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CONDITIONS OF COMPETITION IN THE WESTERN U.S. STEEL MARKET BETWEEN CERTAIN DOMESTIC AND FOREIGN STEEL PRODUCTS

Interim Report on Investigation No. 332-87 Under Section 332 of the Tariff Act of 1930, as Amended

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UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Joseph O. Parker, Chairman
Bill Alberger, Vice Chairman
George M. Moore
Catherine Bedell
Paula Stern

Kenneth R. Mason, Secretary to the Commission

Office of Industries

This report was prepared principally by

Ruth M. Kappler, James S. Kennedy,
Deborah A. McNay, and Nicholas C. Tolerico
Minerals and Metals Division

and

Howard L. Gooley
Office of Economic Research

William Gearhart
Office of the General Counsel

Quay Williams, Branch Chief
Minerals and Metals Division

Address all communications to
Office of the Secretary
United States International Trade Commission

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Executive Summary

On May 23, 1977, the U.S. International Trade Commission instituted an investigation to study the conditions of competition in the Western U.S. carbon steel market between certain domestic and foreign products of steel, other than alloy steel. 1/ In this investigation and report, the Commission is concerned with among other things, the effects on the ten-state Western U.S. carbon steel mill products market (hereinafter referred to as the Western steel market) and western U.S. steel producers of (1) imports of such products, (2) ownership by foreign interests of domestic facilities producing such articles in such market area, and (3) practices of importers marketing such articles.

This report addresses conditions which existed in the Western U.S. carbon steel market through 1977. In view of the apparent changes in conditions of competiton in the Western U.S. steel market as a result of economic developments in 1978, the Commission considers it important to continue the present investigation.

Consequently, the Commission has determined to provide this report on an interim basis, and to supplement it with a final report. This will enable the Commission to gather and to analyze data for all of 1978 plus whatever is available for 1979, and to receive comments on current conditions from industry, labor, and other sources.

The 10-State Western market is, for the most part, isolated from the large eastern and midwestern U.S. steel producers by the Plains and Rocky Mountains. Because the western U.S. steel market is not self-sufficient in all lines of steel production, certain steel products must be obtained from the major eastern and midwestern producers and/or from foreign sources.

Inland shipping rates in the United States are high and as a result add considerably to the price of steel obtained from eastern and midwestern producers, most of whom do not have easy access to ports. Ocean freight rates are much lower than inland shipping rates and as a result provide an important pricing advantage to any producer, including foreign producers, shipping by water to the Western States. Many of the big Japanese and European steel mills are located at or near ports. Further U.S. steel duties do not impose a significant restriction on imports.

1/ The investigation was instituted by the Commission on its own motion under section 332(g) of the Tariff Act of 1930, as amended (19 U.S.C. 1332(g)). The products covered include articles of the types provided for in part 2B of schedule 6 of the Tariff Schedules of the United States. For the purpose of this study, the western market includes the 10 States of California, Oregon, Washington, Idaho, Nevada, Arizona, New Mexico, Colorado, Utah, and Wyoming.

Steel production in the Western States is highly concentrated geographically and by firm and product line. There are 26 producers operating 38 establishments in the western region. Facilities have been closed or curtailed in at least 14 locations during the past 6 years. Although aggregate western capacity appears to be sufficient to satisfy the market's demand, capacity to produce plates, sheets, strip, pipes, and tubes--products which account for the bulk of western consumption--was well below consumption in each of the last 6 years. Capacity shortfalls characterize products important to integrated mills while excess capacity exists for products of minimills and wire mills. Among the major integrated mills, western capacity has been increased only marginally in recent years.

In 1976 and 1977, the Western States operated at about 73 percent of capacity to melt carbon steel compared to about 80 percent for the entire U.S. carbon steel industry. Of the three major types of steelmaking furnaces--open hearth, basic oxygen, and electric--the least efficient type is the open hearth. In 1977, forty-five percent of the Western States' carbon steel production was accounted for by open hearth furnaces compared to 17 percent for the entire U.S. steel industry.

Apparent consumption of steel mill products in the Western States showed no discernible trend from 1972 to 1977. During this period, apparent consumption ranged from a high of 10.6 million tons in 1974 to a low of 7.1 million tons in 1975. Total shipments by western producers also showed no discernible trend from 1972 to 1977. During this period, western producers' share of apparent consumption ranged from a high of 58 percent in 1973 to a low of 47 percent in 1974. After increasing to 56 percent in 1975, their share then decreased annually to 53 percent in 1977. Since 1972, the share of the Western steel market held by imports ranged from 29 percent in 1973 to 40 percent in 1977. The fact is that on a percentage basis imports' market share in the Western States is about twice what it is for the entire nation. Western producers' exports have declined steadily since 1973, and in 1977 equalled 1972 levels.

Based on data submitted to the Commission, western steel producers' inventories are normally higher than those of importers, producers maintaining a 2-month supply compared to a 1-month supply for importers. Thus, the inventory cost burden for western producers is much greater than that of importers.

The western producers require more man-hours to produce a ton of carbon steel than the U.S. steel industry as a whole. In 1977, they required 7.4 man-hours for each ton of carbon steel shipped, while it is estimated that one less man-hour is required for the nation as a whole.

From 1972 to 1975 the Western steel industry was essentially more profitable than the U.S. steel industry industry as a whole. However, in both 1976 and 1977 the Western steel industry suffered losses exceeding 4 percent. Profits of the U.S. steel industry as a whole were 3.5 percent in 1976 and 0.1 percent in 1977. In 1977 more than half the producing establishments in the Western States reported losses. The decline in profits of western producers is apparently the result, in part, of increasing costs of production relative to price increases and low levels of capacity utilization.

Japan is and has traditionally been the largest single supplier of each category of carbon steel mill products imported into the Western States. In 1977, Japan's share of imports declined from 79 percent in 1976 to 72 percent primarily as a result of increasing imports from the EC and the developing countries. During January-September 1978, imports into the Western States increased by 40 percent when compared to January-September 1977; for the entire United States the increase was 18 percent. In both the Western States and the United States as a whole, imports from Japan decreased in absolute terms. In contrast, the EC was the major contributor to the net increase in imports.

In 1977, western producers supplied 53 percent of the western market; importers, 37 percent; and eastern producers, 10 percent. The eastern producers were significant suppliers of bar-size shapes; angles, shapes, and section, rails, joint bars, and tie plates; and pipes and tubes. Western producers market about 20 percent of their supply through service centers/ distributors, while importers sell 60 percent to service centers/ distributors. Many of these service centers source from both domestic and foreign suppliers.

Foreign investment in Western States steel producing, distributing, and fabricating firms is small but growing. Of the 200 firms responding to the Commission's questionnaires, 13 firms reported foreign investment in 1972 and 31 firms in 1977. Japanese investments (15 firms which account for one-third of total sales by foreign affiliated firms) are most prevalent. From the questionnaire responses, it appears that subsequent to foreign investment in several key firms in the wire and wire products and pipes and tubes sectors, the market share of these firms increased. Based on field research, in some cases such investment was in firms in financial difficulty or firms seeking infusions of capital, either through equity investment or loans, to effect major expansions of their business operations. Additionally, foreign affiliated firms have a decided advantage over their competitors in obtaining long term loans. For example, the long term debt-to-equity ratio is one to four for domestically owned firms, while firms with foreign participation have ratios as high as four to one. For the most part, pre-investment management continued to operate the business with little or no participation from the foreign investors.

Prices of carbon steel mill products imported into the Western States were generally below comparable domestically produced articles throughout the 1972-77 period except for the boom years of 1973-74. In 1973-74, import prices of almost every representative carbon steel product moved to levels sharply above U.S. producers' prices. The price spread pattern between imported and domestic steel reflects highly volatile import prices that move with the business cycle. In contrast, domestic prices have not been as volatile.

Importers have employed various techniques and practices to establish, maintain, and strengthen their sales in the Western United States. They, like western producers, have tried to price competitively and offer a quality product and reliable delivery. The Commission received information indicating that importers have engaged in practices such as channeling, price indexing, and dual distribution. Information also reveals that domestic producers engage in dual distribution. While many western steel producers and distributors have alleged that such practices by importers violate U.S. antitrust or unfair trade practice law, this determination can only be made by appropriate proceedings under such laws.

INTRODUCTION 1/

On May 23, 1977, the U.S. International Trade Commission, on its own motion, instituted an investigation under section 332(g) of the Tariff Act of 1930, as amended (19 U.S.C. 1332(g)), to study the conditions of competition in the Western U.S. carbon steel mill product market between certain domestic and foreign products of steel, other than alloy steel. Such articles of steel include articles of the types provided for in part 2B of schedule 6 of the Tariff Schedules of the United States (TSUS).

In its notice of investigation and hearings, the Commission stated that the report issued in connection therewith would be concerned with, among other things, the effects on the Western U.S. steel market and Western U.S. steel producers in such market areas as (1) imports of such steel products, (2) ownership by foreign interests of domestic facilities producing such articles in such market area, and (3) practices of importers marketing such articles.

Public hearings in connection with the investigation were held on November 7, 1977, in Denver, Colo.; on November 9-11, 1977, in Los Angeles, Calif.; on January 24, 1978, in Portland, Oreg.; and on May 16 and 17, 1978, in San Francisco, Calif.

1/ Commissioner Stern notes that the quality of this interim report benefited from the Commission's efforts to schedule a series of open meetings in order to facilitate substantitive exchanges among the Commissioners as well as the Commission staff. However, Commissioner Stern earnestly hopes that the final report will address certain analytical economic issues which were not dealt with sufficiently in the interim report.

First, in order to understand clearly the economic condition of an industrial sector, it is essential to analyze available economic data in terms of the relevant business cycle. However, the report does not include a comprehensive analysis of the business cycle for the domestic and international steel markets during the period covered, 1972-77.

Second, the report does not consistently provide a comparative analysis of the available economic data. In order to understand the significance of economic data and discern meaningful trends, it is essential to analyze data for the entire base period of 1972-77 on a comparative basis. In contrast, there are instances in which the report cites data for one year as a benchmark, against which there is limited or, in some instances, no comparison.

Third, the report would have been more complete had certain additional information been developed and analyzed. For example, the report cites numerous examples of plant closings without any explanation of the reasons for such closings. In addition, the report states that domestic firms with foreign investors have "increased sharply" their shipments, but does not analyze at whose expense -- importers or domestic producers -- these firms are increasing their share of the market.

Finally, after 1975 the Western Steel producers suffered a more dramatic erosion of profits than the U.S. steel industry as a whole. However, the report does not include a complete explanation for this precipitous decline in profits.

Notice of the institution of the investigation and of public hearings was published in the Federal Register of June 15, 1977 (42 F.R. 30555); notice of the dates and sites of public hearings was published in the Federal Register of August 17, 1977 (42 F.R. 41498); notice of the times and places of the Denver and Los Angeles hearings was published in the Federal Register of October 27, 1977 (F.R. 41498); and notice of the change of date and time and place of the San Francisco hearing was published in the Federal Registers of January 31, 1978 (43 F.R. 4126), March 3, 1978 (43 F.R. 8861), and March 23, 1978 (43 F.R. 12130).

The information contained in this report was obtained from fieldwork, from questionnaires sent to domestic producers, importers, end users, and fabricators, from the Commission's files, from other Government agencies, from information received at the hearings, and from briefs filed by interested parties. It addresses conditions which existed in the Western U.S. carbon steel market through 1977. In view of the impact of the administration's trigger-price mechanism (TPM), which was initiated in early 1978 and became effective with respect to various products at various points in 1978, the Commission considers it important to continue the present investigation. Many of the market conditions discussed in this report may have changed substantially during 1978, and further study of the rapidly changing Western U.S. market is clearly warranted.

Consequently, the Commission has determined to provide this report on a interim basis, and to supplement it with a final report. This will enable the Commission to fully gather and analyze crucial data from 1978, and to receive comments on current conditions from industry, labor, and other sources.

The Western Steel Market

The Western States carbon steel market encompasses a 10-State region. 1/ It is unique geographically, isolated from the major steel producing regions of the country by great distances and formidable natural barriers. Apparent consumption of carbon steel mill products in this region totaled 8.4 million tons or 10 percent of U.S. consumption. 2/ The value of this market was $2.7 billion in 1977. Western producers accounted for 7 percent of U.S. raw steel production in 1977.

Unlike total U.S. demand, the strongest elements of Western steel demand are derived from the construction and food-processing industries. The construction industry consumes large quantities of plates, structurals, and reinforcing bars, and the food-processing industry creates heavy demand for tin mill products. Although the region has several auto assembly plants, demand in automobile and automobile-related industries is not as significant for Western producers as for producers located in the Midwest and East.

Carbon steel mill products are supplied to the Western States from three sources--producers located within the region, domestic producers located outside the Western States, and foreign producers. 3/ The ability of producers in the Eastern and Midwestern steel producing centers to market steel mill products in the Western States is limited primarily because of high inland shipping rates. Conversely, low ocean freight costs, coupled with low U.S. tariffs, have allowed the Western States to become a lucrative market for foreign producers. The ratio of imports to consumption in the Western States was 37 percent compared with 18 percent for the entire United States.

Western producers

Steel production in the Western States is highly concentrated geographically. The 26 producers of steel mill products located in the region operate 38 establishments (table 1, app. C). Of these, 21 of the firms and 30 of their establishments are located in California, the Western States' major steel producing and consuming State. The Northwest represents a lesser area of concentration, with producers located near Portland and Seattle. In addition, Pueblo, Colo., the home of CF&I Steel Corp., is the location of a significant portion of total production in the Western States. CF&I, however, because of its location in Colorado is not a significant competitor in the Western coastal markets.

1/ For the purposes of this investigation, the term "Western States" includes Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

2/ Carbon steel products which are the subject of this investigation are enumerated and described in app. A.

3/ To place the Western States steel industry in perspective, an overview of the United States and world steel industries is provided in app. B.

Of the 26 Western producers, 4 accounted for 79 percent of shipments by Western producers of all steel mill products in 1977, which indicates the existence of a high degree of concentration by company, in addition to locality (table 2). These four are the three integrated producers located in the region--Kaiser Steel Corp., CF&I Steel Corp., and U.S. Steel Corp.--and a nonintegrated producer, Bethlehem Steel Corp. These companies not only operate mines supplying the necessary raw material ingredients, but also own blast furnaces, steelmaking furnaces, and rolling and finishing facilities. The operations of Bethlehem Steel Corp. in the Western States are not fully integrated, in that they do not include blast furnaces.

In addition to concentration of Western States steel production by firm, production in the region is also concentrated by product line. The four largest producers in each product category accounted for no less than 70 percent of Western producers' shipments in 1977. The four largest firms as used here are not necessarily the four largest producers of the carbon steel mill products previously discussed. For example, of the four largest producers of reinforcing bars, three are minimills. The four largest producers in each of the major product lines supplied 99 percent of plates, sheets, and strip; 70 percent of deformed reinforcing bars; 100 percent of angles, shapes, and sections combined with rails; and 77 percent of pipes and tubes. The four largest producers of plates, sheets, and strip supplied 54 percent of apparent consumption. The lowest share of apparent consumption of the four largest producers of any product line was 25 percent (pipes and tubes).

There are few Western producers competing in a large number of product lines (table 1). In 1977 only 3 producers were engaged in the production of 9 or more carbon steel mill products, while 18 producers limited output to only 1 or 2 such products. The products dominated by the integrated producers, such as flat-rolled products, show few competitors. Conversely, deformed reinforcing bars, the mainstay of the minimills, shows the largest number of competitors (12 in 1977). Wire and pipes and tubes, product lines in which many fabricators compete along with integrated producers, also show a large number of competitors.

Producer profiles

Kaiser Steel Corp. is the largest steel producer in the Western States. Carbon steel mill products account for about three-fourths of the firm's total sales. The company produces a diversified line of steel mill products. In addition to the steelmaking facilities located in Fontana, Calif., Kaiser obtains iron ore from its Eagle Mountain facility and coal from the company's holdings in Utah and New Mexico. Kaiser also imports iron ore from Hammersley Holdings Ltd., an Australian firm in which Kaiser has a 28-percent interest. This iron ore is blended with its domestic iron ore for use in the blast furnaces at Fontana. Kaiser also imports coal from Canada, Pakistan, The Republic of Korea, and Brazil for use in the Fontana mill. This is done through Kaiser Resources Ltd., a Canadian company engaged primarily in the mining, processing, and exporting of metallurgical-grade coal in which Kaiser has a 32.5 percent interest and Mitsubishi Corp. and other Japanese firms have a 27 percent interest.

Kaiser also operates a steel fabrication plant, construction and marine assembly yards, a drum manufacturing and reconditioning plant, and various metalworking facilities.

In 1978, Kaiser will complete a $233 million modernization program including $95 million for pollution control at its Fontana facility. A new basic oxygen furnace and a continuous caster, which are a part of the modernization program, should enable Kaiser to be somewhat more competitive in the marketplace. The basic oxygen furnace (BOF) will enable Kaiser to phase out eight open-hearth furnaces.

In 1977 Kaiser also announced several major actions to improve efficiency. These included changes in its top corporate management and the shutting down of certain facilities, which Kaiser indicated were marginal operations. About 300 employees were affected by the shutdowns.

U.S. Steel Corp., the second largest Western producer, operates facilities at Provo, Utah (Geneva Works), San Francisco, Calif. (Pittsburg Works), and Los Angeles, Calif. (Torrance Works). Although U.S. Steel produces almost all of the products covered in this investigation, its principal products include sheets and strip, tin mill products, wire rods, plates, pipes and tubes, and angles, shapes, and sections. In the Western States, U.S. Steel's entire steelmaking facilities are either open hearth or electric. At Provo, Utah, U.S. Steel, in addition to making ingots, principally manufactures flat-rolled products and structural shapes. Ingots produced by electric furnaces at Torrance are supplemented by ingots from the Geneva Works. The principal products produced at Torrance include reinforcing bar, hot-rolled bars, and structural shapes.

At U.S. Steel's Pittsburg, Calif. facility, tin mill products and pipe are the principal products. Its tin mill was the first such mill installed in the Western States, and its pipe mill is the largest pipe-producing facility for small-diameter pipe in the Western States. All of U.S. Steel's open-hearth furnaces and primary rolling mills at Pittsburg, Calif. were closed in 1974. Thus, semifinished products for this plant must be shipped from the Geneva Works or from facilities located in the Midwestern or Eastern areas.

For its Western operations, U.S. Steel obtains iron ore from its mines in Utah and Wyoming as well as from outside sources. Coal, obtained from the corporation's mines in Utah and Colorado, is mixed with purchased coal to improve its coking quality. Limestone is obtained from U.S. Steel's operations in Utah.

CF&I, the third largest Western producer, is the most specialized of the integrated producers. Its principal product is rails; it is the only Western producer of this article. It is also a large producer of pipes and tubes, bars, including reinforcing bars, and angles, shapes, and sections. It produces all of the products covered in this investigation, except sheets and strip and tin mill products.

A major expansion and modernization of the rail mill facilities, which will increase rail production capacity by 50 percent, will be completed in 1979. This new rail facility will enable the firm to produce rails up to 25 meters in length, more than twice the standard length. CF&I obtains iron ore from its mines in Wyoming and has become self-sufficient in high-volatile metallurgical coal with the opening of a new mine in Colorado. The company plans to become self-sufficient in low-volatile coal with the development of a mine in Oklahoma.

Bethlehem Steel Corp., the fourth largest producer in the Western States, operates facilities at Los Angeles, Calif. and Seattle, Wash. Although Bethlehem has a capacity to melt raw steel in excess of 1 million tons in its Western facilities, its actual production has been far below this amount. The Los Angeles facility operates three electric furnaces for steelmaking. Bars, including reinforcing bars, wire rods, strip, and structural shapes are the principal mill articles produced at this location. Bethlehem converts the bulk of its wire rod production to wire or fasteners and a substantial portion of reinforcing bar production is consumed in the plant's reinforcing bar fabrication shop. At Seattle, Bethlehem operates two electric furnaces. Although a variety of steel mill products are rolled, reinforcing bar is its largest single product.

In early 1974, Bethlehem closed its Pinole Point, Calif. plant consisting of sheet galvanizing and fabricating operations; in 1976 the structural fabrication facility at Torrance, Calif. was closed and subsequently sold to a local fabricator. In late 1977, it discontinued production of merchant bars, reinforcing bars, and light structurals at South San Francisco, continuing only the production of reinforcing bar and its fabrication. An estimated 300 employees were affected by the shutdown at San Francisco. Bethlehem recently established a Pacific Coast division in Los Angeles to direct steel operating and marketing activities in the Western States.

These four largest producers supplied 42 percent of apparent consumption of steel mill products in the Western States in 1977. The 22 remaining producers, the majority of which are small, individually contribute a minor share to apparent consumption (table 1). Nonetheless, these producers are often of major importance in submarkets and in particular product lines. For example, although the largest share of total plate shipments within the Western States in 1977 was supplied by three producers located in California, Oregon Steel Mills, Division of Gilmore Steel Corp., dominates the plate market in the Northwest and is virtually without competition from the major Western producers.

Many of these smaller firms are minimills which lack basic steelmaking furnaces and which produce no more than 500,000 tons of raw steel per year. Geographically, the eight minimills located in the Western States are situated near the coast or adjacent to major metropolitan areas. Two are located in Los Angeles, two near San Francisco, two at Portland, and one each in Phoenix and Seattle. Many of the minimills are privately held, and ownership has been in the same family for generations. The minimills are dependent in large part upon the price and availability of scrap, which is used to feed the mills'

electric furnaces, and the level of construction activity within the marketing area of the mill. Reinforcing bar is the predominant product of the minimill. All of the minimills produce reinforcing bars except Oregon Steel Mills, Inc.; three produce only reinforcing bars.

Oregon Steel Mills, Inc., Division of Gilmore Steel Corp., is the largest minimill located in the Western States. It is the only minimill specializing in the production and sale of carbon steel plate and the only facility that has a processing plant for the direct reduction of iron ore. This permits the firm to use iron pellets, as well as scrap, for its electric furnaces. In 1974 the firm closed its bar mill which produced hot-rolled bars, reinforcing bars, and light structural shapes. A newly constructed sheet mill will soon be in operation.

Ameron, Inc., which offers the widest range of carbon steel mill products of the minimills located in the Western States, has entered into a joint venture with Tokyo Steel Manufacturing Co. and Mitsui & Co. for the production of semifinished products. The joint venture company, Tamco, has completed construction of a new facility, adjacent to Ameron's melt shop, containing an electric furnace and continuous caster. Ameron manages and operates the facility and receives a portion of the semifinished output. This facility is now supplying Ameron with billets, permitting it to close its older melt shop. The closure of Ameron's melt shop at Etiwanda, Calif. was reported by the firm to be the result of environmental considerations.

Cascade Rolling Mills, Inc., of McMinnville, Oreg. is perhaps the most unique, specialized, and efficient of the Western minimills. Situated in a predominantly farming region, rich in labor resources, and possessing a plentiful supply of scrap, the company secured a multimillion-dollar agricultural loan to finance the rebuilding of much of the mill. Specializing in the production of 3/8- to 1-3/8-inch reinforcing bars, the company has achieved one of the lowest production costs in the U.S. steel industry. Although the firm has installed a shredder to reduce the costs of scrap processing, its most unique cost advantage relative to its California competitors is its cheap power source, the Bonneville Power Administration. Utilization of this power source provides cost savings to the firm of an estimated $15 or more per ton.

Tree Island Steel Co., a wholly owned subsidiary of a Canadian firm by the same name in which Marubeni Corp., a Japanese firm, has a 19.7 percent interest, has begun construction of a wire products plant in Los Angeles. Initially the firm plans to produce nails, netting for use in stucco reinforcing, poultry enclosures, and general-purpose mesh. Later the company expects to expand into spring wire, bright wire, and chain-link fence. The entry of Tree Island into the Western States wire products market marks the first time a foreign-owned firm has established such production facilities in the Western States.

There are numerous other firms producing carbon steel mill products in the Western States which have no melting facilities and which purchase steel coils (plate, sheets, or strip) for the manufacture of pipes and tubes or wire rod to be converted to either wire or wire products. Almost all of the

Western pipe and tube manufacturers, with the exception of the large domestic mills, use Japanese steel coils for part or all of their raw material. The manufacturing process is common to all. Steel coils are slit and then run through an electric resistance weld tube mill. Since the Western tube manufacturers depend entirely upon purchased steel coils, they must compete with the same domestic and foreign suppliers in the finished product. The wire and wire products-producing firms in the Western States are in a parallel situation--i.e., they must purchase wire rods and in turn often compete with the same suppliers in wire and wire products. When domestic or foreign suppliers offer the finished products at or near the price of the coils or wire rods, domestic manufacturers of tubes, wire, and wire products are caught in a competitive squeeze.

California Steel and Tube and Davis Walker Corp. are examples of the type of firm which depends upon purchased raw materials. California Steel and Tube produces mechanical tubing ranging from 3/8 inch to 3-1/2 inches in diameter. Davis Walker is by far the largest wire and wire products-producing firm in the Western States, with four plants in California and one in Washington. Davis Walker also manufactures products at two locations in Canada.

The number of producers in the Western States manufacturing barbed wire, nails, and prestressed strand is limited. During 1972-77, 1/ CF&I produced all three products; U.S. Steel Corp. produced nails, and Davis Walker Corp. produced barbed wire.

Within the past 5 years, 10 firms at 10 locations are known to have closed or reduced operations in addition to those previously mentioned. These include Southwest Steel Rolling Mills, Inc., Los Angeles, a producer of hot-rolled bars and reinforcing bars; Bethlehem and U.S. Steel's bailing wire production facilities at Vernon, Calif., and Pittsburg, Calif., respectively; Senco Products, Inc., City of Commerce, Calif., and Spotnail Stapling Co., Santa Fe Springs, Calif., nail and staple production; and Pacific Wire and Rope Co., Santa Fe Springs, Calif., wire rope. Whitaker Metals, Los Angeles, Calif., a processor of flat-rolled sheets, closed operations in December, 1976, and in late 1977, Witteman Steel Mills Corp., a Fontana, Calif. reinforcing bar producer, filed a petition under chapter XI of the Bankruptcy Act.

Capacity

Aggregate data on capacity relative to consumption in the Western States would appear to suggest that capacity is in place for Western producers to satisfy total steel demand in the region. In 1977, for example, capacity of these firms totaled 10 million tons, while apparent consumption totaled 8.4 million tons. However, in the product category tin mill products, plates, sheets and strip, which accounted for 51 percent of total consumption in the

1/ The U.S. International Trade Commission selected 1972 to begin its analysis of the Western U.S. steel market because 1972 was considered a more representative year than either 1971 or 1973. The year 1971 was a recession year while the year 1973 was a boom year.

Western States in 1977, Western producers' capacity was well below consumption in each of the past 6 years. In addition, Western producers' capacity to manufacture pipes and tubes, which are made from plate and sheet, was below consumption during 1972-77. In contrast, capacity to produce bars, wire rod, and wire exceeded consumption during the same period.

The carbon steel mill articles for which capacity to manufacture is below consumption are primarily products of the integrated producers while those for which capacity to manufacture exceeds consumption are products of the minimills and wire drawing firms. It should be recognized that corporate decisions relating to additional carbon steel capacity in the Western States have been influenced by the industry's low levels of profitability which limits capital for investment, by the size of the market, by the competitive advantages of imports in the marketplace, and by the promise of greater returns on investment in other sections of the United States. This situation appears to have had a significant impact upon producers' ability to satisfy Western States steel demand.

CF&I is not a significant competitor west of the Rocky Mountains, which represents the major segment of Western States consumption of carbon steel mill products, because of freight costs from its Colorado location. Thus, the inclusion of this firm's capacity overstates the ability of the Western producers to satisfy the demand in the market west of the Rockies. The major portion of CF&I's output is consumed in the Southwestern United States and adjacent markets east of Colorado.

Kaiser Steel, whose facilities are located solely within the region's major consuming area, appears to be in the most advantageous position of the major integrated mills to narrow the gap between capacity and consumption. Kaiser's expenditures for a major capital investment program to install a new basic oxygen furnace, the most efficient method of steel production today, currently underway and the closing of existing open-hearth furnaces, suggests that the emphasis of the firm is increased efficiency through modernization rather than increased capacity.

Based upon the relatively small size of the Western States steel market relative to that of the total U.S. steel market and past trends in capital investment, it would appear that additional increases in capacity will be accomplished by modernization and/or "add-ons" to existing facilities rather than construction of totally new facilities, commonly referred to as greenfield plants.

Raw steel.--The capacity of producers in the Western States to melt carbon steel fluctuated from 9.5 million tons in 1972 to 10.5 million tons in 1977. 1/ In 1977, such capacity was 11 percent larger than it was in 1972.

1/ Western producers account for approximately 7 percent of total U.S. capacity to melt carbon steel.

Among the integrated producers, much of the increase was due to increased capacity by CF&I during 1976 and 1977; Kaiser added significant capacity in 1973, but its capacity has remained virtually unchanged since that year. Among the minimills, Gilmore and Northwest Steel increased capacity substantially during 1972-77; Soule Steel Co. added a modest amount of capacity and all others remained virtually unchanged except for Ameron which closed its melt shop in 1977.

Steel mill products.--The capacity of producers located in the Western States to manufacture carbon steel mill products increased only marginally from 9.7 million tons in 1972 to 10.0 million tons in 1977. Increases in capacity occurred mostly in deformed reinforcing bars, wire rods, and wire (table 3). The capacity to produce (1) sheets and strip and (2) angles, shapes, and sections, two of the most important steel product categories in the Western States, as well as in the United States, declined from 1972 to 1977.

Production of raw steel

During 1972-77, production of raw steel in the Western States fluctuated from 7.6 million tons in 1976 to 9.0 million tons in 1973. Production amounted to 7.7 million tons in 1977, as shown in the following table.

Carbon steel: Capacity to melt, production of raw steel, and capacity utilization in the Western States, 1972-77

Year	Capacity to melt	Production	Capacity utilization
	Million short tons	Million short tons	Percent
1972	9.5	8.3	87
1973	10.1	9.0	89
1974	10.0	8.8	88
1975	10.3	7.9	77
1976	10.4	7.6	73
1977	10.5	7.7	73

The rate of capacity utilization in the Western States in both 1976 and 1977 was only 73 percent compared with about 80 percent for the entire United States. Capacity utilization in the Western States has shown a steady decline since 1973.

The following table shows carbon raw steel production in the Western States by type of furnace. In 1977, the latest year for which data are available only 32 percent of raw steel production in the Western States was produced by the BOF method compared with 62 percent for the entire United States. Moreover, while a larger percentage of steel annually is being produced by the BOF method in the United States as a whole, there is no such upward trend in the Western States. 1/

Western producers' production of raw steel, by type of furnace, 1972-77

Type of furnace	1972		1973		1974	
	Quantity	Percent of total	Quantity	Percent of total	Quantity	Percent of total
	1,000 Short tons		1,000 Short tons		1,000 Short tons	
Open hearth	4,062	49	4,608	51	4,073	46
Electric	1,255	15	1,701	19	2,107	24
BOF	2,962	36	2,717	30	2,659	30
Total	8,279	100	9,027	100	8,839	100

Type of furnace	1975		1976		1977	
	Quantity	Percent of total	Quantity	Percent of total	Quantity	Percent of total
	1,000 Short tons		1,000 Short tons		1,000 Short tons	
Open hearth	3,287	41	3,581	47	3,467	45
Electric	1,575	20	1,470	19	1,777	23
BOF	3,080	39	2,589	34	2,478	32
Total	7,942	100	7,640	100	7,721	100

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

Western producers' shipments

Shipments of carbon steel mill products by Western producers showed no discernible trend from 1972 to 1977, amounting to 5.2 million tons in both 1972 and 1977 (table 4). Except for the years 1973 and 1974, shipments remained rather stable, ranging from 4.9 million to 5.2 million tons. In 1973 and 1974, shipments were significantly higher, 6.8 million tons and 6.1

1/ When Kaiser's new BOF facilities go on stream in early 1979, the share of raw steel produced by the BOF method may increase in the Western States.

million tons, respectively. This sharp increase came in response to the strong steel demand which existed prior to the economic recession that began in 1974. The cancellation of orders which resulted from the recession contributed to the moderate decline of shipments in 1974. In addition, after operating at nearly full capacity for the entire year of 1973, it was necessary for the domestic industry to reduce the level of operations somewhat in 1974 in order to make required repairs. Shipments declined sharply in 1975, and increased only moderately in 1976 and 1977. From 1975 to 1977, while shipments, in terms of quantity, displayed no obvious trend, the value of shipments showed a clear upward trend, increasing 80 percent from $1.0 billion in 1972 to $1.8 billion in 1977. The increase in value reflects higher costs of production, 1/ which rose almost 90 percent, and inflation.

Western producers' shipments within the Western States climbed from 3.9 million tons in 1975 to 4.5 million tons in 1977, an increase of 13 percent. During the same period, apparent consumption in the region increased by 20 percent. However the relative importance of Western producers' shipments in supplying regional demand has declined since the 1975 recession, from 56 percent of apparent consumption in 1975 to 53 percent in 1977. Imports captured almost two-thirds of the 1975-77 growth in apparent consumption and Western producers about one-third. Eastern producers lost 3 percent of their market share.

Ingots and semifinished products.--Both integrated mills and minimills produce ingots and semifinished products which are usually further processed; however, limited quantities of both articles are sold. The amount shipped by Western producers ranged from 4,000 to 177,000 tons annually during 1972-77 (table 5), compared with total raw steel production in the Western States of 7.7 million tons in 1977.

Tin mill products, plates, sheets, and strip.--Shipments of tin mill products were combined with shipments of plates, sheets, and strip in order to avoid disclosure of confidential data. The combined grouping of products represented more than one half of total shipments of all carbon steel mill products in the Western States during 1977. During 1972-77, shipments of the combined grouping followed the general trend of all steel mill products. Shipments increased from 2.5 million tons in 1972 to 3.3 million tons in 1973, decreased to 2.1 million tons in 1975, and remained at approximately that level, 2.4 million tons, in 1976 and 1977 (table 6). Integrated producers were responsible for the major share of production in 1977.

Within the combined grouping, sheets and strip accounted for the largest proportion of shipments, tin mill products ranked second, and plates third. Shipments of sheets and strip followed the general trend of the combined grouping during the 6-year period. Shipments of tin mill products and galvanized products followed a somewhat different trend, increasing sharply from 1972 to 1973, and remaining at that level through 1977, except for a decline in 1975 to the 1972 level. Plates also differed from the trend of the

1/ Higher production costs are reflected in costs of raw materials, labor, energy, and pollution control.

combined grouping. Shipments of plates increased from 1972 to 1973, remained at approximately that level in 1974 and 1975, and decreased to a level below the 1972 level in 1976 and 1977.

Deformed reinforcing bars.--Shipments of deformed reinforcing bars represented about 13 percent of the total shipments of Western producers' steel mill products. Shipments were 685,000 tons in 1972, 844,000 tons in 1974, and 679,000 tons in 1977 (table 7).

Several unique characteristics of the deformed-reinforcing-bar market contributed to the variation in the shipment trend of this product from the shipment trend of all steel mill products. In contrast to the widespread decline of Western producers' shipments in 1974, shipments of deformed reinforcing bars exhibited an increase during that year. Although imports were large in most product groupings during 1974, in deformed reinforcing bars, an area of traditionally low import penetration, Western producers increased shipments to satisfy demand. In 1975 and 1976, shipments decreased, reflecting the dependence of demand upon the construction industry which was especially slow in recovering from the economic recession.

Deformed reinforcing bars are products that have proven to be well-suited to specialization. Minimills rather than integrated mills account for the bulk of the production of deformed reinforcing bars.

Bar-size shapes.--Annual shipments of bar-size shapes followed the general trend of total steel mill products. In 1972, shipments were 67,000 tons. An unusually sharp increase brought the total to 117,000 tons in 1973 (table 8). Thereafter, shipments declined annually to 43,000 tons in 1976, but recovered moderately to 58,000 tons in 1977.

In 1977, approximately two-thirds of bar-size shapes were produced by minimills. This is typical of the production pattern for 1972-77, except for the year 1973, when approximately two-thirds of the bar-size shapes were produced by integrated producers.

Bars other than deformed reinforcing bars and bar-size shapes.--Shipments of bars followed the general trend of total steel mill products. Shipments increased from 234,000 tons in 1972 to 359,000 tons in 1973 (table 9). After declining slightly to 349,000 tons in 1974, shipments plummeted to 204,000 tons in 1975. Shipments recovered slightly to 212,000 tons in 1976 and remained at about that level in 1977.

