1989 to 90.8 in 1990 before falling to 90.1 in 1991.[99] The U.S. producers' market share by value increased from 89.8 percent in 1989 to 91.4 percent in 1990 before declining to 90.4 percent in 1991.[100]

The domestic special quality hot-rolled steel bar industry's capacity utilization increased from 69.2 percent in 1989 to 71.9 percent in 1990, before falling to 62.1 percent in 1991. The U.S. industry's shipments by quantity increased by 6.3 percent between 1989 and 1990, but declined by 11.5 percent between 1990 and 1991. Shipments in the first quarter of 1992 increased by 12.6 percent. U.S. shipments by value increased from $2.06 billion in 1989 to $2.10 billion in 1990, and rose again to $2.26 billion in 1991. The number of production workers declined throughout the period of investigation. The number of hours worked and total compensation increased slightly between 1989 and 1990, but declined in 1991. End-of-period inventories increased sharply by 20.3

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[98] Id. at G-38, Table G-35.

[99] Id.

[100] Id.

percent between 1989 and 1990, before declining by 12.2 percent between 1990 and 1991, and rising slightly in the first quarter of 1992.

This industry suffered significant decreases in overall profitability, which as measured by operating losses, declined by 70.1 percent between 1989 and 1991. Confronted with decreasing prices, the domestic industry was required to absorb increases in the cost of goods sold throughout the period of investigation. Net sales increased by 0.3 percent between 1989 and 1990, but declined by 11.4 percent between 1990 and 1991. Capital expenditures reported by U.S. producers of hot-rolled special quality bar and cut-length rod increased significantly from 1989 to 1990, but fell sharply between 1990 and 1991.[101] Research and development expenses in this industry rose between 1989 and 1990, but stayed approximately the same between 1990 and 1991.[102]

IV. REASONABLE INDICATION OF MATERIAL INJURY BY REASON OF ALLEGEDLY LTFV IMPORTS

In determining whether there is a reasonable indication of material injury to the domestic industry by reason of the imports under investigation, the statute[103] directs the Commission to consider:

> (I) the volume of imports of the merchandise which is the subject of the investigation,
>
> (II) the effect of imports of that merchandise on prices in the United States for like products, and
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> (III) the impact of imports of such merchandise on domestic producers of like products, but only in the context

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[101] Id. at A-107.

[102] Id. at A-108.

[103] 19 U.S.C. § 1677(7)(B)(i).

of production operations within the United States.[104]

In making this determination, the Commission may consider "such other economic factors as are relevant to the determination . . . ."[105] Although we may consider information that indicates that injury to the industry is caused by factors other than the LTFV imports, we do not weigh causes. The Commission need not determine that imports are the principal or a substantial cause of material injury.[106] Rather, the Commission need only determine whether imports are a cause of material injury.[107] [108]

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104 Bethlehem and Inland urged the Commission to cumulate the subject imports in this investigation with imports of hot-rolled lead and bismuth bar and rod from Brazil, France, Germany, and the UK subject to the Lead and Bismuth Investigations, if our definition of like product in this investigation is broad enough to include hot-rolled lead and bismuth bar and rod. Bethlehem and Inland Br. at 7, 25 n.44. See 19 U.S.C. § 1677(7)(iv)(I). One of the like products we have found in this investigation -- hot-rolled special quality carbon and alloy steel bar and cut-length rod -- does include hot-rolled lead and bismuth bar and rod. We note, however, that the subject imports in this investigation and those in the Lead and Bismuth Investigations are mutually exclusive. We are not persuaded that there is a sufficiently reasonable overlap of competition between the special quality lead and bismuth bar and rod imports and the much broader range of special quality semifinished and hot-rolled bar imports in this investigation to justify cumulation. Therefore, we have not cumulated imports from the Lead and Bismuth Investigations in this investigation. We intend to reconsider this issue in any final investigation, and invite the parties to comment on (1) whether cumulation is required where separate investigations involve mutually exclusive imported products subject to investigation, and (2) if so, whether the subject imports in the two sets of investigations compete with each other, and whether there is a sufficient overlap of competition between the subject imports and the like products in this investigation.

105 19 U.S.C. § 1677(7)(B)(ii).

106 E.g., Citrosuco Paulista S.A. v. United States, 704 F. Supp. 1075, 1101 (Ct. Int'l Trade 1988). See also S. Rep. No. 249, 96th Cong., 1st Sess. 57 (1979); H.R. Rep. No. 317, 96th Cong., 1st Sess. 46-47 (1979).

107 See S. Rep. No. 249, 96th Cong., 1st Sess. 74-75 (1979). See also Iwatsu Electric Co. v. United States, 758 F. Supp. 1506 (CIT 1991).

108 Vice Chairman Watson believes that the courts have interpreted the statutory requirement that the Commission consider whether there is material injury "by reason of" the subject imports in a number of different ways. Compare, e.g., United Engineering, Slip Op. 91-101 at 36 ("rather it must determine whether

A. Semifinished special quality steel

The quantity of subject imports as a percent of apparent domestic consumption of semifinished special quality steel increased overall between the period of 1989 and 1991, falling from 3.0 percent of domestic consumption in 1989 to 2.2 percent in 1990, before rising to 3.7 percent in 1991.[109] The value of the subject imports as a percentage of apparent domestic consumption also increased overall between the period of 1989 and 1991, initially falling from 2.9 percent in 1989 to 2.0 percent in 1990, and increasing to 3.5 percent in 1991. On an absolute basis, the quantity of subject imports decreased by 18.7 percent from 1989 to 1990, and then increased 51.8 percent in 1991, resulting in an overall increase of 23.4 percent.[110] On the whole, we find this increasing volume and increasing share of consumption accounted for by the subject imports -- particularly between 1990 and 1991 when domestic consumption decreased substantially -- support a preliminary affirmative determination.

The subject imports and domestic semifinished special quality steels

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unfairly-traded imports are contributing to such injury to the domestic industry (citations omitted). Such imports, therefore need not be the only cause of harm to the domestic industry"); Metallverken, 728 F. Supp. at 741 (affirming a determination by two Commissioners that "the imports were a cause of material injury"); USX Corporation v. United States, 682 F. Supp. 60, 67 (CIT 1988) ("any causation analysis must have at its core, the issue of whether the imports at issue cause, in a non *de minimis* manner, the material injury to the industry..."); Maine Potato Council, 613 F. Supp. 1237, 1243 (CIT 1985)(Court declined to issue a remand even though the determination refers to whether or not imports were a "material cause" of the domestic industry's injury). Accordingly, for purposes of this preliminary investigation, I have decided to adhere to the standard articulated by Congress in the legislative history of the pertinent provisions, which states, "the Commission must satisfy itself that, in light of all the information presented, there is a sufficient causal link between the less-than-fair-value imports and the requisite injury." S. Rep. 96-249 at 75, 96th Cong., 1st Sess. (1979).

109 Report G-17, Table G-14.

110 Id. at G-17, Table 14.

generally appear to be relatively substitutable for one another. Semifinished special quality steels are produced to internationally accepted metallurgical, chemical and strength criteria. Many U.S. purchasers evaluate and qualify both domestic and foreign sources (including those from Brazil) based on approved quality.[111] The quality of the Brazilian and domestic semifinished special quality product is comparable.[112] The parties acknowledged that the domestic product typically sells at a 5-8 percent premium to the imported subject product.[113] This premium reflects, in part, the desire of most U.S. purchasers of special quality steels to buy from U.S. producers based on more reliable service, delivery, and considerably smaller lead times.[114] We note, however, a considerable percentage of the Brazilian imports are sold to large U.S. purchasers based on long-term contracts which lessens the importance of the longer lead time factor.[115] On balance, we conclude that the market for semifinished special quality steel appears to be price sensitive.[116]

Prices for the imported semifinished products under investigation have declined during much of the period of investigation even though domestic consumption and production capacity were at the similar levels in 1989 as in

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[111] Tr. 177-78.

[112] Report I-139.

[113] Tr. 35, 108.

[114] Report I-139. Upon the receipt of more complete pricing information in any final investigation, we will take into account such a premium in assessing any evidence of alleged price undercutting.

[115] Id. at I-43, I-137.

[116] One importer stated at the preliminary conference that "[a]lmost every transaction is negotiated based on the competitive conditions facing the producer (importer) at the time. In essence, customers know it's a buyer's market that requires producers to behave accordingly." Tr. 143.

1991.[117] Many U.S. companies indicated that they have been forced to offer volume discounts and negotiate prices downward to meet competition.[118] In fact, unit values for domestic shipments were 4.4 percent lower in 1991 than in 1989.[119] Unit values for Brazilian imports declined even more, by 7.5 percent between 1989 and 1991.[120]

There is incomplete evidence in the record regarding the reasons for such downward price movement. The Commission requested price information from U.S. producers and importers with respect to two types of semifinished special quality products.[121] In the five pricing comparisons available for the first semifinished product, import prices were lower than domestic prices in two of the five quarters.[122] In particular, the import price for the first quarter of 1992 reflected a considerable decline from the first quarter of 1989. In the second semifinished product, import prices were lower than prices for domestic product in five out of ten available quarters. Import prices for the second

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117 Report I-140 - I-146.

118 Id. at 137.

119 Id. at G-17, Table G-14.

120 Id.

121 We note that evidence of underselling is inconclusive in light of the incomplete pricing data obtained. Id. at I-140 - I-149. The Commission requested pricing data regarding seven special quality steel products from a number of U.S. producers and importers. For most of the product categories, only one or two producers provided useful information and, even in those cases, individual producers did not report prices in all quarters. Only four importers provided price information in their questionnaires. Efforts by staff to encourage importers to provide quarterly prices on other product categories not listed in the questionnaire were unsuccessful. In any final investigation, we will vigorously seek to obtain more complete pricing information from importers, purchasers and U.S. producers.

122 Information on the following pricing discussion is set forth in the Report at I-148.

product declined steadily from the first quarter of 1992.

Petitioners assert that the special quality steel market (both semifinished and bar) is very competitive, with the primary basis of competition being price.[123] Petitioners' principal argument is that consistent price underselling by the subject Brazilian imports has depressed prices received by the domestic industry for the like product.[124] The Brazilian respondents assert that lower prices for special quality steels are a result of aggressive pricing behavior by several U.S. producers with lower cost continuous strand casters seeking to expand market share.[125] Caterpillar states that these domestic suppliers are often the price leaders who undersell the Brazilian subject imports.[126]

Petitioners cite a number of instances of alleged price underselling by the subject Brazilian imports resulting in lost sales or revenue. The Commission was able to confirm one lost revenue allegation by one U.S. producer of semifinished special quality steel as a result of low-priced imports from Brazil.[127] The U.S. producer reported that it was forced to reduce the delivered

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[123] Petitioners' Br. at 27-28.

[124] Petitioners' Br. 24-28; Petition 34-40. Petitioner Timken's representative explained the pricing issue:

> The issue here is not volume of imports, but rather the effect that the very low pricing of these imports had on the rest of the market pricing. The volume in and of itself would not have made the Timken Company or any other producer healthy. The fundamental problem is the price level.

Tr. 68.

[125] Id. at 29-32.

[126] Id. at 4-5. The Commission was not able to obtain complete pricing data from a sufficient number of U.S. producers -- including a number of U.S. producers with continuous strand casters -- which would confirm or refute such allegations.

[127] Report I-151.

value of its quotations by a substantial amount.[128] The purchaser acknowledged that it had "threatened to increase its purchases of low-priced imports from Brazil unless domestic producers reduced their prices on the specified products."[129]

Overall, the available information with respect to semifinished special quality steel in this preliminary investigation establishes a reasonable indication that allegedly dumped imports from Brazil, sold at declining prices, in increasing quantities, and accounting for an increasing share of apparent U.S. consumption, have had an adverse effect on domestic prices and sales and revenues of the domestic industry. The negative revenue impact is particularly important because, as noted above, the special quality steel industry is one in which the producers must be able to invest large sums in capital equipment in order to remain competitive. Profitability is extremely important to the continued ability of producers to remain viable competitors in the industry. We note that lower revenues appear to have contributed to the significant decrease in capital expenditures in the semifinished special quality industry throughout the period of investigation.[130]

B. Hot-rolled special quality bar and cut-length rod

Many of the same market forces and pricing factors discussed above regarding semifinished special quality steel also apply to the domestic industry

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[128] Id.

[129] Id. The Commission was able to follow-up on some of the lost sale and revenue allegations made by U.S. producers. Many of the purchasers denied the allegations, but indicated that they had purchased Brazilian special quality imports during the period of investigation. Id. at I-151 - I-155. In any final investigation, we will look carefully at any allegations of lost sales or revenues to determine the extent of any underselling by Brazilian subject imports.

[130] Id. at A-107.

producing hot-rolled special quality bar and cut-length rod.

The quantity of subject imports as a percentage of U.S. domestic consumption of hot-rolled special quality bar and cut-length rod increased throughout the period of 1989 and 1991, increasing to 0.9 percent of domestic consumption in 1990 and rising again to 1.0 percent in 1991.[131] The value of the subject imports as a percentage of apparent domestic consumption also increased steadily between the period of 1989 and 1991. On an absolute basis, the quantity of subject imports increased 44.9 percent from 1989 to 1990, and then increased an additional 2.4 percent in 1991, representing an overall increase of 48.3 percent. The comparable increase in value of the subject imports was 33.1 percent.

Imported and domestic special quality hot-rolled bar and cut-length rod generally appear to be relatively substitutable for one another. As with semifinished special quality steels, hot-rolled special quality steels are produced to internationally accepted standards. The quality of the Brazilian and domestic hot-rolled special quality product is comparable.[132] As with semifinished special quality steel, the parties indicate that domestic hot-rolled special quality bar also typically sells at a 5-8 percent premium to the imported subject product, reflecting, in part, shorter lead times.[133] On balance, we conclude that the market for semifinished special quality steel appears to be price sensitive.

As noted above in the discussion on semifinished special quality steel, petitioners argue that competition in the special quality hot-rolled bar market

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131 Id. at G-38, Table G-35.

132 Id. at I-139.

133 Tr. 35, 108.

is based primarily on price.[134] Import prices for hot-rolled special quality bar products generally declined during much of the period of investigation.[135] As in the semifinished special quality market, many U.S. companies indicated that they were forced to offer volume discounts and negotiate prices to meet competition in the hot-rolled special quality bar market.[136] The unit values of domestic shipments declined between 1989 and 1991.[137]

There is incomplete evidence in the record regarding the reasons for such lower prices. Petitioners cited several instances of alleged price underselling of special quality hot-rolled bar by the subject Brazilian imports. The Commission was not able to confirm these lost sales and revenues allegations.[138]

The Commission requested price information from U.S. producers and importers with respect to five different types of special quality hot-rolled bar products.[139] Pricing comparisons were available on only three of the five products. For the first of these three products, the only comparison indicated that the import price was lower than the domestic price. For the second product, import prices were lower than domestic prices in all four quarters where comparisons could be made.[140] For the third product, import prices were lower than domestic prices in two of the ten quarters where comparisons could be made, and were higher than domestic prices in the remaining eight quarters.

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134 Petitioners' Br. at 27-28.

135 Report I-144 - I-146.

136 Id. at 137.

137 Id. at G-38, Table G-35.

138 Id. at I-151 - I-155.

139 Id. at I-144 - I-148.

140 Id.

We find that the available information in this preliminary investigation concerning the hot-rolled special quality bar market and domestic industry establishes a reasonable indication that allegedly dumped imports from Brazil, sold at declining prices, in increasing quantities, and accounting for an increasing share of apparent U.S. consumption, have had an adverse effect on domestic prices and on the sales and revenues of the domestic industry. In addition, we note the failure of both importers and U.S. producers to provide complete and useful information concerning pricing regarding most of the hot-rolled special quality bar products under investigation. Given the importance of pricing to both the petitioners' allegations and the respondents' arguments, we cannot conclude that there is no likelihood of evidence arising in a final investigation which will show that domestic prices are being suppressed by the subject imports.[141]

Conclusion

For all of the reasons set forth above, we determine that there is a reasonable indication that the domestic industry producing semifinished special quality steel and the domestic industry producing hot-rolled special quality bar and cut-length rod are materially injured by reason of the allegedly dumped imports from Brazil.

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[141] See American Lamb, 785 F.2d at 1004.

SEPARATE VIEWS OF COMMISSIONER DAVID B. ROHR

I determine that there is a reasonable indication that the domestic industries producing certain semifinished free machining steel products and certain semifinished special quality ("SQ") steel products, other than semifinished free machining steel products ("all other semifinished SQ products") are materially injured or threatened with material injury by reason of allegedly less than fair value (LTFV) imports from Brazil. I determine that there is no reasonable indication that the domestic industry producing finished free machining bars and cut to length rod are materially injured or threatened with material injury by reason of allegedly LTFV imports from Brazil. I further determine that there is a reasonable indication that the domestic industry producing all other finished SQ bars and cut to length rod are being injured or threatened with material injury by reason of the allegedly LTFV imports from Brazil.

In making this determination, I find there to be four like products corresponding to the imports subject to investigation:

1. Semifinished free machining steel products
2. All other semifinished SQ steel products
3. Finished free machining steel products
4. All other finished SQ steel products.

I find that all four of these industries are currently experiencing material injury. For the category of finished free machining steel products, I find, in light, *inter alia*, of the insignificant volume, increases in, and market share of imports, that the allegedly LTFV imports were not a cause of and did not threaten the industry. For the other categories, I find that the record does not present clear and convincing evidence of no material injury or threat thereof.

LIKE PRODUCT/DOMESTIC INDUSTRY

In all title VII investigations, I begin by defining the "like product" and the "domestic industry."[1] This analysis starts with the imported articles subject to investigation. In its notice of initiation,[2] the Department of Commerce (Commerce) defined the articles subject to this investigation as follows:

> [H]ot-finished carbon and alloy . . . steel bars and rods, other than forged, which have a uniform solid cross-section along their whole length . . . The subject bars and rods are of special bar quality engineered steel that are described in Society of Automotive Engineers (SAE) J403, J404, J411, J1081, J1249, J1268, and modifications thereof . . . as classifiable under the following subheadings of the Harmonized Tariff Schedule of the United States, (HTSUS): 7214.30, 7214.40.0010, 7214.40.0030, 7214.40.0050, 7214.50.0010, 7214.50.0030, 7214.50.0050, 7214.60.0010, 7214.60.0030, 7214.60.0050, 7228.30.8005, and 7228.30.8050.
> Also included in the scope of this investigation are certain alloy ingots . . . and semifinished products of carbon and alloy . . .steel, . . .that are described in Society of Automotive Engineers (SAE) J403, J404, J411, J1081, J1249, J1268, and modifications thereof, . . . as classifiable under the following subheadings of the HTS: 7207.11, 7207.12.0010, 7207.19.0030, 7207.20.0025, 7207.20.0075, 7224.10.0075, 7224.90.0045, and 7224.90.0065, except steels classified as other alloy steels by reason of containing by weight 0.4 percent or more of lead, or 0.1 percent or more of bismuth, tellurium, or selenium.[3]

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[1] Section 771(4)(A) of the Tariff Act of 1930 defines the domestic industry for a particular investigation as "the domestic producers as a whole of a like product, or those producers whose collective output of the like product constitutes a major proportion of the total domestic production of that product . . . ." 19 U.S.C. § 1677(4)(A). "Like product" is defined as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to investigation . . . ." 19 U.S.C. § 1677(10). The Commission's decision regarding the appropriate domestic product or products like the imported articles subject to investigation is essentially a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis. The like product factors considered by the Commission have included: (1) physical characteristics and end uses, (2) interchangeability of the products, (3) channels of distribution, (4) producer and customer perceptions, (5) common manufacturing facilities, production processes and production employees and, (6) where appropriate, price. Calabrian Corp. v. United States, Slip Op. 92-69 (CIT); Torrington Co. v. United States, 767 F. Supp. 744 (Ct. Int'l Trade 1990), aff'd, 938 F.2d 1278 (1991); Asocoflores, 693 F. Supp. 1165, 1168 n.4, 1180 n.7 (Ct. Int'l Trade 1988). No single factor is dispositive, and the Commission may consider other factors it deems relevant based upon the facts of a particular investigation. Generally, the Commission disregards minor variations between the articles subject to an investigation and looks for clear dividing lines between possible like products. S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

[2] 57 Fed. Reg. 29703-04 (July 6, 1992).

[3] This class or kind excludes the following categories of special quality steels:
1. semifinished carbon ingots
2. alloy silico-manganese steels
3. lead, bismuth, tellurium, or selenium hot-rolled carbon and alloy bar and rod (lead and bismuth steels)
4. coiled carbon and alloy hot-rolled bar and rod

None of the parties to this investigation asserted that the like product should include "merchant" quality carbon steel bar and rod. Similarly, none of the parties argues that the like product should not include both alloy and carbon SQ semifinished and hot-rolled steel products.[4]

A. Free Machining Steel Products and All Other SQ Steel Products are Separate Like Products

In analyzing the like product issue in this investigation, I begin with the issue of whether all SQ steels are a single like product. I note that a closely related issue was recently presented to the Commission in its recent preliminary investigation involving imports of lead and bismuth steel. Certain Hot-Rolled Lead and Bismuth Carbon Steel Products from Brazil, France, Germany, and the United Kingdom, Inv. Nos. 701-TA-314 through 317 (P) and 731-TA-552 through 555 (P), USITC Publication 2512 (June 1992) ("lead and bismuth bars"). In my views in that investigation, I found that the evidence did not support the finding that lead and bismuth steel products were a separate like product. I did, however, conclude that the larger product category of "free machining" steel products, of which lead and bismuth steel products were a part, did satisfy the Commission's traditional criteria as a separate like

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5. forged carbon and alloy bar

Commerce's initiation notice also indicated that it will be reviewing whether to create two separate classes or kinds, one for semifinished special quality steel, and a second for hot-rolled special quality carbon and alloy bar and rod. Specifically, Commerce noted that

> given (1) the clear distinction normally maintained in the steel trade between semifinished products and finished products such as bars and rods, and (2) an examination of the criteria used to evaluate class or kind of merchandise. . . , we question petitioners' assertion that the subject merchandise comprises one class or kind of merchandise. Therefore, we are requesting all interested parties to comment on the scope of these proceedings, particularly whether the subject merchandise in this case comprises one class or kind of merchandise or more. Id. at 29704.

[4] A decade ago, the Commission found that carbon and alloy hot-rolled bars were separate like products. Certain Steel Products from Belgium, Brazil, France, Italy, Luxembourg, the Netherlands, Romania, the United Kingdom, and West Germany, Invs. Nos. 701-TA-86 through 144, 701-TA-146 and 147 (Preliminary), and Invs. Nos. 731-TA-53 through 86 (Preliminary), USITC Pub. 1221 (Feb. 1982) ("1982 Steel Investigations"), Vol. I at 11. However, the Commission did not make a detailed analysis of the distinctions between carbon and alloy hot-rolled bars either in its 1982 decision or in the staff report.

product from other types of SQ steel products.[5]

I believe that the record in this investigation supports and confirms that finding. I incorporate my analysis of the appropriateness of free machining steel products as a separate like product in these views.[6] The record in this investigation also contains additional information which supports this finding. The Commission received detailed information concerning free-machining steels from the Cold Finished Steel Bar Institute ("Institute"), Bethlehem Steel and Inland Steel, and a number of importers and producers. The Commission also requested and received considerable information concerning free-machining steel compared to both lead and bismuth steels and other types of SQ steel products.

With respect to physical characteristics, the record indicates that free-machining steel is "dirty" steel, i.e., it has sulphur, phosphorus, and/or lead/bismuth inclusions, which other types of SQ steel do not contain.[7] Such inclusions permit the free-machining steel to be machined much more easily than other types of SQ steel.[8] In addition, free-machining steels run a higher risk of surface imperfections, and are not as good as other SQ steels in hot working operations due to hot shortness (surface cracks caused by elevated sulphur levels).[9]

Approximately two-thirds of all carbon and alloy free-machining bar and rod is distributed to cold-finishers.[10] On the other hand, only 15.6 percent of other types of SQ steel

[5] Lead and Bismuth Bars at 31 - 44.

[6] Lead and Bismuth Bars, Views of Commissioner Rohr at 37-44.

[7] Report I-8.

[8] Bethlehem and Inland Br. at 18.

[9] Producer questionnaire response at 14; Producer questionnaire response at 18.

[10] Report Table 6, at I-55.

products are distributed to cold-finishers.[11] While a considerable majority of free-machining steels, particularly in the 1200 carbon series, are further processed by cold finishing, a great deal of other types of SQ hot-rolled bar is used in an "as rolled" condition without further processing.[12] The principal end users of free-machining steel are screw machine product makers, who use few other products in the SQ bar and rod category.[13] Unlike free-machining steels, the majority of other types of SQ steels are distributed for a variety of manufacturing applications including cold headers, spring manufacturers, and others.[14] In addition, free-machining steels are less likely to be used in high strength or fatigue critical applications than SQ products.[15]

Further new evidence indicates that producers and customers perceive free-machining steels as a distinct product with distinct uses. Bethlehem and Inland note that steel producers market free-machining steels as a separate category (like stainless and tool steel).[16] Finally, the prices for free-machining steel move together and at a premium to less machinable grades.[17]

I conclude that this information supports the existence of free machining steel products as a separate like product. The record does not contain comparable evidence indicating that any other types of SQ steel products are similarly distinguishable. I therefore conclude, for

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[11] Id. Free machining steel in the 1200 carbon series is purchased almost exclusively by cold finishers for resale to screw machine operations. Producer questionnaire at Exhibit II. However, free machining steel in the 1100 carbon series is used not only in cold finishing applications, but also for forging. Id. Forgers consume approximately 10 percent of the production of both free-machining and other types of SQ bar and rod. Report Table 6, at I-55.

[12] Institute Br. at 5.

[13] Institute Br. at 5.

[14] Id.; Institute Br. at 5.

[15] Producer Questionnaire response at 18.

[16] Bethlehem and Inland Br. at 19.

[17] Id. at 6.

purposes of this investigation, that the articles subject to this investigation should be divided into two like products, free machining steel products and all other SQ steel products.

B. Semifinished SQ Steel Products and Finished SQ Steel Products are Separate Like Products

This investigation also raises the issue whether semifinished products within the scope of the investigation should be included within the same like products as the finished articles produced from them or whether they should be viewed as like products.[18] The articles subject to this investigation include a number of semifinished products, including alloy and carbon ingots, blooms and billets of a circular or rectangular cross-section with a width measuring less than four times the thickness. These products have not been further worked as hot steel other than to primary hot-rolling or roughly shaped by forging. Most U.S. producers refer to semifinished SQ steel as any product greater than 4 inches in cross section.[19]

Some of the factors the Commission has traditionally examined support semifinished SQ steel products as separate like products, while other support their inclusion with the finished products. Approximately 85 percent of the semifinished SQ steel produced in the

[18] In analyzing whether a semifinished product should be included in the same like product with the finished products under investigation, the Commission typically examines five factors, including: 1) the necessity for, and costs of, further processing; 2) the degree of interchangeability of articles at different stages of production; 3) whether the article at an earlier stage of production is dedicated to use in the finished article; 4) whether there are significant independent uses or markets for the finished and unfinished articles; and 5) whether the article at an earlier stage of production embodies or imparts to the finished article an essential characteristic or function. See, e.g., Fresh and Chilled Atlantic Salmon from Norway, Inv. Nos. 701-TA-302, 731-TA-454 (Final), USITC Pub. 2371 at 8-9 (April 1991) (semifinished product analysis used to determine whether salmon smolt and adult salmon should be included in same like product); 3.5" Microdisks and Media Therefor from Japan, Inv. No. 731-TA-389 (Final), USITC Pub. 2170 at 7, 13-18 (March 1989) (semifinished product analysis used to determine whether complete microdisks and the coated media from which microdisks were made should be included within the same like product).

The Commission previously has not addressed the issue of including semifinished ingots, blooms and billets in one like product, or in any like product with hot-rolled bar in a Title VII proceeding. In the 1982 Investigations, the Commission found separate like products of hot-rolled carbon steel bar and hot-rolled alloy steel bar, but did not include semifinished ingots, blooms and billets, and did not discuss the issue. The scope of the petition in the 1982 Investigations for hot-rolled carbon steel bar investigations appears to have been limited to only hot-rolled and not semifinished product. Id. a-1.

[19] Producer questionnaire response at 11A.

United States are further hot-rolled into either bar or rod by the same steel manufacturers who produced the semifinished product.[20] The semifinished SQ steel can be used either in the production of SQ bar or SQ rod.

The processing costs incurred in transforming a semifinished SQ steel product into a hot-rolled product are much less than the initial costs of producing the semifinished product.[21] Because of the necessity for further processing, semifinished billets and blooms and the finished hot-rolled bar and rod generally are not interchangeable in use. One of the most essential characteristics of the finished product -- its chemistry, which largely determines resulting mechanical qualities -- is present in both the semifinished and hot-rolled bar and rod.[22]

I am persuaded that it is necessary to separate semifinished SQ steel products into different like products from finished like products principally because the semifinished products can be used to produce a variety of products some of which are within the scope of this investigation and others which are outside of its scope.

Generally, finished SQ steel products can be in the form of either bar or rod. The distinction between the two is essentially one of diameter, rod being a smaller diameter product. There is, however, an overlap between the two products. Whether a product is viewed as a larger diameter rod or a smaller diameter bar is a largely arbitrary choice by producers and consumers. Because of this overlap it is difficult to separate bar and rod from one another simply on the basis of nomenclature.

However, both bars and rod can be coiled or cut-to-length. Both coiled and cut-to-length bar are used for the same purposes. Cut-to-length rod is also used for the same purposes as coiled and cut-to-length bar. Coiled rod is, however, a different matter. Coiled rod is generally produced at dedicated rod mills which do not produce bars and employ different

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[20] Report, Table 8C, at I-67.

[21] Petitioners' Br. at 4-5.

[22] _See_ Report I-17.

production processes from bar mills. The coiled product is used almost exclusively for the production of wire products. The producers of bar products (and cut-to-length rod, which is the overlapping product) do not generally produce coiled rod. Coiled rod is a less expensive product. Commerce has excluded the coiled product from the scope of the investigation.

Coiled rod therfore has different end uses, different production process, different producers, and different prices. It is therefore proper to exclude coiled rod from the like product, just as it has been excluded from the scope of the investigation by Commerce.

This however, complicates the semifinished product issue because semifinished SQ steel can be used for either the production of the various products within the like product or coiled rod. If I were not to separate the semifinished products as a separate like product I would have to include them with the finished product. This would mean that some semifinsihed SQ steel would be included in the like product because it is used to make finsihed products within the like product while other semifinished SQ products would be excluded because they would be used to produce coiled rod. The semifinsihed SQ steel can be used interchangeably to produce either products within or outside the like product, but the scope of the investigation includes all semifinished products for whatever use. Therefore to treat semishinished products within the like product for finished products would mean that my "like product" did not include all of the products covered by the scope of the investigation. This would not be legally permissible. I decline to do so.

Therefore I conclude that it is necessary to separate semifinished products from the finished product. Because I have found there to be two finished products, free machining and all other SQ steels, this requires the division of the semifinished products into similar products. I therefore find that in this investigation there are four separate like products:

1. Semifinished free machining steel products
2. All other semifinished SQ steel products
3. Finished free machining steel products
4. All other finished SQ steel products.

C. Domestic Industry

I find there are four separate industries producing these like products consisting of the domestic producers of each. I note that one producer of finished bars, Raritan River Steel is an importer of semifinished steel subject to this investigation. I note that no party has argued for the exclusion of this producer as a related party. There is no evidence on the record in this investigation suggesting that exclusion of this producer would be appropriate. I therefore do not exclude it from the domestic industry.

CONDITION OF THE INDUSTRIES

In assessing whether there is a reasonable indication of material injury to a domestic industry by reason of allegedly dumped imports, I consider all "relevant economic factors which have a bearing on the state of the industry in the United States . . . ."[23] As traditionally interpreted by the Commission, this includes U.S. apparent consumption, production, shipments, capacity utilization, employment, wages, financial performance, capital investment, and research and development expenses.[24] No single factor is dispositive in evaluating the condition of the industry. In each investigation, I consider the particular nature of the industry under investigation in the "context of the business cycle and conditions of competition that are distinctive to the affected industry."[25] In this investigation, having found four separate domestic industries I now proceed to discuss the condition of each.

A. Semifinished Free Machining Steel Products[26]

Apparent consumption of semifinished free machining steel rose from 1989 to 1990 by 5.5 percent and declined from 1990 to 1991 by 20.8 percent, for an overall period decline of 16.4 percent. A comparison of interim data, January through March, shows an increase in

[23] 19 U.S.C. § 1677(7)(C)(iii).

[24] See 19 U.S.C. § 1677(7)(C)(iii).

[25] 19 U.S.C. § 1677(7)(C)(iii). These issues were not raised by any of the parties to this investigation, nor did the Commission receive any information relevant to business cycle considerations. Respondents did at one point, however, refer to "the cyclical nature of the textile industry." Tr. at 119.

[26] The data for this domestic industry is contained in the Report at Table G-13.

consumption of 42.5 percent. However, given the limited period of time covered by the interim data, I do not place great weight on the interim data.

Domestic production followed a trend similar to that of consumption, increasing by 5.3 percent before declining by 23.5 percent, for an overall decline of 19.4 percent. Capacity utilization, which never exceeded 55 percent during the period of investigation, increased slightly from 1989 to 1990 before dropping precipitously in 1991. Domestic shipments roughly parallelled production, increasing 7.2 percent from 1989 to 1990 before dropping more than 22 percent in 1991.

The number of production and related workers and the hours worked followed similar trends. Hourly wages and unit labor costs increased steadily with relatively larger increases in 1991. Productivity fell in each year of the period of investigation.

Net sales increased in each year of the period of investigation, as did the costs of goods sold. The cost of goods sold exceeded net sales in each year of the investigation except 1991, in which it was roughly equal to net sales. In no year did the industry report positive operating income.

I conclude that this data reasonably indicate that this industry is currently experiencing material injury.

B. All Other Semifinished SQ Steel Products[27]

With respect to this category of steel, consumption rose by 17 percent from 1989 to 1990 before declining 10.9 percent in 1991, for an overall increase in consumption over the period of 4.2 percent. The interim data show a 6.1 percent increase in consumption.

Domestic production also shows an increase from 1989 to 1990, of some 10.2 percent, substantially below the increase in consumption. Between 1990 and 1991, production declined 12.2 percent, which also exceeds the overall decline in consumption for that year. Overall, while consumption increased 4.2 percent over the period, production declined 3.3 percent.

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[27] Data for this industry is contained in the Report at Table G-84.

Capacity utilization increased by 4.3 percentage points from 1989 to 1990 before declining 8 percentage points in 1991. Domestic shipments increased by 17.3 percent from 1989 to 1990, roughly equal to the increase in consumption, but declined by 13.2 percent, a larger amount than the decline in consumption, in 1991.

The number of production and related workers and hours worked increased in 1990 and fell back in 1991 to a level slightly below that of 1989. Hourly wages were relatively constant, declining slightly in 1990 and increasing slightly in 1991. Unit labor costs, however, increased steadily while productivity fell consistently.

Financial data was not available for this industry. The next largest aggregation of data for which reliable financial data is available is for all semifinished SQ steel.[28] Net sales for this aggregation of products increased 19.9 percent from 1989 to 1990 before declining 23.1 percent in 1991, for an overall decline of 7.8 percent over the period. Cost of cost sold increased absolutely from 1989 to 1990 but declined slightly in 1991. However, as a percentage of net sales, cost of goods sold increased in each year of the investigation and exceeded net sales in both 1990 and 1991. Operating losses of increasing size were recorded in each year of the investigation.

I conclude that this data provide a reasonable indication that this industry is currently experiencing material injury.

C. Finished Free Machining Steel Products[29]

Consumption of these products increased by 5.9 percent from 1989 to 1990 before dropping precipitously, by 19.8 percent, in 1991, for an overall decline of 15.1 percent for the period. The interim data show a substantial rebounding of consumption, by 26.4 percent.

The production trends follow the same pattern as consumption. However, the 1990 increase in production was less than the increase in consumption, while the 1991 decrease in

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[28] Report at Table G-14.

[29] Data for this industry is contained in the Report at Table G-34.

production was even larger than the large decline in consumption. Capacity utilization remained at relatively low levels throughout the period of investigation, increasing 3.9 percentage points in 1990 and declining 13.6 percentage points in 1991. Domestic shipments followed the same pattern as consumption and production increasing 6.1 percent in 1990 and declining 24 percent in 1991.

Both the number of production and related workers and hours worked declined steadily over the period. Hourly wages increased steadily. Unit labor costs declined slightly in 1990 before increasing significantly in 1991. Productivity improved in 1990 before declining slightly in 1991.

Net sales increased slightly in 1990, by 1.1 percent, before falling dramatically, by 22.1 percent, in 1991. The ratio of costs of goods sold to net sales increased steadily throughout the period. Operating profits and the ratio of operating profits to net sales declined steadily, turning into losses in 1991.

I conclude that this data provide a reasonable indication that this industry is currently experiencing material injury.

D. All Other Finished SQ Steel Products[30]

Consumption of these products increased by 3.5 percent from 1989 to 1990 and then declined by 8.4 percent from 1990 to 1991, for a period decline of 5.2 percent. Interim data show an increase in consumption of 8.8 percent.

Production of these products increased by 8.9 percent in 1990. Production declined in 1991 by 11.2 percent. Overall, production declined 3.3 percent. Capacity utilization increased by 2.1 percentage points in 1990 and declined by 8.5 percentage points in 1991. Shipments increased by 6.3 percent in 1990 before declining by 8.4 percent in 1991.

The number of production and related workers was relatively stable over the period. Hours worked increased by 2.1 percent in 1990 and declined by 3.1 percent in 1991. Hourly

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[30] Data for this industry are contained in the Report at Table G-93.

wages increased slightly over the period. Unit labor costs declined significantly in 1990 before increasing significantly in 1991. Productivity improved slightly in 1990 and declined more significantly in 1991.

Net sales remained relatively flat between 1989 and 1990 before declining by a significant 9.2 percent in 1991. The ratio of cost of goods sold to net sales increased steadily and significantly in each year of the investigation. The industry recorded operating profits in each year of the investigation, but the ratio of operating profits to net sales declined in each year of the investigation from a relatively good 9.8 percent in 1989 to a relatively poor 3.9 percent in 1991.

I conclude that, while the data show this industry to be operating slightly better that the other three related industries, there is a reasonable indication that it too is currently experiencing material injury.

CAUSATION

In determining whether there is a reasonable indication that the domestic industry is materially injured by reason of the imports under investigation, the statute directs the Commission to consider:

> (I) the volume of imports of the merchandise which is the subject of the investigation,
>
> (II) the effect of imports of that merchandise on prices in the United States for like products, and
>
> (III) the impact of imports of such merchandise on domestic producers of like products, but only in the context of production operations within the United States.[31]

In making this determination, the Commission may consider "such other economic factors as are relevant to the determination . . . ."[32] Although I may consider information that indicates that injury to the industry is caused by factors other than the LTFV imports, I do not weigh

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[31]19 U.S.C. § 1677(7)(B)(i).

[32]19 U.S.C. § 1677(7)(B)(ii).

causes.[33] I emphasize that I need not determine that imports are the principal or a substantial cause of material injury. Rather, I am required to determine whether imports are a cause of, that is, contribute to, material injury.[34] I will discuss each of the four industries I have found to be experiencing material injury in turn.

A. Semifinished Free Machining Steel Products[35]

Imports of these products declined signficantly from 1989 to 1990 and increased signficantly in 1991. Relative to domestic consumption, the import penetration ratios fluctuated down and then returned to its 1989 level in 1991. The market penetration of imports was, however, always quite low.

The Commission however, was able to gather little in the way of information regarding the pricing of these Brazilian imports. None of the seven products for which the Commission initially sought pricing were of semifinished free machining steel. Respondents did not provide any alternative products that would have included this category, even though the data clearly show that a not inconsiderable volume of such products were in fact sold in the United States.

The Commission has historically found that in some products, such as steel, underselling by even relatively small volumes of imports can be a cause of injury to the domestic industry. The state of the Commission's record does not permit me to conclude that the nature of the market and pricing of this product does not conform to this historical pattern. I cannot therefore say that the evidence is clear and convincing that imports are not a cause of material injury to the domestic industry or that evidence showing that they are such a cause would not be developed in a final if pricing information specific to these

[33] E.g., Citrosuco Paulista S.A. v. United States, 704 F. Supp. 1075, 1101 (Ct. Int'l Trade 1988). See also S. Rep. No. 249, 96th Cong., 1st Sess. 57 (1979); H.R. Rep. No. 317, 96th Cong., 1st Sess. 46-47 (1979).

[34] See S. Rep. No. 249, 96th Cong., 1st Sess. 74-75 (1979). See e.g., Iwatsu Electric Co. v. United States, 758 F. Supp. 1506 (CIT 1991).

[35] The data for this domestic industry is contained in the Report at Table G-13.

products were provided. I cannot make a negative determination as to these products therefore. I further note that in order to make a negative finding, I would also have to find that the imports do not threaten the industry. Both volume and pricing of the imports are relevant to that finding as is other information about the foreign industry, about which the Commission does not have information in a form relevant to this product category. I must therefore make an affirmative finding.

B. All Other Semifinished SQ Steel Products[36]

Imports of these products decreased signficantly from 1989 to 1990 but increased above 1989 levels in 1991. Import market penetration followed the same trend. While relatively small, these percentages can be significant in a product such as steel.

Again, I am faced with a record that contains a limited amount of information relevant to the pricing of this product. Two of the products for which the Commission gathered pricing data fall into this product category. The data show a mixed pattern of over and underselling. However, the data are very limited. The pricing data cover a relatively small percentage of the imports which entered the United States during each year of the investigation. Respondents did not provide the Commission with alternative products which would allow pricing information to have been gathered covering a significant amount of the imports. I am again forced to conclude that the record does not provide clear and convincing evidence that imports are not a cause of material injury or threaten material injury. Further information about the foreign industry will also be necessary if this matter returns to the Commission for a final investigation.

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[36] Data for this industry is contained in the Report at Table G-84.

C. Finished Free Machining Steel Products[37]

Imports of these products from Brazil were virtually nonexistent throughout the period of the investigation. In no period were more than 1000 tons imported, and, in most years, imports were substantially less than this amount.[38] The market penetration of these products was consistently insignificant during the period. In view of the insignificant volume of imports, the lack of pricing data is reasonable. This volume, even given the uncertainties about the pricing of products in this market, appears too small to be a cause of present injury.

While the Commission's information about the foreign industry is no more complete for this industry than for any of the others, I do not feel that this precludes a negative finding in this particular case. The volume of imports is insignificant and not increasing. There is no indication that underselling of these imports will have any effect on the domestic industry. Even if some product shifting were possible, I note that the customers of the semifinished free machining steel, which would be the most likely to be shifted to this product, are not likely to be the customers for the finished product. To do so would effectively idle their expensive finishing facilities. Further, the purchasers of finished free machining steel have extensive qualification procedures and are not likely to switch significant volumes of purchases to untried Brazilian producers within any time frame which could be deemed imminent. I therefore make a negative determination with respect to this product.

D. All Other Finished SQ Steel Products[39]

Imports of these products from Brazil rose steadily throughout the period of investigation. Market penetration likewise rose throughout the period. While small, these

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[37] Data for this industry is contained in the Report at Table G-34.

[38] The issue has been raised whether the imports subject to this investigation should be cumulated with the imports subject to the lead and bismuth investigation. It is not clear to me that it is proper to cumulate the imports subject to two separate investigations when those imports have been specifically defined to exclude the imports subject to the other. In any event however, the imports subject to this investigation clearly meet the criteria of negligibility and thus it would be inappropriate to cumulate them with other imports.

[39] Data for this industry are contained in the Report at Table G-93.

volumes and these market penetration ratios are considerably larger than those for the finished free machining products. Four of the products for which the Commission sought pricing data fall into this category of finished non free machining products. Unfortunately, the volume of imports covered by these products was insignificant and respondents did not propose alternatives that would allow pricing information to have been developed on a significant percentage of the imports. I cannot conclude that further information would not establish price underselling. The record also does not contain sufficient information for me to conclude that these volumes are not having a price depressive or suppressive effect. Further information regarding the foreign industry relevant to these products is not available. I must therefore make an affirmative finding as to this product.

Certain Special Quality and Alloy Hot-rolled Steel Bars and Rods and Semifinished Products Thereof from Brazil Inv. No. 731-TA-527 (Preliminary)

Based on the record in this preliminary investigation, we determine that there is no reasonable indication that the two industries in the United States producing semifinished special quality carbon and alloy steels, and hot-rolled special quality carbon and alloy bar (coiled and cut-length) and cut-length rods are materially injured by reason of imports of certain special quality carbon and alloy hot-rolled steel bar and rod and semifinished products thereof from Brazil that are allegedly sold at less than fair value in the United States.

THE LEGAL STANDARD FOR PRELIMINARY DETERMINATION

Our approach to preliminary determinations is derived from the decision in American Lamb v. United States.[1] The court's language in that decision specifies that a negative determination is appropriate only when "(1) the record as a whole contains clear and convincing evidence that there is no material injury or threat of material injury; and (2) no likelihood exists that contrary evidence will arise in a final investigation."[2]

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[1] 785 F.2d 994 (Fed. Cir. 1986).

[2] Id., at 1001-04. "Clear and convincing" evidence supporting a negative determination must be "substantial," and more than a preponderance of the evidence. Since the Commission is permitted to weigh the evidence in the record, however, a negative preliminary determination may be issued if some evidence

This does not mean, of course, that the absence of some information normally considered in a final investigation would require the Commission to find in the affirmative in a preliminary investigation. Clearly, given the short time period allowed in a preliminary investigation, the burden of requiring that all information be collected to find in the negative would nearly preclude such a finding. Rather, we consider the relation of any missing information to the likely disposition of a final investigation. In cases where there is a question as to what the evidence would show in a final investigation, we give all benefit of doubt, as instructed by the statute, to Petitioners.

LIKE PRODUCT AND DOMESTIC INDUSTRY

We concur with the majority opinion on the like product and domestic industry discussion. However, we find some merit in the position that free-machining special quality bars and rods are a separate like product.[3]

Free-machining steel is "dirty" in that sulphur, phosphorous, and/or lead or bismuth are added to the steel. This permits the free-machining steel to be machined more easily than

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supports an affirmative determination, and even if some reasonable doubt exists as to whether a negative determination is warranted. See, e.g., Buildex Inc. v. Kason Industries, Inc., 849 F.2d 1461, 1463 (Fed. Cir. 1988)

[3] Several parties argued in this investigation that free-machining steels should be a separate like product, although there appears to be disagreement on the definition and scope of free-machining steels. The Cold Finished Steel Bar Institute advocates all resulphurized and rephosphurized steel, including lead and bismuth, while the Petitioner would exclude lead and bismuth. Respondents took no strong position on this issue.

other types of special quality steels, thus providing distinct properties.[4] Non-free-machining steels are harder and are used primarily in high-strength or fatigue-critical applications.[5] More important, end users of special quality steels perceive free-machining steels as a distinct product with distinct uses. Although we find these distinctions to be compelling reasons to warrant separate like products for free-machining special quality carbon and alloy bars and rods and semifinished products and non-free-machining carbon and alloy bars and rods and semifinished products, we agree with the majority in their final assessment and give the benefit of the doubt to the Petitioners by adopting a more aggregate, two separate like-product definition. However, we note that our negative determination would not have been different if we had found four separate like products for these special quality steel products.

CONDITIONS OF COMPETITION

The special quality carbon and alloy steel industries are characterized by a wide range of highly differentiated products. Unlike merchant grade steel, special quality steel is almost always

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[4] Free-machining steels run a higher risk of surface imperfections and are not a good as other special quality steels in hot working operations due to surface cracks. Approximately two-thirds of all carbon and alloy free-machining bars and rods is distributed to cold-finishers compared to only 16 percent of other types of special quality steels. The principal consumers of free-machining steel are screw machine manufacturers.

[5] Unlike free-machining steels, the majority of other types of special quality steels are distributed for a variety of manufacturing applications including cold-headers, spring manufacturers, and others.

made to customer specifications at the melt stage. Although most special quality steel producers can create a product to meet customer specifications, other non-price factors, such as delivery time, reliability, and consistent quality, are significant in determining the degree of competition among suppliers.

The demand for special quality carbon and alloy steel products, as intermediate products, depends largely on the level of overall economic activity. During the period of investigation, the special quality steel industries experienced a cyclical downturn due to the recession in the durable goods sector of the economy. The major markets for specialty bar quality steel are transportation equipment, industrial machinery and equipment, and electrical equipment. Substantial quantities of special quality steel are sold directly to manufacturers to be processed into end use products. Significant quantities also are sold to independent forgers, cold finishers, steel distributors, and other customers for further processing.

With the exception of general machinery, growth of U.S. shipments in these major industries declined throughout the period of investigation, particularly in the motor vehicles and equipment, aircraft and parts, and engines and turbines industries, which account for a substantial proportion of special quality steel consumption. Both domestic producers and importers have indicated that demand for special quality steel products has generally declined since 1989 as a result of the recession and the declining U.S. market share of the major domestic auto producers.

U.S. apparent consumption of all special quality carbon and alloy steel bars and rods increased 4.0 percent between 1989 and 1990, then declined by 10.8 percent between 1990 and 1991, for an overall decline of 7.2 percent during the period of investigation. January-to-March 1992 interim data indicate that these steel products have rebounded, increasing by 11.9 percent over the same period in 1991, as a result of the turnaround in growth for primary end users.[6]

The consumption of semifinished special quality steel is largely driven by the demand for hot-rolled special quality bar and rod and to a lesser extent by the forging industry. Demand for these downstream finished hot-rolled special quality products comes from parts suppliers or original equipment manufacturers of components for incorporation in such end products as automobiles and appliances, the production of which declined between 1990 and 1991.

U.S. apparent consumption of semifinished special quality carbon and alloy steel products increased 15.0 percent between 1989 and 1990 but declined by 12.6 percent between 1990 and 1991, for an overall increase of only 0.5 percent during the period of investigation. January-to-March 1992 interim data indicate that apparent consumption increased 10.6 percent over the same period in 1991.[7]

Of significant note is the entry of minimills into the

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6 Staff report at Table G-35.

7 Staff report at Table G-14.

production of special quality steel bars and rods. Minimills traditionally have been scrap-based, EAF steelmakers with up to 100,000 tons of raw steel-making capacity. Products were usually restricted to concrete reinforcing bars, merchant bars, and in some instances light structural shapes. These mills generally served end use markets within a 200 to 300 mile radius of the mill.[8]

The definition of minimills has evolved over time as both minimills and traditional producers have undergone basic changes. The definition of minimills no longer distinguishes it from integrated mills according to product line, capacity or market area. Increases in average production capacity, and expansion of the geographic marketing area of minimills, along with their ownership of more than one production facility and their entrance into more technologically demanding products such as structurals and flat-rolled products, wire rod and, most important to this investigation, special quality steels, all have expanded competition between minimills and traditional producers.[9] Increasingly significant competition from the more cost-competitive minimills is a significant development in these special quality steel industries.

CUMULATION

Bethlehem and Inland Steel, petitioners in the Lead and Bismuth investigations, argued that the Commission is required to

[8] Staff report at I-29.

[9] Staff Report at I-29.

cumulate hot-rolled lead and bismuth bar and rod imports with the subject imports in this investigation because the Commission has found a similar like product of special quality carbon and alloy hot-rolled bar and rod in both investigations.[10]

We must determine whether it is proper to cumulate imports of lead and bismuth bar and rod, which are excluded from the scope of this investigation, with imports of other special quality bar and rod, which are included in the scope of this investigation, for the purpose of determining whether the domestic industry that produces all special quality bar and rod is materially injured by reason of the allegedly dumped imports. Semifinished products were not part of the previous investigation and therefore cumulation is not an issue in that case.

The Commission must assess the volume and effect of imports from two or more countries of like products subject to investigation if such imports compete with each other and with the domestic like product. There is an exception in any case where the Commission determines that the imports are negligible and have no discernible impact on the domestic industry. In deciding if imports are negligible, we are instructed to consider (1) the volume and market share of imports (2) whether sales have been isolated or sporadic, and (3) whether a small quantity of imports can result in price suppression or depression because of the price sensitivity of the product.

In this case, imports of special quality bar and rod from

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[10] 19 U.S.C. § 1677(7)(iv)(I).

Brazil accounted for 0.9 percent of the domestic market in terms of value in 1991.[11] At no time during the period of investigation did imports of this product account for over 1 percent of the market in terms of quantity or value.[12] In addition, during the interim period the market share of Brazilian imports declined.

We do not believe that the market for special quality bar and rod is so price sensitive that even a small quantity of imports can result in price suppression or depression. This is a competitive multi-product industry, with different types of domestic producers, and a relatively large number of fairly traded imports. There is significant excess capacity in this industry that has remained throughout the period of investigation. Therefore, if Brazilian imports had not been not sold in the U.S. market, it is likely that another domestic or foreign firm would have readily supplied the steel currently being supplied by Brazil. If output remains the same, price is unlikely to rise.

Because the products are not merchant quality commodities, some customers value service, and demand a rigorous supplier qualification process.[13] In addition, some customers mentioned short delivery lead times (which reduce their inventory

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[11] Staff report at G-38, Table G-35 and K-3, Table K-1. If we had looked at free-machining steel as a separate like product, the market share of imports from Brazil in this case would be 0.3 percent.

[12] E.g. Torrington, Slip Op. at 18 citing Coated Groundwood Paper from Austria, Belgium, Finland, France, Germany, Italy, the Netherlands, Sweden, and the United Kingdom, Inv. Nos. 731-TA-486-494 (Preliminary) ("Groundwood Paper"), USITC Pub. 2359 at 28, 30-36 (February 1991).

[13] Staff report at I-121.

costs) and proximity to the plant as reasons for preferring to buy from domestic producers.[14] Those customers would not be particularly sensitive to price differentials between domestic and foreign firms. For all these reasons, this is not the type of industry where imports accounting for less than 1 percent of the market could have a significant depressing or suppressing effect on prices. Therefore, we do not choose to cumulate imports in this case with imports in the previous investigations.[15]

REASONABLE INDICATION OF MATERIAL INJURY BY REASON OF ALLEGEDLY DUMPED IMPORTS

To make an affirmative determination, the statute requires the Commission to find a reasonable indication that material injury to the domestic industry is by reason of the allegedly dumped imports. In assessing the effect of dumped imports, we compare the current condition of the domestic industry to that which would have existed had imports not been dumped. Then, taking into account the condition of the industry, we determine whether the resulting change of circumstances constitutes material injury.

In determining whether material injury is by reason of allegedly dumped imports, we must consider, among other factors, (1) the volume of the imports subject to the investigation, (2) the

[14] Staff report at I-118-121.