Shipments of bars were shared by integrated producers and minimills. Very little production was attributable to producers not operating steelmaking furnaces.

Wire rods.--Considerable amounts of wire rods are converted to wire or wire products by rod producers. These quantities are not reflected in table 10, which shows only wire rod shipped by the Western producers. Annual shipments of wire rod were fairly stable over the 6-year period. Except for a high of 327,000 tons in 1973, shipments ranged between 229,000 and 292,000 tons (table 10). The bulk of wire rod production is by integrated mills.

Wire.--Shipments of wire increased from 209,000 tons in 1972 to 291,000 tons in 1974. Decreasing to the 1972 level in 1975, shipments of wire repeated the same cycle, increasing from 200,000 tons in 1975 to 271,000 tons in 1977 (table 11). In 1977, more than one-half of the wire shipped by Western producers was produced by establishments which do not operate steelmaking furnaces. The next largest share of production was accounted for by minimills, leaving the smallest portion to the integrated producers.

Angles, shapes, sections, rails, tie plates, and joint bars.--Shipments of angles, shapes, and sections were combined with rails, tie plates, and joint bars in order to avoid disclosure of confidential data. Shipments of the total product grouping increased from 577,000 tons in 1972 to 710,000 tons in 1974, dropped sharply to 619,000 tons in 1975, and remained at approximately the same level through 1977 (table 12).

Western producers' shipments of angles, shapes, and sections followed the general trend of the total grouping. Rails, tie plates, and joint bars, however, increased steadily from 1972 to 1976, then decreased in 1977. Western producers' shipments within the Western States of rails, joint bars, and tie plates were rather stable over the 6-year period.

The bulk of this product grouping is made by integrated producers; CF&I, however, is the only producer of rails.

Pipes and tubes.--Pipes and tubes accounted for about 13 percent of the total shipments of all steel mill articles produced in the Western States in 1977. Shipments of pipes and tubes increased from 596,000 tons in 1972 to 827,000 tons in 1974, decreased to 555,000 tons in 1976, but increased to 658,000 tons in 1977 (table 13). Integrated producers account for the bulk of production. There is no pipe and tube production by minimills.

Nails, barbed wire, and prestressed strand.--Shipments of nails, barbed wire, and prestressed strand were combined in order to maintain confidentiality. There are only two domestic producers of nails and barbed wire, and one producer of prestressed strand. Shipments by Western producers declined from 88,000 tons in 1972 to 68,000 tons in 1975 (table 14). They increased slightly to 70,000 tons in 1976, and to 75,000 tons in 1977. Shipments of nails, which account for the largest share of this combined product grouping, set the trend for the entire group. Shipments of barbed wire and of prestressed strand were approximately equal, although the total Western market for barbed wire is much smaller. Both products followed the general trend of the combined grouping.

Exports from the Western States

From 1972 through 1977 Western producers' exports were never more than 8 percent of their total shipments. Canada and Mexico have been by far the principal export markets, accounting for almost 60 percent of the exports of steel mill products in 1977 from the Western States (table 15).

During 1972-77, exports 1/ of carbon steel mill products from ports located in the Western States ranged from 134,000 tons in 1972 to a high of 478,000 tons in 1973 (table 15). After 1973, exports declined to 451,000 tons in 1974, 397,000 tons in 1975, 209,000 tons in 1976, and 157,000 tons in 1977. The level of exports in 1973 and 1974 reflected a surge in world steel demand based on expanding world economic conditions and a desire on the part of carbon steel producers to obtain higher prices in world export markets than in the price-controlled domestic market.

The following tabulation shows an index of total U.S. and Western States exports of steel mill products (in terms of quantity) during 1972-77 (1972=100):

	1972	1973	1974	1975	1976	1977
United States	100	141	203	103	92	70
Western States	100	357	337	296	156	117

The quantities exported from the Western States fluctuated substantially more than total U.S. exports. The index as shown above changes significantly despite relatively small changes in actual quantities because of the small base involved.

The composition of exports from ports located in the Western States is similar to total U.S. exports in that tin mill products and pipes and tubes are significant export items. Unlike total U.S. exports, however, sheets and strip are relatively insignificant export items and reinforcing bars, wire, and rails, joint bars, and tie plates are relatively more important export items in the Western market than in the national market (table 16).

The relative share of exports handled through each port located in the Western States varies considerably from year to year (table 17). Seattle and San Diego, relatively unimportant ports for imports, were the two principal ports for exports in 1977. Except for 1973, more quantities of steel mill products were exported from the port of San Francisco than from the port of Los Angeles during 1972-77.

Inventories

The inventory cost burden per ton for Western producers is considerably heavier than that of importers since, based on questionnaire returns, producers maintain about 2 months supply and importers 1 month's supply. Domestic steel producers' inventories are traditionally higher than those of importers since they usually attempt to inventory in depth in order to rapidly respond to customers needs. On the basis of testimony by Western steel producers, the service factor is important when domestic prices are higher

1/ Exports of carbon steel mill products from ports located in the Western States ranged from 5 percent of total U.S. exports of such products in 1972 to 14 percent in 1975.

than those of imported articles. Importers on the other hand responded during field research that they do not inventory in depth but import to fill specific orders and the bulk of inventory represents cancelled orders.

During 1972-77, Western producers' inventories of carbon steel mill products fluctuated from a high of 1.4 million tons at the end of 1972 to a low of 800,000 tons at the end of 1977 (table 18). Inventories of nails, barbed wire, and prestressed strand decreased from 10,000 tons at the end of 1971 to 2,000 tons in 1974, increased sharply to 8,200 tons in 1975, and then decreased annually to 3,400 tons in 1977.

The greatest change in the level of Western producers' inventories of carbon steel mill products occurred in 1973 when by yearend, inventories had been reduced by 38 percent from the level of the previous year. Inventory reductions occurred because of a combination of increased consumption and reduced supplies from foreign sources.

Short supply and inventory depletion continued through January-June 1974, resulting in yearend inventories being below those at yearend 1973. However, late in 1974, market conditions had changed and steel supply was tending toward surplus.

Steel demand continued to decline and remained depressed through the recession year 1975. As a result, inventories substantially increased. These increases occurred in all product categories except ingots and semifinished products, wire rods, and wire.

In 1976 inventories continued to increase in all product categories except bars, other than reinforcing bars, wire rods, nails, barbed wire, and prestressed strand. By the end of 1977, however, inventories had substantially declined as a result, in large part, of increased consumption.

Inventories of carbon steel mill products of importers fluctuated from 61,000 tons at yearend of 1971 to 277,100 tons at yearend 1975 (table 19). Inventories were 243,000 tons at yearend of 1977.

A striking difference between Western producers' inventories and importers' inventories of carbon steel mill products is apparent in terms of relative size. Whereas producers' inventories were never less than 800,000 tons at yearend during the 6-year period, importers' inventories never exceeded 277,100 tons. Importers' inventories reflect a sharp increase at yearend 1974, rising to a level which was maintained through yearend 1977. Importers' inventories of tin mill products, plates, sheets, and strip increased from 18,000 tons at yearend 1971 to 98,700 tons at yearend 1977. Still, this did not approach the level of Western producers' inventories, which for those products was 365,400 tons in 1977. Importers' inventories of the two product groupings, angles, shapes, sections, rails, joint bars, and tie plates and that of pipes and tubes increased from almost 10,000 tons each at yearend 1971 to 67,300 and 52,500 tons, respectively, at yearend 1977. Producers' inventories of these products followed an opposite trend, declining to 25,400 and 84,500 tons, respectively, in 1977. In addition, whereas

importers' inventories of nails, barbed wire, and prestressed strand increased from 1,000 tons at yearend 1971 to 5,100 tons at yearend 1977, producers' inventories declined from 10,000 tons at yearend 1971 to 3,400 tons at yearend 1977.

The ratios of Western producers' inventories to Western producers' shipments and importers' inventories to imports of carbon steel mill products are shown in the following table.

Carbon steel mill products: Ratios of Western producers' inventories to Western producers' shipments and importers' inventories to imports, by items, 1972-77 1/

(In percent)

Item	1972	1973	1974	1975	1976	1977
Carbon steel mill products: 1/						
Western producers	27	13	13	20	21	15
Importers	3	3	5	12	9	8

1/ Data represent the ratios of inventories at the end of the period shown to shipments and imports during the same period, based on quantity.

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

Employment in the Western States

Employment data indicate output of carbon steel mill products per worker is less in the Western States than it is in the Nation as a whole. Thus, payroll costs per ton of steel produced are higher in the Western region.

All employees.--The average number of persons employed in establishments located in the Western States account for 5 percent of all persons employed in U.S. establishments in which carbon steel mill products are produced. During 1972-77, employment at establishments in the Western States fluctuated from a low of 22,600 to a high of 26,000 in 1974 (table 20). The number of all employees declined to 23,900 in 1975 and to a level of 23,200 in 1976 and 1977, or about 11 percent below the 1974 high.

The manufacture of plates and sheets and strip (including tin mill products) accounts for the largest number of employees at establishments in the Western States. In 1977, about 35 percent of all such employees were engaged in the manufacture of these products. Within this product category, tin mill products required the largest number of employees, not only because it is one of the largest volume items shipped, but also because of the additional processing required in its manufacture.

About one-fourth of all employees at establishments in Western States are engaged in the manufacture of ingots and semifinished products. The production of these items is more labor intensive than the highly automated processes used in the manufacture of most carbon steel mill products. It therefore accounts for a relatively larger share of total employment. Employees engaged in the manufacture of deformed reinforcing bars, wire, and pipes and tubes account for the bulk of the remaining workers.

Production and related workers.--The average number of production and related workers employed at establishments in the Western States is between 5 and 6 percent of the total number employed in the entire U.S. steel industry. During 1972-77, the average number of production and related workers at establishments in the Western States fluctuated from a low of 18,800 in 1972 to a high of 21,400 in 1974 (table 20). In 1977, employment amounted to 19,000 production and related workers. The trend for 1972-77 mirrors demand for carbon steel mill products, increasing during 1972-74, but decreasing in 1975 and 1976, and subsequently increasing slightly in 1977.

The trend in the total number of production and related workers and for those engaged in the manufacture of the individual carbon steel mill products at establishments located in the Western States was similar to that for all employees at these locations.

Man-hours worked by production and related workers.--The total number of man-hours worked in the manufacture of carbon steel mill products at establishments located in the Western States increased from 37.6 million in 1972 to 43.6 million in 1974, declined to slightly less than 39 million in 1975, and remained at about that level during 1976 and 1977 (table 21). In 1977, man-hours worked were 11 percent less than they were in the peak year of 1974.

About one-quarter of the man-hours expended in the production of carbon steel mill products were required for the production of raw steel and its conversion into ingots and semifinished products. Man-hours utilized in the production of these products increased from 9.6 million in 1972 to 11.9 million in 1974 and decreased annually to 9.7 million in 1977. Of the steel mill products made from these semifinished forms, the production of tin mill products, plates, and sheets and strip required the largest number of man-hours, approximately another quarter of the total expended. Man-hours used in the production of these products were 13.8 million in 1972 and 14.3 million in 1977.

Profit-and-loss experience of Western steel industry

From 1972 to 1977, the aggregate earnings of Western steel firms were erratic, ranging from a profit of $205.3 million in 1974 (11.1 percent) to a loss of $81.1 million in 1977 (-4.7 percent).

The following tabulation shows the number of individual companies reporting profits or losses and aggregate profits or losses for all reporting firms during 1972-77:

Item	1972	1973	1974	1975	1976	1977
Number of companies reporting--						
Profit	17	19	20	16	13	10
Loss	2	1	0	5	8	12
No operations	3	2	2	1	1	0
Total	22	22	22	22	22	22
Aggregate net profit or (loss) million dollars--	39.8	86.9	205.3	71.1	(70.2)	(81.1)

From 1975 through 1977 the financial health of the Western steel industry deteriorated. The industry operated at a loss in 1976 and 1977, with more than half the producing establishments reporting losses in the latter year. The number of firms earning a profit declined from 20 in 1974 to 10 in 1977, while the number of firms operating at a loss increased from zero in 1974 to 12 in 1977. Thus, 55 percent of the companies which submitted data to the Commission sustained losses in 1977. During 1975-77, profits of producers in the Western region were below the level of the U.S. steel industry as a whole. This decline in profits can at least partially be blamed on several factors, including increasing costs of production relative to price increases and low levels of capacity utilization, in addition to pressure from lower priced imported products.

Western producers compared with all U.S. producers

From 1972 to 1977, the profitability of Western producers, as reflected by the ratio of net profit to sales, fell from a profit of 3.9 percent to a loss of 4.7 percent compared with the U.S. steel industry's total of 3.3 percent in 1972 to 0.1 percent in 1977 (table 22).

However, the Western producers' ratio of net profit to sales compared favorably with that for all U.S. steel producers for the years 1972-74 as reported by the American Iron and Steel Institute. In 1974, the Western producers' ratio (11.1 percent) was almost double the aggregate for all U.S. producers (6.5 percent), as shown below (in percent):

	Total U.S. producers	Western producers
1972	3.3	3.9
1973	4.3	6.2
1974	6.5	11.1
1975	4.7	4.3
1976	3.5	(4.4)
1977	.1	(4.7)

The decline in the Western ratio, which began in 1975, deepened in 1976 and 1977. The Western producers' earnings are affected to a greater extent than the earnings for all U.S. producers owing to greater import penetration, higher production costs, and the smaller size of the Western market, which tends to be more volatile.

Profit and loss by product lines

The Commission also compiled profit-and-loss data on a product line basis. Certain product lines such as tin mill, plates, sheets and strip, angles, shapes and sections, and rails, joint bars, and tie plates involved a limited number of producers and could not be aggregated in a meaningful and nonconfidential manner. However, with the exception of rails, joint bars, and tie plates, those product lines followed the same earning trends shown previously for Western steel firms' overall operations. On the other hand, rails, joint bars, and tie plates were consistently profitable throughout 1972-77.

The net operating profit or loss and the ratio of net profit or loss to sales on reinforcing bars, other bars and bar-size shapes, wire, and pipes and tubes, 1972-77 are summarized in table 23. As shown in the table, the reinforcing bar and other bar product lines experienced net operating profits or losses and returns on sales similar to those reported earlier for the product lines of all Western producers.

The profit experience of the wire and pipe and tube product lines was higher than any of the other product lines throughout 1972-77. These same product lines were also the areas of maximum foreign investment in the Western States. Not only has import penetration increased in general, but in addition, those firms with maximum foreign investment also increased their market share.

Relationship of volume, sales, prices, and cost of products

The net profit figure is the result of the interactions of sales volume, sales prices, and cost of production. The following table shows each of these factors.

Financial data of Western steel-producing firms on all operations, 1972-77

Year	Sales volume	Average sales price	Average cost of production	Profit
	1,000 tons	Per ton	Per ton	Per ton
1972--	5,166	$198	$174	$24
1973--	6,853	204	179	25
1974--	6,149	301	252	49
1975--	4,862	336	300	36
1976--	4,923	324	316	8
1977--	5,223	331	322	9

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

Sales volume in 1977 was about the same as it was in 1972; however, production costs during the period almost doubled while sales prices increased only 67 percent. The average earnings enjoyed by Western producers from 1972 to 1974 were the result of both increasing volume and gross profit per ton. After 1974, which was a year of high steel demand, the average sales price was up only 10 percent while the average cost of production increased almost 28 percent. From 1975 to 1977, the Western producers experienced no growth in prices, little growth in sales volume, and increasing costs of production.

Imports into the Western States

Since 1972, the share of the market held by imports ranged from 40 percent in 1974 to 29 percent in 1973, and was 38 percent in 1972 compared to 37 percent in 1977. The critical fact is that imports' market share in the Western States is about twice what it is for the entire Nation.

During the period under study, imports of carbon steel mill products into the Western States hit a low of 2.2 million tons in 1975 and a high of 4.2 million tons in 1974 (table 24). 1/ Strong domestic demand during early 1974 and inventory buildup contributed to the high levels of imports in 1974, but the economic recession was the principal reason for the sharp decline in 1975. Imports increased to 2.7 million tons in 1976 and to 3.1 million tons in 1977. By 1977, demand both in the Western States and in the United States as a whole was relatively strong in relation to demand in other principal steel-consuming countries. During January-September 1978, 2/ imports of carbon steel mill products into the Western States amounted to 3.2 million tons, or 40 percent more than the 2.3 million tons imported during the same period of 1977 (table 25). Imports of carbon steel mill products into the entire United States amounted to 14.9 million tons or 18 percent more than the corresponding period of 1977. In 1977, the Western States accounted for 17 percent of total U.S. imports, but only 9 percent of total apparent U.S. consumption and 6 percent of total U.S. producers' shipments.

In 1977, sheets and strip accounted for 26 percent of total imports into the Western States; pipes and tubes, 19 percent; tin mill products, 18 percent; angles, shapes, and sections, 12 percent; plates, 9 percent; and wire rods, 5 percent. During January-September 1978, imports of the various steel mill products, increased except for wire, rails, and barbed wire (table 26). Imports of plates increased by 66 percent, sheets and strip by 59 percent, wire rods by 58 percent, tin mill products by 42 percent, angles, shapes, and sections by 25 percent, pipes and tubes by 23 percent, and other steel mill articles by 13 to 20 percent, when compared with the corresponding period of 1977. Complete import data for 1978 will be provided in the Commission's final report.

The role of imports

Imports of carbon steel mill products are a major force in the Western market, having supplied 37 percent of that market in 1977 compared with 18 percent for the national market. In addition to imports of basic steel, a new import dimension of growing importance is in the area of fabricated carbon steel. Carbon steel imports are not restricted from entry into the United

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1/ The quantities of carbon steel mill products imported into the Western States during 1972-77 exhibited a somewhat different pattern from that of overall U.S. imports, in that 1974 was the peak year in the Western States while 1977 was the peak year for total U.S. imports.

2/ This report does not contain any data for 1978, except official import statistics for January-September 1978.

States other than by the applicable import duties averaging about 6 percent, by actions under import relief legislation, or by provisions of "Buy American" statutes. In spite of the relief granted in all trade-related actions under U.S. trade laws, the great bulk of imports (probably 98 percent or more) of steel mill products remain unaffected. Other administrative actions, designed, in part, to curb imports, were the Voluntary Restraint Agreement (1969-74) and the current trigger-price mechanism.

The composition of imports into the Western States is similar to that of total U.S. imports, in that flat-rolled products are the predominant import item. The percentage of sheets and strip imported into the Western States is, however, less than that for the total United States, but the percentage of tin mill products is comparatively higher. The automotive and appliance industries, by far the largest consumers of sheets and strip, are concentrated more heavily in areas outside of the Western States, and canners, the principal users of tin plate, are more concentrated in the Western region. Reflecting regional demand, about 75 percent of the total imports in the Western States enter through the ports of either Los Angeles or San Francisco (table 27); the Port of Los Angeles alone accounts for almost 60 percent. The Port of Portland accounts for about 15 percent of the imports, and the Port of Seattle for much of the remainder.

Fabricated steel in the Western market 1/

In addition to increased imports of steel mill products, many major construction contracts have recently been awarded to foreign firms or firms using fabricated foreign steel. Construction contracts requiring fabricated steel amount to significant tonnages, millions of dollars in revenue to the steel supplier, hundreds of thousands of man-hours, and often affect the market for structurals produced by mills in the Western States. Data collected from general contractors on nine significant construction projects in the Western States reveal that the subcontracts for the steel input of these projects were granted to Japanese firms with bids based upon the use of

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1/ While fabricated steel products are not among the basic steel products provided for in part 2B of schedule 6 of the TSUS described in the Commission's notice of investigation, information was gathered with respect to several recent public works project contracts for fabricated steel awarded to firms planning to use foreign steel. This information was gathered in response to concerns raised by numerous persons testifying at the Commission's public hearings in this investigation (see transcript of the hearings, at, for example, pp. 212, 214, 220, 566, 569, 767-91, 1189, 1218, and 1234). Many of the projects, like bridges, covered by these contracts require large amounts of carbon steel. The discussion contained herein is limited to certain of the more important recent contracts and does not purport to cover the whole fabricated steel business in the Western States.

imported steel. 1/ These bids were significantly below those submitted by firms planning to use domestically produced steel.

On the basis of responses to the Commission's questionnaire, there appear to be at least seven reasons for such low bids by Japanese firms. They are, as follows:

a. Lower steel costs
b. Lower wage costs for fabrication
c. Lower number of man-hours required to complete fabrication
d. Lower profit margins
e. Lower overhead costs resulting, in part, from reimbursement of bidding costs associated with lost contracts
f. In some cases, less steel was required in the project, and
g. Japanese bids did not include the same items as domestic bids but concentrated on items which provided the most profitability.

During the hearings held in connection with this investigation, construction projects most often referred to as indicative of foreign penetration into this sector of the steel market were the San Joaquin River Bridge, Snake River Bridge, Napa River Bridge, and Portland Drydock #4.

San Joaquin River Bridge.--According to officials of the American Bridge Division, U.S. Steel Corp., the closing of its structural steel plant at Antioch, Calif. was the result of the use of foreign steel in the construction of the San Joaquin River Bridge at Antioch. An analysis of the bidding for this project revealed that the bid submitted by the American Bridge Division was the highest received by the general contractor and the only bid based upon the use of domestic steel exclusively. This bid exceeded that of Mitsubishi International Corp., Los Angeles, Calif., the firm selected to provide the steel, by 70 percent. Bidders using a mix of foreign and domestic steel fell between these two bids.

Peter Kiewit Sons' Co., the winning general contractor, advised the Commission in responding to the questionnaire that ". . . the bids or quotations were not uniform and comparable, and did not include sufficient uniform materials and quantities so as to make any comparison between the quoted prices meaningful." However, they further advised that ". . . Mitsubishi International was the only firm that included all of the other miscellaneous steel and metal components, and the only firm which quoted on the basis of delivered price."

1/ The bid process on projects utilizing fabricated steel involves both direct and indirect bids to supply such steel. The selecting authorities, i.e., the State of California or the Port of Portland, solicit bids for the project and select a general contractor. The general contractor has solicited bids from firms for subcontracts to supply the various components, such as fabricated steel, to be used in the project. In order to determine the extent to which imported fabricated steel is being utilized in the Western steel market, Commission questionnaires were sent only to the winning general contractors on selected projects. Thus, information on direct bids submitted by competing general contractors was not obtained. Testimony by the domestic industry, however, indicates that in a number of cases Western firms submitted unsuccessful direct bids based upon the use of domestic fabricated steel.

Snake River Bridge.--Hansel Phelps Construction Co., the general contractor for this project, received seven bids relative to the structural steel for use in the bridge--four which specified delivery f.o.b. Portland, one for delivery f.o.b. jobsite, and two which included erection. Because the winning bid was based upon a different basis for delivery than bids submitted by firms who planned to utilize domestic steel, a valid comparison between the bids cannot be made.

Napa River Bridge.--Hansel Phelps, the selected general contractor, received two sub-contractor bids for fabricated steel to be used in the Napa River Bridge project. Niether of the bids submitted utilized domestically produced steel. 1/

Portland Drydock #4.--According to an official of the Port of Portland, domestic, particularly Oregon-based, firms were encouraged to bid on the subject drydock. In an attempt to assist these firms the Port spent an estimated $350,000 in designing the drydock in a manner that would permit them to participate in the bidding. Subsequently, the Port received seven bids on the project, all from foreign-based firms and all using imported fabricated steel. Ishikawajima-Harima Heavy Ind. Co., Ltd., (IHI) Tokyo, Japan was awarded the contract with a bid of $17.5 million, $9.1 million below the engineer's estimate. A Port official provided two reasons for the low bid by IHI. This Japanese firm is a large shipbuilding firm with ship repair facilities at several locations throughout the world. At the time the contract was awarded (1977) shipbuilding was at a very low level and the firm apparently needed this contract to keep its facilities operating. Additionally, the Port planned to provide another firm space to operate ship repair facilities. Presumably, IHI submitted a low bid in the belief that it could increase its prospects for being selected to operate this repair facility.

According to the same official, IHI was represented or assisted during negotiations by Mitsui (USA) and the Mitsui Engineering and Shipbuilding Co. was represented by Sumitomo Shoji.

It is apparent that firms utilizing imported fabricated steel have acquired major construction contracts in the Western States. The extent of future penetration in this market appears to depend upon two primary factors--the demand for fabricated steel in Japan and limitations placed upon Japanese imports of structural steel by the United States and other governments.

Imports by country and by product category

Japan is and has traditionally been the largest single supplier of each category of carbon steel mill products imported into the Western States.

1/ Among the 7 direct bids for general contractor for this project, at least 2 bids, those of Kaiser and U.S. Steel, utilized domestic fabricated steel. The winning bid of Hansel Phelps was reportedly about 30 percent below the bids of Kaiser and U.S. Steel.

Considering Japan's importance in the Western market and the paramount importance of exports to both the Japanese economy and its steel industry, an overview of the Japanese steel industry, its structure and facilities, and its role in supplying Japanese and world demand is presented in appendix D.

The following table shows Japan's relative importance as a supplier of steel mill products to the Western States.

Carbon steel mill products: Percentage distribution of U.S. imports for consumption into the 10 Western States, by principal sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
Japan	69	71	61	77	79	72
EEC	14	13	17	11	7	13
Korea	7	6	16	6	8	7
Canada	2	2	2	3	2	2
All other	8	8	4	3	4	6
Total	100	100	100	100	100	100

In 1977, Japan supplied 72 percent (2.3 million tons) of total imports into the Western States; the EEC supplied 13 percent (393,000 tons); Korea, 7 percent (222,000 tons); and South Africa, Canada, and Australia, 2 percent each (table 28). Imports from South Africa were insignificant until 1977. In 1978, there was a dramatic shift in import sourcing, particularly in the Western States. Imports into the Western States increased from 2,310,367 tons during January-September 1977 to 3,227,307 tons in January-September 1978. During the same time periods, imports from Japan decreased from 1,762,359 tons to 1,702,536 tons, while imports from the EC countries increased from 235,741 tons to 705,971 tons. During January-September 1978, Japan supplied 53 percent of total imports into the Western States and the EC, 22 percent. Imports from all the other principal supplying countries increased significantly during January-September 1978 compared with January-September 1977, as shown in following table and table 26.

Source	January-September--	
	1977	1978
Japan	1,762,359	1,702,536
European Community	234,741	705,971
Korea	164,233	353,591
South Afriaca	20,733	137,169
Taiwan	20,909	87,989
Australia	43,374	76,143
Canada	44,054	52,186
All other	19,973	111,722
Total	2,310,367	3,227,307

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

Japan dominates in every product category (tables 28 through 42). In 1977, Japan accounted for 97 percent of the total imports of prestressed strand; 94 percent of the rebars; 85 percent of the bars; 83 percent of the tin mill products; 81 percent of the rails, joint bars, and tie plates; 72 percent of the sheets and strip; and 71 percent of the angles, shapes, and sections. Its dominance in other imported steel mill products ranged from 58 percent to 68 percent except for nails. Japan accounted for 48 percent of the total imports of nails in the Western region. Japan alone accounted for slightly in excess of 27 percent of apparent U.S. consumption in the Western States.

Among the leading sources of imports, the average unit value of all steel mill products imported into the Western States in 1977 was higher for Japan ($274 per ton) than it was for the EEC ($225 per ton) or Korea ($243 per ton). 1/ Although South Africa supplied only 2 percent of the imports in the Western region, its unit values were by far the lowest per ton ($197). Variations in product mix may account for many of the differences. However, a low unit value may also be an indicator of a pricing policy used to establish a foothold in the marketplace.

In examining the more important product categories in terms of quantities imported in 1977, the members of the EEC, among the leading foreign sources, had the lowest unit values in sheets and strip, tin mill products, angles, shapes, and sections, and wire rods. Korea had the lowest unit values in pipes and tubes and in plates. Japan is such a market force that the European and other offshore producers, in order to capture any segment of the market, have had to generally sell below the Japanese price. The west coast area has long been serviced by Japanese importers. Japanese interests testified before the Commission that the quality of the product, the service, the reliability, and the long relationship between supplier and customer has given Japan its import position in the Western market.

Japanese importers

Virtually all of the steel imported from Japan is marketed through Japanese trading companies which form a link between the Japanese steel mills and the U.S. Western market. Although 15 Japanese trading companies serve the Western market, import supply is highly concentrated among a small number of firms. Fifty-nine percent of total tonnage of Japanese steel mill products imported to the Western market in 1977 was supplied by 4 trading companies (table 43). This tonnage represented 16 percent of apparent consumption. The two major product lines in which Japanese importers compete are flat-rolled products and pipes and tubes. The four largest importers of flat-rolled products supplied 58 percent of sheet and strip and 60 percent of plate imported from Japan in 1977. The four largest importers of pipes and tubes supplied 68 percent of imports from Japan. These tonnages accounted for 16

1/ During January-September 1978, the average unit value of all steel mill products imported into the Western States from Japan increased to $321 per ton; for the EEC it was $231 per ton and for Korea it was $268 per ton.

percent of apparent consumption of flat-rolled products and 21 percent of apparent consumption of pipes and tubes in the Western States.

Most of the Japanese importers competed in a wide range of products. Thirteen of the 15 supplied imports in seven or more product lines (table 44). This pattern might be expected since these are not direct mill sales. They reflect the selling pattern of the trading companies which may or may not be the same as the production patterns of the mills.

Mill sourcing patterns of Japanese trading companies exporting carbon steel to the Western States market are presented in table 45. During 1976 and 1977, 89 different steel mills (firms) supplied carbon steel products for the 15 Japanese trading companies serving the market in the Western States. Most of these foreign producers are located in Japan; only six non-Japanese mills located in Taiwan and Korea supplemented Japanese production sources.

The number of trading companies exporting to the Western States and the number of supplying mills vary widely according to product category. In 1977, 19 different mills supplied pipes and tubes to 14 trading companies. Seventeen mills were sources of wire exports to the Western market by 10 trading companies. A narrower sourcing pattern is apparent for tin mill products (8 mills), plates (6 mills), and wire rods (6 mills). The average number of sources for all other product categories (except rails, joint bars, and tie plates) is about 12. For most product categories no less than two nor more than four trading companies are dependent on the same primary mill source. 1/ Almost every trading company uses a single primary mill source. The data show that relatively few trading companies changed primary sources during 1976 and 1977. 2/

Japanese trading companies have recently developed alternative non-Japanese sources to supply certain products to the Western U.S. market. Japan has promoted investments, for example, in wire and nail facilities in Korea. These investments were made by Japanese steel producers (table 46). Korea has now gained a dominant import position in the Western nail market.

Six Japanese wire and wire products manufacturers have relocated their production to Korea. According to Japanese producer and exporter interests, the Mitsui trading company advised six manufacturers to move their equipment in Japan partly to Masan, Korea's Free Trade Zone. 3/ These firms established wire mills in Korea during February-April 1973; all firms listed are now in production. The five companies which produce nails are producing all different size nails for different uses.

1/ A single mill supplies as many as 13 different trading companies (e.g., sheets and strip) if secondary sources are included. A primary source is defined as supplying 60 percent or more of a trading company's export volume. A secondary source is defined as supplying less than 40 percent.

2/ Only two product categories, plates and angles, shapes, and sections show a significant change in primary sourcing.

3/ This statement by Japanese steel interests also notes that Mitsui, which distributes these Korean products, has neither invested any capital in the Korean operations nor participated in their management.

The total investment in Korean wire mill and nail production facilities, amounted to almost $10 million and created an annual capacity of more than 80,000 metric tons, mostly nails. The combined operations employ more than 500 workers and have an annual export earnings potential (planned) of nearly $27 million. Four Japanese steel producers (Kobe, Nippon, Godo Steel, and Sumitomo Metal) supply the wire rod drawn by these six wire mills.

Importers other than Japanese

The sales of steel mill products by large European steel mills are often made by their American sales subsidiaries. British Steel Corp., for example, maintains a Houston office through which all of its U.S. sales are arranged. In fact, three of the four largest importers of steel into the Western market from countries other than Japan are foreign owned. In 1977, the four largest importers of steel mill products imported from countries other than Japan accounted for 53 percent of the total imports from countries other than Japan and 5 percent of apparent consumption (table 47).

In contrast to the Japanese importers, these importers appear quite specialized in product lines. Only 4 of the 24 importers competed in 7 or more product lines (table 48).

U.S. tariff treatment

Carbon steel mill products are only restricted from entry into the United States by the normally applicable import duties, 1/ by actions under the trade laws cited later in this section, and by provisions of "Buy American" statutes. 2/

The average rate of duty in 1977 for all carbon steel mill products imported into the United States was equivalent to 6.0 percent ad valorem; individual rates ranged from an ad valorem equivalent of less than 1 percent to a high of 11 percent.

1/ Although 5 of the steel mill items are eligible for duty-free treatment under the Generalized System of Preferences (GSP), imports of such items which received these benefits were very small, amounting to less than $15,000 in 1977.

2/ The Buy-American Act is applicable to purchases made by U.S. Government agencies; under this act, U.S. Government agencies may purchase products of foreign origin for delivery in the United States if the cost of the domestic product exceeds the cost of the foreign product, including duty, by 6 percent or more (12 percent or more if the low domestic bidder is situated in a labor-depressed area). Certain Federal agencies have "Buy American" policies more restrictive of foreign purchases than the Buy-American Act. A number of States have Buy American statutes.

Import relief actions under U.S. trade laws

Although in recent years there have been numerous import relief actions initiated under U.S. trade laws, the great bulk of imports of steel mill products remain unaffected by any of the following actions cited. Domestic steel producers, including west coast producers, have filed numerous petitions and complaints seeking relief from imports under several different statutory provisions in recent years. The bulk of the documents filed have been complaints submitted to the Secretary of the Treasury alleging sales at less than fair value under the Antidumping Act, 1921. Petitions and complaints have also been filed with the Secretary of the Treasury alleging the bestowal of a bounty or grant within the meaning of the countervailing duty law, with the Commission seeking import relief under section 201 of the Trade Act of 1974 or relief from unfair import practices under section 337 of the Tariff Act of 1930, and with the Special Representative for Trade Negotiations for an investigation under section 301 of the Trade Act of 1974. Some relief has been provided under the first three of the four listed relief provisions. Such relief directly affects less than 5 percent of all steel imports (including imports of basic noncarbon steel such as stainless and alloy tool steel). Each of these relief provisions and actions taken thereunder is briefly discussed below.

Antidumping Act.--The Antidumping Act, 1921, as amended (19 U.S.C. 160, et seq.) provides that where the purchase price or exporter's sales price of imported merchandise is less than the foreign market value there shall be levied, collected, and paid, in addition to any other duties imposed thereof by law, a special dumping duty in an amount equal to such difference (see especially 19 U.S.C. 161(a)). Such dumping duties are levied only after (1) the Secretary of the Treasury has made an appropriate determination that certain merchandise is being or is likely to be sold in the United States or elsewhere at less than its fair value and (2) the U.S. International Trade Commission has determined that an industry in the United States is being or is likely to be injured, or is prevented from being established, by reason of the importation of such merchandise into the United States (19 U.S.C. 160(a)).

Outstanding findings of dumping are currently in effect with respect to steel reinforcing bars from Canada; carbon steel bars and structural shapes from Canada; certain steel bars, reinforcing bars, and shapes from Australia; certain stainless steel plate 1/ from Sweden; certain stainless steel wire rods 1/ from France; certain steel wire rope 2/ from Japan; hot-rolled carbon steel plate from Japan; and steel wire strand for prestressed concrete from Japan. 3/

1/ Stainless steel products were excluded from this investigation.

2/ Wire rope was not covered in this investigation.

3/ A complete list of the current outstanding dumping findings can be found in 19 C.F.R. 153.46. Citations to the appropriate Treasury Digest can also be found there.

In 3 months, from early September to early December 1977, 24 complaints alleging the dumping of steel products were filed with the Treasury Department. As a result of those complaints, Treasury instituted 20 dumping investigations. The investigations covered a wide range of products, including carbon steel bars, pipe and tubing, plate, shapes, sheet, strand, strip, wire nails, wire rods, wire rope, and certain basic steel products. Twelve of the 20 investigations involved imports from the European Community (EC) (6 involved imports from the United Kingdom, a member of the EC). Five of the 20 involved imports from Japan. Most of the investigations were eventually terminated at the request of the complainants as a result of the establishment of the trigger-price mechanism (discussed infra).

Countervailing duty law.--Section 303 of the Tariff Act of 1930, as amended (19 U.S.C. 1303), the countervailing duty law, provides that "Whenever any country, dependence . . . shall pay or bestow, directly or indirectly, any bounty or grant upon the manufacture or production or export of any article or merchandise manufactured or produced in such country . . . there shall be levied and paid, in all such cases, in addition to any duties otherwise imposed, a duty equal to the net amount of such bounty or grant . . . ." Complaints alleging a violation of the countervailing duty law are filed with the Secretary of the Treasury. Determinations are also made by the Secretary. In the case of an imported article which is free of duty, duties may be imposed under this section only if there is an affirmative determination by the Commission that an industry in the United States is being or is likely to be injured, or is prevented from being established, by reason of the importation of such merchandise.

Countervailing duties are presently in effect on galvanized fabricated steel units (transmission towers) from Italy, and steel welded wire mesh from Italy. 1/

Import relief under section 201 of the Trade Act.--Section 201 of the Trade Act of 1974 (19 U.S.C. 2251) provides that an entity, including a firm, trade association, group of workers, or certified or recognized union, representative of a domestic industry may file a petition for import relief with the U.S. International Trade Commission. The Commission, on receipt of such a petition, is required to investigate to determine whether an article is being imported into the United states in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing an article like or directly competitive with the imported article. 2/ If the Commission makes an affirmative determination, it must then find the amount of increase in or imposition of any duty or import restriction on such article which is necessary to prevent or remedy such injury or, if it determines that adjustment assistance can effectively remedy the injury, recommend the provision of such assistance.

1/ A complete list of the countervailing duty orders currently in effect is set forth at 19 C.F.R. 159.47(f).

2/ The Commission is also required to investigate at the request of the President or the Special Representative for Trade Negotiations, or upon resolution of either the Committee on Ways and Means of the House of Representatives or the Committee on Finance of the Senate. The Commission may also investigate on its own motion.

Such findings and recommendations are transmitted to the President, who is required within 60 days, to determine what relief he will provide unless he determines that relief is not in the national economic interest (see 19 U.S.C. 2252). The President may conclude that adjustment assistance is the appropriate form of relief and direct the Secretaries of Labor and Commerce to give expeditious consideration to petitions for such assistance, or he may provide import relief under section 203 of the Trade Act (19 U.S.C. 2253) by (1) proclaiming an increase in, or imposition of, a duty on the article causing or threatening to cause serious injury to such industry; (2) proclaiming a tariff-rate quota on such article; (3) proclaiming a modification of, or imposition of, any quantitative restriction on the import into the United States of such article; (4) negotiating orderly marketing agreements with foreign countries limiting the export from foreign countries and the import into the United States of such articles; or (5) taking some combination of the above four actions.

The Commission has undertaken two investigations in recent years relating to basic steel products. As a result of investigation No. TA-201-5, Stainless Steel and Alloy Tool Steel, 1/ the Commission made an affirmative injury determination and recommended the provision of import relief in the form of quantitative restrictions on imports of stainless steel sheet and strip, plate, bar, and rod, and on alloy tool steel. 2/ As a result of that investigation, President Ford proclaimed relief in the form of quantitative restrictions on such steel for a 3-year period, beginning June 14, 1976. 3/ In the second investigation, No. TA-201-13, Round Stainless Steel Wire, the Commission made a negative injury determination and the question of relief was therefore not reached. 4/

1/ Stainless and alloy tool steel products were exlcuded from this investigation.

2/ See Stainless Steel and Alloy Tool Steel: Report to the President on Investigation No. TA-201-5 . . ., USITC Publication 756, January 1976.

3/ See Proclamation 4445, issued June 11, 1976 (41 F.R. 24101), as modified by Proclamation 4477 of Nov. 16, 1976 (41 F.R. 50969), which provided a separate quota for certain alloy tool steel known in the trade as bearing steel. Proclamation 4509, issued on June 15, 1977 (42 F.R. 30829), terminated the quota on bearing steel; and Proclamation 4559, issued Apr. 5, 1978 (43 F.R. 14433), further modified the remaining quota or alloy tool steel to exclude from that quota so-called chipper knife steel and band saw steel. The present relief is provided for in items 923.20 through 923.26, inclusive, of the Appendix to the Tariff Schedules of the United States (19 U.S.C. 1202).

At the request of the industry, the Commission, on December 11, 1978, instituted investigation No. TA-203-5, Stainless Steel and Alloy Tool Steel, notice of which was published in the Federal Register of Dec. 22, 1978 (43 F.R. 59914), for the purpose of gathering information in order that it might advise the President of its judgment as to the probable economic effect on the industry concerned of the termination of such relief. The relief is set to terminate at the close of June 13, 1979, unless extended. The Commission has set a hearing on the matter for Tuesday, Mar. 6, 1979, in its hearing room.

4/ See Round Stainless Steel Wire: Report to the President on Investigation No. TA-201-13 . . ., USITC Publication 779, June 1976.

Section 337 of the Tariff Act of 1930.--Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), declares unlawful "unfair methods of competition and unfair acts in the importation of articles into the United States, or in their sale by the owner, importer, consignee, or agent of either, the effect or tendency of which is to destroy or substantially injure an industry, efficiently and economically operated, in the United States, or to prevent the establishment of such an industry, or to restrain or monopolize trade and commerce in the United States. . . ." Complaints are filed with the U.S. International Trade Commission and when the Commission determines a violation of section 337 to exist, it may issue an exclusion or a cease-and-desist order.

In the one recent investigation involving a basic steel product, investigation No. 337-TA-29, Certain Welded Stainless Steel Pipe and Tube, the Commission found a violation of section 337 by reason of the importation or sale or both by certain Japanese producers or exporters of certain welded stainless steel pipe and tubes at prices lower than the average variable cost of production of such products without commercial justification (i.e., predatory pricing), and issued an order directing such firms to cease and desist from such practices. 1/ The order did not take effect because it was disapproved for policy reasons by the President.

Section 301 of the Trade Act.--Under section 301 of the Trade Act of 1974 (19 U.S.C. 2411), the President may, in the case of a subsidized import which is substantially reducing sales of the competitive U.S. product, impose duties or other import restrictions on the products of the exporting country, after investigation by the Secretary of the Treasury and the U.S. International Trade Commission. Section 301 authority may be used only if the President finds that the antidumping and the countervailing statutes are inadequate to deter the practices. Complaints are filed with the Special Representative for Trade Negotiations.

In October 1976, the American Iron and Steel Institute (AISI) filed a complaint alleging that the European Coal and Steel Community (ECSC) and the Japanese Ministry of International Trade and Industry (MITI) had entered into a bilateral agreement limiting Japanese steel exports to the EC and which unlawfully diverted Japanese exports of steel from the EC to the United States. 2/ The investigation was terminated in January 1978.

Voluntary Restraint Arrangements (VRA).--In 1968, the Executive sought to reduce steel imports by negotiating Voluntary Restraint Arrangements with Japanese and European producers. Agreements were reached in December 1968 with Japanese and EC producers and these producers sent "letters of intent" to

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1/ In the Matter of: Certain Welded Stainless Steel Pipe and Tube, investigation No. 337-TA-29 . . ., USITC Publication 863, February 1978.

2/ Notice of the complaint was published in the Federal Register of Oct. 15, 1976 (41 F.R. 45628).

the U.S. Secretary of State informing him of their intention to limit steel exports to the United States to specified quantities during 1969-71. 1/

The steel industries of Japan and the Common Market agreed to limit their exports to the United States to about 5.75 million tons each, providing that other countries exporting steel to the United States would limit their shipments in a similar manner so that total world steel exports to the United States would not exceed 14 million tons in 1969 (imports totaled 18 million tons in 1968). The VRA provided for an annual increase of 5 percent in exports to the United States in 1970 and 1971. Total imports slightly exceeded the goal set for 1969; they were considerably below the limit set for 1970, but far exceeded the 15.4 million tons permitted by the VRA for 1971. The increase in 1971 was largely attributable to hedge buying caused by an anticipated steelworkers' strike which never materialized. In addition, the Presidential proclamation imposing the 10-percent surcharge in August 1971 may have caused some increase in imports, since the European and Japanese steel producers were bound by the voluntary arrangements only so long as the United States did not impose any additional restrictions on their exports of steel to the United States. In December 1971, the President removed the 10-percent import surcharge.

Early in 1972, new arrangements were negotiated to cover the period 1972-74. United Kingdom producers joined with EC and Japanese producers in furnishing "letters of intent." 2/ During the first 3-year phase, foreign participants in the VRA found it advantageous to increase their exports of high-priced products since the agreement was based on tonnage and not value. Thus, the first VRA in effect encouraged the shift of imports to stainless, alloy, and other high-priced steel mill products. During the second 3-year phase, the United States was successful in getting the participants to agree not only to a specific limit on their total exports of steel mill products, but also to specific limits on stainless and alloy steel mill products. In 1973 and 1974 demand for steel outside the United States was so strong that this second phase of the VRA had little effect on the level of U.S. imports.

1/ The text of the letters of intent can be found in Consumers Union of U.S., Inc. v. Kissinger, 506 F.2d 136, Appendix at 126a-37a (D.C. Cir 1974). In the Consumers Union case the Court of Appeals upheld the validity of the Voluntary Restraint Arrangements. The United Kindgom was not a member of the European Community in 1968 and did not participate in the first set of arrangements.

2/ Id.

The Trigger-Price Mechanism 1/

The President, on December 6, 1977, approved a "trigger price mechanism" for certain articles of steel, as formally recommended to him on the same date by the U.S. Treasury Department. 2/ The trigger-price mechanism (TPM) was announced and partially implemented 3/ in early 1978. By the end of the year, it apparently had been almost completely implemented. 4/ On October 17, 1978, the Treasury announced the publication of a TPM manual which incorporated all trigger prices announced to that date and which was for use by Customs at ports of entry during the third and fourth quarters of 1978. 5/ On November 22, 1978, Treasury published revised trigger prices for the first quarter of 1979, and on January 23, 1979, revised certain trigger prices and added new products to the program. 6/ The trigger prices for each of the three calendar quarters after June 30, 1978, progressively and significantly increasd in amount over those for the immediately preceding calendar quarter. 7/ In any event, the TPM was for most of 1978 and will probably continue to be for the indefinite future the greatest single factor influencing conditions of competi-tion in all steel markets of the United States, including the Western steel market. Thus, an understanding of the TPM and the effect it is having is critical.

At this date, it is too early to view the TPM in proper perspective and considerable data, in addition to those already obtained, must be collected and analyzed before the TPM and its operation can be fully discussed. Accordingly, the Commission's final report will contain a comprehensive discussion of the TMP with respect to the Western steel market and an analysis of the relevant 1978 data in light of the TPM's operation.

1/ The "trigger-price mechanism" was generally referred to in the press and elsewhere as a "reference price" plan prior to its formal announcement in early 1978.

2/ See Report to the President: A Comprehensive Program for the Steel Industry (Dec. 6, 1977), often referred to as the Solomon Report.

3/ See 43 F.R. 9912 of Mar. 10, 1978, which states that the trigger prices which were published on Jan. 9, 1978 (43 F.R. 1463), were for a majority of the steel mill products imported during 1976 and 1977. Also, this partial list is described as relating to 17 steel mill products. (43 F.R. 6065 of Feb. 13, 1978.)

4/ The Treasury Department announced base prices applicable in October-December 1978 to all shipments exported on or after Oct. 1, 1978, for 84 types of steel products covered by the Program. (43 F.R. 33993 of Aug. 2, 1978.)

5/ 43 F.R. 47809.

6/ 43 F.R. 54710 and 44 F.R. 4767.

7/ For example, the adjustments of trigger prices for the first calendar quarter of 1979 on the basis of changes in costs and in exchange rates are 7.0 percent for shipments from foreign integrated steel producers, and 9.8 percent for other foreign producers.

Before attempting to analyze the available import data for 1978, it is important to examine the operation of the TPM as it is presently in force. 1/

In the public announcements of the TPM, Treasury describes it as consisting of four parts, as follows:

> (1) The establishment of trigger prices for steel mill products imported into the United states. 2/
>
> (2) The adoption of a new Special Summary Steel Invoice ("SSSI"), Customs Form 5520, applicable to imports of all steel mill products.
>
> (3) The continuous collection and analysis of data concerning (a) the cost of production and prices of steel mill products in the countries that are the principal exporters of such products to the United States, and (b) the condition of the domestic steel industry.
>
> (4) Where appropriate the expedited initiation (triggering) and disposition of proceedings under the Antidumping Act, 1921, and section 153.25 of the Customs Regulations, with respect to imports below the trigger prices.

A final rule was published on February 13, 1978, which amended the Customs Regulations, effective on and after February 21, to require that SSSI (Customs Form 5520) be presented to Customs at the time entry is made of each shipment

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1/ The implementation of TPM and its revision in 1978, including the adjustments therein for the first calendar quarter of 1979, were the subject of 24 public notices comprising more than 200 pages published in the Federal Register, as follows: 42 F.R. 65214 (Dec. 30, 1977); 43 F.R. 1464 (Jan. 9, 1978), 4703 (Feb. 3), 6065 (Feb. 13), 8657 (Mar. 2), 9912 (Mar. 10), 12783 (Mar. 27), 18383 (Apr. 28), 20070 (May 10), 22122 (May 23), 23669 (May 31), 32710 (July 27), 32713 (July 27), 32715 (July 27), 32730 (July 27), 33993 (Aug. 2), 38155 (Aug. 25), 47809 (Oct. 17), 49875 (Oct. 25), 54315 (Nov. 21), 54710 (Nov. 22), and 54717 (Nov. 22); and 44 F.R. 2053 (Jan. 9, 1979), and 44F.R. 4767 (Jan. 23).

2/ The steel mill products covered are those identified by the American Iron and Steel Institute in 32 categories, as follows:

1 - Ingots, blooms, billets, slabs, etc.
2 - Wire rods.
3 - Structural shapes--plain 3 inches and over.
4 - Sheet piling.
5 - Plates.
6 - Rail and track accessories.
7 - Wheels and axles.
8 - Concrete reinforcing bars.
9 - Bar shapes under 3 inches.
10 - Bars--hot rolled--carbon.
11 - Bars--hot rolled--alloy.
12 - Bars--cold finished.
13 - Hollow drill steel.
14 - Welded pipe and tubing.
15 - Other pipe and tubing.
16 - Round and shaped wire.
17 - Flat wire.
18 - Bale ties.
19 - Galvanized wire fencing.
20 - Wire nails.
21 - Barbed wire.
22 - Black plate.
23 - Tin plate.
24 - Terne plate.
25 - Sheets--hot rolled.
26 - Sheets--cold rolled.
27 - Sheets--coated (including galvanized).
28 - Sheets--coated--alloy.
29 - Strip--hot rolled.
30 - Strip--cold rolled.
31 - Strip--hot and cold rolled--alloy
32 - Sheets other--electric

of steel covered by the program having an aggregate purchase price over $2,500. 1/ The additional information provided for on the special invoice is for use in the administration and enforcement of the Antidumping Act, 1921.

The establishment of trigger prices

The Treasury has announced or will announce a trigger price per metric ton for each major steel mill product imported in significant quantities. The trigger price for each imported steel mill product is the total of a "base price" plus "extras," if any, plus "transportation charges" from Japan. The trigger prices apply to importations from all countries.

The base price for a steel product is derived from the estimated costs of production in Japan of all steel products. Base prices are constructed and revised (on a quarterly basis after June 30, 1978) from information available to Treasury, including evidence submitted by the MITI in regard to the current cost of producing steel in Japan--the country Treasury has determined is the most efficient producer. The data supplied by MITI were compiled by the six major integrated steel companies in Japan, and by a number of smaller, electric-furnace steelmakers.

The extras, if any, are charges to be added to the base prices of steel mill products, which are sold to specifications for width, thickness, chemistry, or surface preparation that differ from the base products. The extras were calculated by Treasury from data obtained from MITI and other sources.

The transportation charges which are to be added to the base price plus extras, if any, do not include U.S. import duty. Such transportation charges include inland freight, loading, ocean freight, insurance, interest, and wharfage charges. Importers' sales commissions are excluded since the trigger price is based upon the cost to the importer, assuming the importer is dealing on an arms'-length basis. To the extent the importer is related to the exporter of the steel mill product and the transfer price does not reflect an arms'-length transaction, the first resale price by the importer to an unrelated U.S. buyer will be compared with the trigger price.

The "importation charges" have been calculated for each broad product category on the basis of existing data on average freight rates and wharfage charges for each of four regions of the country served by ports of entry on the west coast, gulf coast, east coast, and Great Lakes, 2/ respectively. In general, the transportation charges and, hence, the trigger prices, are lowest on the west coast, and increase for each of the other regions in the above-

1/ The $2,500 figure will be based on the purchase price as shown in the invoice filed in connection with the entry (43 F.R. 6065, 6066 of Feb 13, 1978).

2/ Questions raised about the height of the Great Lakes transportation charges were published for comment (43 F.R. 23669 of May 31, 1978). Treasury's findings, conclusions, and adjustments of the freight component of trigger prices for steel mill products imported through Great Lakes ports of entry were published thereafter (43 F.R. 32730 of July 27, 1978).

mentioned order. Thus, a trigger price for a specific steel mill product varies depending upon the regions into which it is imported and entered.

The trigger prices initially established were applicable to all shipments loaded for export on or before June 30, 1978, i.e., the end of the second calendar quarter of 1978. 1/ All calculations used in estimating Japanese costs of production were based upon several stated assumptions including an exchange rate of 240 yen to the U.S. dollar. The trigger prices are revised on a quarterly basis to reflect changes in costs and in exchange rates. 2/ Revised trigger prices are established within 5 percent above or below any revised cost of production data, where necessary to minimize fluctuations. 2/

Use of the SSSI

As mentioned previously, the SSSI (Customs Form 5520) is to be filed, effective on and after February 21, 1978, at the time customs entry is made of a shipment of steel covered by the TPM having an aggregate purchase price of more than $2,500. Information supplied on this invoice, including the date and terms of the contract between buyer and seller, is necessary to "monitor" the TPM. Beginning with shipments entered on February 21, 1978, all imports of steel mill products loaded for export to the United States after the publication of the relevant trigger prices are examined by the Customs Service. If the SSSIs filed at the time of entry reflect "substantial" or "repeated" imports at prices below applicable trigger prices, the matter is investigated by the Special Customs Steel Task Force to determine whether an immediate investigation under the Antidumping Act should be "triggered" by Treasury on its own motion.

Grace periods.--When a triggered price is first published for a specific steel mill product, a grace period is provided during which no formal Antidumping Act investigations will be triggered by Treasury on its own motion with respect to shipments of such products, if the SSSI and other documentation satisfies Treasury that the prices for such shipments were fixed before the publication of the applicable trigger price and could not be varied in accordance with the terms of the parties' contract, and in the absence of other information indicating that such shipments are priced at less than fair value within the meaning of the Antidumpting Act, specific grace periods were established. 4/

1/ For "base prices," see 43 F.R. 1464, Jan. 9, 1978; for "extras," see 43 F.R. 4703, Feb. 3, 1978; and for "transportation charges," see 43 F.R. 8657, Mar. 2, 1978.

2/ See 43 F.R. 1464, Jan. 9, 1978.

3/ Ibid.

4/ See Treasury Press Release B-689 of Feb. 10, 1978; 43 F.R. 12783 (Mar. 27, 1978); 43 F.R. 18383 (Apr. 28, 1978); 43 F.R. 22122 (May. 23, 1978); 43 F.R. 32715 (July 27, 1978); 43 F.R. 54717 (Nov. 22, 1978); and 44 F.R. 4767 (Jan. 23, 1979).

For contracts between the importer and an unrelated foreign exporter, the imports covered thereby had to be entered on or before the relevant date specified for the grace period; and for contracts between the importer and a related foreign exporter, the imports had to be delivered to an unrelated U.S. buyer before that date.

Triggered Antidumping Act investigations.--In all other instances in which the price of a shipment is found by Customs to be lower than the applicable trigger price, Customs may initiate immediate, informal inquiries of the importer to determine whether such sale is less than fair value within the meaning of the Antidumping Act. Unless the Treasury is satisfied, within the time to be allotted therefor, that no reasonable possibility of sales at less than fair value may be found, an antidumping proceeding notice will promptly be published with respect to that shipment and other shipments of such or similar merchandise from the same exporter or from the same country of exportation, as Treasury deems appropriate.

In accordance with this procedure, the Treasury has initiated (triggered) a formal investigation under the Antidumping Act with respect to certain carbon steel plate from certain firms in Poland and Taiwan. 1/ Imports of carbon steel plate from Belgium, France, the Federal Republic of Germany, Italy, and the United Kingdom are the subject of a dumping complaint filed with Treasury on December 26, 1978, by the Lukens Steel Company. 2/ Treasury instituted an investigation under the Antidumping Act on December 28. The alacrity with which Treasury moved to institute its investigation suggests that this investigation is in the nature of a triggered self-initiated investigation under the Antidumping Act. These current investigations of carbon steel plate are, in a way, complementary to the outstanding dumping finding issued by Treasury in the spring of 1978 against carbon steel plate from Japan, the subject of an affirmative Commission injury determination. 3/

The Commission does not know the extent to which Treasury has given clearance to the importation of steel mill products at prices which are below applicable trigger prices owing to their being sold at prices above less than fair value within the meaning of the Antidumping Act.

It will be noted that Treasury removed welded stainless steel pipe and tube from the TPM. 4/ This action was taken as a result of a negative Commission determination with respect to imports from Japan under section 201(a) of the Antidumping Act. 5/

1/ 43 F.R. 49875 (Oct. 25, 1978). Terminated as to Spain, 43 F.R. 54315 (Nov. 21, 1978).

2/ 44 F.R. 2053 (Jan. 9, 1979)

3/ Carbon Steel Plate From Japan: Determination of Injury on Investigation No. AA1921-179 . . ., USITC Publication 882, April 1978.

4/ 43 F.R. 32175 (July 27, 1978).

5/ Welded Stainless Steel Pipe and Tube From Japan: Determination of No Injury in Investigation No. AA1921-180 . . ., USITC Publication 899, July 1978.

The problems of analyzing market conditions for steel since the advent of the TPM are many. The mechanism is itself very complex. Added to this inherent complexity is the gradual implementation of it throughout 1978; the large number of revisions, corrections, and adjustments made in the trigger prices; the existence of grace periods for U.S. importers geared to dates of entry or dates of delivery to U.S. buyers unrelated to the importer; the dates of exportation from foreign countries rather than dates of entry at U.S. ports in the calendar quarter which determine the relevant trigger prices on shipments to the United States. The steel import statistics published by the Bureau of the Census (tables 25, 26, 49, and 50) are based upon quantities expressed in short tons rather than in metric tons as in the TPM, and upon values for regular duty assessment purposes as determined under Sections 402 and 402a of the Tariff Act of 1930.

Eastern Producers

Eastern producers are the least important of the three sources of aggregate supply of steel mill products to the Western market. The share of apparent consumption of carbon steel mill products in the Western States accounted for by Eastern producers ranged from 13 percent in 1973 through 1975 to 10 percent in 1976 and 1977, fluctuating from a high of 1.4 million tons in 1974 to a low of 743,000 tons in 1976. Eastern producers shipments to the Western States during 1972-77 are shown in the following tabulation:

	Short tons
1972	990,000
1973	1,189,000
1974	1,380,000
1975	904,000
1976	743,000
1977	872,000

However, within some product lines, such as bar-size shapes; angles, shapes, sections, rails, joint bars, and tie plates; and pipes and tubes, Eastern producers were significant competitors (tables 5-14).

Shipments supplied to the Western States from the East were provided by 21 Eastern producers in 1977. The four largest Eastern suppliers of steel mill products to the Western market accounted for 65 percent of Eastern producers' shipments but only 7 percent of apparent consumption in the Western States. Of these four firms, two are also major Western producers.

The four largest Eastern suppliers within each product line dominated Eastern producers' shipments to the Western States (table 51). In 1977, their share of shipments in each of the product lines was 74 percent or more. They did not dominate either in terms of their share of shipments of Eastern and Western producers combined or in their share of apparent consumption in the Western market. However, in both cases they were significant competitors in several product lines. Their share of Eastern and Western producers' shipments combined accounted for 35 percent of bar-size shapes; 23 percent of angles, shapes, section, rails, joint bars, and tie plates; and 31 percent of pipes and tubes. Their share of apparent consumption in the above product lines was 19 percent, 13 percent, and 17 percent, respectively.

Similar to the pattern of Western producers, the majority of Eastern producers which shipped to the Western States competed in three or less product lines (table 52). The relatively few eastern producers who shipped a broad range of product lines were Armco, Bethlehem Steel, Jones & Laughlin, Republic Steel, and U.S. Steel. Sixteen Eastern producers competed in 1 to 4 product lines, 2 producers competed in 7 to 8 product lines, and 3 producers competed in 11 to 13 product lines.

Apparent Consumption

The relative importance of the three sources of supply to the Western market in 1977 was as follows: Western producers, 53 percent (4,453 million tons); importers, 37 percent (3,124 million tons); and eastern producers, 10 percent (872,000 tons). Shipments of Western producers to the Eastern States were 613,000 tons compared with Eastern producers shipments to customers within the Western States of 872,000 tons. In 1977, 15 percent of Western producers's shipments were exported or shipped to the Eastern States.

Western States producers, Eastern producers, and importers utilize service centers/distributors to make their products available to consumers and also sell directly to the end users. As shown in the tables that follow, importers sell a far larger share of steel mill products to service centers/distributors than the domestic producers.

Western producers' shipments, by market classifications, 1972-77

(In percent)

Market	1972	1973	1974	1975	1976	1977
Service centers/distributors	20	22	16	17	20	21
End users:						
Construction	26	23	24	23	21	26
Transportation	10	11	10	13	11	10
Oil and gas	2	2	1	2	2	3
Agriculture	2	1	1	1	2	2
All other 1/	40	41	48	44	44	38
Total	100	100	100	100	100	100

1/ Metalworking is by far the largest single category.

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

Importers' shipments into the Western States, by market classifications, 1972-77

(In percent)

Market	1972	1973	1974	1975	1976	1977
Service centers/distributors	57	56	61	55	59	58
End users:						
Construction	11	6	5	7	5	4
Transportation	1/	1/	1/	1/	1	1
Oil and gas	1/	1/	1/	1	1/	1
Agriculture	1/	1/	1/	1/	1/	1/
All other 2/	32	38	34	37	35	36
Total	100	100	100	100	100	100

1/ Less than 0.5 percent.
2/ Metalworking is by far the largest single category.

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

Importers' channels of distribution in the Western States depend largely (approximately 60 percent) on utilization of steel service centers/distributors (table 53). In contrast, U.S. producers utilize service center distribution channels for only about one-fifth of their shipments.

The bulk of shipments directly to end users is accounted for by a diverse array of consumers. About 25 percent is channeled to the construction industry. Channels of distribution for individual product categories are presented in tables 54 through 59.

U.S. producers' shipments (both Western and Eastern producers) and importers' shipments, by markets into the Western States as a share of total shipments, are presented in tables 60 through 66.

While apparent consumption in terms of quantity displayed no discernible trend, the value of apparent consumption showed a clear upward trend, increasing 80 percent from $1.5 billion in 1972 to $2.8 billion in 1977. The upward trend in the value of apparent consumption reflected higher costs of production and inflation.

The relative importance of individual categories of carbon steel products in the Western market is reflected in their share of apparent consumption. Plates and sheets and strip (including tin mill products) accounted for 50 percent of apparent consumption; pipes and tubes, 16 percent; angles, shapes, sections, rails, tie plates, and joint bars, 11 percent; and deformed reinforcing bar, 9 percent.

Apparent consumption in the Western States of carbon steel mill products showed no discernible trend between 1972 and 1977, amounting to 8.4 million tons in both 1972 and 1977 (table 4). 1/ Consumption increased annually from 1972 to 1974, peaking in 1974 at 10.6 million tons. This high level of consumption was supplied, in part, by imports of 4.2 million tons in 1974 compared with 2.7 million tons in 1973. It was reached despite the fact that Western producers' shipment within the Western States decreased to 5.0 million tons in 1974 from 5.4 million tons in 1973. At the same time, there is little doubt that actual consumption in 1974 was much less than the apparent consumption figures indicate as a result of heavy inventories at the end of the year. Because of the economic recession, apparent consumption in 1975 decreased precipitously to 7.1 million tons, the lowest level in the 6-year period. As the recovery began, apparent consumption increased annually in 1976 and 1977, reaching 8.4 million tons in 1977, a level equivalent to what it was in 1972.

In 1972-77, imports as a percent of apparent consumption ranged from 29 percent in 1973 to 40 percent in 1974. The ratio of imports to consumption was lowest in 1973 as a result of the world steel shortage. At that time, steel prices were higher in countries other than the United States. Thus, supply normally available to the U.S. market was diverted to other more profitable markets. Imports accounted for 40 percent of consumption in 1974, reflecting the pressure of extremely high demand during the first half of the year. The ratios of imports to consumption in the other years were 38 percent in 1972, 32 percent in 1975, 36 percent in 1976, and 37 percent in 1977.

During 1972-77, Eastern producers supplied from 10 to 13 percent of the total consumption in the Western States. Eastern producers' shipments to the Western States were consistently above Western producers' shipments to the Eastern States.

Ingots and semifinished products.--The bulk of ingots and semifinished products are consumed by the mill where they are produced, and are not reflected in table 5, which shows apparent consumption of ingots and semifinished products that were actually shipped to or within the Western market. Apparent consumption (not including those items consumed by the producer) averaged about 50,000 tons annually from 1972-77. Imports into the Western States were negligible. This product category is the only one in which exports exceeded imports. Exports fluctuated greatly; in some years they were virtually nonexistent while in 1 year they exceeded apparent consumption.

Tin mill products, plates, sheets and strip.--This grouping of products accounts for more than one-half of all carbon steel mill products consumed in the Western States. Apparent consumption followed closely the general trend of total steel mill products, rising annually from 1972 (4.3 million tons) to

1/ On the basis of all available data, the staff of the U.S. International Trade Commission believes that the long-term growth rate of the Western market for steel mill products may be slightly in excess of 4 percent annually compared with a growth rate of about 2.5 percent annually for the Nation as a whole.

peak in 1974 (5.4 million tons), declining sharply in 1975 (3.6 million tons) to fall below the 1972 level, and then increasing annually to 1977 (4.3 million tons), when it again reached the 1972 level (table 6).

Although data were collected separately on various products within this grouping, it was necessary to combine the products in order to preserve confidentiality. The apparent consumption of plate did not follow the general trend of the total group. After apparent consumption increased during 1972 to 1974, it decreased during each succeeding year, declining to its lowest point in 1977. The ratio of imports to apparent consumption for these products changed little from 1972 to 1977. However, the ratio of imports to consumption for plate showed greater variance than those of other items in the group. Data on plate consumption are not presented because they would reveal the operations of individual firms. The share of consumption of the Eastern producers was less than their share for the total group.

Deformed reinforcing bars.--Because deformed reinforcing bars are used by the construction industry, their level of consumption is dependent upon the demand generated by that industry. Apparent consumption of deformed reinforcing bars in the Western States followed the general trend of total steel mill products except in 1976. In that year, while other industries began to recover from the economic recession that occurred in 1975, the construction industry remained depressed and apparent consumption continued near the 1975 level (596,000 tons). By 1977, consumption had increased to 739,000 tons, approximately the 1972 level of 749,000 tons (table 7).

Deformed reinforcing bars, compared with other categories of carbon steel mill products, are one of the least import-sensitive items. Their value, compared with other steel mill products, is low, and thus shipping costs are relatively high. Moreover, domestic minimills which produce this item are highly efficient. Consequently, domestic producers of deformed reinforcing bars are able to compete with imports.

Bar-size shapes.--Bar-size shapes are a relatively small product grouping, accounting for less than 2 percent of all carbon steel mill products in the Western States. Apparent consumption followed the general trend of total steel mill products. Consumption was at the level of about 160,000 tons in 1972 and 1977; in the peak year of 1974 consumption totaled 245,000 tons (table 8). Import penetration in this category ranged from 32 percent in 1973 to 57 percent in 1972 and 1974. The ratio was 46 percent in 1977. During 1972, 1973, and 1974, Eastern producers supplied only 10 percent of the Western market for bar-size shapes; however, since 1974, Eastern producers have supplied almost 30 percent of the Western market while Western producers have supplied less than one-third of the total Western market.

Other bars.--Other bars (other than reinforcing bars and bar-size shapes) account for about 4 percent of apparent consumption of all carbon steel products in the Western States. Apparent consumption of this product also followed a trend similar to that of the total for all the steel mill products in 1972-77.

Apparent consumption amounted to 321,000 tons in 1977, considerably larger than the amount consumed in 1975 or 1976, but well below the amounts consumed in 1972, 1973, or 1974 (table 9). The ratio of imports to apparent consumption trended upward from 25 percent in 1973 to 45 percent in 1977. Eastern producers' share of the market ranged from 4 to 7 percent except in 1975 when it reached 10 percent.

Wire rods.--As considerable quantities of wire rods are converted to wire or wire products by rod producers, these quantities are not reflected in table 10 which only shows consumption of wire rod that was actually shipped to or within the Western States. Apparent consumption of wire rods showed no discernible trend from 1972 to 1977. Apparent consumption was 380,000 tons in 1972, 483,000 tons in 1974, 386,000 tons in 1976, and 358,000 tons in 1977. During 1972-77, the import to consumption ratio ranged from 36 percent of the Western market in 1975 to 52 percent in 1972 and 1974. Imports supplied 46 percent in 1977. Eastern producers' shipments into the Western States were negligible.

Wire.--From 1972 to 1977 apparent consumption of wire, like apparent consumption of total steel mill products showed no discernible trend. In 1976, apparent consumption of wire increased more sharply than other products, amounting to 286,000 tons, in 1977 it increased to 304,000 tons, but was still well below the 389,000 tons reached in 1974 (table 11). During the period under study the ratio of imports to apparent consumption fluctuated from a low of 21 percent in 1975 and 1976 to a high of 31 percent in 1972. The ratio in 1977 amounted to 23 percent. Eastern producers' share of the Western market was small, ranging from 2 to 5 percent annually.

Angles, shapes, and sections; rails; joint bars, and tie plates.--Angles, shapes, and sections were combined with rails, tie plates, and joint bars in order to avoid disclosure of confidential data. From 1972 to 1977 the general trend of apparent consumption for the grouping was somewhat different from that of total steel mill products. Apparent consumption increased moderately from 1972 to 1974, then decreased in both 1975 and 1976. It was 940,000 tons in 1972, 1.1 million tons in 1974, 744,000 tons in 1976, and 896,000 tons in 1977 (table 12). In 1972-77, the ratio of imports to consumption of the combined grouping ranged from 30 percent in 1975 to 45 percent in 1977.

The trend of apparent consumption for angles, shapes and sections followed that of total steel mill products except for a decrease in 1976, which corresponds to the relatively late recovery of the construction industry. Apparent consumption for rails, tie plates, and joint bars remained at about the same level throughout the 6-year period.

The ratio of imports to apparent consumption is considerably higher for angles, shapes, and sections than it is for rails. In the most recent years, imports of angles, shapes, and sections have supplied more than one-half of the Western market. Eastern producers also sell considerable tonnages of angles, shapes, and sections in the Western market, leaving Western producers only a small share of the Western market.

While the ratio of imports to consumption for rails, tie plates, and joint bars has been small, the ratio in 1977 was more than three times larger than in any of the previous 5 years.

Pipes and tubes.--During 1972-77, apparent consumption of pipes and tubes, which ranged from 1.0 million tons in 1976 to 1.6 million tons in 1974, showed no discernible trend (table 13). Consumption amounted to 1.3 million tons in 1977. Imports were relatively high throughout the 1972-77 period, accounting for a low of 37 percent of the market in 1975 and a high of 48 percent in 1976. Eastern producers' shipments into the Western States were also large, averaging slightly under 25 percent over the 6-year period, leaving the Western producers only about one-third of the market.

Nails, barbed wire, and prestressed strand.--Because of the limited number of domestic producers (two of barbed wire, two of nails, and one of prestressed strand), the categories of nails, barbed wire, and prestressed strand were combined in order to meet the requirements of confidentiality. During 1972-77, total consumption ranged from 111,000 tons in 1975 to 170,000 tons in 1977. Virtually all of the increase occurred as a result of increased imports (table 14). The ratio of imports to apparent consumption has steadily increased from 53 percent in 1972 to 67 percent in 1977, while shipments of Western producers decreased overall during the same period. Nails, the largest product category in this combined grouping, was the prime factor contributing to this general trend.