[15] We note that although the cumulation issue usually involves two or more countries rather than two or more products from the same country, the statute specifically refers to imports in a particular case and not imports from a particular country in deciding negligibility.

effect of those imports on prices in the United States for like products, and (3) the impact of those imports on domestic producers of like products.[16]

Volume of Imports

Imports of semifinished special quality bar and rod from Brazil accounted for 3.5 percent of the domestic market in terms of value in 1991. This was the highest market share attained by Brazilian producers during the period of investigation. In the interim period Brazilian market share declined to 2.9 percent.[17] Domestic producers held 89.9 percent of the market in 1991, and a high of 91.7 percent in 1990.

As we discussed above, imports of special quality bar and rod from Brazil accounted for 0.9 percent of the market in 1991. The market share of domestic special quality bar and rod was 90.4 percent in 1991, after reaching a high of 91.4 percent in 1990.[18]

Effect of Allegedly Dumped Imports on Domestic Prices

To analyze the effect of this volume of imports on

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[16] See 19 U.S.C. 1677(7)(B).

[17] If we separated free machining and non-free machining semifinished steel, the 1991 Brazilian market share would be less than 2 percent and less than 5 percent, respectively, while the domestic market share would be about 90 percent in both cases. See Report at G-16, G-17, and G-87, Tables G-13, G-14, and G-84.

[18] If we separated free-machining and non-free-machining special quality bar and rod, the 1991 Brazilian market share would be about 0 and about 1 percent respectively and the domestic market share would be about 80 percent and about 90 percent, respectively. See Staff report at G-37, G-38, and G-96, Tables G-34 G-35, and G-93.

domestic prices of the like product and on the domestic industry, we consider a number of factors about the industry and the nature of the products, such as substitutability between the subject imports and the domestic like product. In the section on cumulation we discussed the low volume of imports of special quality bar and rod from Brazil and the reasons why those imports are unlikely to suppress or depress prices for the domestic like product.

Rather than explicitly discussing the substitutability, we give Petitioners all benefit of the doubt for the purposes of this preliminary determination and find, for the reasons outlined in the cumulation section, that even if there had been no sales of special quality bar and rod at the fairly traded price, the volume of sales and the price of the domestic like product would not have been significantly higher. Even if domestic producers had captured the entire 0.9 percent of the market held by Brazil, their volume of sales would not be significantly different.[19]

In the case of semifinished special quality products, there are various additional factors that make it unlikely that imports could have had a significant effect on domestic sales and prices. First of all, over 80 percent of the domestic semifinished product is further processed by the same steel manufacturer who produced the semifinished product.[20] Unless the price of imported

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[19] The same would apply to free-machining, where there were almost no imports from Brazil, and to non free-machining, where imports accounted for about 1 percent of the market.

[20] Staff report at I-67, Table 8C.

steel was so low that steel producers shut down their facilities and simply bought Brazilian steel for further processing, the dumping would have had no effect on production of the semi-finished product. Pricing for the purpose of intracompany transfers is not the same as pricing for the market and therefore the effect of imports would appear to be much less important. Therefore, over 80 percent of domestic shipments were likely to be unaffected by Brazilian imports.

Of the semifinished steel sold on the market, it is unlikely that the small volume of imports from Brazil had a significant effect on domestic prices. This is a competitive market with substantial excess capacity. In fact, capacity utilization declined to a period low of 60.5 percent in 1991.[21] Given the industry's claims that it important to achieve higher rates of capacity utilization, it is likely that, even if Brazil sold no semifinished products, absent the dumping, other domestic producers or foreign producers of fairly traded imports would have expanded output. Producers cannot control price in a market as competitive as the market for special quality semifinished steel. Thus, while it is likely that domestic producers would gain additional volume, absent the dumping, given their already large market share the percentage increase in their output would be extremely small.[22]

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21 Staff report at Table G-14.

22 If semifinished steel was separated into free-machining and non free-machining, the same general analysis would apply. The case would be even stronger in the case of free-machining semifinished steel.

Impact on the Domestic Industry

The statute directs the Commission to examine the impact of the subject imports on the domestic industry. The statute requires that we consider this impact in light of certain relevant economic factors "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[23] We concur with the majority on the description of conditions in the domestic special quality carbon and alloy steel bars and rods and semifinished products industries.[24]

U.S. apparent consumption of all special quality carbon and alloy steel bar, including cut-length rods declined by over 322 thousand short tons during the period of investigation. During this period, imports from Brazil increased by only 13.9 thousand short tons.[25] Domestic production of finished special quality bar and rod declined by 233.2 thousand short tons.[26] As discussed above, giving the benefit of the doubt to Petitioners, even if all imports of special quality steel bars and rods from Brazil had been produced by domestic producers, U.S. production would not have been materially different. We note that U.S. apparent consumption for all special quality carbon and alloy steel bars and rods increased

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[23] 19 U.S.C. § 1677 (7)(C)(iii)

[24] cite majority opinion at _____.

[25] Staff report at Table G-35.

[26] Staff report at Table G-35.

by 11.9 percent between interim 1991 and interim 1992.[27] Domestic production followed this upward trend increasing by 20.4 percent over the same period in 1991.[28]

We are not persuaded that the industries' decline in financial performance is related to the allegedly dumped imports. Domestic market share for special quality bars and rods increased from 89.8 percent in 1989 to 91.4 percent in 1990, and then decreased to 90.4 percent in 1991.[29] While market share increased, domestic profitability declined. The value of these domestic shipments also did not follow the pattern exhibited by domestic profitability. Shipments increased by 1.9 percent between 1989 and 1990 before declining by 12.9 percent between 1990 and 1991.[30]

Semifinished special quality steel products also followed a similar disparate path for profitability and domestic shipments. Domestic market share increased from 91.0 percent in 1989 to 91.7 percent in 1990 and then declined to 89.9 percent in 1991.[31] The value of domestic shipments increased 7.6 percent between 1989 and 1990 before declining by 12.5 percent between 1990 and 1991.[32] However, operating losses continued to increase throughout the period of investigation despite increased market share in 1990 and

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[27] Staff report at Table G-35.

[28] Staff report at Table G-35.

[29] Staff report at Table G-14.

[30] Staff report at Table G-14.

[31] Staff report at Table G-14.

[32] Staff report at Table G-14.

increased domestic shipments.

We note that domestic average capacity exceeded U.S. apparent consumption during the entire period of investigation. That is, capacity exceeded consumption by 2.7 million short tons (47.7 percent) in 1989, 2.1 million short tons (32.6 percent) in 1990, and 2.8 million short tons (48.5 percent) in 1991.[33] We find that this significant excess capacity has had a materially negative impact on the domestic industry. Again, giving the benefit of the doubt to Petitioners, even if all imports of special quality bars and rods from Brazil had been produced domestically, the industry still would have experienced significant excess capacity during the period of investigation. We further note that instead of capacity declining during the period of investigation, as would be expected from industries with large amounts of excess capacity in periods of declining demand, average capacity increased by 4.6 percent in the special quality steel bars and rods industry and by 1.0 percent in the semifinished steel industry, thus adding to the capacity problem.[34]

In assessing the impact of this excess capacity on these two industries, we find that special quality steel producers operating at higher rates of capacity utilization tend to be more profitable. Minimills producing special quality steels achieved capacity utilization rates of greater than 89 percent throughout the period of investigation, while traditional mills achieved their

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[33] Staff report at Table G-14.

[34] Staff report at Tables G-35 and G-14

highest capacity utilization rate of 59.1 percent in 1990.[35] As a result, minimills had lower costs as a percentage of net sales and showed healthy operating incomes during the period of investigation in both absolute terms and as a percent of net sales. In contrast, traditional mills showed significantly declining operating income resulting in an operating loss in 1991.[36] We note that, in 1991, traditional mills accounted for close to 65 percent of the industries' capacity and only 46 percent of its production.[37] We further note that the sales volume of minimills expanded during the period of investigation, while the sales volume of traditional producers declined.[38]

THREAT OF MATERIAL INJURY BY REASON OF THE ALLEGEDLY LESS THAN FAIR VALUE IMPORTS FROM BRAZIL

The domestic industries producing special quality semifinished steel and bar and rod are not threatened with material injury by reason of allegedly dumped imports from Brazil. We have examined all the relevant statutory factors, keeping in mind that this determination must be "made on the basis of evidence that the threat of material injury is real and that actual injury is imminent. Such a determination may not be made on the basis of

[35] Staff report at Table H-1 and H-2.

[36] Staff report at Table H-2.

[37] Staff report at Table H-2.

[38] Staff report at Tables H-1 and H-2.

mere conjecture or supposition."[39]

Brazilian capacity did not increase throughout the period of investigation and is projected to decline in 1992 for both products. While capacity utilization declined throughout this period, it is projected to increase in the future. In addition, there was excess capacity throughout this period, and no indication that increased excess capacity will lead to increased imports from Brazil.

There has been no substantial increase in market penetration of imports from Brazil. In the case of bar and rod, Brazilian imports never accounted for over 1 percent of the market and they declined in the interim period.[40] In the case of semifinished products, Brazilian imports increased from 2.9 percent in 1989 to 3.5 percent in 1991 (3.0 percent to 3.7 percent in terms of quantity), but declined to 2.9 percent in the interim period.[41]

Finally, the European Community imposed dumping duties on Brazilian imports of semifinished alloy steel, in March 1992. These duties range from 1.7 percent to 15 percent. While these duties may lead to some decrease in EC demand for Brazilian steel, it would be speculative to assume they will cause Brazilian producers to sell more steel in the U.S. market. Rather, shifts in sources of supply might occur, so that the Brazilian firm with the lower duty rate supplies relatively more steel to the EC. In

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[39] 19 U.S.C. §1677(7)(F)(ii)

[40] Staff report at Table G-35.

[41] Staff report at Table G-35.

addition, Brazil only sells about 25 percent of its semifinished alloy steel in the U.S. market.[42] Given its excess capacity throughout this investigation, it is difficult to believe that Brazil is not already selling as much steel as it can in the U.S. market.

CONCLUSION

Based on the record in this investigation, we find that the special quality carbon and alloy steel bars and rods industry is not materially injured by reason of the de minimis level of subject imports from Brazil. We further find that the semifinished special quality carbon and alloy steel products industry is not materially injured by reason of the allegedly less than fair value imports from Brazil.

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[42] Staff report at Table G-31.

INFORMATION OBTAINED IN THE INVESTIGATION

INTRODUCTION

On June 9, 1992, a petition was filed with the U.S. International Trade Commission and the U.S. Department of Commerce by Republic Engineered Steels, Inc., Massillon, OH, and The Timken Company, Canton, OH. The petition alleges that imports of certain special quality carbon and alloy semifinished and hot-rolled steel products[1] from Brazil, covered by subheadings/statistical reporting numbers 7207.11.00, 7207.12.0010, 7207.19.0030, 7207.20.0025, 7207.20.0075, 7214.30.00, 7214.40.00, 7214.50.00, 7214.60.00, 7224.10.0075, 7224.90.0045, 7224.90.0065, and 7228.30.80 of the Harmonized Tariff Schedule of the United States (HTS), are being sold in the United States at less than fair value (LTFV), and that an industry in the United States is materially injured and threatened with material injury by reason of such imports.

Accordingly, effective June 9, 1992, the Commission instituted preliminary antidumping investigation No. 731-TA-572 under the applicable provisions of the Tariff Act of 1930 to determine whether there is a reasonable indication that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded by reason of imports of such merchandise into the United States.

Notice of the institution of the Commission's preliminary investigation, and of the public conference 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, DC, and by publishing the notice in the Federal Register on June 17, 1992 (57 F.R. 27064).[2] The conference was held in Washington, DC, on June 30, 1992.[3] The Commission voted on this investigation on July 21, 1992, and transmitted its determination to Commerce on July 24, 1992.

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[1] As defined by the Department of Commerce, the imports subject to investigation are certain hot-finished carbon and alloy (other than stainless, high speed, silico-manganese, and tool steel) steel bars and rods, which have a uniform solid cross-section along their whole length and are in the shape of circles, segments of circles, ovals, rectangles, or other convex polygons. The subject bars and rods are of special bar quality engineered steel that are described in Society of Automotive Engineers (SAE) standards J403, J404, J411, J1081, J1249, J1268, and modifications thereof. Also included are certain alloy ingots (other than stainless steel, high-speed steel, silico-manganese steel, tool steel, and high-nickel alloy steel), and semifinished products of carbon and alloy steel (other than stainless steel, high-speed steel, silico-manganese steel, tool steel, and high-nickel alloy steel), of circular or rectangular (including square) cross-section with a width measuring less than four times thickness, of special bar quality engineered steel. Excluded from the scope of the investigation are imports of semifinished products or hot-rolled bars and rods which contain by weight 0.03 percent or more of lead or 0.05 percent or more of bismuth; nonalloy steel ingots or other primary forms; semifinished or hot-rolled products of merchant quality steels (American Iron and Steel Institute (AISI) grades M 1000 through M 1044); hot-rolled bars and rods in coiled form; forged bars; and reinforcing bars and rods.

[2] Copies of the Commission's institution notice and Commerce's initiation notice are presented in app. A.

[3] A list of witnesses appearing at the conference is presented in app. B.

Previous and Related Investigations

Certain special quality carbon and alloy steel products have been included in a number of investigations conducted by the Commission since 1921. A listing of those investigations is presented in table 1.

General Steel Products Investigations

The 1982 countervailing duty and antidumping investigations resulted in negative preliminary determinations with respect to hot-rolled carbon steel bar; the petitions with respect to hot-rolled alloy steel bars were withdrawn and the investigations terminated. In 1984 the Commission unanimously determined in a section 201 investigation that imports of carbon and alloy steel bar and wire rod products were not a substantial cause of serious injury, or threat thereof, to those domestic industries. The 1984 investigations of carbon steel wire rod resulted in an affirmative determination in the countervailing duty investigation concerning Spain, and affirmative determinations in the antidumping investigations involving Argentina, Brazil, Spain, and Trinidad and Tobago.[4]

Investigations of Special Quality Carbon Steel Products

In its recent investigations of certain hot-rolled lead and bismuth carbon steel products, the Commission found a like product of hot-rolled special quality carbon steel bar and rod, and preliminarily determined that there is a reasonable indication that the domestic industry producing such like product is materially injured by reason of imports of the subject hot-rolled lead and bismuth carbon steel products from Brazil, France, Germany, and the United Kingdom.[5] Commerce is expected to make its preliminary countervailing duty determinations in these investigations by September 10, 1992, and its preliminary antidumping determinations by September 21, 1992.

THE PRODUCT

Description[6]

The special quality carbon and alloy steel products covered by this investigation are semifinished and hot-rolled products that may have been subjected to direct hardening, carburizing, induction hardening, and/or nitriding; and exhibit creep resistance; and are used in applications

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[4] In addition, Commerce conducted several countervailing duty investigations of countries that were not signatories to the GATT subsidies code from 1986 to 1988. These investigations resulted in affirmative countervailing duty determinations regarding carbon steel wire rod from Malaysia, New Zealand, Saudi Arabia, and Zimbabwe.

[5] Certain Hot-rolled Lead and Bismuth Carbon Steel Products from Brazil, France, Germany, and the United Kingdom, USITC Publication 2512, p. 22.

[6] See app. C for a glossary of selected steel industry terminology. Many terms, both in the industry and the tariff, have ambiguous and apparently overlapping definitions, or cannot even be positively delineated.

Table 1
Special quality carbon and alloy steel products: Previous and related investigations since 1921

Item	Investigation number	Date of issue	Report No.
Steel billets and bars	N.A.	1921	C-7
Hot-rolled carbon steel wire rods:			
Belgium	AD-27	1963	TC 93
France	AD-30	1963	TC 99
Luxembourg	AD-28	1963	TC 94
West Germany	AD-29	1963	TC 95
Carbon steel bars and shapes:			
Canada	AD-39	1964	TC 135
Steel bars, reinforcing bars, and shapes: Australia	AD-62	1970	TC 314
Carbon steel wire rods and wire	TEA-W-100	1971	TC 418
Carbon steel wire rods and round wire	TEA-W-181	1973	TC 566
Carbon steel bars and shapes:			
The United Kingdom	AD-INQ-8, 9	1978	USITC 855
Certain steel products (Hot-rolled carbon steel bar, and hot-rolled alloy steel bar):			
Belgium, Brazil, France, Italy, Luxembourg, United Kingdom, West Germany	701-TA-86-144 (P)	1982	USITC 1221
Carbon and certain alloy steel products (Hot-rolled carbon steel bars)	TA-201-51	1984	USITC 1553
Carbon steel wire rod:			
Brazil, Belgium, France, Venezuela	701-TA-148-150 (P)	1982	USITC 1230
	731-TA-88 (P)		
Venezuela	731-TA-88 (F)	1983	USITC 1338
Brazil, Trinidad and Tobago	731-TA-113-114 (P)	1982	USITC 1316
	731-TA-113-114 (F)	1983	USITC 1444
Argentina, Mexico, Poland, Spain	701-TA-209 (P)	1984	USITC 1476
	731-TA-157-160 (P)		
Spain	701-TA-209 (F)	1984	USITC 1544
Poland	731-TA-159 (F)	1984	USITC 1574
Argentina, Spain	731-TA-157, 160 (F)	1984	USITC 1598
German Democratic Republic	731-TA-205 (P)	1984	USITC 1607
Poland, Portugal, Venezuela	701-TA-243-244 (P)	1985	USITC 1701
	731-TA-256-258 (P)		
Stainless and alloy tool steel	TA-201-5	1976	USITC 756
(Alloy tool steel only)	TA-201-2	1977	USITC 805
	TA-203-3	1977	USITC 838
	TA-203-5	1979	USITC 968
	TA-201-48	1983	USITC 1377
	TA-203-16	1987	USITC 1975
Steel Industry Annual Reports	332-209 and 332-289	Various	
Lead and bismuth carbon steel products:			
Brazil, France, Germany, United Kingdom	701-TA-314-317 (P)	1992	USITC 2512
	731-TA-552-555 (P)		

Source: Various Commission reports.

requiring critical levels of hardness and/or hardenability, strength, toughness, fatigue resistance, high-temperature creep and fracture resistance, wear resistance, machinability, and formability. The subject semifinished and hot-rolled bars and rods are commonly referred to as engineered or special bar quality (SBQ) steels,[7] and the subject imports are defined as follows:

> Semifinished products.--Products of solid circular or rectangular (including square) cross section, with a width measuring less than four times thickness, which have not been further worked than by being subjected to primary hot-rolling or roughly shaped by forging. These products do not include semifinished steel products which contain by weight 0.03 percent or more of lead or 0.05 percent or more of bismuth; nonalloy steel ingots or other primary forms; or semifinished products of merchant quality steels (AISI grades M 1000 through M 1044).
>
> Hot-rolled bars and rods.--Products which have been reduced to their final thickness by heating and rolling the products (bars and rods) at elevated temperature (usually above 2,200° F). These products have a solid cross section along their length in shapes (and sizes) that include, but are not limited to: circles or segments of circles (from 0.20 to 12 inches in diameter), ovals, rectangles (including squares from 0.20 to 6 inches in width), flats (from 0.25 to 8 inches in width and from 0.23 to 4 inches in thickness), or other convex polygons (such as hexagonals and octagonals from 0.20 to 4.06 inches between parallel surfaces). These products do not include semifinished or hot-rolled products which contain by weight 0.03 percent or more of lead or 0.05 percent or more of bismuth; nonalloy steel ingots or other primary forms; semifinished or hot-rolled products of merchant quality steels (AISI grades M 1000 through M 1044); products wound in coils; forged bars; or reinforcing bars and rods.

In contrast to merchant quality, special quality steel is typically produced to customer order and characterized by tighter surface and chemical tolerances. It is produced with minimal segregation and porosity, tighter grain size tolerances, and restrictive limits on incidental chemical element content. A tight range for chemical composition is prescribed for carbon, manganese, phosphorus, and sulfur. Standards on surface irregularities, including seams, are stricter than for merchant quality.[8]

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[7] These products are produced from the following grades of steel: AISI carbon series 1000 (excluding grades 1000 through 1044 designated with the prefix M), 1100, 1200, and 1500; AISI alloy series 1300, 4000, 4100, 4300, 4600, 4700, 4800, 5000, 5100, 5200, 6100, 8100, 8600, 8700, 8800, 9200, 9300 and 9400; and PS-grade steels; and include Boron and H-steels in these carbon and alloy grades.

[8] See app. D for a presentation of comments on the differences and similarities in the physical/metallurgical characteristics and uses of special quality vs. merchant quality steel products, as well as comparisons of other categories of carbon and alloy steel products, as compiled from responses to the Commission's producer and importer questionnaires.

Free-Machining Steels

Free-machining steels are a subset of the larger category of special quality steels, whereby base grades of steel have been either resulphurized and/or rephosphorized, or have had additions of lead, bismuth, selenium, or tellurium.[9,10] All steel, irrespective of grade or

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[9] Inclusion of a definition and various subheadings for "free-cutting" steel in Chapter 72 of the tariff schedules was proposed by the EC in 1978 (there was no prior provision for such steel in the BTN/CCCN). The original EC definition is as follows:

> Non-alloy steel containing, by weight, one or more of the following elements in the specified proportions:
>
> - 0.1% or more but not more than 0.4% of sulphur
> - more than 0.1% of phosphorus
> - 0.1% or more but less than 0.5% of lead
> - more than 0.1% of selenium
> - more than 0.1% of tellurium
> - more than 0.1% of bismuth

Over time this definition was modified based on comments from the International Standards Organization (ISO), Japan, Sweden, and Switzerland (the U.S. did not comment on the term, its definition, or inclusion in the HS) and adopted by the CCC in February 1981 (without comment by the U.S.). The adopted definition for "free-cutting" steel was (and is) as follows:

> Non-alloy steel containing, by weight, one or more of the following elements in the specified proportions:
>
> - 0.08% or more of sulphur
> - 0.1% or more of lead
> - more than 0.05% of selenium
> - more than 0.01% of tellurium
> - more than 0.05% of bismuth

[10] The record indicates that there are differences of opinion as to the definition of free-machining and/or free-cutting steel, based on the inclusion or exclusion of certain carbon steel grades. Counsel for the Cold Finished Steel Bar Institute defines "free-machining" steel (or "free-cutting" steel) as material that has a low carbon content (0.15 percent or less), and is resulphurized <u>and</u> rephosphorized (1200 series steel), or has lead or bismuth injected (postconference brief of Thompson & Mitchell, p. 3). ***.

For purposes of this investigation, counsel for Inland and Bethlehem has suggested that the Commission adopt the broader meaning of free-machining as a synonym for free-cutting as defined in the tariff headnotes to HTS Chapter 72, with an adjustment for lower levels of lead, as follows (postconference brief of Wiley, Rein & Fielding, p. 16, fn 28):

(continued...)

content, is machinable to some degree, and the machinability of the base steel is largely dictated by the engineering requirements for the end product. These requirements, which are properties of the base grade of the steel, include the steel's strength, ductility, and fatigue resistance.

Leaded and bismuth steels possess a significantly higher level of machinability (over 30 percent in terms of productivity) compared with base grades in the 1100 and 1200 series. Lead and bismuth are insoluble and form inclusions in the steel, attaching themselves as tails to manganese sulfides. These inclusions aid chip formation and improve the lubricity or machinability of the steel. However, these steels pose problems in terms of manufacture and rolling, and their production is subject to environmental and health restrictions.

Manufacturing Process

Special quality carbon and alloy steel products require more ophisticated manufacturing tools, machinery, equipment, and skills than that required for merchant quality products, since the requirements for chemistry control, rigorous product analysis, surface quality, and critical engineered characteristics are much more restrictive.[11] The manufacturing process leading to the production of certain special quality carbon and alloy steel products is analyzed below and consists of three different stages: (1) melting, (2) casting, and (3) hot-rolling.

Melt Stage

Steel is produced either by the integrated or nonintegrated process (see figure 1). The nonintegrated process produces molten steel by melting scrap in an electric arc furnace (EAF). In contrast, the integrated process typically smelts iron ore and coke in a blast furnace to produce molten iron, which is subsequently poured into a steelmaking furnace, generally a basic oxygen furnace (BOF), together with scrap

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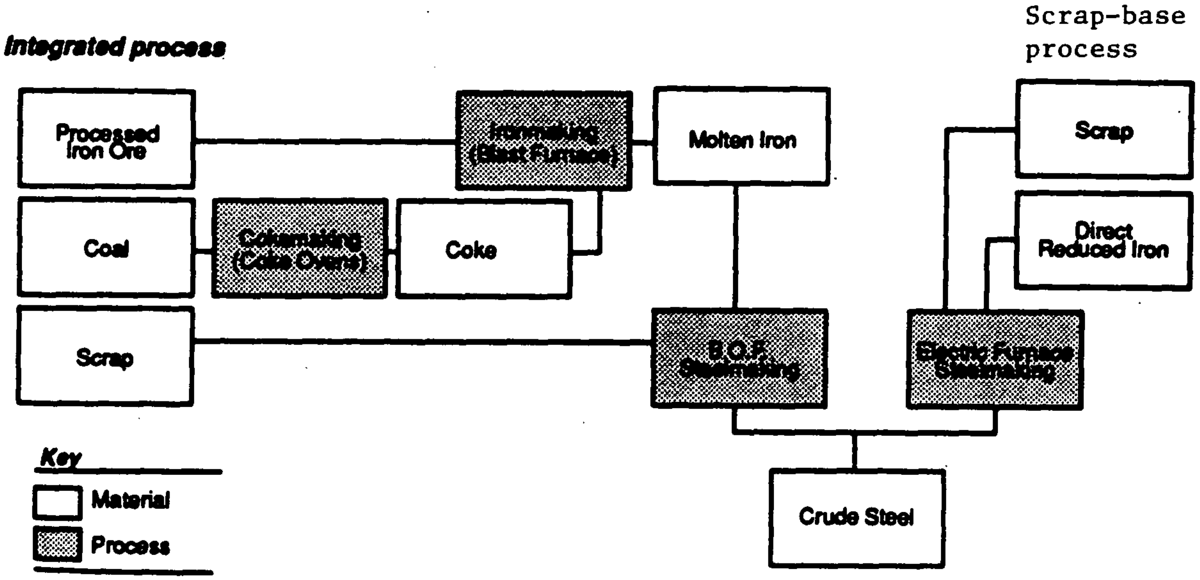
[10] (...continued)
Carbon steel containing one or more of the following elements:

- 0.08% or more of sulphur
- 0.03% or more of lead
- more than 0.05% of selenium
- more than 0.01% of tellurium
- more than 0.05% of bismuth

***.

[11] See app. E for a presentation of comments on the differences and similarities in the manufacturing processes of special quality vs. merchant quality steel products, as well as comparisons for other categories of carbon and certain alloy steel products, as compiled from responses to the Commission's producer and importer questionnaires.

Figure 1
Simplified steelmaking flowchart



Source: Steel Industry Annual Report, USITC 2436, Sept. 1991, p. 2-2.

metal. The hot metal is processed into steel when oxygen is blown into the metal bath. Lime is added to serve as a fluxing agent; it combines with impurities to form a floating layer of slag, which is later removed. Alloy steels are produced by additions of alloying agents (including chromium, nickel, and molybdenum) to liquid steel to impart specific properties to finished steel products. Molten steel is poured or tapped from the furnace to a ladle, an open-topped, refractory-lined vessel, typically with an off-center bottom opening, equipped with a nozzle. Meanwhile, the primary steelmaking vessel (EAF or BOF) may be charged with new materials to begin another refining cycle.

Whether produced by the integrated or nonintegrated process, it is increasingly common for molten steel to pass through a ladle metallurgy station, where its chemistry is refined to embody the steel with properties required for specific applications.[12] At the ladle metallurgy, or secondary steelmaking, station the chemical content and temperature are adjusted for optimum casting.

Significant progress towards increasing the cleanliness of special quality steels has been achieved in recent years. Important developments include the use of submerged tap holes; eccentric bottom tap holes and reladling to prevent slag carry-over on tapping; argon bubbling to assist inclusion flotation; synthetic reducing slags; vacuum

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[12] Ladle metallurgy stations differ in their sophistication and ability to refine steel. Steels used to produce most merchant quality products and concrete reinforcing bar are not usually processed in a ladle metallurgy station.

degassing; shrouding of the teeming stream to prevent reoxidation; and corrosion resistant refractories.[13]

Carbon vs. alloy steel

In this investigation, the term "carbon steel" is steel that does not contain the elements listed below in excess of the quantity, by weight, respectively indicated:

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

Alloy steel is that which contains any of the elements listed above in excess of its specified quantity. Alloying agents are added to the liquid steel to impart specific properties to the finished product. Both carbon and alloy special quality products are characterized by common manufacturing methods and uses. Both carbon and alloy special quality steels require similarly high levels of cleanliness, soundness, and surface quality. Both can be heat treated and have equally rigorous internal chemistry requirements. A number of U.S. steel producers manufacture both carbon and alloy special quality semifinished and hot-rolled bars and rods using the same workers, processes, and equipment.[14]

Casting Stage

Once molten steel with the correct properties has been produced, it is cast into a form that can enter the rolling process (see figure 2 for a presentation of steel products and processes). In the ingot-based process, the ladle is moved by an overhead crane to a pouring platform where the steel is poured or "teemed" into ingot molds, either through the top of each mold or, in the preferred method for special quality production, through a pipe system that fills each mold from the bottom (bottom casting). As the steel begins to solidify, the mold is stripped from the ingot and the ingot is then transferred to a soaking pit, a specialized heating furnace that equalizes the temperature within the ingot. Following removal from the soaking pit, the ingots are hot-rolled on a primary breakdown mill to bloom or billet sizes and then transferred to a bar or rod mill for hot-rolling.

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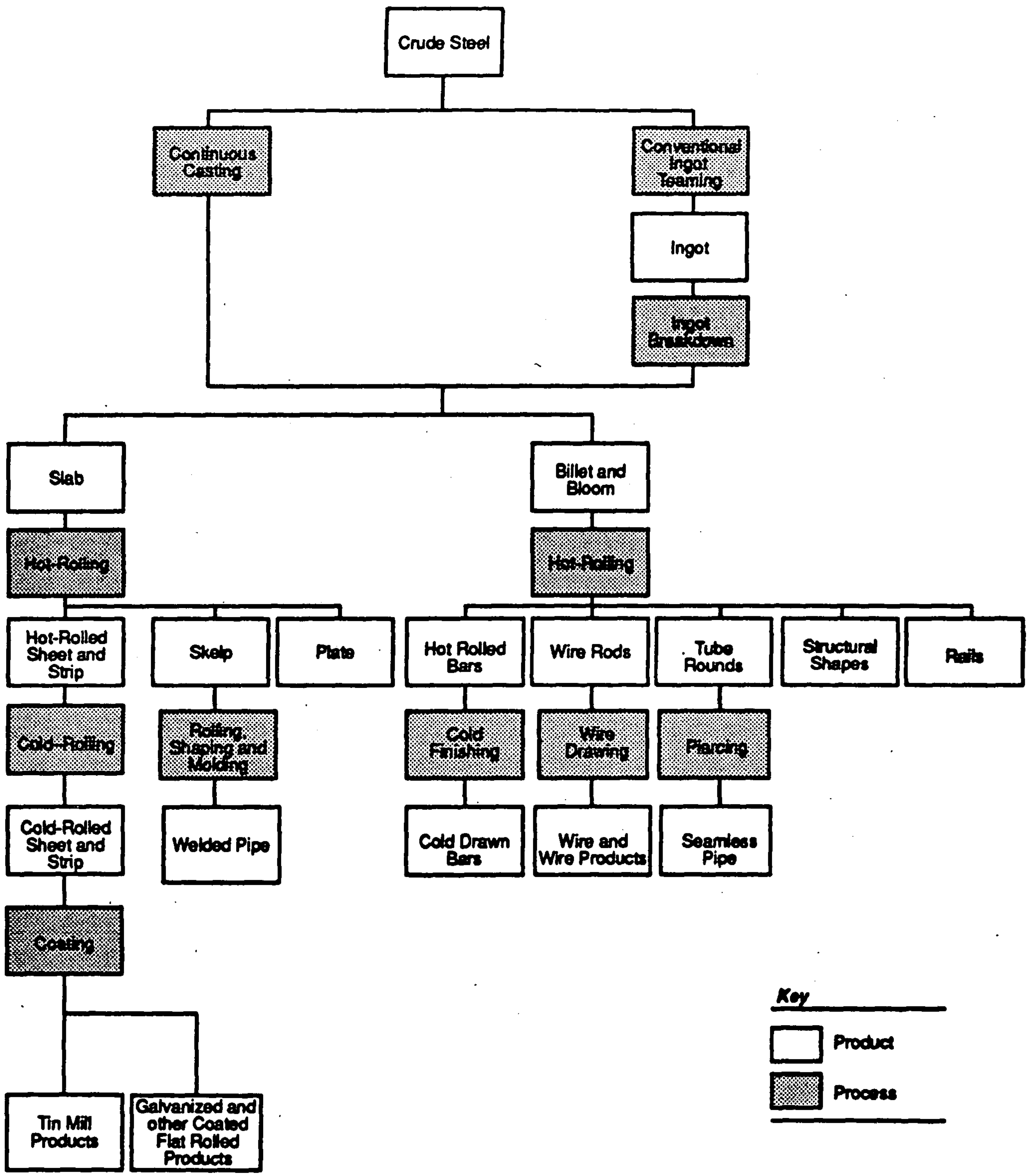
[13] David J. Naylor, "The Future for Engineering Steels," *Advanced Materials Technology International*, London, Sterling Publications Ltd., 1989, p. 31 and petition, p. 5.

[14] See app. E for comments on manufacturing processes.

Figure 2
Steel products and processes



Source: Steel Industry Annual Report, USITC 2436, Sept. 1991, pp. 2-3.

With respect to strand (or "continuous") casting, the ladle is transferred from the ladle metallurgy station to the caster, and the molten steel is poured at a controlled rate into a tundish, which in turn controls the rate of flow into the strand caster. The tundish may have a special design or electromagnetic stirring for the purpose of ensuring homogeneity of the steel. The strand caster is designed to produce blooms or billets in the desired cross-sectional dimensions.[15] For special quality steel, billet casting has generally not been utilized because it did not yield comparable quality to ingot or bloom casting;[16] however, certain mills have been able to successfully cast special quality as billets.[17] Although initial acceptance of continuously cast special quality product was slow, it has rapidly increased over the past 5 years. Some consumers now reportedly prefer continuously cast special quality.[18]

Hot-Rolling Stage

After being cast, the ingots, blooms, or billets are transferred to a hot-rolling mill where they are reduced in cross-sectional dimension. There are additional losses in weight at each processing stage of the ingot or bloom associated with the production of special quality steel.

Blooms and billets are usually channeled through a reheat furnace prior to rolling. This increases the malleability of the steel, reducing energy consumption and wear in the rolling mill. The semifinished steel is successively reduced in size as it passes through several stands. Most modern rolling mills are in-line, although cross-country mills are still in use. Rod is rolled in a similar manner, although there are usually one or more additional stands in the rolling mill (or one or more additional passes made through a cross-country mill) to reduce the rod's finished diameter (most rod mills roll multiple strands). Rod is almost always coiled.

Special quality steel products are usually subjected to some form of heat treatment to impart certain valued properties. This treatment consists of some form of annealing, normalizing, or quenching and tempering, or a combination of these processes. Annealing processes remove stresses, alter mechanical properties to "soften" the steel, refine grain structure, and produce a definite microstructure. Normalizing produces a more uniform

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[15] There are no widely accepted precise definitions for the terms blooms or billets; the principal distinction is one of size--blooms are larger than billets in cross-sectional area. Blooms were defined in the Tariff Schedule of the United States, Annotated as measuring at least 36 square inches in cross-sectional dimension; billets were defined as measuring at least 3 square inches up to 36 square inches. These distinctions were not carried over into the HTS.

[16] Transcript of the public conference (TR), testimony of Mr. Matthews, p. 84.

[17] USITC staff fieldwork, June 24-25, 1992, and industry executives, USITC staff interview, July 7, 1992.

[18] TR, testimony of Mr. Baker, p. 142, and USITC staff fieldwork, June 24-25, 1992.

structure and removes irregularities caused by high or low rolling or forging temperatures. Quenching and tempering harden the steel.[19]

Microalloyed steel is a recently developed subset of special quality steel to provide, more economically, strength characteristics in medium- and high-carbon steels that have been traditionally obtained by the use of more expensive alloying element additions (chromium, nickel, and molybdenum), and by heat treatment.[20] Small additions of certain alloys, such as vanadium or niobium (columbium), impart the necessary properties for many applications without subsequent heat treating. U.S. consumers have been slower to accept microalloyed steel than those in Europe and Japan.[21]

Semifinished vs. hot-rolled steel

The final result of both conventional ingot teeming and continuous casting is steel in one of three semifinished shapes: ingots, blooms, or billets. Semifinished steel products may be subjected to primary hot-rolling on a breakdown mill before being considered ready for additional rolling. These products may be inspected and conditioned to minimize surface imperfections before further processing. Semifinished steel products have no other application than to be further processed into finished products.

Hot rolling transforms semifinished products into their final, or near final, shape. It is referred to as "hot" rolling because the material is heated before entering the rolling mill. The material makes repeated passes through pairs of rolls which squeeze the steel incrementally closer to its finished shape. Most special quality steel products undergo no further rolling operations during their manufacture. Hot-rolled special quality bar and rod products are suitable for forging, piercing, heat treating, cold drawing, cold forming, and machining.

Cut-lengths vs. coiled

After hot-rolled steel is rolled, it can be cut to convenient shipping lengths or coiled. Special quality coiled products up to approximately 2 inches in diameter are produced on a bar or rod mill equipped with reels to coil the final product. Special quality cut-length products are produced on a mill equipped with facilities to produce the cut lengths, such as shears, hot saws, or abrasive saws, as well as notch turnover hot beds to ensure product straightness off the hot-mill.[22] There is virtually no metallurgical difference between cut-length and coiled products, although the maximum diameter of coiled products is limited. The choice between these two products is based on the purchaser's manufacturing equipment. Coiled products are

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[19] United States Steel, *The Making, Shaping and Treating of Steel*, 10th ed., (1985), pp. 954-954.

[20] June 10, 1992, letter to Diane Mazur from Willis Martyn of Wiley, Rein & Fielding; and ***.

[21] TR, testimony of Mr. Matthews, pp. 85-86 and USITC staff fieldwork, June 25, 1992.

[22] See app. E for comments on manufacturing processes.

generally not used for hot forging or direct machining operations.[23] Both cut lengths and coiled products are used by cold finishers.[24]

Bars vs. rods[25]

Bars and rods are solid hot-rolled products produced by rolling heated billets into cut lengths or coils of a smaller predetermined cross-sectional size. Although most bars and rods are rolled from strand-cast billets, some bars, including those subject to the investigation, are hot-rolled from billets which were processed from ingots or strand-cast blooms. In general practice, bars are rolled on a bar mill and rods are rolled on a rod mill; these two types of hot-rolling mills differ somewhat in their engineering requirements, such as the number of stands and their speed of operation. Chemistry, size tolerance, and end use typically define most differences between bars and rods.

With respect to chemistry and form differences, most carbon steel rod is produced in the 1000 and 1500 series, and very little, if any, is produced in the 1100 or 1200 series, which, along with the 1000 and 1500 series are common bar grades.[26] Rods are typically produced in coils of one continuous length, unlike bars, which may be produced either in coils or cut to length. Most of the rod products that are produced in the United States are designated "wire rods," intended for being cold-drawn into wire for the production of wire products; this also means that most rod is of a circular cross-section.[27] Bars may be further hot-worked (e.g., forged), or cold-finished (including cold-drawn) depending upon their end use. Bars are hot-rolled to a number of shapes, including rounds, squares, round-cornered squares, hexagons, square-edge and round-edge flats, flats, and angles.[28]

Bar tolerances are tighter and more exacting than those for rod. The specifications written for the two products reflect these differences and are based mainly on the different end uses. Hot-rolled wire rods are generally produced in nominal fractional diameters, and are not comparable to hot-rolled bars in terms of either nominal fractional diameters or accuracy of

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[23] See app. D for comments on characteristics and uses.

[24] Id.

[25] See also app. D and the memorandum prepared by Charles Yost of the Commission's Iron and Steel Branch of the Office of Industries, for an in-depth discussion of the physical and quality distinctions between bar and rod, based on telephone surveys of industry personnel.

[26] American Iron and Steel Institute, *Steel Products Manual: Wire and Rods, Carbon Steel*, Mar. 1984. See definitions in app. C for a discussion of steel series.

[27] According to one estimate made by a steel industry executive, approximately 95 percent of the U.S. rod production is "wire rod," with another 3 to 4 percent designated for cold-heading applications and structural applications requiring large-diameter wires welded at the intersection.

[28] American Iron and Steel Institute, *Steel Products Manual: Alloy, Carbon and High Strength Low Alloy Steels: Semifinished for Forging; Hot Rolled Bars, Cold Finished Bars, Hot Rolled Deformed and Plain Concrete Reinforcing Bars*, pp. 91-94.

cross section or surface finish because of the methods of manufacture and the designation of wire rods to be drawn into wire.[29]

With respect to size differences, industry usage is in transition; there is a grey area in which the definitions of bar and rod overlap, and standardized nomenclature or a distinct and clear line between bar and rod is lacking.[30] The overlap can be seen in normal usage where forms that exceed 3/4 inch in diameter are termed "bar," those under 1/2 inch in diameter are usually termed "rod," and those between 1/2 and 3/4 inches may be called "bar" or "rod," depending upon the mill or the customer and the end use. Rod sizes include those hot-rolled coiled sections with a solid cross-sectional diameter between 5.5 mm (7/32 inch) and 18.5 mm (47/64 inch).[31] Most wire rod production is 5.5 mm (7/32 inches) material. With respect to bar sizes, the HTS limits bar to a minimum of 14 mm in cross-sectional diameter, thereby admitting a grey area of overlap between bars and rods between 14 mm and 19 mm. U.S. steel industry specifications for bar include sizes down to 7.94 mm (5/16 inch).[32] While the HTS definition provides an indication of the minimum size for bars, no provision is made for maximum size. However, the AISI uses the following guidelines for bars: rounds may be up to 10 inches in diameter; squares may be up to 8 inches; hexagons may be up to 4 inches; and flats may be up to 1.5 inches thick and 6 inches wide.[33]

Uses

Special quality steel is preferable for applications requiring critical and stringent levels of elasticity, strength, toughness, fatigue resistance, high-temperature creep and fracture resistance, corrosion resistance, wear resistance, machinability, and formability. Applications are found throughout the automotive, aerospace, railway, oil, coal and gas extraction, power generation, defense, chemical, agricultural, construction, and general manufacturing industries. Cars, trucks, tractors, and off-highway vehicles

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[29] AISI, *Steel Products Manual (Wire and rods)*, p. 35.

[30] Under the predecessor Tariff Schedules of the United States (TSUS), bars and wire rod were separate items. Steel bar was defined as having cross sections in the shape of circles, ovals, triangles, rectangles, hexagons, or octagons; and imports were reported under separate categories based on configuration and whether or not they were cold formed. Wire rod was defined as a coiled hot-rolled product, approximately round in cross section, and not under 0.20 inch nor over 0.74 inch in diameter; imports were reported under separate categories based on carbon content and further processing.

With the adoption of the HTS, hot-rolled bars and rods are classified together with a distinction between "hot-rolled bars and rods in irregularly wound coils" and "other bars and rods" (which would include hot-rolled cut-to-length bars and rods). A size dimension continues to be maintained, however, with a separate reporting category for coiled product less than 14 millimeters (0.74 inch) in diameter. (See app. F for tariff headnotes and nomenclature.)

[31] AISI, *Steel Products Manual (Wire and Rods)*, p. 35. The HTS limits the upper size of rods to 19 mm (0.74 inches).

[32] AISI, *Steel Products Manual (Bars)*, p. 91.

[33] Ibid, pp. 91-94.

account for more than half of the engineering steels market.[34] Current applications include crankshafts, connecting rods, suspension forgings, fasteners, bearings, aircraft undercarriage components, springs, high-strength pipeline fittings, gas containers, mining chains, and hand tools.[35]

Cold-finishing companies, which include some steelmakers, perform value-added work on hot-rolled bar and rod; cold-finished work includes cold-drawing (improving mechanical properties, such as increasing tensile strength, yield strength, torsional strength, hardness, and wear resistance), straightening, or other surface treatments, such as turning, grinding, and polishing. These companies in turn supply companies whose raw material specifications require tight tolerances and superior surface quality for steel bar products.

Questionnaire Responses

Through its questionnaires, the Commission sought data regarding the ultimate end-use customers of special quality carbon and alloy steel products, whether U.S.-produced or imported from Brazil. U.S. producers accounting for *** percent of total U.S. production in 1991 of special quality hot-rolled carbon and alloy steel bars and rods and semifinished products provided information on total U.S. shipments of the subject products by end-use customer. The data are presented in table 2. U.S. importers of the subject product from Brazil reported that they were unable to identify end-use customers in that sales were generally made to service centers, cold-finishers, or forgers (see section of the report entitled "Channels of Distribution").

Imported and Domestic Product Comparison

According to testimony by Republic Engineered Steels, Inc., a producer of special quality steel products, its customers view the domestic and Brazilian product as being interchangeable in terms of quality.[36] However, according to domestic suppliers, there may be some differences between the domestic and imported products in the area of customer service. There are significantly longer lead times associated with purchasing from a foreign source, and several references have been made to the Brazilians being "unreliable" suppliers.[37,38] According to one domestic purchaser of both domestic and Brazilian special quality steel products, the ingot casting method used by Brazilian producers is more cost effective in making larger cross-sections. This company purchases smaller cross-sections, more economically produced on a continuous caster, from domestic suppliers.[39]

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[34] David J. Naylor, "The Future for Engineering Steels," p. 31 and petition, at p. 5.

[35] Robert A. Garvey, President, North Star Steel, "SBQ - A Major Opportunity for US Minimills," *Metal Bulletin Monthly*, June 1992, p. 31.

[36] TR, testimony of Mr. Guilfoyle, pp. 34, 39, and 109.

[37] Ibid., p. 108 and USITC staff fieldwork, June 24-25, 1992.

[38] However, evidence on the record also indicates that ***.

[39] Caterpillar, Inc., postconference brief, p. 3.

Table 2
Special quality carbon and alloy steel products: Shares of shipments of U.S.-produced product, by end uses, 1991

(In percent)

Item	Auto-motive	Construction including maintenance	Machinery, industrial equipment & tools	Mining, lumbering, quarrying	Other
CARBON:					
Cut bars:					
Non-lead/bismuth free-machining..	13.7	.8	9.6	(1)	75.9
Other special.......	22.3	4.6	12.9	1.5	58.7
Subject special...	20.4	3.7	12.1	1.2	62.6
Coiled bars:					
Non-lead/bismuth free-machining..	10.1	(1)	(1)	(1)	89.9
Other special.......	45.1	.1	4.3	1.0	49.4
Certain special...	40.3	.1	3.7	.9	55.0
Rods:					
Non-lead/bismuth free-machining..	37.6	7.5	5.0	(1)	49.8
Other special.......	30.3	5.4	5.6	.1	58.6
Certain special...	30.6	5.5	5.5	.1	58.3
Lead & bismuth......	50.7	2.1	7.0	(1)	40.2
All free-machining..	45.0	4.5	6.1	(1)	44.5
All special.........	31.5	5.3	5.6	.1	57.5
Bars and rods:					
Non-lead/bismuth free-machining..	15.1	1.2	8.3	(1)	75.4
Other special.......	27.8	4.4	9.2	.9	57.6
Certain special...	25.9	3.9	9.1	.8	60.3
Lead & bismuth......	17.3	.3	2.0	(1)	80.4
All free-machining..	16.0	.9	5.9	(1)	77.3
All special.........	25.2	3.6	8.5	.7	62.1
ALLOY:					
Cut bars:					
Non-lead/bismuth free-machining..	(1)	.1	(1)	.7	99.2
Other special.......	16.1	2.5	13.2	.1	68.2
Subject special...	15.3	2.4	12.6	.1	69.6
Coiled bars:					
Non-lead/bismuth free-machining..	(1)	(1)	(1)	(1)	(1)
Other special.......	43.3	.6	9.4	1.0	45.7
Certain special...	43.3	.6	9.4	1.0	45.7
Rods:					
Non-lead/bismuth free-machining..	(1)	(1)	(1)	(1)	(1)
Other special.......	29.5	3.6	17.6	(1)	49.3
Certain special...	29.5	3.6	17.6	(1)	49.3
Lead & bismuth......	38.4	2.4	16.7	(1)	42.5
All free-machining..	38.4	2.4	16.7	(1)	42.5
All special.........	29.8	3.5	17.6	(1)	9.1
Bars and rods:					
Non-lead/bismuth free-machining..	(1)	.1	(1)	.7	99.2
Other special.......	19.0	2.4	13.1	.1	65.3
Certain special...	18.3	2.3	12.6	.2	66.7
Lead & bismuth......	19.5	.3	2.4	(1)	77.9
All free-machining..	6.2	.2	.7	.5	92.5
All special.........	18.3	2.3	12.4	.2	66.9

--Continued on next page.

Table 2--Continued
Special quality carbon and alloy steel products: Shares of shipments of U.S.-produced product, by end uses, 1991

(In percent)

Item	Automotive	Construction including maintenance	Machinery, industrial equipment & tools	Mining, lumbering, quarrying	Other
CARBON AND ALLOY:					
Cut bars:					
Non-lead/bismuth free-machining..	12.2	.7	8.5	.1	78.5
Other special.......	19.6	3.7	13.0	.9	62.8
Subject special...	18.5	3.2	12.3	.8	65.2
Coiled bars:					
Non-lead/bismuth free-machining..	10.1	(1)	(1)	(1)	89.9
Other special.......	44.7	.2	5.6	1.0	48.5
Certain special...	41.0	.2	5.0	.9	53.0
Rods:					
Non-lead/bismuth free-machining..	12.0	.7	7.7	.1	79.6
Other special.......	23.2	3.2	12.0	.9	60.8
Certain special...	21.5	2.8	11.3	.8	63.6
Lead & bismuth......	11.8	(1)	1.1	(1)	87.2
All free-machining..	11.9	.4	5.3	(1)	82.3
All special.........	20.8	2.6	10.5	.7	65.4
Bars and rods:					
Non-lead/bismuth free-machining..	13.7	1.1	7.5	.1	77.6
Other special.......	25.1	3.7	10.4	.7	60.0
Certain special...	23.7	3.4	10.1	.6	62.2
Lead & bismuth......	17.5	.3	2.0	(1)	80.2
All free-machining..	15.1	.8	5.4	(1)	78.6
All special.........	23.3	3.2	9.5	.6	63.4

[1] Not applicable or zero.

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

Substitute Products

The unique characteristics of special quality steel products, including temperature creep and fracture resistance, wear resistance, machinability, and formability, make them especially suited for forging into critical components. According to petitioner, no other products compete in these markets.[40] Information from firms responding to the Commission's questionnaires indicate that although there are generally no economically practical substitutes for

[40] TR, testimony of Mr. Guilfoyle, p. 42.

the subject special quality steel products, occasionally aluminum, graphite composites, or powdered metal may be used for certain applications.[41] For certain highly-machined uses, lead and bismuth steels may be an acceptable alternative. However, these steels are generally more expensive to produce, and their production is subject to extensive environmental and health restrictions.

U.S. Tariff Treatment

Imports of special bar quality steel products subject to this investigation, and the column 1-general (most-favored-nation) rates of duty (in percent ad valorem) applicable to imports from Brazil,[42] are provided for in the following HTS subheadings (statistical reporting numbers):[43]

Item	HTS subheading	Rate of duty
Semifinished products of iron or nonalloy steel....	7207.11.00.00	4.2
	7207.12.00.10	
	7207.19.00.30	
	7207.20.00.25	
	7207.20.00.75	
Ingots and semifinished products of other alloy steel....................	7224.10.00.75	5.1
	7224.90.00.45	
	7224.90.00.65	
Hot-rolled bars and rods, other than in irregularly wound coils, of nonalloy steel....................	7214.30.00.00	4.7
	7214.40.00.10	
	7214.40.00.30	
	7214.40.00.50	
	7214.50.00.10	
	7214.50.00.30	
	7214.50.00.50	
	7214.60.00.10	
	7214.60.00.30	
	7214.60.00.50	
Hot-rolled bars and rods, other than in irregularly wound coils, of other alloy steel..............	7228.30.80.05	6.0
	7228.30.80.50	

[41] See questionnaire responses of ***.
[42] No preferential treatment is accorded under the Generalized System of Preferences.
[43] See app. F for tariff headnotes and nomenclature.

Voluntary Restraint Agreements

Between October 1, 1984, and March 31, 1992, imports of bar, rod, and semifinished steel from Brazil, including the products subject to this investigation, were subject to quantitative limitations under the Voluntary Restraint Agreements (VRAs) negotiated with 19 foreign governments and the European Community.[44] The VRA program was, in part, an outgrowth of earlier trade measures during the period 1969-84, although these agreements principally covered flat-rolled products, pipe and tube, and wire rod. The immediate impetus of the VRA program was a determination by the President, on September 18, 1984, that taking "escape clause" action was not in the national economic interest; this decision followed an investigation conducted by the Commission in which imports of certain steel products were found to be a substantial cause of serious injury, or threat thereof, to certain domestic industries (Inv. No. TA-201-51).[45] The President directed the United States Trade Representative (USTR) to negotiate VRAs to cover a five-year period, October 1, 1984 through September 30, 1989, with countries whose exports to the United States had increased significantly in previous years. Although the structure of the arrangements varied from one country to another, each involved an agreement by the foreign government to limit its exports of the pertinent steel products to the United States. In order to bring the agreements into effect, U.S. producers withdrew pending unfair trade petitions, and the U.S. Government suspended antidumping and countervailing duties on steel products covered by the VRAs. The trade measures were expected to return the share of imports in the U.S. market to a level of approximately 18.5 percent, excluding semifinished steel (subsequent Administration statements indicated such imports were limited to about 1.7 million tons per year). In this manner, export restraints were to allow the U.S. steel industry to restructure in response to the structural crisis, improve capacity utilization rates, and become competitive with foreign producers.

On July 25, 1989, the President announced a Steel Trade Liberalization Program, under which the VRAs were extended for two and one-half years, terminating on March 31, 1992. The President directed the USTR to negotiate VRAs at an overall restraint level of 18.4 percent (the 1988 VRA import penetration level). The President authorized up to an additional one percent import penetration annually that would be available to countries that entered into bilateral consensus agreements, designed to provide incentives for countries to eliminate trade-distorting practices and to respond to concerns of steel consumers for adequate supplies of raw materials.[46]

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[44] The restraint limits discussed in this section are more accurately defined as export limits because the countries under agreement controlled their shipments of exports in lieu of U.S. import quotas.

[45] Affirmative decisions were rendered in the case of semifinished steel, plates, sheets and strip, wire and wire products, and structural shapes and units. Negative determinations were rendered in the case of wire rod, railway type products, bars, and pipe and tube.

[46] Negotiations for bilateral agreements were conducted in order to restrict trade-distorting practices, particularly subsidies to the steel industry. USTR, press release, Dec. 12, 1989.