The apparent consumption of prestressed strand decreased overall during this period. Prestressed strand also had the largest ratio of imports to consumption within this grouping. CF&I, the only Western producer of prestressed strand, is not competitive in the Western coastal area, leaving virtually all of that regional market to imports, principally from Japan.

Apparent consumption of barbed wire was not large in 1972, and by 1977 it had decreased to 50 percent of the 1972 total. This was the result of combined decreases in imports, Western producers' shipments, and Eastern producers' shipments into the Western States. The ratios of imports to consumption were fairly stable over the entire period; the percentages of the Western market supplied by Eastern producers dropped sharply. The domestic production of nails, barbed wire, and prestressed strand in the Western States is quite limited.

Prices

Prices of carbon steel mill products imported into the Western States were generally below that of the domestically produced articles throughout 1973-77, except for the boom years of 1973 and 1974. 1/ During the latter period, import prices of almost every representative carbon steel product moved from below U.S. producers' prices to levels sharply above U.S. producers' prices.

The price spread pattern reflects volatile import prices that move with the business cycle. In contrast, domestic prices have not shown such marked price swings. In time of strong demand, such as in 1973 and 1974, the strength of imports in the Western market, coupled with capacity constraints on domestic supply, have enabled importers to raise prices above domestic prices. When weak demand and excess capacity occurred in the Western market, import prices generally were at a greater discount below the prices of the domestic product than was necessary to gain sales in competiton with Western producers.

Beginning in late 1977 and continuing in 1978, increased import competition from European and developing countries has intensified, thus widening the spread between domestic prices and non-Japanese import prices. On the basis of field research, it is believed that the price margins between domestic prices and Japanese prices have narrowed.

Price data for selected carbon steel mill categories were collected by the Commission from importers and U.S. producers located in the Western States. Within each of the carbon steel mill categories, the selected representative product(s) accounted for significant sales volume by the importers and domestic producers. The price data gathered by the Commission covered (a) each importer's lowest net purchase price and lowest net selling price, (b) each importer's net purchase price and selling price at which the greatest volume was purchased and sold, (c) each producer's lowest net selling price and selling price at which the greatest volume was purchased and sold, and (d) data on quantities sold at each price. The carbon steel mill categories and the representative products selected within each category are listed on the following page. The analysis of price trends and price relationships which follows is derived from the quarterly data collected for the period 1973-77. The assembled data base permitted comparisons of (a) price levels and trends, (b) differences between importers' and producers' prices to all customers, (c) the spread between importers' and U.S. producers' prices to steel service centers/distributors and to fabricators/end users, and (d) a comparison of purchase prices of imported carbon steel by countries of origin.

1/ Price data were collected quarterly beginning in 1973, because such data were not available for 1972 from all respondents.

Carbon steel product categories and selected representative products 1/

Product category	Representative product
Tin mill products	Galvanized sheet, commercial quality, G90, .0187" x 36" x coil.
Plates	Plate, structural grade, ASTMA-36, 3/8" x 72"-90" x 240".
Sheets and strip	Hot-rolled sheet, commercial quality, 14 ga. (.075") x 36" x coil, pickled and oiled.
	Cold-rolled sheet, Class 1, commercial quality, .0299" x 36" x coil.
	Cold-rolled sheet, Class 1, commercial quality, .0359" x 36" x coil.
Bars	Deformed reinforcing bars, ASTM 615, grade 40, No. 4.
	Hot-rolled bars (flats), 1/4" x 3" x 20', A-36.
Bar-size shapes	Angles, 2"x 2" x 1/4", A-36
Wire rods	Hot-rolled rods, 7/32", low carbon grade C-1008, industrial quality in coils.
Wire	Manufacturers' coarse steel wire, 12 gauge.
	Galvanized wire, 12 qauge, soft industrial quality.
	Baling wire, 14-1/2 gauge, ASAE No. 6500.
Angles, shapes, and sections	Angle L, 6" x 4" x 3/8"
Rails	Rails, 136 pounds per yard
Pipes and tubes	Welded standard pipe, ASTM A-120, 3/4" nominal diameter.
	Hot-rolled square tubing, 14 gauge (0.075"), 1-1/4" x 1-1/4" x 20', pickled and oiled.
Manufactured wire products	Nails, 16d common bright
	Barbed wire, 12-1/2 gauge, 2 pt., 4", 2 ply, 80 rod reels.
	Prestressed strand, 1/2", 7 wire, 270 K

1/ The selection of the above products and their specifications was made in consultation with both U.S. producers and U.S. importers.

Pricing Patterns

The following section summarizes the price levels and trends of the carbon steel categories surveyed by the Commission. The summary data in the tables on the following two pages were taken from tables 67 through 85. The raw data is also displayed figuratively in appendix E. The lowest net producers' and importers' prices were used for comparison in the analysis because of the close correspondence of this price to the average price and its greater availability in terms of number of responses.

The analysis begins in 1973, the last full year of U.S. Government wage and price controls. Phase III price controls permitted only small increases in U.S. producers' selling prices. In 1973, producers' prices of carbon steel mill products surveyed by the Commission increased an average of only 4 percent. In contrast, importers' prices during that year, which were not subject to price controls, increased an average of 31 percent. Price controls on domestic steel were removed in 1974; at the same time, domestic and imported prices for steel soared in response to a surge in U.S. demand. In that year, U.S. producers' prices increased an average of 62 percent, while importers' prices increased an average of 54 percent. During 1973-77, the variation of the percentage increase in the individual categories ranged, for the domestic producers, from a low of 21 percent (hot-rolled square tubing) to a high of 110 percent (deformed reinforcing bars) and, in the case of importers, from a low of 6 percent (baling wire) to a high of 119 percent (plate).

As the demand for steel declined in 1975, prices moderated for both domestic and imported steel. In fact, in almost one-half of the sample products there were declines in price large enough to cause the average of all imported and domestic products surveyed to decline 7 and 5 percent, respectively. There were sharp declines (20 percent or more) in five U.S. producers' prices and six importers' prices. However, sharp declines for both importers and producers occurred in only the reinforcing bars and angles categories.

The data for 1976 and 1977 revealed: (1) the average price increases for U.S. producers (5 percent in 1976 and 6 percent in 1977) and for U.S. importers (6 percent in 1976 and 2 percent in 1977) were small, and (2) movements in U.S. producers' prices mirrored the movements in the importers' prices. Such tandem pricing actions occurred 60 percent of the time in 1976 and 80 percent of the time in 1977.

Importer-producer pricing margins.--The price spread between the imported carbon steel products and the competing U.S.-made products generally followed a common trend over the 5-year time span. The table on pages 53 and 54 presents these price differentials in percentages. This data is shown figuratively in appendix F. During January-June 1973, a period of strengthening demand for steel, 12 of the 19 imported products sold at a price less than that of the competing product made in Western U.S. mills. From July 1973-March 1975, more than three-fourths of the imported products sold at prices sharply higher than those of the competing U.S.-produced carbon steel

Selected carbon steel mill products: An index of selected U.S. importers' prices, 1973-77

(1st quarter 1973 = 100)

Item	1973 1/	1974 1/	1975 1/	1976 1/	1977 1/
Galvanized sheet, commercial quality 2/	133	166	171	179	178
Plate, structural grade, ASTM A-36, 3/8" x 72" x 240"	117	255	134	160	160
Hot-rolled sheet, commercial quality, 14 gauge (0.075")	120	148	153	161	161
Cold-rolled sheet, class 1, commercial quality, 0.0299"	115	202	141	173	150
Cold-rolled sheet, class 1, commerical quality, 0.0359"	124	201	142	171	185
Deformed reinforcing bars, ASTM 615, grade 40, No. 4	186	274	142	144	164
Hot-rolled bars (flats), 1/4" x 3"	195	216	129	123	124
Angles, 2" x 2" x 1/4", A-36	141	258	158	194	144
Hot-rolled rods, 7/32" low carbon grade C-1008	113	246	164	184	174
Baling wire, 14-1/2 guage, ASAE No. 6500	160	170	153	163	171
Welded standard pipe, ASTM A-120, 3/4" nominal diameter	123	225	136	162	156
Hot-rolled square tubing, 14 guage, 0.075" 3/	107	121	133	131	147
Barbed wire, 12-1/2 guage, 2 pt., 4", 2 ply, 80 rod reels	100	100	113	84	84
Prestressed strand, 1/2", 7 wire, 270 K	102	179	192	149	146
Nails, 16d common bright	116	234	154	158	158
Average change (in percent)	31	54	(7)	6	2

1/ Represents average 4th quarter price.

2/ For galvanized sheet, the index was constructed using the 2nd quarter 1973 as the base period.

3/ For hot-rolled square tubing, the index was constructed using the 3rd quarter 1973 as the base period.

Selected carbon steel mill products: An index of selected U.S. producers' prices, 1973-77

(1st quarter 1973 = 100)

Item	1973 1/	1974 1/	1975 1/	1976 1/	1977 1/
Galvanized sheet, commercial quality	92	164	165	161	156
Plate, structural grade, ASTM A-36, 3/8" x 72" x 240"	102	134	157	170	173
Hot-rolled sheet, commercial quality, 14 gauge (0.075")	102	126	168	177	200
Cold-rolled sheet, class 1, commercial quality, 0.0299"	100	152	158	168	174
Cold-rolled sheet, class 1, commerical quality, 0.0359"	102	142	151	160	179
Deformed reinforcing bars, ASTM 615, grade 40, No. 4	79	166	116	110	120
Hot-rolled bars (flats), 1/4" x 3"	106	172	154	171	159
Angles, 2" x 2" x 1/4", A-36	97	167	131	141	149
Hot-rolled rods, 7/32" low carbon grade C-1008	100	143	156	169	100
Baling wire, 14-1/2 guage, ASAE No. 6500	115	206	145	165	175
Welded standard pipe, ASTM A-120, 3/4" nominal diameter	100	167	182	144	188
Hot-rolled square tubing, 14 guage, 0.075"	129	156	114	114	115
Barbed wire, 12-1/2 guage, 2 pt., 4", 2 ply, 80 rod reels	118	208	163	186	179
Prestressed strand, 1/2", 7 wire, 270 K	105	209	197	157	149
Nails, 16d common bright	102	186	180	185	169
Average change (in percent)	4	62	(5)	5	6

1/ Represents average 4th quarter price.

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

Carbon steel: The discount of importers' lowest selling price 1/ below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above U.S. producers' lowest selling price, by quarters, 1973-77

(In percent)

Product	1973				1974				1975				1976				1977			
	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.
Galvanized sheet, commercial quality	-	42	-2	29	-	13	21	-10	-11	-	-	-	-	-1	-1	-	-12	-3	3	1
Plate, structural grade, ASTM A-36, 3/8" x 72" x 240"	-8	-8	2	6	42	47	52	76	34	-6	-12	-21	-20	-16	-7	-13	-16	-14	-21	-15
Hot-rolled sheet, commercial quality, 14 gauge (0.075")	-11	-8	7	5	10	7	-	-	26	-	-13	-19	-	20	25	-19	-	-	-	-
Cold-rolled sheet, class 1, commercial quality 0.029"	-2	-1	16	13	19	37	4	31	29	23	-3	-12	-9	-	-2	1	10	25	-	12
Cold-rolled sheet, class 1, commercial quality 0.035"	-11	-11	4	8	14	30	-1	26	27	-11	-11	-16	-	-15	-11	-5	-3	-7	-9	-8
Deformed reinforcing bars, ASTM 615, grade 40, No. 4	-25	-1	-	77	-11	11	24	-	3	-4	-12	-7	-6	-1	8	-2	8	-1	-	3
Hot-rolled bars (flats), 1/4" x 3"	5	-13	93	94	39	44	23	33	-	-11	-22	-12	-11	23	-6	-24	-17	-14	-13	-18
Angles, 2" x 2" x 1/4", A-36	-25	-17	-16	10	37	6	1	16	28	9	-23	-9	-22	3	-15	3	15	-29	-28	-27
Hot-rolled rods, 7/32" low carbon grade C-1008	3	6	15	16	47	77	111	77	101	-8	25	8	3	1	8	72	6	5	7	6
Manufacturers coarse steel wire, 12 gauge	-	-45	-	-	-	-42	-42	-	-	-	-	-	-	-	-	-	-	-	-	-
Galvanized wire, 12 gauge, soft industrial quality	-	-	-	-	-	-	-	18	-	-	-	-13	-	-15	-	-	-	-	-	-

Carbon steel: The discount of importers' lowest selling price 1/ below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above U.S. producers' lowest selling price, by quarters, 1973-77--Continued

(In percent)

Product	1973				1974				1975				1976				1977			
	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.	Jan.-Mar.	Apr.-June	July-Sept.	Oct.-Dec.
aling wire, 14-1/2 gauge, ASAE No. 6500	-	-2	-2	39	1	-15	-12	-18	1	-6	-10	5	-12	-11	-7	-1	-	-7	-2	-4
ails, 136 pounds, per yard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	27	1
ngle L, 6" x 4" x 3/8"	-	-	-	-	-	-	-	-	-10	1	77	-24	-22	-16	-7	-21	-27	-13	13	
elded standard pipe, ASTM A-120, 3/4 nominal diameter	-23	-20	-8	-6	6	5	5	4	-7	-21	-40	-42	-41	-35	-21	-13	-23	-29	-20	-36
ot-rolled square tubing, 14 gauge 0.075"	-	-	-	-42	-38	-	18	-	-	18	-	-	-	-	-	-	-	-9	-	-
arbed wire, 12-1/2 gauge, 2 pt., 4", 2 ply., 80 rod reels	110	74	77	78	64	38	27	1	37	7	41	45	-9	2	12	-5	1	8		-1
restressed strand, 1/2", 7 wire, 270 K	-5	-4	-4	-8	-4	-26	-19	13	12	-	-	12	-11	-6	-10	-3	-3	-2	7	7
ails, 16 d common bright	25	23	40	42	71	78	45	57	-5	22	9	4	-3	-9	-5	4	20	4	4	17

1/ Weighted average lowest selling prices are the data base for this comparison.

Source: Compiled from tables 67-85.

products. As the steel boom faded in 1975, the pattern again reversed, with the price spread between the imported and domestic products favoring imports by amounts ranging from a low of 3 to a high of 42 percent. Since 1975, the price differential remained constantly in favor of imports during most quarters of 1976 and 1977 for 10 of the 14 products for which data were available. The spread ranged from a 1 to 36 percent price advantage for the imported product.

Price data for 1978 will be provided in the Commission's final report.

Importers' and producers' prices to end users/fabricators and to service centers/distributors.--Tables 86 to 104 present weighted average lowest prices of importers and U.S. producers to the various market segments served by each. They also provide the ratio of importers' and producers' prices to each market and to each other. These data reveal that importers serve the distributor market for most of these representative products in contrast to domestic producers which supply both the distributor and the end-user markets. During 1973-77, for those products for which importers supply both markets, importers' prices to end users were at times above and at other times below the importers' prices to distributors. In contrast, Western producers' prices to end users for some products, e.g., plate and galvanized sheet, were usually above prices to distributors, for other products such as hot rolled bars, angles, and nails, producers' prices to end users were usually below their prices to distributors. Importers' prices to the market segments served were below competing producers' prices in most instances. However, prices of imported galvanized sheets, hot-rolled rods, rails, and nails were generally above the domestic producers' prices of these steel-mill products.

Importers' purchase prices by source country.--A comparison of lowest importers' purchase prices by source country for each product in which quarterly data were received is presented in the following table. Over the 5-year period, there were a total of 111 observations, slightly more than one-half of which were above the Japanese sales price. Three countries exhibited strikingly different patterns. In the case of Australia, 16 of 17 prices were above the corresponding Japanese price. However, prices of imports from Korea (20 out of 28) and the United Kingdom (8 out of 9) were consistently below the Japanese price. EEC pricing was below the Japanese pricing in 83 percent of the observations during 1977 compared with 49 percent of the observations over the 5-year period, 1972-77.

Carbon steel products: Number of times above or below Japanese price for same product, by countries, 1973-77

Country	1973		1974		1975		1976		1977		Total	
	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below	Above	Below
EEC	5	6	12	8	4	3	2	1	1	5	24	23
Korea	1	3	4	4	0	3	1	5	2	5	8	20
Australia	4	0	1	0	5	1	2	0	4	0	16	1
United Kingdom	0	2	1	2	-	-	0	2	0	2	1	8
Canada	0	1	1	1	2	0	-	-	-	-	3	2
Other	1	0	1	0	1	0	1	0	1	0	5	0
Total	11	12	20	15	12	7	6	8	8	12	57	54

Marketing and Sales Practices

Background

The marketing and sales practices used in the Western States by domestic producers, distributors/service centers, and by importers are common in many respects but quite different in other ways. All sellers of steel attempt to maintain competitive pricing, to offer quality steel with reliable delivery, and to provide quality services. They generally offer some form of credit extension. However, importers employ other techniques and practices to establish, maintain, and strengthen their sales in the Western United States.

These marketing practices reflet the interaction of divergent economic and legal systems. Market systems and principles vary widely from nation to nation. It is in the arena of international trade, where these diverse practices converge, that differences arise. Specific examples of practices resulting in foreign competitive advantages can be observed in the Western steel market. These practices may include such things as sales at less than cost of production and sales at less than fair value. Such practices direct attention to the distinct and divergent systems from which they spring. It is in these underlying systems that major competitive advantages develop, the benefits of which are often realized long before imports reach the market place.

The activities of the Japanese steel industry must be considered within a framework of a close working relationship between the industry and the Japanese Government. Economic decisions are made through the closely coordinated efforts of policymakers in both business and government to achieve domestic economic goals. 1/ One of the guiding principles in this decision-making process is the fact that Japan is an export-oriented economy. The MITI is involved in steel policy to the extent that it participates with the industry in making major decisions. The Japanese steel industry, its banks, and its trading companies are all financially interrelated. This has enabled development of a "rationalized" 2/ Japanese steel industry. In addition, Japan's banks cooperate with its steel industry by making funds more readily accessible than do U.S. banks with respect to the U.S. steel industry. The Japanese trading companies are the mechanism for the smooth import and export flow through Japan. They not only procure raw materials for the Japanese industries, but also market internationally the steel mill products and finished articles of steel made in Japan.

1/ See USITC study, A Survey and Analysis of Government Ownership in Market Economy Countries: A study of Steel, Automobiles, and Iron Ore, May 1978.

2/ Rationalization involves specialization by individual mills in the production of relatively few product lines; it seeks to gain economies of scale by long production runs of single items; and it eliminates inefficient duplication of production facilites and minimizes excess capacity. Rationalized production reduces costs, increases efficiency, and provides a competitive advantage over nonrationalized steel industries.

The coordinated planning within the Japanese steel industry is quite different from the economic system as practiced in the United States. The production and distribution efficiencies of this policy result in competitive advantages for Japan in world export markets. Similar coordinated planning does not exist for the U.S. steel industry.

The members of the EC operate on a somewhat similar basis. For example, they also require a large export market in order to keep their mills running at an acceptable level of capacity utilization. They have taken coordinated actions to rationalize and to protect the European steel industry's domestic markets from entry by non-EEC members. In addition, certain member countries of the EC within the structure of the ECSC, have attempted to allocate production and raw materials among member nations, set minimum prices for both domestically produced and imported steel, and eliminate inefficient production facilities by controlling access to low-cost guaranteed loans by the ECSC. Government assistance such as low-interest loans and grants may also be obtained. Nonetheless, the EEC is composed of nine separate nations and thus cannot operate with as high a degree of coordination as does Japan.

Importers generally utilize such practices as offering credit terms which are superior to those offered by domestic mills and pricing based upon date of contract rather than date of shipments, as is the practice of domestic mills. In addition, it has been alleged that they employ such practices as sales at less than cost of production or less than fair value, price indexing, 1/ and channeling, 2/ which if practiced in certain forms may be in violation of U.S. law. Both importers and produces engage in the practice of dual distribution. 3/

Sales at less than cost of production or less than fair value

The problem of sales at less than cost of production is intensified in the U.S. market, not only because it is the largest steel-consuming market in the world and one of the most accesible owing to its free-trade policies, illustrated by low tariffs and relatively minor nontariff barriers, but also because selling below the cost of production does not appear to be an avenue of recourse available to U.S. producers. In the U.S. market, the profit motive and the lack of Government assistance prevent U.S. steel producers from selling below the cost of production for prolonged periods. However, U.S. producers may sell below cost of production to meet either domestic or foreign competiton on a spot transaction basis. In a nationalized steel industry such as British Steel Corp. or Italsider (Italy), profit is not the overriding concern; rather, national interest and maintaining employment take precedence. Thus, production is often maintained at levels exceeding demand. The steel industries of countries where only minor quantities of steel are imported have a predictable and dependable production base. Such captive home markets allow foreign producers to price steel in their domestic markets

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1/ See page 59.
2/ See page 60.
3/ See page 61.

higher than in the highly competitive export markets. The Western States because of their geographic location and high import dependence are particularly attractive to such sales.

Price indexing

Price indexing is a system designed to maintain one's prices at a fixed percentage below the price of another. The Commission found that this technique has been employed by Japanese trading companies and by some representatives of European producers in the Western steel market during 1972-77. The Commission does not know whether the practice has continued since the implementation of trigger pricing on carbon steel mill products, but intends to consider this matter further as part of the Commission's final report.

Contracts supplied to the Commission from customers in the Western States purchasing imported steel and other information supplied by the principal parties, including both producer and importer interests, reveal that price indexing clauses have been used in a significant number of transactions. These contracts contained price index clauses guaranteeing importers' prices generally less than 12 percent below U.S. producers' list prices.

The following is an example of a price indexing clause taken from one of the many purchase contracts obtained by the Commission:

The above base price is based on FOB _____ plant, duty, wharfage, and handling paid per package.

Base Price: During the terms of the contract our price will remain at 5.1 percent below US Steel's base price. If the Kaiser price increases or decreases, adjustments will be made so that the differential remains at same percentage.

1-1/2 percent performance allowance: This allowance is presently in effect by US Steel. If this allowance is increased, decreased or eliminated by US Steel the same action will apply to our price.

1-1/2 percent cash discount: The cash discount is presently 1/2 of 1 percent. The 1/2 percent discount will not be allowed if payment has not been made within 10 days after_____invoice date which is delivery date of our tinplate. If US Steel increases, decreases or eliminates this discount the same will apply to our price.

*(5.1 percent for tin plate and 7.9 percent for tin free steel).

The Commission further obtained information that the Japanese mills preset price increases or decreases as follows:

Re: Hot Rolled Steel Sheet in Coil

Dear Customer:

We are very pleased to submit our quotation regarding the captioned subject for July, August and September shipments as below.

According to the agreement among all Japanese integrated mills, the price shall be subject to escalation clause equal to U.S. Steel price increase or decrease. For example, if U.S. Steel increases 5¢ as of July 1st, our July shipment will be increased by 5¢.

For 1972-77, price indexing was a marketing technique which appears to have played a role in the acquisition of imports' present share of the market for carbon steel mill products in the Western States. According to Western steel interests and data supplied to the Commission, numerous customers have been lost by the domestic industry to importers because of price, but few, if any, customers have been acquired or recovered as a result of the domestic industry underselling foreign competition. These price index clauses make it difficult for domestic producers to compete on the basis of price.

The existence of price indexing of foreign steel influences the purchasing decisions for carbon steel mill products in the Western steel market. Firms which do not distribute or consume imported steel are at a competitive disadvantage with those firms that do import and against which they must compete. The manager of a service center, for example, who purchases only domestically produced steel has a number of difficult choices to make when competing against a service center which distributes imported steel. He knows that if both service centers have the same selling price his competitor is more profitable because raw material costs, the major component of total costs, are lower; he also knows that by permitting his competitor to undersell him he faces the prospect of losing customers. The alternative which most service centers and an increasing number of end users of steel in the Western steel market have selected is to obtain at least a part of their steel requirements by imports.

In summary, price indexing helps insulate imports from price competition with the domestic industry while creating market conditions which induce those firms that compete with imports to also import in order to remain competitive.

Channeling

Another sales practice of concern to domestic interests is the alleged channeling by Japanese suppliers of U.S. customers to a particular source. Channeling involves the allocation of carbon steel customers and products by and among Japanese trading companies. Where it exists, channeling enables Japanese mills and trading companies to limit competition among themselves and to tie foreign customers to single Japanese sources.

On the basis of discussions with Japanese interests and Western States importers, the Commission's staff found that the practice of channeling appears to exist among the leading trading companies and mills. Japanese trading companies have indicated that they compete vigorously for customers and sales in the Western market with U.S. producers and other importers as well as among each other. It would appear that once an account has been established by a Japanese trading company, other trading companies respect that relationship. The channeling of customers in this manner tends to reduce competition among the Japanese steel mills and trading companies. According to domestic importers this policy is honored by other trading companies either by refusing to grant additional quotes when requested or by making quotes which are not competitive with those of the trading company already servicing the account. The Commission has no information to suggest that other importers engage in this practice.

According to the Japanese, the practice of respecting each others accounts once established is done in the interest of efficiency. Increased efficiencies arise from better mill predictability of tonnage requirements, better production planning, longer production runs, and lower unit costs. The Japanese mills are therefore able to maximize profits during periods of high capacity utilization and minimize losses during periods of low capacity utilization. The practice of channeling also reduces price competition between Japanese trading companies and thus permits cost savings to the trading firms.

Dual distribution

Both U.S. producers and importers engage in the practice of dual distribution. Dual distribution occurs when a producer or importer sells a product to a distributor and also sells the same product to end-use customers of that distributor. The Western States steel industry, however, generally agrees that dual distribution involves selling two or more vertically related products. It occurs when a vertically integrated producer or importer of a raw material sells that product to a U.S. consumer and in turn competes with that consumer in the sale of the finished product. Among the products in the Western steel market affected by dual distribution are wire rod sold to wire drawers for conversion to wire and wire products and plates, sheets, or strip, principally sheet, sold to firms engaged in the manufacture of pipes and tubes.

The practice of dual distribution is a natural outgrowth of the desire to market those products which provide the greatest economic benefit. Generally, producers, both domestic and foreign, receive the greatest return by selling steel in its most advanced form. Dual distribution has also been fostered to some extent by Government policy to restrict entry of certain steel articles while leaving other articles free to enter the domestic market at will or by placing restrictions upon quantity without consideration for value. Restrictions placed on the quantity of imports marketed in the United States by the VRA, for example, induced foreign producers to change their product mix by increasing exports of higher value end products such as wire and wire products and pipes and tubes. Dual distribution may also result to some extent from inventory imbalances of supplying firms.

Most domestic manufacturers of wire and wire products and of pipes and tubes obtain their wire rod and their plates, sheets, and strip requirements from domestic producers, distributors, and importers. However, in order to be competitive in the sale of their manufactured products they must be able to buy their raw materials at a price differential that will permit recovery of conversion costs and allow for a reasonable profit. There have been instances in which the domestic supply of wire rods and sheets has been less than adequate to meet demand. This was the result, in part, of vertically integrated U.S. producers ensuring that their own requirements for primary products were met before making these products available to other consumers. Customers who normally received their supplies from these firms were unable to obtain them from other domestic sources because, for the most part, only vertically integrated firms produce these products.

Most nonintegrated wire and wire products manufacturers and pipe fabricators in the Western States source the bulk of their needs from foreign sources, principally Japan. Such domestic firms are, therefore, highly dependent upon the Japanese trading companies to maintain supply of their raw materials and to maintain a price differential between the products that would permit recovery of conversion costs. The integrated structure of the Japanese steel producers and their strong cooperation with the Japanese trading companies results in the potential to control supply and price in exports to the Western States. The extent to which these factors have affected competition in the Western steel market cannot be readily determined. The trend in the volume of imports and their pricing patterns, however, may be indicative of whether or not these factors have been employed in recent years.

An analysis of import data during 1972-77 suggests that these firms lack willingness to supply their Western States customers' requirements for wire rod and sheet despite changing economic conditions. Imports of wire rod, by countries, into the Western States during 1972-77 are provided in table 36.

In 1974, apparent consumption of wire rod in the Western States was at a record high level. At the same time, Japan's share of total imports substantially declined from 67 percent in 1973 to 48 percent in 1974, although its exports to the United States slightly increased. The resulting deficit in the supply of imported wire rod was made up by the EC, whose share of total imports increased from 32 percent to 43 percent, and by other countries, whose share increased from 1 to 9 percent. The surge of exports by these nations in 1974 prevented an even greater shortage of wire rod than that which actually occurred. On the basis of such data, and the fact that Japanese trading companies are worldwide organizations which can divert Japanese produced steel to those parts of the world where the best prices can be obtained, the indication is that adequate quantities of Japanese steel were not made available to supply customer needs. Similarly, during the same year, domestic producers placed their customers on allocation and were unable to supply the demand for the articles.

A similar analysis of sheet imports used to manufacture pipes and tubes cannot be made because of a lack of detailed statistical information relating to these items.

Price data collected by the Commission to determine price differentials between the product categories are provided in tables 72 through 74 and 78 through 81. In addition, Western States producers of wire and wire products and pipes and tubes were contacted in an effort to determine the costs of converting wire rod and sheet, respectively, into their more advanced forms. An analysis of these data indicates that in 1975 the price of imported wire and pipes and tubes was not sufficient to cover the cost to domestic producers of converting imported wire rod and sheet to these advanced forms. Price increases for wire and pipes and tubes relative to wire rod and sheets subsequent to 1975, however, increased the differential to levels which appeared to be sufficient to cover the domestic producers' conversion costs.

A further indication that price differentials associated with dual distribution have not had a significant impact upon conditions of competition in the Western States is the profitability of the wire and wire products and pipes and tubes product lines. In each year of the 1972-77 period these product lines were the most profitable of any of the carbon steel mill products manufactured in the Western States.

The marketing practices discussed above arise from economic systems in Japan and other countries, which permit their respective steel industries to coordinate planning and to rationalize production and distribution. These marketing practices observed in the Western steel market, may result from the interactions of these divergent economic and legal systems.

Foreign Investment in Western States 1/

Foreign investment in steel-related producing, fabricating, importing, distributing, and consuming firms in the Western States is small but growing. A total of 200 firms, accounting for about $28 billion in sales, responded to the Commission's investment questionnaire. As of January 1, 1978, 28 of these firms were owned by foreign firms or affiliates of foreign firms, while another 3, although U.S.-owned, can be considered to be controlled by foreign interests owing to their financial obligations to such foreign firms. 2/

Investment by Japanese-affiliated firms in the Western marketing region is, by far, the most prevalent. The Japanese control 15 of 31 steel-related firms, as provided in the following tabulation:

Country	Producing	Fabricating	Importing and distributing	Consuming	Total
Japan	3	2	7	3	15
Canada	1	1	2	2	6
All other countries	1	2	3	4	10
Total	5	5	12	9	31

In 1976 these firms had sales of 2 percent of total sales of firms responding to the questionnaire.

1/ "Ownership" or "control" for purposes of this discussion means ownership of 50 percent of more of the ustanding voting stock. However, it must be noted that in many cases the owner of substantially less than 50 percent of the shares of a corportation may have effective control of the corporation. As a general rule, the more widely held a stock is the lower the percentage of shares required for control. In this regard, it should also be noted that the U.S. Department of Commerce considers a business enterprise to be foreign controlled where 25 percent or more of the voting shares are beneficially foreign held. Only one of the firms responding affirmatively to the question of foreign investment indicated that the level of foreign investment in the firm was less than 50 percent.

2/ This control by lenders encompassed formal agreements restricting management activity in such areas as; payment of dividends, maintenance of minimum net worth, disposition of accounts receivable and assignment of proceeds from accounts receivable, limitation on new debt obligations, and acquistion of additional steel for inventory.

Canada is the only other country having substantial investments in Western States steel-related firms. In 1976, six firms with Canadian interests had sales of 2 percent of total sales of firms reporting to the Commission. Countries other than Japan and Canada having investments in the Western States are primarily the United Kingdom, Taiwan, Italy, and Korea.

The time frame in which foreign investments in Western States steel-related firms have occurred is shown in the following tabulation:

Country	1972 and before	1973-75	1976-77	Total
Japan	5	5	5	15
Canada	3	1	2	6
Other	5	2	3	10
Total	13	8	10	31

These data indicate that foreign investment is occurring at an accelerated rate--two-thirds of the firms in which Japan has interests were acquired in the past 5 years, and one-half of the firms in which Canada and other countries have interests were acquired during this same period.

On the basis of field research and trade sources, it appears that the reasons foreign investment has occurred in the Western States depend upon the steel sector involved and the time frame in which the foreign investment was made. In the distribution sector of the market, the acquired firms were generally importers dependent primarily upon Japanese sources for steel supplies. Foreign investments were directly linked to excess inventories of high-priced foreign steel purchased during the steel shortage of 1973 and early 1974. The weakness of demand and depressed prices in 1975 caused cash flow problems among domestic firms, which led to difficulties in their meeting accounts-payable obligations to foreign suppliers. In all cases, foreign investment in the distribution sector during 1975 was made by the foreign supplier of a financially weak debtor.

In contrast to that in the distribution sector, foreign investment in the producing and consuming markets has resulted from the desire of U.S. firms to secure a broader capital base from which to expand an already successful business. Generally, these investments were in response to initiatives made by U.S. firms after their attempts to obtain participation by other U.S. firms had failed.

The steel fabrication sector appears to be the only area, based on field research, in which foreign firms actively sought investments. Foreign participation in this sector is relatively new.

Executives of the foreign-owned or joint-venture firms visited by the Commission's staff indicated that their foreign partners do not exercise control over the firm's operations and that management determines its own marketing policy and buys from the best available source.

Foreign investment in wire and wire products and pipes and tubes

In general, the extent of foreign investment does not appear to have significantly affected conditions of competition in the Western States, with the exception of wire and wire products and pipes and tubes. In these sectors several key firms with foreign participation have sharply increased their shipments subsequent to foreign involvement. It is doubtful that these firms could have increased their market shares in these product categories to the same extent without investment capital.

In these same market sectors, direct imports supply a substantial share of Western States' consumption (23 percent for wire; 67 percent for nails, barbed wire, and prestressed strand; and 45 percent for pipes and tubes).

Financing of Western States steel firms

Firms in the steel industry, as in all others, must acquire funds in order to finance their operations. The various methods used to obtain these funds are outlined below.

Short-term loans.--Short-term loans, as defined in the Commission's investment questionnaire, are used to cover the financial obligations of a firm for a period of 1 year or less. These loans are generally arranged to provide working capital for the interim between delivery of goods to the customer and receipt of payment.

Total short-term loan obligations of Western States steel-related firms declined from $153.2 million in 1972 to $70.5 million in 1973, and sharply increased to $245.1 million in 1974, before reaching a high of $305.3 million in 1976. The rapid rise in loans which began in 1974 and ended in 1976 reflects the financing of substantially increased inventories and accounts receivable and further reflects the inability of firms to arrange long-term loans during this period, thus requiring the refinancing of short-term obligations. In 1977, short-term loans declined by 61 percent to $118 million.

The trend of short-term loans by foreign firms to Western States steel-related firms was similar to that of total short-term loans to these firms, with the exception of 1975. In that year foreign suppliers, in an attempt to assist their financially pressed customers, converted short-term loans into long-term loans and, in some cases, converted these loans into equity participation. In 1977, foreign short-term debt more than doubled, when compared with that of the previous year.

Long-term loans.--Long-term loans, as defined in the Commission's questionnaire, are used to cover the financial obligations of a firm for a period of more than 1 year and include such instruments as bonds and commercial paper. These loans are generally made to finance equipment outlays, pollution-control additions, and other projects involving capital investment.

Total long-term loans rose from $559 million in 1972 to $702 million in 1973, declined to $605 million in 1976, then increased to $907 million in 1977. During 1972-77, long-term debt maintained an almost constant ratio to equity of slightly less than 0.50, except for 1976 when the ratio fell to 0.35. The maintenance of such a constant ratio indicates that there is an upward limit on the long-term borrowing capacity of Western States steel firms and that the limit may have been reached. Long-term loans to Western States steel-related firms by foreign firms rose from $11.8 million in 1972 to $21.0 million in 1975, before declining to $13.3 million in 1977.

Firms with foreign participation operating in the Western States have a decided advantage over their competitors in obtaining long-term loans. In contrast to the traditional debt-to-equity ratio of 1 to 4 for domestically owned firms, firms with foreign participation have ratios as high as 4 to 1. It is highly unlikely that long-term financing could be arranged through domestic financial institutions with such a high debt-to- equity ratio.

Consignments.--Consignment refers to the act of sending carbon steel mill products to an agent for sale, storage, or shipment. The title is held by the consignor until the sale is made. Consignments, which reached a peak of $5.5 million in 1974, are not significant in the Western States steel industry. Consignments by foreign firms averaged about 60 percent of total consignments during the past 5 years.

Inventory financing

During 1972-77, inventory financing increased in each year except 1975, a recession year. The higher level of inventory financing reflects growth in sales volume of Western States firms, which requires more inventory to adequately service accounts, and inflation, which has increased the unit price of all carbon steel mill products. The percentage of total inventory financing supplied by foreign firms is small and reached its highest level, 4.3 percent, in 1975. This type of inventory financing is confined primarily to firms owned, in whole or in part, by foreign firms.

Accounts receivable

During 1972-77, accounts receivable increased in each year except 1975 and, as with inventories, reflected growing sales volume and inflation. Foreign financing of accounts receivable was small, reaching its highest level, 2.7 percent, in 1975.

Paid-in capital and retained earnings

Paid-in capital refers to equity capital obtained by a firm through such methods as the sale of common stock. Retained earnings refer to that portion of a company's earnings which are not distributed to stockholders or otherwise disbursed, but are retained in the company's equity accounts. The total

paid-in capital account remained essentially unchanged from 1972 to 1974, increased 4 percent and 9 percent during 1975 and 1976, respectively, and declined slightly in 1977.

The share of total paid-in capital accounted for by foreign firms was less than 1 percent throughout the 1972-77 period. Paid-in capital by these firms remained unchanged at $326,000 from 1972 to 1974, substantially increased during 1975 and 1976, and continued at the 1976 level in 1977. The increases which occurred in 1975 and 1976 represent the influx of foreign capital required to maintain operations of domestic firms acquired during those years.

The level of aggregate retained earnings is a measure of the industry's profitability over time. In 1973, total retained earnings rose 10 percent over the 1972 level, but returned to the 1972 level in 1974 and 1975. During 1976 and 1977, retained earnings substantially increased, and at the end of 1977 were 53 percent higher than at the end of 1975. This growth was primarily the result of increased profitability of steel end users 1/ which were paying less for their steel supplies than in prior years.

Retained earnings in foreign-owned Western States firms showed negative balances during 1972 and 1973, indicating that the firms were unprofitable in their operations up to that period. In 1974, retained earnings returned to a positive balance and substantially improved in 1975. In 1976, retained earnings decreased, but rebounded in 1977 to reach their highest level of the 1972-77 period.

1/ End users as defined in this context are manufacturing companies which consume steel mill products in the production of finished products. Such end users do not include fabricators.

Appendix A

Scope

Scope

The scope of this investigation includes the basic shapes and forms of carbon steel and, in addition, selected fabricated products of carbon steel made from wire. The definitions in the Tariff Schedules of the United States (TSUS) were used for defining the steel mill products and the grade of steel specified.

The TSUS defines steel as--

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

The TSUS defines alloy steel as--

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

The body of the TSUS then distinguishes between alloy steel and "other than alloy steel." The steel termed "other than alloy" is that which is dealt with in this study. This steel is essentially equivalent to what in general usage is termed "carbon steel" and will be referred to in this study as "carbon steel."

The various steel mill products included in this study were grouped in the following general categories: Ingots and semifinished products (billets, blooms, slabs, and sheet bars); tin mill products (plates, sheets, and strip coated or plated with metal, blackplate); plates; sheets and strip; bars (including deformed concrete reinforcing bar and bar-size shapes under 3 inches); wire rods; wire; angles, shapes, and sections; rails; joint bars and tie plates; pipes and tubes; nails; barbed wire; and prestressed strand. Although the terminology of the product groupings is not that of the TSUS in

every case, the products included in the groupings conform to TSUS definitions. These definitions will be found in the following section of this report.

Descriptions and Uses

Steelmaking process

The principal raw materials used in the production of steel are iron ore, limestone, and coal. These are smelted in a blast furnace to produce pig iron, which is then converted to steel in a steelmaking furnace. The molten metal is cast into ingots or continuous cast into billets, slabs, blooms, or sheet bars. These basic forms are reheated and rolled into the shapes of the various steel mill products which are generally identifiable by their cross-sectional configurations, i.e., bars, plates, sheets, strip, angles, shapes, sections, and wire rod.

The fuel used in the blast furnace to smelt the iron ore is coke. Coke is converted from coal in coke ovens, one of the many auxiliary facilities of a steel mill. The properties of coke which, unlike coal, make it suitable foruse in blast furnaces include its abilities to burn inside and outside, to retain its strength under the weight of iron ore and limestone, and to burn without fusing.

Limestone is used primarily to remove impurities from iron ore used to charge the blast furnaces. Limestone is also processed in kilns to make quicklime, a flux used to help remove impurities from the molten metal in steelmaking furnaces. Limestone and lime fuse the impurities associated with the molten metal and combine with them, permitting them to be carried off as slag.

In the production of pig iron, iron ore, coke, and limestone are charged continuously and alternately through the top of a blast furnace. Hot air (approximately 1-1/2 to 2-1/2 tons for each ton of pig iron) is injected into the bottom of the furnace and rises through the charge of iron ore, coke, and limestone. The air induces the coke to burn, releasing gases which reduce the ore to metallic iron (pig iron) which in molten form accumulates at the bottom of the furnace. Limestone in the charge combines with impurities to form slag, which floats to the top of the molten pig iron. The pig iron and slag are periodically drawn off from the bottom of the furnace as the remainder of the smelting process continues.

The significant difference between pig iron and steel is their differing degrees of malleability and carbon content. Pig iron contains over 2 percent of carbon and is not malleable. Steel, on the other hand, contains a maximum of 2 percent carbon in most cases and can be rolled and thus formed into a variety of mill products. The advantage of rolling over forging or casting lies in the extraordinary speed of the process. Sheet, for example, can be rolled and coiled at a rate of 3,200 feet or more per minute, while wire rod, one-quarter inch in diameter, can be rolled and coiled at speeds in excess of 8,500 feet per minute.

Pig iron is converted to steel in steelmaking furnaces by the addition of some elements and the removal of others, including the removal of excess carbon. Pig iron, scrap, and limestone are heated to high temperatures, forming molten steel and slag. The slag is removed, desired alloying elements are added, and the molten steel is then cast.

In contrast to the continuous pig iron process steel is produced by the "batch" in one of the three major types of steelmaking furnaces--open-hearth, basic oxygen, and electric. In addition to pig iron, iron or steel scrap may be used in the steelmaking furnaces, although the three types of furnaces differ regarding the amount of scrap which they can accomodate. In 1976, an average of 44 percent scrap was used in domestically operated open-hearth furnaces, 28 percent in basic oxygen furnaces (BOF), and nearly 100 percent in electric furnaces. Aside from purchased scrap, a great deal of scrap is generated within the steelmaking process. Steel ingots yield only about 75 percent of finished or semifinished product. The 25 percent resulting from discards from ingots and products being processed is remelted and kept in constant circulation.

The oldest and least efficient type of furnace is the open hearth, so named because the limestone, scrap, and molten (or cold) iron are charged into a shallow steelmaking area (the hearth). The charge is then melted by burning fuel oil, tar, or gases. In recent years this process has been modified by the introduction of oxygen which has significantly accelerated an otherwise slow process. Alloy additions are made to the steel after the steel has been poured from the furnace into the ladle.

In the basic oxygen furnace steelmaking process, oxygen is used as a component of chemical reactions which result in heat and the chemical changes required to make steel. The only other source of fuel that is used is the heat of the molten pig iron. The furnace is first charged through the mouth of the vessel with scrap and molten pig iron; oxygen is blown on the top of the metal at supersonic speed. The oxygen combines with carbon and other unwanted elements, separating these impurities from the molten charge and converting the remainder to steel. The furnace is tilted and the molten steel poured into a ladle; alloying additions are made in the ladle. Most BOF's are built near blast furnaces, facilitating the transfer of the molten metal. Oxygen-producing facilities are usually located nearby. The BOF produces steel very quickly, compared with the other major methods now in use. For example, a BOF may produce up to 300 tons in 45 minutes or less, compared with 5 to 8 hours for the older open-hearth furnace.

The electric furnace is normally charged with scrap, which is subjected to an electrical current. Heat, generated as the current arcs from one electrode to the metallic charge and from the charge to the next electrode, melts the charge. When the charge is molten, limestone and flux are charged on top. The slag is raked off, alloying elements are added, and when the reactions are complete, the furnace is tilted and the molten metal is poured out.

Of the 128 million tons of raw steel produced in the United States in 1976, about three-fifths was produced in BOF's and one-fifth, each, in open-hearth and electric furnaces.

Molten steel must be solidified in a manageable shape prior to rolling. Consequently, it is cast into ingots, a columnar form suitable for working by rolling. The molten metal, upon being poured into the ingot mold, solidifies first near the sides and ends, forming a solid exterior. When the ingot has partially or completely solidified, the mold is removed and the ingot is placed in a temperature-controlled pit, where it remains until it reaches a uniform temperature throughout (required rolling temperatures range from 2000°F to 2500°F).

Forms comparable in size and shape with the semifinished products may be achieved directly from the molten metal through a process known as continuous casting. The advantage of this process is that the ingot and reheating stages can be by-passed. This results in great energy savings because one heating process, that of heating the ingot for hot-rolling into semifinished forms, is eliminated.

Although pig iron or steel may be cast directly into the form of the finished article, and steel may be forged, the primary forming process used in steel mills is rolling.

The purpose of the first rolling process is to reshape the ingots roughly into shapes more suitable for further manufacture into finished products. These rough shapes are called "blooms, billets, slabs, and sheet bars" and are generally referred to as "semifinished." Blooms, billets, slabs, and sheet bars differ from each other primarily in size; all are substantially smaller than ingots. These products are heated to a uniform rolling temperature and then passed through a series of rolls that form the steel into the desired shapes and sizes of the various steel mill products.

Products formed by the hot-rolling process are termed "hot-rolled." They may be used or shipped in this condition; however, a substantial quantity of hot-rolled products are subsequently cold-finished. This term applies to hot-rolled products that have been subjected to processes such as rolling, drawing, turning, grinding, or polishing while cold. Once a product has been cold-worked, it is referred to as "cold-rolled," "cold-formed," or "cold-finished;" it is no longer termed "hot-rolled."

Product descriptions

Each of the following products is discussed in terms of TSUS definitions, general description, and use. The TSUS definitions, where available, were used as the basis for defining what was included within each category.

Ingots.--The TSUS defines ingots as--

> castings resulting from the solidification of molten steel and having a columnar form suitable for working by rolling or forging.

Ingots vary widely in size and may have smooth, corrugated, or fluted sides. They are usually tapered from one end to the other, a shape that facilitates removal of the mold when the exterior of the ingot has solidified. Ingots, the basic form in the steelmaking process, may be forged or rolled into more advanced shapes and forms.

Semifinished products.--The TSUS defines blooms and billets as--

> semifinished products generally of rectangular or circular cross section, having a length several times greater than the maximum cross-sectional dimension, and, if rectangular, a width less than 4 times the thickness. A bloom is at least 36 square inches in cross-sectional area; a billet is less than 36 square inches but not less than 3 square inches in cross-sectional area.

The TSUS defines slabs and sheet bars as--

> semifinished products of rectangular cross section, having a width of at least 4 times the thickness. A slab is not less than 2 inches and not over 6 inches in thickness; a sheet bar is less than 2 inches in thickness.

Blooms, billets, slabs, and sheet bar are intermediate products of the steel-rolling process which are usually rolled into more advanced steel mill shapes and forms.

Blooms and billets are generally of rectangular or circular cross section, but may be square. Slabs and sheet bar are flatter than blooms or billets and are rectangular in cross section. Billets of circular cross section, intended to be used in the production of seamless tubes, are often referred to as tube rounds. In general, slabs and short bars are used to produce flat-rolled products such as plates, sheets, and strip, while billets are used in the production of structural shapes, bars, rods, and narrow strip.

Bars.--The TSUS defines bars as--

> products of solid section not conforming completely to the respective specifications set forth herein for blooms, billets, slabs, sheet bars, wire rods, plates, sheets, strip, wire, rails, joint bars, or tie plates, and which have cross sections in the shape of circles, segments of circles, ovals, triangles, rectangles, hexagons, or octagons.

Although steel bars may be made from old rails, axles, or similar products that have outlived their original usefulness, they are generally hot-rolled from billets. The most common shapes of bars are flats (rectangular cross section), squares, and rounds, but they may be formed in any cross-sectional configuration, such as octagons or hexagons.

Hot-rolled carbon steel bars are produced in two major qualities--merchant quality and special quality. Special quality bars have more exacting chemical and physical requirements than merchant quality.

Cold-finished carbon steel bars are commonly produced from hot-rolled steel by several cold-finishing processes. Cold-finishing may be used to improve the surface finish, to increase the dimensional accuracy, and to improve the machinability of the bar. Yield strength and tensile strength are increased by cold-drawing and cold-rolling.

After being rolled, the bars are generally cut to standard straight lengths; however, depending on their size and cross-sectional configuration, they may be shipped in coiled form.

Bars are used in a wide range of applications in the production of noncritical parts of bridges, buildings, ships, agricultural implements, roadbuilding equipment, railway equipment, and general machinery.

Bars may require mild cold-bending, mild hot-forming, punching, welding, ordinary forging, heat treating, cold-drawing, or machining in the fabrication process to adapt them for their intended use. The type of bar selected is dependent upon the special requirements of the fabrication process required to prepare the bar for its final use.

Deformed concrete reinforcing bars.--The TSUS defines deformed concrete reinforcing bars as--

> hot-rolled steel bars, of solid cross section, having deformations of various patterns on their surfaces.

Deformed reinforcing bars are made by pressing deformations into hot-rolled bars during the final stage of rolling. Deformations are protrusions extending outward from the surface of the bar in a uniform pattern. Reinforcing bars are used in the construction of concrete structures; the deformations around the circumferences prevent longitudinal movement when the bars are embedded in concrete. For the purposes of the investigation, reinforcing bars include only hot-rolled bars with deformations. Plain reinforcing bars are grouped with "other bars."

The standard sizes of reinforcing bars, which correspond to standard bar sizes 2 (2/8-inch diameter) through 11 (1-3/8 inch diameter), range with 1/8-inch intervals between sizes. Large reinforcing bars are also made in diameter sizes of approximately 1-3/4 inches and 2-1/4 inches. Reinforcing bar may be shipped cut to standard lengths of 20, 40, 60, 80, or 100 feet, or it may be shipped in coils. Often, reinforcing bars are recut for fabrication (shaping) as required by the detailed design of a particular construction project.

Reinforcing bars are made in three grades--structural, intermediate, and hard. The three grades differ only in their mechanical properties, principally tensile strength.

Angles, shapes, and sections.--The TSUS defines angles, shapes, and sections as--

> products which do not conform completely to the respective specifications set forth herein for blooms, billets, slabs, sheet bars, bars, wire rods, plates, sheets, strip, wire, rails, joint bars, or tie plates, and do not include any tubular products.

Angles, shapes, and sections are terms which describe a group of products that have identifiable cross-sectional characteristics, usually consisting of flat surfaces joined together at angles. Examples of these cross-sectional configurations are patterns similar to the capital letters C, H, I, L, T, or Z. Some of the fundamental shapes are known as angles, channels, beams, tees, and special sections.

The terms "shapes" and "sections" are synonymous; angles are a specific form of a shape or section. Angles and shapes having a maximum cross-sectional dimension of less than 3 inches are referred to as bar-size shapes; those of 3 inches or more are referred to as structural shapes. A great variety of products fall within the latter grouping, with the products ranging from 1-inch by 3-inch angles to 36-inch or larger I beams. In this study, the bar-size shapes are grouped with bars because they are usually produced in a bar mill. Included in this category are those products that have been drilled, punched, or otherwise advanced; however, those which have been fabricated are excluded.

Angles, shapes, and sections are used in the construction of bridges, buildings, dams, cars, ships, cranes, machinery, appliances, and a host of other common articles.

Plates.--The TSUS defines plates as--

> flat rolled products whether or not corrugated or crimped, in coils or cut to length, 0.1875 inch or more in thickness and, if not cold rolled, over 8 inches in width, or, if cold rolled, over 12 inches in width.

Although plates may be of any grade of steel and may be cold-rolled, virtually all are hot-rolled from carbon steel. They may be rolled up to 206 inches in width. Plates are used principally for structural purposes, in boilers, tanks, pipe, steel railway cars, ships, safes, and bridges.

Sheets.--The TSUS defines sheets as--

> flat rolled products whether or not corrugated or crimped, in coils or cut to length, under 0.1875 inch in thickness and over 12 inches in width.

Sheets may range up to 72 inches or more in width. Most sheets are made of carbon steel. After hot-rolling, substantial quantities are cold-rolled. The automotive industry is the largest single consumer of sheets, primarily for bodies of motor vehicles. Sheets are also used in the manufacture of pipe, water heaters, refrigerators, metal furniture, and fabricated structural sections.

Strip.--Strip is defined in the TSUS as--

> a flat rolled product whether or not corrugated or crimped, in coils or cut to length, under 0.1875 inch in thickness, and, if cold rolled, over 0.50 inch but not over 12 inches in width, or, if not cold rolled, not over 12 inches in width.

Strip may be rolled, or it may be made by slitting sheet. Strip is adapted to the manufacture of a multitude of articles by mass-production methods in the automotive and other industries.

Tin mill products.--The TSUS defines black plate as "cold-rolled steel sheets, not coated, under 0.0142 inch in thickness." It defines "tin plate and tin coated sheets" as "tin coated steel sheets and "terne plate and terne coated sheets" as "steel sheets coated with terne metal (a lead-tin alloy)." Black plate, tin plate, tin-coated sheet, terne plate, and terne-coated sheet are the only products included in this grouping which are defined in the TSUS. For the purposes of this investigation all plate, sheet, and strip coated, plated, or clad with metal were grouped within this category. In addition, black plate was included because of its close association with the tin mill process.

Black plate is a thin cold-rolled sheet of carbon steel that is used principally in the manufacture of tin plate. Tin plate and tin-coated sheets are steel sheets coated with tin, and terne plate and terne-coated sheets, production of which is small, are steel sheets coated with terne metal, a lead-tin alloy. The tin coating may be applied by hot-dipping (immersion in molten tin) or by electrolysis. Tin plate is used principally in the manufacture of containers, chiefly food cans; it is also used in the production of bottle closures, toys, kitchen utensils, and dairy equipment. Plates, sheets, and strip that are galvanized (zinc coated) or coated or plated with other metals are included in this product grouping.

Clad plates and sheets generally consist of steel with a thin outer layer of nickel, nickel alloy, copper, monel stainless steel, or other base metal or alloy permanently bonded thereto by mechanical or thermal means. The cladding generally represents 10 to 20 percent of the total thickness and may be on one or both sides of the steel plate or sheet. Clad steel offers a variety of unique characteristics, some of which are corrosion resistance, abrasion resistance, high strength, and electrical conductivity. Clad steel has important uses in refinery applications, in shipbuilding, and in the chemical industry.

Wire rod.--The TSUS defines wire rods as--

> a coiled, semifinished, hot-rolled product of solid cross section, approximately round in cross section, not under 0.20 inch nor over 0.74 inch in diameter.

Because most wire rod is cold-drawn into wire, it is considered a semifinished product--an intermediate product that will be converted into another steel mill product. Wire rod is not rolled to exact dimensions and is described as approximately round. Each rod is rolled to a cross section only slightly larger than the aperture in the first die that it will be drawn through to make wire. The wire rod is coiled rather than cut to length, so it may simply be unwound when drawn through the dies used in the wiremaking process.

Wire rods are prepared for drawing in various ways. In one process, the surface is cleaned with acid, rinsed with water, and a lime coating is baked on which serves as a carrier for the lubricant used in the wire-drawing process. Products treated in such ways are still wire rods and are not termed wire until they have been drawn through a die.

Wire.--The TSUS defines wire as--

> a finished, drawn, non-tubular product, of any cross-sectional configuration, in coils or cut to length, and not over 0.703 inch in maximum cross-sectional dimension. The term also includes a product of solid rectangular cross section, in coils or cut to length, with a cold-rolled finish, and not over 0.25 inch thick and not over 0.50 inch wide.

The most common method of producing wire is by cold-drawing wire rod. Most flat wire is cold-rolled from wire rod or from drawn wire; some flat wire is produced by slitting cold-rolled plate, sheet, or strip, a method often used to produce flat wire which measures significantly more in width than in thickness.

This category covers very basic wire in the state as drawn from wire rod or as described above, though it may be tempered or treated or may be coated or plated with metal. Not included are wire covered with textiles, plastics, or other material not wholly of metal. Barbed wire, twisted wire, wire strands (prestressed strand), ropes, cables, and cordage, or woven wire products are not included here.

Pipes and tubes.--The TSUS defines pipes and tubes and blanks therefor as--

> tubular products, including hollow bars and hollow billets but not including hollow drill steel, of any cross-sectional configuration, by whatever process made, whether seamless, brazed, or welded and whether with an open lock seam or joint.

The terms "pipes" and "tubes" are generally synonymous. Welded pipe is made by two principal methods--butt-welding and electric-welding. Skelp 1/ is uncoiled, heated, and formed into a tube. The hot edges are either squeezed together, resulting in a solid butt-weld, or the edges are electric-welded. Large-diameter pipe is made from plate in a process similar to the electric-weld method. Seamless pipe is made from solid tube rounds, a semifinished mill product which is heated, pierced by a cylindrical mandrel bar, and rolled with a bar inside to obtain the desired wall thickness, diameter, and length.

Welded pipe is generally less than 0.25 inch in wall thickness. Butt-weld pipe generally ranges from 1/8 inch to 4 inches in size of inside diameter; electric-weld pipes range up to 96 inches (or even larger) in outside diameter. Seamless pipes are commonly made in sizes ranging in outside diameter from 1-1/2 to 26 inches and are usually produced in a wider range of wall thicknesses than welded pipes.

1/ Skelp is a term used in the industry to identify plates, sheets, or strip intended for use in the production of welded pipes and tubes.

Many of the important tubular products covered here are known in the trade according to the uses for which they are intended by terms such as standard pipe, line pipe, pressure tubing, oil country goods, structural tubing, conduits, and mechanical tubing.

Standard pipe is used for conveying liquids under low pressure. It is produced in three classes of wall thicknesses (designated as standard weight, extra-strong weight, and double extra-strong weight) and in outside diameters of about 1/2 inch to about 4-1/2 inches.

Line pipe is used to convey crude oil, oil products, gas, or water under high pressure. It is produced in lengths up to a maximum of 80 feet and in outside diameters up to 48 inches or more.

Pressure tubing is used for conveying fluids at high temperatures or pressures within industrial apparatus, such as boilers, heat exchangers, condensers, and evaporators.

Oil country goods are tubular products used in extracting petroleum. Well casing, the ends of which are usually threaded and fitted with couplings, is used primarily to retain the walls of a well and to exclude undesirable fluids; such pipes have outside diameters from 4-1/2 to about 20 inches. Tubing is used within the casing of wells to conduct crude oil and natural gases from producing strata to ground level; it ranges in outside diameter from slightly more than 1 inch to about 4-1/2 inches.

Structural tubing is used primarily in building construction.

Conduits are used to enclose and protect electrical wiring systems. Such pipes are generally produced in diameter sizes from about 1/4 inch to about 6 inches and in lengths from 10 to 20 feet.

Mechanical tubing is used in the manufacture of automobiles, gravity conveyor rolls, bushings, separators, hydraulic cylinders and hoists, oil well pumps, bicycle frames, metal furniture, and other products.

Rails.--The TSUS defines rails as--

> hot-rolled steel products, weighing not less than 8 pounds per yard, with cross-sectional shapes intended for carrying wheel loads in railroad, railway, and crane runway applications. Rails may be punched or not punched.

Shapes of the rail type which weigh under 8 pounds per yard are included in the categories of "bar-size shapes" or "angles, shapes, and sections," depending on size.

Rails are classified as either "heavy" or "light," depending on whether they weigh more or less than 60 pounds per yard. Heavy rails, representing the bulk of U.S. production of rails, are used in rail systems in which the strength of the rails is essential, such as mainline railways and subways. Light rails are generally used in mines, for crane trackways and other industrial uses, and for streetcars.

Although rails may be manufactured in lengths up to a quarter of a mile, standard heavy rails are 39 feet in length, and standard light rails are generally 30 feet long.

Joint bars.--The TSUS defines joint bars as--

> hot-rolled steel products designed to connect the ends of adjacent rails in track. Joint bars are usually punched or slotted.

Joint bars are hot-rolled in a special shape designed to fit between the head and flange of a rail. They range from 24 to 36 inches in length, with a series of 4 to 6 punched holes evenly distributed throughout their length and usually weigh from 33 to 49 pounds each. They are used to connect the ends of adjacent rails in track.

Tie plates.--Tie plates are defined in the TSUS as--

> hot-rolled steel products used to support rails in track, to maintain track gauge and protect the ties. Tie plates are punched to provide holes for spikes and have one or two shoulder sections as rail guides.

Tie plates, weighing about 19 pounds each, are used to connect the rails in track to the railway ties. They are inserted between the rails and the ties to support the rails and to hold them securely. A standard 39-foot length of rail usually passes over about 24 ties and subsequently requires about 48 tie plates.

Barbed wire.--Although there is a specific provision for barbed wire in the TSUS, a definition is not provided. For purposes of this investigation, however, barbed wire is considered to be wire which usually consists of two galvanized strands, twisted together, containing two to four barbs at frequent intervals. The barbs are pointed and extend at right angles to the twisted wire. Barbed wire is used chiefly in fencing.

Nails.--The TSUS does not define nails. Nails made from steel wire in automatic machines vary greatly in size and design. After each nail is formed, the wire is advanced through the machine and grasped by a die formed in the mirror image of the desired nailhead. The length of wire that extends in front of the die is flattened by a hammer blow against the die to form the nailhead. The wire is again advanced, the amount depending upon the desired length of the nail, and a die closed to pinch the wire, acting as a vice. Two specially shaped knives are moved together, cutting the wire and at the same time pressing the wire into the point required.

The uniform finish of common nails is obtained by rotating them with sawdust in a tumbler with projections on the inside. This process polishes the nails and removes any adhering bits of metal while absorbing any grease and oil collected during the manufacturing process. Nails may then be galvanized, zinc coated, tinned, coppered, or cement coated.

Prestressed strand.--Prestressed strand is a term that refers to steel strand that will be used in the process of prestressing concrete. The strand is not actually put under tension until it is incorporated in the concrete, but the mechanical properties necessary to allow deformation under tension must be present in the strand when it is ready for use or shipment in the form of prestressed strand. These mechanical properties are achieved through the various treatments of the steel at each stage of its production.

The wire used for making prestressed strand is drawn from heat-treated wire rods of high-carbon steel (approximately 0.70 to 0.85 percent carbon content). The wire is then stranded, a process by which outer wires are wrapped around a central wire in a uniform spiral. The most commonly used prestressed strand is seven-wire strand--one central wire wrapped with six outer wires. After further heat treatment, the strand must meet specified tension requirements for breaking strength, yield strength, and elongation.

The TSUS does not define prestressed strand, although it provides a statistical breakout under strand.

Appendix B

The U.S. Steel Industry

The U.S. Steel Industry

The U.S. steel industry's position in world steel production has steadily declined since the 1950's. In 1956, the United States accounted for 37 percent of total world steel production; by 1975 the United States accounted for only 16 percent. Raw steel production for all countries currently producing in excess of 10 million tons annually is shown separately in the following table.

Raw steel production by selected countries, 1973-77

(million tons)

Country	1973	1974	1975	1976	1977
U.S.S.R	145	150	156	160	162
United States	151	146	117	128	125
Japan	132	129	113	118	113
Federal Republic of Germany	55	59	45	47	43
China	29	29	29	23	26
Italy	23	26	24	26	26
France	28	30	24	26	24
United Kingdom	29	25	22	25	22
Poland	16	16	17	17	20
Belgium-Luxembourg	24	25	17	18	17
Czechoslovakia	15	15	16	16	16
Canada	15	15	14	15	15
Romania	9	10	10	12	13
Brazil	8	8	9	10	12
Spain	12	13	12	12	12
India	8	8	9	10	11
All other	70	79	78	90	88
Total	769	783	712	753	743

Source: Compiled from data published by the American Iron and Steel Institute.

The United States is second only to the U.S.S.R. in world steel production. Japan ranks a close third, and the Federal Republic of Germany is a distant fourth. An additional 12 countries, including such developing countries as Brazil, India, and Spain, produced in excess of 10 million tons of raw steel in 1977. Developing countries have significantly increased steel production in recent years. Collectively, the developing countries represent a growing market force inasmuch as most of these countries are unable to consume internally the increased tonnages produced.

In a more historical analysis of steel production from 1956 through 1977, the following table shows the rapid development of the Japanese steel industry from 13 million tons produced in 1958 to 132 million tons in the peak year of 1973. In much the same way, the steel industries in EEC countries expanded from 86 million tons in 1958 to 172 million in 1974.

Raw steel: Production, total world, EEC countries, Japan, and the United States, 1956-77

Year	Total world	EEC	Japan	United States	U.S. share of total world production
	Million tons	Million tons	Million tons	Million tons	Percent
1956	312.9	85.9	13.2	115.2	36.8
1957	321.7	90.4	13.8	112.7	35.0
1958	298.9	86.0	13.3	85.3	28.5
1959	337.2	92.6	18.3	93.4	27.7
1960	381.6	107.9	24.4	99.3	26.0
1961	390.1	105.9	31.2	98.0	25.1
1962	394.1	103.6	30.4	98.3	24.9
1963	422.2	106.4	34.7	109.3	25.9
1964	479.0	121.2	43.9	127.1	26.5
1965	503.1	125.5	45.4	131.5	26.1
1966	519.1	121.5	52.7	134.1	25.8
1967	547.6	126.3	68.5	127.2	23.2
1968	582.5	138.2	73.7	131.5	22.6
1969	632.0	148.5	90.5	141.3	22.4
1970	654.2	151.7	102.9	131.5	20.1
1971	639.9	141.3	97.6	120.4	18.8
1972	694.5	153.4	106.8	133.2	19.2
1973	768.6	165.5	131.5	150.8	19.6
1974	782.8	171.5	129.1	145.7	18.6
1975	712.0	138.1	112.8	116.6	16.4
1976	753.1	148.1	118.4	128.0	17.0
1977	743.0	138.1	112.9	124.7	16.7

Source: Compiled from data published by the American Iron and Steel Institute.

The following table shows the market-economy countries' 10 largest steel producers and their output in 1977 compared with 1976.

Raw steel: Output by companies in market-economy countries, 1976 and 1977

(In millions of tons)

Company	Country	1976	1977
Nippon Steel	Japan	35.8	35.7
U.S. Steel	United States	28.3	28.8
British Steel	United Kingdom	21.4	19.0
Bethlehem	United States	15.5	15.2
Nippon Kokan	Japan	16.2	15.2
Finsider	Finland	14.8	14.2
Sumitomo	Japan	14.7	13.8
Kawasaki	Japan	14.7	13.8
A. Thyssen Hutte AG	West Germany	14.1	12.7
National Steel	United States	10.8	9.4

Source: Compiled from data published by the International Iron and Steel Institute.

The dominance of the United States and Japan in market-economy countries' steel output is readily apparent--of the 10 leading steel-producing firms, 4 are located in Japan and 3 in the United States. Kaiser Steel, the largest producer in the Western States, ranked 43d in 1977, down from 40th in 1976.

World steel capacity far exceeds actual production. In 1977, Japanese mills operated at about 65 to 70 percent of capacity utilization, while European mills operated at 60 to 65 percent. With unused capacity of about 125 million tons in Europe and Japan, along with rapidly increasing production in developing countries and a projected annual world growth rate of less than 3 percent for steel mill products, the potential exists for these nations to substantially increase their penetration of the U.S. steel market. It is also likely that Japan and the industrialized steel-producing countries of Europe will increasingly emphasize the exportation of products containing significant amounts of steel in order to keep mills operating at acceptable levels of utilization.

From 1950 to 1960, U.S. raw-steel-making capacity increased from about 102 million tons to about 149 million tons, or by about 45 percent. However, since 1960, very little net capacity has been added. U.S. steelmaking capacity is currently estimated at slightly under 160 million tons. Virtually all of the capital invested has been to replace obsolete facilities, to build rolling and finishing facilities, and to install environmental protection equipment. The industry has little or no expansion plans for the immediate future, and no greenfield plants are under construction.

U.S. production of raw steel and U.S. producers' shipments of steel mill products during 1968-77, except for the years 1973-75, have remained rather stagnant, as shown in the following tabulation (in millions of tons).

Year	Production	Shipments
1968	131.5	91.9
1969	141.3	93.9
1970	131.5	96.8
1971	120.4	87.0
1972	133.2	91.8
1973	150.8	1/ 111.4
1974	145.7	1/ 109.5
1975	116.6	1/ 80.0
1976	128.0	89.4
1977	124.7	91.1

1/ Production and shipments in 1973 and 1974 were abnormally high both in the United States and throughout the world because of the steel shortage; they were abnormally low in 1975 because of the recession.

Carbon steel mill products account for about 90 percent of the total quantity of U.S. producers' shipments; stainless steel accounts for about 1 percent; and other alloy, for about 9 percent.

Shipments of sheets and strip alone account for almost 50 percent of total domestic shipments, reflecting in large part the importance of the automotive industry (about two-fifths of total sheet and strip shipments) to the domestic steel industry. Bars account for about 15 percent of total shipments, plates account for about 8 percent, and pipes and tubes about 7 percent.

The automotive industry consumes about one-fourth of annual domestic shipments of all steel mill products; about 17 percent goes to steel service centers and distributors; about 13 percent to the construction industry; about 7 percent to the container industry; about 6 percent to the machinery and industrial equipment industry; and about 4 percent to the oil and gas industry.

In the United States, the basic-oxygen furnace (BOF) process in 1977 accounted for 62 percent of total raw steel production, the electric-furnace process for 22 percent, and open hearth for the remaining 16 percent. About 11 percent of U.S. production was by the continuous-casting method. In contrast, about 82 percent of Japan's production was by the BOF process and 35 percent was continuously cast. EEC countries in the aggregate had a higher percentage of steel production by the BOF method, and a higher percentage by the continuous-casting method, than the United States.

In 1977, U.S. mills operated at about 78 percent of capacity utilization, a rate somewhat higher than that recorded by Japan or EEC countries. The efficiency and the competitiveness of the major steel industries of the world are dependent upon a large number of factors--most importantly, the cost of raw materials, energy, and labor. The rate of capacity utilization and the technology provided by the BOF and continuous-casting processes over conventional processes are also important factors in the cost of producing

In 1977, producers located outside the Western States accounted for 94 percent of both the total carbon raw steel production and of the shipments of carbon steel mill products. Pennsylvania, Indiana, and Ohio together accounted for almost 69 million tons or 55 percent of total U.S. raw steel production in 1977. In addition, facilities located in Illinois and Michigan produced more than 10 million tons each.

Steel production in the United States is heavily concentrated in large integrated firms. These firms not only operate blast furnaces and rolling and finishing facilities, but also own and operate mines which provide the raw materials for the production of pig iron. In some cases they own or have interests in service centers and outlets through which their products are distributed.

The following table shows the 15 largest U.S. producers of raw steel in 1977:

Raw steel: Production by the 15 largest U.S. producers, 1977

Firm	Production	Share of total U.S. production
	1,000 tons	Percent
U.S. Steel Corp	28,800	23.1
Bethlehem Steel Corp	16,609	13.3
National Steel Corp	9,378	7.5
Republic Steel Corp	9,220	7.4
Armco Steel Corp	7,918	6.3
Inland Steel Corp	7,760	6.2
Jones & Laughlin Steel Corp	7,039	5.6
Lykes-Youngstown Corp	4,530	3.6
Wheeling-Pittsburgh Steel Corp	3,730	3.0
Kaiser Steel Corp	2,281	1.8
McLouth Steel Corp	1,904	1.5
CF & I Steel Corp	1,544	1.2
Sharon Steel Corp	1,215	1.0
Interlake, Inc	1,080	0.9
Northwestern Steel & Wire Co	988	0.8
All other	20,750	16.6
Total	124,746	100.0

Source: Metal Statistics, 1978, a publication of American Metal Market.