On December 12, 1989, the USTR announced that negotiations had been completed with the European Community and 16 countries, including Brazil, that previously had VRAs. As a result of the negotiations, overall restraint levels were raised. Product coverage under the VRAs remained essentially unchanged, although the agreements were modified to include those specialty steel products (e.g., stainless and alloy tool steels) that were previously subject to relief under section 203 of the Trade Act of 1974.

The categories for hot-rolled bar, rod, and semifinished products subject to the VRAs were broader than for those products subject to this investigation. Moreover, the VRA categories, where product coverage is specified, are broader than the products described earlier in the HTS or do not cover products subject to the investigation. In all but one case, the category limits had not been binding for several years. Nonetheless, Brazil's restraint limits for and exports of hot-rolled bars, wire rod, and semifinished steel for the relevant periods are shown in the following tabulation, based on export certificate data and final consultations conducted by Commerce's Office of Agreements Compliance (in metric tons):

Hot-finished bars, wire rod, and semifinished steel:	VRA period[1]					
	1988 (12 months)		Jan.-Sept. 1989 (9 months)		Oct. 1989-Dec. 1990 (15 months)	
	Exports to U.S.	Adjusted ceiling	Exports to U.S.	Adjusted ceiling	Exports to U.S.	Adjusted ceiling
Bars	31,517	33,932	21,045	23,044	94,158	149,218
Rod	50,425	54,187	35,173	38,344	73,610	104,814
Semis	559,023	559,023	444,055	476,280	960,965	1,010,966

[1] Final period data (Jan. 1991-Mar. 1992) not yet available.

Based on the above data, the extent to which Brazil filled its VRA subcategory limits on hot-finished bars, wire rod, and semifinished steel is shown in the following tabulation (in percent):

Hot-finished bars, wire rod, and semifinished steel:	VRA period[1]		
	1988 (12 months)	Jan.-Sept. 1989 (9 months)	Oct. 1989-Dec. 1990 (15 months)
Bar	92.88	91.33	63.10
Rod	93.06	91.73	70.23
Semis	100.00	93.23	95.05

[1] Final period data (Jan. 1991-Mar. 1992) not yet available.

Bilateral Consensus Agreements/Multilateral Consensus Agreement

When the VRAs were extended in 1989, the United States sought to address the causes of unfair trade and eliminate subsidization and overcapacity in the steel industry. The bilateral agreements attempted to include commitments by countries to prohibit export and production subsidies specifically for steel products, to reduce tariffs and nontariff barriers to steel trade, and to incorporate a binding arbitration mechanism; the bilateral consensus agreements were to be multilateralized within the General Agreement on Tariffs and Trade (GATT) through incorporation in the Uruguay Round of multilateral GATT negotiations.[47] As envisioned, negotiations on the new Multilateral Steel Agreement (MSA) were to be completed by December 1990. On March 31, 1992, negotiations on the MSA were suspended without agreement, although considerable progress had been made. Negotiators reportedly have agreed to continue to meet bilaterally and multilaterally, but no specific time schedule has been set.

Like Product Considerations

During this investigation petitioners have argued that, on the basis of the factors the Commission considers in analyzing like-product issues (physical characteristics and uses, interchangeability among products, channels of distribution, producer and customer perceptions of the articles, commonality of production facilities and employees and, where appropriate, price), there is a single like product and a single industry producing the subject special quality carbon and alloy steel products. Other parties in this investigation, using those same like-product factors, have argued that the Commission should find (a) separate like products of subject semifinished and hot-rolled special quality products,[48] (b) a separate like product of free-machining carbon steels,[49] and (c) a like product of all special quality carbon and alloy steel products (i.e., including lead and bismuth steel products and coiled products).[50]

This report presents as much information as is available regarding these alternative like-product industries. In addition, appendix G presents a summary of data on these and other alternative like product industries, including an industry producing merchant quality carbon steel products.

THE NATURE AND EXTENT OF ALLEGED SALES AT LESS THAN FAIR VALUE

The petitioners have calculated LTFV margins (in percent <u>ad valorem</u>) by comparing (a) the United States price with the foreign market value (FMV), with estimated dumping margins ranging from 2 to 59 percent, (b) Brazilian home market prices with average prices derived from official U.S. import statistics, with estimated dumping margins ranging to 84 percent, and (c) the United States price with the cost of production and constructed value for Brazilian FMV, with estimated dumping margins ranging from 23 to 73 percent.

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[47] USTR, press release, Dec. 12, 1989, and accompanying fact sheet, "Steel Trade Liberalization Program."

[48] Postconference brief of Jeffrey W. Carr for Raritan River Steel, p. 2.

[49] Postconference brief of Wiley, Rein & Fielding for Bethlehem and Inland, p. 20.

[50] Postconference brief of Willkie, Farr & Gallagher for the Villares Group, p. 12.

THE U.S. MARKET

This report is structured to provide data and information on three overall like-product industries as follows:

I. Subject special.--The petitioners' proposed like product of special quality semifinished and hot-rolled bars and rods of carbon and alloy steel; excluding hot-rolled products in irregularly wound coils, and hot-rolled lead and bismuth carbon and alloy steel products.

II. Free-machining.--The category of "free-cutting" steel as defined by the headnote to Chapter 72 of the HTS,[51] including resulfurized alloy steel products; also includes semifinished products and hot-rolled bars and rods whether or not in irregularly wound coils, and lead and bismuth carbon and alloy steel products.

III. All special.--All special quality carbon and alloy steel products, whether or not in irregularly wound coils, and including lead and bismuth carbon and alloy steel products.

U.S. Producers

The petition in this investigation identified seven firms as producing the subject special quality carbon and alloy steel products. The Commission sent questionnaires to each of the seven producers, as well as approximately *** other firms listed in industry references as possible producers of other special quality carbon and alloy steel products. The Commission received complete responses from *** of the firms.[52] These firms are believed to have accounted for *** percent of all U.S. production of the subject special quality carbon and alloy steel products in 1991. Table 3 presents the major producers of special quality carbon and alloy steel products, the locations of their plants, position on the petition, and their share of 1991 total production of special quality carbon and alloy steel products. Firms in support of the petition accounted for *** percent of U.S. production of special quality carbon and alloy steel products in 1991, those opposed accounted for *** percent, those that did not wish to take a position on the petition accounted for *** percent, and those firms that did not provide the information accounted for *** percent. The firms that produce special quality carbon and alloy steel products in the United States are described below.

Company Profiles

American Steel & Wire

American Steel & Wire purchases billets and then produces special quality hot-rolled carbon and alloy steel products at its facilities in Cuyahoga Heights, OH, and accounted for *** percent of U.S. production of special quality carbon and alloy steel products in 1991. American's

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[51] See app. F for tariff headnotes.

[52] Four firms did not respond to the U.S. producer's questionnaire in this investigation, but useable information was available from the firms' responses to the Commission's questionnaires in the recently completed investigation of hot-rolled lead and bismuth carbon steel products.

Table 3
Special quality carbon and alloy steel products: U.S. producers, location of producing facility, position on petition, and share of production in 1991

Firm	Location	Position on petition[1]	Share of U.S. production: Carbon	Alloy	Total
Acme Steel	Riverdale, IL	***	***	***	***
American Steel & Wire	Cuyahoga Heights, OH	***	***	***	***
Atlantic Steel	Atlanta, GA	***	***	***	***
Auburn Steel	Auburn, NY	***	***	***	***
Bethlehem Steel Bar, Rod & Wire Div.	Johnstown, PA Lackawanna, NY Sparrows Pt., MD	S	***	***	***
Calumet Steel	Chicago Hghts., IL	***	***	***	***
Chaparral Steel	Midlothian, TX	***	***	***	***
Charter Steel	Saukville, WI	***	***	***	***
Copperweld Steel Co.	Warren, OH	***	***	***	***
Green River Steel	Owensboro, KY	***	***	***	***
Inland Steel Bar	E. Chicago, IN	S	***	***	***
Kentucky Electric	Ashland, KY	***	***	***	***
Koppel Steel	Beaver Falls, PA	***	***	***	***
Laclede Steel	St. Louis, MO	***	***	***	***
MacSteel (Quanex)	Jackson, MI Ft. Smith, AR	***	***	***	***
North Star Steel	St. Paul, MN Monroe, MI Wilton, IA Beaumont, TX	***	***	***	***
Nucor	Norfolk, NE	***	***	***	***
Raritan River Steel	Perth Amboy, NJ	O	***	***	***
Republic Engineered Steels	Canton, OH	S	***	***	***
Sheffield Steel	Sand Springs, OK	***	***	***	***
Timken Co	Canton, OH	S	***	***	***
USS/Kobe Steel	Lorain, OH	***	***	***	***
Total			100.0	100.0	100.0

[1] S-Supports, N-does not wish to take a position, and O-Opposes.
[2] Not available.

Note.--Totals may not add due to rounding.

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

operations producing hot-rolled lead carbon steel products accounted for *** percent of the firm's total net sales in 1991, with the remainder accounted for by carbon and alloy wire products, and ultra-high tensile strength specialty wire.

Auburn Steel

Auburn Steel produces special quality carbon and alloy hot-rolled steel bars and semifinished products at its facility in Auburn, NY, and accounted for *** percent of U.S. production of such products in 1991. Auburn produces special quality products in its establishment producing rebar, merchant bar, and structurals.

Bethlehem Steel, Bar, Rod & Wire Division

Bethlehem produced special quality semifinished carbon and alloy steel products at its facility in Johnstown, PA; special quality hot-rolled carbon and alloy steel bar products at its facility in Lackawanna, NY; and special quality rod products at its facility in Sparrows Point, PA.[53] Bethlehem's Bar, Rod & Wire Division accounted for *** percent of U.S. production of special quality carbon and alloy steel products in 1991. Bethlehem's operations producing semifinished and special quality carbon and alloy steel products accounted for 100 percent of Bethlehem's Bar, Rod & Wire Div. total net sales in 1991.

Calumet Steel

Calumet Steel produces special quality carbon and alloy hot-rolled steel bars and semifinished products at its facility in Chicago Heights, IL, and accounted for *** percent of U.S. production of such products in 1991. Calumet's operations producing special quality steel products accounted for *** percent of its establishment's total net sales in 1991, with the remainder accounted for by rebar, merchant bar, and structurals.

Chaparral Steel

Chaparral Steel produces special quality carbon and alloy hot-rolled steel bars and semifinished products at its facility in Midlothian, TX, and accounted for *** percent of U.S. production of such products in 1991. Chaparral produces special quality steel products in its establishment producing rebar, merchant bar, and structurals.

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[53] On Jan. 29, 1992, Bethlehem Steel Corp. announced its decision to exit the bar, rod, and wire industry, offering its Bar, Rod & Wire Div. for sale. Unable to complete a transaction for the entire division2, Bethlehem announced, on May 15, 1992, that it was initiating "an orderly phasing down" of the division, exiting the business "as quickly as possible," and reported that a "schedule for cessation of various steelmaking and rolling operations will be announced within two weeks." (May 15, 1992, Press Release, Bethlehem Steel Corp.).

Charter Steel

Charter Steel produces special quality carbon and alloy hot-rolled steel rods and semifinished products at its facility in Saukville, WI, and accounted for *** percent of U.S. production of such products in 1991. Charter produces special quality steel products in its establishment producing wire rod and wire.

Copperweld Steel Co.

Copperweld produces special quality semifinished and hot-rolled carbon and alloy steel products at its facility in Warren, OH, and accounted for *** percent of U.S. production of special quality steel products in 1991. Copperweld's operations producing special quality products accounted for *** percent of its establishment's total net sales in 1991.

Green River Steel

Green River Steel produces special quality carbon and alloy hot-rolled steel bars and semifinished products at its facility in Owensboro, KY, and accounted for *** percent of U.S. production of such products in 1991. Green River's operations producing special quality products accounted for *** percent of its establishment's total net sales in 1991.

Inland Steel, including Inland Steel Bar Co.

Inland produces special quality carbon and alloy semifinished and hot-rolled steel products at its facility in East Chicago, IN, and accounted for *** percent of U.S. production of such special quality products in 1991. Inland's operations producing special quality carbon and alloy steel products accounted for *** percent of its establishment's total net sales in 1991, with the remainder accounted for by flat-rolled products (*** percent) and structurals (*** percent).

Laclede Steel

Laclede Steel produces special quality carbon and alloy hot-rolled steel bars and semifinished products at its facility in St. Louis, MO, and accounted for *** percent of U.S. production of such products in 1991. Laclede produces special quality products in its establishment producing wire rod, hot-rolled strip and plate, chain, and pipe and tube.

MacSteel, a Division of Quanex

MacSteel, a division of Quanex, produces special quality carbon and alloy hot-rolled steel bars and semifinished products at its facilities in Jackson, MI, and Ft. Smith, AR, and accounted for *** percent of U.S. production of such products in 1991. MacSteel's operations producing special quality steel products accounted for *** percent of its establishment's total net sales in 1991.

North Star Steel

North Star Steel produces special quality carbon and alloy hot-rolled steel bars, rods, and semifinished products at its facilities in St. Paul, MN, Monroe, MI, Wilton, IA, and Beaumont, TX, and accounted for *** percent of U.S. production of such products in 1991. North Star's operations producing special quality steel products accounted for *** percent of its establishment's total net sales in 1991, with the remainder accounted for by merchant bar, structurals, wire rod, and rebar.

Raritan River Steel Co.

Raritan River produces special quality semifinished and hot-rolled carbon and alloy steel bars and rods at its facility in Perth Amboy, NJ, and accounted for *** percent of U.S. production of special quality carbon and alloy steel products in 1991. Raritan River's operations producing special quality carbon and alloy steel products accounted for *** percent of the firm's total net sales in 1991, with the remainder accounted for by merchant quality carbon steel products.

Republic Engineered Steels, Inc.

Republic produces special quality semifinished and hot-rolled carbon and alloy steel products at its facility in Canton, OH, and accounted for *** percent of U.S. production of such special quality steel products in 1991. Republic's operations producing special quality carbon and alloy steel products accounted for *** percent of its establishment's total net sales in 1991, with the remainder accounted for by cold-finished products, stainless steel, and tool steel products.

Timken Co.

The Timken Co. produces special quality carbon and alloy hot-rolled steel bars, rods, and semifinished products at its facility in Canton, OH, and accounted for *** percent of U.S. production of such products in 1991. Timken's operations producing special quality products accounted for *** percent of its establishment's total net sales in 1991, with the remainder accounted for by wire rod, stainless products, and pipe and tube.

USS/Kobe Steel Co.

USS/Kobe produces special quality semifinished and hot-rolled carbon and alloy steel bars and rods at its facility in Lorain, OH, and accounted for *** percent of U.S. production of such special quality steel products in 1991. USS/Kobe's operations producing special quality semifinished and hot-rolled carbon and alloy steel products accounted for *** percent of its establishment's total net sales in 1991, with the remainder accounted for by tubular products.

Other Special Quality Steel Producers

Other U.S. producers of special quality carbon and alloy steel products submitted questionnaire responses covering total establishment operations, and provided limited data on their special quality products operations. The firms are described below.

Kentucky Electric Steel.--Kentucky Electric Steel Corp. is a wholly-owned subsidiary of NS Group, Inc., and produces special quality carbon and alloy hot-rolled steel bars and semifinished products at its facility in Ashland KY. It accounted for *** percent of U.S. production of such products in 1991. Kentucky Electric's operations producing special quality products accounted for *** percent of its establishment's total net sales in 1991, with the remainder accounted for by merchant quality products.

Koppel Steel.--Koppel Steel Corp. is a wholly-owned subsidiary of NS Group, Inc., and was started as a company on October 5, 1990, when it purchased certain assets of Babcock & Wilcox Tubular Products Group. Koppel produces special quality carbon and alloy hot-rolled steel bars, rods, and semifinished products (as cast blooms and billets) at its facility in Beaver Falls, PA, and accounted for *** percent of U.S. production of such products in 1991. Koppel's operations producing special quality products accounted for *** percent of its establishment's total net sales in 1991, with the remainder accounted for by seamless tubular products.[54]

Nucor.--Nucor produces special quality carbon and alloy hot-rolled steel bars, rods, and semifinished products at its facility in Norfolk, NE, and accounted for *** percent of U.S. production of such products in 1991. Nucor's operations producing special quality products accounted for *** percent of its establishment's total net sales in 1991, with the remainder accounted for by structurals and hot- and cold-rolled sheet and coil.

Product Lines

Table 4 presents a listing of U.S. producers of special quality carbon and alloy steel products, as well as producers of merchant quality steel products, and the products that those firms produce (or have produced).

Table 4
Carbon and alloy steel products: U.S. producers' production capabilities, by types, 1991

*   *   *   *   *   *   *

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[54] July 6, 1992, telephone interview with ***.

Minimills

The traditional definition of a minimill distinguishes it from an integrated mill by focusing on the minimill's method of steelmaking, its product mix and geographical sales base, and its different cost structure.[55] For example, minimills have often been described as scrap-based, EAF steelmakers with up to 100,000 tons of raw steelmaking capacity. Their products were usually restricted to concrete reinforcing bars, merchant bars, and in some instances light structural shapes (e.g., small angles and channels), and they served a market located within a 200- to 300-mile radius from the mill.[56] However, the minimill concept has changed considerably since the 1960s, just as the integrated mill concept has also undergone some basic changes; for example, most integrated steelmakers have installed EAFs in at least one facility, and most utilize continuous casting to some degree. The distinction between the two types of mills currently rests on differences in the steelmaking process: one definition terms minimills as those mills that usually bypass the first three steps of steelmaking (iron ore processing, cokemaking, and ironmaking) and use scrap as the primary raw material in electric arc furnaces. In other words, the definition no longer distinguishes the minimill from an integrated mill according to its product line, its capacity, or its market. This evolution has come about because of increases in average production capacity and the geographic marketing area of minimills, their ownership of more than one production facility, and their entrance into more technologically demanding products such as structurals and flat-rolled products, special quality steels, and wire rod.[57] This blurring of the distinction between integrated mills and minimills has come about because of major changes in steelmaking technology, particularly trends toward decreasing the minimum efficient scale of production and the convergence of integrated and nonintegrated production processes.[58]

In its majority opinion in the recent investigations concerning hot-rolled lead and bismuth carbon steel products, the Commission expressed interest in reviewing information regarding the operation of U.S. mini-mills.[59] Appendix H presents summary data for traditional and minimill producers separately. Information on minimill criteria is presented in the following tabulation:

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[55] The economic consultant for the Brazilian respondents defined minimills as (a) producing from a scrap-based process using electric arc furnaces, (b) having production capacities of a million tons or lower, (c) servicing regional rather than national markets, and (d) being nonunionized (TR, pp. 171-172).

[56] William T. Hogan, S.J., Minimills and Integrated Mills (D.C. Heath and Co.: Lexington Books, Lexington, MA), 1987, p. 9.

[57] There are several minimill companies with more than 1 million tons production capacity, and one with a capacity of over 4 million tons. Each of several integrated mills have production capacities of less than 1 million tons, although integrated mills are larger on average. In general, the average size of integrated mills has decreased.

[58] For further discussion see, USITC, Steel Industry Annual Report On Competitive Conditions in the Steel Industry and Industry Efforts to Adjust and Modernize, USITC Publication 2436, September 1991, pp. 3-38, 3-39.

[59] Certain Hot-Rolled Lead and Bismuth Carbon Steel Products from Brazil, France, Germany, and the United Kingdom, USITC Publication 2512, June 1992, p. 26.

Firm	Production process[1]	Production method	Production capacity	Union Representation	Markets served: % Shipments-- < 500 mi.	> 500 mi.
Bethlehem......	EAF	Ingot	***	***	***	***
Border.........	EAF	Cast billet	***	***	***	***
Calumet........	EAF	Cast billet	***	***	***	***
Chaparral......	EAF	Cast billet	***	***	***	***
Copperweld.....	EAF	Cast billet	***	***	***	***
Green River....	EAF	Cast billet	***	***	***	***
Inland.........	BOF	Bloom, cast billet	***	***	***	***
MacSteel.......	EAF	Cast billet	***	***	***	***
North Star.....	EAF	Cast billet	***	***	***	***
Raritan River..	EAF	Cast billet	***	***	***	***
Republic.......	EAF	Ingot, cast billet	***	***	***	***
Sheffield......	EAF	Cast billet	***	***	***	***
Timken.........	EAF	Ingot	***	***	***	***
USS/Kobe.......	BOF	Ingot	***	***	***	***

[1] EAF-Electric arc furnace and BOF-Basic oxygen furnace.
[2] ***.

U.S. Importers

Information identifying importers of special quality carbon and alloy steel products was provided by counsel for the petitioner and was verified against files provided by the U.S. Customs Service. The Commission sent questionnaires to approximately *** importers of the subject product from Brazil, which include all the known major importers of special quality carbon and alloy steel products. The *** importers are believed to account for approximately *** percent of total imports of the subject special quality carbon and alloy steel products from Brazil. Major importers and their 1991 imports (in short tons) and share of imports (in percent) of the subject products from Brazil are presented below:[60]

* * * * * * *

U.S. Producers' Imports

*** U.S. producers, *** reported imports of special quality semifinished and/or hot-rolled carbon and alloy steel products, reportedly to economically supplement their own product (hot-rolled and cold-finished) lines.[61] ***. Data on *** production and imports from Brazil during the period of investigation are presented below (in short tons):[62]

[60] The Commission has not received information from the following firms that have been identified as U.S. importers of the subject products from Brazil: ***.
[61] ***.
[62] ***.

* * * * * * *

Apparent U.S. Consumption

The demand for special quality carbon and alloy steel products, as intermediate products, depends largely on the level of overall economic activity. In general, weak demand in the automotive and construction sectors during 1991 contributed to declines in apparent U.S. consumption of special quality carbon and alloy steel products.

Market Trends

An examination of economic conditions in the end-use markets for special quality steel shows that growth in these markets has slowed since 1988. Information received in this and other investigations indicates that the major markets for special quality steel products are transportation equipment, especially motor vehicles and equipment and aircraft and parts; industrial machinery and equipment, especially engines and turbines, construction and related machinery, and general industrial machinery; and electrical equipment. The following tabulation displays growth in these markets,[63] as measured by growth in U.S. shipments, during 1988-90:[64]

Industry	1988	1989	1990	1987-90
	(Percent change)			
Transportation equipment	6.5	2.9	0.0	9.6
Motor vehicles and equipment	5.6	(1.4)	(7.4)	(3.7)
Aircraft and parts	(11.8)	(4.4)	(3.7)	(18.8)
Industrial machinery	12.4	8.3	3.5	26.0
Engines and turbines	2.2	(2.1)	(12.6)	(12.6)
Construction machinery	14.5	6.0	4.8	27.2
General industrial machinery	8.5	9.1	6.6	26.2
Electrical equipment	7.5	4.7	(2.6)	9.6

Three major industries, motor vehicles and equipment, aircraft and parts, and engines and turbines, suffered overall negative growth between 1987 and 1990. Significantly, in the motor vehicles and equipment industry, the major consumer of special quality steel, growth fell 7.4 percent from 1989 to 1990, the first part of the period under investigation. Certain major industries experienced significant growth between 1987 and 1990. Construction machinery, general industrial machinery, and industrial machinery as a whole all grew more than 25 percent during this period. Transportation equipment as

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[63] Based on the closest SIC equivalent.

[64] Source: U.S. Department of Commerce, 1990 Annual Survey of Manufactures, M90(AS)-2 and Aerospace Industries Association of America, *Aerospace Facts and Figures 91-92*, 1991. Data for 1991 on U.S. shipments in these industries are not yet available.

a whole and electrical equipment also experienced positive growth between 1987 and 1990.

Factual data gathered during this investigation on apparent U.S. consumption of special quality carbon and alloy steel products, free-machining products, and all special quality products, are presented in tables 5A-C. The data are derived from responses to the Commission's questionnaires and official import statistics, and are composed of the sum of U.S. shipments (domestic shipments and company transfers) of U.S.-produced products plus imports.

Trends in Apparent Consumption

Apparent consumption of subject special quality carbon and alloy steel products increased from 3.428 million tons in 1989 to 3.599 million tons in 1990, or by 5.0 percent based on quantity, and then decreased by 9.7 percent to 3.249 million tons during 1991. During January-March 1992, apparent consumption rose by 7.9 percent when compared to the same period in 1991. In addition to the impact of overall economic activity, the magnitude of recent increases may be partially explained by accelerated purchases from Bethlehem following the announced sale of its Bar, Rod & Wire Division.

U.S. Producers' Share of Apparent Consumption

The U.S. producers' share of total apparent consumption of subject special quality carbon and alloy bar and rod products (based on quantity) increased from 90.1 percent in 1989 to 92.7 percent in 1990, decreased slightly to 92.3 percent in 1991, and remained stable during January-March 1992 when compared to the same period in 1991.

Channels of Distribution

Table 6 presents the shares of shipments of special quality carbon and alloy steel finished products by channels of distribution for both U.S. producers and U.S. importers of product from Brazil. Special quality carbon and alloy semifinished steel products are sold by both U.S. producers and importers directly to processors for rerolling or forging applications.

Table 5A
Subject special quality carbon and alloy steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	3,149,483	3,683,546	3,147,807	850,306	957,287
U.S. imports	319,119	386,799	422,706	147,525	154,575
Apparent consumption	3,468,602	4,070,345	3,570,513	997,831	1,111,862
Alloy:					
Producers' U.S. shipments	1,586,036	1,815,413	1,574,050	412,304	407,453
U.S. imports	111,861	109,223	139,165	36,630	34,994
Apparent consumption	1,697,897	1,924,636	1,713,215	448,934	442,447
Carbon and alloy:					
Producers' U.S. shipments	4,735,519	5,498,959	4,721,857	1,262,610	1,364,740
U.S. imports	430,980	496,022	561,871	184,155	189,569
Apparent consumption	5,166,499	5,994,981	5,283,728	1,446,765	1,554,309
Cut bars and rods:					
Carbon:					
Producers' U.S. shipments	1,984,278	2,085,383	1,852,973	444,573	495,761
U.S. imports	213,827	161,229	124,390	29,454	30,983
Apparent consumption	2,198,105	2,246,612	1,977,363	474,027	526,744
Alloy:					
Producers' U.S. shipments	1,106,477	1,249,277	1,145,481	281,934	288,450
U.S. imports	124,237	102,792	126,435	30,162	32,710
Apparent consumption	1,230,714	1,352,069	1,271,916	312,096	321,160
Carbon and alloy:					
Producers' U.S. shipments	3,090,755	3,334,660	2,998,454	726,507	784,211
U.S. imports	338,064	264,021	250,825	59,616	63,693
Apparent consumption	3,428,819	3,598,681	3,249,279	786,123	847,904
	Share of the quantity of U.S. consumption (percent)				
Producers' share of U.S. shipments:					
Semifinished:	90.8	90.5	88.2	85.2	86.1
Alloy	93.4	94.3	91.9	91.8	92.1
Carbon and alloy	91.7	91.7	89.4	87.3	87.8
Cut bars and rods:					
Carbon	90.3	92.8	93.7	93.8	94.1
Alloy	89.9	92.4	90.1	90.3	89.8
Carbon and alloy	90.1	92.7	92.3	92.4	92.5

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Table 5A--Continued
Subject special quality carbon and alloy steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	997,278	1,072,137	947,417	247,843	276,228
U.S. imports	101,513	109,159	118,680	42,454	43,330
Apparent consumption	1,098,791	1,181,296	1,066,097	290,297	319,558
Alloy:					
Producers' U.S. shipments	676,043	730,527	647,157	176,804	162,776
U.S. imports	48,375	45,783	53,887	13,977	12,464
Apparent consumption	724,418	776,310	701,044	190,781	175,240
Carbon and alloy:					
Producers' U.S. shipments	1,673,321	1,802,664	1,594,574	424,647	439,004
U.S. imports	149,888	154,942	172,567	56,431	55,794
Apparent consumption	1,823,209	1,957,606	1,767,141	481,078	494,798
Cut bars and rods:					
Carbon:					
Producers' U.S. shipments	902,568	914,788	1,226,378	195,547	208,084
U.S. imports	92,276	68,208	53,112	12,508	14,688
Apparent consumption	994,844	982,996	1,279,490	208,055	222,772
Alloy:					
Producers' U.S. shipments	689,448	723,855	648,052	164,652	161,530
U.S. imports	65,725	55,908	66,049	16,337	15,777
Apparent consumption	755,173	779,763	714,101	180,989	177,307
Carbon and alloy:					
Producers' U.S. shipments	1,592,016	1,638,643	1,874,430	360,199	369,614
U.S. imports	158,001	124,116	119,161	28,845	30,465
Apparent consumption	1,750,017	1,762,759	1,993,591	389,044	400,079
	Share of the value of U.S. consumption (percent)				
Producers' share of U.S. shipments:					
Semifinished:					
Carbon	90.8	90.8	88.9	85.4	86.4
Alloy	93.3	94.1	92.3	92.7	92.9
Carbon and alloy	91.8	92.1	90.2	88.3	88.7
Cut bars and rods:					
Carbon	90.7	93.1	95.8	94.0	93.4
Alloy	91.3	92.8	90.8	91.0	91.1
Carbon and alloy	91.0	93.0	94.0	92.6	92.4

Note.--Because of rounding, shares may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table 5B
Free-machining carbon and alloy steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	840,712	893,553	694,517	144,220	224,217
U.S. imports	83,246	69,140	68,365	23,618	27,962
Apparent consumption	923,958	962,693	762,882	167,838	252,179
Alloy:					
Producers' U.S. shipments	87,785	102,075	76,539	23,682	21,873
U.S. imports	2,948	6,170	9,049	1,511	1,089
Apparent consumption	90,733	108,245	85,588	25,193	22,962
Carbon and alloy:					
Producers' U.S. shipments	928,497	995,628	771,056	167,902	246,090
U.S. imports	86,194	75,310	77,414	25,129	29,051
Apparent consumption	1,014,691	1,070,938	848,470	193,031	275,141
Bars and rods:					
Carbon:					
Producers' U.S. shipments	820,711	851,428	661,564	152,961	212,434
U.S. imports	272,855	257,769	263,313	45,011	48,378
Apparent consumption	1,093,566	1,109,197	924,877	197,972	260,812
Alloy:					
Producers' U.S. shipments	85,229	93,976	73,562	24,207	20,091
U.S. imports	16,392	11,457	16,466	3,712	2,501
Apparent consumption	101,621	105,433	90,028	27,919	22,592
Carbon and alloy:					
Producers' U.S. shipments	905,940	945,404	735,126	177,168	232,525
U.S. imports	289,247	269,226	279,779	48,723	50,879
Apparent consumption	1,195,187	1,214,630	1,014,905	225,891	283,404
	Share of the quantity of U.S. consumption (percent)				
Producers' share of U.S. shipments:					
Semifinished:					
Carbon	91.0	92.8	91.0	85.9	88.9
Alloy	96.8	94.3	89.4	94.0	95.3
Carbon and alloy	91.5	93.0	90.9	87.0	89.4
Bars and rods:					
Carbon	75.0	76.8	71.5	77.3	81.5
Alloy	83.9	89.1	81.7	86.7	88.9
Carbon and alloy	75.8	77.8	72.4	78.4	82.0

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Table 5B--Continued
Free-machining carbon and alloy steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	275,441	288,078	227,670	47,595	75,081
U.S. imports	32,258	26,351	26,146	9,260	9,997
Apparent consumption	307,699	314,429	253,816	56,855	85,078
Alloy:					
Producers' U.S. shipments	48,017	47,683	36,032	11,431	9,867
U.S. imports	1,368	4,170	6,873	1,147	885
Apparent consumption	49,385	51,853	42,905	12,578	10,752
Carbon and alloy:					
Producers' U.S. shipments	323,458	335,761	263,702	59,026	84,948
U.S. imports	33,626	30,521	33,019	10,407	10,882
Apparent consumption	357,084	366,282	296,721	69,433	95,830
Bars and rods:					
Carbon:					
Producers' U.S. shipments	414,121	420,641	323,423	77,212	107,327
U.S. imports	128,123	117,766	121,595	19,389	19,999
Apparent consumption	542,244	538,407	445,018	96,601	127,326
Alloy:					
Producers' U.S. shipments	62,556	67,057	50,096	17,000	13,536
U.S. imports	11,370	8,220	12,662	2,902	2,013
Apparent consumption	73,926	75,277	62,758	19,902	15,549
Carbon and alloy:					
Producers' U.S. shipments	476,677	487,698	373,519	94,212	120,863
U.S. imports	139,493	125,986	134,257	22,291	22,012
Apparent consumption	616,170	613,684	507,776	116,503	142,875
	Share of the value of U.S. consumption (percent)				
Producers' share of U.S. shipments:					
Semifinished:					
Carbon	89.5	91.6	89.7	83.7	88.2
Alloy	97.2	92.0	84.0	90.9	91.8
Carbon and alloy	90.6	91.7	88.9	85.0	88.6
Bars and rods:					
Carbon	76.4	78.1	72.7	79.9	84.3
Alloy	84.6	89.1	79.8	85.4	87.1
Carbon and alloy	77.4	79.5	73.6	80.9	84.6

Note.--Because of rounding, shares may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table 5C
All special quality carbon and alloy steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	3,547,850	4,117,781	3,488,174	920,777	1,075,319
U.S. imports	391,918	446,230	476,882	165,757	179,501
Apparent consumption	3,939,768	4,564,011	3,965,056	1,086,534	1,254,820
Alloy:					
Producers' U.S. shipments	1,615,932	1,844,641	1,595,542	416,642	413,948
U.S. imports	114,809	109,903	139,165	36,630	34,994
Apparent consumption	1,730,741	1,954,544	1,734,707	453,272	448,942
Carbon and alloy:					
Producers' U.S. shipments	5,163,782	5,962,422	5,083,716	1,337,419	1,489,267
U.S. imports	506,727	556,133	616,047	202,387	214,495
Apparent consumption	5,670,509	6,518,555	5,699,763	1,539,806	1,703,762
Bars and rods:					
Carbon:					
Producers' U.S. shipments	4,656,526	4,669,781	4,318,155	1,051,300	1,203,180
U.S. imports	1,820,977	1,700,011	1,517,202	356,614	492,155
Apparent consumption	6,477,503	6,369,792	5,835,357	1,407,914	1,695,335
Alloy:					
Producers' U.S. shipments	1,307,308	1,462,222	1,333,746	328,926	342,556
U.S. imports	338,215	292,191	344,835	85,383	94,182
Apparent consumption	1,645,523	1,754,413	1,678,581	414,309	436,738
Carbon and alloy:					
Producers' U.S. shipments	5,963,834	6,132,003	5,651,901	1,380,226	1,545,736
U.S. imports	2,159,192	1,992,202	1,862,037	441,997	586,337
Apparent consumption	8,123,026	8,124,205	7,513,938	1,822,223	2,132,073
	Share of the quantity of U.S. consumption (percent)				
Producers' share of U.S. shipments:					
Semifinished:					
Carbon	90.1	90.2	88.0	84.7	85.7
Alloy	93.4	94.4	92.0	91.9	92.2
Carbon and alloy	91.1	91.5	89.2	86.9	87.4
Bars and rods:					
Carbon	71.9	73.3	74.0	74.7	71.0
Alloy	79.4	83.3	79.5	79.4	78.4
Carbon and alloy	73.4	75.5	75.2	75.7	72.5

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Table 5C--Continued
All special quality carbon and alloy steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	1,137,628	1,221,802	1,065,213	272,073	317,349
U.S. imports	129,937	132,206	139,513	49,677	52,264
Apparent consumption	1,267,565	1,354,008	1,204,726	321,750	369,613
Alloy:					
Producers' U.S. shipments	690,083	743,929	655,521	178,481	165,216
U.S. imports	49,743	46,152	53,887	13,977	12,464
Apparent consumption	739,826	790,081	709,408	192,458	177,680
Carbon and alloy:					
Producers' U.S. shipments	1,827,711	1,965,731	1,720,734	450,554	482,565
U.S. imports	179,680	178,358	193,400	63,654	64,728
Apparent consumption	2,007,391	2,144,089	1,914,134	514,208	547,293
Bars and rods:					
Carbon:					
Producers' U.S. shipments	2,029,636	2,025,568	2,229,381	443,168	496,767
U.S. imports	719,964	641,409	565,651	128,807	172,018
Apparent consumption	2,749,600	2,666,977	2,795,032	571,975	668,785
Alloy:					
Producers' U.S. shipments	815,386	854,130	760,742	192,920	193,708
U.S. imports	177,436	151,726	169,469	42,797	43,391
Apparent consumption	992,822	1,005,856	930,211	235,717	237,099
Carbon and alloy:					
Producers' U.S. shipments	2,845,022	2,879,698	2,990,123	636,088	690,475
U.S. imports	897,400	793,135	735,120	171,604	215,409
Apparent consumption	3,742,422	3,672,833	3,725,243	807,692	905,884
	Share of the value of U.S. consumption (percent)				
Producers' share of U.S. shipments:					
Semifinished:					
Carbon	89.7	90.2	88.4	84.6	85.9
Alloy	93.3	94.2	92.4	92.7	93.0
Carbon and alloy	91.0	91.7	89.9	87.6	88.2
Bars and rods:					
Carbon	73.8	75.9	79.8	77.5	74.3
Alloy	82.1	84.9	81.8	81.8	81.7
Carbon and alloy	76.0	78.4	80.3	78.8	76.2

Note.--Because of rounding, shares may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table 6
Special quality carbon and alloy steel products: Shares of shipments of product, by channels of distribution, 1991

(In percent)

Item	Distributor/ service centers	End users-- Cold finishers	Forgers	Other
	U.S.-produced product			
CARBON:				
Cut bars--				
Non-lead/bismuth free-machining..	15.0	38.6	22.1	24.3
Other special.......	8.1	19.9	12.6	59.4
Subject special...	9.1	22.7	14.0	54.3
Coiled bars--				
Non-lead/bismuth free-machining..	.2	90.8	.1	8.9
Other special.......	3.0	29.8	18.0	49.2
Certain special...	2.6	39.0	15.3	43.2
Rods--				
Non-lead/bismuth free-machining..	([1])	96.5	([1])	3.5
Other special.......	([1])	9.3	3.0	87.7
Certain special...	([1])	12.0	2.9	85.1
Lead & bismuth......	([1])	83.8	([1])	16.2
All free-machining..	([1])	89.4	([1])	10.6
All special.........	([1])	14.7	2.8	82.5
Bars & Rods--				
Non-lead/bismuth free-machining..	11.3	52.3	16.5	19.9
Other special.......	4.6	16.9	9.5	69.0
Certain special...	5.3	20.7	10.3	63.8
Lead & bismuth......	([1])	94.1	([1])	5.9
All free-machining..	6.1	71.6	8.9	13.4
All special.........	4.8	26.8	9.4	59.0
ALLOY:				
Cut bars--				
Non-lead/bismuth free-machining..	1.4	([1])	([1])	98.5
Other special.......	11.1	9.3	15.0	64.7
Subject special...	10.6	8.8	14.4	66.2
Coiled bars--				
Non-lead/bismuth free-machining..	([1])	([1])	([1])	([1])
Other special.......	2.7	22.7	5.7	68.8
Certain special...	2.7	22.7	5.7	68.8
Rods--				
Non-lead/bismuth free-machining..	([1])	([1])	([1])	([1])
Other special.......	.2	34.7	([1])	65.1
Certain special...	.2	34.7	([1])	65.1
Lead & bismuth......	([1])	76.0	([1])	24.0
All free-machining..	([1])	76.0	([1])	24.0
All special.........	.2	36.7	([1])	63.1

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Table 6--Continued
Special quality carbon and alloy steel products: Shares of shipments of product, by channels of distribution, 1991

(In percent)

		End users--		
Item	Distributor/ service centers	Cold finishers	Forgers	Other
	U.S.-produced product			
ALLOY:--continued				
Bars and rods--				
Non-lead/bismuth				
free-machining..	1.4	([1])	([1])	98.5
Other special.......	9.8	11.7	13.5	65.0
Certain special...	9.4	11.3	12.9	66.4
Lead & bismuth......	1.7	77.3	.7	20.3
All free-machining..	1.5	24.9	.3	73.3
All special.........	9.3	12.5	12.7	65.5
CARBON AND ALLOY:				
Cut bars--				
Non-lead/bismuth				
free-machining..	12.8	32.4	18.5	36.2
Other special.......	9.3	15.6	13.6	61.5
Certain special...	9.7	17.4	14.1	58.8
Coiled bars--				
Non-lead/bismuth				
free-machining..	.2	90.8	.1	8.9
Other special.......	2.9	28.1	14.9	54.1
Subject special...	2.6	35.4	13.2	48.8
Rods--				
Non-lead/bismuth				
free-machining..	([1])	96.5	([1])	3.5
Other special.......	([1])	10.7	2.8	86.5
Certain special...	([1])	13.2	2.7	84.0
Lead & bismuth......	([1])	83.3	([1])	16.7
All free-machining..	([1])	88.8		11.2
All special.........	([1])	15.9	2.6	81.5
Bars and rods--				
Non-lead/bismuth				
free-machining..	10.0	45.8	14.5	29.8
Other special.......	6.1	15.4	10.7	67.8
Certain special...	6.4	18.1	11.0	64.5
Lead & bismuth......	.1	92.9	.1	6.9
All free-machining..	5.6	66.8	8.0	19.6
All special.........	6.0	23.0	10.3	60.7

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Table 6--Continued
Special quality carbon and alloy steel products: Shares of shipments of product, by channels of distribution, 1991

(In percent)

Item	Distributor/ service centers	End users-- Cold finishers	Forgers	Other
	Imports from Brazil			
CARBON:				
Cut bars	75.5	22.5	([1])	([1])
Bars & Rods	53.3	47.7	([1])	([1])
ALLOY:				
Cut bars	64.7	([1])	([1])	35.3
Bars & rods	64.7	([1])	([1])	35.3
CARBON & ALLOY:				
Cut bars	72.5	13.7	([1])	([1])
Bars & rods	56.7	32.7	([1])	10.6

[1] Not applicable or zero.

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

CONSIDERATION OF ALLEGED MATERIAL INJURY TO AN INDUSTRY IN THE UNITED STATES

The information in this section of the report was compiled from responses to questionnaires of the U.S. International Trade Commission. The producers that provided questionnaire responses are believed to account for approximately *** percent of U.S. shipments of total special quality carbon and alloy steel products in 1991. As mentioned previously, this report is structured to provide data and information on three overall like-product industries as follows:[65]

I. <u>Subject special</u>.--The petitioners' proposed like product of special quality semifinished and hot-rolled bars and rods of carbon and alloy steel; excluding hot-rolled products in irregularly wound coils, and hot-rolled lead and bismuth carbon and alloy steel products.

II. <u>Free-machining</u>.--The category of "free-cutting" steel as defined by the headnote to Chapter 72 of the HTS,[66] including resulfurized alloy steel products; also includes semifinished products and hot-rolled bars and rods whether or not in irregularly wound coils, and lead and bismuth carbon and alloy steel products.

[65] See app. G for summary data for alternative like-product industry scenarios, including separate industries producing bar and rod, and lead and bismuth carbon and alloy steel products.

[66] See app. F for tariff headnotes.

III. All special.--All special quality carbon and alloy steel products whether or not in irregularly wound coils, and including lead and bismuth carbon and alloy steel products.

U.S. Production, Capacity, and Capacity Utilization

Data on reported U.S. production, average-of-period capacity, and capacity utilization in connection with operations on special quality carbon and alloy steel products are presented in table 7. Production of all subject special quality carbon and alloy steel bar and rod products increased from 3.10 million tons in 1989 to 3.42 million tons in 1990, or by 10.4 percent, and then decreased to 2.99 million tons in 1991, or by 12.7 percent. Production turned upward by 16.6 percent during January-March 1992 when compared with that in the same period in 1991.

Capacity to produce subject special quality carbon and alloy steel products increased by 6.7 percent to 4.22 million tons in 1990, as North Star and Timken reported increases in capacity, and remained unchanged thereafter. Utilization of capacity to produce subject special quality hot-rolled carbon and alloy bar and rod products increased from 77.0 percent in 1989 to 79.7 percent in 1990, and decreased to 70.0 percent in 1991. Capacity utilization increased to 70.4 percent during January-March 1992 when compared to 58.0 percent during the corresponding period of 1991.

U.S. Producers' U.S. Shipments

Data on U.S. producers' total shipments of special quality carbon and alloy steel products, by type of product, are presented in tables 8A-C. Semifinished special quality steel products were generally consumed internally in the further value-added production of hot-rolled carbon and alloy steel bars and rods. Aggregate U.S. shipments of the subject special quality carbon and alloy bars and rods increased from 1989 to 1990 by 7.9 percent, decreased from 1990 to 1991 by 10.1 percent, and increased from interim 1991 to interim 1992 by 7.9 percent.

Questionnaire data regarding U.S. shipments by selected types of special quality products are presented in table 9 and indicate that subject special quality carbon and alloy semifinished products sold as "forging" billets, and not otherwise re-rolled, accounted for a low of *** percent of U.S. shipments of special quality semifinished products in 1989, and a high of *** percent in 1990. The data also indicate that special quality coiled carbon and alloy steel products in the "overlap" category between 0.5-0.74 inch accounted for a low of *** percent of U.S. shipments of special quality coiled products during January-March 1991, and a high of *** percent in 1989.

U.S. Producers' Exports

Information on U.S. producers' exports of special quality carbon and alloy steel products is based on questionnaire responses of *** firms, accounting for approximately *** percent of total shipments of U.S.-produced subject special quality carbon and alloy bars and rods in 1991 (see tables 8A-C). U.S. producers' exports of subject special quality semifinished products increased *** from 1990 to a high in *** tons, representing *** percent of total U.S. shipments of the subject *** products. U.S. producers, ***, exported to Mexico and Canada.

Table 7
Special quality carbon and alloy steel products: U.S. capacity, production, and capacity utilization, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Average-of-period capacity (short tons)				
Subject special-quality:					
Carbon:					
Semifinished	5,098,482	5,245,597	5,045,185	1,257,847	1,305,901
Cut bars and rods	2,599,365	2,717,855	2,675,532	678,755	683,017
Alloy:					
Semifinished	2,214,677	2,334,919	2,353,510	574,883	566,867
Cut bars and rods	1,361,348	1,505,381	1,523,986	500,967	450,071
Carbon and alloy:					
Semifinished	7,313,159	7,580,516	7,398,695	1,832,730	1,872,768
Cut bars and rods	3,960,713	4,223,236	4,199,518	1,179,722	1,133,088
Free-machining:					
Carbon:					
Semifinished	1,737,064	1,754,980	1,681,236	408,507	417,464
Bars and rods	1,557,625	1,580,111	1,577,242	395,230	404,012
Alloy:					
Semifinished	124,429	125,462	125,920	31,461	31,650
Bars and rods	141,303	142,668	142,505	35,877	35,748
Carbon and alloy:					
Semifinished	1,861,493	1,880,442	1,807,156	439,968	449,114
Bars and rods	1,698,928	1,722,779	1,719,747	431,107	439,760
All special-quality:					
Carbon:					
Semifinished	6,111,182	6,258,297	6,057,885	1,511,247	1,559,301
Bars and rods	6,138,805	6,004,295	5,986,112	1,575,500	1,580,917
Alloy:					
Semifinished	2,265,677	2,385,919	2,404,510	587,683	579,667
Bars and rods	2,004,348	2,150,881	2,171,986	663,717	612,821
Carbon and alloy:					
Semifinished	8,376,859	8,644,216	8,462,395	2,098,930	2,138,968
Bars and rods	8,143,153	8,155,176	8,158,098	2,239,217	2,193,738
	Production (short tons)				
Subject special-quality:					
Carbon:					
Semifinished	3,431,771	3,663,161	3,200,150	842,876	951,138
Cut bars and rods	1,983,331	2,131,346	1,844,528	430,148	513,454
Alloy:					
Semifinished	1,563,689	1,810,544	1,558,625	401,905	404,824
Cut bars and rods	1,117,382	1,292,178	1,143,597	265,611	297,909
Carbon and alloy:					
Semifinished	4,995,460	5,473,705	4,758,775	1,244,781	1,355,962
Cut bars and rods	3,100,713	3,423,524	2,988,125	695,759	811,363
Free-machining:					
Carbon:					
Semifinished	868,853	906,568	693,690	141,436	227,501
Bars and rods	820,462	871,733	683,508	148,756	210,234
Alloy:					
Semifinished	87,149	99,983	76,373	23,517	20,849
Bars and rods	84,436	95,330	72,147	22,023	20,946
Carbon and alloy:					
Semifinished	956,002	1,006,551	770,063	164,953	248,350
Bars and rods	904,898	967,063	755,655	170,779	231,180

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Table 7--Continued
Special quality carbon and alloy steel products: U.S. capacity, production, and capacity utilization, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Production (short tons)				
All special-quality:					
Carbon:					
Semifinished	3,861,574	4,126,784	3,541,327	912,578	1,076,335
Bars and rods	4,641,685	4,778,646	4,323,734	988,625	1,184,108
Alloy:					
Semifinished	1,592,949	1,837,691	1,580,035	406,080	410,294
Bars and rods	1,313,847	1,507,701	1,331,130	309,117	357,498
Carbon and alloy:					
Semifinished	5,454,523	5,964,475	5,121,362	1,318,658	1,486,629
Bars and rods	5,955,532	6,286,347	5,654,864	1,297,742	1,541,606
	Capacity utilization (percent)				
Subject special-quality:					
Carbon:					
Semifinished	67.3	69.8	63.4	67.0	72.6
Cut bars and rods	74.4	76.4	67.1	61.7	73.2
Alloy:					
Semifinished	70.6	77.5	66.2	69.9	71.4
Cut bars and rods	82.0	85.8	75.0	53.0	66.2
Carbon and alloy:					
Semifinished	68.3	72.2	64.3	67.9	72.2
Cut bars and rods	77.0	79.7	70.0	58.0	70.4
Free-machining:					
Carbon:					
Semifinished	50.0	51.7	41.3	34.6	54.5
Bars and rods	51.5	53.9	42.3	37.3	51.1
Alloy:					
Semifinished	70.0	79.7	60.7	74.7	65.9
Bars and rods	115.2	127.7	96.8	116.7	111.7
Carbon and alloy:					
Semifinished	51.4	53.5	42.6	37.5	55.3
Bars and rods	54.4	57.3	44.8	40.9	53.8
All special-quality:					
Carbon:					
Semifinished	63.2	65.9	58.4	60.4	68.8
Bars and rods	69.2	69.4	63.2	55.5	67.1
Alloy:					
Semifinished	70.3	77.0	65.7	69.1	70.8
Bars and rods	74.7	79.2	69.2	51.4	64.9
Carbon and alloy:					
Semifinished	65.1	69.0	60.5	62.8	69.4
Bars and rods	70.4	71.8	64.6	54.4	66.5

Note.--Capacity utilization is calculated using data of firms providing both capacity and production information.

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

Table 8A
Subject special quality carbon and alloy steel products: Shipments by U.S. producers, by products and by types 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Company transfers	2,690,319	3,082,481	2,738,863	731,248	835,130
Domestic shipments	459,164	601,065	408,944	119,058	122,157
Subtotal	3,149,483	3,683,546	3,147,807	850,306	957,287
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	1,389,672	1,570,601	1,385,496	351,746	361,705
Domestic shipments	196,364	244,812	188,554	60,558	45,748
Subtotal	1,586,036	1,815,413	1,574,050	412,304	407,453
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	4,079,991	4,653,082	4,124,359	1,082,994	1,196,835
Domestic shipments	655,528	845,877	597,498	179,616	167,905
Subtotal	4,735,519	5,498,959	4,721,857	1,262,610	1,364,740
Exports	***	***	***	***	***
Total	***	***	***	***	***
Cut bars and rods:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	1,984,278	2,085,383	1,852,973	444,573	495,761
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	1,106,477	1,249,277	1,145,481	281,934	288,450
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	3,090,755	3,334,660	2,998,454	726,507	784,211
Exports	***	***	***	***	***
Total	***	***	***	***	***

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Table 8A--Continued
Subject special quality carbon and alloy steel products: Shipments by U.S. producers, by products and by types 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Company transfers	830,969	872,809	804,386	205,311	234,148
Domestic shipments	166,309	199,328	143,031	42,532	42,080
Subtotal	997,278	1,072,137	947,417	247,843	276,228
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	568,328	614,318	555,694	146,349	140,855
Domestic shipments	107,715	116,209	91,463	30,455	21,921
Subtotal	676,043	730,527	647,157	176,804	162,776
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	1,399,297	1,487,127	1,360,080	351,660	375,003
Domestic shipments	274,024	315,537	234,494	72,987	64,001
Subtotal	1,673,321	1,802,664	1,594,574	424,647	439,004
Exports	***	***	***	***	***
Total	***	***	***	***	***
Cut bars and rods:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	902,568	914,788	1,226,378	195,547	208,084
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	689,448	723,855	648,052	164,652	161,530
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	1,592,016	1,638,643	1,874,430	360,199	369,614
Exports	***	***	***	***	***
Total	***	***	***	***	***

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Table 8A--Continued
Subject special quality carbon and alloy steel products: Shipments by U.S. producers, by products and by types 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Unit value (per short ton)				
Semifinished:					
Carbon:					
Company transfers	$308.87	$283.15	$293.69	$280.77	$280.37
Domestic shipments	362.20	331.62	349.76	357.24	344.47
Average	316.65	291.06	300.98	291.48	288.55
Exports	***	***	***	***	***
Average	***	***	***	***	***
Alloy:					
Company transfers	408.97	391.14	401.08	416.06	389.42
Domestic shipments	548.55	474.69	485.08	502.91	479.17
Average	426.25	402.40	411.14	428.82	399.50
Exports	***	***	***	***	***
Average	***	***	***	***	***
Carbon and alloy:					
Company transfers	342.97	319.60	329.77	324.71	313.33
Domestic shipments	418.02	373.03	392.46	406.35	381.17
Average	353.36	327.82	337.70	336.32	321.68
Exports	***	***	***	***	***
Average	***	***	***	***	***
Cut bars and rods:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	454.86	438.67	661.84	439.85	419.73
Exports	***	***	***	***	***
Average	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	623.10	579.42	565.75	584.01	559.99
Exports	***	***	***	***	***
Average	***	***	***	***	***
Carbon and alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	515.09	491.40	625.13	495.80	471.32
Exports	***	***	***	***	***
Average	***	***	***	***	***

[1] Not applicable.

Note.--Unit values are calculated using data of firms supplying both quantity and value information.