The 5 largest firms account for almost 60 percent of the total U.S. production of raw steel; the 10 largest firms account for about 80 percent of such production. Of the 10 largest firms, Kaiser is the only firm located in the Western States.

Minimills, although representing only a small portion of total U.S. steel output, have become increasingly important in recent years. These companies generally operate electric furnaces and are therefore dependent upon scrap. They usually specialize in a narrow product range; often they produce only reinforcing bars. Since they are inflexible in terms of their dependence on scrap, changes in the price and availability of scrap has almost an immediate effect on the profit margins of these firms.

During 1968-77, employment in the U.S. steel industry, except for the boom years of 1973 and 1974, has steadily declined from 421,000 production workers in 1968 to 337,000 in 1977; similarly, the number of all employees engaged in the production and sale of iron and steel products declined from 552,000 in 1968 to 452,400 in 1977. During the same 10-year period, average wage costs (including fringe benefits) more than doubled from slightly more than $5.00 per hour in 1968 to more than $10.00 per hour in 1977.

Number of persons employed in U.S. steel mills:
Production workers and all employees, 1968-77

Year	Production workers	All employees
1968	421,000	552,000
1969	415,000	544,000
1970	403,000	531,000
1971	367,000	487,000
1972	364,000	478,000
1973	393,000	509,000
1974	393,000	512,000
1975	340,000	457,000
1976	339,000	454,000
1977	337,400	452,400

Source: Annual Statistical Report, American Iron and Steel Institute.

The profit experience of the U.S. steel industry has been less than that for all manufacturing during the past decade. Net income as a percentage of sales for the U.S. steel industry has ranged from 0.1 percent in 1977 to 6.5 percent in 1974. It was 4.7 percent in 1975 and 3.6 percent in 1976. Industry's profits in 1978 have increased considerably. As a result of poor earnings, the steel industry has been unable to attract the necessary capital to build greenfield plants and to modernize existing facilities on the scale which seems necessary for the decade ahead.

Profits of the European and Japanese steel producers have been traditionally lower than U.S. producers. In 1977, 10 of the 14 major European steel producers sustained losses while Japanese producers showed extremely small profits, ranging from 0.4 to 0.8 percent (table 106). Government owned steel producers in the United Kingdom and Italy suffered staggering losses.

Increased costs, lower prices, and low levels of capacity utilization explain, in part, the poor profit performance of the European and Japanese steel producers. These factors have caused foreign producers to increasingly turn to the U.S. market to sustain an acceptable level of capacity utilization and to keep workers employed even at the cost of maintaining profitability.

World trade in steel mill products has grown from about 13 percent of world steel production in the late 1950's to almost 25 percent of current world output. Japan has been by far the world's largest steel exporter. In 1976, Japan exported almost 40 million tons of steel mill products, considerably more than twice the amount of its closest rival, West Germany. During 1960-77, Japan and EEC countries supplied 75 to 88 percent of annual U.S. imports. Japan alone supplied more than half of total U.S. imports in 1975-77. The United States is by far the world's largest importer; in 1977, imports totaled 19.3 million tons, the highest tonnage ever recorded. In 1977, imports supplied almost 20 percent of total apparent U.S. consumption. Until 1959, the United States was a net exporter of steel mill products; however, fueled by the 116-day steel strike of that year, imports more than doubled and outpaced exports by about 2.7 million tons. The following table shows the tonnages exported and imported since 1955.

Steel mill products: U.S. imports for consumption and exports of domestic merchandise, 1956-1977

Year	Imports	Exports	Ratio of imports to apparent consumption
	Million tons	Million tons	Percent
1956	1.3	4.3	1.7
1957	1.2	5.3	1.5
1958	1.7	2.8	2.9
1959	4.4	1.7	6.1
1960	3.4	3.0	4.7
1961	3.2	2.0	4.7
1962	4.1	2.0	5.6
1963	5.4	2.2	6.9
1964	6.4	3.4	7.3
1965	10.4	2.5	10.3
1966	10.8	1.7	10.9
1967	11.5	1.7	12.2
1968	18.0	2.2	16.7
1969	14.0	5.2	13.7
1970	13.4	7.1	13.8
1971	18.3	2.8	17.9
1972	17.7	2.9	16.6
1973	15.2	4.1	12.4
1974	16.0	5.8	13.4
1975	12.0	3.0	13.5
1976	14.3	2.7	14.1
1977	19.3	2.0	17.8

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

From 1959 to 1968, the imbalance of imports over exports grew at a rapid pace amounting to 15.8 million tons in 1968. After 1968, the imbalance declined somewhat in 1969 and 1970 but has remained at rather high levels throughout the 1970's. In 1977, U.S. imports exceeded exports by 17.3 million tons, the largest amount ever.

Since 1968, the quantity imported has ranged from a low of 12.0 million tons during the recession year of 1975 to a high of 19.3 million tons in 1977; on the other hand, exports during the same 10-year period were highest in 1970 (7.1 million tons) and lowest in 1977 (2.0 million tons).

During January-September 1978, imports of carbon steel mill products accelerated, amounting to 14.9 million tons, compared with 12.6 million tons recorded during the corresponding period of 1977. During January-September 1978 the average unit value of imports increased to $291 per ton compared to $260 per ton for the comparable 1977 period.

Flat-rolled products (plates, sheets and strip, and tin mill products) accounted for 56 percent of the total quantity of imports in 1977. Pipe and tubes (13 percent), angles, shapes, and sections (9 percent), wire rods (7 percent), and bars (7 percent) accounted for most of the remainder.

Since 1974, the quantities of steel mill articles exported have decreased annually, reaching an alltime low of only 2.0 million tons in 1977. Canada has been the largest single market for domestically produced steel mill products. Countries of Latin America have also been important markets. Canada and Latin American countries together have accounted for more than one-half of all U.S. exports of steel mill products. In 1977, less than 10,000 tons of steel mill products were exported to Japan.

Appendix C

Statistical tables

Table 1.--Western producers and carbon steel mill products produced in their establishments in 1977.

Type of mill and producer	Ingots and semifinished products	Tin mill products sheets & strip	Plates	Deformed re-bar	Bar-size shapes	Other bars	Wire rod	Wire	Angles, shapes and sections	Pipes and Tubes	Rails, joint-bars and tie plates	Nails	Barbed wire	Pre-stressed strand	Total number of products
ed:															
teel Corp., lo, Co	X		X	X	X	X	X	X	X	X	X	X	X	X	13
Steel Corp., ana, Ca	X	X	X	X		X				X					6
States Steel Corp., va, Utah; Torrance, Pittsburg, Ca	X	X	X		X	X	X	X	X	X	X	X			11
hem Steel Corp., Angeles, Ca tle, Wash	X		X	X	X	X	X	X	X		X				9
s:															
-Steel & Wire Div., anda, Ca	X			X			X	X							4
le Steel Rolling s, McMinnville, Or	X			X	X	X									4
e Steel Corp., land, Or	X		X												2
n Steel Corp., ryville, Ca	X			X											2
hon Steel Co., pe, Ariz	X			X											2
west Steel Rolling ls, Kent, Wash	X			X	X										3
ic States Steel Corp., on City, Ca	X			X	X	X			X						5
' Steel Corp., son, Ca	X			X											2
tors:															
Rolling Mill, Bernadino, Ca				X											1
& Laughlin Steel, Angeles, Ca						X		X							2
ornia Pipe & Tube Co., ifornia										X					1

Table 1.--Western producers and carbon steel mill products produced in their establishments in 1977--(Continued)

Type of mill and producer	Ingots and semifinished products	Tin mill products sheets & strip	Plates	Deformed re-bar	Bar-size shapes	Other bars	Wire rod	Wire	Angles, shapes and sections	Pipes and Tubes	Rails, joint-bars and tie plates	Nails	Barbed wire	Pre-stressed strand	Total number of products
Tubing & Conduit															
Torrance, Ca										X					1
Walker Corp.,															
Angeles, Ca															
ard, Ca															
of Industry, Ca															
rside, Ca															
, Wash								X					X		2
d Epps & Co.,															
Angeles, Ca										X					1
Tube Division,															
Angeles, Ca										X					1
rial Wire Products															
., Los Angeles, Ca								X							1
n Steel & Wire Co.,															
Angeles, Ca								X							1
ley Steel,															
na, Ca				X											1
al Standard Co.,															
Angeles, Ca								X							1
ic Steel Corp.,															
Angeles, Ca					X										1
est Wire Corp.,															
Angeles, Ca								X							1
n Tube & Conduit															
., Oakland, Ca										X					1
mber of producers	12	2	5	12	7	7	4	10	4	8	3	2	1	1	

ile Bethlehem is integrated nationally, its western operations are not integrated.

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

-Mills identified as producers of ingots and semifinished products operate steelmaking furnaces.

ıble 2.--Shipments of the 4 largest western producers of each category of carbon steel mill products and their shares of total shipments of western producers within the Western States, of shipments of both eastern and western producers in the Western States, and of apparent consumption in the Western States, and shipments and apparent consumption in the Western States, 1977

Item	Total of reporting firms	Shipments of the 4 largest producers	Share of shipments of western producers within the Western States	Share of both eastern and western shipments in the Western States	Share of apparent consumption in the Western States	Shipments of western producers within the Western States	Shipments of both eastern and western producers in the Western States	Apparent consumption in the Western States
		Short tons	Percent	Percent	Percent	Short tons	Short tons	Short tons
ısic steel mill products 1/	26	3,525,022	79	66	42	4,453,000	5,325,000	8,449,000
ıgots and semifinished products	6	38,379	96	87	87	40,000	44,000	44,000
n mill products, plates, sheets, and strip	5	2,340,295	2/ 99	88	54	2,341,000	2,666,000	4,313,000
formed reinforcing bars	12	446,893	70	63	60	643,000	708,000	739,000
ır-size shapes	7	41,236	79	48	26	52,000	86,000	159,000
her bars	7	141,240	87	80	44	163,000	177,000	321,000
re rod	4	193,000	100	99	54	193,000	195,000	358,000
re	10	189,690	83	81	62	228,000	235,000	304,000
ıgles, shapes, and sections; rails, joint bars, and tie plates	4	375,000	100	75	42	375,000	497,000	896,000
pes and tubes	8	322,225	77	45	25	417,000	716,000	1,312,000
ıils, barbed wire, and prestressed strand	3/ 3	50,000	100	89	29	50,000	56,000	170,000

1/ The term "basic steel mill products" covers the products listed below, except nails, barbed wire, and prestressed strand.
2/ Shipments of the four largest producers represent virtually 100 percent of total shipments; shipments of other producers are negligible.
3/ Where there were less than 4 reporting firms, the total number of reporting firms was used.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; import data used to calculate ıpparent consumption was compiled from official statistics of the Department of Commerce.

Table 3.--Carbon steel: Capacity 1/ of steel-producing establishments located in the 10 Western States to melt carbon steel and to produce carbon steel mill products, 1972-77

(In thousands of short tons)

Item	1972	1973	1974	1975	1976	1977
Capacity to melt carbon steel	9,476	10,115	9,957	10,263	10,447	10,510
Capacity to produce--						
Plates, sheets, and strips, (including tin mill products)	3,582	3,587	3,470	3,516	3,515	3,546
Bars:						
Deformed rebars	1,557	1,467	1,448	1,515	1,579	1,659
Other bars (including bar-size shapes)	543	571	564	548	568	534
Wire rods	587	718	716	719	716	716
Wire	1,084	1,116	1,223	1,244	1,242	1,245
Angles, shapes, and sections; rails, joint bars, and tie plates	1,561	1,592	1,578	1,568	1,556	1,502
Pipes and tubes	753	753	753	753	753	784
Total	9,667	9,804	9,752	9,863	9,929	9,986

1/ Maximum sustainable output reflecting a firm's product mix during each of the years indicated.

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

Table 4.--Steel mill products of carbon steel: 1/ Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
Total	Exports	To Eastern States	Within Western States					
Quantity								
5,166	139	814	4,213	990	3,178	8,381	12	38
6,784	478	953	5,353	1,189	2,707	9,249	13	29
6,149	451	705	4,993	1,380	4,201	10,574	13	40
4,862	397	533	3,932	904	2,229	7,065	13	32
4,923	209	524	4,190	743	2,725	7,658	10	36
5,223	157	613	4,453	872	3,124	8,449	10	37
Value								
1,000,889	27,913	134,784	838,192	209,653	466,547	1,514,392	14	31
1,376,171	86,063	173,811	1,116,297	284,447	466,201	1,866,945	15	25
1,825,166	134,963	203,231	1,486,972	429,008	1,164,760	3,080,740	14	38
1,691,004	180,838	196,166	1,314,000	346,076	715,948	2,376,024	15	30
1,628,817	71,875	179,719	1,377,223	295,533	678,497	2,351,253	13	29
1,809,001	63,062	236,290	1,509,649	379,143	830,026	2,718,818	14	31

:luding nails, barbed wire, and prestressed strand.

:: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, i from official statistics of the U.S. Department of Commerce.

--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, ton, Oregon, California, and Arizona.

Table 5.--Ingots and semifinished products 1/ of carbon steel: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
Total	Exports	To Eastern States	Within Western States					
Quantity								
46	11	1	34	14	2	50	28	4
177	131	2	44	9	2/	53	17	0
121	43	4	74	12	1	87	14	1
106	55	2	49	13	1	63	21	2
38	6	2/	32	6	2	40	15	5
50	9	1	40	4	0	44	9	0
Value								
5,284	825	83	4,376	2,360	207	6,943	34	3
22,048	15,148	305	6,595	1,475	35	8,105	18	0
21,477	6,636	756	14,085	2,910	173	17,168	17	1
20,335	9,311	474	10,550	3,753	442	14,745	25	3
8,848	950	106	7,792	1,814	184	9,790	19	2
11,257	1,816	306	9,135	856	0	9,991	9	0

he bulk of ingots and semifinished products are consumed by the mills where they are produced. This table is restricted to actual shipments erefore does not reflect apparent consumption in terms of total production.
ess than 500 tons.

ce: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, ed from official statistics of the U.S. Department of Commerce.

.--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, gton, Oregon, California, and Arizona.

Table 6.--Tin mill products, plates, sheets and strip whether or not coated with metal, of carbon steel: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

	Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
	Total	Exports	To Eastern States	Within Western States					
	Quantity								
--:	2,492	71	302	2,119	478	1,675	4,272	11	39
--:	3,287	192	356	2,739	581	1,446	4,766	12	30
--:	2,635	131	107	2,397	705	2,294	5,396	13	43
--:	2,147	127	36	1,984	334	1,237	3,555	9	35
--:	2,431	69	25	2,337	306	1,543	4,186	7	37
--:	2,446	59	46	2,341	325	1,647	4,313	8	38
	Value								
--:	489,453	13,682	35,234	440,537	98,946	254,281	793,764	12	32
--:	669,440	35,914	46,443	587,083	136,423	249,871	973,377	14	26
--:	751,823	37,006	18,409	696,408	218,783	583,703	1,498,894	15	39
--:	705,919	48,814	13,604	643,501	121,186	364,735	1,129,422	11	32
--:	798,088	20,610	7,587	769,891	121,154	383,104	1,274,149	10	30
--:	845,373	19,792	16,559	809,022	137,381	447,034	1,393,437	10	32

rce: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, led from official statistics of the U.S. Department of Commerce.

e.--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, ngton, Oregon, California, and Arizona.

Table 7.--Deformed reinforcing bars of carbon steel: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
Total	Exports	To Eastern States	Within Western States					
Quantity								
685	5	27	653	28	68	749	4	9
807	50	26	731	19	16	766	2	2
844	100	30	714	25	77	816	3	9
550	8	31	511	32	53	596	5	9
494	14	13	467	61	64	592	10	11
679	12	24	643	65	31	739	9	4
Value								
107,033	647	3,673	102,713	3,873	6,415	113,001	3	6
135,774	9,083	3,852	122,839	5,072	2,682	130,593	4	2
235,926	25,232	8,758	201,936	6,105	22,745	230,786	3	10
160,999	1,867	8,544	150,588	8,219	9,688	168,495	5	6
122,003	2,763	2,937	116,303	14,701	9,346	140,350	10	7
160,658	2,861	5,469	152,328	15,863	4,955	173,146	9	3

rce: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, led from official statistics of the U.S. Department of Commerce.

e.--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, ngton, Oregon, California, and Arizona.

Table 8.--Bar-size shapes of carbon steel: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

r	Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
	Total	Exports	To Eastern States	Within Western States					
				Quantity					
---	67	4	9	54	16	92	162	10	57
---	117	2	17	98	17	55	170	10	32
---	93	1	11	81	25	139	245	10	57
---	46	2	6	38	25	33	96	26	34
---	43	1	7	35	35	39	109	32	36
---	58	1	5	52	34	73	159	21	46
				Value					
---	13,912	702	1,596	11,614	3,693	10,740	26,047	14	41
---	21,101	524	3,124	17,453	4,216	7,346	29,015	15	25
---	29,663	342	3,283	26,038	8,132	42,341	76,511	11	55
---	15,344	674	1,431	13,239	8,467	10,280	31,986	26	32
---	14,039	284	1,663	12,092	10,523	7,719	30,334	35	25
---	18,710	210	1,037	17,463	10,731	13,271	41,465	26	32

urce: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, iled from official statistics of the U.S. Department of Commerce.

te.--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, ington, Oregon, California, and Arizona.

Table 9.--Bars other than deformed reinforcing bars of carbon steel: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

Year	Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
	Total	Exports	To Eastern States	Within Western States					
	Quantity								
1972	234	5	43	186	25	144	355	7	41
1973	359	21	62	276	25	101	402	6	25
1974	349	22	50	277	25	197	499	5	39
1975	204	8	46	150	23	63	236	10	27
1976	212	8	41	163	15	91	269	6	34
1977	214	8	43	163	14	144	321	4	45
	Value								
1972	46,582	944	7,926	37,712	4,431	19,892	62,035	7	32
1973	74,800	5,113	12,407	57,280	4,917	17,294	79,491	6	22
1974	103,254	6,278	15,885	81,091	6,533	61,953	149,577	4	41
1975	66,699	3,259	13,286	50,154	6,507	20,892	77,553	8	27
1976	65,903	2,560	11,299	52,044	4,379	21,763	78,186	6	28
1977	69,412	2,708	12,291	54,413	4,420	34,435	93,268	5	37

Source: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, compiled from official statistics of the U.S. Department of Commerce.

Note.--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 10.--Wire rod of carbon steel: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

Year	Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
	Total	Exports	To Eastern States	Within Western States					
	Quantity								
1972	259	6	73	180	4	196	380	1	52
1973	327	12	84	231	9	168	408	2	41
1974	283	3	64	216	18	249	483	4	52
1975	229	2	33	194	3	113	310	1	36
1976	292	2	56	234	1	151	386	1/	39
1977	244	2	49	193	2	163	358	1	46
	Value								
1972	36,670	780	10,218	25,672	433	21,874	47,979	1	46
1973	49,978	2,086	14,002	33,890	1,397	21,673	56,960	2	38
1974	60,278	693	15,849	43,736	3,838	62,157	109,731	4	57
1975	55,790	463	8,664	46,663	867	29,648	77,178	1	38
1976	70,699	423	14,370	55,906	418	31,444	87,768	1/	36
1977	60,890	454	13,203	47,233	603	34,056	81,892	1	42

1/ Less than 0.05 percent.

Source: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, compiled from official statistics of the U.S. Department of Commerce.

Note.--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 11.--Wire of carbon steel: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
Total	Exports	To Eastern States	Within Western States					
Quantity								
209	3	15	191	7	87	285	2	31
254	5	12	237	10	68	315	3	22
291	5	15	271	16	102	389	4	26
200	6	18	176	12	50	238	5	21
255	11	26	218	9	59	286	3	21
271	13	30	228	7	69	304	2	23
Value								
50,914	656	3,334	46,924	2,981	17,843	67,748	4	26
65,019	1,337	3,081	60,601	4,773	17,197	82,571	6	21
118,753	2,000	6,339	110,414	8,704	45,048	164,166	5	27
87,882	2,459	7,014	78,409	8,849	23,317	110,575	8	21
104,589	3,542	10,006	91,041	8,341	24,599	123,981	7	20
115,081	4,390	13,245	97,446	7,328	30,772	135,546	5	23

:e: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, :d from official statistics of the U.S. Department of Commerce.

.--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, gton, Oregon, California, and Arizona.

Table 12.--Angles, shapes and sections, rails, tie plates and joint bars, of carbon steel: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
Total	Exports	To Eastern States	Within Western States					
Quantity								
577	8	152	417	138	385	940	15	41
671	27	141	503	202	310	1,015	20	31
710	63	177	470	208	413	1,091	19	38
619	50	158	411	151	244	806	19	30
606	59	180	367	102	275	744	14	37
602	24	203	375	122	399	896	14	45
Value								
98,552	1,475	24,653	72,424	23,935	51,997	148,356	16	35
120,931	4,994	25,239	90,698	38,344	47,739	176,781	22	27
169,929	15,560	42,171	112,198	45,610	112,773	270,581	17	42
175,212	15,764	41,358	118,090	39,716	68,936	226,742	18	30
178,914	17,428	53,252	108,234	28,524	61,109	197,867	14	31
182,080	4,408	63,240	114,432	35,110	86,088	235,630	15	37

e: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, d from official statistics of the U.S. Department of Commerce.

--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, ton, Oregon, California, and Arizona.

Table 13.--Pipes and tubes of carbon steel: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
Total	Exports	To Eastern States	Within Western States					
Quantity								
596	26	192	378	280	532	1,190	24	45
784	37	253	494	319	543	1,356	24	40
827	83	247	497	346	729	1,572	22	46
765	139	207	419	311	436	1,166	27	37
555	42	176	337	208	502	1,047	20	48
658	30	211	417	299	596	1,312	23	45
Value								
152,489	8,202	48,067	96,220	69,001	83,298	248,519	28	34
217,080	11,864	65,358	139,858	87,830	102,365	330,053	27	31
334,098	41,217	91,815	201,066	128,393	233,872	563,331	23	42
402,824	98,227	101,791	202,806	148,512	188,009	539,327	28	35
265,734	23,315	78,499	163,920	105,679	139,229	408,828	26	34
345,540	26,423	110,940	208,177	166,851	179,415	554,443	30	32

e: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, d from official statistics of the U.S. Department of Commerce.

--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, ton, Oregon, California, and Arizona.

Table 14.--Nails, barbed wire, prestressed strand: Producers' shipments, exports, imports, and apparent consumption, 1972-77

(Quantity in thousands of short tons; value in thousands of dollars)

Western producers' shipments				Eastern producers' shipments to Western States	Imports into the Western States	Apparent consumption	Share (percent) of apparent consumption accounted for by eastern producers' shipments	Share (percent) of apparent consumption accounted for by imports
Total	Exports	To Eastern States	Within Western States					
Quantity								
88	2	22	64	11	83	158	7	53
87	5	20	62	9	82	153	6	54
81	7	19	55	8	95	158	5	60
68	7	21	40	4	67	111	4	60
70	6	19	45	5	78	128	4	61
75	6	19	50	6	114	170	4	67
Value								
26,563	1,745	6,189	18,629	2,914	19,138	40,681	7	47
29,805	4,291	6,451	19,063	2,967	21,234	43,264	7	49
40,351	6,375	9,164	24,812	4,025	42,548	71,385	6	60
38,517	6,963	11,922	19,632	2,616	34,405	56,653	5	61
39,326	7,160	9,718	22,448	2,249	28,825	53,522	4	54
42,392	6,512	10,136	25,744	2,953	44,424	73,121	4	61

e: Shipments compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; exports and imports, d from official statistics of the U.S. Department of Commerce.

--The import and export statistics in this table are restricted to importations and exportations through customs ports located in Montana, ton, Oregon, California, and Arizona.

Table 15.--Carbon steel mill products: U.S. exports through Western ports, by principal markets, 1972-77

Market	1972	1973	1974	1975	1976	1977
	Quantity (short tons)					
Canada	15,621	65,426	133,587	92,778	46,670	48,791
Mexico	35,091	45,267	51,775	54,136	64,142	41,775
Philippines	1,000	6,519	3,684	1,000	2,481	20,083
Italy	3,336	8,673	13,371	2,004	2,477	10,214
Taiwan	4,404	14,140	63,458	26,860	45,609	6,219
Indonesia	1,090	16,240	6,075	17,638	13,966	3,280
Korea	1/	1,255	11,520	1/	1/	2,268
Brazil	3,384	20,083	35,095	14,737	1,141	1,504
Iran	12,245	1/	1/	45,250	1,278	1,000
Singapore	1,764	32,375	29,824	4,301	1,000	1,000
Argentina	1/	141,294	11,285	28,378	1/	1/
Venezuela	1/	22,581	7,071	24,837	2,263	1/
South Africa	1/	13,618	1/	1/	1/	1/
Pakistan	14,475	18,713	2,240	1,000	1,000	1/
South Vietnam	22,660	14,177	5,033	1,000	0	0
Spain	0	0	1/	27,540	1/	0
Oman	0	0	18,572	29,027	0	0
All other	18,982	57,402	58,388	26,192	27,320	21,192
Total	134,052	477,763	450,978	396,678	209,347	157,326
	Value (1,000 dollars)					
Canada	4,909	15,371	40,702	39,042	16,405	19,575
Mexico	6,720	10,405	15,267	17,621	23,099	15,439
Philippines	2/	1,416	1,697	2/	1,000	4,422
Italy	461	1,604	3,068	1,000	703	2,955
Taiwan	1,000	2,610	13,785	8,573	14,853	2,181
Indonesia	2/	3,416	1,865	10,016	3,785	1,000
Korea	2/	2/	1,787	1,000	1,000	1,000
Brazil	2/	4,749	8,959	6,306	2/	2/
Iran	2,095	2/	2/	29,956	1,000	2/
Singapore	2/	6,444	9,674	1,687	2/	1,000
Argentina	2/	15,580	1,626	5,646	2/	2/
Venezuela	2/	4,897	3,700	16,125	1,000	2/
South Africa	2/	2,182	2/	2/	2/	2/
Pakistan	2,174	2,731	2/	2/	2/	2/
South Vietnam	4,323	2,447	1,325	2/	-	-
Spain	-	-	2/	4,247	2/	-
Oman	-	-	8,818	24,622	-	-
All other	6,231	12,211	22,690	14,997	9,030	15,490
Total	27,913	86,063	134,963	180,838	71,875	63,062
	Unit value (per ton)					
Canada	$314	$235	$305	$421	$352	$401
Mexico	192	230	295	325	360	370
Philippines	244	217	461	519	314	220
Italy	138	185	229	379	284	289
Taiwan	169	185	217	319	326	351
Indonesia	253	210	307	568	271	271
Korea	385	249	155	2,140	1,179	396
Brazil	183	236	255	428	339	241
Iran	171	136	490	662	530	509
Singapore	195	199	324	392	329	779
Argentina	160	110	144	199	519	382
Venezuela	2,580	215	523	649	292	1,374
South Africa	1,806	160	238	753	995	778
Pakistan	150	146	275	176	141	260
South Vietnam	191	173	263	443	-	-
Spain	-	-	445	154	742	-
Oman	-	-	475	848	-	-
All other	328	214	389	573	330	731
Average	208	180	299	456	343	401

1/ Less than 500 tons.
2/ Less than $500.

Table 16.--Steel mill products: Percentage distribution of exports from the United States and the Western States, by products, 1972-77

	1972		1973		1974	
	Total U.S. exports	Total Western States exports	Total U.S. exports	Total Western States exports	Total U.S. exports	Total Western States exports
Ingots and semifinished products	15	8	14	27	14	10
Tin mill products	17	44	19	14	14	13
Plates	3	1	8	8	8	8
Sheets and strip	31	7	23	18	26	8
Bars:						
Deformed re-bars	1	3	4	11	6	21
Other bars	4	3	4	4	5	5
Bar-size shapes	1	3	1/	1/	1	1/
Wire rods	4	4	2	3	1	1
Wire	1	2	1	1	1	1
Angles, shapes, and sections	4	4	7	4	6	9
Rails, joint bars, and tie plates	4	2	3	2	2	5
Pipes and tubes	15	19	15	8	16	19
Total	100	100	100	100	100	100

	1975		1976		1977	
	Total U.S. exports	Total Western States exports	Total U.S. exports	Total Western States exports	Total U.S. exports	Total Western States exports
Ingots and semifinished products	12	13	11	3	14	6
Tin mill products	12	11	22	24	25	32
Plates	8	14	3	3	3	1
Sheets and strip	9	8	18	5	12	3
Bars:						
Deformed re-bars	3	2	4	7	4	8
Other bars	4	2	4	4	5	5
Bar-size shapes	1	1/	1	1	1/	1
Wire rods	2	1	4	1	4	2
Wire	1	2	2	5	2	8
Angles, shapes, and sections	6	2	4	3	5	4
Rails, joint bars, and tie plates	7	11	7	24	4	11
Pipes and tubes	35	34	20	20	22	19
Total	100	100	100	100	100	100

1/ Less than 0.5 percent.

Table 17.--Carbon steel mill products: U.S. exports from Western States, by ports, 1972-77

Port	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Seattle, Wash	14	64	133	77	34	46
San Diego, Calif	34	44	46	51	58	40
San Francisco, Calif	43	84	107	147	74	37
Los Angeles, Calif	36	271	100	76	16	14
Great Falls, Mont	5	8	16	23	14	14
Portland, Oreg	1/	4	44	20	7	5
Nogales, Ariz	1	1	4	3	6	1
Total	134	478	451	397	209	157
	Percent of total					
Seattle, Wash	10	13	29	20	16	29
San Diego, Calif	25	9	10	13	28	26
San Francisco, Calif	32	18	24	36	35	24
Los Angeles, Calif	27	57	22	19	8	9
Great Falls, Mont	4	2	4	6	7	9
Portland, Oreg	2/	1	10	5	3	3
Nogales, Ariz	1	2/	1	1	3	1
Total	100	100	100	100	100	100

1/ Less than 500 tons.
2/ Less than 0.5 percent.

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

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

Table 18.--Carbon steel mill products: Inventories held by producers in the Western States, by products, Dec. 31 of 1971-77

(In short tons)

Product	As of Dec. 31--						
	1971	1972	1973	1974	1975	1976	1977
Ingots and semifinished products	308,819	341,829	322,610	319,070	279,920	280,485	195,289
Tin mill products; plates; and sheets and strip	519,951	588,786	296,727	222,713	338,413	374,483	365,441
Bars:							
Deformed reinforcing bars	140,114	129,189	84,638	118,159	120,160	127,917	56,438
Bar-size shapes	67,204	72,743	39,473	39,566	61,793	68,707	24,504
Other bars	1/	7,919	1/	2,857	7,818	7,637	1/
Wire rods	1/	19,190	1/	21,452	16,447	13,870	1/
Wire	12,744	19,320	12,947	22,250	21,473	23,036	20,749
Angles, shapes, and sections; rails; and joint bars and tie plates	89,067	57,770	26,548	20,137	46,260	55,104	25,386
Pipes and tubes	128,199	142,591	54,979	50,040	57,217	63,669	84,476
Total	1,282,260	1,379,337	857,787	816,244	949,501	1,014,908	800,113
Carbon steel manufactured products:							
Nails, barbed wire, and prestressed strand	9,971	6,724	2,913	2,037	8,171	6,716	3,449

1/ Withheld to avoid the disclosure of individual company confidential data.

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

Table 19.--Carbon steel mill products: Inventories held by importers in the Western States, by products, Dec. 31 of 1971-77

(In short tons)

Product	As of Dec. 31--						
	1971	1972	1973	1974	1975	1976	1977
Ingots and semifinished products	0	0	0	0	0	0	0
Tin mill products; plates; and sheets and strip	18,038	37,078	26,226	111,722	85,452	80,758	98,746
Bars:							
Deformed reinforcing bars	7,655	8,428	2,174	13,193	4,103	2,916	2,203
Bar-size shapes	4,745	5,620	1,900	8,288	4,606	3,404	2,462
Other bars	1/	1/	1/	1/	1/	1/	1/
Wire rods	1/	1/	1/	1/	1/	1/	1/
Wire	8,198	2,428	1,066	3,170	16,330	5,874	4,623
Angles, shapes, and sections; rails; and joint bars and tie plates	9,827	24,064	18,077	28,067	82,620	69,015	67,310
Pipes and tubes	9,901	17,940	19,972	43,695	59,746	59,447	52,488
Total	61,017	100,318	71,165	220,061	277,112	238,452	243,024
Carbon steel manufactured products:							
Nails, barbed wire, and prestressed strand	965	734	3,010	4,081	5,626	4,774	5,091

1/ Withheld to avoid the disclosure of individual company confidential data.

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

Table 20.--Average number of persons employed in U.S. and western establishments in which carbon steel mill products 1/ were produced, all employees and production and related workers, 1972-77

Year	All employees		Production and related workers	
	Total	Western States	Total	Western States
1972	478,400	22,600	364,100	18,800
1973	508,600	25,200	392,900	21,000
1974	512,400	26,000	393,200	21,400
1975	457,200	23,900	339,900	19,500
1976	454,100	23,200	339,000	18,900
1977	452,400	23,200	337,400	19,000

1/ Does not include nails, barbed wire, and prestressed strand.

Source: Totals compiled from American Iron and Steel Institute, Annual Statistical Report, 1977; data for Western States compiled from responses to questionnaires of the U.S. International Trade Commission.

Table 21.--Man-hours expended by production and related workers in establishments located in the Western States in which carbon steel mill products were produced, 1972-77

(In thousands of man-hours)

Item	1972	1973	1974	1975	1976	1977
Production and related workers employed on--						
Carbon steel mill products 1/	37,595	42,415	43,633	38,998	38,370	38,813
Ingots and semi-finished products	9,649	11,763	11,897	10,762	10,447	9,693
Plates, sheets, and strip (including tin mill products)	13,722	13,826	14,145	13,904	14,485	14,329
Deformed reinforcing bars	3,449	3,883	4,307	3,444	3,251	3,522
Bar-size shapes	954	1,361	1,451	986	949	938
Other bars	423	797	686	260	299	341
Wire rods	1,381	1,695	1,377	1,526	1,812	1,320
Wire	2,214	2,379	2,443	2,129	2,170	2,328
Angles, shapes, sections, rails, joint bars, and tie plates	2,772	3,597	4,344	3,461	2,692	3,067
Pipes and tubes	2,981	3,164	2,983	2,526	2,265	3,265

1/ The term "carbon steel mill products" includes all the follwing products.

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

Table 22.--Profit-and-loss experience of U.S. carbon steel producers in the Western States on overall establishment operations, 1972-1977

Item and year	Net sales	Cost of goods sold	Gross profit or (loss)	General, selling, and administrative expenses	Net operating profit or (loss)	Other costs	Net profit or (loss)	Ratio of net profit or (loss) to net sales
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	Percent
1972	1,023,683	901,042	122,641	79,211	43,430	(3,676)	39,754	3.9
1973	1,401,072	1,227,757	173,315	84,011	89,304	(2,359)	86,945	6.2
1974	1,851,194	1,552,613	298,581	91,482	207,099	(1,774)	205,325	11.1
1975	1,637,042	1,456,504	180,538	103,680	76,858	(5,804)	71,054	4.3
1976	1,594,706	1,554,804	39,902	103,978	(64,076)	(6,161)	(70,237)	(4.4)
1977	1,726,606	1,678,111	48,495	119,938	(71,443)	(9,638)	(81,081)	(4.7)

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

Table 23.--Profit-and-loss experience of western steel producers, by selected steel mill products, 1972-77

Year	Reinforcing bars		Other bars and bar-size shapes		Wire		Pipes and tubes		Total, all products	
	Net profit or (loss)	Ratio of net profit or (loss) to sales	Net profit or (loss)	Ratio of net profit or (loss) to sales	Net profit	Ratio of net profit to sales	Net profit	Ratio of net profit to sales	Net profit or (loss)	Ratio of net profit or (loss) to sales
	1,000 dollars	Percent	1,000 dollars	Percent	1,000 dollars	Percent	1,000 dollars	Percent	1,000 Dollars	Percent
1972--	3,771	4.4	$2,980	6.1	$4,425	11.3	$8,891	7.7	40	3.9
1973--	5,379	4.8	3,423	4.6	2,987	5.9	20,833	11.7	87	6.2
1974--	42,300	22.8	10,693	9.8	17,033	17.8	63,811	21.8	205	11.1
1975--	10,243	7.7	225	.3	8,378	11.3	76,354	24.6	71	4.3
1976--	(4,300)	(3.9)	(6,001)	(8.9)	5,666	6.8	17,522	8.2	(70)	(4.4)
1977--	(5,431)	(4.3)	(3,742)	(5.4)	4,090	4.5	25,591	11.2	(81)	(4.7)

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

Table 24.--Steel mill products: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	2,196	1,927	2,550	1,709	2,163	2,257
EEC	457	360	714	254	199	393
Korea	221	168	655	133	230	222
Canada	55	60	95	62	46	63
South Africa	12	9	1	2	2	65
Australia	104	56	25	33	23	60
Taiwan	69	54	72	16	24	33
All others	64	70	89	20	38	31
Total	3,178	2,704	4,201	2,229	2,725	3,124
	Value (1,000 of dollars)					
Japan	334,129	338,949	722,992	544,743	543,302	618,874
EEC	60,644	55,933	217,836	81,299	45,362	88,337
Korea	27,101	25,912	131,269	36,666	50,131	54,116
Canada	9,257	12,417	31,802	27,969	16,047	22,999
South Africa	1,310	978	192	636	395	12,783
Australia	16,369	10,445	7,871	12,508	6,868	16,336
Taiwan	8,709	9,121	25,724	5,103	5,915	8,316
All others	9,028	12,446	27,074	7,024	10,476	8,265
Total	466,547	466,201	1,164,760	715,948	678,496	830,026
	Unit price (per ton) 1/					
Japan	$152	$176	$283	$319	$251	$274
EEC	133	155	305	320	227	225
Korea	123	154	200	275	218	243
Canada	170	208	335	448	348	365
South Africa	107	104	330	396	257	197
Australia	157	186	313	374	299	272
Taiwan	126	168	360	316	244	254
All others	141	178	304	351	276	267
Average	147	172	277	321	249	266

1/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs' ports located in Montana, Washington, Oregon, California, and Arizona.

Table 25.--Carbon steel mill products: Imports into the Western States and total U.S. imports, by country or group, January-September 1977-78

(Quantity in short tons; value in thousands of dollars; unit value per short ton)

Item	West coast imports			Total U.S. imports		
	January-September--		Percentage change, Jan.-Sept. 1978 from Jan.-Sept. 1977	January-September--		Percentage change, Jan.-Sept. 1978 from Jan.-Sept. 1977
	1977	1978		1977	1978	
	Quantity					
Japan	1,762,359	1,702,536	-3	5,575,694	4,680,964	-16
EEC	234,741	705,971	201	4,181,593	5,253,318	26
Korea	164,233	353,591	115	502,161	727,939	45
South Africa	20,733	137,169	552	208,727	545,725	161
Taiwan	20,909	87,989	321	45,805	202,212	341
Australia	43,374	76,143	76	49,823	84,399	69
Canada	44,045	52,186	18	1,296,578	1,584,729	22
All other	19,973	111,722	459	752,031	2,365,657	215
Total	2,310,367	3,227,307	40	12,612,412	14,899,218	18
	Value					
Japan	476,237	546,782	15	1,552,447	1,589,593	2
EEC	53,385	163,131	206	1,020,287	1,426,579	40
Korea	39,964	94,620	137	110,455	197,100	78
South Africa	3,969	27,448	592	42,166	122,006	189
Taiwan	5,396	21,279	294	11,949	48,600	307
Australia	11,720	24,364	108	13,360	26,660	100
Canada	16,081	20,567	22	352,208	483,541	37
All other	5,183	29,418	468	175,341	443,694	153
Total	611,935	927,609	52	3,278,213	4,337,773	32
	Unit value					
Japan	$270.23	$321.16	19	$278.43	$339.59	22
EEC	227.42	231.07	2	243.99	271.56	11
Korea	243.34	267.60	10	219.96	270.76	23
South Africa	191.43	200.10	5	202.02	223.57	11
Taiwan	258.08	241.84	-6	260.87	240.34	-8
Australia	270.21	319.98	18	268.16	315.88	18
Canada	365.10	394.10	8	271.64	305.13	12
All other	259.50	263.31	1	233.16	187.56	-20
Average	264.86	287.42	9	259.92	291.14	12

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

Table 26.--Carbon steel mill products: Imports into the Western States and total U.S. imports, by product groupings, January-September 1977-78

(Quantity in short tons; value in thousands of dollars; unit value per short ton)

Item	West coast imports			Total U.S. imports		
	January-September--		Percentage change, Jan.-Sept. 1978 from Jan.-Sept. 1977	January-September--		Percentage change, Jan.-Sept. 1978 from Jan.-Sept. 1977
	1977	1978		1977	1978	
	Quantity					
Ingots and semi-finished products	-	169	-	148,888	190,029	28
Tin mill products	414,826	587,298	42	1,778,903	2,140,008	20
Plates	204,239	339,758	66	1,355,859	2,160,062	62
Sheets and strip	609,157	969,451	59	4,030,037	4,318,516	7
Deformed reinforcing bars	26,997	32,280	20	68,571	96,015	40
Bar-size shapes	53,483	63,094	18	192,558	185,588	-4
Bars	103,460	121,437	17	621,505	592,876	-5
Wire rod	111,571	176,755	58	899,660	975,011	8
Wire	52,396	42,098	-20	359,079	405,825	13
Angles, shapes, and sections	264,557	331,760	25	1,338,193	1,469,764	10
Rails	30,137	22,902	-24	100,425	153,071	52
Pipes and tubes	439,544	540,306	23	1,718,734	2,212,453	29
Total	2,310,367	3,227,307	40	12,612,412	14,899,218	18
Barbed wire	2,981	2,772	-7	19,925	21,683	9
Prestressed strand	13,496	18,438	37	72,304	89,225	23
Nails	70,358	79,744	13	200,816	252,346	26
	Value					
Ingots and semi-finished products	-	37	-	23,280	32,667	40
Tin mill products	139,027	222,647	60	592,162	788,698	33
Plates	45,116	77,543	72	290,903	495,394	70
Sheets and strip	147,642	246,505	67	951,306	1,124,422	18
Deformed reinforcing bars	4,193	5,845	39	10,910	17,386	59
Bar-size shapes	9,473	13,093	38	36,212	42,315	17
Bars	24,675	32,420	31	143,452	164,835	15
Wire rod	24,091	39,462	64	200,919	236,859	18
Wire	23,166	20,494	-12	167,469	197,110	18
Angles, shapes, and sections	55,691	80,884	45	281,788	368,067	31
Rails	8,275	6,863	-17	26,302	41,605	58
Pipes and tubes	130,585	181,815	39	553,508	828,416	50
Total	611,935	927,609	52	3,278,212	4,337,773	32
Barbed wire	986	1,035	5	7,233	7,961	10
Prestressed strand	5,687	8,675	53	28,217	39,977	42
Nails	27,445	33,021	20	78,734	101,202	29
	Unit value					
Ingots and semi-finished products	-	$221.43	-	$156.36	$171.90	10
Tin mill products	$335.14	379.10	13	332.88	368.55	11
Plates	220.90	228.23	3	214.55	229.34	7
Sheets and strip	242.37	254.27	5	236.05	260.37	10
Deformed reinforcing bars	155.32	181.08	17	159.10	181.07	14
Bar-size shapes	177.12	207.51	17	188.06	228.00	21
Bars	238.50	266.97	12	230.80	278.03	20
Wire rod	215.92	223.26	3	223.33	242.93	9
Wire	442.14	486.81	10	466.38	485.70	4
Angles, shapes, and sections	210.51	243.80	16	210.57	250.43	19
Rails	274.59	299.66	9	261.91	271.60	4
Pipes and tubes	297.09	336.51	13	322.04	374.43	16
Average	264.86	287.42	9	259.92	291.14	12
Barbed wire	330.92	373.23	13	363.01	367.13	1
Prestressed strand	421.41	470.47	12	390.25	448.45	15

Table 27.--Carbon steel mill products: Imports into Western States, by port, 1972-77

Port	1972		1973		1974	
	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent
Los Angeles, Calif.	1,875	59	1,576	58	2,449	58
San Francisco, Calif.	587	18	472	18	645	15
Portland, Oregon	438	14	362	13	661	16
Seattle, Wash.	252	8	255	10	391	10
Other	27	1	39	1	55	1
Total	3,179	100	2,704	100	4,201	100
	1975		1976		1977	
	1,000 tons	Percent	1,000 tons	Percent	1,000 tons	Percent
Los Angeles, Calif.	1,136	51	1,656	61	1,809	58
San Francisco, Calif.	505	23	449	16	521	17
Portland, Oregon	298	13	344	13	474	15
Seattle, Wash.	263	12	244	9	286	9
Other	27	1	32	1	34	1
Total	2,229	100	2,725	100	3,124	100

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

Table 28.--Ingots, blooms, billets, slabs, and sheet bars: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	0	0	0	0	2	0
EEC	1	1/	1/	1	0	0
Canada	1/	0	1/	0	0	0
Total	1	1/	1	1	2	-
	Value (1,000 dollars)					
Japan	-	-	-	-	184	-
EEC	197	35	148	442	-	-
Canada	10	-	25	-	-	-
Total	207	35	173	442	184	-
	Unit price (per ton) 2/					
Japan	-	-	-	-	$113	-
EEC	$132	$145	$352	$412	-	-
Canada	-	-	153	-	-	-
Average	138	145	295	412	113	-

1/ Less than 500 tons.
2/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 29.--Tin mill products: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	434	407	441	398	454	464
EEC	24	45	98	31	12	20
Korea	1/	6	0	0	1/	1/
Canada	1/	0	1	1/	1	1
South Africa	0	0	0	0	0	14
Australia	62	32	22	11	19	47
Taiwan	1/	3	2	0	1	1/
All others	18	25	18	10	16	11
Total	538	518	582	450	503	557
	Value (1,000 dollars)					
Japan	85,025	89,084	139,302	149,221	143,867	160,063
EEC	3,932	7,791	32,934	11,436	3,341	6,163
Korea	38	1,152	-	-	21	68
Canada	17	-	1	110	153	305
South Africa	-	-	-	-	-	3,534
Australia	9,989	6,539	6,488	3,841	5,812	13,271
Taiwan	60	768	510	-	205	39
All others	2,796	4,144	6,118	3,538	5,567	3,724
Total	101,857	109,478	185,353	168,146	158,966	187,167
	Unit price (per ton) 2/					
Japan	$196	$219	$316	$375	$317	$345
EEC	161	172	337	374	278	309
Korea	167	180	-	-	413	334
Canada	288	-	389	333	281	269
South Africa	-	-	-	-	-	260
Australia	161	201	302	352	308	283
Taiwan	178	223	316	-	318	347
All others	155	166	340	354	348	338
Average	189	211	318	373	316	366

1/ Less than 500 tons.
2/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 30.--Sheets and strip: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	660	577	668	395	577	588
EEC	62	35	128	45	40	130
Korea	133	70	291	32	92	85
Canada	3	2	3	1	1/	1/
South Africa	1/	1/	0	0	0	10
Australia	1/	0	1/	1/	1/	1
Taiwan	0	0	0	0	1	1/
All others	6	3	2	1	8	4
Total	864	687	1,092	474	718	818
	Value (1,000 dollars)					
Japan	89,617	87,927	159,151	94,411	128,688	149,847
EEC	7,565	5,324	35,645	10,277	8,362	27,633
Korea	17,136	9,412	47,541	8,189	18,772	18,647
Canada	467	480	731	413	119	157
South Africa	14	32	-	-	-	1,866
Australia	35	-	8	4	1	273
Taiwan	-	-	-	-	243	2
All others	735	612	909	351	1,794	1,101
Total	115,569	103,787	243,985	113,645	157,979	199,526
	Unit price (per ton) 2/					
Japan	$136	$152	$238	$239	$223	$255
EEC	122	153	279	228	210	213
Korea	128	134	164	252	204	220
Canada	168	298	274	329	281	336
South Africa	116	131	-	-	-	193
Australia	131	-	383	718	414	181
Taiwan	-	-	-	-	223	285
All others	122	204	454	351	224	275
Average	134	151	223	240	220	244

1/ Less than 500 tons.

2/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 31.--Plates: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	213	199	311	244	259	162
EEC	21	15	106	43	36	72
Korea	21	21	188	21	25	18
Canada	4	1	9	3	1	1
South Africa	2	2	0	1	0	16
Australia	1/	0	1/	1/	0	0
Taiwan	1/	0	0	1/	1/	1
All others	11	2	6	1	1	2
Total	272	240	620	313	322	272
	Value (1,000 dollars)					
Japan	29,213	30,968	88,076	66,386	55,961	38,112
EEC	2,714	2,037	35,934	10,529	4,848	14,875
Korea	2,554	2,793	25,403	4,493	4,728	3,463
Canada	613	201	2,771	950	508	373
South Africa	235	270	-	248	-	2,933
Australia	24	-	8	1	-	-
Taiwan	50	-	-	56	24	218
All others	1,452	337	2,168	281	90	367
Total	36,855	36,606	154,360	82,944	66,159	60,341
	Unit price (per ton) 2/					
Japan	$137	$156	$283	$271	$216	$235
EEC	130	138	339	246	135	207
Korea	123	134	135	215	189	197
Canada	165	203	313	313	275	260
South Africa	113	144	-	365	-	181
Australia	126	-	379	288	-	-
Taiwan	114	-	-	320	235	205
All others	132	168	361	281	90	184
Average	135	152	249	265	205	221

1/ Less than 500 tons.
2/ Based on actual quantities and values of imports.

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

Note.—The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 32.--Deformed concrete reinforcing bars: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	3	4	54	39	46	29
EEC	1	4	13	1/	1/	1/
Korea	45	5	1	11	17	2
Canada	1/	1/	1	0	0	1/
Australia	0	0	1/	0	0	0
Taiwan	19	1/	0	3	0	0
All others	1	3	8	0	0	0
Total	69	16	77	53	63	31
	Value (1,000 dollars)					
Japan	358	789	16,390	7,206	6,686	4,606
EEC	83	847	3,842	179	25	22
Korea	4,189	474	294	1,752	2,634	324
Canada	41	28	264	-	-	3
Australia	-	-	18	-	-	-
Taiwan	1,707	41	-	552	-	-
All others	37	503	1,937	-	-	-
Total	6,415	2,682	22,745	9,689	9,345	4,955
	Unit price (per ton) 2/					
Japan	$100	$202	$303	$187	$145	$158
EEC	133	242	286	361	312	517
Korea	94	97	287	161	151	164
Canada	103	106	213	-	-	313
Australia	-	-	292	-	-	-
Taiwan	89	94	-	206	-	-
All others	37	168	242	-	-	-
Average	93	173	295	184	147	159

1/ Less than 500 tons.

2/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 33.--Bar-size shapes: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	47	30	100	21	30	60
EEC	33	19	26	5	3	7
Korea	2	1/	9	3	4	4
Canada	4	2	2	3	1	1
Australia	1/	0	1/	1	1/	0
Taiwan	4	3	1	1/	1/	1/
All others	1	1	1	0	1	1
Total	91	55	139	33	39	73
	Value (1,000 dollars)					
Japan	5,337	3,991	30,634	6,652	5,564	10,315
EEC	4,082	2,719	7,991	2,077	937	1,552
Korea	235	21	2,872	821	878	1,051
Canada	537	253	372	560	259	292
Australia	33	-	2	164	15	-
Taiwan	413	300	263	6	44	58
All others	103	62	207	-	22	3
Total	10,740	7,346	42,341	10,280	7,719	13,271
	Unit price (per ton) 2/					
Japan	$114	$129	$304	$311	$186	$171
EEC	124	143	310	388	270	218
Korea	114	122	320	298	211	227
Canada	129	143	172	209	255	257
Australia	162	-	227	318	371	-
Taiwan	106	118	336	204	166	159
All others	103	62	207	-	22	3
Average	118	134	304	314	198	181

1/ Less than 500 tons.
2/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 34.--Bars: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	88	50	130	42	76	123
EEC	46	47	49	16	6	11
Korea	1	1	6	2	7	5
Canada	2	1/	1/	1/	1/	1/
South Africa	0	1/	1/	1/	1/	1/
Australia	1/	1/	1/	1/	0	0
Taiwan	1	1/	1/	1	1/	0
All others	6	3	12	2	2	5
Total	144	101	197	63	91	144
	Value (1,000 dollars)					
Japan	13,010	9,551	41,095	14,756	18,166	29,359
EEC	5,754	7,114	15,280	4,696	1,598	2,868
Korea	80	80	2,048	584	1,317	1,065
Canada	262	56	208	322	20	99
South Africa	-	4	37	14	27	6
Australia	27	41	14	4	-	-
Taiwan	143	2	23	218	26	-
All others	616	446	3,248	298	609	1,038
Total	19,892	17,294	61,953	20,892	21,763	34,435
	Unit price (per ton) 2/					
Japan	$147	$192	$317	$349	$240	$239
EEC	124	151	314	289	249	253
Korea	120	125	328	284	192	195
Canada	128	134	350	649	290	256
South Africa	-	197	306	333	278	291
Australia	224	218	271	336	-	-
Taiwan	101	160	451	315	198	-
All others	103	149	271	149	304	208
Average	138	172	315	333	238	239

1/ Less than 500 tons.
2/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 35.--Wire rod: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	122	113	120	96	101	97
EEC	68	54	106	11	43	48
Korea	0	0	1	1	2	1/
Canada	1/	1/	1/	0	1/	1/
South Africa	0	0	0	0	0	15
Australia	0	0	2	1	0	0
All others	6	1	20	4	5	3
Total	196	168	249	113	151	163
	Value (1,000 dollars)					
Japan	14,363	14,958	24,690	24,380	21,634	22,147
EEC	6,892	6,529	30,466	3,637	8,577	8,896
Korea	-	-	359	81	316	2
Canada	2	2/	115	-	2	30
South Africa	-	-	-	-	-	2,439
Australia	-	-	573	481	-	-
All others	619	186	5,954	1,069	915	542
Total	21,874	21,673	62,157	29,648	31,444	34,056
	Unit price (per ton) 3/					
Japan	$118	$132	$205	$253	$214	$228
EEC	101	122	286	330	201	187
Korea	-	-	291	134	142	255
Canada	73	430	400	-	727	229
South Africa	-	-	-	-	-	160
Australia	-	-	340	342	-	-
All others	103	186	298	267	183	181
Average	111	129	250	263	208	208

1/ Less than 500 tons.
2/ Less than $500.
3/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 36.--Wire: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	69	46	68	34	39	44
EEC	9	11	18	7	10	9
Korea	1/	1/	3	1	1	1
Canada	7	9	9	6	7	12
South Africa	0	1/	1/	1	1	2
Australia	0	1/	1	1/	0	0
Taiwan	0	0	1/	1/	0	0
All others	2	2	3	1	1	1
Total	87	68	102	50	59	69
	Value (1,000 dollars)					
Japan	13,455	10,947	29,410	14,817	14,260	18,677
EEC	2,374	3,408	8,615	4,265	5,506	5,011
Korea	8	37	1,330	212	392	539
Canada	1,725	2,501	4,156	3,373	3,751	5,728
South Africa	-	1	63	251	363	593
Australia	-	2	245	15	-	-
Taiwan	-	-	9	82	-	-
All others	281	301	1,220	302	327	224
Total	17,843	17,197	45,048	23,317	24,599	30,772
	Unit price (per ton) 2/					
Japan	$195	$236	$430	$436	$370	$419
EEC	252	308	472	595	538	552
Korea	221	261	394	362	406	360
Canada	245	266	482	499	510	495
South Africa	-	167	321	389	254	295
Australia	-	436	390	278	-	-
Taiwan	-	-	594	523	-	-
All others	140	150	407	302	327	224
Average	206	254	442	469	417	446

1/ Less than 500 tons.
2/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 37.--Angles, shapes, and sections: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	176	141	229	144	215	256
EEC	168	120	143	77	45	92
Korea	1/	0	14	10	1	1
Canada	12	5	4	3	1	1
South Africa	10	7	1/	0	0	8
Australia	0	0	0	1	1/	1
Taiwan	8	12	2	3	1/	1/
All others	6	20	12	1	3	4
Total	380	305	404	239	265	363
	Value (1,000 dollars)					
Japan	24,391	23,338	63,856	39,620	48,377	54,771
EEC	22,626	17,329	36,894	21,357	8,878	18,496
Korea	22	-	4,685	3,013	129	207
Canada	1,677	747	1,395	1,025	301	350
South Africa	1,061	671	1	-	-	1,406
Australia	-	-	-	417	50	413
Taiwan	805	1,365	545	853	7	37
All others	891	3,727	3,546	645	791	529
Total	51,473	47,177	110,922	66,930	58,533	76,209
	Unit price (per ton) 2/					
Japan	$139	$165	$279	$276	$225	$214
EEC	135	144	258	276	199	201
Korea	105	-	325	299	195	228
Canada	138	159	356	392	309	372
South Africa	106	93	78	-	-	174
Australia	-	-	-	307	300	306
Taiwan	107	113	350	332	166	187
All others	148	186	296	645	264	132
Total	135	154	275	280	221	210

1/ Less than 500 tons.
2/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 38.--Rails, joint bars, and tie plates: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	1	1/	0	1	9	29
EEC	2	3	5	3	1/	1
Canada	1/	1/	3	1/	1/	5
All others	0	1	0	0	0	0
Total 2/	4	4	9	5	10	36
	Value (1,000 dollars)					
Japan	155	8	-	383	2,383	7,749
EEC	362	430	1,557	1,542	179	472
Canada	5	13	293	42	9	1,650
All others	-	111	-	-	-	-
Total 2/	524	562	1,851	2,006	2,576	9,879
	Unit price (per ton) 3/					
Japan	$133	$140	-	$305	$269	$269
EEC	140	163	$274	436	294	285
Canada	99	91	96	121	193	315
All others	-	111	-	-	-	-
Average	138	161	212	379	270	276

1/ Less than 500 tons.
2/ Because of rounding figures may not add to the total shown.
3/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 39.--Pipes and tubes: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (1,000 short tons)					
Japan	383	357	428	294	356	403
EEC	20	8	21	13	4	3
Korea	19	65	141	53	80	106
Canada	22	40	62	45	34	41
South Africa	0	0	1/	1/	1/	1/
Australia	41	23	1	19	4	10
Taiwan	36	35	68	10	22	31
All others	11	15	8	2	2	2
Total	532	543	729	436	502	596
	Value (1,000 dollars)					
Japan	59,204	67,388	130,388	126,911	97,533	123,229
EEC	4,063	2,372	8,531	10,860	3,110	2,349
Korea	2,840	11,942	46,736	17,522	20,945	28,750
Canada	3,900	8,138	21,258	21,174	10,924	14,013
South Africa	-	-	90	122	5	6
Australia	6,263	3,863	517	7,582	990	2,337
Taiwan	5,531	6,644	24,375	3,335	5,365	7,962
All others	1,497	2,018	1,977	503	357	769
Total	83,298	102,365	233,872	188,009	139,229	179,415
	Unit price (per ton) 2/					
Japan	$155	$189	$305	$432	$274	$306
EEC	205	289	399	819	867	832
Korea	150	184	331	331	260	272
Canada	177	201	338	482	322	345
South Africa	-	-	365	515	418	502
Australia	151	165	428	396	256	233
Taiwan	153	186	361	338	244	257
All others	136	134	247	252	178	384
Average	157	189	321	431	278	301

1/ Less than 500 tons.
2/ Based on actual quantities and values of imports.

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

Note.—The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 40.--Barbed wire: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (short tons)					
Japan	5,183	4,912	4,222	2,461	3,201	2,459
Korea	0	0	815	429	910	627
EEC	1,997	1,808	1,978	671	280	323
South Africa	0	0	0	0	114	263
All others	239	860	3,099	254	118	600
Total	7,419	7,580	10,114	3,815	4,623	4,272
	Value (1,000 dollars)					
Japan	952	1,060	1,887	1,095	998	798
Korea	0	0	434	147	276	197
EEC	521	488	976	428	154	152
South Africa	0	0	0	0	30	75
All others	43	166	1,451	112	36	169
Total	1,516	1,714	4,748	1,782	1,494	1,391
	Unit price (per ton) 1/					
Japan	184	216	447	445	312	324
EEC	261	270	493	638	550	470
Korea	0	0	532	343	303	314
South Africa	0	0	0	0	263	285
All others	180	186	468	441	305	282
Average	204	226	469	467	323	326

1/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 41.--Prestressed strand: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (short tons)					
Japan	28,927	29,662	33,311	25,026	16,638	20,409
EEC	38	10	303	98	26	34
Australia	0	0	578	1,411	0	0
All others	0	0	225	250	834	582
Total	28,965	29,672	34,417	26,785	17,498	21,025
	Value (1,000 dollars)					
Japan	7,443	8,300	14,528	16,212	7,226	8,405
EEC	9	2	132	54	24	16
Australia	0	0	422	983	0	0
All others	0	0	105	120	254	195
Total	7,452	8,302	15,187	17,369	7,504	8,616
	Unit price (per ton) 1/					
Japan	257	280	436	648	434	412
EEC	237	200	436	551	923	471
Australia	-	-	730	697	-	-
All others	-	-	467	480	305	335
Average	257	280	441	648	429	410

1/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 42.--Nails: Imports into the Western States, by sources, 1972-77

Source	1972	1973	1974	1975	1976	1977
	Quantity (short tons)					
Japan	35,857	32,774	32,967	24,194	33,130	42,745
Korea	0	137	1,637	3,465	14,032	37,261
Canada	7,635	8,558	10,600	7,500	6,998	7,940
EEC	3,397	1,312	2,878	67	342	802
All others	28	857	1,516	776	33	22
Total	46,917	43,638	49,598	36,002	54,535	88,777
	Value (1,000 dollars)					
Japan	7,574	8,348	14,721	9,656	11,452	16,415
Korea	0	27	794	1,555	4,671	13,356
Canada	1,895	2,292	5,085	3,797	3,528	4,187
EEC	686	344	1,333	36	160	405
All others	5	207	561	212	15	17
Total	10,160	11,218	22,494	15,256	19,826	34,382
	Unit price (per ton) 1/					
Japan	211	255	446	399	346	384
EEC	202	262	463	537	468	505
Korea	0	197	485	449	333	358
Canada	248	268	480	506	504	527
All others	179	242	370	273	455	773
Average	217	257	454	424	364	387

1/ Based on actual quantities and values of imports.

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

Note.--The import statistics in this table are restricted to importations through U.S. Customs ports located in Montana, Washington, Oregon, California, and Arizona.

Table 43.--Imports of the four largest Japanese importers of each category within the Western States of carbon steel mill products and their shares of Japanese imports into the Western States, of total imports into the Western States, and of apparent consumption within the Western States; imports and apparent consumption in the Western States, 1977

Item	Japanese importers					Imports and apparent consumption		
	Total of reporting firms	Imports of the 4 largest	Share of Japanese imports	Share of total imports	Share of apparent consumption	Japanese imports	Total imports	Apparent consumption
		Short tons	Percent	Percent	Percent	Short tons	Short tons	Short tons
sic steel mill products 1/	15	1,357,327	59	43	16	2,257,000	3,124,000	8,449,000
igots and semifinished products	2/ 1	1,503	3/ -	-	-	-	-	44,000
n mill products, sheets, and strip	15	612,405	58	45	16	1,052,000	1,375,000	4,313,000
lates	15	97,423	60	36		162,000	272,000	
formed reinforcing bars	10	13,923	3/ -	-	-	29,000	31,000	739,000
ir-size shapes	10	18,966	32	26	12	60,000	73,000	159,000
her bars	12	78,347	64	54	24	123,000	144,000	321,000
re rod	10	81,379	84	50	23	97,000	163,000	358,000
re	11	51,650	3/ -	-	-	44,000	69,000	304,000
igles, shapes, and sections	13	213,577	83	56	27	256,000	363,000	896,000
ils	2/ 3	3,206	100	95		29,000	36,000	
int bars and tie plates	2/ 3	24,408	100					
pes and tubes	13	272,591	68	46	21	403,000	596,000	1,312,000
ils	7	23,228	54	26		43,000	89,000	
rbed wire	2/ 1	2,000	100	50	24	2,000	4,000	170,000
estressed strand	7	15,179	76	72		20,000	21,000	

1/ The term "basic steel mill products" covers the products listed below, except nails, barbed wire, and prestressed strand.
2/ Where there were less than 4 reporting firms, the total number of reporting firms was used.
3/ Official statistics indicate fewer imports than reported by questionnaire respondents.

Note.--Imports of the 4 largest importers were compiled from data submitted in response to questionnaires. The total of this import data uals 93 percent of official import statistics for total steel mill products.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; import data used to calculate parent consumption was compiled from official statistics of the Department of Commerce.

Table 44--Japanese trading companies and carbon steel mill prouducts imported by those companies into the Western States, 1977

trading company	Ingots and semifinished products	Tin mill products sheets & strip	Plates	Deformed re-bar	Bar-size shapes	Other bar	Wire rod	Wire	Angles, shapes and sections	Pipes & tubes	Rails Joint-bars and tie plates	Nails	Barbed wire	Pre-stressed strand	Total number of products
----------		X	X				X	X	X	X					
----------		X	X	X	X	X		X	X	X		X			7
----------			X		X		X	X						X	9
----------		X	X	X		X			X	X					4
----------		X	X	X	X	X	X		X	X				X	7
----------		X	X	X	X	X	X	X	X	X		X			8
----------	X	X	X			X	X	X	X	X		X		X	11
----------		X	X	X	X	X	X	X	X	X	X	X		X	10
----------		X	X	X	X	X			X	X					12
----------		X	X	X		X		X	X	X			X	X	7
----------		X	X	X	X	X	X	X	X	X		X			10
----------		X	X	X		X		X	X	X		X		X	9
----------			X			X		X	X	X					9
----------		X	X	X	X	X	X	X	X	X		X		X	5
----------		X	X		X	X			X	X	X	X			11
umber of pro-									X	X	X				7
s----------	1	13	15	10	9	13	8	11	14	14	3	7	1	7	

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

Table 45--Carbon steel: Mill sourcing patterns of Japanese trading companies exporting to the Western States market, by product category, 1976, 1977

Product category	Number of supplying Japanese mills		Number of Japanese trading companies--										
			Exporting to the Western States market		Dependent on same primary mill source		Using a single primary mill source		Using balanced sourcing from 2 or more mills		Using an exclusive primary or secondary source		Changing primary sources
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976 to 1977
Ingots & semi-finished products	-	1	-	1	-	1	-	1	-	0	-	1	0
Tin mill products	6	8	8	8	5	5	7	7	1	1	1	3	0
Plates	6	6	15	13	6	6	12	11	2	2	1	1	7
Sheets & strip	12	12	16	15	7	6	11	11	5	4	5	4	3
Bars:													
Deformed rebars	11	9	9	9	2	2	8	9	1	0	8	5	5
Bar size shapes	12	9	8	8	2	2	6	8	2	0	7	4	3
Other bars	13	12	12	11	3	2	11	9	1	2	5	4	4
Wire rods	6	6	9	9	4	4	9	9	0	0	1	1	1
Wire	16	17	10	10	3	2	8	7	2	3	9	12	3
Angles, shapes, & sections	11	13	16	14	4	3	13	14	3	0	5	5	6
Rails	4	5	3	3	1	1	2	2	1	1	3	4	0
Joint bars & tie plates	1	4	1	3	1	1	1	3	0	0	1	4	0
Pipes and tubes	16	19	15	14	3	4	12	14	3	0	5	10	5

Source: Compiled from Appendix Tables D-1 through D-12.

Table 46.--Japanese wire and wire products manufacturers located in Korea's Masan Free Trade Zone 1/

Manufacturer	Products	Capacity	Total investment	Foreign cash	Capital material and equipment	Japanese investment ratio	Employment	Rod supplier
		Metric tons per month	Dollars	Dollars	Dollars	Percent		
Korea Sugimoto Steel Wire Drawing Co	Stitching wire	1,500	$2,650,000	$1,017,500	$1,633,500	100	98	Kobe Steel Corp.
Kankoku Murata Nail Co	Wire and nails	1,500	1,900,000	595,900	1,304,100	100	109	Kobe Steel Corp.
Kankoku Nitto Co	Wire and nails	1,000	920,000	288,500	631,500	100	55	Godo Steel Ltd.
Masan Murakomi Steel Ind. Co	Wire and nails	1,000	1,400,000	749,800	652,200	100	150	Nippon Steel Corp.
Korea Nihon Seisen Wire Mfg. Co	Wire and nails	300	440,000	159,100	280,900	100	40	Nippon Steel Corp.
Korea Nittei Co	Wire and nails	1,500	2,610,000	1,305,600	1,304,400	100	100	Sumitomo Metal

1/ As of July, 1978.

Source: Provided by U.S. producer and importer interests.

47.--Imports of the four largest importers, other than Japanese, of each category of carbon steel mill products and their shares of ts of other than Japanese origin into the Western States, of total imports into the Western States, and of apparent consumption within Western States; imports and apparent consumption in the Western States, 1977

Item	Other than Japanese importers					Imports and apparent consumption		
	Total of reporting firms	Imports of the 4 largest	Share of imports other than Japanese	Share of total imports	Share of apparent consumption	Imports other than Japanese	Total imports	Apparent consumption
		Short tons	Percent	Percent	Percent	Short tons	Short tons	Short tons
steel mill products 1/	24	460,809	53	15	5	867,000	3,124,000	8,449,000
and semifinished								
ucts	2/ 1	125	3/ -	-	-	-	-	44,000
ll products, sheets, and								
)	13	262,733	76	19	8	347,000	1,375,000	4,313,000
	9	102,133	93	38		110,000	272,000	
ed reinforcing bars	6	14,546	50	47	2	2,000	31,000	739,000
ze shapes	8	18,049	3/ -	-	-	13,000	73,000	159,000
bars	8	7,169	34	5	2	21,000	144,000	321,000
od	6	58,997	89	36	16	66,000	163,000	358,000
	10	10,159	41	15	3	25,000	69,000	304,000
, shapes, and sections	11	84,028	79	23	9	107,000	363,000	896,000
	2/ 2	76	100	-		7,000	36,000	
bars and tie plates	-	-	-	-				
and tubes	13	94,799	49	16	7	193,000	596,000	1,312,000
	7	33,128	72	37	20	46,000	89,000	170,000
wire	5	660	33	16		2,000	4,000	
essed strand	2/ 2	978	98	5		1,000	21,000	

he term "basic steel mill products" covers the products listed below, except nails, barbed wire, and prestressed strand.
here there were less than 4 reporting firms, the total number of reporting firms was used.
fficial statistics indicate fewer imports than reported by questionnaire respondents.

.--Imports of the 4 largest importers were compiled from data submitted in response to questionnaires. The total of this import data 93 percent of official import statistics for total steel mill products.

ce: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; import data used to calculate nt consumption was compiled from official statistics of the Department of Commerce.