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

Table 8B
Free-machining carbon and alloy steel products: Shipments by U.S. producers, by products and by types 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	840,712	893,553	694,517	144,220	224,217
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	87,785	102,075	76,539	23,682	21,873
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	928,497	995,628	771,056	167,902	246,090
Exports	***	***	***	***	***
Total	***	***	***	***	***
Bars and rods:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	820,711	851,428	661,564	152,961	212,434
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	85,229	93,976	73,562	24,207	20,091
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	905,940	945,404	735,126	177,168	232,525
Exports	***	***	***	***	***
Total	***	***	***	***	***

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Table 8B--Continued
Free-machining carbon and alloy steel products: Shipments by U.S. producers, by products and by types 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	275,441	288,078	227,670	47,595	75,081
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	48,017	47,683	36,032	11,431	9,867
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	323,458	335,761	263,702	59,026	84,948
Exports	***	***	***	***	***
Total	***	***	***	***	***
Bars and rods:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	414,121	420,641	323,423	77,212	107,327
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	62,556	67,057	50,096	17,000	13,536
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	476,677	487,698	373,519	94,212	120,863
Exports	***	***	***	***	***
Total	***	***	***	***	***

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Table 8B
Free-machining carbon and alloy steel products: Shipments by U.S. producers, by products and by types 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Unit value (per short ton)				
Semifinished:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	$327.63	$322.40	$327.81	$330.02	$334.86
Exports	***	***	***	***	***
Average	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	546.98	467.14	470.77	482.69	451.10
Exports	***	***	***	***	***
Average	***	***	***	***	***
Carbon and alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	348.37	337.24	342.00	351.55	345.19
Exports	***	***	***	***	***
Average	***	***	***	***	***
Bars and rods:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	504.59	494.05	488.88	504.78	505.23
Exports	***	***	***	***	***
Average	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	733.98	713.55	681.00	702.28	673.73
Exports	***	***	***	***	***
Average	***	***	***	***	***
Carbon and alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	526.17	515.87	508.10	531.77	519.78
Exports	***	***	***	***	***
Average	***	***	***	***	***

[1] Not available.
[2] Not applicable.

Note.--Unit values are calculated using data of firms supplying both quantity and value information.

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

Table 8C
All special quality carbon and alloy steel products: Shipments by U.S. producers, by products and by types 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Company transfers	3,073,556	3,489,564	3,048,344	795,469	946,569
Domestic shipments	474,294	628,217	439,830	125,308	128,750
Subtotal	3,547,850	4,117,781	3,488,174	920,777	1,075,319
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	1,419,285	1,599,617	1,406,897	356,013	368,192
Domestic shipments	196,647	245,024	188,645	60,629	45,756
Subtotal	1,615,932	1,844,641	1,595,542	416,642	413,948
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	4,492,841	5,089,181	4,455,241	1,151,482	1,314,761
Domestic shipments	670,941	873,241	628,475	185,937	174,506
Subtotal	5,163,782	5,962,422	5,083,716	1,337,419	1,489,267
Exports	***	***	***	***	***
Total	***	***	***	***	***
Bars and rods:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	4,656,526	4,669,781	4,318,155	1,051,300	1,203,180
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	1,307,308	1,462,222	1,333,746	328,926	342,556
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	470,991	496,263	472,963	109,619	139,690
Domestic shipments	5,492,843	5,635,740	5,178,938	1,270,607	1,406,046
Subtotal	5,963,834	6,132,003	5,651,901	1,380,226	1,545,736
Exports	***	***	***	***	***
Total	***	***	***	***	***

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Table 8C--Continued
All special quality carbon and alloy steel products: Shipments by U.S. producers, by products and by types 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Company transfers	966,321	1,013,665	911,957	227,437	273,049
Domestic shipments	171,307	208,137	153,256	44,636	44,300
Subtotal	1,137,628	1,221,802	1,065,213	272,073	317,349
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	582,177	627,584	563,996	147,977	143,290
Domestic shipments	107,906	116,345	91,525	30,504	21,926
Subtotal	690,083	743,929	655,521	178,481	165,216
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	1,548,498	1,641,249	1,475,953	375,414	416,339
Domestic shipments	279,213	324,482	244,781	75,140	66,226
Subtotal	1,827,711	1,965,731	1,720,734	450,554	482,565
Exports	***	***	***	***	***
Total	***	***	***	***	***
Bars and rods:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	2,029,636	2,025,568	2,229,381	443,168	496,767
Exports	***	***	***	***	***
Total	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Subtotal	815,386	854,130	760,742	192,920	193,708
Exports	***	***	***	***	***
Total	***	***	***	***	***
Carbon and alloy:					
Company transfers	198,336	211,235	200,105	45,021	60,179
Domestic shipments	2,646,686	2,668,463	2,790,018	591,067	630,296
Subtotal	2,845,022	2,879,698	2,990,123	636,088	690,475
Exports	***	***	***	***	***
Total	***	***	***	***	***

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Table 8C--Continued
All special quality carbon and alloy steel products: Shipments by U.S. producers, by products and by types 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Unit value (per short ton)				
Semifinished:					
Carbon:					
Company transfers	$314.40	$290.48	$299.16	$285.92	$288.46
Domestic shipments	361.18	331.31	348.44	356.21	344.08
Average	320.65	296.71	305.38	295.48	295.12
Exports	***	***	***	***	***
Average	***	***	***	***	***
Alloy:					
Company transfers	410.19	392.33	400.88	415.65	389.17
Domestic shipments	548.73	474.83	485.17	503.13	479.19
Average	427.05	403.29	410.85	428.38	399.12
Exports	***	***	***	***	***
Average	***	***	***	***	***
Carbon and alloy:					
Company transfers	344.66	322.50	331.28	326.03	316.67
Domestic shipments	416.15	371.58	389.48	404.12	379.51
Average	353.95	329.69	338.48	336.88	324.03
Exports	***	***	***	***	***
Average	***	***	***	***	***
Bars and rods:					
Carbon:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	435.87	433.76	516.28	421.54	412.88
Exports	***	***	***	***	***
Average	***	***	***	***	***
Alloy:					
Company transfers	***	***	***	***	***
Domestic shipments	***	***	***	***	***
Average	623.71	584.13	570.38	586.51	565.48
Exports	***	***	***	***	***
Average	***	***	***	***	***
Carbon and alloy:					
Company transfers	421.10	425.66	423.09	410.70	430.80
Domestic shipments	481.84	473.49	538.72	465.18	448.28
Average	477.05	469.62	529.05	460.86	446.70
Exports	***	***	***	***	***
Average	***	***	***	***	***

Note.--Unit values are calculated using data of firms supplying both quantity and value information.

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

Table 9
Special quality carbon and alloy steel products: U.S. producers' U.S. shipments (domestic shipments and company transfers), by selected types, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
Forging billets:					
Quantity (short tons).....	***	***	***	***	***
Value (1,000 dollars).....	***	***	***	***	***
Unit value (per ton)......	***	***	***	***	***
Share of total HR: quantity (percent)......	***	***	***	***	***
Microalloy bars and rods:					
Quantity (short tons).....	***	***	***	***	***
Value ($1,000).....	***	***	***	***	***
Unit value (per ton)......	***	***	***	***	***
Share of subtotal lead: quantity (percent)......	***	***	***	***	***
Coiled rods with diameters between 0.5-0.74 inch:					
Quantity (short tons).....	***	***	***	***	***
Value (1,000 dollars).....	***	***	***	***	***
Unit value (per ton)......	***	***	***	***	***
Share of total HR: quantity (percent)......	***	***	***	***	***

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

U.S. Producers' Inventories

U.S. producers' inventories of subject special quality carbon and alloy steel products remained relatively low during the period of investigation, increasing from 1989 to 1991, and then decreasing during January-March 1992 (table 10). As a share of U.S. producers' total shipments during the preceding year, inventories of subject special quality carbon and alloy steel bars and rods increased from 11.2 percent as of December 31, 1989, to 12.7 percent as of December 31, 1990, and decreased to 12.3 percent at yearend 1991.

Table 10
Special quality carbon and alloy steel products: End-of-period inventories of U.S. producers, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Quantity (short tons)				
Subject special-quality:					
Semifinished:					
Carbon	***	***	***	***	***
Alloy	***	***	***	***	***
Total	***	***	***	***	***
Cut bars and rods:					
Carbon	***	***	***	***	***
Alloy	***	***	***	***	***
Total	***	***	***	***	***
Free-machining:					
Semifinished:					
Carbon	***	***	***	***	***
Alloy	***	***	***	***	***
Total	***	***	***	***	***
Bars and rods:					
Carbon	***	***	***	***	***
Alloy	***	***	***	***	***
Total	***	***	***	***	***
All special-quality:					
Semifinished:					
Carbon	***	***	***	***	***
Alloy	***	***	***	***	***
Total	***	***	***	***	***
Bars and rods:					
Carbon	***	***	***	***	***
Alloy	***	***	***	***	***
Total	***	***	***	***	***
	Ratio to total shipments (percent)				
Subject special-quality:					
Semifinished:					
Carbon	12.2	9.2	10.6	9.4	8.4
Alloy	10.2	9.4	9.6	10.7	9.9
Average	11.5	9.3	10.3	9.8	8.8
Cut bars and rods:					
Carbon	11.4	12.8	12.2	13.7	11.9
Alloy	10.7	12.4	12.3	12.3	12.9
Average	11.2	12.7	12.3	13.2	12.2
Free-machining:					
Semifinished:					
Carbon	18.1	15.0	15.1	20.7	11.4
Alloy	34.3	20.8	28.7	34.7	17.3
Average	18.8	15.2	15.5	21.1	11.6
Bars and rods:					
Carbon	14.2	13.8	15.8	14.8	10.8
Alloy	15.2	27.1	23.1	15.2	26.9
Average	14.2	14.2	16.0	14.8	11.2
All special-quality:					
Semifinished:					
Carbon	12.8	10.0	11.0	10.4	8.7
Alloy	10.7	9.6	9.9	11.0	10.0
Average	12.1	9.9	10.7	10.6	9.0
Bars and rods:					
Carbon	7.2	9.3	8.6	8.7	8.4
Alloy	10.6	12.2	12.1	11.6	12.9
Average	7.8	9.9	9.2	9.3	9.2

Note.--Ratios are calculated using data of firms supplying both numerator and denominator information. Part-year inventory ratios are annualized.

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

U.S. Producers' Employment and Wages

The average number of production and related workers producing all special quality carbon and alloy steel products for the producers that provided employment data decreased from 6,497 in 1989 to 6,438 in 1990, or by 0.9 percent, and decreased to 6,337 in 1991, or by 1.6 percent (table 11). The average hourly wage for production and related workers producing all special quality carbon and alloy steel products increased from $16.14 in 1989 to $16.24 in 1990 and to $16.47 in 1991.

Most firms reported that production and related workers producing special quality semifinished and hot-rolled carbon and alloy steel products were represented by the United Steelworkers of America, and those workers accounted for *** percent of total reported subject product production and related workers.[67] The following firms reported some form of labor reductions:[68]

* * * * * * *

[67] Production and related workers at *** are not represented by a union.
[68] ***.

Table 11
Average number of U.S. production and related workers producing special-quality steel products, hours worked,[1] wages and total compensation paid to such employees, and hourly wages, productivity, and unit production costs,[2] by products, 1989-91, January-March 1991, and January-March 1992[3]

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Number of production and related workers (PRWs)				
Subject special-quality:					
Semifinished:					
Carbon	1,773	1,952	1,817	1,509	1,855
Alloy	1,092	1,078	895	1,017	934
Carbon and alloy	2,865	3,030	2,712	2,526	2,789
Cut bars and rods:					
Carbon	2,344	2,256	2,062	2,026	2,128
Alloy	1,122	1,205	1,261	1,154	1,003
Carbon and alloy	3,466	3,461	3,323	3,180	3,131
Free-machining:					
Semifinished:					
Carbon	624	645	528	471	565
Alloy	46	34	31	31	30
Carbon and alloy	670	679	559	502	595
Bars and rods:					
Carbon	1,547	1,464	1,321	1,293	1,548
Alloy	82	62	62	64	57
Carbon and alloy	1,629	1,526	1,383	1,357	1,605
All special-quality:					
Semifinished:					
Carbon	2,032	2,255	2,075	1,730	2,135
Alloy	1,133	1,109	923	1,045	960
Carbon and alloy	3,165	3,364	2,998	2,775	3,095
Bars and rods:					
Carbon	4,998	4,856	4,680	4,515	4,881
Alloy	1,499	1,582	1,657	1,525	1,415
Carbon and alloy	6,497	6,438	6,337	6,040	6,296
	Hours worked by PRWs (1,000 hours)				
Subject special-quality:					
Semifinished:					
Carbon	3,471	3,828	3,379	772	946
Alloy	2,198	2,317	1,754	528	486
Carbon and alloy	5,669	6,145	5,133	1,300	1,432
Cut bars and rods:					
Carbon	4,894	4,810	4,497	1,096	1,200
Alloy	2,271	2,530	2,403	599	560
Carbon and alloy	7,165	7,340	6,900	1,695	1,760
Free-machining:					
Semifinished:					
Carbon	1,347	1,391	1,101	257	342
Alloy	75	77	54	9	19
Carbon and alloy	1,422	1,468	1,155	266	361
Bars and rods:					
Carbon	2,940	2,943	2,365	630	791
Alloy	161	135	118	34	30
Carbon and alloy	3,101	3,078	2,483	664	821
All special-quality:					
Semifinished:					
Carbon	4,181	4,610	4,025	916	1,155
Alloy	2,267	2,390	1,805	536	504
Carbon and alloy	6,448	7,000	5,830	1,452	1,659
Bars and rods:					
Carbon	10,334	10,265	9,629	2,360	2,616
Alloy	3,026	3,321	3,159	793	767
Carbon and alloy	13,360	13,586	12,788	3,153	3,383

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Table 11--Continued
Average number of U.S. production and related workers producing special-quality steel products, hours worked,[1] wages and total compensation paid to such employees, and hourly wages, productivity, and unit production costs,[2] by products, 1989-91, January-March 1991, and January-March 1992[3]

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Wages paid to PRWs (1,000 dollars)				
Subject special-quality:					
Semifinished:					
Carbon	51,624	54,726	46,327	10,540	14,043
Alloy	32,005	33,038	25,885	8,054	7,337
Carbon and alloy	83,629	87,764	72,212	18,594	21,380
Cut bars and rods:					
Carbon	80,132	79,355	72,612	17,627	20,244
Alloy	35,473	41,308	39,774	9,924	9,350
Carbon and alloy	115,605	120,663	112,386	27,551	29,594
Free-machining:					
Semifinished:					
Carbon	20,508	21,367	17,518	4,124	5,752
Alloy	1,123	1,159	820	142	293
Carbon and alloy	21,631	22,526	18,338	4,266	6,045
Bars and rods:					
Carbon	51,413	52,072	43,159	11,007	14,119
Alloy	4,249	3,956	4,054	1,161	951
Carbon and alloy	55,662	56,028	47,213	12,168	15,070
All special-quality:					
Semifinished:					
Carbon	62,498	66,849	56,752	12,889	17,647
Alloy	33,039	34,132	26,650	8,182	7,607
Carbon and alloy	95,537	100,981	83,402	21,071	25,254
Bars and rods:					
Carbon	168,678	167,344	158,933	38,314	44,165
Alloy	46,919	53,334	51,703	12,900	12,693
Carbon and alloy	215,597	220,678	210,636	51,214	56,858
	Total compensation paid to PRWs (1,000 dollars)				
Subject special-quality:					
Semifinished:					
Carbon	80,711	88,219	82,712	18,426	23,969
Alloy	50,002	51,991	40,675	12,532	11,506
Carbon and alloy	130,713	140,210	123,387	30,958	35,475
Cut bars and rods:					
Carbon	111,400	109,767	103,469	25,063	28,894
Alloy	50,231	56,493	55,726	13,805	13,292
Carbon and alloy	161,631	166,260	159,195	38,868	42,186
Free-machining:					
Semifinished:					
Carbon	32,180	33,480	28,733	6,695	9,136
Alloy	1,791	1,784	1,331	231	454
Carbon and alloy	33,971	35,264	30,064	6,926	9,590
Bars and rods:					
Carbon	78,663	79,123	68,803	17,470	22,124
Alloy	6,573	6,083	6,531	1,861	1,507
Carbon and alloy	85,236	85,206	75,334	19,331	23,631
All special-quality:					
Semifinished:					
Carbon	97,809	107,372	99,863	22,242	29,693
Alloy	51,660	53,673	41,918	12,741	11,923
Carbon and alloy	149,469	161,045	141,781	34,983	41,616
Bars and rods:					
Carbon	239,544	238,301	234,430	56,104	66,306
Alloy	68,204	74,963	75,418	18,678	18,644
Carbon and alloy	307,748	313,264	309,848	74,782	84,950

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Table 11--Continued
Average number of U.S. production and related workers producing special-quality steel products, hours worked,[1] wages and total compensation paid to such employees, and hourly wages, productivity, and unit production costs,[2] by products, 1989-91, January-March 1991, and January-March 1992[3]

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Hourly wages paid to PRWs				
Subject special-quality:					
Semifinished:					
Carbon	$14.87	$14.30	$13.71	$13.65	$14.84
Alloy	14.56	14.26	14.76	15.25	15.10
Carbon and alloy	14.75	14.28	14.07	14.30	14.93
Cut bars and rods:					
Carbon	16.37	16.50	16.15	16.08	16.87
Alloy	15.62	16.33	16.55	16.57	16.70
Carbon and alloy	16.13	16.44	16.29	16.25	16.81
Free-machining:					
Semifinished:					
Carbon	15.22	15.36	15.91	16.05	16.82
Alloy	14.97	15.05	15.19	15.78	15.42
Carbon and alloy	15.21	15.34	15.88	16.04	16.75
Bars and rods:					
Carbon	17.49	17.69	18.25	17.56	17.94
Alloy	26.39	29.30	34.36	34.15	31.70
Carbon and alloy	17.95	18.20	19.01	18.41	18.45
All special-quality:					
Semifinished:					
Carbon	14.95	14.50	14.10	14.07	15.28
Alloy	14.57	14.28	14.76	15.26	15.09
Carbon and alloy	14.82	14.43	14.31	14.51	15.22
Bars and rods:					
Carbon	16.32	16.30	16.51	16.23	16.88
Alloy	15.51	16.06	16.37	16.27	16.55
Carbon and alloy	16.14	16.24	16.47	16.24	16.81
	Hourly total compensation paid to PRWs				
Subject special-quality:					
Semifinished:					
Carbon	$23.25	$23.05	$24.48	$23.87	$25.34
Alloy	22.75	22.44	23.19	23.73	23.67
Carbon and alloy	23.06	22.82	24.04	23.81	24.77
Cut bars and rods:					
Carbon	22.76	22.82	23.01	22.87	24.08
Alloy	22.12	22.33	23.19	23.05	23.74
Carbon and alloy	22.56	22.65	23.07	22.93	23.97
Free-machining:					
Semifinished:					
Carbon	23.89	24.07	26.10	26.05	26.71
Alloy	23.88	23.17	24.65	25.67	23.89
Carbon and alloy	23.89	24.02	26.03	26.04	26.57
Bars and rods:					
Carbon	26.76	26.89	29.09	27.86	28.11
Alloy	40.83	45.06	55.35	54.74	50.23
Carbon and alloy	27.49	27.68	30.34	29.25	28.92
All special-quality:					
Semifinished:					
Carbon	23.39	23.29	24.81	24.28	25.71
Alloy	22.79	22.46	23.22	23.77	23.66
Carbon and alloy	23.18	23.01	24.32	24.09	25.08
Bars and rods:					
Carbon	23.18	23.21	24.35	23.77	25.35
Alloy	22.47	22.55	23.83	23.50	24.29
Carbon and alloy	23.02	23.05	24.22	23.70	25.11

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Table 11--Continued
Average number of U.S. production and related workers producing special-quality steel products, hours worked,[1] wages and total compensation paid to such employees, and hourly wages, productivity, and unit production costs,[2] by products, 1989-91, January-March 1991, and January-March 1992[3]

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Productivity (short tons per hour)				
Subject special-quality:					
Semifinished:					
Carbon	0.548	0.531	0.521	0.502	0.548
Alloy	.358	.367	.371	.336	.409
Carbon and alloy	.475	.469	.470	.435	.501
Cut bars and rods:					
Carbon	.286	.311	.286	.266	.300
Alloy	.333	.335	.295	.257	.321
Carbon and alloy	.302	.320	.289	.263	.307
Free-machining:					
Semifinished:					
Carbon	.562	.559	.533	.496	.600
Alloy	.272	.257	.279	.284	.243
Carbon and alloy	.548	.544	.522	.490	.582
Bars and rods:					
Carbon	.259	.274	.266	.218	.249
Alloy	.175	.190	.166	.101	.199
Carbon and alloy	.255	.271	.262	.212	.248
All special-quality:					
Semifinished:					
Carbon	.558	.542	.522	.500	.557
Alloy	.356	.363	.368	.335	.403
Carbon and alloy	.487	.481	.474	.439	.510
Bars and rods:					
Carbon	.349	.357	.338	.305	.338
Alloy	.313	.319	.283	.248	.310
Carbon and alloy	.341	.347	.324	.290	.332
	Unit labor costs (per short ton)				
Subject special-quality:					
Semifinished:					
Carbon	$42.43	$43.40	$47.01	$47.50	$46.21
Alloy	63.49	61.22	62.52	70.71	57.93
Carbon and alloy	48.59	48.65	51.20	54.78	49.45
Cut bars and rods:					
Carbon	80.45	74.00	81.05	87.14	81.21
Alloy	66.42	66.59	78.65	89.69	73.83
Carbon and alloy	75.34	71.24	80.16	88.06	78.66
Free-machining:					
Semifinished:					
Carbon	42.52	43.03	48.97	52.53	44.51
Alloy	88.38	89.72	87.47	91.87	95.42
Carbon and alloy	43.63	44.12	49.88	53.22	45.57
Bars and rods:					
Carbon	103.19	98.12	109.38	127.98	112.29
Alloy	134.90	120.70	148.00	236.15	119.59
Carbon and alloy	104.22	98.76	110.47	130.48	112.48
All special-quality:					
Semifinished:					
Carbon	41.94	43.01	47.54	48.61	46.11
Alloy	64.07	61.84	63.05	70.98	58.73
Carbon and alloy	47.62	47.87	51.27	54.91	49.14
Bars and rods:					
Carbon	66.75	65.31	72.42	78.43	75.36
Alloy	71.77	70.73	84.34	94.87	78.22
Carbon and alloy	67.82	66.55	75.04	82.04	75.98

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[1] Includes hours worked plus hours of paid leave time.
[2] On the basis of total compensation paid.
[3] Firms providing employment data accounted for *** percent of reported total U.S. shipments (based on quantity) in 1991.

Note.--Ratios are calculated using data of firms supplying both numerator and denominator information.

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

Financial Experience of U.S. Producers

*** firms,[69] accounting for *** percent of U.S. production of special quality carbon and alloy steel products in 1991, supplied income-and-loss data on their operations related to special quality carbon and alloy hot-rolled steel bars and rods and semifinished products, and on their overall establishment operations.

In this particular investigation, financial data for most transferred semifinished products were not collected. Therefore, the revenue and cost data for semifinished products represent primarily trade sales and associated costs. The cost data requested were the actual costs incurred for the products sold, determined in accordance with generally accepted accounting principles. Therefore, the level of sales and costs in the financial data may substantially under-represent total values and costs if transfers of all semifinished products were included. Assets, capital expenditures, and research and development expenses are allocated to the extent practical to the various products.

Subject Special Quality Steel Products

Semifinished

Carbon.--*** firms,[70] accounting for *** percent of production of special quality carbon steel products in 1991, supplied income-and-loss data. These data are presented in table 12.

None of the responding firms reported their internal consumption of this product; therefore, almost all reported net sales were trade sales. Net sales rose by 23 percent from 1989 to 1990 and then fell by 28 percent from 1990 to 1991. During January-March 1992, such sales remained at almost the same level when compared to the corresponding period in 1991. Aggregate operating loss margins rose from *** percent in 1989 to *** percent in 1991. Such loss margins remained at about *** percent during January-March 1991 and 1992.

[69] These firms are ***.
[70] These firms are ***.

Table 12
Income-and-loss experience of U.S. producers on their operations producing subject special quality carbon steel semifinished products, fiscal years 1989-91, January-March 1991, and January-March 1992[1]

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
	Value (1,000 dollars)				
Net sales	141,741	174,810	126,597	38,032	37,967
Cost of goods sold	139,642	178,638	143,703	40,858	41,314
Gross profit or (loss)	2,099	(3,828)	(17,106)	(2,826)	(3,347)
Selling, general, and administrative expenses	***	***	***	***	***
Operating (loss)	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income or (expense), net	***	***	***	***	***
Net (loss) before income taxes	(5,516)	(14,301)	(29,075)	(6,764)	(6,341)
Depreciation and amortization	6,976	7,852	8,322	2,140	2,190
Cash flow[2]	1,460	(6,449)	(20,753)	(4,624)	(4,151)
	Ratio to net sales (percent)				
Cost of goods sold	98.5	102.2	113.5	107.4	108.8
Gross profit or (loss)	1.5	(2.2)	(13.5)	(7.4)	(8.8)
Selling, general, and administrative expenses	***	***	***	***	***
Operating (loss)	***	***	***	***	***
Net (loss) before income taxes	(3.9)	(8.2)	(23.0)	(17.8)	(16.7)
	Number of firms reporting				
Operating losses	4	5	6	5	5
Net losses	4	6	6	5	7
Data	6	6	7	7	7

[1] These firms are ***.
[2] Cash flow is defined as net income or loss plus depreciation and amortization.

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

Alloy.--*** firms,[71] accounting for *** percent of production of special quality alloy steel products in 1991, supplied income-and-loss data. These data are presented in table 13.

All reported net sales were trade sales. Net sales rose by 13 percent from 1989 to 1990 and then dropped by 19 percent from 1990 to 1991. Such sales fell by 28 percent during January-March 1992 compared with the corresponding period in 1991. Aggregate operating loss margins rose from *** percent in 1989 to *** percent in 1991. Such loss margins increased from *** percent during January-March 1991 to *** percent in January-March 1992.

Carbon and alloy combined.--Data on subject carbon and alloy semifinished product operations combined are presented in table 14. Net sales rose by 20 percent from 1989 to 1990 and then declined by 24 percent from 1990 to 1991. Such sales further fell by 11 percent from January-March 1991 to January-March 1992. The responding firms suffered aggregate operating losses in each reporting period. Aggregate operating loss margins rose from 4.1 percent in 1989 to 18.4 percent in 1991. Such loss margins increased from 11.0 percent during January-March 1991 to 14.2 percent in J8anuary-March 1992.

Cut bars and rods

Carbon.--*** firms,[72] accounting for *** percent of production of special quality carbon steel products in 1991, supplied income-and-loss data. These data are presented in table 15.

Net sales rose about 1 percent from 1989 to 1990 and then fell by 10 percent from 1990 to 1991. Such sales increased by 11 percent during January-March 1992 compared with the corresponding period in 1991. Aggregate operating income margins declined from 10.3 percent in 1989 to 5.3 percent in 1991. Such income margins increased from 2.9 percent during January-March 1991 to 7.8 percent in January-March 1992.

Alloy.--*** firms,[73] accounting for *** percent of production of special quality alloy steel products in 1991, supplied income-and-loss data. These data are presented in table 16.

Net sales rose by 3 percent from 1989 to 1990 and then dropped by 12 percent from 1990 to 1991. Such sales declined by 4 percent during January-March 1992 compared with the corresponding period in 1991. Aggregate operating income margins declined from 5.5 percent in 1989 to 1.1 percent in 1991. Such income margins increased from 1.5 percent during January-March 1991 to 2.8 percent in January-March 1992.

Carbon and alloy combined.--Data on subject carbon and alloy cut bar and rod operations combined are presented in table 17. Net sales slightly increased by 1 percent from 1989 to 1990 but declined by 11 percent from 1990 to 1991. Such sales rose by 3 percent from January-March 1991 to January-March 1992. Aggregate operating income margins declined from 8.2 percent in 1989 to 3.5 percent in 1991. Such income margins increased from 2.2 percent during January-March 1991 to 5.4 percent in January-March 1992.

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[71] These firms are ***.
[72] These firms are ***.
[73] These firms are ***.

Table 13
Income-and-loss experience of U.S. producers on their operations producing subject special quality alloy steel semifinished products, fiscal years 1989-91, January-March 1991, and January-March 1992[1]

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
	Value (1,000 dollars)				
Net sales	84,751	95,926	77,877	26,087	18,816
Cost of goods sold	82,551	96,345	81,746	24,954	19,516
Gross profit or (loss)	2,200	(419)	(3,869)	1,133	(700)
Selling, general, and administrative expenses	***	***	***	***	***
Operating (loss)	***	***	***	***	***
Interest expense	***	***	***	***	***
Other income or (expense), net	***	***	***	***	***
Net (loss) before income taxes	(5,881)	(11,632)	(13,914)	(2,079)	(2,748)
Depreciation and amortization	5,407	5,658	5,366	1,524	1,233
Cash flow[2]	(474)	(5,974)	(8,548)	(555)	(1,515)
	Ratio to net sales (percent)				
Cost of goods sold	97.4	100.4	105.0	95.7	103.7
Gross profit or (loss)	2.6	(0.4)	(5.0)	4.3	(3.7)
Selling, general, and administrative expenses	***	***	***	***	***
Operating (loss)	***	***	***	***	***
Net (loss) before income taxes	(6.9)	(12.1)	(17.9)	(8.0)	(14.6)
	Number of firms reporting				
Operating losses	3	4	5	4	4
Net losses	3	4	5	4	5
Data	4	4	5	4	5

[1] These firms are ***.
[2] Cash flow is defined as net income or loss plus depreciation and amortization.

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

Table 14
Income-and-loss experience of U.S. producers on their operations producing subject special quality carbon and alloy steel semifinished products, fiscal years 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
	Value (1,000 dollars)				
Net sales	226,492	270,736	204,474	64,119	56,783
Cost of goods sold	222,193	274,983	225,449	65,812	60,830
Gross profit or (loss)	4,299	(4,247)	(20,975)	(1,693)	(4,047)
Selling, general, and administrative expenses	13,656	17,591	16,651	5,348	4,008
Operating (loss)	(9,357)	(21,838)	(37,626)	(7,041)	(8,055)
Interest expense	2,184	3,958	3,310	1,365	773
Other income or (expense), net	144	(137)	(2,053)	(437)	(261)
Net (loss) before income taxes	(11,397)	(25,933)	(42,989)	(8,843)	(9,089)
Depreciation and amortization	12,383	13,510	13,688	3,664	3,423
Cash flow[1]	986	(12,423)	(29,301)	(5,179)	(5,666)
	Ratio to net sales (percent)				
Cost of goods sold	98.1	101.6	110.3	102.6	107.1
Gross profit or (loss)	1.9	(1.6)	(10.3)	(2.6)	(7.1)
Selling, general, and administrative expenses	6.0	6.5	8.1	8.3	7.1
Operating (loss)	(4.1)	(8.1)	(18.4)	(11.0)	(14.2)
Net (loss) before income taxes	(5.0)	(9.6)	(21.0)	(13.8)	(16.0)
	Number of firms reporting				
Operating losses	4	6	6	5	5
Net losses	4	6	6	5	7
Data	6	6	7	7	7

[1] Cash flow is defined as net income or loss plus depreciation and amortization.

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

Table 15
Income-and-loss experience of U.S. producers on their operations producing subject special quality carbon steel cut bars and rods, fiscal years 1989-91, January-March 1991, and January-March 1992[1]

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
	Value (1,000 dollars)				
Net sales	802,663	807,301	726,167	134,794	149,452
Cost of goods sold	682,915	705,728	645,850	121,793	129,786
Gross profit	119,748	101,573	80,317	13,001	19,666
Selling, general, and administrative expenses	37,227	42,116	41,949	9,135	8,046
Operating income	82,521	59,457	38,368	3,866	11,620
Startup or shutdown expense	0	540	870	236	382
Interest expense	3,900	8,694	11,223	2,472	2,496
Other expense, net	1,011	5,994	15,634	2,226	3,240
Net income or (loss) before income taxes	77,610	44,229	10,641	(1,068)	5,502
Depreciation and amortization	16,032	16,876	19,348	4,431	5,024
Cash flow[2]	93,642	61,105	29,989	3,363	10,526
	Ratio to net sales (percent)				
Cost of goods sold	85.1	87.4	88.9	90.4	86.8
Gross profit	14.9	12.6	11.1	9.6	13.2
Selling, general, and administrative expenses	4.6	5.2	5.8	6.8	5.4
Operating income	10.3	7.4	5.3	2.9	7.8
Net income or (loss) before income taxes	9.7	5.5	1.5	(0.8)	3.7
	Number of firms reporting				
Operating losses	3	5	6	6	4
Net losses	3	5	6	5	4
Data	12	12	12	8	8

[1] These firms are ***.
[2] Cash flow is defined as net income or loss plus depreciation and amortization.

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

Table 16
Income-and-loss experience of U.S. producers on their operations producing subject special quality alloy steel cut bars and rods, fiscal years 1989-91, January-March 1991, and January-March 1992[1]

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
	Value (1,000 dollars)				
Net sales	594,424	609,373	534,198	136,834	131,587
Cost of goods sold	533,432	545,491	496,017	126,984	121,120
Gross profit	60,992	63,882	38,181	9,850	10,467
Selling, general, and administrative expenses	28,410	33,145	32,544	7,856	6,778
Operating income	32,582	30,737	5,637	1,994	3,689
Startup or shutdown expense	0	70	157	44	61
Interest expense	6,263	12,699	11,765	3,216	2,771
Other income or (expense), net	4,508	(5,870)	(10,291)	(4,164)	(2,799)
Net income or (loss) before income taxes	30,827	12,098	(16,576)	(5,430)	(1,942)
Depreciation and amortization	20,844	22,740	23,997	6,028	5,530
Cash flow[2]	51,671	34,838	7,421	598	3,588
	Ratio to net sales (percent)				
Cost of goods sold	89.7	89.5	92.9	92.8	92.0
Gross profit	10.3	10.5	7.1	7.2	8.0
Selling, general, and administrative expenses	4.8	5.4	6.1	5.7	5.2
Operating income	5.5	5.0	1.1	1.5	2.8
Net income or (loss) before income taxes	5.2	2.0	(3.1)	(4.0)	(1.5)
	Number of firms reporting				
Operating losses	1	4	5	4	5
Net losses	3	5	6	6	5
Data	9	10	10	10	10

[1] These firms are ***.
[2] Cash flow is defined as net income or loss plus depreciation and amortization.

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

Table 17
Income-and-loss experience of U.S. producers on their operations producing subject special quality carbon and alloy steel cut bars and rods, fiscal years 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
	Value (1,000 dollars)				
Net sales	1,397,087	1,416,674	1,260,365	271,628	281,039
Cost of goods sold	1,216,347	1,251,219	1,141,867	248,777	250,906
Gross profit	180,740	165,455	118,498	22,851	30,133
Selling, general, and administrative expenses	65,637	75,261	74,493	16,991	14,824
Operating income	115,103	90,194	44,005	5,860	15,309
Startup or shutdown expense	0	610	1,027	280	443
Interest expense	10,163	21,393	22,988	5,688	5,267
Other income or (expense), net	3,497	(11,864)	(25,925)	(6,390)	(6,039)
Net income or (loss) before income taxes	108,437	56,327	(5,935)	(6,498)	3,560
Depreciation and amortization	36,876	39,616	43,345	10,459	10,554
Cash flow[1]	145,313	95,943	37,410	3,961	14,114
	Ratio to net sales (percent)				
Cost of goods sold	87.1	88.3	90.6	91.6	89.3
Gross profit	12.9	11.7	9.4	8.4	10.7
Selling, general, and administrative expenses	4.7	5.3	5.9	6.3	5.3
Operating income	8.2	6.4	3.5	2.2	5.4
Net income or (loss) before income taxes	7.8	4.0	(0.5)	(2.4)	1.3
	Number of firms reporting				
Operating losses	3	5	6	4	5
Net losses	3	6	6	5	5
Data	13	14	14	10	10

[1] Cash flow is defined as net income or loss plus depreciation and amortization.

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

Semifinished and cut bars and rods combined[74]

The key data on subject carbon and alloy semifinished product and cut bar and rod operations combined are presented in the following tabulation:

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
Net sales (1,000 dollars)	1,623,579	1,687,410	1,464,839	335,747	337,822
Operating income or (loss) (1,000 dollars)	105,746	68,356	6,379	(1,181)	7,254
Operating income or (loss) margins (percent)	6.5	4.1	0.4	(0.4)	2.1

Free-Machining Steel Products[75]

Semifinished

Financial data were not collected on semifinished carbon and alloy lead and bismuth, or non-lead/bismuth free-machining steel products in this investigation. However, in investigations Nos. 701-TA-314-317 and 731-TA-552-555 (Preliminary), the Commission collected data on semifinished carbon lead and bismuth free-machining operations, which are discussed below.

Carbon.--*** firms,[76] accounting for *** percent of production of special quality carbon steel products in 1991, supplied income-and-loss data. These data are presented in table 18. ***.

Table 18
Income-and-loss experience of U.S. producers on their operations producing free-machining semifinished carbon steel lead and bismuth products, fiscal years 1989-91

*   *   *   *   *   *   *

[74] Net sales of semifinished products include primarily trade sales only. These combined data exclude transfers to products other than bars and rods.
[75] Aggregate data on all free-machining operations (i.e., semifinished plus bars and rods) are presented in app. table G-64.
[76] These firms are ***.

Bars and rods

Carbon.--*** firms,[77] accounting for *** percent of production of special quality carbon steel products in 1991, supplied income-and-loss data. These data are presented in table 19. Net sales declined by 15 percent from 1989 to 1991, and operating income margins fell from 6.9 percent in 1989 to 0.4 percent in 1991.

Alloy.--*** firms,[78] accounting for *** percent of production of special quality alloy steel products in 1991, supplied income-and-loss data. These data are presented in table 20. Net sales rose by 7 percent from 1989 to 1990 and then dropped by 23 percent from 1990 to 1991. In 1990 when sales peaked, these firms reported an operating income margin of 0.3 percent compared with operating loss margins of 1.1 percent in 1989 and 4.1 percent in 1991.

Carbon and alloy combined.--Data on free-machining carbon and alloy bar and rod operations combined are presented in table 21. Net sales declined by 15 percent from 1989 to 1991. Aggregate operating income margins fell from 5.8 percent in 1989 to 2.6 percent in 1990. In 1991, the responding firms suffered an operating loss margin of 0.2 percent.

All Special Quality Steel Products[79]

Semifinished

Carbon.--*** firms,[80] accounting for *** percent of production of special quality carbon steel products in 1991, supplied income-and-loss data. These data are presented in table 22. Net sales rose by 24 percent from 1989 to 1990 and then dropped by 25 percent from 1990 to 1991. ***.

Alloy.--*** firms,[81] accounting for *** percent of production of special quality alloy steel products in 1991, supplied income-and-loss data. These data are presented in table 23. Net sales rose by 13 percent from 1989 to 1990 and then fell by 19 percent from 1990 to 1991. ***.

Carbon and alloy combined.--Data on semifinished special quality carbon and alloy steel product operations combined are presented in table 24. Net sales rose by 20 percent from 1989 to 1990 and then declined by 23 percent from 1990 to 1991. Aggregate operating loss margins jumped from 4.2 percent in 1989 to 17.7 percent in 1991.

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[77] These firms are ***.

[78] These firms are ***.

[79] Aggregate data on all special quality steel product operations (i.e., semifinished plus bars and rods) are presented in app. table G-65.

[80] These firms are ***.

[81] These firms are ***.

Table 19
Income-and-loss experience of U.S. producers on their operations producing free-machining carbon steel bars and rods, fiscal years 1989-91[1]

Item	1989	1990	1991
	Value (1,000 dollars)		
Net sales	478,389	448,503	406,561
Cost of goods sold	424,702	413,298	383,676
Gross profit or (loss)	53,687	35,205	22,885
Selling, general, and administrative expenses	20,882	21,553	21,144
Operating income or (loss)	32,805	13,652	1,741
	Ratio to net sales (percent)		
Cost of goods sold	88.8	92.2	94.4
Gross profit or (loss)	11.2	7.8	5.6
Selling, general, and administrative expenses	4.4	4.8	5.2
Operating income or (loss)	6.9	3.0	0.4
	Number of firms reporting		
Operating losses	3	4	5
Data	9	9	9

[1] These firms are ***.

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

Table 20
Income-and-loss experience of U.S. producers on their operations producing free-machining alloy steel bars and rods, fiscal years 1989-91[1]

Item	1989	1990	1991
	Value (1,000 dollars)		
Net sales	75,121	80,389	62,100
Cost of goods sold	72,842	77,258	62,164
Gross profit or (loss)	2,279	3,131	(64)
Selling, general, and administrative expenses	3,072	2,900	2,498
Operating income or (loss)	(793)	231	(2,562)
	Ratio to net sales (percent)		
Cost of goods sold	97.0	96.1	100.1
Gross profit or (loss)	3.0	3.9	(0.1)
Selling, general, and administrative expenses	4.1	3.6	4.0
Operating income or (loss)	(1.1)	0.3	(4.1)
	Number of firms reporting		
Operating losses	2	2	3
Data	7	8	8

[1] These firms are ***.

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

Table 21
Income-and-loss experience of U.S. producers on their operations producing free-machining carbon and alloy steel bars and rods, fiscal years 1989-91

Item	1989	1990	1991
	Value (1,000 dollars)		
Net sales	553,510	528,892	468,661
Cost of goods sold	497,544	490,556	445,840
Gross profit or (loss)	55,966	38,336	22,821
Selling, general, and administrative expenses	23,954	24,453	23,642
Operating income or (loss)	32,012	13,883	(821)
	Ratio to net sales (percent)		
Cost of goods sold	89.9	92.8	95.1
Gross profit or (loss)	10.1	7.2	4.9
Selling, general, and administrative expenses	4.3	4.6	5.0
Operating income or (loss)	5.8	2.6	(0.2)
	Number of firms reporting		
Operating losses	3	4	5
Data	9	10	10

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

Table 22
Income-and-loss experience of U.S. producers on their operations producing special quality carbon steel semifinished products, fiscal years 1989-91[1]

Item	1989	1990	1991
	Value (1,000 dollars)		
Net sales	148,964	184,348	137,651
Cost of goods sold	147,023	188,531	154,745
Gross profit or (loss)	1,941	(4,183)	(17,094)
Selling, general, and administrative expenses	***	***	***
Operating (loss)	***	***	***
	Ratio to net sales (percent)		
Cost of goods sold	98.7	102.3	112.4
Gross profit or (loss)	1.3	(2.3)	(12.4)
Selling, general, and administrative expenses	***	***	***
Operating (loss)	***	***	***
	Number of firms reporting		
Operating losses	4	5	6
Data	6	6	7

[1] These firms are ***.

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

Table 23
Income-and-loss experience of U.S. producers on their operations producing special quality alloy steel semifinished products, fiscal years 1989-91[1]

Item	1989	1990	1991
	Value (1,000 dollars)		
Net sales	84,751	95,926	77,877
Cost of goods sold	82,551	96,345	81,746
Gross profit or (loss)	2,200	(419)	(3,869)
Selling, general, and administrative expenses	***	***	***
Operating (loss)	***	***	***
	Ratio to net sales (percent)		
Cost of goods sold	97.4	100.4	105.0
Gross profit or (loss)	2.6	(0.4)	(5.0)
Selling, general, and administrative expenses	***	***	***
Operating (loss)	***	***	***
	Number of firms reporting		
Operating losses	3	4	5
Data	4	4	5

[1] These firms are ***.

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

Table 24
Income-and-loss experience of U.S. producers on their operations producing special quality carbon and alloy steel semifinished products, fiscal years 1989-91

Item	1989	1990	1991
	Value (1,000 dollars)		
Net sales	233,715	280,274	215,528
Cost of goods sold	229,574	284,876	236,491
Gross profit or (loss)	4,141	(4,602)	(20,963)
Selling, general, and administrative expenses	13,888	17,863	17,096
Operating (loss)	(9,747)	(22,465)	(38,059)
	Ratio to net sales (percent)		
Cost of goods sold	98.2	101.6	109.7
Gross profit or (loss)	1.8	(1.6)	(9.7)
Selling, general, and administrative expenses	5.9	6.4	7.9
Operating (loss)	(4.2)	(8.0)	(17.7)
	Number of firms reporting		
Operating losses	4	6	6
Data	6	6	7

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

Bars and rods

Carbon.--*** firms,[82] accounting for *** percent of production of special quality carbon steel products in 1991, supplied income-and-loss data. These data are presented in table 25. From 1989 to 1991, net sales fell by 10 percent, and operating income margins dropped from 8.6 percent to 2.6 percent.

Alloy.--*** firms,[83] accounting for *** percent of production of special quality alloy steel products in 1991, supplied income-and-loss data. These data are presented in table 26. Net sales increased by 3 percent from 1989 to 1990 and then fell by 12 percent from 1990 to 1991. Aggregate operating income margins declined from 7.2 percent in 1989 to 2.3 percent in 1991.

Carbon and alloy combined.--Data on special quality carbon and alloy steel bar and rod operations combined are presented in table 27. Net sales slightly increased by about 1 percent from 1989 to 1990 but declined by 10 percent from 1990 to 1991. Aggregate operating income margins fell from 8.2 percent in 1989 to 2.5 percent in 1991.

Available income-and-loss data on alternative "like-product" industries are presented in appendix G.

Investment in Productive Facilities

The value of property, plant, and equipment and total assets, along with the return on book value of fixed assets and the return on total assets are presented in tables 28A to 28C.

Capital Expenditures

Capital expenditures reported by U.S. producers are shown in table 29.

Research and Development Expenses

Research and development expenses reported by U.S. producers are presented in table 30.

[82] These firms are ***.
[83] These firms are ***.

Table 25
Income-and-loss experience of U.S. producers on their operations producing special quality carbon steel bars and rods, fiscal years 1989-91[1]

Item	1989	1990	1991
	Value (1,000 dollars)		
Net sales	1,797,875	1,794,045	1,618,354
Cost of goods sold	1,554,508	1,595,219	1,484,724
Gross profit or (loss)	243,367	198,826	133,630
Selling, general, and administrative expenses	88,241	94,078	90,886
Operating income or (loss)	155,126	104,748	42,744
	Ratio to net sales (percent)		
Cost of goods sold	86.5	88.9	91.7
Gross profit or (loss)	13.5	11.1	8.3
Selling, general, and administrative expenses	4.9	5.2	5.6
Operating income or (loss)	8.6	5.8	2.6
	Number of firms reporting		
Operating losses	2	5	7
Data	14	14	14

[1] These firms are ***.

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

Table 26
Income-and-loss experience of U.S. producers on their operations producing special quality alloy steel bars and rods, fiscal years 1989-91[1]

Item	1989	1990	1991
	Value (1,000 dollars)		
Net sales	732,364	754,392	664,331
Cost of goods sold	646,612	671,005	611,081
Gross profit or (loss)	85,752	83,387	53,250
Selling, general, and administrative expenses	33,215	38,853	38,018
Operating income or (loss)	52,537	44,534	15,232
	Ratio to net sales (percent)		
Cost of goods sold	88.3	88.9	92.0
Gross profit or (loss)	11.7	11.1	8.0
Selling, general, and administrative expenses	4.5	5.2	5.7
Operating income or (loss)	7.2	5.9	2.3
	Number of firms reporting		
Operating losses	1	4	5
Data	10	11	11

[1] These firms are ***.

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

Table 27
Income-and-loss experience of U.S. producers on their operations producing special quality carbon and alloy steel bars and rods, fiscal years 1989-91

Item	1989	1990	1991
	Value (1,000 dollars)		
Net sales	2,530,239	2,548,437	2,282,685
Cost of goods sold	2,201,120	2,266,224	2,095,805
Gross profit or (loss)	329,119	282,213	186,880
Selling, general, and administrative expenses	121,456	132,931	128,904
Operating income or (loss)	207,663	149,282	57,976
	Ratio to net sales (percent)		
Cost of goods sold	87.0	88.9	91.8
Gross profit or (loss)	13.0	11.1	8.2
Selling, general, and administrative expenses	4.8	5.2	5.6
Operating income or (loss)	8.2	5.9	2.5
	Number of firms reporting		
Operating losses	2	5	6
Data	15	16	16

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

Table 28A
Value of assets and return on assets of U.S. producers of semifinished steel products, fiscal years 1989-91, January-March 1991, and January-March 1992

Item	As of the end of fiscal year--			As of Mar. 31--	
	1989	1990	1991	1991	1992
	Value (1,000 dollars)				
Subject special quality:					
Carbon:					
Fixed assets:					
Original cost	***	***	***	***	***
Book value	***	***	***	***	***
Total assets[1]	***	***	***	***	***
Alloy:					
Fixed assets:					
Original cost	***	***	***	***	***
Book value	***	***	***	***	***
Total assets[1]	***	***	***	***	***
Carbon and alloy:					
Fixed assets:					
Original cost	494,404	537,961	561,204	570,616	564,229
Book value	300,165	319,380	318,223	327,537	315,432
Total assets[1]	315,042	382,611	347,076	387,757	347,964
Free-machining:					
Carbon:					
Fixed assets:					
Original cost	***	***	***	-	-
Book value	***	***	***	-	-
Total assets[1]	***	***	***	-	-
Alloy:					
Fixed assets:					
Original cost	0	0	0	-	-
Book value	0	0	0	-	-
Total assets[1]	0	0	0	-	-
Carbon and alloy:					
Fixed assets:					
Original cost	***	***	***	-	-
Book value	43,674	46,253	44,190	-	-
Total assets[1]	***	***	***	-	-
All special quality:					
Carbon:					
Fixed assets:					
Original cost	***	***	***	-	-
Book value	***	***	***	-	-
Total assets[1]	***	***	***	-	-
Alloy:					
Fixed assets:					
Original cost	***	***	***	-	-
Book value	***	***	***	-	-
Total assets[1]	***	***	***	-	-
Carbon and alloy:					
Fixed assets:					
Original cost	606,088	667,595	697,067	-	-
Book value	343,839	365,633	362,413	-	-
Total assets[1]	0	0	0	-	-

Continued on next page.

Table 28A--Continued
Value of assets and return on assets of U.S. producers of semifinished steel products, fiscal years 1989-91, January-March 1991, and January-March 1992

Item	As of the end of fiscal year-- 1989	1990	1991	As of Mar. 31-- 1991	1992
	Return on book value of fixed assets (percent)[2]				
Subject special quality:					
Carbon:					
Operating return[3]	***	***	***	***	***
Net return[4]	***	***	***	***	***
Alloy:					
Operating return[3]	***	***	***	***	***
Net return[4]	***	***	***	***	***
Carbon and alloy:					
Operating return[3]	(3.3)	(7.4)	(13.7)	(10.2)	(11.6)
Net return[4]	(4.0)	(8.9)	(15.7)	(12.8)	(13.1)
Free-machining:					
Carbon:					
Operating return[3]	***	***	***	-	-
Net return[4]	***	***	***	-	-
Alloy:					
Operating return[3]	***	***	***	-	-
Net return[4]	***	***	***	-	-
Carbon and alloy:					
Operating return[3]	***	***	***	-	-
Net return[4]	***	***	***	-	-
All special quality:					
Carbon:					
Operating return[3]	***	***	***	-	-
Net return[4]	***	***	***	-	-
Alloy:					
Operating return[3]	***	***	***	-	-
Net return[4]	***	***	***	-	-
Carbon and alloy:					
Operating return[3]	(2.9)	(7.3)	(11.9)	-	-
Net return[4]	0.0	0.0	0.0	-	-

Continued on next page.

Table 28A--Continued
Value of assets and return on assets of U.S. producers of semifinished steel products, fiscal years 1989-91, January-March 1991, and January-March 1992

Item	As of the end of fiscal year-- 1989	1990	1991	As of Mar. 31-- 1991	1992
	Return on total assets (percent)[2]				
Subject special quality:					
Carbon:					
Operating return[3]	***	***	***	***	***
Net return[4]	***	***	***	***	***
Alloy:					
Operating return[3]	***	***	***	***	***
Net return[4]	***	***	***	***	***
Carbon and alloy:					
Operating return[3]	(3.1)	(6.4)	(12.7)	(8.8)	(10.7)
Net return[4]	(3.9)	(7.7)	(14.6)	(11.1)	(12.1)
Free-machining:					
Carbon:					
Operating return[3]	***	***	***	-	-
Net return[4]	***	***	***	-	-
Alloy:					
Operating return[3]	***	***	***	-	-
Net return[4]	***	***	***	-	-
Carbon and alloy:					
Operating return[3]	***	***	***	-	-
Net return[4]	***	***	***	-	-
All special quality:					
Carbon:					
Operating return[3]	-	-	-	-	-
Net return[4]	-	-	-	-	-
Alloy:					
Operating return[3]	-	-	-	-	-
Net return[4]	-	-	-	-	-
Carbon and alloy:					
Operating return[3]	-	-	-	-	-
Net return[4]	-	-	-	-	-

[1] Defined as book value of fixed assets plus current and noncurrent assets.
[2] Total establishment assets are apportioned, by firm, to product groups on the basis of the ratio of the respective book values of fixed assets.
[3] Computed using data from only those firms supplying both asset and income-and-loss information, and as such, may not be derivable from data presented. Data for the partial-year periods are calculated using annualized income-and-loss information.
[4] Defined as operating income or loss divided by asset value.

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

Table 28B
Value of assets and return on assets of U.S. producers of subject special quality cut bars and rods, fiscal years 1989-91, January-March 1991, and January-March 1992

Item	As of the end of fiscal year--			As of Mar. 31--	
	1989	1990	1991	1991	1992
	Value (1,000 dollars)				
Carbon:					
Fixed assets:					
Original cost	358,603	396,472	438,246	403,788	444,870
Book value	134,891	148,829	172,753	154,731	173,409
Total assets[1]	238,966	283,033	278,948	259,486	284,768
Alloy:					
Fixed assets:					
Original cost	365,554	398,840	420,737	430,328	395,463
Book value	168,284	181,647	182,254	189,660	169,195
Total assets[1]	278,691	317,450	287,894	309,674	271,707
Carbon and alloy:					
Fixed assets:					
Original cost	724,157	795,312	858,983	834,116	840,333
Book value	303,175	330,476	355,007	344,391	342,604
Total assets[1]	517,657	600,483	566,842	569,160	556,475
	Return on book value of fixed assets (percent)[2]				
Carbon:					
Operating return[3]	49.1	29.5	19.9	11.9	24.8
Net return[4]	45.9	19.6	4.3	(0.2)	11.0
Alloy:					
Operating return[3]	14.6	12.3	(1.6)	0.5	4.4
Net return[4]	13.7	2.2	(13.6)	(14.8)	(8.7)
Carbon and alloy:					
Operating return[3]	29.9	20.1	8.9	5.6	14.7
Net return[4]	28.1	10.1	(4.9)	(8.3)	1.3
	Return on total assets (percent)[2]				
Carbon:					
Operating return[3]	25.5	16.4	14.3	9.8	16.7
Net return[4]	23.7	11.2	4.6	2.6	8.4
Alloy:					
Operating return[3]	7.1	7.8	[5]	1.7	3.1
Net return[4]	6.6	2.0	(7.6)	(7.7)	(5.1)
Carbon and alloy:					
Operating return[3]	15.6	11.8	7.0	5.4	10.1
Net return[4]	14.5	6.3	(1.6)	(3.0)	1.8

[1] Defined as book value of fixed assets plus current and noncurrent assets.
[2] Total establishment assets are apportioned, by firm, to product groups on the basis of the ratio of the respective book values of fixed assets.
[3] Computed using data from only those firms supplying both asset and income-and-loss information, and as such, may not be derivable from data presented. Data for the partial-year periods are calculated using annualized income-and-loss information.
[4] Defined as operating income or loss divided by asset value.
[5] Negative figure, but less than significant digits displayed.

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

Table 28C
Value of assets and return on assets of U.S. producers' establishments wherein all special quality steel products are produced, fiscal years 1989-91, January-March 1991, and January-March 1992

Item	As of the end of fiscal year-- 1989	1990	1991	As of Mar. 31-- 1991	1992
	Value (1,000 dollars)				
All products of the establishment:					
Fixed assets:					
Original cost	6,642,589	6,971,321	7,244,779	7,155,940	7,326,519
Book value	3,020,930	3,129,619	3,166,215	3,220,513	3,130,459
Total assets[1]	4,467,527	4,715,055	4,430,014	4,712,422	4,497,971
Bars and Rods:					
Free-machining:					
Carbon:					
Fixed assets:					
Original cost	***	***	224,328	-	-
Book value	85,353	106,231	98,403	-	-
Total assets[2]	***	195,818	161,145	-	-
Alloy:					
Fixed assets:					
Original cost	***	***	28,887	-	-
Book value	13,146	14,964	12,931	-	-
Total assets[2]	***	35,604	25,807	-	-
Carbon and alloy:					
Fixed assets:					
Original cost	209,276	257,044	253,215	-	-
Book value	98,499	121,195	111,334	-	-
Total assets[2]	167,718	231,422	186,952	-	-
All special quality:					
Carbon:					
Fixed assets:					
Original cost	758,625	832,539	882,918	-	-
Book value	317,829	340,267	371,914	-	-
Total assets[2]	0	0	0	-	-
Alloy:					
Fixed assets:					
Original cost	421,074	468,321	505,876	-	-
Book value	196,352	213,932	219,057	-	-
Total assets[2]	0	0	0	-	-
Carbon and alloy:					
Fixed assets:					
Original cost	1,179,699	1,300,860	1,388,794	-	-
Book value	514,181	554,199	590,971	-	-
Total assets[2]	0	0	0	-	-
	Return on book value of fixed assets (percent)[3]				
All products of the establishment:					
Operating return[4]	15.2	7.1	(8.8)	(5.4)	(2.1)
Net return[5]	10.9	2.2	(14.3)	(10.9)	(7.2)

Continued on next page.

Table 28C--Continued
Value of assets and return on assets of U.S. producers' establishments wherein all special quality steel products are produced, fiscal years 1989-91, January-March 1991, and January-March 1992

Item	As of the end of fiscal year-- 1989	1990	1991	As of Mar. 31-- 1991	1992
	Return on book value of fixed assets (percent)[3]				
Bars and Rods:					
Free-machining:					
Carbon:					
Operating return[4]	***	***	10.7	-	-
Net return[5]	0.0	0.0	0.0	-	-
Alloy:					
Operating return[4]	***	(1.9)	(21.7)	-	-
Net return[5]	0.0	0.0	0.0	-	-
Carbon and alloy:					
Operating return[4]	***	***	6.9	-	-
Net return[5]	0.0	0.0	0.0	-	-
All special quality:					
Carbon:					
Operating return[4]	***	23.7	9.8	-	-
Net return[5]	0.0	0.0	0.0	-	-
Alloy:					
Operating return[4]	21.9	16.7	3.0	-	-
Net return[5]	0.0	0.0	0.0	-	-
Carbon and alloy:					
Operating return[4]	33.7	21.0	7.3	-	-
Net return[5]	0.0	0.0	0.0	-	-
	Return on total assets (percent)[3]				
All products of the establishment:					
Operating return[4]	10.0	5.2	(5.5)	(2.9)	(1.0)
Net return[5]	7.0	2.0	(9.4)	(6.7)	(4.5)
Bars and Rods:					
Free-machining:					
Carbon:					
Operating return[4]	***	10.9	8.2	-	-
Net return[5]	***	0.0	0.0	-	-
Alloy:					
Operating return[4]	***	(0.8)	(10.9)	-	-
Net return[5]	***	0.0	0.0	-	-
Carbon and alloy:					
Operating return[4]	16.4	9.1	5.6	-	-
Net return[5]	0.0	0.0	0.0	-	-
All special quality:					
Carbon:					
Operating return[4]	-	-	-	-	-
Net return[5]	-	-	-	-	-
Alloy:					
Operating return[4]	-	-	-	-	-
Net return[5]	-	-	-	-	-
Carbon and alloy:					
Operating return[4]	-	-	-	-	-
Net return[5]	-	-	-	-	-

[1] Defined as book value of fixed assets plus current and noncurrent assets.
[2] Total establishment assets are apportioned, by firm, to product groups on the basis of the ratio of the respective book values of fixed assets.
[3] Computed using data from only those firms supplying both asset and income-and-loss information, and as such, may not be derivable from data presented. Data for the partial-year periods are calculated using annualized income-and-loss information.
[4] Defined as operating income or loss divided by asset value.
[5] Defined as net income or loss divided by asset value.

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

Table 29
Capital expenditures by U.S. producers of special quality steel products, by products, fiscal years 1989-91, January-March 1991, and January-March 1992

(In thousands of dollars)

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
All products	272,797	397,037	398,146	96,476	***
Subject special quality:					
Carbon:					
Semifinished products	***	17,595	***	***	***
Cut bars and rods	8,722	37,313	21,326	8,521	***
Alloy:					
Semifinished products	***	6,779	***	***	***
Cut bars and rods	6,237	32,555	14,737	4,230	***
Carbon and alloy:					
Semifinished products	26,865	24,374	14,703	3,576	***
Cut bars and rods	14,959	69,868	36,063	12,751	5,475
Total	41,824	94,242	50,766	16,327	9,266
Free-machining:					
Carbon:					
Semifinished products	***	***	***	-	-
All bars and rods	***	***	3,520	-	-
Alloy:					
Semifinished products	0	0	0	-	-
All bars and rods	***	***	242	-	-
Carbon and alloy:					
Semifinished products	***	***	***	-	-
All bars and rods	15,787	10,985	3,762	-	-
Total	18,064	13,325	5,703	-	-
All special-quality:					
Carbon:					
Semifinished products	***	19,935	***	-	-
All bars and rods	29,290	61,515	34,175	-	-
Alloy:					
Semifinished products	***	6,779	***	-	-
All bars and rods	7,684	35,029	16,830	-	-
Carbon and alloy:					
Semifinished products	29,142	26,714	16,644	-	-
All bars and rods	36,974	96,544	51,005	-	-
Total	66,116	123,258	67,649	-	-

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

Table 30
Research and development expenses of U.S. producers of special quality steel products, by products, fiscal years 1989-91, January-March 1991, and January-March 1992

(In thousands of dollars)

Item	1989	1990	1991	January-March-- 1991	January-March-- 1992
All products	51,310	67,813	62,225	15,783	11,022
Subject special quality:					
Carbon:					
Semifinished products	***	***	***	***	***
Cut bars and rods	***	***	***	***	***
Alloy:					
Semifinished products	***	***	***	***	***
Cut bars and rods	***	**	***	***	***
Carbon and alloy:					
Semifinished products	***	***	***	***	***
Cut bars and rods	***	***	***	***	***
Total	12,830	20,482	20,242	5,283	4,222
Free-machining:					
Carbon:					
Semifinished products	***	***	***	-	-
All bars and rods	***	***	***	-	-
Alloy:					
Semifinished products	***	***	***	-	-
All bars and rods	***	***	***	-	-
Carbon and alloy:					
Semifinished products	***	***	***	-	-
All bars and rods	***	***	***	-	-
Total	624	1,778	1,836	-	-
All special-quality:					
Carbon:					
Semifinished products	***	***	***	-	-
All bars and rods	***	***	***	-	-
Alloy:					
Semifinished products	***	***	***	-	-
All bars and rods	***	***	***	-	-
Carbon and alloy:					
Semifinished products	***	***	***	-	-
All bars and rods	***	***	***	-	-
Total	13,745	21,775	21,632	-	-

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

Impact of Imports on Capital and Investment

The Commission requested U.S. producers to describe and explain the actual and potential negative effects of imports of certain special quality carbon and alloy steel products from Brazil on their existing development and production efforts (including efforts to develop a derivative or more advanced version of the product), growth, investment, and ability to raise capital. Their responses are shown in appendix J.

Consideration of the Question of Threat of Material Injury To an Industry in the United States

Section 771(7)(F)(i) of the Tariff Act of 1930 (19 U.S.C. § 1677(7)(F)(i)) provides that--

> In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the merchandise, the Commission shall consider, among other relevant economic factors[84]--
>
> (I) If a subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the subsidy is an export subsidy inconsistent with the Agreement),
>
> (II) any increase in production capacity or existing unused capacity in the exporting country likely to result in a significant increase in imports of the merchandise to the United States,
>
> (III) any rapid increase in United States market penetration and the likelihood that the penetration will increase to an injurious level,
>
> (IV) the probability that imports of the merchandise will enter the United States at prices that will have a depressing or suppressing effect on domestic prices of the merchandise,
>
> (V) any substantial increase in inventories of the merchandise in the United States,
>
> (VI) the presence of underutilized capacity for producing the merchandise in the exporting country,
>
> (VII) any other demonstrable adverse trends that indicate the probability that the importation (or sale for importation) of the merchandise (whether or not it is actually being imported at the time) will be the cause of actual injury,

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[84] Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that "Any determination by the Commission under this title that an industry in the United States is threatened with material injury shall be made on the basis of evidence that the threat of material injury is real and that actual injury is imminent. Such a determination may not be made on the basis of mere conjecture or supposition."

(VIII) the potential for product-shifting if production facilities owned or controlled by the foreign manufacturers, which can be used to produce products subject to investigation(s) under section 701 or 731 or to final orders under section 706 or 736, are also used to produce the merchandise under investigation,

(IX) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both), and

(X) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the like product.[85]

The available information on the volume, U.S. market penetration, and pricing of imports of the subject merchandise (items (III) and (IV) above) is presented in the section entitled "Consideration of the Causal Relationship Between Imports of the Subject Merchandise and the Alleged Material Injury;" and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts (item (X)) is presented in appendix J. Items (I) and (IX) above are not applicable in this investigation. Available information on U.S. inventories of the subject products (item (V)); foreign producers' operations, including the potential for "product-shifting" (items (II), (VI), and (VIII) above); any other threat indicators, if applicable (item (VII) above); and any dumping in third-country markets, follows. Other threat indicators have not been alleged or are otherwise not applicable.

Ability of Foreign Producers to Generate Exports and the Availability of Export Markets Other Than the United States

The petition identified five major manufacturers/exporters of special quality carbon and alloy steel products in Brazil: Acos Anhanguera (Villares)

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[85] Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other GATT member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

S/A - Anhanguera; Villares Industria de Base S/A - Vibasa; CIA Acos Especiais Itabria - Acesita; Acos Finos Piratini S/A - Piratini; and Mannesmann S/A. *** additional Brazilian manufacturers/exporters were identified as sources of imports of the subject products in responses to the Commission's importer's questionnaire and include ***.

Respondents' Data

Information on capacity, production, inventories, and shipments of the subject special quality carbon and alloy steel products for the five major Brazilian manufacturers/exporters identified in the petition was provided by counsel and are presented in table 31. Capacity of the five Brazilian producers, representing a significant portion of production of special quality carbon and alloy steel products in Brazil, remained unchanged during 1989-91, but then decreased by 4.0 percent during January-March 1992 when compared to the same period in 1991.

Exports to the United States by the Brazilian manufacturers accounted for 9.4 percent of total shipments of special quality carbon and alloy steel products in 1989; this share increased to 11.6 percent in 1990, and then decreased to 10.7 percent in 1991. The Brazilian firms reported operating at 76.7 percent of capacity during 1989, decreasing to 67.1 percent in 1990, and then declining to 61.8 percent during 1991.

Additional Information Regarding the Brazilian Industry

Available information on additional manufacturers/exporters of special quality carbon and alloy steel products in Brazil is presented below.[86]

Respondents represented by counsel

Anhanguera - Aços Anhanguera (Villares) SA.--Anhanguera, part of the Villares group, was established in 1966 and currently has 1,924 employees. Anhanguera's production is ingot cast, and the company has an annual capacity of 370,000 metric tons of raw steel and 292,300 metric tons of finished steel. The company's capital equipment includes three EAFs, one vacuum degasser, one blooming mill, one billet mill, two bar mills, four bar straightening machines and three peeling machines. Anhanguera's product line is composed of carbon steel ingots, billets, round and square bars, flats, and bright bars; alloy steel ingots, billets, round and square bars, and bright bars; and bearing steel.

Acesita - Cia Aços Especiais Itabira.--Acesita was established in 1944. The company's production is both ingot and continuously cast. Annual capacity is unknown. The company's capital equipment includes one blast furnace, one electric pig iron furnace, two BOFs and three EAFs, one slabbing mill, one blooming mill, three bar mills, one hot strip mill, two cold reduction mills, and one temper/skin pass mill. Acesita's product line is composed of foundry

[86] Iron and Steel Works of the World, pp. 28-50.

Table 31
Subject special quality carbon and alloy steel products: Brazilian capacity, production, capacity utilization, and shipments, by products, 1989-91, January-March 1991, January-March 1992, and projected 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992	Projected 1992
	Quantity (short tons)					
Carbon:						
Semifinished:						
Capacity	117,200	117,200	117,200	29,300	29,300	105,150
Production	108,517	85,373	95,240	24,347	15,866	74,294
Inventories	6,890	8,717	12,274	6,902	5,175	4,616
Shipments:						
Home market	75,319	51,279	56,615	12,457	13,674	55,833
Exports:						
U.S	23,802	9,021	8,602	1,691	72	8,565
Other countries	14,714	23,245	26,468	11,024	9,219	17,554
Total exports	38,516	32,266	35,070	12,715	9,291	26,119
Total shipments	113,835	83,545	91,685	25,172	22,965	81,952
Cut bars:						
Capacity	237,181	237,181	237,181	59,296	48,308	193,230
Production	211,055	191,916	181,438	32,721	38,756	154,045
Inventories	6,354	4,060	5,527	5,990	3,164	2,469
Shipments:						
Home market	163,961	150,422	127,263	18,782	25,695	108,181
Exports:						
U.S	12,426	15,254	10,340	2,998	4,666	9,435
Other countries	32,018	29,234	42,305	8,710	10,759	39,488
Total exports	44,444	44,488	52,645	11,708	15,425	48,923
Total shipments	208,405	194,910	179,908	30,490	41,120	157,104
Semifinished and bars:						
Capacity	354,381	354,381	354,381	88,596	77,608	298,380
Production	319,572	277,289	276,678	57,068	54,622	228,339
Inventories	13,244	12,777	17,801	12,892	8,339	7,085
Shipments:						
Home market	239,280	201,701	183,878	31,239	39,369	164,014
Exports:						
U.S	36,228	24,275	18,942	4,689	4,738	18,000
Other countries	46,732	52,479	68,773	19,734	19,978	57,042
Total exports	82,960	76,754	87,715	24,423	24,716	75,042
Total shipments	322,240	278,455	271,593	55,662	64,085	239,056
Alloy:						
Semifinished:						
Capacity	224,141	224,141	224,141	56,035	58,658	234,630
Production	190,475	192,252	175,069	40,229	33,371	197,491
Inventories	15,803	12,582	7,785	10,555	8,912	9,145
Shipments:						
Home market	100,405	86,279	77,731	39,680	15,311	85,744
Exports:						
U.S	32,207	48,040	46,261	18,370	5,884	43,439
Other countries	79,300	67,316	50,989	13,485	17,374	66,948
Total exports	111,507	115,356	97,250	31,855	23,258	110,387
Total shipments	211,912	201,635	174,981	71,535	38,569	196,131

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Table 31--Continued
Subject special quality carbon and alloy steel products: Brazilian capacity, production capacity utilization, and shipments, by products, 1989-91, January-March 1991, January-March 1992, and projected 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992	Projected 1992
	Quantity (short tons)					
Alloy--Continued:						
Cut bars:						
Capacity	280,394	280,394	280,394	70,098	63,840	252,760
Production	260,927	236,613	212,221	40,938	49,752	205,367
Inventories	8,371	8,044	7,558	7,889	10,235	6,504
Shipments:						
Home market	185,600	185,351	150,223	25,514	31,384	140,174
Exports:						
U.S.	9,416	16,489	9,907	3,921	4,425	8,752
Other countries	74,371	35,089	52,577	11,659	11,454	52,994
Total exports	83,787	51,578	62,484	15,580	15,879	61,746
Total shipments	269,387	236,929	212,707	41,094	47,263	201,920
Semifinished and bars:						
Capacity	504,535	504,535	504,535	126,133	122,498	487,390
Production	451,402	428,865	387,290	81,167	83,123	402,858
Inventories	24,174	20,626	5,343	18,444	19,147	15,649
Shipments:						
Home market	286,005	271,630	227,954	65,194	46,695	198,742
Exports:						
U.S.	41,623	64,529	54,911	24,847	17,748	47,190
Other countries	153,671	102,405	103,566	25,144	28,828	119,942
Total exports	195,294	166,934	158,477	49,991	46,576	167,132
Total shipments	481,299	438,564	386,431	115,185	93,271	365,874
Carbon and alloy:						
Semifinished:						
Capacity	821,341	821,341	821,341	205,335	207,958	819,780
Production	599,026	504,047	462,058	106,309	102,375	271,785
Inventories	22,693	21,299	20,059	17,457	14,087	13,761
Shipments:						
Home market	210,254	170,155	167,462	57,514	32,722	141,577
Exports:						
U.S.	63,918	62,147	60,500	25,502	15,295	52,004
Other countries	95,920	93,083	79,629	24,560	26,593	84,502
Total exports	159,838	155,230	140,129	50,062	41,888	136,506
Total shipments	370,092	325,385	307,591	107,576	74,610	278,083
Cut bars:						
Capacity	657,575	657,575	657,575	164,394	147,148	585,990
Production	535,492	489,043	451,834	83,628	100,465	359,412
Inventories	14,725	12,104	13,085	13,879	13,399	8,973
Shipments:						
Home market	413,279	387,473	329,682	53,799	69,149	248,355
Exports:						
U.S.	21,842	31,743	20,247	6,919	9,091	18,187
Other countries	106,542	64,560	95,410	20,412	22,213	92,482
Total exports	128,384	96,303	115,657	27,331	31,304	110,669
Total shipments	541,663	483,776	445,339	81,130	100,453	359,024
Semifinished and bars:[1]						
Capacity	1,478,916	1,478,916	1,478,916	369,729	355,106	1,405,770
Production	1,134,518	993,090	913,892	189,937	202,840	631,197
Inventories	37,418	33,403	33,144	31,336	27,486	22,734
Shipments:						
Home market	623,533	557,628	497,144	111,313	101,871	389,932
Exports:						
U.S.	85,760	93,890	80,747	32,421	24,386	70,191
Other countries	202,462	157,643	175,039	44,972	48,806	176,984
Total exports	288,222	251,533	255,786	77,393	73,192	247,175
Total shipments	911,755	809,161	752,930	188,706	175,063	637,107

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Table 31--Continued
Subject special quality carbon and alloy steel products: Brazilian capacity, production, capacity utilization, and shipments, by products, 1989-91, January-March 1991, January-March 1992, and projected 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992	Projected 1992
	Ratios and shares (percent)					
Carbon:						
Semifinished:						
Capacity utilization........	92.6	72.8	81.3	83.1	54.2	70.7
Inventories to production.........	6.3	10.2	12.9	7.1	8.2	6.2
Share of shipments:						
Home market........	66.2	61.4	61.7	49.5	59.5	68.1
Exports:						
U.S.............	20.9	10.8	9.4	6.7	0.3	10.5
Other countries..	12.9	27.8	28.9	43.8	40.1	21.4
Cut bars:						
Capacity utilization........	89.0	80.9	76.5	55.2	80.2	79.7
Inventories to production.........	3.0	2.1	3.0	4.6	2.0	1.6
Share of shipments:						
Home market........	78.7	77.2	70.7	61.6	62.5	68.9
Exports:						
U.S.............	6.0	7.8	5.7	9.8	11.3	6.0
Other countries..	15.4	15.0	23.5	28.6	26.2	25.1
Semifinished and bars:						
Capacity utilization........	90.2	78.2	78.1	64.4	70.4	76.5
Inventories to production.........	4.1	4.6	6.4	5.6	3.8	3.1
Share of shipments:						
Home market........	74.3	72.4	67.7	56.1	61.4	68.6
Exports:						
U.S.............	11.2	8.7	7.0	8.4	7.4	7.5
Other countries..	14.5	18.8	25.3	35.5	31.2	23.9
Alloy:						
Semifinished:						
Capacity utilization........	85.0	85.8	78.1	71.8	56.9	84.2
Inventories to production.........	8.3	6.5	4.4	6.6	6.7	4.6
Share of shipments:						
Home market........	47.4	42.8	44.7	53.6	33.3	35.7
Exports:						
U.S.............	15.2	23.8	25.9	28.2	29.0	23.4
Other countries..	37.4	33.4	29.4	18.2	37.8	40.8
Cut bars:						
Capacity utilization........	93.1	84.4	75.7	58.4	77.9	81.2
Inventories to production.........	3.2	3.4	3.6	4.8	5.1	3.2
Share of shipments:						
Home market........	68.9	78.2	70.6	62.1	66.4	69.4
Exports:						
U.S.............	3.5	7.0	4.7	9.5	9.4	4.3
Other countries..	27.6	14.8	24.7	28.4	24.2	26.2

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Table 31--Continued
Subject special quality carbon and alloy steel products: Brazilian capacity, production, capacity utilization, and shipments, by products, 1989-91, January-March 1991, January-March 1992, and projected 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992	Projected 1992
	Ratios and shares (percent)					
Alloy--Continued:						
Semifinished and bars:						
Capacity utilization........	89.5	85.0	76.8	64.4	67.9	82.7
Inventories to production.........	5.4	4.8	4.0	5.7	5.8	3.9
Share of shipments:						
Home market........	59.4	61.9	59.0	56.6	50.1	54.3
Exports:						
U.S..............	8.6	14.7	14.2	21.6	19.0	12.9
Other countries..	31.9	23.4	26.8	21.8	30.9	32.8
Carbon and alloy:						
Semifinished:						
Capacity utilization........	72.9	61.4	56.3	51.8	49.2	80.0
Inventories to production.........	3.8	4.2	4.3	4.1	3.4	5.1
Share of shipments:						
Home market........	56.8	52.3	54.4	53.5	43.9	50.9
Exports:						
U.S..............	17.3	19.1	19.7	23.7	20.5	18.7
Other countries..	25.9	28.6	25.9	22.8	35.6	30.4
Cut bars:						
Capacity utilization........	91.2	82.8	76.1	56.9	78.9	80.6
Inventories to production.........	3.1	2.8	3.3	4.7	3.8	2.5
Share of shipments:						
Home market........	73.2	77.8	70.7	61.9	64.6	69.2
Exports:						
U.S..............	4.6	7.4	5.2	9.7	10.3	5.1
Other countries..	22.3	14.9	24.2	28.5	25.1	25.8
Semifinished and bars:						
Capacity utilization........	76.7	67.1	61.8	51.4	57.1	80.3
Inventories to production.........	3.3	3.4	3.6	4.1	3.4	3.6
Share of shipments:						
Home market........	68.4	68.9	66.0	59.0	58.2	61.2
Exports:						
U.S..............	9.4	11.6	10.7	17.2	13.9	11.0
Other countries..	22.2	19.5	23.2	23.8	27.9	27.8

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

pig iron; carbon steel ingots, slabs, blooms, billets, round and square bars, flats, bright bars, and hot- and cold-rolled uncoated sheet and coil; stainless steel ingots, slabs, blooms, billets, round and square bars, and flats; alloy steel ingots, slabs, blooms, billets, round and square bars, flats, hot and cold rolled hoop and strip, hot- and cold-rolled sheet and coil, and electrical sheet and coil; free-cutting steel; high speed steel; leaded steel; and iron, steel and non-ferrous castings.

Mannesmann - Mannesmann S/A.--Mannesmann, which is largely owned by Mannesmann AG, Germany, was established in 1952 and currently has 7,651 employees. Mannesmann's production is both ingot and continuously cast, and the company has an annual capacity of 7,000 metric tonnes of pig iron and one million metric tons of raw steel. The company's capital equipment includes two blast furnaces, three electric pig iron furnaces, one basic oxygen converter, one EAF, one continuous caster, one blooming and billet mill, one bar mill, four seamless tube and pipe mills, and other pipe mills. Mannesmann's product line is composed of pig iron; carbon steel ingots, billets, round and square bars, flats, hexagons, seamless tubes and pipes, oil country tubular goods, cold-drawn tubes and pipes, and forged tubes and pipes; and alloy steel ingots, billets, round and square bars, flats, hexagons, seamless tubes and pipes, OCTG, and forged tubes.

Piratini - Aços Finos Piratini SA.--Piratini, formerly a subsidiary of Siderbras, was established in 1961 and currently has 2,400 employees. The company's production is currently ingot cast, but plans are underway to install a continuous caster. Annual capacity is unknown. The company's capital equipment includes a direct reduction plant, one EAF, one billet mill, one bar mill, and one wire rod mill. Piratini's product line is composed of carbon steel billets, wire rod, round and square bars, and flats; stainless steel billets, wire rod, round and square bars, and flats; and alloy steel billets, wire rod, round and square bars, and flats.

Vibasa - Villares Indústrias de Base SA.--Vibasa, part of the Villares group, was established in 1975 and currently has 2,025 employees. Vibasa's production is ingot cast, and the company has an annual capacity of 36,000 metric tonnes of pig iron, 400,000 metric tons of raw steel, and 310,000 metric tons of finished steel. The company's capital equipment includes three EAFs, a vacuum degassing system, one blooming mill, one billet mill, one bar mill, a heavy foundry/forge, and centrifugal casting machines for tubes. Vibasa's product line is composed of foundry pig iron; carbon steel ingots, blooms, billets, wire rod, round and square bars, flats, hexagons, and centrifugally cast tubes; alloy steel ingots, blooms, billets, wire rod, round and square bars, flats, and hexagons; bearing steel; free-cutting steel; leaded steel; and spring steel.

Other Brazilian manufacturers/exporters

*   *   *   *   *   *   *

EC Dumping Duty Order

In February 1990 the Commission of the European Communities received a complaint lodged by the European Confederation of Iron and Steel Industries (Eurofer) on behalf of the majority of producers of certain semifinished products of alloy steel. The complaint contained evidence of dumping and of material injury caused by imports of certain semifinished products of special engineering alloy steel, of rectangular (including square) cross-section, hot-rolled or obtained by continuous casting, originating in Brazil and Turkey. The investigation covered the period April 1, 1989, to March 31, 1990. On March 30, 1992,[87,88] the EC issued its preliminary decision which established weighted-average margins of dumping and price undercutting margins, and determined that the dumped imports caused material injury to the Community industry. The EC determined that the prices of the Brazilian exporters should be increased by their price undercutting margin or their dumping margin, whichever is the lower. The margins (in percent) and definitive duties imposed are as follows:[89]

Firm	Dumping margin	Undercutting margin	Definitive duty
Vibasa.........	7.4	22.0	4.9
Anhanguera.....	15.0	26.0	15.0
Acesita........	37.9	15.0	8.5
Piratini.......	1.7	9.0	1.7
All other......	(1)	(1)	15.0

[1] Not applicable.

U.S. Importers' Inventories

U.S. importers of special quality carbon and alloy steel products from Brazil reported almost no inventories of the subject hot-rolled bar products, but inventories of semifinished products were reported, ***. Inventories and shares of imports (in percent) of semifinished carbon and alloy products from Brazil are listed below.

* * * * * * *

[87] Commission (Provisional) Decision No. 891/92/ECSC, Official Journal of the European Communities (No. L 95/26, April 9, 1992) is presented in app. K.

[88] Due to the complexity of the proceeding, the investigation exceeded the normal period of one year.

[89] Commission (Definitive) Decision No. 1775/92/ECSC of June 30, 1992, Official Journal of the European Communities (No. L 182/23, July 2, 1992) is also presented in app. K.

CONSIDERATION OF THE CAUSAL RELATIONSHIP BETWEEN IMPORTS OF THE SUBJECT PRODUCTS AND THE ALLEGED MATERIAL INJURY

Imports

During the course of this investigation questions have arisen as to the reliability of information and data concerning the level of subject imports from Brazil. Counsel for the Brazilian respondents argues that import volume based on official import statistics, which petitioners rely upon for market penetration, is overstated by virtue of the fact that merchant quality carbon steel products are contained within the broad HTS subheadings for semifinished nonalloy steel products.[90] Counsel for petitioners argues that official import statistics are reliable in that (a) average unit values approximate the price of special quality steel products and (b) the merchant classification assigned by the respondents to the *** is not sustainable as the Brazilian manufacturer/supplier employs refining operations that include a vacuum degassing unit which is associated with the production of special quality steel products.[91]

The following is a review of respondents' postconference brief regarding the controversial semifinished carbon imports from Brazil.

Exhibit 3B

It is difficult to determine from the paperwork whether the two sets of *** information are double counting, or whether this information double counts what is presented in *** or exhibit 3C.

*   *   *   *   *   *   *

Based on discussions with industry experts and metallurgists, it would appear that the products listed below are the special quality carbon products that are the subject of this investigation. However, it is difficult to make a definitive finding without knowledge of the end use or the specifications.

*   *   *   *   *   *   *

Exhibit 3C

*   *   *   *   *   *   *

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[90] Postconference brief of Willkie, Farr & Gallagher, p. 19, exh. 3.
[91] July 10, 1992, submission by Mr. DeProst, Stewart & Stewart, p. 1 and attachments.

For purposes of the Commission's analysis of import volumes and values, data are presented in table 32 that contain U.S. imports of special quality carbon and alloy steel products based on responses to the Commission's importer's questionnaire and official U.S. import statistics.

Market Penetration of Imports

Shares of apparent U.S. consumption accounted for by imports of the subject special quality carbon and alloy steel products are presented in tables 33A-C. See also appendix L for apparent consumption and market penetration tables presenting data based on cumulation of imports subject to this investigation with imports of hot-rolled lead and bismuth carbon steel bars and rods.

Table 32
Subject special-quality steel products: U.S. imports, by products and by sources, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Brazil	132,935	107,583	145,292	45,470	36,163
Other sources	186,184	279,216	277,414	102,055	118,412
Total	319,119	386,799	422,706	147,525	154,575
Alloy:					
Brazil	39,686	32,747	67,683	15,457	17,003
Other sources	72,175	76,476	71,482	21,173	17,991
Total	111,861	109,223	139,165	36,630	34,994
Carbon and alloy:					
Brazil	172,621	140,330	212,975	60,927	53,166
Other sources	258,359	355,692	348,896	123,228	136,403
Total	430,980	496,022	561,871	184,155	189,569
Cut bars and rods:					
Carbon:					
Brazil	25,673	28,074	29,429	8,424	4,559
Other sources	188,154	133,155	94,961	21,030	26,424
Total	213,827	161,229	124,390	29,454	30,983
Alloy:					
Brazil	3,141	13,673	13,304	3,699	3,791
Other sources	121,096	89,119	113,131	26,463	28,919
Total	124,237	102,792	126,435	30,162	32,710
Carbon and alloy:					
Brazil	28,814	41,747	42,733	12,123	8,350
Other sources	309,250	222,274	208,092	47,493	55,343
Total	338,064	264,021	250,825	59,616	63,693
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Brazil	41,876	28,738	39,375	13,032	9,556
Other sources	59,637	80,421	79,305	29,422	33,774
Total	101,513	109,159	118,680	42,454	43,330
Alloy:					
Brazil	16,846	13,136	27,649	6,230	6,311
Other sources	31,529	32,647	26,238	7,747	6,153
Total	48,375	45,783	53,887	13,977	12,464
Carbon and alloy:					
Brazil	58,722	41,874	67,024	19,262	15,867
Other sources	91,166	113,068	105,543	37,169	39,927
Total	149,888	154,942	172,567	56,431	55,794
Cut bars and rods:					
Carbon:					
Brazil	11,755	12,069	11,647	3,613	2,284
Other sources	80,521	56,139	41,465	8,895	12,404
Total	92,276	68,208	53,112	12,508	14,688
Alloy:					
Brazil	1,740	6,174	6,319	1,870	1,506
Other sources	63,985	49,734	59,730	14,467	14,271
Total	65,725	55,908	66,049	16,337	15,777
Carbon and alloy:					
Brazil	13,495	18,243	17,966	5,483	3,790
Other sources	144,506	105,873	101,195	23,362	26,675
Total	158,001	124,116	119,161	28,845	30,465

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Table 32--Continued
Subject special-quality steel products: U.S. imports, by products and by sources, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Unit value (per short ton)				
Semifinished:					
Carbon:					
Brazil	$315.01	$267.12	$271.01	$286.61	$264.25
Other sources	320.31	288.02	285.87	288.30	285.22
Average	318.10	282.21	280.76	287.77	280.32
Alloy:					
Brazil	424.48	401.14	408.51	403.05	371.17
Other sources	436.84	426.89	367.06	365.89	342.00
Average	432.46	419.17	387.22	381.57	356.18
Carbon and alloy:					
Brazil	340.18	298.40	314.70	316.15	298.44
Other sources	352.87	317.88	302.51	301.63	292.71
Average	347.78	312.37	307.13	306.43	294.32
Cut bars and rods:					
Carbon:					
Brazil	457.87	429.90	395.77	428.89	500.99
Other sources	427.95	421.61	436.65	422.97	469.42
Average	431.55	423.05	426.98	424.66	474.07
Alloy:					
Brazil	553.96	451.55	474.97	505.54	397.26
Other sources	528.38	558.06	527.97	546.69	493.48
Average	529.03	543.89	522.39	541.64	482.33
Carbon and alloy:					
Brazil	468.35	436.99	420.42	452.28	453.89
Other sources	467.28	476.32	486.30	491.90	481.99
Average	467.37	470.10	475.08	483.85	478.31

Note.--Because of rounding, figures may not add to the totals shown; unit values are calculated from unrounded figures.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table 33A
Subject special quality steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	3,149,483	3,683,546	3,147,807	850,306	957,287
U.S. imports from--					
Brazil	132,935	107,583	145,292	45,470	36,163
Other sources	186,184	279,216	277,414	102,055	118,412
Total	319,119	386,799	422,706	147,525	154,575
Apparent consumption	3,468,602	4,070,345	3,570,513	997,831	1,111,862
Alloy:					
Producers' U.S. shipments	1,586,036	1,815,413	1,574,050	412,304	407,453
U.S. imports from--					
Brazil	39,686	32,747	67,683	15,457	17,003
Other sources	72,175	76,476	71,482	21,173	17,991
Total	111,861	109,223	139,165	36,630	34,994
Apparent consumption	1,697,897	1,924,636	1,713,215	448,934	442,447
Carbon and alloy:					
Producers' U.S. shipments	4,735,519	5,498,959	4,721,857	1,262,610	1,364,740
U.S. imports from--					
Brazil	172,621	140,330	212,975	60,927	53,166
Other sources	258,359	355,692	348,896	123,228	136,403
Total	430,980	496,022	561,871	184,155	189,569
Apparent consumption	5,166,499	5,994,981	5,283,728	1,446,765	1,554,309
Cut bars and rods:					
Carbon:					
Producers' U.S. shipments	1,984,278	2,085,383	1,852,973	444,573	495,761
U.S. imports from--					
Brazil	25,673	28,074	29,429	8,424	4,559
Other sources	188,154	133,155	94,961	21,030	26,424
Total	213,827	161,229	124,390	29,454	30,983
Apparent consumption	2,198,105	2,246,612	1,977,363	474,027	526,744
Alloy:					
Producers' U.S. shipments	1,106,477	1,249,277	1,145,481	281,934	288,450
U.S. imports from--					
Brazil	3,141	13,673	13,304	3,699	3,791
Other sources	121,096	89,119	113,131	26,463	28,919
Total	124,237	102,792	126,435	30,162	32,710
Apparent consumption	1,230,714	1,352,069	1,271,916	312,096	321,160
Carbon and alloy:					
Producers' U.S. shipments	3,090,755	3,334,660	2,998,454	726,507	784,211
U.S. imports from--					
Brazil	28,814	41,747	42,733	12,123	8,350
Other sources	309,250	222,274	208,092	47,493	55,343
Total	338,064	264,021	250,825	59,616	63,693
Apparent consumption	3,428,819	3,598,681	3,249,279	786,123	847,904

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Table 33A--Continued
Subject special quality steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	997,278	1,072,137	947,417	247,843	276,228
U.S. imports from--					
Brazil	41,876	28,738	39,375	13,032	9,556
Other sources	59,637	80,421	79,305	29,422	33,774
Total	101,513	109,159	118,680	42,454	43,330
Apparent consumption	1,098,791	1,181,296	1,066,097	290,297	319,558
Alloy:					
Producers' U.S. shipments	676,043	730,527	647,157	176,804	162,776
U.S. imports from--					
Brazil	16,846	13,136	27,649	6,230	6,311
Other sources	31,529	32,647	26,238	7,747	6,153
Total	48,375	45,783	53,887	13,977	12,464
Apparent consumption	724,418	776,310	701,044	190,781	175,240
Carbon and alloy:					
Producers' U.S. shipments	1,673,321	1,802,664	1,594,574	424,647	439,004
U.S. imports from--					
Brazil	58,722	41,874	67,024	19,262	15,867
Other sources	91,166	113,068	105,543	37,169	39,927
Total	149,888	154,942	172,567	56,431	55,794
Apparent consumption	1,823,209	1,957,606	1,767,141	481,078	494,798
Cut bars and rods:					
Carbon:					
Producers' U.S. shipments	902,568	914,788	1,226,378	195,547	208,084
U.S. imports from--					
Brazil	11,755	12,069	11,647	3,613	2,284
Other sources	80,521	56,139	41,465	8,895	12,404
Total	92,276	68,208	53,112	12,508	14,688
Apparent consumption	994,844	982,996	1,279,490	208,055	222,772
Alloy:					
Producers' U.S. shipments	689,448	723,855	648,052	164,652	161,530
U.S. imports from--					
Brazil	1,740	6,174	6,319	1,870	1,506
Other sources	63,985	49,734	59,730	14,467	14,271
Total	65,725	55,908	66,049	16,337	15,777
Apparent consumption	755,173	779,763	714,101	180,989	177,307
Carbon and alloy:					
Producers' U.S. shipments	1,592,016	1,638,643	1,874,430	360,199	369,614
U.S. imports from--					
Brazil	13,495	18,243	17,966	5,483	3,790
Other sources	144,506	105,873	101,195	23,362	26,675
Total	158,001	124,116	119,161	28,845	30,465
Apparent consumption	1,750,017	1,762,759	1,993,591	389,044	400,079

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Table 33A--Continued
Subject special quality steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Share of the quantity of U.S. consumption (percent)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	90.8	90.5	88.2	85.2	86.1
U.S. imports from--					
Brazil	3.8	2.6	4.1	4.6	3.3
Other sources	5.4	6.9	7.8	10.2	10.6
Total	9.2	9.5	11.8	14.8	13.9
Alloy:					
Producers' U.S. shipments	93.4	94.3	91.9	91.8	92.1
U.S. imports from--					
Brazil	2.3	1.7	4.0	3.4	3.8
Other sources	4.3	4.0	4.2	4.7	4.1
Total	6.6	5.7	8.1	8.2	7.9
Carbon and alloy:					
Producers' U.S. shipments	91.7	91.7	89.4	87.3	87.8
U.S. imports from--					
Brazil	3.3	2.3	4.0	4.2	3.4
Other sources	5.0	5.9	6.6	8.5	8.8
Total	8.3	8.3	10.6	12.7	12.2
Cut bars and rods:					
Carbon:					
Producers' U.S. shipments	90.3	92.8	93.7	93.8	94.1
U.S. imports from--					
Brazil	1.2	1.2	1.5	1.8	.9
Other sources	8.6	5.9	4.8	4.4	5.0
Total	9.7	7.2	6.3	6.2	5.9
Alloy:					
Producers' U.S. shipments	89.9	92.4	90.1	90.3	89.8
U.S. imports from--					
Brazil	.3	1.0	1.0	1.2	1.2
Other sources	9.8	6.6	8.9	8.5	9.0
Total	10.1	7.6	9.9	9.7	10.2
Carbon and alloy:					
Producers' U.S. shipments	90.1	92.7	92.3	92.4	92.5
U.S. imports from--					
Brazil	.8	1.2	1.3	1.5	1.0
Other sources	9.0	6.2	6.4	6.0	6.5
Total	9.9	7.3	7.7	7.6	7.5

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Table 33A--Continued
Subject special quality steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Share of the value of U.S. consumption (percent)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	90.8	90.8	88.9	85.4	86.4
U.S. imports from--					
Brazil	3.8	2.4	3.7	4.5	3.0
Other sources	5.4	6.8	7.4	10.1	10.6
Total	9.2	9.2	11.1	14.6	13.6
Alloy:					
Producers' U.S. shipments	93.3	94.1	92.3	92.7	92.9
U.S. imports from--					
Brazil	2.3	1.7	3.9	3.3	3.6
Other sources	4.4	4.2	3.7	4.1	3.5
Total	6.7	5.9	7.7	7.3	7.1
Carbon and alloy:					
Producers' U.S. shipments	91.8	92.1	90.2	88.3	88.7
U.S. imports from--					
Brazil	3.2	2.1	3.8	4.0	3.2
Other sources	5.0	5.8	6.0	7.7	8.1
Total	8.2	7.9	9.8	11.7	11.3
Cut bars and rods:					
Carbon:					
Producers' U.S. shipments	90.7	93.1	95.8	94.0	93.4
U.S. imports from--					
Brazil	1.2	1.2	.9	1.7	1.0
Other sources	8.1	5.7	3.2	4.3	5.6
Total	9.3	6.9	4.2	6.0	6.6
Alloy:					
Producers' U.S. shipments	91.3	92.8	90.8	91.0	91.1
U.S. imports from--					
Brazil	.2	.8	.9	1.0	.8
Other sources	8.5	6.4	8.4	8.0	8.0
Total	8.7	7.2	9.2	9.0	8.9
Carbon and alloy:					
Producers' U.S. shipments	91.0	93.0	94.0	92.6	92.4
U.S. imports from--					
Brazil	.8	1.0	.9	1.4	.9
Other sources	8.3	6.0	5.1	6.0	6.7
Total	9.0	7.0	6.0	7.4	7.6

Note.--Because of rounding, shares may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table 33B
Free-machining steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	840,712	893,553	694,517	144,220	224,217
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	83,246	69,140	68,365	23,618	27,962
Apparent consumption	923,958	962,693	762,882	167,838	252,179
Alloy:					
Producers' U.S. shipments	87,785	102,075	76,539	23,682	21,873
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	2,948	6,170	9,049	1,511	1,089
Apparent consumption	90,733	108,245	85,588	25,193	22,962
Carbon and alloy:					
Producers' U.S. shipments	928,497	995,628	771,056	167,902	246,090
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	86,194	75,310	77,414	25,129	29,051
Apparent consumption	1,014,691	1,070,938	848,470	193,031	275,141
Bars and rods:					
Carbon:					
Producers' U.S. shipments	820,711	851,428	661,564	152,961	212,434
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	272,855	257,769	263,313	45,011	48,378
Apparent consumption	1,093,566	1,109,197	924,877	197,972	260,812
Alloy:					
Producers' U.S. shipments	85,229	93,976	73,562	24,207	20,091
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	16,392	11,457	16,466	3,712	2,501
Apparent consumption	101,621	105,433	90,028	27,919	22,592
Carbon and alloy:					
Producers' U.S. shipments	905,940	945,404	735,126	177,168	232,525
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	289,247	269,226	279,779	48,723	50,879
Apparent consumption	1,195,187	1,214,630	1,014,905	225,891	283,404

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Table 33B--Continued
Free-machining steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	275,441	288,078	227,670	47,595	75,081
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	32,258	26,351	26,146	9,260	9,997
Apparent consumption	307,699	314,429	253,816	56,855	85,078
Alloy:					
Producers' U.S. shipments	48,017	47,683	36,032	11,431	9,867
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	1,368	4,170	6,873	1,147	885
Apparent consumption	49,385	51,853	42,905	12,578	10,752
Carbon and alloy:					
Producers' U.S. shipments	323,458	335,761	263,702	59,026	84,948
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	33,626	30,521	33,019	10,407	10,882
Apparent consumption	357,084	366,282	296,721	69,433	95,830
Bars and rods:					
Carbon:					
Producers' U.S. shipments	414,121	420,641	323,423	77,212	107,327
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	128,123	117,766	121,595	19,389	19,999
Apparent consumption	542,244	538,407	445,018	96,601	127,326
Alloy:					
Producers' U.S. shipments	62,556	67,057	50,096	17,000	13,536
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	11,370	8,220	12,662	2,902	2,013
Apparent consumption	73,926	75,277	62,758	19,902	15,549
Carbon and alloy:					
Producers' U.S. shipments	476,677	487,698	373,519	94,212	120,863
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	139,493	125,986	134,257	22,291	22,012
Apparent consumption	616,170	613,684	507,776	116,503	142,875

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Table 33B--Continued
Free-machining steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Share of the quantity of U.S. consumption (percent)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	91.0	92.8	91.0	85.9	88.9
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	9.0	7.2	9.0	14.1	11.1
Alloy:					
Producers' U.S. shipments	96.8	94.3	89.4	94.0	95.3
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	3.2	5.7	10.6	6.0	4.7
Carbon and alloy:					
Producers' U.S. shipments	91.5	93.0	90.9	87.0	89.4
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	8.5	7.0	9.1	13.0	10.6
Bars and rods:					
Carbon:					
Producers' U.S. shipments	75.0	76.8	71.5	77.3	81.5
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	25.0	23.2	28.5	22.7	18.5
Alloy:					
Producers' U.S. shipments	83.9	89.1	81.7	86.7	88.9
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	16.1	10.9	18.3	13.3	11.1
Carbon and alloy:					
Producers' U.S. shipments	75.8	77.8	72.4	78.4	82.0
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	24.2	22.2	27.6	21.6	18.0

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Table 33B--Continued
Free-machining steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Share of the value of U.S. consumption (percent)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	89.5	91.6	89.7	83.7	88.2
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	10.5	8.4	10.3	16.3	11.8
Alloy:					
Producers' U.S. shipments	97.2	92.0	84.0	90.9	91.8
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	2.8	8.0	16.0	9.1	8.2
Carbon and alloy:					
Producers' U.S. shipments	90.6	91.7	88.9	85.0	88.6
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	9.4	8.3	11.1	15.0	11.4
Bars and rods:					
Carbon:					
Producers' U.S. shipments	76.4	78.1	72.7	79.9	84.3
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	23.6	21.9	27.3	20.1	15.7
Alloy:					
Producers' U.S. shipments	84.6	89.1	79.8	85.4	87.1
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	15.4	10.9	20.2	14.6	12.9
Carbon and alloy:					
Producers' U.S. shipments	77.4	79.5	73.6	80.9	84.6
U.S. imports from--					
Brazil	***	***	***	***	***
Other sources	***	***	***	***	***
Total	22.6	20.5	26.4	19.1	15.4

Note.--Because of rounding, shares may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Table 33C
All special quality steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Quantity (short tons)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	3,547,850	4,117,781	3,488,174	920,777	1,075,319
U.S. imports from--					
Brazil	132,935	107,583	145,292	45,470	36,163
Other sources	258,983	338,647	331,590	120,287	143,338
Total	391,918	446,230	476,882	165,757	179,501
Apparent consumption	3,939,768	4,564,011	3,965,056	1,086,534	1,254,820
Alloy:					
Producers' U.S. shipments	1,615,932	1,844,641	1,595,542	416,642	413,948
U.S. imports from--					
Brazil	39,686	32,747	67,683	15,457	17,003
Other sources	75,123	77,156	71,482	21,173	17,991
Total	114,809	109,903	139,165	36,630	34,994
Apparent consumption	1,730,741	1,954,544	1,734,707	453,272	448,942
Carbon and alloy:					
Producers' U.S. shipments	5,163,782	5,962,422	5,083,716	1,337,419	1,489,267
U.S. imports from--					
Brazil	172,621	140,330	212,975	60,927	53,166
Other sources	334,106	415,803	403,072	141,460	161,329
Total	506,727	556,133	616,047	202,387	214,495
Apparent consumption	5,670,509	6,518,555	5,699,763	1,539,806	1,703,762
Bars and rods (including imports of semifinished):					
Carbon:					
Producers' U.S. shipments	4,656,526	4,669,781	4,318,155	1,051,300	1,203,180
U.S. imports from--					
Brazil	158,608	135,657	174,721	53,894	40,722
Other sources	1,662,369	1,564,354	1,342,481	302,720	451,433
Total	1,820,977	1,700,011	1,517,202	356,614	492,155
Apparent consumption	6,477,503	6,369,792	5,835,357	1,407,914	1,695,335
Alloy:					
Producers' U.S. shipments	1,307,308	1,462,222	1,333,746	328,926	342,556
U.S. imports from--					
Brazil	42,827	46,420	80,987	19,156	20,794
Other sources	295,388	245,771	263,848	66,227	73,388
Total	338,215	292,191	344,835	85,383	94,182
Apparent consumption	1,645,523	1,754,413	1,678,581	414,309	436,738
Carbon and alloy:					
Producers' U.S. shipments	5,963,834	6,132,003	5,651,901	1,380,226	1,545,736
U.S. imports from--					
Brazil	201,435	182,077	255,708	73,050	61,516
Other sources	1,957,757	1,810,125	1,606,329	368,947	524,821
Total	2,159,192	1,992,202	1,862,037	441,997	586,337
Apparent consumption	8,123,026	8,124,205	7,513,938	1,822,223	2,132,073

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Table 33C--Continued
All special quality steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Value (1,000 dollars)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	1,137,628	1,221,802	1,065,213	272,073	317,349
U.S. imports from--					
Brazil	41,876	28,738	39,375	13,032	9,556
Other sources	88,061	103,468	100,138	36,645	42,708
Total	129,937	132,206	139,513	49,677	52,264
Apparent consumption	1,267,565	1,354,008	1,204,726	321,750	369,613
Alloy:					
Producers' U.S. shipments	690,083	743,929	655,521	178,481	165,216
U.S. imports from--					
Brazil	16,846	13,136	27,649	6,230	6,311
Other sources	32,897	33,016	26,238	7,747	6,153
Total	49,743	46,152	53,887	13,977	12,464
Apparent consumption	739,826	790,081	709,408	192,458	177,680
Carbon and alloy:					
Producers' U.S. shipments	1,827,711	1,965,731	1,720,734	450,554	482,565
U.S. imports from--					
Brazil	58,722	41,874	67,024	19,262	15,867
Other sources	120,958	136,484	126,376	44,392	48,861
Total	179,680	178,358	193,400	63,654	64,728
Apparent consumption	2,007,391	2,144,089	1,914,134	514,208	547,293
Bars and rods (including imports of semifinished):					
Carbon:					
Producers' U.S. shipments	2,029,636	2,025,568	2,229,381	443,168	496,767
U.S. imports from--					
Brazil	53,631	40,807	51,022	16,645	11,840
Other sources	666,333	600,602	514,629	112,162	160,178
Total	719,964	641,409	565,651	128,807	172,018
Apparent consumption	2,749,600	2,666,977	2,795,032	571,975	668,785
Alloy:					
Producers' U.S. shipments	815,386	854,130	760,742	192,920	193,708
U.S. imports from--					
Brazil	18,586	19,310	33,968	8,100	7,817
Other sources	158,850	132,416	135,501	34,697	35,574
Total	177,436	151,726	169,469	42,797	43,391
Apparent consumption	992,822	1,005,856	930,211	235,717	237,099
Carbon and alloy:					
Producers' U.S. shipments	2,845,022	2,879,698	2,990,123	636,088	690,475
U.S. imports from--					
Brazil	72,217	60,117	84,990	24,745	19,657
Other sources	825,183	733,018	650,130	146,859	195,752
Total	897,400	793,135	735,120	171,604	215,409
Apparent consumption	3,742,422	3,672,833	3,725,243	807,692	905,884

--Continued on next page.

Table 33C--Continued
All special quality steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Share of the quantity of U.S. consumption (percent)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	90.1	90.2	88.0	84.7	85.7
U.S. imports from--					
Brazil	3.4	2.4	3.7	4.2	2.9
Other sources	6.6	7.4	8.4	11.1	11.4
Total	9.9	9.8	12.0	15.3	14.3
Alloy:					
Producers' U.S. shipments	93.4	94.4	92.0	91.9	92.2
U.S. imports from--					
Brazil	2.3	1.7	3.9	3.4	3.8
Other sources	4.3	3.9	4.1	4.7	4.0
Total	6.6	5.6	8.0	8.1	7.8
Carbon and alloy:					
Producers' U.S. shipments	91.1	91.5	89.2	86.9	87.4
U.S. imports from--					
Brazil	3.0	2.2	3.7	4.0	3.1
Other sources	5.9	6.4	7.1	9.2	9.5
Total	8.9	8.5	10.8	13.1	12.6
Bars and rods (including imports of semifinished):					
Carbon:					
Producers' U.S. shipments	71.9	73.3	74.0	74.7	71.0
U.S. imports from--					
Brazil	2.4	2.1	3.0	3.8	2.4
Other sources	25.7	24.6	23.0	21.5	26.6
Total	28.1	26.7	26.0	25.3	29.0
Alloy:					
Producers' U.S. shipments	79.4	83.3	79.5	79.4	78.4
U.S. imports from--					
Brazil	2.6	2.6	4.8	4.6	4.8
Other sources	18.0	14.0	15.7	16.0	16.8
Total	20.6	16.7	20.5	20.6	21.6
Carbon and alloy:					
Producers' U.S. shipments	73.4	75.5	75.2	75.7	72.5
U.S. imports from--					
Brazil	2.5	2.2	3.4	4.0	2.9
Other sources	24.1	22.3	21.4	20.2	24.6
Total	26.6	24.5	24.8	24.3	27.5

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Table 33C--Continued
All special quality steel products: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

Item	1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992
	Share of the value of U.S. consumption (percent)				
Semifinished:					
Carbon:					
Producers' U.S. shipments	89.7	90.2	88.4	84.6	85.9
U.S. imports from--					
Brazil	3.3	2.1	3.3	4.1	2.6
Other sources	6.9	7.6	8.3	11.4	11.6
Total	10.3	9.8	11.6	15.4	14.1
Alloy:					
Producers' U.S.shipments	93.3	94.2	92.4	92.7	93.0
U.S. imports from--					
Brazil	2.3	1.7	3.9	3.2	3.6
Other sources	4.4	4.2	3.7	4.0	3.5
Total	6.7	5.8	7.6	7.3	7.0
Carbon and alloy:					
Producers' U.S. shipments	91.0	91.7	89.9	87.6	88.2
U.S. imports from--					
Brazil	2.9	2.0	3.5	3.7	2.9
Other sources	6.0	6.4	6.6	8.6	8.9
Total	9.0	8.3	10.1	12.4	11.8
Bars and rods (including imports of semifinished):					
Carbon:					
Producers' U.S. shipments	73.8	75.9	79.8	77.5	74.3
U.S. imports from--					
Brazil	2.0	1.5	1.8	2.9	1.8
Other sources	24.2	22.5	18.4	19.6	24.0
Total	26.2	24.1	20.2	22.5	25.7
Alloy:					
Producers' U.S. shipments	82.1	84.9	81.8	81.8	81.7
U.S. imports from--					
Brazil	1.9	1.9	3.7	3.4	3.3
Other sources	16.0	13.2	14.6	14.7	15.0
Total	17.9	15.1	18.2	18.2	18.3
Carbon and alloy:					
Producers' U.S. shipments	76.0	78.4	80.3	78.8	76.2
U.S. imports from--					
Brazil	1.9	1.6	2.3	3.1	2.2
Other sources	22.0	20.0	17.5	18.2	21.6
Total	24.0	21.6	19.7	21.2	23.8

Note.--Because of rounding, shares may not add to the totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

Prices

Market Characteristics

The special quality carbon and alloy hot-rolled steel bars and semi-finished products subject to this investigation are used in the automobile, heavy equipment, and farm machinery industries and other major sectors of the U.S. economy. While large quantities of these steel products are sold directly to large manufacturers to be further processed for use in final products, significant quantities are also sold to independent forgers, cold finishers, steel distributors, and other classes of customers. Producers and importers have indicated that demand for these products has generally declined since 1989 as a result of the recession and the declining U.S. market share of the major domestic auto producers.

Domestic producers and importers of these steel products may quote prices on either an f.o.b. or a delivered basis or both depending upon the particular supplier's policy. ***. *** importers of Brazilian products, some reported that they quote f.o.b. prices while others reported that they quote delivered prices.

All of the major domestic producers publish price lists, but policies on discounting from the list prices vary by company. ***.[92] In contrast to the domestic producers, none of the importers of the Brazilian products use price lists.

Special quality carbon and alloy hot-rolled steel bars and rods and semifinished products are commonly sold on either a contract or spot basis by domestic producers and importers from Brazil. Contract periods reportedly range in length from 3 months to 3 years. Under the contract terms, price and quantities are commonly fixed for the agreed upon period and, in some cases the contract allows for a premium to be charged for sub-minimum shipments.[93]

Ferrostaal has ***. ***, Caterpillar is officially the importer of record for the subject steel products.[94] However, ***.

Special quality carbon and alloy hot-rolled steel bars, rods, and semifinished products are sold throughout the continental United States, although some of the individual suppliers indicated that they focus on particular regions. *** sell mainly in the East and the Midwest, whereas ***'s sales are primarily in the Great Lakes area. *** stated that its sales of the Brazilian products are concentrated in the Gulf Coast, Midwest, and West Coast regions. ***, another importer, sells mainly in the Gulf region, and ***'s sales are primarily in the Southeast and the Midwest. The majority of shipments of these products are made by truck, and the largest share of shipments are within a 500-mile radius of the producer's plant or the importer's point of shipment within the United States.

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[92] Telephone interview with ***.

[93] ***.

[94] Postconference brief of Powell, Goldstein, Frazer & Murphy for Caterpillar; p. 4, fn 1.

Transportation costs account for a relatively small share of the total delivered prices of these steel products when shipping distances are 500 miles or less, but these costs can increase significantly for shipments beyond a 500-mile radius. Producers and importers reported that these costs range from *** to *** percent of the delivered price for shipments of less than 500 miles. However, *** reported that its shipping costs average *** percent of the delivered price for distances of more than 500 miles, and *** reported that its costs for these longer-distance shipments averaged *** percent of the delivered price.

Evidence obtained in the investigation indicates that producers and importers generally regard the domestic and imported special quality carbon and alloy hot-rolled steel bars and rods and semifinished products from Brazil as essentially equivalent in quality. However, lead times for delivery of the domestic products to steel customers are significantly shorter than those for the Brazilian products. Domestic lead times ranged from as little as one week for high volume items to as much as two months for more specialized products. In contrast, lead times for delivery of imports from Brazil ranged from three to five months.[95]

Questionnaire Price Data

Because of the very wide range of products covered by this investigation, the petitioner and a representative of the respondent were consulted extensively in selecting products for the purpose of obtaining prices on items that are commonly sold by both producers and importers. The seven selected products are shown below. For each of these products, producers and importers were asked to provide f.o.b. and delivered prices for their largest sales in each quarter as well as total quantities and values shipped in all quarters during January 1989-March 1992.

Product Categories

Product 1: Carbon, semifinished, SAE-1548, 5.0″-7.5″ round cornered squares and rounds.

Product 2: Alloy, semifinished, SAE-4130, 5.0″-8.0″ round cornered squares and rounds.

Product 3: Hot-rolled carbon bar, SAE-1040, 3.5″ round cornered squares.

Product 4: Hot-rolled carbon bar, SAE-1045, 3.5″ round cornered squares.

Product 5: Hot-rolled alloy bar, SAE-4120,2.5″-4.0″ rounds and round cornered squares.

Product 6: Hot-rolled alloy bar, SAE-4140, 2.5″-4.0″ rounds and round cornered squares.

Product 7: Hot-rolled finished, SAE-1144, 6″ round bars.

[95] However, evidence on the record also indicates that ***.

*** producers representing *** percent of total U.S. shipments of the products under investigation provided varying amounts of price information. For most of the product categories, *** producers provided a significant amount of price information and, in those cases, individual producers did not report prices in all quarters. Only *** importers provided price information in their questionnaires. When contacted by the staff, the importers repeatedly stated that they did not sell Brazilian products that fit into the seven categories listed in the questionnaire. Efforts by the staff to encourage the importers to provide quarterly prices on other product categories that they commonly sell in competition with domestic producers were generally unsuccessful.[96]

Despite these problems, the information obtained did provide information on trends in prices, and some comparisons between domestic and import prices were possible.

Price Trends

Quarterly prices of domestic and imported products 1-6 are shown in tables 34 through 38.[97] The most complete domestic price data were obtained for product categories 1 and 6. The data show that prices of product 1 ***. Prices of product 6, which represent largely complete data from four domestic producers, show evidence of a downward trend during the 3-year period despite frequent, small fluctuations. The weighted-average price of this product ranged from a high of $*** in the fourth quarter of 1989 to a low of $*** in the third quarter of 1991. In the case of product 5, it is clear that the price of ***. However, no clear trend in prices of product 5 is evident for the 3-year period. The other price data provided by domestic producers were not sufficient for determining trends. The prices shown for product 2 represent a combination of ***. However, the data do indicate that prices were generally ***. The price data for products 3, 4, and 7 were largely incomplete.[98] Prices of product 7, which are not shown in a table, were only available for three quarters.

Most of the importer price data were too incomplete to determine trends. In the case of product 2, the data in table 2 show ***.

Price Comparisons

Price comparisons between domestic and imported products were possible in 30 quarters during the 3-year period, for products 1, 2, 4, 5, and 6. In 14 cases the import price was lower than the domestic price, in 14 cases the import price was higher, and in the other 2 cases the domestic and import prices were approximately the same. ***.

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[96] When contacted by the staff, ***.

[97] When possible, weighted-average prices were computed for the domestic products. However, in many of the quarters the prices represent sales by only one producer or importer.

[98] ***.

Table 34
Weighted-average net f.o.b. prices of product 1 reported by U.S. producers and importers, margins of underselling (overselling), and total shipments, by quarters, January 1989-March 1992

* * * * * * *

Table 35
Weighted-average net f.o.b. prices of product 2 reported by U.S. producers and importers, margins of underselling (overselling), and total shipments, by quarters, January 1989-March 1992

* * * * * * *

Table 36
Weighted-average net f.o.b. prices of product 3 reported by U.S. producers and product 4 reported by U.S. producers and importers, margins of underselling (overselling), and total shipments, by quarters, January 1989-March 1992

* * * * * * *

Table 37
Weighted-average net delivered prices of product 5 reported by U.S. producers and importers, margins of underselling (overselling), and total shipments, by quarters, January 1989-March 1992

* * * * * * *

Table 38
Weighted-average f.o.b prices of product 6 reported by U.S. producers and importers, margins of underselling (overselling), and total shipments, by quarters, January 1989-March 1992

* * * * * * *

In their posthearing brief the respondents presented data from two large purchasers, *** and Norris Cylinder, that compared prices paid for domestic products and imports from Brazil. ***. Both sets of data indicated that domestic and import prices were close to each other during the period indicated.[99] However, these data were strongly challenged by the petitioners and parties in support of the petition. Questions were raised concerning the accuracy of the importer's shipment data, the prices reported, and the description of the product categories.[100]

Exchange Rates

Quarterly data reported by the International Monetary Fund indicate that during January 1989-March 1992 the nominal value of the Brazilian cruzeiro steadily decreased, ending the period at nearly 100 percent below its initial value (table 39).[101] Adjusted for movements in producer price indexes in the United States and Brazil, the real value of the Brazilian currency showed a net depreciation of 4.3 percent relative to the dollar between January-March 1989 and the first quarter of 1992.

Lost Sales and Lost Revenues

In their questionnaire responses, domestic producers provided a total of 32 lost sales allegations relating to imports from Brazil that involved over 220,000 short tons of special quality carbon and alloy hot-rolled steel bars and rods and semifinished products valued at over $120 million. They also provided 22 lost revenue allegations valued at over $9 million on sales of over 100,000 short tons. The staff contacted purchasers at *** companies to investigate the allegations.

*** alleged that it lost revenues of $*** on sales of *** categories of products to ***, during *** as a result of competition from imports from Brazil. *** stated that it was forced to reduce the delivered value of its quotations on sales of *** tons of steel products from $*** to $***. *** acknowledged that the allegations were generally true. He said that during *** had threatened to increase its purchases of low-priced imports from Brazil unless domestic producers reduced their prices on the specified products. However, *** believed that the actual percentage reduction in prices and lost revenues was smaller than the alleged amounts.

*** further stated that *** has always bought most of its special quality steel products from domestic producers and has purchased only small amounts of imports from Brazil. He said that prices of the Brazilian imports are lower than domestic prices and that in many cases the quality of these imports is superior to the domestic product. However, he said that his

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[99] Postconference brief of Willkie, Farr and Gallagher for Villares, Exh. 8 and 9.

[100] See July 9, 1992, letters to Mr. Bardos from Wiley, Rein & Fielding for Bethlehem Steel and Inland Steel Bar; and July 10, 1992, letter to Mr. Bardos from Stewart & Stewart for Republic and Timken.

[101] <u>International Financial Statistics</u>, June 1992.

Table 39
Exchange rates:[1] Indexes of nominal and real exchange rates of the Brazilian cruzeiro, and indexes of producer prices in the United States and Brazil,[2] by quarters, January 1989-March 1992

Period	U.S. producer price index	Brazilian producer price index	Nominal exchange rate index	Real exchange rate index[3]
1989:				
January-March.......	100.0	100.0	100.00	100.0
April-June..........	101.8	129.1	84.12	106.7
July-September......	101.4	303.6	37.92	113.5
October-December....	101.8	878.5	14.52	125.3
1990:				
January-March.......	103.3	4,201.2	3.84	156.1
April-June..........	103.1	8,137.9	1.85	145.8
July-September......	104.9	10,947.3	1.36	141.6
October-December....	108.1	16,375.5	0.78	117.9
1991:				
January-March.......	105.9	26,646.4	0.45	113.3
April-June..........	104.8	34,545.8	0.35	116.2
July-September......	104.7	48,541.1	0.26	119.2
October-December....	104.8	88,992.0	0.13	108.0
1992:				
January-March.......	104.6	154,810.3[4]	0.06	95.7[4]

[1] Exchange rates expressed in U.S. dollars per Brazilian cruzeiro.
[2] Producer price indexes--intended to measure final product prices--are based on period-average quarterly indexes presented in line 63 of the International Financial Statistics.
[3] The real exchange rate is derived from the nominal rate adjusted for relative movements in producer prices in the United States and Brazil.
[4] Derived from Brazilian price data reported for January-February only.

Note.--January-March 1989 = 100. The real exchange rates, calculated from precise figures, cannot in all instances be derived accurately from previously rounded nominal exchange rate and price indexes.

Source: International Monetary Fund, International Financial Statistics, June 1992.

company purchases mostly from domestic producers because their shorter delivery lead times make it easier for *** to manage its inventories.

*** alleged that it lost revenues of $*** on total sales of *** short tons of *** to ***, due to import competition from Brazil. *** also alleged that it lost *** short tons of *** valued at $*** to *** as a result of this competition. *** denied the lost revenue allegation. He said that *** had not purchased the products described in the allegation from any source during ***. *** could not confirm or deny the lost sales allegation, although he believed that the volume described in the allegation was too large.

*** said that ***'s purchases of imports from Brazil during ***. He said that most of those imports had previously gone to ***.

*** alleged that it lost revenues of $*** on sales of *** short tons of products in the *** series between *** as a result of competition from imports from Brazil to ***, as a result of competition from imports from Brazil. *** further alleged that it lost sales of *** short tons of *** categories of products in the *** series valued at $*** during *** as a result of this import competition. *** denied the lost revenue and lost sales allegation. He said that his company does purchase imports from Brazil, but that the largest share of his purchases are from domestic producers. *** further stated that *** is ***'s largest supplier of special quality steel products because of ***.

*** alleged that it lost revenues of $*** on sales of *** categories of *** products to ***, in *** due to competition from Brazilian imports. *** denied the allegation. He said that all of ***'s purchases for *** had been negotiated in ***, and that no additional negotiation for sales occurred in ***.

*** said that his company buys primarily from domestic sources. He said that his company bought approximately *** tons of domestic special quality steel products and about *** tons of Brazilian imports in ***. However, *** has not purchased any Brazilian imports ***.

*** further stated that prices of Brazilian imports were far lower than domestic prices in the early 1980s, but that the differential has narrowed significantly since that time. He believes that Brazil's prices are lower for carbon steel products, but are often higher for alloy steel products.

*** provided a large number of lost revenue and lost sales allegations relating to ***. The lost sales allegations, which involved transactions during ***, were valued at $***, and the lost revenue allegations were valued at $***. *** denied the allegations. He said that his *** has been increasing its purchases of domestic special quality steel products and reducing purchases of imported Brazilian products because of their higher prices relative to comparable domestic products. He said that *** has reduced its purchases of Brazilian imports from about *** percent of its total purchases of special quality steel two years ago to about *** percent a year ago. He said that purchases of these imports have continued to decline in the past year and now account for only about *** percent of ***'s purchases of special quality steel products.

*** provided *** separate lost revenue allegations and *** separate lost sales allegations, all relating to ***. The lost revenue allegations were valued at $***, and the lost sales allegations were valued at $***. *** denied all of the allegations. He said that his company did not reduce its purchases of the domestic products during the periods when the lost sales and lost revenues allegedly occurred. *** said that while *** seeks the lowest-priced quotes that it can obtain from its qualified suppliers, it does not use separate quotes of competing suppliers to bid down prices.

*** also stated that all of its suppliers must undergo a rigorous qualification process before they are accepted as approved suppliers. Normally this process takes ***. Because of the lengthy qualification process that is required for approving new suppliers, his company prefers to continue providing business for its established suppliers instead of undergoing the complex process required to obtain new sources of supply. *** indicated that some Brazilian plants and some domestic plants have not been qualified thus far.

*** said that *** divides its purchases between domestic sources and Brazil and ***. He said that its imports from *** have increased recently relative to those from Brazil because of lower prices.

*** all provided a number of high-valued lost sales and lost revenues relating to ***. However, ***.

APPENDIX A

COMMISSION'S AND COMMERCE'S FEDERAL REGISTER NOTICES

[Investigation No. 731-TA-572 (Preliminary)]

Certain Special Quality Carbon and Alloy Hot-Rolled Steel Bars and Rods and Semifinished Products Thereof From Brazil

AGENCY: United States International Trade Commission.

ACTION: Institution and scheduling of preliminary antidumping investigation.

SUMMARY: The Commission hereby gives notice of the institution of preliminary antidumping investigation No. 731-TA-572 (Preliminary) under section 733(a) of the Tariff Act of 1930 (19 U.S.C. 1673b(a)) to determine whether there is a reasonable indication that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from Brazil of certain special quality carbon and alloy hot-rolled steel bars and rods, and seimfinished products thereof [1] covered by subheadings/statistical reporting numbers 7207.11.00, 7207.12.0010, 7207.19.0030, 7207.20.0025, 7207.20.0075, 7214.30.00, 7214.40.00, 7214.50.00, 7214.60.00, 7224.10.0075, 7224.90.0045, 7224.90.0065, and 7228.30.80 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value.

As provided in section 733(a) of the Tariff Act, the Commission must complete its preliminary antidumping investigation in 45 days, or in this case by July 24, 1992.

For further information concerning the conduct of this investigation and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A throguh E (19 CFR part 201), and part 207, subparts A and B(19 CFR part 207).

EFFECTIVE DATE: June 9, 1992.

FOR FURTHER INFORMATION CONTACT: Diane J. Mazur (202-205-3184), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, Dc 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202-205-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000.

SUPPLEMENTARY INFORMATION:

Background

This investigation is being instituted in response to a petition filed on June 9, 1992, by Republic Engineered Steels, Inc., Massillon, OH, and The Timken Company, Canton, OH.

Participation in the Investigation and Public Service List

Persons (other than petitioners) wishing to participate in this investigation as parties must file an

[1] For purposes of this investigation, the subject imports consist of certain special quality carbon (nonalloy) steel and alloy steel (other than stainless steel, high-speed steel, silico-manganese steel, and tool steel) semifinished products and hot-rolled bars and rods. The subject imports are semifinished and hot-rolled products that may have been subjected to direct hardening, carburizing, induction hardening, and nitriding, and exhibit creep resistance; and are used in applications requiring critical levels of hardness and/or hardenability, strength, toughness, fatigue resistance, high-temperature creep and fracture resistance, wear resistance, machinability, and formability. The imports subject to investigation include products that are produced from the following grades of steel: AISI carbon series 1000 (excluding grades 1000 through 1044 designated with the prefix M), 1100, 1200, and 1500; AISI certain alloy series 1300, 4000, 4100, 4300, 4600, 4700, 4800, 5000, 5100, 5200, 6100, 8100, 8600, 8700, 8800, 9200, 9300 and 9400; and the grades for both carbon and certain alloy include Boron and H-steels. The subject imports of hot-rolled bars and rods are in cut lengths and various shapes and sizes. The subject imports of semifinished products include cast certain alloy steel ingots and strand castings, and semi-wrought ingots and strand castings; and nonalloy and certain alloy steel rolled or forged blooms, billets, and slabs for forging, if destined for use in the subject hot-rolled bars and rods. Excluded from the scope of the investigation are imports of semifinished products or hot-rolled bars and rods which contain by weight 0.03 percent or more of lead or 0.05 percent or more of bismuth; nonalloy steel ingots or other primary forms; semifinished or hot-rolled products of merchant quality steels (AISI grades M 1000 through M 1044); hot-rolled bars and rods in coiled form; forged bars; and reinforcing bars and rods.

entry of appearance with the Secretary to the Commission as provided in § 201.11 and 207.10 of the Commission's rules, not later than seven (7) days after publication of this notice in the Federal Register. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigation upon the expiration of the period for filing entries of appearance.

Limited Disclosure of Business Proprietary Information (BPI) under an Administrative Protective Order (APO) and BPI Service List

Pursuant to § 207.7(a) of the Commission's rules, the Secretary will make BPI gathered in this preliminary investigation available to authorized applicants under the APO issued in the investigation, provided that the application is made not later than seven (7) days after the publication of this notice in the Federal Register. A separate service list will be maintained by the Secretary for those parties authorized to receive BPI under the APO.

Conference.

The Commission's Director of Operations has scheduled a conference in connection with this investigation for 9:30 a.m. on June 30, 1992, at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC. Parties wishing to participate in the conference should contact Diane Mazur (202-205-3184) not later than June 25, 1992, to arrange for their appearance. Parties in support of the imposition of antidumping duties in this investigation and parties in opposition to the imposition of such duties will each be collectively allocated one hour within which to make an oral presentation at the conference. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the conference.

Written Submissions

As provided in § 201.8 and 207.15 of the Commission's rules, any person may submit to the Commission on or before July 6, 1992, a written brief containing information and arguments pertinent to the subject matter of this investigation. Parties may file written testimony in connection with their presentation at the conference no later than three (3) days before the conference. If briefs or written testimony contain BPI, they must conform with the requirements of § 201.6, 207.3, and 207.7 of the Commission's rules.

In accordance with § 201.16(c) and 207.3 of the rules, each document filed by a party to this investigation must be served on all other parties to the investigation (as identified by either the public or BPI service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

Authority: This investigation is being conducted under authority of the Tariff Act of 1930, title VII. This notice is published pursuant to § 207.12 of the Commission's rules.

Issued: June 12, 1992.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 92-14205 Filed 6-16-92; 8:45am]

BILLING CODE 7020-02-M

[A-351-813]

Initiation of Antidumping Duty Investigation: Certain Alloy and Carbon Hot Rolled Bars, Rods and Semifinished Products of Special Bar Quality Engineered Steel From Brazil

AGENCY: Import Administration, Interantional Trade Administration, Department of Commerce.

EFFECTIVE DATE: July 6, 1992.

FOR FURTHER INFORMATION CONTACT: Linda Pasden or Richard Weible, Office of Agreements Compliance, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230; telephone: (202) 377-0194 or (202) 377-0159, respectively.

Initiation

The Petition

On June 9, 1992, we received a petition filed in proper form by The Timken Company and Republic Engineered Steels, Inc. In accordance with 19 CFR 353.12, petitioners allege that imports of certain alloy and carbon hot rolled bars, rods, and semifinished products of special bar quality engineered steel, (referred to as SBQ bars and rods) from Brazil are being, or are likely to be, sold in the United States at less than fair value within the meaning of section 731 of the Tariff Act of 1930, as amended (the Act), and that an industry in the United States is being materially injured, or is threatened with material injury, by reason of those imports.

Petitioners have stated that they have standing to file the petition because they are interested parties, as defined under section 771(9)(C) of the Act, and because they filed the petition on behalf of the U.S. industry producing the products that are subject to these investigations. If any interested party, as described under paragraphs (C), (D), (E), or (F) of section 771(9) of the Act, wishes to register support for, or opposition to, this petition, please file a written notification with the Assistant Secretary f Administration.

Under the Department's regulations, any producer or reseller seeking exclusion from a potential antidumping duty order must submit its request for exclusion within 30 days of the date of the publication of this notice. The procedures and requirements regarding the filing of such requests are contained in 19 CFR 353.14.

United States Price and Foreign Market Value

Petitioners provided multiple methodologies for calculating United States price (USP) and foreign market value (FMV). We have analyzed only the price-to-price allegations. If necessary at a later date, we will analyze petitioners' allegations involving constructed value.

Petitioners estimate of USP is based on both actual price quotes to U.S. customers on a delivered basis and IM 145 import statistics. We relied only on the actual price quotes as a basis for the calculation of USP, because for selected comparisons, the IM 145 import statistics were not contemporaneous with home market prices. Delivered prices were adjusted to reflect a FOB port-or-origin basis. No further adjustments to U.S. price were made.

Petitioners' estimate of FMV is based on actual invoices and price quotations to Brazilian customers on an ex-works basis, and home market price lists. Because of the hyperinflation that exists in Brazil, we excluded comparisons based on invoice prices, certain price quotes, and list prices, because petitioners did not submit contemporaneous U.S. prices. We made comparisons only on the basis of contemporaneous price quotes in the U.S. and home markets. Petitioners deducted the ICMS state value-added tax from all domestic price quotations. Price quotations were reported exclusive of all other taxes.

Based on the 1992 price-to-price comparisons of USP and FMV, petitioners allege dumping margins ranging from 17 to 16 percent.

Initiation of Investigation

Pursuant to section 732(c) of the Act, the Department must determine, within 20 days after a petition is filed, whether the petition sets forth allegations necessary for the initiation of an antidumping duty investigation, and whether the petition contains information reasonably available to petitioners supporting the allegations.

We have examined the petition and found that it complies with the requirements of section 732(b) of the Act. Therefore, in accordance with section 732 of the Act, we are initiating an antidumping duty investigation to determine whether imports of SBQ bars and rods from Brazil are being, or are likely to be, sold in the United States at less than fair value. If the investigation proceeds normally, we will make our preliminary determination by November 16, 1992.

Scope of Investigation

The products covered by this investigation are certain hot-finished carbon and alloy (other than stainless, high speed, silico-manganese, and tool steel) steel bars and rods, other than forged, which have a uniform solid cross-section along their whole length and are in the shape of circles, segments of circles, ovals, rectangles, triangles, or other convex polygons, and do not conform to the definitions for semi-finished steel, flat-rolled products, hot-rolled bars and rods in irregularly wound coils, reinforcing bars and rods, and wire. The subject bars and rods are of special bar quality engineered steel that are described in Society of Automotive Engineers (SAE) J403, J404, J411, J1081, J1249, J1268, and modifications thereof, whether they be domestic or foreign, of other than merchant quality grades M 1000 through M 1044, not containing by weight 0.03 percent or more of lead or 0.05 percent or more of bismuth, as classifiable under the following subheadings of the Harmonized Tariff Schedule of the United States (HTS): 7214.30.0000, 7214.40.0010, 7214.40.0030, 7214.40.0050, 7214.50.0010, 7214.50.0030, 7214.50.0050, 7214.60.0010, 7214.60.0030, 7214.60.0050, 7228.30.8005, and 7228.30.8050.

Also included in the scope of this investigation are certain alloy ingots (other than stainless steel, high-speed steel, silico-manganese steel, tool steel, and high-nickel alloy steel), and semi-finished products of carbon and alloy (other than stainless steel, high-speed steel, silico-manganese steel, tool steel, and high-nickel alloy steel) steel, of circular or rectangular (including square) cross-section with a width measuring less than four times thickness, of special bar quality engineered steel that are described in Society of Automotive Engineers (SAE) J403, J404, J411, J1081, J1249, J1268, and modifications thereof, whether they be domestic or foreign, not containing by weight 0.03 percent or more of lead or 0.05 percent or more of bismuth, as classifiable under the following subheadings of the HTS: 7207.11.0000, 7207.12.0050, 7207.19.0030, 7207.20.0025, 7207.20.0075, 7224.10.0075, 7224.90.0045, and 7224.90.0065.

Although the HTS subheadings are provided for convenience and customs purposes, our written description of the scope of these proceedings is dispositive.

Class of Kind Issue

The Department has accepted, for purposes of this initiation, petitioner's claim that the subject merchandise comprises one class or kind of merchandise. However, given (1) the clear distinction normally maintained in the steel trade between semifinished products and finished products such as bars and rods, and (2) an examination of the criteria used to evaluate Class or kind of merchandise, established in *Diversified Products* v. *United States*, 6 CIT 155 (1983), we question petitioners' assertion that the subject merchandise comprises one class or kind of merchandise. Therefore, we are requesting all interested parties to comment on the scope of these proceedings, particularly whether the subject merchandise in this case comprises one class or kind of merchandise or more. Comments should be submitted to the Assistant Secretary for Import Administration, Room B-099, at the above address within 14 days of the publication of this notice.

ITC Notification

Section 732(d) of the Act requires us to notify the ITC of these actions and we have done so.

Preliminary Determination by ITC

The ITC will determine by July 24, 1992, whether there is a reasonable indication that imports of SBQ bars and rods, and SBQ semifinished products from Brazil, are materially injuring, or threaten material injury to, a U.S. industry. If the ITC determination is negative, the investigation will be terminated; otherwise, the investigation will proceed according to statutory and regulatory time limits.

This notice is published pursuant to section 732(c)(2) of the Act and 19 CFR 353.13(b).

Dated: June 29, 1992.

Alan M. Dunn,

Assistant Secretary for Import Administration.

[FR Doc. 92-15739 Filed 7-2-92; 8:45 am]

BILLING CODE 3510-DS-M

APPENDIX B

LIST OF WITNESSES APPEARING AT CONFERENCE

CALENDAR OF THE PUBLIC CONFERENCE

June 30, 1992

Investigation No. 731-TA-572 (Preliminary)

Certain Special Quality Hot-Rolled Carbon and Alloy Steel Products and Semifinihsed Products Thereof from Brazil

Those persons listed below appeared at the United States International Trade Commission's conference held in connection with the subject investigation at 9:30 a.m. on Tuesday, June 30, 1992, at the U.S. International Trade Commission, 500 E Street, SW, Washington, DC.

In support of the imposition of antidumping duties

Stewart & Stewart--Counsel
Washington, DC
on behalf of--

Republic Engineered Steels, Inc.
Timken Company

Harold V. Kelly, V.P. & General Counsel, Republic
Steve Higley, V.P.-Commercial, Republic
John Sears, Controller, Republic
Ed Hyde, Gen. Manager-Sales, Republic
Larry R. Brown, V. P. & General Counsel, Timken
Scott A. Scherff, Managing Attorney, Timken
George Matthews, Chief Engineer-Process Engr., Timken
Paul Guilfoyle, Gen. Manager-Sales, Timken
Jim Holderbaum, Gen. Manager-Business Economics, Timken

Eugene L. Stewart)
James R. Cannon, Jr.) -- OF COUNSEL
Geert De Prest)

Wiley, Rein & Fielding--Counsel
Washington, DC
on behalf of--

Inland Steel Industries, Inc., including Inland Steel Bar Co.

Joseph Alvarado, Gen. Mgr. Sales, Inland Steel Bar Co.

Alan Price) -- OF COUNSEL

<u>In opposition to the imposition of antidumping duties</u>

Willkie, Farr & Gallagher--Counsel
Washington, DC
<u>on behalf of</u>--

The Villares Group

Len Luscomb, Norris Cylinder Co.
Ed Baker, Ferrostaal Metals Corp.
Bruce Malashevich, Pres., Economic Consulting Services

William H. Barringer) -- OF COUNSEL
Daniel L. Porter)
David E. Bond)

APPENDIX C

GLOSSARY

Glossary

Carbon steel

Carbon steel means all nonalloy steel which is usefully malleable and contains 2 percent or less carbon. In addition, any steel classified as other alloy steel solely because it contains 0.4 percent or more by weight of lead and/or 0.1 percent or more by weight of bismuth, is classified as being of carbon steel for purposes of this investigation.

Certain alloy steel

Alloy steel <u>other than</u> stainless steel, high-speed steel, silico-manganese steel, or tool steel.

Semifinished special quality carbon and certain alloy steel products

Products of solid cross section, which have not been further worked than subjected to primary hot-rolling or roughly shaped by forging, and include cast certain alloy steel ingots and strand castings and semi-wrought ingots and strand castings; and nonally and certain alloy rolled or forged blooms, billets, and slabs that are destined for use in hot-rolled products. Semifinished carbon and certain alloy steel products are provided for in subheadings 7207.11, 7207.12, 7207.19, 7207.20, 7224.10 and 7224.90 of the Harmonized Tariff Schedule of the United States (HTS).

Hot-rolled carbon and certain alloy steel products

Carbon and certain alloy steel which has been reduced to its final thickness by heating and rolling the products at elevated temperature (usually above 2,200° F). The hot-rolled carbon steel products covered by this investigation are provided for in HTS subheadings 7213.20, 7213.31, 7213.39, 7213.41, 7213.49, 7213.50, 7214.30, 7214.40, 7214.50, 7214.60, 7227.90.60, and 7228.30.80. Flat-rolled carbon steel products are <u>not included</u> in this investigation. For purposes of this investigation hot-rolled carbon steel products include the following:

Hot-rolled bars

Hot-rolled products, whether or not in irregularly wound coils, which have a solid cross section along their length in shapes (and sizes) that include, but are not limited to: circles or segments of circles (from 0.20 to 12 inches in diameter), ovals, rectangles (including squares from 0.20 to 6 inches in width), flats (from 1/4 to 8 inches in width and from 0.23 to 4 inches in thickness), or other convex polygons (such as hexagonals and octagonals from 0.20 to 4 1/16 inches between parallel surfaces). These products do not include reinforcing bars.

Cut-length bars.--Hot-rolled bar products not in coiled form, including circles or segments of circles in cut-lengths having a diameter from 0.20 to 12 inches.

Coiled bars.--Hot-rolled bar products in irregularly wound coils, including circles or segments of circles in coiled form having a diameter from 0.75 to 12 inches.

Hot-rolled rods

Coiled, semifinished, hot-rolled products of solid cross section, approximately round in cross section, not less than 0.20 inch but less than 0.75 inch in diameter. These products do not include reinforcing rods.

Non-lead/bismuth free-machining steel products

Nonalloy (carbon) and certain alloy steel products (<u>other than</u> those containing lead or bismuth) containing by weight one or more of the following elements in the specified proportions:

- 0.08 percent or more of sulfur
- more than 0.05 percent of selenium
- more than 0.01 percent of tellurium

Lead and bismuth carbon and alloy steel products

Hot-rolled products or semifinished products thereof as described above that contain by weight 0.03 percent or more lead, and/or 0.05 percent or more bismuth, whether in coils or cut lengths. These products may also contain other additives such as tellurium or selenium. Hot-rolled lead and bismuth carbon steel products are principally provided for in HTS subheadings 7213.20 and 7214.30.

Machinability

Machinability is that combination of properties in a material that affects its response to removal by a cutting tool. The machining of a steel may be enhanced by additives, such as lead, bismuth, selenium, tellurium, sulphur, phosphorus, or calcium, to the steel at its liquid phase. Or, for certain types of steel, machinability may be enhanced by annealing.[1]

Machinability depends upon the dynamic reactions which occur in the workpiece material (including its chemical and metallurgical compositions), the machine tool, the tool's geometry, the lubricant employed, and operating conditions. Among other items, tool life, the rate of metal removal, surface finish, ease of chip removal, and the reduction of cutting forces are important criteria for evaluating a steel's machinability.[2]

Additions of lead, in combination with selenium or tellurium, or bismuth significantly improve machinability, and these grades are most often

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[1] See, United States Steel, <u>The Making, Shaping, and Treating of Steel</u>, pp. 1465-1488.

[2] Debanshu Bhattacharya, "Machinability of Steel," <u>Journal of Metals</u>, Mar. 1987, p. 32.

used when the part that is to be made requires the removal of relatively large amounts of metal (greater than 30 percent, for example, according to one estimate).[3] They are most often specified when the machine to be utilized is an automatic screw machine, lathe, or drill press.[4] As indicated earlier, there are other types of additions, most of which are made at the ladle, including calcium, phosphorus, and sulphur, which also affect the machinability of the steel. Calcium is used to minimize the detrimental effect of alumina inclusions on some carbide tools; it assists castability and is often used in applications calling for casting parts to near net shape.

Steel series

Carbon, certain alloy, and alloy steels are categorized according to their chemical content. The primary elements that are specified are carbon, manganese, phosphorus, and sulphur for carbon steels (other elements such as copper and silicon are specified in terms of maximum allowable levels); and, these elements plus nickel, chromium, and molybdenum for alloy steels. Carbon steel grades include the 1000, 1100, 1200, and 1500 series (see further description below). Alloy steel grades include the 1300, 4000, 4100, 4300, 4400, 4600, 4700, 4800, 5000, 5100, 5200, 6100, 8100, 8600, 9200, and 9300 series.

The primary series for carbon steels, including special bar quality, are shown in the following tabulation:

Grade	Comment
1000	Non-resulphurized carbon steels with a manganese content not exceeding 1.00 percent; used for forging axles, casings, shafting applications, and cold-heading applications (e.g., production of screws, nuts, and bolts). Termed a non-free cutting steel. Lead is added to enhance machinability such as in production of small fins and threads.
1100	Resulphurized carbon steels; used in forging applications where strength is needed (e.g., connecting rods and nuts); termed a free-cutting steel.
1200	Free-cutting resulphurized and rephosphorized carbon steels; not load-bearing; includes the bulk of lead and bismuth steels for use in such applications as valves and hydraulic fittings.
1500	Carbon steels with a manganese content exceeding 1.00 percent; lead or bismuth seldom added. Calcium may be added to ameliorate effects of alumina inclusions on high-speed tool steels.

[3] Staff interview with ***.

[4] Ibid.

Merchant bar quality[5]

This group is designated with the prefix M before the 1000 series (for example, M1010, a merchant low-carbon bar of the nonresulphurized series for forging). Steels in this group are known as merchant steels; the bar and rod category includes concrete reinforcing bar. They are used for structural and similar applications involving moderate cold bending, moderate hot forming, punching, and welding as used in the production of noncritical parts. They are characterized by wider physical and chemical tolerances and are produced to grade only. Merchant quality is produced to 0.50 percent maximum carbon, 0.60 percent maximum manganese, nonresulfurized, nonleaded, 0.04 percent maximum phosphorus, and 0.05 percent maximum sulfur content, i.e., standard chemical ranges and limits, used for special carbon grades, do not apply. Merchant quality bars are not produced to any specified silicon content, grain size, or other requirement that would influence the type of steel, and they may contain pronounced chemical segregation; internal porosity, surface seams, and other surface irregularities may also be present.

Special bar quality[6]

This group includes bars and rods that are produced to customer order and are characterized by tighter surface and chemical tolerances than M-quality steels. Applications include forging, heat treating, cold drawing, machining, and many structural uses. The primary melting may incorporate separate degassing or refining and may be followed by secondary melting (vacuum arc remelting or electroslag remelting); deoxification is performed. The steel is produced with internal soundness, i.e., relative freedom from segregation and porosity, grain size tolerances, and limits on the content of incidental chemical elements (e.g., copper, nickel, chromium, molybdenum, or others) are restrictive, i.e., not exceeding the limits shown on the customer's purchase order. A tight range for chemical composition is prescribed for carbon, manganese, phosphorus, and sulfur.

Restrictive requirements applicable to special quality.--Certain additional requirements are sometimes necessary for some applications or manufacturing processes, including the following:[7]

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[5] ASTM Designation A 575-81, Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades.

[6] ASTM Designation A 576-81, Standard Specification for Steel Bars, Carbon, Hot-wrought, Special Quality.

[7] Steel Products Manual, AISI, Aug. 1977, pp. 89 and 90.

Restrictive requirement quality A & B
Multiple restrictive requirement quality
Scrapless nut quality
Axle shaft quality
Cold shearing quality
Cold forging quality
Cold extrusion quality A & B
Cold heading quality
Cold expansion quality
Restrictive cold working quality
Other quality designations:
  File quality
  Gun barrel quality
  Gun receiver quality
  Shell steel quality A, B, & C
  Spark plug leaded quality
  Spark plug non-leaded quality
  Standard tube round quality

Lead and bismuth steels.--These steels are part of the group designated special quality steels; leaded steels are designated by inserting the letter L between the 2-digit number that denotes the series and the 2-digit number that denotes the range of carbon present. When lead is required as an added element to a standard steel, a range of 0.15 to 0.35 percent is specified. When bismuth is added, a proprietary name may be used, although a letter insertion is not made.

Steelmaking terminology

Killed steels

Killed steels are produced by adding deoxidizing elements such as silicon and aluminum to the ladle before pouring. Chemical composition and mechanical properties of killed steels are relatively uniform throughout the ingot. Alloy and carbon steels containing more than about 0.25 percent carbon are almost always fully killed.

Rimmed steels

Rimmed steels are cast into ingots without deoxidation by silicon or aluminum, i.e., they are not killed. As solidification proceeds, oxygen and carbon dissolved in the molten metal continue to combine, producing a characteristic effervescent action in the ingot during solidification. Chemical composition and mechanical properties vary widely throughout rimmed steel ingots, with the region near the surface being lower in carbon, sulfur and phosphorus than the average composition of the ingot. The low carbon skin generally provides a smoother surface than might be expected on a fully killed steel, although high-quality surfaces can routinely be obtained on killed steel products. Only low-carbon steels are made as rimmed steels.

Semikilled steels

Semikilled steels are partially deoxidized. Their characteristics, e.g. uniformity of composition and mechanical properties, fall between those of killed and rimmed steels.

Capped steels

Capped steels are somewhat similar to rimmed steels, except that the rimming action is stopped at a specified point during the solidification process. A capped steel ingot has the low-carbon rim typical of a rimmed steel ingot, but the uniformity of composition and mechanical properties in the center that might be expected from a killed steel ingot. This combination of properties makes capped steels particularly well suited for applications involving cold forming or cold heading.

Creep

Slow deformation of steel under continued stress.

Toughness

A property that denotes an intermediate value between softness and brittleness. Tensile tests show a tough material to have a fairly high tensile strength accompanied by moderate values of elongation and reduction of area.

Fatigue

Failure under repeated stress.

APPENDIX D
COMMENTS ON DIFFERENCES AND SIMILARITIES IN PHYSICAL/METALLURGICAL CHARACTERISTICS AND USES OF SEMIFINISHED AND HOT-ROLLED PRODUCTS

QUESTIONNAIRE RESPONSES

The Commission's questionnaires in this investigation requested comments regarding the differences and similarities in the physical/ metallurgical characteristics and uses of selected semifinished and hot-rolled steel products. The following comments were received:

Seminished Products

A) Certain special quality semifinished **CARBON** products vs. semifinished **ALLOY** products:

Firm	Comments
***.............	"Only distinction is that alloy is added to allow heat treatment in thicker sections. Depending on part size or heat treat requirements, either might be used in various machined and heat treated parts."
***.............	"Alloy is for strength, hardenability and toughness."
***.............	"(C)haracteristics may be exactly the same; both may be ordered in a variety of sizes and surface conditions, e.g., hot-rolled, cold drawn, turned and polished, etc. Chemical ranges for semifinished carbon products are generally not as restrictive or demanding as those for semifinished alloy products. Both products may undergo forging, machining, cold finishing, or heat treating for end use in automotive gear train, engine or suspension parts, oil country goods, off highway equipment, etc. Where greater depth of hardening is required, alloy steels would be favored over carbon steels because of their higher hardenability which is imparted to the steel as a result of alloying."
***.............	"Both require high levels of internal cleanness, soundness and uniformity of chemical consistency. Dimensional characteristics are also the same. Both must have surface quality suitable for rerolling or forging which is usually achieved by desurfacing all or part of the surface during processing to a semifinished state."
***.............	"The physical differences are slight, however, the chemistries are very different and must be carefully obtained. Used for direct forgings or to be rolled into products."

Firm (continued)	Comments
***............	"Alloy steels provide enhanced property levels, particularly in relation to strength, hardness, hardenability and impact resistance. In terms of mechanical properties such as strength, hardness and impact resistance, then the higher levels require and the greater the final section size involved, the greater probability that an alloy steel will be used. Alloy steels are more normally used in the heat-treated condition compared to carbon steels. In addition, the quality standard of the conditioned semifinished alloy products would frequently be higher than for carbon products, both for surface and internal quality, reflecting the greater expectations in use of alloy material. The semifinished products for both steels have their use in subsequent hot rolling and hot forging applications with hot rolling being the more common process. They may require some variations in process conditions in these drafting schedules and possibly cooling regimes but these are part of the normal flexible operation of any hot rolling mill and forge that deals with carbon and alloy steels."

B) Certain special quality semifinished **FREE-MACHINING** products vs. semifinished **OTHER SPECIAL QUALITY** products:

Firm	Comments
***............	"(C)haracteristics may be exactly the same; both may be ordered in a variety of sizes and surface conditions, e.g., hot-rolled, cold drawn, turned and polished, etc. Both products may undergo forging, machining, cold finishing, or heat treating for end uses that require high machining rates. Free machining products contain machinability enhancers such as sulfur which combines with manganese in the steel to produce manganes sulfide inclusions which act as chip breakers during machining."
***............	"All free-machining carbon steels require a production process diametrically opposed to other steel products, alloy or carbon. Rather than attempting to eliminate embrittling elements like sulfur, phosphorous, lead, and bismuth (considered impurities in most applications), the producer tries to propagate these impurities and trap them in the steel. The result is a "dirty" steel, which enhances machining."

Firm (continued)	Comments
***.............	"Many free machining additives other than lead/bismuth tend to impair mechanical properties. Sulfur can be very helpful to machining in moderate amounts without reducing properties. Don't use free-machining grades in the most demanding applications, but use intermediate levels of sulfur in very highly stressed parts."
***.............	"Examples of resulferize steels are steering yokes, fittings, transmission shafts."
***.............	"Internal quality is measured to different standards of cleanness to recognize the influence of sulphur in FM products."
***.............	"Like all carbon steels used, the free machining steel will be selected where it will perform similarly to other plain carbon steels. The machinability of other SQ products may be improved by various techniques. The surface and internal quality standars of the other SQ products may often be greater than for free machining products."

C) Certain special quality semifinished **FREE-MACHINING** products vs. semifinished **LEAD AND BISMUTH** products:

Firm	Comments
***.............	"(C)haracteristics may be exactly the same; both may be ordered in a variety of sizes and surface conditions, e.g., hot-rolled, cold drawn, turned and polished, etc. Both products may undergo forging, machining, cold finishing, or heat treating for end uses that require superior machining properties. For exceptional machining rates, lead and bismuth products may be favored over free machining products."
***.............	"Lead and bismuth are much more machineable than other steels. They give the steel detrimental characteristics that make it bad for extruding, cold heading, or forging."
***.............	"Effects on machining properties vary depending on amount of each element added. Lead/bismuth don't have as much effect as large amounts of sulfur and/or phosphorus can. Lead/bismuth can be used at higher stress levels than heavily resulfurized grades. More moderate sulfur levels can have quite good properties however."

D) **SPECIAL QUALITY** semifinished steel products vs. **MERCHANT** quality semifinished products:

Firm	Comments
***.............	"Merchant quality semifinished products are not subject to restrictive chemical requirements of special quality products nor the rigorous product analysis requirements of these products."
***.............	"Merchant quality is much more likely to contain detrimental surface and internal defects. It's not generally made/sold to tightly controlled specs. Used in lightly loaded structural applications not requiring heat treatment."
***.............	"Merchant quality denotes relatively less demanding standards compared to certain SQ products in both surface and internal quality aspects. Because merchant quality involves less demanding quality levles it may be produced on lower quality steel making and casting routes. The major technical requirements of merchant quality relates to certain properties such as strength, ductility and possibly welding, and in this respect may have some similarities to the basic requirements of special quality products. However, the latter will be used for the higher quality applications where generally a wider and superior range of quality characteristics are required."
***.............	"When selling MQ, the producer guarantees only that the steel falls within a broad range of carbon, manganese, phosphorous, and sulfur contents. It will not meet specified chemical content (other than carbon, manganese, sulfur, and phosphorous), grain size, or surface quality requirements. MQ steel is typically used for structural support and non-critical parts."
***.............	"Merchant is not used for forging, but both are rerolled to bars or rods."

Hot-Rolled Products

E) Certain special quality hot-rolled **CARBON** products vs. hot-rolled **ALLOY** products:

Firm	Comments
***.............	"Characteristics are the same. Uses are the same except that alloy products are used where the design or engineering requirements call for higher levels of strength and reliability than can be achieved in carbon products."
***.............	"More physical strength is normally obtained with alloy products vs. carbon due to chemical elements. Uses include forgings, bolts, fasteners, tools and construction applications."
***.............	"Carbon is confined mainly to 1090 type steel used for automotive stabilizer bars; 1141 and 1151 steels used for automotive connecting rod applications. Alloy is composed mainly of 5160 type steels used for automotive leaf spring applications."

E) Certain special quality hot-rolled **FREE-MACHINING** products vs. hot-rolled **OTHER SPECIAL QUALITY** products:

Firm	Comments
***.............	"Characteristics are the same except for internal quality standards for FM products which are different to reflect higher sulfur content. FM products are slos not as good as SQ in hot working operations due to hot shortness. A higher percentage of FM steel are used in direct machining applications without prior alteration of the as-delivered shape by a hot or cold forming operation. FM steels particularly those containing sulfur, are less likely to be used in high strength or fatigue critical applications then special quality proucts."

F) Certain special quality hot-rolled **FREE-MACHINING** products vs. hot-rolled **LEAD & BISMUTH** products:

Firm	Comments
***.............	"Prouction of lead and bismuth steels requires environmental an health protection considerations (EPA & OSHA) and higher teaming temperatures than their non-lead FM counterparts. Lead and bismuth are subject to somewhat narrower process windows than their FM counterparts."

G) Certain special quality hot-rolled **BAR** products vs. hot-rolled **ROD** products:

Firm	Comments
***............	"Bars are produced to tighter dimensional tolerances. Rods are semi-finished used primarily for drawn wire products. Bars are used for multiple purposes - structural support, auto parts, etc."
***............	"Rod products have restricted size range compared to special quality bar products being limited to a size range of 7/32" to 47/64" in diameter almost always available in straights. Generally, special quality bar products up to approximately 2" diameter may be supplied in straights or in coil....and greater than 2" diameter are supplied in straights. Special quality rod may see application in the hot rolled condition; however, the vast majority of rod products see application as wire rod for redraw application for end use products as tire cord wire or valve spring wire. As a consequence, bar products may undergo processing to produce end products not normally applied to rod products, for example, forging, heat treating, or machining."
***............	"Rod proucts have looser tolerances and are limited in maximum size availability. Rod products are all essentially drawn through a die to put the product in a usable form, or for subsequent manufacturing operations. This is not essential for bar products. Bar products are also hot worked through forging which is uncommon for rods."

H) Certain special quality hot-rolled **CUT-LENGTH** products vs. hot-rolled **COILED** products:

Firm	Comments
***............	"Certain special quality cut length products may see the same end uses as special quality coiled products up to the maximum size limitation for producing in coil form which is approximately 2" in diameter. For certain applications, such as cold forming, it may be desirable to produce cold forged parts from heavy weight coils in a continuous manner as opposed to individually feeding several lighter weight cut length bars. Above approximately 2" in diameter, cut length products are the only choice."
***............	"Cut-length products include sizes much larger than coiled products. Coiled products used primarily in cold conversion applications such as cold drawing and cold heading."

Firm (continued)	Comments
***.............	"If you were to uncoil a coiled prouct and cut it into straight lengths you would have cut-length proucts. Maximum diameter of coiled proucts is limited. That is not the case for cut lengths. Coiled products are generally not used for hot forging operations or for direct machining operations."

I) Certain **SPECIAL QUALITY** hot-rolled products vs. **MERCHANT** quality hot-rolled products:

Firm	Comments
***.............	"Merchant quality products are limited to use in light structural applications and general machinery applications and are not applicable to uses requiring forging, heat treating, cold forming, or severe bending applications."
***.............	"Special quality bars require closer dimensional tolerances, cleaner, pipe-free interior quality and no surface defects, as well as special chemical compostion and properties. SQ bars are used for critical parts such as automotive drive trains, suspension and engine components, whereas merchant quality is used for general structural uses."
***.............	"Merchant quality is usually of looser dimension tolerances and is never heat treated. Merchant quality is not produced to metallurgical characteristics and is far less consistent between lots than is special quality. MQ is not intended for uses beyond simple bending, cutting, or hole punching. It is used for its inherent structural strength as a steel and is used more in fabrication than manufacturing. It is generally not heat treated or machined."

UNITED STATES INTERNATIONAL TRADE COMMISSION

WASHINGTON, DC 20436

July 13, 1992

MEMORANDUM

TO: Diane Mazur, O/INV

FROM: Charles Yost, O/IND

COPY: Scott Anderson, O/GC
Stephanie Kaplan, O/IND

SUBJECT: Telephone interviews on carbon steel rod

This refers to telephone interviews on July 10, 1992 between USITC staff and engineering and marketing personnel at ***. The interviews addressed the differences between "bar" and "rod", including size differences between bars and rod and, within the rod category, between "merchant quality rod" and "special quality rod". They also addressed the question of cut-to-length rods.

Distinction between bars and rods

With respect to the differences between bars and rods: while simplistic in its formulation, the essential difference is that bars are produced on a bar mill and rods are produced on a rod mill. These two mills are engineered and constructed differently, operate at different speeds, with a different configuration, and there are differences in the rolling stands, finishing stands, and coiling equipment used in the two types of mills. One such difference is that rod is passed along a Stelmore deck (a type of controlled cooling line) prior to coiling whereas bar is coiled directly off the finishing stands of the rolling line.

None of the companies that produce both rod and bar do so on the same line; instead they tend to operate separate lines in separate facilities (the Northstar facility in Michigan for bar as opposed to the Northstar facility in Beaumont, TX for rod, the American Steel and Wire facility near Cleveland for bar versus the facility in Joillet for rod, or the Bethlehem Sparrows Point, MD facility for rod as opposed to that company's bar facility at Lackawana, NY for example). Asked the question, one of the persons stated that bar cannot be produced on a rod mill and vice versa.

Tolerances and specifications dictate the differences between bar and rod, at least to some degree. What is important to the rod buyer is generally not important to a purchaser of bar. Customer concerns overlap with respect to carbon and residuals content. The rod purchaser is more concerned with certain physical characteristics of the rod--its tensile strength, reduction area and ductility, the size and amount of mill scale, and the size of the coil. The bar purchaser is more concerned with grain sizes (a metallurgical aspect), how the steel was deoxidized, and its size tolerances (including its roundness, diameter, and length). Surface quality has, at least to some degree, a different meaning for purchasers of rod and bar. Because rod, usually produced to a tolerance of plus or minus 1/64 inch (0.0156), is intended for drawing applications where there might be as much as a 90 percent reduction in area, roundness (or ovality) are less important than the closer size and roundness tolerances in the bar industry. Also, most rod is shipped with mill scale on it and how the customer descales affects the rod producer's operating practices; bar may have scale on it, but the manner of customer descaling does not affect the barmaker's cooling practices. Most bar is produced to at least plus/minus 0.007 inches, which is a minimum specification and many bar producers can produce to half or quarter tolerance. Because of the less demanding shape tolerances rod is less expensive to produce than bar which serves to limit any practical overlap between bar and rod, except at the margin.

Each party contacted stated that bar and rod are not interchangeable products. Bar is a nearly finished product produced to tight chemistries and dimensional tolerances. As indicated above, rod is a semifinished steel mill product intended for further processing (including drawing). There is some overlap, in terms of size for some specific applications, between bars and rods. This occurs within the size range of one-half to three-quarters inch, and is apparently mostly rebar (which is produced on a rod mill), according to one interlocutor. Size distinctions are also imparted by the type of rolling mill. Rod is typically produced in approximate diameters between 7/32 and 11/16 inches (according to the industry experts, about 90 to 95 percent of rod is produced to diameters between 7/32 and 1/2 inch, there is a limited amount that is produced to diameters between 1/2 and 3/4 inch, and a de minimus amount that is produced to diameters above 3/4 inch); bar is typically produced in diameters above 1/2 inch, with a very small amount that produced at diameters below 1/2 inch. Bar produced below 1/2 inch is reportedly a product produced at the margin and reflects automotive industry downsizing, but the quantities are small.

Distinction between merchant and special rod quality

It is tempting to utilize bar morphology (the break between merchant bar and special quality bar for example) in an analysis of the rod industry. For example, when asked the question whether there exists special quality rod, most industry personnel will answer that there is, and indicate that there is a merchant or standard industrial quality rod (from which wire is fabricated into such mundane products as fence, barbed wire, nails, and merchant wire; these people will usually indicate that the industrial quality rod is classified as low or medium low carbon, and distinguish the industrial quality rod from high quality rod or high carbon rod (which are used for more highly demanding enduses as cold finishing rods, welding quality, wood screw quality, and tire bead/cord). In addition there are separate designations contained in the AISI carbon steel wire and rods product manual (1984 edition) that distinguish industrial or standard quality rods as one type of rod among an assortment of qualities.

However, bar nomenclature is not used in the rod industry--i.e., the prefix "M" is not used to designate industrial or standard quality rods. Nonethless, one of the interlocutors indicated that industrial quality rod has no restrictions on chemistry, tensile strength, and finish, and is used for "down and dirty" applications, welded wire mesh for example. Others indicated that the designation "standard rod quality," or "merchant grade," is reflective of older usage and does not conform to how barmakers use the term. These people indicated that all of their rod is produced to customer specifications (usually modifications to the AISI/AIME grade specifications[1]), but usually based on the customer's reactions to trial shipments. They further indicated that their mills alter their operating practices so that rod is produced to specific end-use applications, it is customer specific, and it is produced to be drawn/fabricated on the customer's equipment. This specificity (viz. the customer's equipment, operating practices, and intended end-use) is necessary because differences in equipment among facilities will result in variations in the customer's yields and production. Seen in this light, rod is a sophisticated product and all rod could be termed special quality, because it is custom-manufactured. Even the mills that use the term standard or industrial quality indicated that they produce a load of rod to a customer's specification and accept an order only after a trial shipment.

[1] One indicated, "no one uses AISI specifications."

Cut-to-length rod

Unlike on a bar production line, where the bar might be diverted to either a coiler or cut-to-length and sent to a cooling bed, rod are cooled on a Stelmore deck and coiled. There are apparently one or two instances where the rod might be straightened and cut-to-length, but the operation is performed subsequent to the hot-rolling and after the coil has cooled. The instances are: nondeformed concrete reinforcing bar (produced to ASTM A615 or A615M), and where a piece of round steel is required for a brace on a machine frame or for construction (produced to A36 chemistry). These products are apparently industrial quality rod.

APPENDIX E

COMMENTS ON DIFFERENCES AND SIMILARITIES IN MANUFACTURING PROCESSES OF SEMIFINISHED AND HOT-ROLLED PRODUCTS

QUESTIONNAIRE RESPONSES

The Commission's questionnaires in this investigation requested comments regarding the differences and similarities in the manufacturing processes used in the production of selected semifinished and hot-rolled steel products. The following comments were received:

Seminished Products

A) Certain special quality semifinished **CARBON** products vs. semifinished **ALLOY** products:

Firm	Comments
***.............	"While molten, alloy bearing material must be added to alloy grades; temperature control and processing are critical to insure that the alloy melts go into solution and is homoginized. Alloy is added to impart certain metallurgical properties, thus alloy and carbon steels are generally interchangeable."
***.............	"Machinery interchangeable. Shared difficulties are porosity, trapped gasses during solidification, slag inclusions, and internal cracking. Scrap inputs and additives/alloys would differ."
***.............	"Scrap separation. Lower heating in soaking temp for alloy. Normally higher scrap rate for alloy."
***.............	"(T)he same tools, i.e., machinery and equipment, are used; however, regarding carbon steels, not all aspects of the manufacturing process necessary for alloy steel are required. Most carbon steels in small and intermediate sizes would not require vacuum degassing, whereas comparable sizes of alloy products would. During refining of alloy steels, greater time and care must be taken in akjusting alloy compostion since, depending on the complexity of the alloy, more elemental ranges must be met than in carbon steel manufacture where only carbon and manganese ranges are required. The ranges for carbon, manganese, phosphorous, and sulfur are tighter or more restrictive in alloy steel manufacture."
***.............	"Alloy steel production process resembles that for carbon steels, except that the complicated chemistries require more chemical analysis."

Firm (continued)	Comments
***.............	"Melting difference is that you add more alloys and dependent on quality level such as bearing quality, you refine more."
***.............	"Same equipment and labor."
***.............	"The differences in manufacturing processes between semifinished carbon and alloy products are minimal, as the result of the quality requirements imposed by the ultimate user of the products. Differences do arise in (A) continuous casting, wherein alloy steels generally require greater precision in process controls, (B) ingot to bloom yield, wherein alloy steels have lower yields due to somewhat less permitted chemical variability in the end product, and (C) cooling practices, wherein more alloy than carbon products require controlled cooling from primary operations to avoid cracking."
***.............	"In our mills there is virtually no differences in our manufacturing processes. All the same manufacturing equipment is used."

B) Certain special quality semifinished **FREE-MACHINING** products vs. semifinished **OTHER SPECIAL QUALITY** products:

Firm	Comments
***.............	"Free machining grades can be very difficult in a continuous cast operation. Causes extensive clogging of ceramic openings during the pouring process."
***.............	"Same equipment and labor."
***.............	"The same machiner, equipment, and skills are required...Free machining products, however, do require more care in the selection of the casting process; i.e., to maximize final product yields, free machining products require bottom pour ingot casting or bloom continuous casting to optimize surface quality. The surface quality of carbon and alloy products is similarly enhanced by bottom pour ingot casting or bloom continuous casting, but are also better adaptable to the top pour ingot casting process than are the free machining grades."

Firm (continued) | Comments

***............. "When we normally make SQ it usually gets secondary process such as VAD, or ultrasonic test. You don't vacuum arc degass or sonic test resulferized steel."

***............. "Differences are minimal. Principal differences arise from the need to have a method for adding Se or Te to the molten steel for the FM steels and having an appropriate air control system for Se and Te additions. The machining additives also require the product to be processed within restrictive hot working ranges."

***............. "All free-machining carbon steel semifinished products have much higher levels of sulfur than other SBQ products. They are harder to produce, as sulfur tends to segregate more during casting than other additives, often resulting in unveve properties. Sulfur also contributes to hot shortness, a bar's tendency to crack, check, or split during rolling."

C) Certain special quality semifinished **FREE-MACHINING** products vs. semifinished **LEAD AND BISMUTH** products:

Firm | Comments

***............. "Up to the point of adding the machinability enhancer, the manufacturing tools, processes, and skills are the same...lead and bismuth requires specialized equipment to manage the environmental problems associated with the lead and bismuth additions."

***............. "Specialized equipment for lead and bismuth as a capital expense and ongoing operating expenses."

***............. "Base grade free-machining carbon steel products do not require a specialized tundish or dedicated injector, are less sensitive to rolling temperature and speed, and less prone to surface defects than lead and bismuth....12xx steels have a higher phosphorous content (than 11xx steels) that hardens the steel, exacerbating rolling difficulties. Therefore, 12xx steels share production problems with lead and bismuth....almost as difficult to cast and roll, and suffer similar defect rates."

***............. "Differences include an air environmental control system in the case of lead and bismuth and lower ingot to semifinished yield due to extra discards to assure elimination of undue additive segregation."

D) Certain **SPECIAL QUALITY** bars and rods vs. **MERCHANT** quality products:

Firm	Comments
***.............	"SBQ-more critical application where extensive forging or other manufacturing stresses will be demanded. SBQ also is used in critical applications such as aircraft landing gear."
***.............	"Same equipment and labor."
***.............	"SQ products require greater refining time in melt furnace, vacuum degassing, ladel refining practices, and tighter rolling tolerances than are required for MQ products."
***.............	"Special quality semifinished products require more sophisticated manufacturing tools, machinery, equipment, and skills than that required for semifinished merchant quality products since the requirements for chemistry control, rigorous product analysis, surface quality, and critical engineered characteristics such as strength, toughness, fatigue resistance, machinability, formability, and the like are much more restrictive and customer demanding."
***.............	"Merchant does not require select scrap or raw material controls in the melting phase. Very limited refining is required. Very wide process window, few restrictions on chemistry and chemical consistency, no conditioning, minimal quality discards, high process yields."

Hot-rolled products

E) Certain special quality hot-rolled **CARBON** products vs. hot-rolled **ALLOY** products:

Firm	Comments
***.............	"Shearing temperature concerns for higher carbon and alloy grades. Tighter reheat control tables and gauge/width specifications would apply on most alloy."
***.............	"No differences."
***.............	"Same equipment, process, and labor is used."
***.............	"Same equipment and labor."

F) Certain special quality hot-rolled **FREE-MACHINING** products vs. hot-rolled **OTHER SPECIAL QUALITY** products:

Firm	Comments
***.............	"Same equipment and labor."
***.............	"Final product inspection is more frequent in special quality."
***.............	"Free machining grades have larger grain size and promote greater tendencies to slip during the rolling (forming) of the product."

G) Certain special quality hot-rolled **FREE-MACHINING** products vs. hot-rolled **LEAD & BISMUTH** products:

Firm	Comments
***.............	"SBQ is less sensitive to heat fluctuations, allowing a faster rolling within a broader temperature range. SBQ does not tend to split during rolling and so do not require special heating practices, like free machining carbon steels."

H) Certain special quality hot-rolled **BAR** products vs. hot-rolled **ROD** products:

Firm	Comments
***.............	"Bars and rod differ in finishing operations, dimensional tolerances, and uses."
***.............	"The same manufacturing tools, processes, and skills may be required...up to the final step of bar or rod rolling. For the production of the end product, the tools of manufacture vary; i.e., bar products are produced on a rod mill generally finished in coil form. Such a rod mill may be equipped with a Stelmor line to control the cooling of the coiled rod. The dimensional requirements of the rod are somewhat less demanding than of a comparably sized hot roll bar since the vast majority of rod in coil is drawn into wire products."
***.............	"A smaller size rolling mill and associated reheating facilities are required for rod products."

Firm (continued)	Comments
***.............	"Bar and rod are two separate products, requiring totally different mill machinery to produce."
***.............	"SQ bar products are made on a 12" or 13" bar mill vs rods being produced on a rod mill."
***.............	"Bar is rolled in a single strand rolling mill whereas rod may be rolled in a multi-strand mill. Rod is produced to broader dimensional tolerances at higher production rates than bar."
***.............	"Rod products are generally produced on dedicated mills different from those used for bar production. Rod mills operate at very high speeds, may have several rolling strands, specialized finishing blocks and sophisticated coiling and cooling facilities. Rod generally is produced to more controlled standards of mechanical properties, metallurgical structures and levels of surface oxide, surface roughness and possibly surface decarburization."

I) Certain special quality hot-rolled **CUT-LENGTH** products vs. hot-rolled **COILED** products:

Firm	Comments
***.............	"After hot-rolled steel is rolled it is either cut to convenient shipping lengths or poured into coils. There is virtually no difference between the cut-length and coiled products from a metallurgical point of view. The same raw steel and mill process is used in either case. The steel is the same...(the only possible difference is incidental hardness level differences caused by more gradual cooling times for coiled steel). Cut lengths tend to be favored for forging or for direct machining or fabrication, while coils are used extensively in wire drawing and cold heading operations."
***.............	"Cut length requires a shear to cut steel to length. Coiled products require machinery to coil the hot bar as it is rolled. Some mills have both systems."
***.............	"Cut length product requires long cooling beds and shears. Coiled products require coiling tubs and cooling conveyors. Handling equipment is different."

Firm (continued)	Comments
***.............	"The same manufacturing tools, processes, and skills may be required...up to the point of the final hot rolling operation. Special quality coiled products up to approximately 2" in diameter are produced on a merchant mill equipped with facilities to produce the cut lengths such as shears, hot saws, or abrasive saws. In addition, for the cut length products, notch turnover hot beds are required to ensure product straightness off the hot mill."
***.............	"Cut lengths require cooling beds, shears, length measuring devices, and yield planning where as coils require coiling tubs and coil handling facilities."

J) Certain **SPECIAL QUALITY** hot-rolled products vs. **MERCHANT** quality hot-rolled products:

Firm	Comments
***.............	"SBQ has much tighter tolerances, the processes are similar, but our equipment is not capable of holding the tight SBQ tolerances."
***.............	"Same equipment, process and labor used."
***.............	"Same equipment and labor."
***.............	"Merchant quality does no;t require rolling facilites capable of strict temperature controls or dimensional controls."

APPENDIX F

TARIFF HEADNOTES AND NOMENCLATURE

CHAPTER 72

IRON AND STEEL

Notes

1. In this chapter and, in the case of notes (d), (e) and (f) below throughout the tariff schedule, the following expressions have the meanings hereby assigned to them:

(a) Pig iron

Iron-carbon alloys not usefully malleable, containing more than 2 percent by weight of carbon and which may contain by weight one or more other elements within the following limits:

- not more than 10 percent of chromium
- not more than 6 percent of manganese
- not more than 3 percent of phosphorus
- not more than 8 percent of silicon
- a total of not more than 10 percent of other elements.

(b) Spiegeleisen

Iron-carbon alloys containing by weight more than 6 percent but not more than 30 percent of manganese and otherwise conforming to the specification at (a) above.

(c) Ferroalloys

Alloys in pigs, blocks, lumps or similar primary forms, in forms obtained by continuous casting and also in granular or powder forms, whether or not agglomerated, commonly used as an additive in the manufacture of other alloys or as deoxidants, desulfurizing agents or for similar uses in ferrous metallurgy and generally not usefully malleable, containing by weight 4 percent or more of the element iron and one or more of the following:

- more than 10 percent of chromium
- more than 30 percent of manganese
- more than 3 percent of phosphorus
- more than 8 percent of silicon
- a total of more than 10 percent of other elements, excluding carbon, subject to a maximum content of 10 percent in the case of copper.

(d) Steel

Ferrous materials other than those of heading 7203 which (with the exception of certain types produced in the form of castings) are usefully malleable and which contain by weight 2 percent or less of carbon. However, chromium steels may contain higher proportions of carbon.

(e) Stainless steel

Alloy steels containing, by weight 1.2 percent or less of carbon and 10.5 percent or more of chromium, with or without other elements.

(f) <u>Other alloy steel</u>

Steels not complying with the definition of stainless steel and containing by weight one or more of the following elements in the proportion shown:

- 0.3 percent or more of aluminum
- 0.0008 percent or more of boron
- 0.3 percent or more of chromium
- 0.3 percent or more of cobalt
- 0.4 percent or more of copper
- 0.4 percent or more of lead
- 1.65 percent or more of manganese
- 0.08 percent or more of molybdenum
- 0.3 percent or more of nickel
- 0.06 percent or more of niobium
- 0.6 percent or more of silicon.
- 0.05 percent or more of titanium
- 0.3 percent or more of tungsten (wolfram)
- 0.1 percent or more of vanadium
- 0.05 percent or more of zirconium
- 0.1 percent or more of other elements (except sulfur, phosphorus, carbon and nitrogen), taken separately.

(g) <u>Remelting scrap ingots of iron or steel</u>

Products roughly cast in the form of ingots without feeder-heads or hot tops, or of pigs, having obvious surface faults and not complying with the chemical composition of pig iron, spiegeleisen or ferroalloys.

(h) <u>Granules</u>

Products of which less than 90 percent by weight passes through a sieve with a mesh aperture of 1 mm and of which 90 percent or more by weight passes through a sieve with a mesh aperture of 5 mm.

(ij) <u>Semifinished products</u>

Continuous cast products of solid section, whether or not subjected to primary hot-rolling; and

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

These products are not presented in coils.

(k) <u>Flat-rolled products</u>

Rolled products of solid rectangular (other than square) cross section, which do not conform to the definition at (ij) above in the form of:

- coils of successively superimposed layers, or
- straight lengths, which if of a thickness less than 4.75 mm are of a width measuring at least 10 times the thickness or if of a thickness of 4.75 mm or more are of a width which exceeds 150 mm and measures at least twice the thickness.

Flat-rolled products include those with patterns in relief derived directly from rolling (for example, grooves, ribs, checkers, tears, buttons, lozenges) and those which have been perforated, corrugated or polished, provided that they do not thereby assume the character of articles or products of other headings.

Flat-rolled products of a shape other than rectangular or square, of any size, are to be classified as products of a width of 600 mm or more, provided that they do not assume the character of articles or products of other headings.

(l) Bars and rods, hot-rolled, in irregularly wound coils

Hot-rolled products in irregularly wound coils, which have a solid cross section in the shape of circles, segments of circles, ovals, rectangles (including squares), triangles or other convex polygons. These products may have indentations, ribs, grooves or other deformations produced during the rolling process (reinforcing bars and rods).

(m) Other bars and rods

Products which do not conform to any of the definitions at (ij), (k) or (l) above or to the definition of wire, which have a uniform solid cross section along their whole length in the shape of circles, segments of circles, ovals, rectangles (including squares), triangles or other convex polygons. These products may:

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

- be twisted after rolling.

(n) Angles, shapes and sections

Products having a uniform solid cross section along their whole length which do not conform to any of the definitions at (ij), (k), (l) or (m) above or to the definition of wire.

Chapter 72 does not include products of heading 7301 or 7302.

(o) Wire

Cold-formed products in coils, of any uniform solid cross section along their whole length, which do not conform to the definition of flat-rolled products.

(p) Hollow drill bars and rods

Hollow bars and rods of any cross section, suitable for drills, of which the greatest external dimension of the cross section exceeds 15 mm but does not exceed 52 mm, and of which the greatest internal dimension does not exceed one half of the greatest external dimension. Hollow bars and rods of iron or steel not conforming to this definition are to be classified in heading 7304.

2. Ferrous metals clad with another ferrous metal are to be classified as products of the ferrous metal predominating by weight.

3. Iron or steel products obtained by electrolytic deposition, by pressure casting or by sintering are to be classified according to their form, their composition and their appearance, in the headings of this chapter appropriate to similar hot-rolled products.

Subheading Notes

1. In this chapter the following expressions have the meanings hereby assigned to them:

(a) Alloy pig iron

Pig iron containing, by weight, one or more of the following elements in the specified proportions:

- more than 0.2 percent of chromium

- more than 0.3 percent of copper

- more than 0.3 percent of nickel

- more than 0.1 percent of any of the following elements: aluminum, molybdenum, titanium, tungsten (wolfram), vanadium.

(b) Nonalloy free-cutting steel

Nonalloy steel containing by weight one or more of the following elements in the specified proportions:

- 0.08 percent or more of sulfur

- 0.1 percent or more of lead

- more than 0.05 percent of selenium

- more than 0.01 percent of tellurium

- more than 0.05 percent of bismuth.

(c) Silicon electrical steel

Alloy steels containing by weight at least 0.6 percent but not more than 6 percent of silicon and not more than 0.08 percent of carbon. They may also contain by weight not more than 1 percent of aluminum but no other element in a proportion that would give the steel the characteristics of another alloy steel.

(d) High-speed steel

Alloy steels containing, with or without other elements, at least two of the three elements molybdenum, tungsten and vanadium with a combined content by weight of 7 percent or more, 0.6 percent or more of carbon and 3 to 6 percent of chromium.

(e) Silico-manganese steel

Alloy steels containing by weight:

- 0.35 percent or more but not more than 0.7 percent of carbon
- 0.5 percent or more but not more than 1.2 percent of manganese, and
- 0.6 percent or more but not more than 2.3 percent of silicon, but not containing any other element in a proportion that would give the steel the characteristics of another alloy steel.

2. For the classification of ferroalloys in the subheadings of heading 7202 the following rule should be observed:

A ferroalloy is considered as binary and classified under the relevant subheading (if it exists) if only one of the alloy elements exceeds the minimum percentage laid down in chapter note 1(c); by analogy, it is considered respectively as ternary or quaternary if two or three alloy elements exceed the minimum percentage.

For the application of this rule, the unspecified "other elements" referred to in chapter note 1(c) must each exceed 10 percent by weight.

Additional U.S. Notes

1. For the purposes of the tariff schedule the following expressions have the meanings hereby assigned to them:

(a) High-strength steel

Flat-rolled products of a thickness of less than 3 mm and having a minimum yield point of 275 MPa or of a thickness of 3 mm or more and having a minimum yield point of 355 MPa.

(b) Universal mill plate

Flat-rolled products rolled on four faces or in a closed box pass, of a width exceeding 150 mm but not exceeding 1,250 mm and of thickness of not less than 4 mm, not in coils and without patterns in relief.

(c) Concrete reinforcing bars and rods

Hot-rolled bars and rods containing indentations, ribs, grooves or other deformations produced during the rolling process or twisted after rolling.

(d) Razor blade steel

Flat-rolled products of stainless steel not over 0.25 mm in thickness and not over 23 mm in width, and containing by weight not over 14.7 percent of chromium, certified at the time of entry to be used in the manufacture of razor blades.

(e) Tool steel

Alloy steels which contain the following combinations of elements in the quantity by weight respectively indicated:

(i) more than 1.2 percent carbon and more than 10.5 percent chromium; or

(ii) not less than 0.3 percent carbon and 1.25 percent or more but less than 10.5 percent chromium; or

(iii) not less than 0.85 percent carbon and 1 percent to 1.8 percent, inclusive, manganese; or

(iv) 0.9 percent to 1.2 percent, inclusive, chromium and 0.9 percent to 1.4 percent, inclusive, molybdenum; or

(v) not less than 0.5 percent carbon and not less than 3.5 percent molybdenum; or

(vi) not less than 0.5 percent carbon and not less than 5.5 percent tungsten.

(f) Chipper knife steel

Alloy tool steels which contain, in addition to iron, each of the following elements by weight in the amount specified:

(i) not less than 0.48 nor more than 0.55 percent of carbon;

(ii) not less than 0.2 nor more than 0.5 percent of manganese;

(iii) not less than 0.75 nor more than 1.05 percent of silicon;

(iv) not less than 7.25 nor more than 8.75 percent of chromium;

(v) not less than 1.25 nor more than 1.75 percent of molybdenum;

(vi) none, or not more than 1.75 percent of tungsten; and

(vii) not less than 0.2 nor more than 0.55 percent of vanadium.

(g) Heat-resisting steel

Alloy steels containing by weight less than 0.3 percent of carbon and 4 percent or more but less than 10.5 percent of chromium.

(h) Ball-bearing steel

Alloy tool steels which contain, in addition to iron, each of the following elements by weight in the amount specified:

(i) not less than 0.95 nor more than 1.13 percent of carbon;

(ii) not less than 0.22 nor more than 0.48 percent of manganese;

(iii) none, or not more than 0.03 percent of sulfur;

(iv) none, or not more than 0.03 percent of phosphorus;

(v) not less than 0.18 nor more than 0.37 percent of silicon;

(vi) not less than 1.25 nor more than 1.65 percent of chromium;

(vii) none, or not more than 0.28 percent of nickel;

(viii) none, or not more than 0.38 percent of copper; and

(ix) none, or not more than 0.09 percent of molybdenum.

For the purposes of this chapter, unless the context provides otherwise, the term "further worked" refers to products subjected to any of the following surface treatments: polishing and burnishing; artificial oxidation; chemical surface treatments such as phosphatizing, oxalating and borating; coating with metal; coating with nonmetallic substances (e.g., enameling, varnishing, lacquering, painting, coating with plastics materials); or cladding.

No allowance or reduction of duties for partial damage or loss in consequence of discoloration or rust occurring before entry shall be made upon iron or steel or upon any article of iron or steel.

Statistical Notes

1. For the purposes of the tariff schedule, the expression high-nickel alloy steel refers to alloy steel containing by weight 24 percent or more of nickel, with or without other elements.

2. For the purposes of subheading 7204.10, waste and scrap of cast iron includes but is not necessarily limited to: cupola cast (ISRI number 252); charging box cast (ISRI number 253); heavy breakable cast (ISRI number 254); hammer blocks or bases (ISRI number 255); burnt iron (ISRI number 256); mixed cast (ISRI number 257); stove plate, clean cast iron stove (ISRI number 258); clean auto cast (ISRI numbers 259, 262 and 263); motor blocks (ISRI number 260); drop broken machinery cast (ISRI number 261); malleable (ISRI number 264); ingot molds and stools (ISRI numbers 265 and 266); and railroad ferrous scrap consisting of cast iron No. 1, No. 2, No.3 and No. 4, cast iron brake shoes and No. 1 wheels.

3. For the purposes of subheading 7204.41 or 7204.49 the expression:

(a) No. 1 heavy melting includes, but is not necessarily limited to:

No. 1 heavy melting steel (ISRI numbers 200, 201 and 202); bundled No. 1 steel (ISRI number 217); cast steel (ISRI number 233); springs and crankshafts (ISRI number 244); ship scrap; and railroad ferrous scrap consisting of cast steel No. 1 and No. 2, railroad No.1 melting steel, spring steel, destroyed steel cars, destroyed steel car sides and box car roofs (note: other types of railroad ferrous scrap are included in some of the grades listed below);

(b) No. 2 heavy melting includes, but is not necessarily limited to:

No. 2 heavy melting steel (ISRI numbers 203, 204, 205 and 206); bundled No. 2 steel (ISRI number 218); foundary steel (ISRI numbers 242 and 243); and hard steel cut 76 cm and under (ISRI number 248);

(c) No. 1 bundles includes, but is not necessarily limited to:

No. 1 busheling (ISRI number 207); new black sheet clippings (ISRI number 207A); No. 1 bundles (ISRI number 208); electric furnace bundles (ISRI number 235); silicon-bearing steel busheling, clippings, and bundles (ISRI numbers 239, 240 and 250); No. 1 railroad ferrous sheet scrap; and car clips;

(d) No. 2 bundles includes, but is not necessarily limited to:

No. 2 bundles (ISRI number 209); No. 3 bundles (ISRI number 214); incinerator bundles (ISRI number 215); terne plate bundles (ISRI number 216); and auto slabs (ISRI numbers 224 and 225);

(e) Borings, shovelings and turnings includes, but it not necessarily limited to:

Machine shop turnings, shoveling turnings and iron borings (ISRI numbers 219, 220, 221, 222 and 223); briquetted iron borings (ISRI number 226); briquetted steel turnings (ISRI number 227); alloy free turnings (ISRI numbers 245, 246 and 247); heavy turnings (ISRI number 251); chemical borings, No. 1 and No. 2 (ISRI numbers 267 and 271); malleable borings (ISRI number 270); steel shavings; and railroad ferrous scrap consisting of No. 1 turnings and No. 2 turnings, drillings and/or borings;

(f) Shredded scrap includes, but is not necessarily limited to:

Shredded clippings (ISRI number 212); and shredded automobile scrap (ISRI numbers 210 and 211);

(g) Cut plate and structural includes but is not necessarily limited to:

Billet, bloom and forge crops (ISRI number 229); bar crops, punchings and plate scrap (ISRI numbers 230 and 234); plate and structural (ISRI numbers 231, 232, 236, 237 and 238); chargeable ingots and ingot butts (ISRI number 241); and chargeable slab crops (ISRI number 249).

Heading/ Subheading	Stat. Suf. & cd	Article Description	Units of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	2
		II. IRON AND NONALLOY STEEL				
7206		Iron and nonalloy steel in ingots or other primary forms (excluding iron of heading 7203):				
7206.10.00	00 5	Ingots	kg	4.2%	Free (E,IL) 2.5% (CA)	20%
7206.90.00	00 8	Other	kg	4.2%	Free (A,E,IL) 2.5% (CA)	20%
7207		Semifinished products of iron or nonalloy steel:				
		Containing by weight less than 0.25 percent of carbon:				
7207.11.00	00 3	Of rectangular (including square) cross section, the width measuring less than twice the thickness	kg	4.2%	Free (E,IL) 2.5% (CA)	20%
7207.12.00		Other, of rectangular (other than square) cross section		4.2%	Free (E,IL) 2.5% (CA)	20%
	10 0	Having a width measuring less than four times the thickness	kg			
	50 1	Having a width measuring at least four times the thickness	kg			
7207.19.00		Other		4.2%	Free (E,IL) 2.5% (CA)	20%
	30 9	Of circular cross section	kg			
	90 6	Other	kg			
7207.20.00		Containing by weight 0.25 percent or more of carbon		4.2%	Free (E,IL) 2.5% (CA)	20%
		Of rectangular (including square) cross section:				
	25 3	Having a width measuring less than four times the thickness	kg			
	45 9	Having a width measuring at least four times the thickness	kg			
	75 2	Of circular cross section	kg			
	90 3	Other	kg			
7208		Flat-rolled products of iron or nonalloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated:				
		In coils, not further worked than hot-rolled, of high-strength steel:				
7208.11.00	00 2	Of a thickness exceeding 10 mm	kg	6%	Free (E,IL) 3.6% (CA)	20%
7208.12.00	00 1	Of a thickness of 4.75 mm or more but not exceeding 10 mm	kg	6%	Free (E,IL) 3.6% (CA)	20%
7208.13		Of a thickness of 3 mm or more but less than 4.75 mm:				
7208.13.10	00 8	Pickled	kg	5.1%	Free (E,IL) 3% (CA)	0.4¢/kg + 20%
7208.13.50	00 9	Other	kg	4.9%	Free (E,IL) 2.9% (CA)	20%
7208.14		Of a thickness of less than 3 mm:				
7208.14.10	00 7	Pickled	kg	5.1%	Free (E,IL) 3% (CA)	0.4¢/kg + 20%
7208.14.50	00 8	Other	kg	4.9%	Free (E,IL) 2.9% (CA)	20%

Heading/ Subheading	Stat. Suf. & cd	Article Description	Units of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	2
7212		Flat-rolled products of iron or nonalloy steel, of a width of less than 600 mm, clad, plated or coated:				
7212.10.00	00 7	Plated or coated with tin	kg	3.5%	Free (E,IL) 2.1% (CA)	6%
		Electrolytically plated or coated with zinc:				
7212.21.00	00 4	Of high-strength steel	kg	6.5%	Free (E,IL) 3.9% (CA)	21.5%
7212.29.00	00 6	Other	kg	6.5%	Free (E,IL) 3.9% (CA)	21.5%
7212.30		Otherwise plated or coated with zinc:				
		Of a width of less than 300 mm:				
7212.30.10		Of a thickness exceeding 0.25 mm or more		3.4%	Free (E,IL) 2% (CA)	25%
	30 5	Of a width less than 51 mm, in coils	kg			
	90 2	Other	kg			
7212.30.30	00 7	Other	kg	2.4%	Free (E,IL) 1.4% (CA)	25%
7212.30.50	00 2	Other	kg	6.5%	Free (E,IL) 3.9% (CA)	21.5%
7212.40		Painted, varnished or coated with plastics:				
7212.40.10	00 9	Of a width of less than 300 mm	kg	3.4%	Free (E,IL) 2% (CA)	25%
7212.40.50	00 0	Other	kg	5.1%	Free (E,IL) 3% (CA)	0.4¢/kg + 20%
7212.50.00	00 8	Otherwise plated or coated	kg	6.5%	Free (E,IL) 3.9% (CA)	21.5%
7212.60.00	00 6	Clad	kg	6.5%	Free (E,IL) 3.9% (CA)	30%
7213		Bars and rods, hot-rolled, in irregularly wound coils, of iron or nonalloy steel:				
7213.10.00	00 6	Concrete reinforcing bars and rods	kg	4.9%	Free (E,IL) 2.9% (CA)	20%
7213.20.00	00 4	Of free-cutting steel	kg	1.9%	Free (E,IL) 1.1% (CA)	5.5%
		Other, containing by weight less than 0.25 percent of carbon:				
7213.31		Of circular cross section measuring less than 14 mm in diameter:				
7213.31.30	00 5	Not tempered, not treated and not partly manufactured	kg	1.9%	Free (E,IL) 1.1% (CA)	5.5%
7213.31.60	00 8	Other	kg	2.3%	Free (E,IL) 1.3% (CA)	6%
7213.39.00		Other		1.9%	Free (E,IL) 1.1% (CA)	5.5%
		Of circular cross section:				
	30 7	With a diameter of 14 mm or more but less than 19 mm	kg			
	60 0	With a diameter of 19 mm or more	kg			
	90 4	Other	kg			

Heading/ Subheading	Stat. Suf. & cd	Article Description	Units of Quantity	Rates of Duty 1 General	Special	2
7213 (con.)		Bars and rods, hot-rolled, in irregularly wound coils, of iron or nonalloy steel (con.):				
		Other, containing by weight 0.25 percent or more but less than 0.6 percent of carbon:				
7213.41		Of circular cross section measuring less than 14 mm in diameter:				
7213.41.30	00 3	Not tempered, not treated and not partly manufactured	kg	1.9%	Free (E,IL) 1.1% (CA)	5.5%
7213.41.60	00 6	Other	kg	2.3%	Free (E,IL) 1.3% (CA)	6%
7213.49.00		Other		1.9%	Free (E,IL) 1.1% (CA)	5.5%
		Of circular cross section:				
	30 5	With a diameter of 14 mm or more but less than 19 mm	kg			
	60 8	With a diameter of 19 mm or more	kg			
	90 2	Other	kg			
7213.50.00		Other, containing by weight 0.6 percent or more of carbon		1.9%	Free (E,IL) 1.1% (CA)	5.5%
		Of circular cross section:				
	20 3	With a diameter of less than 14 mm	kg			
	40 9	With a diameter of 14 mm or more but less than 19 mm	kg			
	60 4	With a diameter of 19 mm or more	kg			
	80 0	Other	kg			
7214		Other bars and rods of iron or nonalloy steel, not further worked than forged, hot-rolled, hot-drawn or hot-extruded, but including those twisted after rolling:				
7214.10.00	00 5	Forged	kg	4.7%	Free (E,IL) 2.8% (CA)	20%
7214.20.00	00 3	Concrete reinforcing bars and rods	kg	4.9%	Free (E,IL) 2.9% (CA)	20%
7214.30.00	00 1	Of free-cutting steel	kg	4.7%	Free (E,IL) 2.8% (CA)	20%
7214.40.00		Other, containing by weight less than 0.25 percent of carbon		4.7%	Free (E,IL) 2.8% (CA)	20%
	10 7	Flats	kg			
	30 3	Rounds	kg			
	50 8	Other	kg			
7214.50.00		Other, containing by weight 0.25 percent or more but less than 0.6 percent of carbon		4.7%	Free (E,IL) 2.8% (CA)	20%
	10 4	Flats	kg			
	30 0	Rounds	kg			
	50 5	Other	kg			
7214.60.00		Other, containing by weight 0.6 percent or or more of carbon		4.7%	Free (E,IL) 2.8% (CA)	20%
	10 2	Flats	kg			
	30 8	Rounds	kg			
	50 3	Other	kg			

Heading/ Subheading	Stat. Suf. & cd	Article Description	Units of Quantity	Rates of Duty 1 General	Special	2
		IV. OTHER ALLOY STEEL; HOLLOW DRILL BARS AND RODS, OF ALLOY OR NONALLOY STEEL				
7224		Other alloy steel in ingots or other primary forms; semifinished products of other alloy steel:				
7224.10.00		Ingots and other primary forms	....	5.1%	Free (E,IL) 3% (CA)	28%
	05 8	Of high-nickel alloy steel	kg			
		Other:				
	45 0	Of tool steel	kg			
	75 3	Other	kg			
7224.90.00		Other	....	5.1%	Free (E,IL) 3% (CA)	28%
	05 1	Of high-nickel alloy steel	kg			
		Other:				
		Of tool steel:				
		Of rectangular (including square) cross section:				
	15 9	Having a width less than four times the thickness	kg			
	25 7	Having a width at least four times the thickness	kg			
	35 5	Other	kg			
		Other:				
		Of rectangular (including square) cross section:				
	45 3	Having a width less than four times the thickness	kg			
	55 0	Having a width at least four times the thickness	kg			
	65 8	Of circular cross section	kg			
	75 6	Other	kg			
7225		Flat-rolled products of other alloy steel, of a width of 600 mm or more:				
7225.10.00	00 2	Of silicon electrical steel	kg	5.8%	Free (E,IL) 3.4% (CA)	28%
7225.20.00	00 0	Of high-speed steel	kg	10.5%	Free (E,IL) 6.3% (CA)	32%
7225.30		Other, not further worked than hot-rolled, in coils:				
		Of a thickness of 4.75 mm or more:				
7225.30.10	00 6	Of tool steel (other than high-speed steel)	kg	9.6%	Free (E,IL) 5.7% (CA)	29%
7225.30.30		Other	....	3.8%	Free (E,IL) 2.2% (CA)	28%
	05 7	Of high-nickel alloy steel	kg			
	50 1	Other	kg			
		Of a thickness of less than 4.75 mm:				
7225.30.50		Of tool steel (other than high-speed steel)	....	9.6%	Free (E,IL) 5.7% (CA)	29%
	30 1	Of ball-bearing steel	kg			
	60 4	Other	kg			
7225.30.70	00 3	Other	kg	9.5%	Free (E,IL) 5.7% (CA)	28%

Heading/ Subheading	Stat. Suf.	& cd	Article Description	Units of Quantity	Rates of Duty 1 General	Rates of Duty 1 Special	Rates of Duty 2
7227			Bars and rods, hot-rolled, in irregularly wound coils, of other alloy steel:				
7227.10.00	00	0	Of high-speed steel..........................	kg......	5.3%	Free (E,IL) 3.1% (CA)	14%
7227.20.00	00	8	Of silico-manganese steel.....................	kg......	4.5%	Free (E,IL) 2.7% (CA)	10%
7227.90			Other:				
			Of tool steel (other than high-speed steel):				
7227.90.10			Not tempered, not treated, and not partly manufactured................	....	2.1%	Free (E,IL) 1.2% (CA)	12%
	30	5	Of ball-bearing steel..........	kg			
	60	8	Other..........................	kg			
7227.90.20			Other.............................	....	4.2%	Free (E,IL) 2.5% (CA)	11%
	30	3	Of ball-bearing steel..........	kg			
	60	6	Other..........................	kg			
7227.90.60			Other................................	....	4.5%	Free (E,IL) 2.7% (CA)	10%
	05	5	Of high-nickel alloy steel..........	kg			
	50	9	Other..............................	kg			
7228			Other bars and rods of other alloy steel; angles, shapes and sections, of other alloy steel; hollow drill bars and rods, of alloy or non-alloy steel:				
7228.10.00			Bars and rods, of high-speed steel...........	....	11.5%	Free (E,IL) 6.9% (CA)	32%
	10	7	Not cold-formed.........................	kg			
			Cold-formed:				
	30	3	With a maximum cross-sectional dimension of less than 18 mm........	kg			
	60	6	With a maximum cross-sectional dimension of 18 mm or more..........	kg			
7228.20			Bars and rods, of silico-manganese steel:				
7228.20.10	00	5	Not cold-formed.........................	kg......	6%	Free (E,IL) 3.6% (CA)	28%
7228.20.50	00	6	Cold-formed............................	kg......	7.5%	Free (E,IL) 4.5% (CA)	28%
7228.30			Other bars and rods, not further worked than hot-rolled, hot-drawn or extruded:				
			Of tool steel (other than high-speed steel):				
7228.30.20	00	1	Of ball-bearing steel..............	kg......	6.1%	Free (E,IL) 3.6% (CA)	29%
7228.30.40	00	7	Of chipper knife steel, not cold-formed.........................	kg......	Free		28%
7228.30.60	00	2	Other.............................	kg......	10.6%	Free (E,IL) 6.3% (CA)	29%
7228.30.80			Other................................	....	6%	Free (E,IL) 3.6% (CA)	28%
	05	3	Of high-nickel alloy steel..........	kg			
	50	7	Other..............................	kg			
7228.40.00	00	3	Other bars and rods, not further worked than forged................................	kg......	6%	Free (E,IL) 3.6% (CA)	28%

APPENDIX G

AVAILABLE INFORMATION ON ALTERNATIVE "LIKE-PRODUCT" INDUSTRIES

Figure G-1
Like-product scenarios: Certain Steel Products

(table numbers)

Item		Semi-finished	Cut-length bars	Coiled bars	Total bars	Rods	Bars & rods	Semifin., Bars & rods
Carbon:	Certain special	G-1	G-16	G-19	G-22	G-37	G-52	G-67
	Lead & bismuth	G-2	N.A.	N.A.	G-23	G-38	G-53	G-68
	Free-machining	G-3	N.A.	N.A.	G-24	G-39	G-54	G-69
	All special	G-4	N.A.	N.A.	G-25	G-40	G-55	G-70
	Merchant	G-5	N.A.	N.A.	G-26	G-41	G-56	G-71
	Total carbon	G-6	N.A.	N.A.	G-27	G-42	G-57	G-72
Certain Alloy:	Certain special	G-7	G-17	G-20	G-28	G-43	G-58	G-73
	Lead & bismuth	G-8	N.A.	N.A.	G-29	G-44	G-59	G-74
	Free-machining	G-9	N.A.	N.A.	G-30	G-45	G-60	G-75
	All special	G-10	N.A.	N.A.	G-31	G-46	G-61	G-76
Carbon & certain alloy:	Certain special	G-11	G-18	G-21	G-32	G-47	G-62	G-77
	Lead & bismuth	G-12	N.A.	N.A.	G-33	G-48	G-63	G-78
	Free-machining	G-13	N.A.	N.A.	G-34	G-49	G-64	G-79
	All special	G-14	N.A.	N.A.	G-35	G-50	G-65	G-80
	Total carbon & certain alloy	G-15	N.A.	N.A.	G-36	G-51	G-66	G-81

N.A. = Not Available

Figure G-1--Continued
Like-product scenarios: Certain Steel Products

(table numbers)

Item	Semi-finished	Cut-length bars	Coiled bars	Total bars	Rods	Bars & rods	Semifin., Bars & rods
Subject non-free-machining:							
Carbon	G-82	G-85	G-88	G-91	G-94	G-97	G-100
Alloy	G-83	G-86	G-89	G-92	G-95	G-98	G-101
Total carbon & certain alloy	G-84	G-87	G-90	G-93	G-96	G-99	G-102
Subject free-machining (non-lead/bismuth):							
Carbon	G-103	G-106	G-109	G-112	G-115	G-118	G-121
Alloy	G-104	G-107	G-110	G-113	G-116	G-119	G-122
Total carbon & certain alloy	G-105	G-108	G-111	G-114	G-117	G-120	G-123

N.A. = Not Available

TABLES G-1 THROUGH G-12 CONTAIN CONFIDENTIAL BUSINESS PROPRIETARY INFORMATION.

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Table G-13
All free-machining carbon & alloy steel semifinished products: Summary data concerning the U.S. market, 1989-91, January-March 1991, and January-March 1992

(Quantity=short tons, value=1,000 dollars, unit values and unit labor costs are per short ton, period changes=percent, except where noted)

Item	Reported data					Period changes			
				Jan.-Mar.--					Jan.-Mar.
	1989	1990	1991	1991	1992	1989-90	1990-91	1989-91	1991-92
U.S. consumption quantity:									
Amount	1,014,691	1,070,938	848,470	193,031	275,141	+5.5	-20.8	-16.4	+42.5
Producers' share 1/	91.5	93.0	90.9	87.0	89.4	+1.5	-2.1	-0.6	+2.5
Importers' share 1/:									
Brazil (subject)	***	***	***	***	***	***	***	***	***
All sources	8.5	7.0	9.1	13.0	10.6	-1.5	+2.1	+0.6	-2.5
U.S. consumption value:									
Amount	357,084	366,282	296,721	69,433	95,830	+2.6	-19.0	-16.9	+38.0
Producers' share 1/	90.6	91.7	88.9	85.0	88.6	+1.1	-2.8	-1.7	+3.6
Importers' share 1/:									
Brazil (subject)	***	***	***	***	***	***	***	***	***
All sources	9.4	8.3	11.1	15.0	11.4	-1.1	+2.8	+1.7	-3.6
U.S. importers' imports from--									
Brazil (subject):									
Imports quantity	***	***	***	***	***	***	***	***	***
Imports value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
All sources:									
Imports quantity	86,194	75,310	77,414	25,129	29,051	-12.6	+2.8	-10.2	+15.6
Imports value	33,626	30,521	33,019	10,407	10,882	-9.2	+8.2	-1.8	+4.6
Unit value	$390.12	$405.27	$426.52	$414.14	$374.58	+3.9	+5.2	+9.3	-9.6
U.S. producers'--									
Average capacity	1,861,493	1,880,442	1,807,156	439,968	449,114	+1.0	-3.9	-2.9	+2.1
Production	956,002	1,006,551	770,063	164,953	248,350	+5.3	-23.5	-19.4	+50.6
Capacity utilization 1/	51.4	53.5	42.6	37.5	55.3	+2.2	-10.9	-8.7	+17.8
U.S. shipments:									
Quantity	928,497	995,628	771,056	167,902	246,090	+7.2	-22.6	-17.0	+46.6
Value	323,458	335,761	263,702	59,026	84,948	+3.8	-21.5	-18.5	+43.9
Unit value	$348.37	$337.24	$342.00	$351.55	$345.19	-3.2	+1.4	-1.8	-1.8
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments 1/	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
Inventory/shipments 1/	18.8	15.2	15.5	21.1	11.6	-3.5	+0.3	-3.2	-9.5
Production workers	670	679	559	502	595	+1.3	-17.7	-16.6	+18.5
Hours worked (1,000s)	1,422	1,468	1,155	266	361	+3.2	-21.3	-18.8	+35.7
Total comp. ($1,000)	33,971	35,264	30,064	6,926	9,590	+3.8	-14.7	-11.5	+38.5
Hourly total comp	$23.89	$24.02	$26.03	$26.04	$26.57	+0.6	+8.4	+9.0	+2.0
Productivity (tons/hour)	0.548	0.544	0.522	0.490	0.582	-0.6	-4.2	-4.8	+18.9
Unit labor costs	$43.63	$44.12	$49.88	$53.22	$45.57	+1.1	+13.0	+14.3	-14.4
Net sales	***	***	***	***	***	***	***	***	***
COGS/sales 1/	***	***	***	***	***	***	***	***	***
Operating income (loss)	***	***	***	***	***	***	***	***	***
Op. income (loss)/sales 1/	***	***	***	***	***	***	***	***	***

1/ 'Reported data' are in percent and 'period changes' are in percentage-point.
2/ Less than 0.05 percentage points.
3/ Not applicable.
4/ Not available.

Note.--Period changes are derived from the unrounded data. Period changes involving negative period data are positive if the amount of the negativity decreases and negative if the amount of the negativity increases. Part-year inventory ratios are annualized.

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

Table G-14
All special-quality carbon & alloy steel semifinished products: Summary data concerning the U.S. market, 1989-91, January-March 1991, and January-March 1992

(Quantity=short tons, value=1,000 dollars, unit values and unit labor costs are per short ton, period changes=percent, except where noted)

Item	Reported data 1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992	Period changes 1989-90	1990-91	1989-91	Jan.-Mar. 1991-92
U.S. consumption quantity:									
Amount	5,670,509	6,518,555	5,699,763	1,539,806	1,703,762	+15.0	-12.6	+0.5	+10.6
Producers' share 1/	91.1	91.5	89.2	86.9	87.4	+0.4	-2.3	-1.9	+0.6
Importers' share 1/:									
Brazil (subject)	3.0	2.2	3.7	4.0	3.1	-0.9	+1.6	+0.7	-0.8
All sources	8.9	8.5	10.8	13.1	12.6	-0.4	+2.3	+1.9	-0.6
U.S. consumption value:									
Amount	2,007,391	2,144,089	1,914,134	514,208	547,293	+6.8	-10.7	-4.6	+6.4
Producers' share 1/	91.0	91.7	89.9	87.6	88.2	+0.6	-1.8	-1.2	+0.6
Importers' share 1/:									
Brazil (subject)	2.9	2.0	3.5	3.7	2.9	-1.0	+1.5	+0.6	-0.8
All sources	9.0	8.3	10.1	12.4	11.8	-0.6	+1.8	+1.2	-0.6
U.S. importers' imports from--									
Brazil (subject):									
Imports quantity	172,621	140,330	212,975	60,927	53,166	-18.7	+51.8	+23.4	-12.7
Imports value	58,722	41,874	67,024	19,262	15,867	-28.7	+60.1	+14.1	-17.6
Unit value	$340.18	$298.40	$314.70	$316.15	$298.44	-12.3	+5.5	-7.5	-5.6
Ending inventories	21,726	7,017	32,368	19,509	35,995	-67.7	+361.3	+49.0	+84.5
All sources:									
Imports quantity	506,727	556,133	616,047	202,387	214,495	+9.8	+10.8	+21.6	+6.0
Imports value	179,680	178,358	193,400	63,654	64,728	-0.7	+8.4	+7.6	+1.7
Unit value	$354.59	$320.71	$313.94	$314.52	$301.77	-9.6	-2.1	-11.5	-4.1
U.S. producers'--									
Average capacity	8,376,859	8,644,216	8,462,395	2,098,930	2,138,968	+3.2	-2.1	+1.0	+1.9
Production	5,454,523	5,964,475	5,121,362	1,318,658	1,486,629	+9.3	-14.1	-6.1	+12.7
Capacity utilization 1/	65.1	69.0	60.5	62.8	69.4	+3.9	-8.5	-4.6	+6.5
U.S. shipments:									
Quantity	5,163,782	5,962,422	5,083,716	1,337,419	1,489,267	+15.5	-14.7	-1.6	+11.4
Value	1,827,711	1,965,731	1,720,734	450,554	482,565	+7.6	-12.5	-5.9	+7.1
Unit value	$353.95	$329.69	$338.48	$336.88	$324.03	-6.9	+2.7	-4.4	-3.8
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments 1/	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
Inventory/shipments 1/	12.1	9.9	10.7	10.6	9.0	-2.2	+0.8	-1.4	-1.6
Production workers	3,165	3,364	2,998	2,775	3,095	+6.3	-10.9	-5.3	+11.5
Hours worked (1,000s)	6,448	7,000	5,830	1,452	1,659	+8.6	-16.7	-9.6	+14.3
Total comp. ($1,000)	149,469	161,045	141,781	34,983	41,616	+7.7	-12.0	-5.1	+19.0
Hourly total comp	$23.18	$23.01	$24.32	$24.09	$25.08	-0.8	+5.7	+4.9	+4.1
Productivity (tons/hour)	0.487	0.481	0.474	0.439	0.510	-1.3	-1.3	-2.6	+16.3
Unit labor costs	$47.62	$47.87	$51.27	$54.91	$49.14	+0.5	+7.1	+7.7	-10.5
Net sales	233,715	280,274	215,528	3/	3/	+19.9	-23.1	-7.8	3/
COGS/sales 1/	98.2	101.6	109.7	3/	3/	+3.4	+8.1	+11.5	3/
Operating income (loss)	(9,747)	(22,465)	(38,059)	3/	3/	-130.5	-69.4	-290.5	3/
Op. income (loss)/sales 1/	(4.2)	(8.0)	(17.7)	3/	3/	-3.8	-9.6	-13.5	3/

1/ 'Reported data' are in percent and 'period changes' are in percentage-point.
2/ An increase of less than 0.05 percentage points.
3/ Not available.

Note.--Period changes are derived from the unrounded data. Period changes involving negative period data are positive if the amount of the negativity decreases and negative if the amount of the negativity increases. Part-year inventory ratios are annualized.

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

TABLES G-15 THROUGH G-33 CONTAIN CONFIDENTIAL BUSINESS PROPRIETARY INFORMATION.

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Table G-34
All free-machining carbon & alloy steel bars (including cut rods): Summary data concerning the U.S. market, 1989-91, January-March 1991, and January-March 1992

(Quantity=short tons, value=1,000 dollars, unit values and unit labor costs are per short ton, period changes=percent, except where noted)

Item	Reported data: 1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992	Period changes: 1989-90	1990-91	1989-91	Jan.-Mar. 1991-92
U.S. consumption quantity:									
Amount	922,501	976,748	783,505	173,321	219,121	+5.9	-19.8	-15.1	+26.4
Producers' share 1/	87.5	87.7	83.1	89.6	92.9	+0.2	-4.6	-4.4	+3.3
Importers' share 1/:									
Brazil (subject)	***	***	***	***	***	***	***	***	***
All sources	12.5	12.3	16.9	10.4	7.1	-0.2	+4.6	+4.4	-3.3
U.S. consumption value:									
Amount	481,317	498,509	393,890	90,940	113,372	+3.6	-21.0	-18.2	+24.7
Producers' share 1/	87.8	88.3	83.4	90.7	93.3	+0.5	-4.9	-4.4	+2.6
Importers' share 1/:									
Brazil (subject)	***	***	***	***	***	***	***	***	***
All sources	12.2	11.7	16.6	9.3	6.7	-0.5	+4.9	+4.4	-2.6
U.S. importers' imports from--									
Brazil (subject):									
Imports quantity	***	***	***	***	***	***	***	***	***
Imports value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
All sources:									
Imports quantity	115,201	120,447	132,431	18,028	15,464	+4.6	+9.9	+15.0	-14.2
Imports value	58,915	58,438	65,482	8,465	7,589	-0.8	+12.1	+11.1	-10.3
Unit value	$511.41	$485.18	$494.46	$469.55	$490.75	-5.1	+1.9	-3.3	+4.5
U.S. producers'--									
Average capacity	1,497,328	1,533,179	1,530,147	380,457	389,110	+2.4	-0.2	+2.2	+2.3
Production	802,252	876,535	671,964	149,711	201,353	+9.3	-23.3	-16.2	+34.5
Capacity utilization 1/	54.9	58.8	45.2	40.7	53.1	+3.9	-13.6	-9.7	+12.4
U.S. shipments:									
Quantity	807,300	856,301	651,074	155,293	203,657	+6.1	-24.0	-19.4	+31.1
Value	422,402	440,071	328,408	82,475	105,783	+4.2	-25.4	-22.3	+28.3
Unit value	$523.23	$513.92	$504.41	$531.09	$519.42	-1.8	-1.9	-3.6	-2.2
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments 1/	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
Inventory/shipments 1/	12.3	12.1	13.9	12.5	9.3	-0.2	+1.9	+1.7	-3.2
Production workers	1,472	1,385	1,222	1,213	1,415	-5.9	-11.8	-17.0	+16.7
Hours worked (1,000s)	2,785	2,776	2,174	585	718	-0.3	-21.7	-21.9	+22.7
Total comp. ($1,000)	78,205	78,697	67,610	17,590	21,337	+0.6	-14.1	-13.5	+21.3
Hourly total comp.	$28.08	$28.35	$31.10	$30.07	$29.72	+1.0	+9.7	+10.7	-1.2
Productivity (tons/hour)	0.247	0.267	0.260	0.204	0.242	+8.1	-2.7	+5.2	+18.7
Unit labor costs	$109.57	$102.05	$113.17	$138.97	$118.45	-6.9	+10.9	+3.3	-14.8
Net sales	338,017	341,871	266,169	4/	4/	+1.1	-22.1	-21.3	4/
COGS/sales 1/	91.1	93.7	96.4	4/	4/	+2.7	+2.7	+5.4	4/
Operating income (loss)	16,737	7,883	(3,424)	4/	4/	-52.9	-143.4	-120.5	4/
Op. income (loss)/sales 1/	5.0	2.3	(1.3)	4/	4/	-2.6	-3.6	-6.2	4/

1/ 'Reported data' are in percent and 'period changes' are in percentage-point.
2/ An increase of less than 0.05 percentage points.
3/ Not applicable.
4/ Not available.

Note.--Period changes are derived from the unrounded data. Period changes involving negative period data are positive if the amount of the negativity decreases and negative if the amount of the negativity increases. Part-year inventory ratios are annualized.

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

Table G-35
All special-quality carbon & alloy steel bars (including cut rods): Summary data concerning the U.S. market, 1989-91, January-March 1991, and January-March 1992

(Quantity=short tons, value=1,000 dollars, unit values and unit labor costs are per short ton, period changes=percent, except where noted)

Item	Reported data 1989	1990	1991	Jan.-Mar.-- 1991	1992	Period changes 1989-90	1990-91	1989-91	Jan.-Mar. 1991-92
U.S. consumption quantity:									
Amount	4,453,348	4,632,834	4,130,878	985,773	1,102,822	+4.0	-10.8	-7.2	+11.9
Producers' share 1/	88.9	90.8	90.1	91.4	92.0	+1.9	-0.7	+1.2	+0.6
Importers' share 1/:									
Brazil (subject)	0.6	0.9	1.0	1.2	0.8	+0.3	+0.1	+0.4	-0.5
All sources	11.1	9.2	9.9	8.6	8.0	-1.9	+0.7	-1.2	-0.6
U.S. consumption value:									
Amount	2,290,934	2,295,045	2,020,741	493,469	534,211	+0.2	-12.0	-11.8	+8.3
Producers' share 1/	89.8	91.4	90.4	91.8	92.2	+1.5	-1.0	+0.6	+0.4
Importers' share 1/:									
Brazil (subject)	0.6	0.8	0.9	1.1	0.7	+0.2	+0.1	+0.3	-0.4
All sources	10.2	8.6	9.6	8.2	7.8	-1.5	+1.0	-0.6	-0.4
U.S. importers' imports from--									
Brazil (subject)									
Imports quantity	28,814	41,747	42,733	12,123	8,350	+44.9	+2.4	+48.3	-31.1
Imports value	13,495	18,243	17,966	5,483	3,790	+35.2	-1.5	+33.1	-30.9
Unit value	$468.35	$436.99	$420.42	$452.28	$453.89	-6.7	-3.8	-10.2	+0.4
Ending inventories	293	417	454	2,695	3,851	+42.3	+8.9	+54.9	+42.9
All sources:									
Imports quantity	493,848	424,314	408,251	84,850	88,031	-14.1	-3.8	-17.3	+3.7
Imports value	233,069	198,273	194,285	40,375	41,590	-14.9	-2.0	-16.6	+3.0
Unit value	$471.94	$467.28	$475.90	$475.84	$472.45	-1.0	+1.8	+0.8	-0.7
U.S. producers'--									
Average capacity	5,895,013	6,175,036	6,168,818	1,674,647	1,625,013	+4.8	-0.1	+4.6	-3.0
Production	3,959,643	4,315,918	3,726,399	865,499	1,042,107	+9.0	-13.7	-5.9	+20.4
Capacity utilization 1/	69.2	71.9	62.1	52.9	65.8	+2.7	-9.7	-7.1	+12.9
U.S. shipments:									
Quantity	3,959,500	4,208,520	3,722,627	900,923	1,014,791	+6.3	-11.5	-6.0	+12.6
Value	2,057,865	2,096,772	1,826,456	453,094	492,621	+1.9	-12.9	-11.2	+8.7
Unit value	$519.73	$498.22	$490.64	$502.92	$485.44	-4.1	-1.5	-5.6	-3.5
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments 1/	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
Inventory/shipments 1/	10.9	12.2	12.3	12.5	11.2	+1.3	+0.1	+1.4	-1.3
Production workers	5,153	5,068	4,895	4,708	4,879	-1.6	-3.4	-5.0	+3.6
Hours worked (1,000s)	10,415	10,565	9,719	2,445	2,644	+1.4	-8.0	-6.7	+8.1
Total comp. ($1,000)	239,371	244,111	233,818	57,772	65,284	+2.0	-4.2	-2.3	+13.0
Hourly total comp	$22.98	$23.11	$24.06	$23.63	$24.69	+0.5	+4.1	+4.7	+4.5
Productivity (tons/hour)	0.289	0.306	0.281	0.251	0.291	+5.8	-8.2	-2.8	+16.0
Unit labor costs	$79.95	$75.88	$86.10	$94.87	$85.42	-5.1	+13.5	+7.7	-10.0
Net sales	1,790,692	1,796,882	1,587,116	4/	4/	+0.3	-11.7	-11.4	4/
COGS/sales 1/	86.8	88.9	91.5	4/	4/	+2.1	+2.6	+4.7	4/
Operating income (loss)	159,538	112,060	47,760	4/	4/	-29.8	-57.4	-70.1	4/
Op. income (loss)/sales 1/	8.9	6.2	3.0	4/	4/	-2.7	-3.2	-5.9	4/

1/ 'Reported data' are in percent and 'period changes' are in percentage-point.
2/ A decrease of less than 0.05 percentage points.
3/ An increase of less than 0.05 percentage points.
4/ Not available.

Note.--Period changes are derived from the unrounded data. Period changes involving negative period data are positive if the amount of the negativity decreases and negative if the amount of the negativity increases. Part-year inventory ratios are annualized.

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

TABLES G-36 THROUGH G-83 CONTAIN CONFIDENTIAL BUSINESS PROPRIETARY INFORMATION.

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Table G-84
Subject non-free-machining carbon and alloy steel semifinished products: Summary data concerning the U.S. market, 1989-91, January-March 1991, and January-March 1992

(Quantity=short tons, value=1,000 dollars, unit values and unit labor costs are per short ton, period changes=percent, except where noted)

Item	Reported data					Period changes			
				Jan.-Mar.--					Jan.-Mar.
	1989	1990	1991	1991	1992	1989-90	1990-91	1989-91	1991-92
U.S. consumption quantity:									
Amount	4,655,818	5,447,617	4,851,293	1,346,775	1,428,621	+17.0	-10.9	+4.2	+6.1
Producers' share 1/	91.0	91.2	88.9	86.8	87.0	+0.2	-2.3	-2.1	+0.2
Importers' share 1/:									
Brazil	***	***	***	***	***	***	***	***	***
All sources	9.0	8.8	11.1	13.2	13.0	-0.2	+2.3	+2.1	-0.2
U.S. consumption value:									
Amount	1,650,307	1,777,807	1,617,413	444,775	451,463	+7.7	-9.0	-2.0	+1.5
Producers' share 1/	91.1	91.7	90.1	88.0	88.1	+0.5	-1.6	-1.1	2/
Importers' share 1/:									
Brazil	***	***	***	***	***	***	***	***	***
All sources	8.9	8.3	9.9	12.0	11.9	-0.5	+1.6	+1.1	3/
U.S. importers' imports from--									
Brazil:									
Imports quantity	***	***	***	***	***	***	***	***	***
Imports value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
All sources:									
Imports quantity	420,533	480,823	538,633	177,258	185,444	+14.3	+12.0	+28.1	+4.6
Imports value	146,054	147,837	160,381	53,247	53,846	+1.2	+8.5	+9.8	+1.1
Unit value	$347.31	$307.47	$297.76	$300.39	$290.36	-11.5	-3.2	-14.3	-3.3
U.S. producers'--									
Average capacity	6,515,366	6,763,774	6,655,239	1,658,962	1,689,854	+3.8	-1.6	+2.1	+1.9
Production	4,498,521	4,957,924	4,351,299	1,153,705	1,238,279	+10.2	-12.2	-3.3	+7.3
Capacity utilization 1/	69.0	73.3	65.3	69.5	73.1	+4.3	-8.0	-3.7	+3.6
U.S. shipments:									
Quantity	4,235,285	4,966,794	4,312,660	1,169,517	1,243,177	+17.3	-13.2	+1.8	+6.3
Value	1,504,253	1,629,970	1,457,032	391,528	397,617	+8.4	-10.6	-3.1	+1.6
Unit value	$355.17	$328.17	$337.85	$334.78	$319.84	-7.6	+2.9	-4.9	-4.5
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments 1/	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
Inventory/shipments 1/	10.6	8.9	9.8	9.2	8.5	-1.8	+0.9	-0.8	-0.7
Production workers	3,235	3,375	2,985	2,779	3,078	+4.3	-11.6	-7.7	+10.8
Hours worked (1,000s)	6,312	6,758	5,591	1,414	1,566	+7.1	-17.3	-11.4	+10.7
Total comp. ($1,000)	145,928	154,639	135,057	33,859	38,924	+6.0	-12.7	-7.4	+15.0
Hourly total comp	$23.12	$22.88	$24.16	$23.95	$24.86	-1.0	+5.6	+4.5	+3.8
Productivity (tons/hour)	0.374	0.380	0.387	0.358	0.407	+1.4	+1.9	+3.3	+13.5
Unit labor costs	$61.76	$60.29	$62.48	$66.80	$61.11	-2.4	+3.6	+1.2	-8.5
Net sales	6/	6/	6/	6/	6/	6/	6/	6/	6/
COGS/sales 1/	6/	6/	6/	6/	6/	6/	6/	6/	6/
Operating income (loss)	6/	6/	6/	6/	6/	6/	6/	6/	6/
Op. income (loss)/sales 1/	6/	6/	6/	6/	6/	6/	6/	6/	6/

1/ 'Reported data' are in percent and 'period changes' are in percentage-point.
2/ An increase of less than 0.05 percentage points.
3/ A decrease of less than 0.05 percentage points.
4/ An increase of 1,000 percent or more.
5/ Positive figure, but less than significant digits displayed.
6/ Not available.

Note.--Period changes are derived from the unrounded data. Period changes involving negative period data are positive if the amount of the negativity decreases and negative if the amount of the negativity increases. Part-year inventory ratios are annualized.

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

TABLES G-85 THROUGH G-92 CONTAIN CONFIDENTIAL BUSINESS PROPRIETARY INFORMATION.

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Table G-93
Certain special quality non-free-machining carbon and alloy steel bars: Summary data concerning the U.S. market, 1989-91, January-March 1991, and January-March 1992

(Quantity=short tons, value=1,000 dollars, unit values and unit labor costs are per short ton, period changes=percent, except where noted)

Item	Reported data 1989	1990	1991	Jan.-Mar.-- 1991	Jan.-Mar.-- 1992	Period changes 1989-90	1990-91	1989-91	Jan.-Mar. 1991-92
U.S. consumption quantity:									
Amount	3,530,847	3,656,086	3,347,373	812,452	883,701	+3.5	-8.4	-5.2	+8.8
Producers' share 1/	89.3	91.7	91.8	91.8	91.8	+2.4	+0.1	+2.5	2/
Importers' share 1/:									
Brazil	***	***	***	***	***	***	***	***	***
All sources	10.7	8.3	8.2	8.2	8.2	-2.4	-0.1	-2.5	3/
U.S. consumption value:									
Amount	1,809,617	1,796,536	1,626,851	402,529	420,839	-0.7	-9.4	-10.1	+4.5
Producers' share 1/	90.4	92.2	92.1	92.1	91.9	+1.8	-0.1	+1.9	-0.2
Importers' share 1/:									
Brazil	***	***	***	***	***	***	***	***	***
All sources	9.6	7.8	7.9	7.9	8.1	-1.8	+0.1	-1.7	+0.2
U.S. importers' imports from--									
Brazil:									
Imports quantity	***	***	***	***	***	***	***	***	***
Imports value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
All sources:									
Imports quantity	378,647	303,867	275,820	66,822	72,567	-19.7	-9.2	-27.2	+8.6
Imports value	174,154	139,835	128,803	31,910	34,001	-19.7	-7.9	-26.0	+6.6
Unit value	$459.94	$460.18	$466.98	$477.54	$468.55	+0.1	+1.5	+1.5	-1.9
U.S. producers'--									
Average capacity	4,397,685	4,641,857	4,638,671	1,294,190	1,235,903	+5.6	-0.1	+5.5	-4.5
Production	3,157,391	3,439,383	3,054,435	715,788	840,754	+8.9	-11.2	-3.3	+17.5
Capacity utilization 1/	74.1	76.2	67.7	56.5	69.8	+2.1	-8.5	-6.4	+13.3
U.S. shipments:									
Quantity	3,152,200	3,352,219	3,071,553	745,630	811,134	+6.3	-8.4	-2.6	+8.8
Value	1,635,463	1,656,701	1,498,048	370,619	386,838	+1.3	-9.6	-8.4	+4.4
Unit value	$518.83	$494.21	$487.72	$497.05	$476.91	-4.7	-1.3	-6.0	-4.1
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments 1/	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
Inventory/shipments 1/	10.5	12.3	11.9	12.5	11.8	+1.8	-0.4	+1.4	-0.7
Production workers	5,003	4,921	4,739	4,539	4,534	-1.6	-3.7	-5.3	-0.1
Hours worked (1,000s)	10,150	10,293	9,481	2,358	2,470	+1.4	-7.9	-6.6	+4.7
Total comp. ($1,000)	244,924	249,680	238,434	59,320	64,521	+1.9	-4.5	-2.6	+8.8
Hourly total comp	$24.13	$24.26	$25.15	$25.16	$26.12	+0.5	+3.7	+4.2	+3.8
Productivity (tons/hour)	0.226	0.239	0.226	0.207	0.239	+5.7	-5.6	-0.3	+15.4
Unit labor costs	$107.28	$101.90	$112.06	$122.33	$109.98	-5.0	+10.0	+4.5	-10.1
Net sales	1,452,675	1,455,011	1,320,947	285,415	300,926	+0.2	-9.2	-9.1	+5.4
COGS/sales 1/	85.8	87.7	90.5	90.4	88.2	+2.0	+2.8	+4.7	-2.2
Operating income (loss)	142,801	104,177	51,184	10,732	20,743	-27.0	-50.9	-64.2	+93.3
Op. income (loss)/sales 1/	9.8	7.2	3.9	3.8	6.9	-2.7	-3.3	-6.0	+3.1

1/ 'Reported data' are in percent and 'period changes' are in percentage-point.
2/ An increase of less than 0.05 percentage points.
3/ A decrease of less than 0.05 percentage points.

Note.--Period changes are derived from the unrounded data. Period changes involving negative period data are positive if the amount of the negativity decreases and negative if the amount of the negativity increases. Part-year inventory ratios are annualized.

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

TABLES G-94 THROUGH G-123 CONTAIN CONFIDENTIAL BUSINESS PROPRIETARY INFORMATION.

* * * * * * *

Prices

U.S. producers were asked to provide f.o.b. plant prices and delivered prices on sales of the two selected hot-rolled bar products listed below that are not subject to this investigation for the period January-March 1989 through January-March 1992. For the product 1 category listed below, price data were requested for the largest sales to a cold finisher. For product 2, price data were requested for the largest sale to a steel service center or distributor. Importers were not asked to provide price data on these products.

<u>Product 1</u>: Hot-rolled leaded alloy bars, 41L40 grade, in cut-lengths or coils 1/2 to 1-1/2 inch rounds.

<u>Product 2</u>: Hot-rolled carbon steel bars, merchant quality, in cut lengths or coils, 3/16 through 2-15/16 inches in diameter, thickness, all shapes except flats, M1016 through M1044 grades, not thermal treated.

*** domestic producers provided data that were complete or largely complete for product 1, and *** firms provided complete data for product 2. *** were the largest suppliers of product 1, and *** was the predominant supplier of product 2. No clear trend in the weighted-average prices was evident for either product category during the 3-year period.

Table G-124
Weighted-average net f.o.b. prices of U.S. producers for sales of product 1 to cold finishers and sales of product 2 to steel service centers or distributors, and total quantities of shipments, by quarters, January 1989-March 1992

*   *   *   *   *   *   *

APPENDIX H

SUMMARY DATA ON OPERATIONS OF TRADITIONAL AND MINIMILL PRODUCERS

Table H-1
All special-quality carbon & alloy steel bars and rods: Summary data concerning minimill producers, 1989-91, January-March 1991, and January-March 1992

(Quantity=short tons, value=1,000 dollars, unit values and unit labor costs are per short ton, period changes=percent, except where noted)

Item	Reported data					Period changes			
				Jan.-Mar.--					Jan.-Mar.
	1989	1990	1991	1991	1992	1989-90	1990-91	1989-91	1991-92
U.S. producers'--									
Average capacity	2,408,466	2,574,540	2,492,181	752,967	703,913	+6.9	-3.2	+3.5	-6.5
Production	2,572,680	2,807,815	2,629,260	633,235	693,962	+9.1	-6.4	+2.2	+9.6
Capacity utilization 1/	92.3	93.8	89.2	70.1	82.9	+1.5	-4.6	-3.1	+12.8
U.S. shipments:									
Quantity	2,510,309	2,682,175	2,630,950	674,060	715,356	+6.8	-1.9	+4.8	+6.1
Value	989,597	1,079,776	985,818	259,485	262,005	+9.1	-8.7	-0.4	+1.0
Unit value	$394.21	$402.57	$374.70	$384.96	$366.26	+2.1	-6.9	-4.9	-4.9
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments 1/	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
Inventory/shipments 1/	6.4	8.3	7.3	8.3	6.7	+1.9	-1.1	+0.8	-1.6
Production workers	1,927	2,009	1,968	1,895	1,876	+4.3	-2.0	+2.1	-1.0
Hours worked (1,000s)	4,426	4,456	4,459	1,081	1,093	+0.7	+0.1	+0.7	+1.1
Total comp. ($1,000)	100,062	102,746	100,583	23,964	26,899	+2.7	-2.1	+0.5	+12.2
Hourly total comp	$22.61	$23.06	$22.56	$22.17	$24.61	+2.0	-2.2	-0.2	+11.0
Productivity (tons/hour)	0.350	0.366	0.338	0.326	0.355	+4.7	-7.6	-3.2	+8.9
Unit labor costs	$65.45	$63.59	$67.23	$68.86	$70.38	-2.8	+5.7	+2.7	+2.2
Net sales	812,010	871,601	824,049	3/	3/	+7.3	-5.5	+1.5	3/
COGS/sales 1/	80.2	79.6	81.3	3/	3/	-0.6	+1.7	+1.0	3/
Operating income (loss)	104,487	120,675	100,043	3/	3/	+15.5	-17.1	-4.3	3/
Op. income (loss)/sales 1/	12.9	13.8	12.1	3/	3/	+1.0	-1.7	-0.7	3/

1/ 'Reported data' are in percent and 'period changes' are in percentage-point.
2/ Big positive figure--1,000.0 percent or more.
3/ Not available.

Note 1.--Firms were deemed to be "minimill" producers if their method of production is billet casting. Data from the following firms have been included in the above table: ***. These *** firms accounted for *** percent of U.S. production of special quality carbon and alloy steel products in 1991.

Note 2.--Period changes are derived from the unrounded data. Period changes involving negative period data are positive if the amount of the negativity decreases and negative if the amount of the negativity increases. Part-year inventory ratios are annualized.

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

Table H-2
All special-quality carbon & alloy steel bars and rods: Summary data concerning traditional producers, 1989-91, January-March 1991, and January-March 1992

(Quantity=short tons, value=1,000 dollars, unit values and unit labor costs are per short ton, period changes=percent, except where noted)

Item	Reported data					Period changes			
				Jan.-Mar.--					Jan.-Mar.
	1989	1990	1991	1991	1992	1989-90	1990-91	1989-91	1991-92
U.S. producers'--									
Average capacity	4,503,547	4,349,496	4,425,137	1,176,180	1,175,450	-3.4	+1.7	-1.7	-0.1
Production	2,609,052	2,741,012	2,250,196	501,762	667,923	+5.1	-17.9	-13.8	+33.1
Capacity utilization 1/	57.9	59.1	48.7	42.7	56.8	+1.2	-10.4	-9.3	+14.1
U.S. shipments:									
Quantity	2,676,465	2,713,364	2,237,311	546,238	646,689	+1.4	-17.5	-16.4	+18.4
Value	1,447,156	1,410,013	1,595,888	288,834	333,334	-2.6	+13.2	+10.3	+15.4
Unit value	$540.70	$519.66	$713.31	$528.77	$515.45	-3.9	+37.3	+31.9	-2.5
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Exports/shipments 1/	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventories	***	***	***	***	***	***	***	***	***
Inventory/shipments 1/	10.2	11.2	13.0	10.8	11.7	+1.0	+1.8	+2.8	+0.9
Production workers	4,305	4,144	4,083	3,866	4,134	-3.7	-1.5	-5.2	+6.9
Hours worked (1,000s)	8,295	8,460	7,684	1,903	2,120	+2.0	-9.2	-7.4	+11.4
Total comp. ($1,000)	195,380	199,342	196,757	47,483	54,753	+2.0	-1.3	+0.7	+15.3
Hourly total comp	$23.53	$23.55	$25.59	$24.93	$25.82	+0.1	+8.6	+8.7	+3.6
Productivity (tons/hour)	0.311	0.321	0.289	0.261	0.313	+3.2	-9.7	-6.8	+20.0
Unit labor costs	$75.75	$73.46	$88.41	$95.59	$82.51	-3.0	+20.4	+16.7	-13.7
Net sales	1,362,361	1,324,128	1,114,553	4/	4/	-2.8	-15.8	-18.2	4/
COGS/sales 1/	87.8	92.4	96.3	4/	4/	+4.6	+3.8	+8.5	4/
Operating income (loss)	116,212	39,494	(18,630)	4/	4/	-66.0	-147.2	-116.0	4/
Op. income (loss)/sales 1/	8.5	3.0	(1.7)	4/	4/	-5.5	-4.7	-10.2	4/

1/ 'Reported data' are in percent and 'period changes' are in percentage-point.
2/ An increase of less than 0.05 percentage points.
3/ A decrease of less than 0.05 percentage points.
4/ A decrease of less than 0.05 percentage points.

Note 1.--Firms were deemed to be "traditional" producers if their method of production includes ingot casting. Data from the following firms have been included in the above table: ***. These *** firms accounted for *** percent of U.S. production of special quality carbon and alloy steel products in 1991.

Note 2.--Period changes are derived from the unrounded data. Period changes involving negative period data are positive if the amount of the negativity decreases and negative if the amount of the negativity increases. Part-year inventory ratios are annualized.

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

APPENDIX J

EFFECTS OF IMPORTS ON PRODUCERS' EXISTING DEVELOPMENT AND PRODUCTION EFFORTS, GROWTH, INVESTMENT, AND ABILITY TO RAISE CAPITAL

EFFECTS OF IMPORTS ON PRODUCERS' EXISTING DEVELOPMENT AND PRODUCTION EFFORTS, GROWTH, INVESTMENT, AND ABILITY TO RAISE CAPITAL

The Commission requested U.S. producers to describe and explain the actual and potential negative effects of imports of the subject special quality carbon and alloy steel products from Brazil on their existing development and production efforts (including efforts to develop a derivative or more advanced version of the product), growth, investment, and ability to raise capital. The responses by producers are shown below.

SUBJECT SPECIAL QUALITY CARBON AND ALLOY STEEL OPERATIONS

*** firms--***--stated "No" to the actual and potential negative effects of imports of the subject special quality carbon and alloy steel products from Brazil on their operations producing those products. Comments of firms responding in the affirmative are presented below.

* * * * * * *

LEAD AND BISMUTH STEEL OPERATIONS

The Commission also asked U.S. producers to describe and explain the negative impact of imports of subject special quality carbon and alloy steel products from Brazil on their cash flow, wages, ability to raise capital, investment, or development and production efforts on their lead and bismuth steel products operations. The responses by producers are shown below.

*** firms--***--stated "No" to the negative impact of imports of subject special quality carbon and alloy steel products from Brazil on their lead and bismuth steel products operations. Comments of firms responding in the affirmative are presented below.

* * * * * * *

MERCHANT QUALITY STEEL OPERATIONS

The Commission also asked U.S. producers to describe and explain the negative impact of imports of subject special quality carbon and alloy steel products from Brazil on their cash flow, wages, ability to raise capital, investment, or development and production efforts on their merchant quality steel products operations.

All *** firms responding to this question--stated "No" to the negative impact of imports of subject special quality carbon and alloy steel products from Brazil on their merchant quality steel products operations.

APPENDIX K

EC DUMPING DECISIONS

COMMISSION DECISION No 891/92/ECSC

of 30 March 1992

imposing a provisional anti-dumping duty on imports of certain semi-finished products of alloy steel, originating in Turkey and Brazil

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Coal and Steel Community,

Having regard to Commission Decision No 2424/88/ECSC of 29 July 1988 on protection against dumped or subsidized imports from countries not members of the European Coal and Steel Community [1], and in particular Article 11 thereof,

After consultation within the Advisory Committee as provided for by the above Decision,

Whereas:

A. PROCEDURE

(1) In February 1990 the Commission received a complaint lodged by the European Confederation of Iron and Steel Industries (Eurofer) on behalf of producers whose collective output constitutes the majority of Community production of the products in question. The complaint contained evidence of dumping and of material injury resulting therefrom, which was considered sufficient to justify the initiation of a proceeding. The Commission accordingly announced, by a notice published in the *Official Journal of the European Communities* [2], the initiation of an anti-dumping proceeding concerning imports into the Community of certain semi-finished products of special engineering alloy steel, of rectangular (including square) cross-section, hot-rolled or obtained by continuous casting, falling within CN codes ex 7224 90 09 and ex 7224 90 15, originating in Turkey and Brazil and commenced an investigation.

(2) The Commission officially so advised the exporters and importers known to be concerned, the representatives of the exporting countries and the complainants and gave the parties directly concerned the opportunity to make known their views in writing and to request a hearing.

(3) All of the producers/exporters and some importers known to the Commission made their views known in writing. Several producers/exporters requested a hearing which was granted.

(4) No submissions were made by or on behalf of Community purchasers or processors of the products concerned.

(5) The Commission sought and verified all information it deemed to be necessary for the purpose of a preliminary determination and carried out investigations at the premises of the following companies:

EEC producers:

- Saarstahl AG, Völklingen, Germany,
- Thyssen Edelstahlwerke AG, Krefeld, Germany,
- Edelstahlwerke Buderus AG, Wetzlar, Germany,
- Krupp Stahl AG, Bochum, Germany,
- Klöckner Stahl GmbH, Georgsmarienhütte, Germany,
- Ascometal, Paris La Défense, France,
- ILVA SpA, Sesto S. Giovanni, Italy.

Non-EEC producers/exporters:

in Brazil:

- Villares Indústrias de Base SA (Vibasa), São Paulo,
- Aços Anhanguera SA, São Paulo,
- Companhia Aços Especiais Itabira (Acesita), Belo Horizonte,
- Aços Finos Piratini SA, Porto Alegre.

in Turkey:

- Asil Çelik, Istanbul.

(6) The Commission requested and received detailed written submissions from the complainant Community producers and some importers and verified the information therein to the extent considered necessary.

(7) The investigation of dumping covered the period from 1 April 1989 to 31 March 1990.

(8) Due to the complexity of the proceeding, in particular the difficulties met by the Commission in obtaining, from some of the interested parties the relevant data, the investigation exceeded the normal period of one year laid down in Article 7 (9) of Decision No 2424/88/ECSC.

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[1] OJ No L 209, 2. 8. 1988, p. 18 and corrigendum in OJ No L 273, 5. 10. 1988, p. 19.

[2] OJ No C 144, 14. 6. 1990, p. 5.

B. PRODUCT UNDER CONSIDERATION, LIKE PRODUCT

(9) The products concerned by the proceeding are semi-finished products of rectangular (including square) cross-section, hot-rolled or obtained by continuous casting. Semi-finished products of alloy steel, also known as alloy engineering steel billets, are those steels used to make engineering components. A large proportion of engineering steels are ultimately destined for the automobile and heavy vehicle industries as components for engines, gear boxes, transmission and steering parts. Other and applications are mining, energy, aerospace and mechanical engineering. Alloy steel is on the market in a multitude of alloys for different applications, e.g. special engineering steels such as heat treatable steels, cast hardened steels, nitriding steels, steels for flame and induction hardening, roller bearing steels, spring steels, steels for bolts and nuts etc.

(10) Engineering steels are produced in forms of rectangular (including square) billets, bars and coils. Only rectangular billets are considered as semi-finished products in the sense of this proceeding. Alloy steel billets are to be distinguished from bars of alloy steel which consist basically of the same product but further processed.

(11) During the course of the investigation it became apparent that the words 'special engineering' and nothing to the term 'alloy steel' and that there are no other products falling under tariff headings 7224 90 09 and 7224 90 15. Therefore the product definition can be simplified in the interests of clarity to be: semi-finished products of alloy steel, of rectangular (including square) cross-section hot-rolled or obtained by continuous casting, falling within CN codes 7224 90 09 and 7224 90 15.

(12) The Commission found that the semi-finished products of alloy steel produced by the Community industry are like in all essential physical and technical characteristics to those imported from Turkey and Brazil, which are also like to those sold for consumption on the Turkish and Brazilian markets.

C. DUMPING

1. Normal value

(a) *Turkey*

(13) The Turkish producer was found to sell significant quantities on a profitable basis on the domestic market. Therefore, domestic sales prices were chosen for the determination of normal value.

(14) The inflation rate in Turkey was over 70 % per annum during the investigation period. In order to eliminate the effects of inflation, normal value was determined for the shortest possible meaningful period, i.e. on a per month basis.

(b) *Brazil*

(15) In the case of all four Brazilian producers, normal values had to be constructed because substantial sales had been made at a loss or there were no representative sales of the like products exported to the Community on the domestic market.

(16) Normal value was determined by adding a reasonable amount for selling, general and administrative expenses and profit to the cost of production. As only one of the four Brazilian companies concerned showed an operating profit during the reference period, the profit margin retained for this company was also applied for all other companies.

(17) The constructed value was calculated on the basis of average figures for cost and profit and was established on a monthly basis in order to take account of the effects of inflation.

2. Export prices

(18) The export prices for the Turkish and Brazilian producers for every export transaction to independent Community customers were determined on the basis of the prices actually paid or payable.

(19) In the case of the Turkish producer six alloy steel grades accounted for approximately 70 % of the total Turkish export sales to the Community. The Commission decided, therefore, in agreement with the Turkish producer, to base the dumping calculations on these six alloy steel grades.

3. Comparison

(20) Normal values and export prices of the Turkish and Brazilian producers were adjusted to net ex-works level in order to take account of differences in conditions and terms of sale and were compared on a transaction by transaction basis.

(21) Where the companies concerned could show pertinent evidence, allowances for import charges and indirect taxes borne by materials physically incorporated in the like product and refunded on export were granted in accordance with Article 2 (10) (b) of Decision No 2424/88/ECSC.

(22) A Brazilian producer claimed that, in accordance with Article 2 (10) (c) (III) of Decision No 2424/88/ECSC, its normal value should be reduced by the cost of credit granted for the sales under consideration on the domestic market because there were no comparable costs incurred on their export transactions to the Community.

(23) The Commission rejected the claim because it considers that the payment terms agreed in the sales contracts are directly related to the sales under consideration and that the cost of the credit granted to the customers is normally accounted for in the sales price. Furthermore it was verified that the Brazilian producer had calculated the cost of the credit terms granted and increased the sales price to its clients accordingly. As the Commission, for the purpose of comparison, has not directly allocated these costs to the constructed normal value, it is of the opinion that with regard to credit cost, normal value and export price have been established on a perfectly comparable basis.

4. Dumping margins

(24) The dumping margins were calculated as being the total amount by which the normal values exceeded the prices for export to the Community.

(25) The weighted average margins of dumping established and exressed as a percentage of the total cif value of the imports were as follows:

— Asil Çelik, İstanbul, Turkey	33,7 %
— Villares indústrias de Base SA (Vibasa), São Paulo, Brazil	7,4 %
— Aços Anhanguera (Villares) SA, São Paulo, Brazil	15,0 %
— Aços Especiais Itabira (Acesita), Belo Horizonte, Brazil	37,9 %
— Aços Finos Piratini SA, Porto Alegre, Brazil	1,7 %.

D. INJURY

1. Volume of dumped imports and market shares

(a) *Cumulation*

(26) The Commission is of the opinion that for the determination of the impact on the Community industry, the cumulative effect of all the imports has to be taken into consideration. In analyzing whether cumulation was appropriate, the Commission considered the comparability of the imported products and took further into consideration the extent to which each imported product competed in the Community with the like product of the Community industry. In addition, it was taken into account that the behaviour on the Community market of all exporters was similar and that their market position was as such not negligible.

(27) Accordingly, the Commission concluded that regard should be paid to the effect of the dumped imports cumulated from all the countries and all exporters concerned.

(b) *Volume and market shares of dumped imports*

(28) The evidence available to the Commission shows that the combined imports into the Community from Turkey and Brazil increased from 10 578 tonnes in 1985 to 69 391 tonnes in 1989 and 77 234 tonnes in the investigation period (April 1989 to March 1990). Over the same period Turkish imports went up from 3 880 tonnes to 20 959 tonnes and Brazilian imports from 6 698 tonnes to 56 275 tonnes.

(29) The only Turkish producer known to the Commission claimed that his direct shipments dispatched to the Community during the investigation period amounted to only 14 152 tonnes as verified by the Commission and that this quantity ought to be retained for the determination of its import volume and market share, the official trade statistics (Eurostat) being unreliable.

(30) The Commission considers that in this case the Eurostat Statistics reflect in a reliable manner the total quantities of the products in question originating in Turkey which have been imported into the Community.

(31) Discrepancies with dispatch figures of the producer can stem from the time lag between the date of shipment in the country of origin and customs clearance in the Community as well as from redirection of exports towards the Community. The Commission therefore relied on the quantities recorded by Eurostat.

(32) The imports concentrated on the German, Italian and United Kingom markets, the German market being the most affected with 46 290 tonnes representing 60 % of the total dumped imports.

(33) In terms of market shares based on total apparent Community consumption, the market penetration of the dumped imports increased from 1,2 % in 1985 to 7,8 % in 1989 and 8,7 % during the investigation period. On the German market alone, the impact of the dumped imports reached 13,7 %, an increase of 11,1 percentage points within two years only. The individual market shares developed from 0,5 % in 1985 to 2,4 % in the investigation period in the case of Turkey. The Brazilian market share rose from 0,8 % to 6,3 % over the same period.

2. Price undercutting

(34) The Commission established price undercutting by comparing the exporter's prices of semi-finished products of alloy steel with the corresponding weighted average prices for the identical product sold by the Community producers on an ex-works basis. The comparison was carried out with prices cif Community border, customs cleared including port and handling charges and for every transaction made by the exporters during the investigation period.

(35) The weighted average undercutting margins established, broken down by exporters, are :

— Asil Çelík, İstanbul, Turkey	16 %
— Villares Indústrias de Base SA (Vibasa), São Paulo, Brazil	22 %
— Açoes Anhanguera (Villares) SA, São Paulo, Brazil	26 %
— Aços Especiais Itabira (Acesita), Belo Horizonte, Brazil	15 %
— Aços Finos Piratini SA, Porto Alegre, Brazil	9 %.

3. Situation of the Community industry

(a) *Sales and market shares*

(36) From a cyclical downturn which bottomed out in 1987, consumption in the Community picked up rapidly in 1988 and reached its peak in 1989 with the increase of 16 % compared to the trough in 1987. While in the beginning of the recovery, the complainant Community producers were also able to expand their sales, they were rapidly lagging behind the overall evolution of demand because of the massively increasing inflow of dumped imports. Up to the investigation period their sales even fell below the level of 1987 which led to a significant loss of market share which decreased from 84 % in 1986 to 71 % in the investigation period.

(b) *Capacity utilization*

(37) Between 1987 and the investigation period capacity utilization of the complaining Community producers generally improved. This was, however, mainly achieved by streamlining production facilities, restructuring efforts of the sector and plant closures in Germany and Italy mainly induced by the continued lack of satisfactory profitability in the presence of the low-priced imports.

(c) *Prices of Community producers*

(38) Between 1985 and 1987 the conjunctural downturn of demand in the Community led to a pronounced slump of prices in the Community. Although the subsequent improvement in demand allowed some Community producers to raise their prices, the possible price increase were suppressed by the competition of the dumped imports and their significant price undercutting to the extent that prices in the investigation period scarcely exceeded the price levels in 1985.

(d) *Profitability*

(39) Because of the pressure on prices, Community producers had difficulties in generating satisfactory returns. In most cases, the achievable price increases were insufficient even to cover the rise in wage and raw material cost. This situation led in some cases to increasing financial losses, in others profit margins were reduced to or remained at a marginal level insufficient for a healthy development of the sector in the longer run. In particular, efforts to restructure and rationalize were in a number of cases severly hampered.

(40) The Commission took into account that certain Community producers which, because of their electric arc technology in the steelmaking phase could rely heavily on ferrous scrap inputs, found a certain relief on the cost side from the fall in international scrap prices combined with the devaluation of the US dollar against Community currencies. The resulting cost advantages partially explain the variation in Community producer's profitability. However, the temporary cost advantages of this nature enjoyed by some Community producers cannot overshadow the overall injurious effects of the low priced imports.

4. Conclusions

(41) The preliminary examination of the facts on injury shows that the Community industry was suffering a significant loss of market share, the prevention of price increases to cover the rise in wage and raw material costs and a deterioration of the financial results.

The Commission therefore concludes that the Community industry was suffered material injury.

5. Causation

(42) The negative effects suffered by the Community industry coincide with the rapid increase of the dumped imports originating in Brazil and Turkey. In fact, while imports from Brazil and Turkey increased by a factor of 7, the Community industry lost market shares and suffered important price undercutting. In a highly price sensitive market, such undercutting is extremely detrimental. The loss in market share is in sharp contrast with the brisk increase of consumption in the Community between 1987 and the investigation period.

(43) The Commission also examined whether other factors than the dumped imports might have caused injury to the Community industry. With regard to the volume and prices of imports originating in other third countries, it was found that these imports also increased. However, their market share was extended between 1985 and the investigation period by only 1,6 percentage points against an increase by 7,5 percentage points of the dumped imports. There is, furthermore, no indication that imports from other sources than Brazil and Turkey have been dumped.

(44) The Commission also established that within the restructuring process of the sector a certain shift of market share between Community producers has apparently also occured. On the basis of global market figures relating to the product under consideration in the Community, it can be assessed that about 2,9 percentage points of the total loss of 12 percentage points of the complainants are attributable to the expansion of other non-complaining EC producers. This expansion, however, is significantly lower than that of the dumped imports and cannot, therefore, have had a comparable impact on the complainant industry. In fact, under these conditions, it has to be concluded that the imports in question, through the effects of dumping, have caused material injury to the Community industry.

E. COMMUNITY INTEREST

(45) Production of semi-finished alloy steels is a highly specialized branch of the ECSC steel industry. Its total output represents about 12 % of the bulk raw steel production of the Community. The performance of the sector has a non-negligible influence through its linkages on the situation of the ECSC steel industry as a whole. Downstream, the industry is of vital importance for the Community manufacturing industry. It supplies the metal-processing industry with a wide range of special alloy steels, specifically designed for the various applications. Its products are fundamental for mechanical and electrical engineering, the automotive industry, shipbuilding, the aerospace industry and for other metallic articles. Constant research and development has to be carried out to cope with the requirements of the high-tech downstream industries for high-performance materials. In general the industry must be capable of supplying about 600 different alloy steel grades to satisfy the specific needs of its customers and to develop new products to follow the progress in production techniques and increasing quality requirements for the finished products. The industry branches vitally depending on these products represent about 45 % of the total labour force and 40 % of the total production value of Community manufacturing industry.

(46) It is clearly in the interest of the Community that the production of alloy steels, with its widespread ramifications in other essential setors of the manufacturing industry, continue under healthy conditions and that the efficiency of the sector not be further weakened by unfair trade practices. It is therefore considered in the Community's interest to take defensive action against the dumped imports.

(47) The Commission is furthermore of the opinion that protection of the Community industry against unfair price competition is also in the interest of the consumers of the products concerned. The imports against which action is to be taken represent a rather limited range of basic alloy steel grades, which however provide for the ground capacity utilization of the production equipment. Besides the necessity to guarantee the longer-run

security of supplies and the maintenance of quality standards of the basic products, the industry must also be in the position to supply its wide range of specialities at reasonable prices. Phasing out the production of the lower-grade mass products would necessarily lead to a significant deterioration of the cost structure within the coupled production process and would entail significant price increases for the downstream consumers for essential materials.

(48) The Turkish producer claimed that, except for the significant increase within the investigation period, its market share in the Community has always been at a *de minimis* level and that after the reference period its market share has again been reduced to a level too insignificant to cause injury to the Community industry such that in the actual situation it could not be in the Community's interest to take protective action.

(49) The Commission considers that, given the volatile nature of the trade pattern in steel products as shown by the sudden increase of Turkish exports of the dumped products, there would be no guarantee to prevent the recurrence of injurious dumping should the investigation be concluded without protective measures. An exemption from anti-dumping measures of imports originating in Turkey because of a reduction in volume during the ongoing investigation would also be discriminatory towards the Brazilian producers/exporters in the light of recital (26).

(50) On the basis of this consideration, the Commission considers that the interests of the Community call for protective measures against dumped imports of semi-finished products of alloy steel in the form of provisional anti-dumping duties.

F. PROVISIONAL DUTY

(51) Having established that the dumped imports under consideration have caused material injury to the Community industry and that it is in the Community's interest to take action, the measures envisaged should be sufficient to eliminate the injury caused. However, the measures should not exceed the dumping margins. Since the main cause of the injury is the price undercutting of the Community industry's prices by the exporters, it is considered necessary to eliminate price undercutting where possible. Therefore, the prices of the exporters should be increased by their price undercutting margin or their dumping margin, whichever is the lower. On this basis, the Commission considers that the following provisional duties should be imposed:

Turkey	16,0 %
Brazil	15,0 %

with the exception of

— Villares Indústrias de Base SA (Vibasa), São Paulo, Brazil	7,4 %
— Aços Finos Piratini SA, Porto Alegre, Brazil	1,7 %

(52) A period should be fixed within which the parties concerned may make their views known and request a hearing. Furthermore, it should be stated that all findings made for the purpose of this Decision are provisional and may have to be reconsidered for the purpose of any definitive duty which the Commission may propose,

HAS ADOPTED THIS DECISION:

Article 1

1. A provisional anti-dumping duty is hereby imposed on imports of certain semi-finished products of alloy steel, of rectangular (including square) cross-section, hot-rolled or obtained by continuous casting, falling within CN codes 7224 90 09 and 7224 90 15 and originating in Turkey and Brazil.

2. The rate of the duty, based on the free-at-Community-frontier price, not cleared through customs, shall be:

— 16,0 % for imports of semi-finished products of alloy steel originating in Turkey,

— 15,0 % for imports of semi-finished products of alloy steel originating in Brazil (Taric additional code: 8625).

3. Notwithstanding paragraph 2, the rate of the provisional anti-dumping duty shall be:

— 7,4 % for products manufactured by Villares Indústrias de Base SA (Vibasa), São Paulo, Brazil (Taric additional code: 8624),

— 1,7 % for products manufactured by Aços Finos Piratini SA, Porto Alegre, Brazil (Taric additional code: 8623).

4. The provisions in force concerning customs duties shall apply.

5. The release for free circulation in the Community of the products referred to in paragraph 1 shall be subject to the provision of a security, equivalent to the amount of the provisional duty.

Article 2

Without prejudice to Article 7 (4) (b) and (c) of Decision No 2424/88/ECSC, the parties concerned may make known their views in writing and apply to be heard orally by the Commission within one month of the date of entry into force of this Decision.

Article 3

This Decision shall enter into force on the day following its publication in the *Official Journal of the European Communities.*

Subject to Articles 11, 12 and 13 of Decision No 2424/88/ECSC, Article 1 of this Decision shall apply for a period of four months, unless the Commission adopts definitive measures before the expiry of that period.

This Decision shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 30 March 1992.

For the Commission

Frans ANDRIESSEN

Vice-President

COMMISSION DECISION No 1775/92/ECSC

of 30 June 1992

imposing a definitive anti-dumping duty on imports of certain semi-finished products of alloy steel, originating in Turkey and Brazil, definitively collecting the provisional anti-dumping duty imposed on such imports and accepting an undertaking offered in connection with the anti-dumping proceeding concerning imports of these products

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Coal and Steel Community,

Having regard to Commission Decision No 2424/88/ECSC of 29 July 1988 on protection against dumped or subsidized imports from countries not members of the European Coal and Steel Community [1], and in particular Articles 10 and 12 thereof,

After consultations within the Advisory Committee as provided for by the above Decision,

Whereas:

A. PROVISIONAL MEASURES

(1) The Commission, by Decision No 891/92/ECSC [2], imposed a provisional anti-dumping duty on imports of certain semi-finished products of alloy steel, originating in Turkey and Brazil.

B. SUBSEQUENT PROCEDURE

(2) Following the imposition of the provisional anti-dumping duty, some exporters requested and were granted an opportunity to be heard by the Commission or made submissions expressing their views on the duty.

(3) Upon request, the parties were informed of the essential facts and considerations on the basis of which it was intended to recommend the imposition of definitive duties and the definitive collection of amounts secured by way of a provisional duty. They were also granted a period within which to make representations subsequent to the disclosure.

(4) The oral and written comments submitted by the parties were considered and, where appropriate, the Commission's findings were modified to take account of them.

C. PRODUCT UNDER CONSIDERATION

(5) After the imposition of provisional duties it became apparent that, under the product description given in recital 11 and Article 1 (1) of Decision No 891/92/ECSC, the duties apply to certain semi-finished products of alloy high-speed steel falling within CN code 7224 90 15 to which the investigation did not relate. It is therefore considered appropriate to modify the product description as follows in order to exclude certain alloy high-speed steels from the application of the duty: semi-finished products of alloy steel, of rectangular (including square) cross-section, hot-rolled or obtained by continuous casting, excluding high-speed steel, falling within CN codes 7224 90 09 and ex 7224 90 15.

D. DUMPING

Turkey

(6) No new evidence on dumping has been received since the imposition of the provisional duty and the Commission therefore considers its findings on dumping as set out in Decision No 891/92/ECSC to be definitive.

Consequently, the preliminary determination on dumping concerning imports from Turkey are confirmed.

Brazil

(7) On the basis of the duming calculation described in recitals 15 to 18 and 20 to 25 of Decision No 891/92/ECSC, the Commission provisionally established a different margin of dumping for each of the four Brazilian producers which cooperated during the preliminary investigation.

(8) As no new evidence on dumping has been received since the imposition of the provisional duty in respect of exports made by Acos Anhanguera

[1] OJ No L 209, 2. 8. 1988, p. 18, as corrected in OJ No L 273, 5. 10. 1988, p. 19.
[2] OJ No L 95, 9. 4. 1992, p. 26.

(Villares) SA, São Paulo, Brazil and by Aços Finos Piratini SA, Porto Alegre, Brazil, the findings on dumping with regard to exports made by these two producers, as set out in Decision No 891/92/ECSC, are therefore considered to be definitive.

(9) Regarding the provisional dumping determination for Villares Indústrias de Base SA (Vibasa), this producer claimed that the Commission, in constructing normal value, had included in the global amount of selling, general and administrative expenses added to manufacturing costs, certain directly related selling expenses in the domestic market which were not incurred in export transactions to the Community and requested an adjustment under Article 2 (10) (c) (i) and (v) of Commission Decision No 2424/88/ECSC.

(10) On the basis of the evidence provided by the exporter, the Commission accepted this claim and amended the calculation of the weighted average dumping margin accordingly to be definitively established at 4,9 % of the cif Community frontier export prices.

(11) Regarding the provisional dumping determination for Companhia Aços Especiais Itabira (Acesita), it was claimed by the exporter that the Commission had overestimated the impact of inflation on production costs used for the construction of normal value by applying an incorrect index for inflation adjustment.

(12) The Commission has confirmed that the adjustment index used to bring the export price and production cost to a comparable basis in the month of export excessively inflated production cost. Given the degree of inflation in Brazil, this difference has a significant impact on the result of the dumping calculation and calls for correction.

(13) It was further claimed and evidence provided that certain items in Acesita's financial expenses were related to other activities in the group, in particular Acesita's holding in affiliated companies and should therefore be considered non-operational with regard to production and sales of the products concerned by the proceeding.

(14) On the basis of the evidence submitted, the Commission took account of the arguments raised by the exporter and revised the dumping calculation for Acesita. The weighted average dumping margin is in consequence definitively established at 8,5 % of the cif Community frontier export prices.

E. DUMPING MARGINS

(15) The weighted average margins of dumping definitively established and expressed as a percentage of the cif Community frontier export prices are as follows:

— Asil Celik, Istanbul, Turkey	33,7 %
— Aços Anhanguera (Villares) SA, São Paulo, Brazil	15,0 %
— Aços Especiais Itabira (Acesita), Belo Horizonte, Brazil	8,5 %
— Villares Indústrias de Base SA (Vibasa), São Paulo, Brazil	4,9 %
— Aços Finos Piratini SA, Porto Alegre, Brazil	1,7 %

(16) For those exporters who did not make themselves known in the course of investigation, the Commission based its findings on the facts available in accordance with Article 7 (7) (b) of Decision No 2424/88/ECSC. It is considered appropriate in the present case and in order to avoid circumvention, to use the findings of the investigation and to apply a dumping margin of 33,7 % for Turkey and 15 % for Brazil.

F. INJURY

(17) As no new evidence regarding injury and causation to the Community industry was received, the Commission confirms the conclusion on injury reached in Decision No 891/92/ECSC.

G. COMMUNITY INTEREST

(18) No observations were received from any user of the products concerned by the present proceeding and subject to provisional anti-dumping duties, within the time limit laid down in Article 2 of Decision No 891/92/ECSC.

(19) The Commission, therefore, confirms its conclusions that the interests of the Community call for protective measures against dumped imports of semi-finished products of alloy steel, originating in Turkey and Brazil.

H. RATE OF DEFINITIVE DUTY

Turkey

(20) With regard to exports from Turkey the provisional findings of the Commission having been confirmed, the rate of the definitive anti-dumping duty should be the same as the amount of the provisional anti-dumping duty.

Brazil

(21) With the exception of those exports made by Vibasa and Acesita, the provisional findings of the Commission having been confirmed, the rate of the definitive duty should be the same as the rate of the provisional anti-dumping duty.

(22) With regard to exports made by Vibasa or Acesita and in the light of the findings in recitals (9) to (14), the rate of the definitive duty should be equal to the dumping margin which has finally been calculated on the basis of the new elements presented by the exporters concerned since the injury level as determined in the provisional decision and definitively determined is higher than this margin.

I. UNDERTAKING

(23) One exporter of the Turkish product, Asil Celik, having been informed that the main findings of the preliminary investigation would be confirmed, offered an undertaking concerning its exports of semi-finished products of alloy steel to the Community.

(24) The effect of this undertaking will be to revise the export prices of the products concerned to the Community to an extent sufficient to eliminate the injury caused to the Community industry. The Commission believes that, administratively, it will be possible to verify that this undertaking is being respected. In view of this, the Commission considers that the undertaking offered is acceptable.

(25) Should this undertaking not be complied with or be withdrawn by the producer concerned, the Commission could, in accordance with Article 10 (6) of Commission Decision No 2424/88/ECSC, immediately impose a provisional duty on the basis of the results and conclusions of this investigation. Subsequently, a definitive duty could also be imposed by the Commission on the basis of information gathered in this investigation.

(26) The Advisory Committee has been consulted in this course of action and has raised no objection.

J. COLLECTION OF PROVISIONAL DUTY

(27) In view of the dumping margins found and the seriousness of the injury caused to Community producers, it is considered necessary that amounts secured by way of provisional anti-dumping duty should be definitively collected to the extent of the amount of the duty definitively imposed and that amounts exceeding these duties should be released.

(28) In respect of recital (5), it is appropriate that any securities pledged by way of provisional anti-dumping duty on imports of certain semi-finished products of alloy high-speed steel, falling within CN code ex 7224 90 15 and originating in Turkey and Brazil, be released,

HAS ADOPTED THIS DECISION:

Article 1

The undertaking given by Asil Celik Sanayi ve Ticaret A.S., Istanbul, Turkey, is hereby accepted.

Article 2

1. A definitive anti-dumping duty is hereby imposed on imports of certain semi-finished products of alloy steel, of rectangular (including square) cross-section, hot-rolled or obtained by continuous casting, excluding high-speed steel, falling within CN codes 7224 90 09 and ex 7224 90 15 (Taric code: 7224 90 15*90), originating in Turkey and Brazil.

2. The rate of the definitive duty, based on the free-at-Community-frontier price, not cleared through customs shall be:

— 16,0 % for imports of semi-finished products of alloy steel originating in Turkey (Taric additional code: 8672),.
— 15,0 % for imports of semi-finished products of alloy steel originating in Brazil (Taric additional code: 8625).

3. Notwithstanding paragraph 2, the rate of the definitive anti-dumping duty shall be:

— 8,5 % for products concerned manufactured by Aços Especiais Itabira (Acesita), Belo Horizonte, Brazil (Taric additional code: 8670),
— 4,9 % for products concerned manufactured by Villares Indústrias de Base SA (Vibasa), São Paulo, Brazil (Taric additional code: 8624),
— 1,7 % for products concerned manufactured by Aços Finos Piratini SA, Porto Alegre, Brazil (Taric additional code: 8623).

4. Notwithstanding paragraph 2, the duty shall not apply for the products concerned manufactured by Asil Celik Sanayl Ve Ticaret AS, Istanbul, Turkey (Taric additional code: 8671).

5. The provisions in force concerning customs duties shall apply.

Article 3

1. The amounts secured by way of provisional anti-dumping duty pursuant to Decision No 891/92/ECSC shall be collected at the rates of duty definitively imposed and any amount secured in excess of the anti-dumping duty definitively imposed shall be released.

2. With regard to the exports made by Asil Celik Sanayi Ve Ticaret AS the amounts secured by way of provisional anti-dumping duty shall be collected in full.

3. The amounts secured by way of provisional anti-dumping duty on imports of semi-finished products of alloy high-speed steel, falling within CN code ex 7224 90 15 shall be released.

Article 4

This Decision shall enter into force on the day following its publication in the *Official Journal of the European Communities.*

This Decision shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 30 June 1992.

For the Commission

Frans ANDRIESSEN

Vice-President

APPENDIX L

MARKET PENETRATION OF IMPORTS ON A CUMULATED BASIS

Table L-1
Special quality carbon and alloy steel bars and rods: U.S. shipments of domestic product, U.S. imports of bars and rods (including hot-rolled lead and bismuth bars and rods subject to investigation), and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

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Table L-2
Special quality steel semifinished products and bars and rods: U.S. shipments of domestic product, U.S. imports of semifinished products plus bars and rods (including hot-rolled lead and bismuth carbon steel bars and rods subject to investigation), and apparent U.S. consumption, by products, 1989-91, January-March 1991, and January-March 1992

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