Table 48.—Importers other than Japanese and carbon steel mill products imported by those companies into the Western States in 1977

Importers other than Japanese	Ingots and semifinished products	Tin mill products sheets & strip	Plates	Deformed re-bar	Bar-size shapes	Other bars	Wire rod	Wire	Angles, shapes and sections	Pipes and Tubes	Rails, joint-bars and tie plates	Nails	Barbed wire	Pre-stressed strand	Total number of products
----------		X	X	X	X		X	X	X	X		X	X		10
----------		X	X					X							3
----------	X	X	X			X	X		X	X		X			3
----------		X							X	X	X	X			7
----------								X				X			4
----------		X					X					X			2
----------		X	X		X		X		X						3
----------		X	X		X	X			X						5
----------						X									6
----------				X				X							1
----------		X	X	X					X	X		X	X		5
----------		X	X					X	X						4
----------										X		X			5
----------		X	X	X	X	X			X	X		X			1
----------		X		X	X				X	X	X	X			9
----------									X	X					5
----------		X	X	X	X	X	X	X	X	X		X	X		1
----------		X				X		X		X					11
----------								X	X	X			X	X	4
----------								X				X	X		5
----------						X									1
----------										X					1
----------						X									1
Number of importers than Japanese----------	1	13	8	13	6	8	6	9	12	16		10	5	1	

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

Table 49.--Carbon steel mill products: Imports into the Western States 1/ by product groupings, January-March 1977 and 1978, and, by months, April-September 1977 and 1978

(in short tons)

Product categories	Jan.-Mar. 1977	April 1977	May 1977	June 1977	July 1977	August 1977	September 1977
Ingots and semifinished products	-	-	-	-	-	-	-
Tin mill products	124,919	43,553	49,097	53,713	46,754	52,352	44,438
Plates	72,763	16,287	26,295	14,333	16,629	21,179	36,752
Sheets and strip	182,645	35,384	74,822	69,916	68,501	94,674	83,215
Deformed concrete reinforcing bar	4,093	8,149	4,185	3,116	4,473	1,096	1,885
Bar-size shapes	10,752	6,225	10,474	6,833	6,142	8,032	5,025
Bars	30,558	12,849	12,003	12,595	11,554	12,496	11,404
Wire rod	35,803	14,750	9,432	15,810	16,344	8,387	11,045
Wire	17,208	6,186	6,557	5,855	4,763	6,515	5,312
Angles, shapes, and sections	75,698	36,332	30,226	27,745	28,739	27,491	38,327
Rails, joint bars, and tie plates	13,103	2,330	6,059	3,197	150	4,774	524
Pipes and tubes	122,101	45,921	46,516	57,164	49,596	58,108	60,137
Total	689,643	227,967	275,668	270,277	253,644	295,105	298,063
Nails	21,230	6,257	8,311	8,506	7,579	10,227	8,249
Barbed wire	580	346	470	279	435	585	286
Prestressed strand	3,759	2,172	958	1,749	963	2,654	1,242

	Jan.-Mar. 1978	April 1978	May 1978	June 1978	July 1978	August 1978	September 1978
Ingots and semifinished products	125	-	32	-	-	-	-
Tin mill products	182,894	102,869	32,480	59,288	75,831	65,852	68,083
Plates	120,076	63,410	24,761	24,121	34,394	53,608	19,388
Sheets and strip	445,074	120,576	31,150	56,092	98,338	127,572	90,650
Deformed concrete reinforcing bar	17,683	10,376	3,987	214	20	-	-
Bar-size shapes	27,986	5,950	1,510	3,934	5,610	10,597	7,507
Bars	52,724	13,815	6,182	9,089	14,164	9,657	15,805
Wire rod	55,366	30,236	13,436	19,335	19,215	17,409	21,758
Wire	12,943	6,450	4,314	4,981	5,161	3,850	4,399
Angles, shapes, and sections	132,969	44,312	16,930	26,470	36,740	37,085	37,254
Rails, joint bars, and tie plates	5,321	423	3,951	3,962	3,971	2,261	3,012
Pipes and tubes	181,565	66,669	58,305	45,833	62,336	74,297	51,300
Total	1,234,727	465,086	197,049	253,319	355,780	402,189	319,156
Nails	22,582	11,796	7,632	12,363	8,066	10,131	7,174
Barbed wire	797	173	432	564	418	357	32
Prestressed strand	7,228	5,035	1,288	1,110	1,396	1,047	1,335

1/ The import statistics in this table are restricted to importations through U.S. Customs' ports located in Montana, Washington, Oregon, California, and Arizona.

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

Table 50.--Carbon steel mill products: Imports into the Western States 1/ by principal sources, January-March 1977 and 1978, and, by months, April-September 1977 and 1978

(in short tons)

Source	Jan.-Mar 1977	April 1977	May 1977	June 1977	July 1977	August 1977	September 1977
Japan	585,874	181,991	221,366	216,430	174,744	216,162	165,792
EEC	36,482	22,442	18,148	20,179	35,077	42,601	59,813
Canada	14,199	3,090	5,187	6,887	4,835	5,899	3,947
Korea	30,580	12,033	21,845	18,287	27,284	20,620	33,584
Taiwan	5,939	1,750	3,803	1,293	2,601	3,427	2,097
South Africa	312	615	569	80	88	97	18,973
All other	16,257	6,046	4,750	7,121	9,015	6,299	13,857
Total	689,643	227,967	275,668	270,277	253,644	295,105	298,063
	Jan.-Mar 1978	April 1978	May 1978	June 1978	July 1978	August 1978	September 1978
Japan	690,059	181,006	98,225	143,388	199,049	208,295	182,512
EEC	305,905	127,187	21,603	34,972	59,497	110,467	46,340
Canada	19,265	4,437	5,571	4,357	7,907	3,948	6,702
Korea	127,341	41,852	22,275	31,459	54,667	35,251	40,748
Taiwan	25,459	19,347	7,249	2,322	10,518	7,664	9,033
South Africa	27,929	53,741	13,838	14,990	307	16,821	9,543
All other	38,769	37,516	28,288	21,831	23,835	19,743	24,278
Total	1,234,727	465,086	197,049	253,319	355,780	402,189	319,156

1/ The import statistics in this table are restricted to importations through U.S. Customs' ports located in Montana, Washington, Oregon, California, and Arizona.

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

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

ıble 51.--Shipments of the 4 largest eastern producers of each category of carbon steel mill products and their shares of total shipments of eastern producers to the Western States, of shipments both of eastern producers and western producers to the Western States, and of apparent consumption in the Western States, and shipments and apparent consumption in the Western States, 1977

Item	Total of reporting firms	Shipments of the 4 largest producers	Share of eastern producers' shipments to the Western States	Share of both eastern and western shipments in the Western States	Share of apparent consumption in the Western States	Shipments of eastern producers to the Western States	Shipments of both eastern and western producers in the Western States	Apparent consumption in the Western States
		Short tons	Percent	Percent	Percent	Short tons	Short tons	Short tons
asic steel mill products 1/	21	566,897	65	11	7	872,000	5,325,000	8,449,000
ngots and semifinished products	4	3,756	100	8	8	4,000	4,400	44,000
in mill products, sheets, and strip	11	279,626	94	11	7	296,628	2,666,000	4,313,000
lates	9	26,074	94			27,632		
eformed reinforcing bars	5	64,896	2/ 99	9	9	65,000	708,000	739,000
ar-size shapes	12	30,287	89	35	19	34,000	86,000	159,000
ther bars	6	14,103	2/ 99	8	4	14,153	177,000	321,000
ire rod	4	2,165	100	1	1	2,165	195,000	358,000
ire	5	6,400	91	3	2	7,000	235,000	304,000
Angles, shapes, and sections	8	100,714	92	23	13	109,026	497,000	896,000
Rails, joint bars, and tie plates	4	12,900	100			12,900		
Pipes and tubes	10	221,724	74	31	17	299,000	716,000	1,312,000
Nails, barbed wire, and prestressed strand	4	6,000	100	11	4	6,000	56,000	170,000

1/ The term "basic steel mill products" covers the products listed below, except nails, barbed wire, and prestressed strand.
2/ Shipments of the four largest producers represent virtually 100 percent of total shipments; shipments of other producers are negligible.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; import data used to calculate apparent consumption was compiled from official statistics of the Department of Commerce.

Table 52--Eastern producers and carbon steel mill prouducts shipped by those firms to the Western States, 1977

Company	Ingots and semifinished products	Tin mill products, sheets, & strip	Plates	Deformed re-bar	Bar-size shapes	Other bar	Wire rod	Wire	Angles, shapes, and sections	Pipes & tubes	Rails Joint-bars and tie plates	Nails	Barbed wire	Strand	Total number of products
eel Corp	X	X	X	X	X	X	X	X	X	X		X	X	X	13
m Steel Corp		X	X	X	X	X	X	X	X	X	X			X	11
teel Rolling Mills,				X											1
, Inc					X										1
l Steel Co				X	X				X						3
, Inc	X				X										2
Corp		X								X					2
wn Steel Corp							X								1
rter Co., Inc					X				X		X				3
teel Co		X	X		X				X						4
Laughlin Steel Corp-		X	X		X	X		X	X	X	X				8
r Steel Co										X					1
Steel Corp		X	X												2
ar Steel Corp				X	X	X			X						4
rp					X										1
orp										X					1
Steel Corp	X	X	X		X			X		X		X			7
teel Corp	X	X	X												3
el Corp		X	X		X	X	X	X	X	X	X	X	X		11
-Pittsburg Steel		X								X					2
wn Sheet & Tube Co-		X	X			X				X					4
number of ucers	4	11	9	5	12	6	4	5	8	10	4	3	2	2	

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

Table 53.--Carbon steel mill products: Percentage distribution of U.S. producers' shipments in, and importers' shipments into, the Western States, by markets, 1972-77

Year and item	Service centers/ distributors	Agriculture	Transportation	Oil and gas	Construction	Mining	Other	Total
1972:								
U.S. producers' shipments	20	2	10	2	26	1/	40	100
U.S. importers' shipments	57	1/	1/	1/	8	0	34	100
All shipments	30	1	7	2	21	1/	38	100
1973:								
U.S. producers' shipments	22	1	11	2	23	1/	41	100
U.S. importers' shipments	56	1/	1/	1/	6	0	38	100
All shipments	30	1	8	2	19	1/	40	100
1974:								
U.S. producers' shipments	16	1	10	1	24	1/	47	100
U.S. importers' shipments	61	1/	1/	1/	5	1/	34	100
All shipments	29	1	7	1	18	1/	43	100
1975:								
U.S. producers' shipments	17	1	13	2	23	1/	44	100
U.S. importers' shipments	55	1/	1/	1	7	1	37	100
All shipments	28	1	9	2	19	1	42	100
1976:								
U.S. producers' shipments	20	2	11	2	21	1/	44	100
U.S. importers' shipments	61	1/	1	1/	5	1/	32	100
All shipments	33	2	7	1/	16	1/	41	100
1977:								
U.S. producers' shipments	21	2	10	3	26	1/	38	100
U.S. importers' shipments	58	1	1	1	4	1/	35	100
All shipments	34	1	7	3	18	1/	37	100

1/ Less than 0.05 percent.

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

Table 54.--Tin mill products, plates, sheets, and strip: Percentage distribution of U.S. producers' shipments in, and importers' shipments into, the Western States, by markets, 1972-77

Year and item	Service centers/ distributors	Agriculture	Transportation	Oil and gas	Construction	Mining	Other	Total
1972:								
U.S. producers' shipments	14	2	8	1	17	1/	58	100
U.S. importers' shipments	49	0	0	0	9	0	41	100
All shipments	25	1	6	1	15	1/	52	100
1973:								
U.S. producers' shipments	14	1	8	1	19	1/	56	100
U.S. importers' shipments	49	0	1/	0	6	0	45	100
All shipments	24	1	6	1	16	1/	53	100
1974:								
U.S. producers' shipments	11	1	9	1	15	1	63	100
U.S. importers' shipments	51	1/	0	0	6	1/	42	100
All shipments	23	1	6	1/	13	1/	57	100
1975:								
U.S. producers' shipments	10	1	12	1	15	1/	61	100
U.S. importers' shipments	46	0	1	0	5	2	46	100
All shipments	21	1	8	1	12	1	56	100
1976:								
U.S. producers' shipments	15	1	9	1/	15	1	59	100
U.S. importers' shipments	52	1/	1/	0	5	1/	42	100
All shipments	27	1	7	1/	12	1	54	100
1977:								
U.S. producers' shipments	17	1	9	1/	18	1	54	100
U.S. importers' shipments	46	1	1/	0	4	1/	48	100
All shipments	27	1	6	1/	13	1	53	100

1/ Less than 0.05 percent.

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

Table 55.--Bars and bar-size shapes: Percentage distribution of U.S. producers' shipments in, and importers' shipments into, the Western States, by markets, 1972-77

Year and item	Service centers/ distributors	Agriculture	Transportation	Oil and gas	Construction	Mining	Other	Total
1972:								
U.S. producers' shipments	16	1	3	1/	67	1/	11	100
U.S. importers' shipments	74	0	0	0	5	0	22	100
All shipments	25	1	3	1/	57	1/	13	100
1973:								
U.S. producers' shipments	18	2	3	1/	63	1/	14	100
U.S. importers' shipments	69	0	0	0	2	0	28	100
All shipments	23	1	3	1/	57	1/	16	100
1974:								
U.S. producers' shipments	16	2	3	1/	64	1/	14	100
U.S. importers' shipments	83	1/	0	0	1	0	16	100
All shipments	29	2	2	1/	53	1/	15	100
1975:								
U.S. producers' shipments	14	2	3	1/	71	1/	10	100
U.S. importers' shipments	71	1/	0	0	5	0	24	100
All shipments	24	2	2	1/	59	1/	13	100
1976:								
U.S. producers' shipments	19	2	3	1/	64	1/	12	100
U.S. importers' shipments	84	1/	1/	0	3	0	13	100
All shipments	32	2	2	1/	52	1/	12	100
1977:								
U.S. producers' shipments	17	2	2	1/	70	1/	9	100
U.S. importers' shipments	83	1/	1/	0	2	0	15	100
All shipments	28	1	1	1/	58	1/	10	100

1/ Less than 0.05 percent.

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

Table 56.--Angles, shapes, and sections: Percentage distribution of U.S. producers' shipments in, and importers' shipments into, the Western States, by markets, 1972-77

Year and item	Service centers/ distributors	Agriculture	Transportation	Oil and gas	Construction	Mining	Other	Total
1972:								
U.S. producers' shipments	35	2	10	1	28	1/	24	100
U.S. importers' shipments	68	0	0	0	13	0	20	100
All shipments	51	1	5	1	21	1/	23	100
1973:								
U.S. producers' shipments	40	1	7	1	28	1	22	100
U.S. importers' shipments	63	0	0	0	12	0	26	100
All shipments	49	1	5	1/	22	1/	23	100
1974:								
U.S. producers' shipments	21	1	10	1/	27	1/	41	100
U.S. importers' shipments	71	0	1/	0	7	0	22	100
All shipments	45	1	5	1/	18	1/	32	100
1975:								
U.S. producers' shipments	25	1	10	1/	39	1/	24	100
U.S. importers' shipments	56	0	1/	0	22	0	22	100
All shipments	40	1	6	1/	31	1/	23	100
1976:								
U.S. producers' shipments	31	1	11	1/	43	1	15	100
U.S. importers' shipments	77	0	1/	0	8	0	15	100
All shipments	57	1/	5	1/	23	1/	15	100
977:								
U.S. producers' shipments	31	1	12	1/	53	1/	3	100
U.S. importers' shipments	79	0	1/	0	7	0	14	100
All shipments	59	1/	5	1/	26	1/	10	100

1/ Less than 0.05 percent.

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

Table 57.--Wire rods: Percentage distribution of U.S. producers' shipments in, and importers' shipments into, the Western States, by markets, 1972-77

Year and item	Service centers/ distributors	Agriculture	Transportation	Oil and gas	Construction	Mining	Other	Total
1972:								
U.S. producers' shipments	3	1/	3	1/	1	0	93	100
U.S. importers' shipments	4	0	0	0	10	0	86	100
All shipments	3	1/	2	1/	4	0	91	100
1973:								
U.S. producers' shipments	10	1/	2	0	1/	0	87	100
U.S. importers' shipments	1	0	0	1/	14	0	85	100
All shipments	7	1/	1	1/	5	0	87	100
1974:								
U.S. producers' shipments	1	1/	2	0	1/	0	97	100
U.S. importers' shipments	5	0	0	1	9	0	86	100
All shipments	3	1/	1	1/	4	0	92	100
1975:								
U.S. producers' shipments	1	1	1/	0	1/	0	98	100
U.S. importers' shipments	1	0	0	0	2	0	97	100
All shipments	1	1/	1/	0	1	0	97	100
1976:								
U.S. producers' shipments	3	1/	1/	0	1/	0	97	100
U.S. importers' shipments	2	0	0	0	4	0	94	100
All shipments	3	1/	1/	0	1	0	96	100
1977:								
U.S. producers' shipments	3	1/	1	0	1/	0	97	100
U.S. importers' shipments	11	0	0	0	8	0	82	100
All shipments	6	1/	1/	0	3	0	90	100

1/ Less than 0.05 percent.

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

Table 59.--Wire: Percentage distribution of U.S. producers' shipments in, and importers' shipments into, the Western States, by markets, 1972-77

Year and item	Service centers/ distributors	Agriculture	Transportation	Oil and gas	Construction	Mining	Other	Total
1972:								
U.S. producers' shipments	7	8	3	1/	10	1	72	100
U.S. importers' shipments	50	10	0	0	7	0	33	100
All shipments	16	8	3	1/	9	1	64	100
1973:								
U.S. producers' shipments	4	8	3	1/	9	1	75	100
U.S. importers' shipments	28	14	0	0	4	0	54	100
All shipments	8	9	3	1/	8	1	72	100
1974:								
U.S. producers' shipments	2	12	3	1/	8	1	74	100
U.S. importers' shipments	54	2	0	0	5	0	39	100
All shipments	10	11	2	1/	8	1	69	100
1975:								
U.S. producers' shipments	3	9	4	0	9	1	75	100
U.S. importers' shipments	40	13	0	0	2	0	45	100
All shipments	8	10	3	0	8	1	71	100
1976:								
U.S. producers' shipments	4	9	3	1/	9	1	75	100
U.S. importers' shipments	36	8	0	0	5	0	51	100
All shipments	7	9	3	1/	9	1	72	100
1977:								
U.S. producers' shipments	4	11	3	1/	9	1	73	100
U.S. importers' shipments	46	5	0	0	3	0	46	100
All shipments	8	10	3	1/	8	1	70	100

1/ Less than 0.05 percent.

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

Table 59.--Pipes and tubes: Percentage distribution of U.S. producers' shipments in, and importers' shipments into, the Western States, by markets, 1972-77

Year and item	Service centers/ distributors	Agriculture	Transportation	Oil and gas	Construction	Mining	Other	Total
1972:								
U.S. producers' shipments	56	1/	1/	16	18	1/	10	100
U.S. importers' shipments	84	0	1	1	1	0	14	100
All shipments	65	1/	1/	11	13	1/	11	100
1973:								
U.S. producers' shipments	62	1/	1	14	16	1/	8	100
U.S. importers' shipments	88	0	1	1	1	0	10	100
All shipments	70	1/	1	10	11	1/	8	100
1974:								
U.S. producers' shipments	49	1/	1	7	18	1/	26	100
U.S. importers' shipments	93	0	1	1	1	0	5	100
All shipments	64	1/	1	5	12	1/	18	100
1975:								
U.S. producers' shipments	57	1/	4	10	10	1/	19	100
U.S. importers' shipments	84	1/	1	3	1	0	10	100
All shipments	66	1/	3	8	7	1/	16	100
1976:								
U.S. producers' shipments	63	1	1/	13	10	1/	13	100
U.S. importers' shipments	85	1/	1	3	1	0	11	100
All shipments	72	1	1/	9	6	1/	13	100
1977:								
U.S. producers' shipments	60	1/	1/	27	6	1/	7	100
U.S. importers' shipments	82	1/	1	5	1	0	11	100
All shipments	70	1/	1/	18	4	1/	8	100

1/ Less than 0.05 percent.

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

Table 60.--Steel mill products: U.S. producers' shipments (both western and eastern producers) and importers' shipments into the Western States, as a share of total, by types of markets, 1972-77

(In percent)

Item	Producers' shipments						Importers' shipments					
	1972	1973	1974	1975	1976	1977	1972	1973	1974	1975	1976	1977
Service centers/distributors	46	55	39	44	41	42	54	45	61	56	59	58
End users: 1/												
Transportation	99	99	99	99	97	94	1	1	1	1	3	6
Construction	89	92	92	90	90	93	11	8	8	10	10	7
Other: 2/	54	52	58	54	58	52	46	48	42	46	42	48
Total	71	75	71	72	68	66	29	25	29	28	32	34

1/ Shipments of steel mill products were negligible to the following types of end users: agriculture, oil and gas, and mining.

2/ Metal working is the primary market included in this grouping.

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

Table 61--Tin mill products, plates, sheets, and strip: U.S. producers' shipments (both western and eastern producers) and importers' shipments into the Western States, as a share of total, by types of markets, 1972-77

(In percent)

Item	Producers' shipments						Importers' shipments					
	1972	1973	1974	1975	1976	1977	1972	1973	1974	1975	1976	1977
Service centers/distributors	39	45	33	34	37	41	61	55	67	66	63	59
End users: 1/												
Transportation	100	99	100	98	98	99	0	1	0	2	2	1
Construction	81	90	85	87	85	89	19	10	15	13	15	11
Other: 2/	69	56	60	57	57	53	41	44	40	43	43	47
Total	69	74	70	70	68	65	31	26	30	30	32	35

1/ Shipments of tin mill products, plates, sheets, and strip were negligible to the following types of end users: agriculture, oil and gas, and mining.

2/ Metal working is the primary market included in this grouping.

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

Table 62.--Bars and bar-size shapes: U.S. producers' shipments (both western and eastern producers) and importers' shipments into the Western States, as a share of total, by types of markets, 1972-77

(In percent)

Item	Producers' shipments						Importers' shipments					
	1972	1973	1974	1975	1976	1977	1972	1973	1974	1975	1976	1977
Service centers/distributors	54	70	47	47	49	50	46	30	53	53	51	50
End users: 1/												
Construction	99	99	99	99	99	99	1	1	1	1	1	1
Other: 2/	33	33	47	29	48	38	67	67	53	71	52	62
Total	84	90	82	82	81	83	16	10	18	18	19	17

1/ Shipments of bars and bar-size shapes were negligible to the following types of end users: agriculture, transportation, oil and gas, and mining.

2/ Metal working is the primary market included in this grouping.

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

Table 63.--Angles, shapes, and sections: U.S. producers' shipments (both western and eastern producers) and importers' shipments into the Western States, as a share of total, by types of markets, 1972-77

(In percent)

Item	Producers' shipments						Importers' shipments					
	1972	1973	1974	1975	1976	1977	1972	1973	1974	1975	1976	1977
Service centers/distributors	36	51	24	34	23	21	64	49	76	66	77	79
End users: 1/												
Transportation	100	100	98	97	96	95	0	0	2	3	4	5
Construction	71	79	81	67	80	84	29	21	19	33	20	16
Other: 2/	55	46	65	52	50	21	45	54	35	48	50	79
Total	52	62	53	53	43	41	48	38	47	47	57	59

1/ Shipments of angles, shapes, and sections were negligible to the following types of end users: agriculture, oil and gas, and mining.

2/ Metal working is the primary market included in this grouping.

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

Table 64.--Wire rods: U.S. producers' shipments (both western and eastern producers) and importers' shipments into the Western States, as a share of total, by types of markets, 1972-77

(In percent)

Item	Producers' shipments						Importers' shipments					
	1972	1973	1974	1975	1976	1977	1972	1973	1974	1975	1976	1977
Service centers/distributors	47	94	10	65	94	33	53	6	90	35	6	67
End users: 1/												
Construction	12	1	1	37	4	2	88	99	99	63	96	98
Other: 2/	52	51	53	50	51	54	48	49	47	50	49	46
Total	63	62	48	63	67	56	37	38	52	37	33	44

1/ Shipments of wire rods were negligible to the following types of end users: agriculture, transportation, oil and gas, and mining.

2/ Metal working is the primary market included in this grouping.

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

Table 65.--Wire: U.S. producers' shipments (both western and eastern producers) and importers' shipments into the Western States, as a share of total, by types of markets, 1972-77

(In percent)

Item	Producers' shipments						Importers' shipments					
	1972	1973	1974	1975	1976	1977	1972	1973	1974	1975	1976	1977
Service centers/distributors	33	47	18	27	45	38	67	53	82	73	55	62
End users: 1/												
Agriculture	76	78	97	81	91	95	24	22	3	19	9	5
Construction	83	89	83	95	91	95	17	11	17	5	9	5
Other: 2/	69	58	65	63	60	61	31	42	35	37	40	39
Total	76	83	82	83	88	88	24	17	18	17	12	12

1/ Shipments of wire were negligible to the following types of end users: transportation, oil and gas, and mining.
2/ Metal working is the primary market included in this grouping.

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

Table 66.--Pipes and tubes: U.S. producers' shipments (both western and eastern producers) and importers' shipments into the Western States, as a share of total, by types of markets, 1972-77

(In percent)

Item	Producers' shipments						Importers' shipments					
	1972	1973	1974	1975	1976	1977	1972	1973	1974	1975	1976	1977
Service centers/distributors	58	60	50	69	50	49	42	40	50	41	50	51
End users: 1/												
Oil and gas	98	98	91	86	87	87	2	2	9	14	13	13
Construction	98	98	97	94	93	91	2	2	3	6	7	9
Other: 2/	45	44	84	66	54	39	55	56	16	34	46	61
Total	68	69	66	68	67	67	32	31	34	32	43	43

1/ Shipments of pipes and tubes were negligible to the following types of end users: agriculture, transportation, and mining.

2/ Metal working is the primary market included in this grouping.

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

67.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling ;es, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or ıium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices: Lowest purchase price: Range (A)	Importers' prices: Lowest purchase price: Weighted average (B)	Importers' prices: Lowest selling price: Range (C)	Importers' prices: Lowest selling price: Weighted average (D)	U.S. producers' lowest selling price: Range (E)	U.S. producers' lowest selling price: Weighted average (F)	Importers' price discount or premium (percent) (D-F)/F
	Galvanized Sheet, commercial quality						
uary-March-----	-		-		99- 101	100	
il-June--------	80- 89	84	88- 89	89	92- 101	97	-8
y-September----	90- 90	90	90- 90	90	93- 101	96	-6
ober-December--	116- 116	116	118- 118	118	89- 104	92	29
uary-March-----	-		-		98- 117	111	
il-June--------	145- 145	145	145- 145	145	127- 129	128	13
y-September----	143- 177	163	155- 177	168	124- 163	140	21
ober-December--	133- 133	133	148- 148	148	156- 184	164	-10
uary-March-----	149- 149	149	152- 152	152	146- 171	170	-11
il-June--------	-		-		141- 161	157	
y-September----	-		-		146- 158	151	
ober-December--	-		-		152- 168	165	
uary-March-----	-		-		134- 168	166	
il-June--------	-		-		132- 166	161	
y-September----	152- 152	152	155- 155	155	136- 173	157	-1
ober-December--	159- 159	159	159- 159	159	136- 175	161	-1
uary-March-----	151- 151	151	151- 151	151	143- 181	172	-12
il-June--------	150- 158	151	150- 150	150	146- 180	155	-3
y-September----	164- 164	164	161- 164	163	147- 188	157	3
ober-December--	157- 157	157	157- 159	158	147- 188	156	1

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

68.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling ces, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or mium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices: Lowest purchase price: Range (A)	Importers' prices: Lowest purchase price: Weighted average (B)	Importers' prices: Lowest selling price: Range (C)	Importers' prices: Lowest selling price: Weighted average (D)	U.S. producers' lowest selling price: Range (E)	U.S. producers' lowest selling price: Weighted average (F)	Importers' price discount or premium (percent) (D-F)/F
	Plate, structural grade, ASTM A-36, 3/8" x 72" x 240"						
uary-March-----	150- 160	157	156- 225	168	165- 195	182	-8
il-June--------	158- 200	169	161- 164	162	165- 186	176	-8
y-September----	175- 225	189	183- 193	188	164- 186	185	2
ober-December--	178- 211	192	186- 214	196	164- 186	185	6
uary-March-----	196- 416	286	208- 423	271	185- 205	191	42
il-June--------	237- 428	371	257- 500	304	187- 245	207	47
y-September----	279- 492	363	290- 493	385	186- 288	254	52
ober-December--	367- 444	391	375- 503	429	184- 280	244	76
uary-March-----	221- 456	353	304- 456	369	270- 288	275	34
il-June--------	161- 350	287	221- 304	262	274- 285	279	-6
y-September----	216- 265	238	216- 294	241	270- 284	274	-12
ober-December--	210- 235	225	212- 240	225	285- 290	285	-21
uary-March-----	206- 270	230	206- 266	224	246- 290	279	-20
il-June--------	209- 250	231	229- 255	239	285- 290	286	-16
y-September----	227- 263	235	242- 296	268	285- 313	287	-7
ober-December--	235- 270	249	255- 283	269	309- 331	310	-13
uary-March-----	236- 261	248	245- 309	260	309- 313	309	-16
il-June--------	230- 255	234	244- 311	266	260- 313	307	-14
y-September----	223- 336	245	242- 341	251	294- 329	320	-21
ober-December--	222- 283	255	260- 288	268	294- 329	314	-15

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

9.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling
, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or
um in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices					U.S. producers' lowest selling price		Importers' price discount or premium (percent)
	Lowest purchase price		Lowest selling price					
	Range (A)		Weighted average (B)	Range (C)		Range (E)		Weighted average (F)	(D-F)/F
	Hot rolled sheet, commercial quality, 14 ga. (.075 in.)								
ry-March	88-	88	88	89-	89	89	100-	100	100	-11
-June	92-	92	92	89-	94	92	100-	100	100	-8
September	88-	88	88	107-	107	107	100-	100	100	7
er-December	104-	104	104	107-	107	107	102-	102	102	5
ry-March	104-	104	104	107-	130	115	105-	105	105	10
-June	129-	129	129	130-	137	135	126-	126	126	7
September	129-	129	129	132-	132	132	-	-		
er-December	-			-						
ary-March	203-	203	203	207-	207	207	157-	167	164	26
l-June	-			-			157-	167	163	
-September	138-	138	138	140-	140	140	157-	167	162	-13
ber-December	133-	133	133	136-	136	136	160-	169	168	-19
ary-March	127-	127	127	-			160-	169	169	
l-June	131-	131	131	133-	133	133	160-	169	167	-20
-September	131-	131	131	133-	133	133	168-	178	177	-25
ber-December	141-	141	141	143-	143	143	168-	178	177	-19
ary-March	-			-			177-	187	186	
l-June	148-	148	148	-			177-	187	184	
-September	158-	158	158	-			192-	201	200	
ber-December	-			-			192-	201	200	

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

70..--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling ces, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or nium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices						U.S. producers' lowest selling price		Importers' price discount or premium (percent)
	Lowest purchase price			Lowest selling price					
	Range (A)		Weighted average (B)	Range (C)		Weighted average (D)	Range (E)	Weighted average (F)	(D-F)/F
	Cold rolled sheet, Class 1, commercial quality, .0299"								
uary-March-----	92-	96	93	94-	104	98	98- 113	100	-2
il-June--------	95-	95	95	97-	100	99	98- 113	100	-1
/-September----	88-	123	106	100-	123	115	98- 113	99	16
ober-December--	110-	110	110	113-	113	113	98- 116	100	13
uary-March-----	110-	138	126	113-	149	133	111- 116	112	19
il-June--------	136-	182	161	138-	188	175	116- 128	127	37
/-September----	145-	166	150	148-	186	158	152- 159	152	4
ober-December--	171-	197	185	195-	201	198	151- 165	152	31
uary-March-----	192-	192	192	196-	196	196	152- 165	152	29
il-June--------	183-	183	183	187-	187	187	151- 159	152	23
/-September----	138-	138	138	141-	141	141	143- 159	145	-3
ober-December--	136-	136	136	138-	138	138	152- 168	158	-12
uary-March-----	139-	139	139	142-	142	142	154- 168	156	-9
il-June--------	-			-			154- 168	157	
/-September----	165-	165	165	169-	169	169	163- 178	172	-2
ober-December--	165-	169	166	169-	172	170	166- 178	168	1
uary-March-----	151-	169	166	157-	172	169	146- 189	153	10
il-June--------	178-	186	185	182-	189	188	146- 189	150	25
/-September----	-			-			164- 202	175	
ober-December--	-			147-	147	147	163- 202	174	-15

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

1 .--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling s, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or um in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices				U.S. producers' lowest selling price		Importers' price discount or premium (percent)
	Lowest purchase price		Lowest selling price				
	Range (A)	Weighted average (B)	Range (C)	Weighted average (D)	Range (E)	Weighted average (F)	(D-F)/F
	Cold rolled sheet, Class 1, commercial quality, .0359"						
ıry-March-----	84- 87	86	86- 94	89	86- 102	100	-11
l-June--------	90- 90	90	90- 90	90	85- 102	100	-11
-September----	88- 112	100	90- 111	104	85- 102	99	4
ɔer-December--	94- 116	107	102- 119	110	85- 105	102	8
ary-March-----	100- 125	114	102- 134	120	105- 105	105	14
l-June--------	123- 163	135	125- 168	138	105- 113	106	30
-September----	131- 133	132	134- 142	138	130- 143	140	-1
ber-December--	155- 178	168	176- 182	179	131- 150	142	26
ary-March-----	174- 174	174	177- 177	177	130- 150	140	27
l-June--------	125- 125	125	127- 127	127	137- 143	142	-11
-September----	125- 125	125	127- 127	127	137- 143	143	-11
ber-December--	123- 128	125	125- 128	126	147- 152	151	-16
ıary-March-----	-		-		140- 152	150	
l-June--------	125- 125	125	127- 127	127	139- 152	150	-15
-September----	125- 147	142	127- 147	143	156- 161	160	-11
ber-December--	147- 151	150	113- 155	152	151- 161	160	-5
ıary-March-----	150- 151	150	153- 155	154	132- 171	160	-3
l-June--------	148- 153	152	111- 158	151	132- 171	163	-7
-September----	148- 148	148	151- 151	151	133- 183	165	-9
ber-December--	162- 162	162	165- 165	165	149- 183	179	-8

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

72.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling
s, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or
um in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices						U.S. producers' lowest selling price		Importers' price discount or premium (percent)
	Lowest purchase price			Lowest selling price					
	Range (A)		Weighted average (B)	Range (C)		Weighted average (D)	Range (E)		Weighted average (F)	(D-F)/F
	Deformed reinforcing bars, ASTM 615, grade 40, No. 4									
ry-March-----	245-	245	245	137-	137	137	128-	284	182	-25
-June--------	-			142-	142	142	130-	185	143	-1
September----	-			-			144-	205	153	
er-December--	228-	353	273	233-	320	255	144-	162	144	77
ry-March-----	225-	313	232	231-	320	233	165-	299	262	-11
-June--------	274-	370	344	347-	370	352	208-	370	317	11
September----	330-	368	346	353-	390	376	295-	335	304	24
er-December--	295-	385	305	-			294-	355	302	
ry-March-----	193-	243	211	229-	229	229	217-	236	222	3
-June--------	205-	295	240	222-	278	242	205-	308	253	-4
September----	185-	228	204	195-	215	201	203-	263	230	-12
er-December--	174-	228	190	195-	310	195	185-	255	211	-7
ry-March-----	170-	196	190	173-	250	192	184-	245	204	-6
-June--------	174-	216	197	174-	265	194	185-	245	196	-1
September----	211-	219	212	211-	230	214	187-	248	197	8
er-December--	212-	212	212	197-	197	197	180-	245	200	-2
ry-March-----	185-	200	190	198-	218	201	180-	243	186	8
-June--------	185-	206	192	196-	216	198	180-	245	201	-1
September----	199-	220	203	201-	226	207	185-	245	208	
er-December--	213-	221	215	219-	228	224	185-	248	218	3

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

'3. -Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling
, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or
m in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices: Lowest purchase price: Range (A)		Importers' prices: Lowest purchase price: Weighted average (B)	Importers' prices: Lowest selling price: Range (C)		Importers' prices: Lowest selling price: Weighted average (D)	U.S. producers' lowest selling price: Range (E)		U.S. producers' lowest selling price: Weighted average (F)	Importers' price discount or premium (percent) (D-F)/F
	Hot rolled bars (flats), 1/4" x 3"									
y-March	149-	360	174	156-	360	190	175-	190	180	5
-June	145-	360	156	149-	360	163	182-	195	187	-13
eptember	370-	370	370	370-	370	370	187-	195	191	93
er-December	222-	370	309	370-	370	370	186-	195	190	94
y-March	169-	382	291	228-	382	286	206-	206	206	39
-June	213-	386	347	300-	500	378	255-	351	263	44
September	342-	392	360	362-	435	372	300-	360	303	23
er-December	344-	448	384	370-	487	410	307-	313	309	33
							307-	307	307	
ry-March	324-	450	360	-			239-	333	296	-11
-June	265-	367	302	265-	265	265	304-	304	304	-22
September	225-	387	246	232-	238	236	253-	294	278	-12
er-December	203-	245	226	245-	282	246				
ry-March	177-	252	218	193-	250	221	198-	281	248	-11
-June	200-	263	220	204-	219	209	215-	306	273	-23
September	227-	264	239	228-	270	244	259-	259	259	-6
er-December	224-	276	236	225-	253	234	283-	444	308	-24
ry-March	203-	269	223	216-	260	231	224-	302	277	-17
-June	206-	228	216	210-	262	220	228-	273	256	-14
September	213-	233	218	215-	239	229	249-	310	264	-13
er-December	224-	237	230	232-	241	236	266-	310	287	-18

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

74.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling ces, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or mium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices						U.S. producers' lowest selling price			Importers' price discount or premium (percent)
	Lowest purchase price			Lowest selling price						
	Range (A)		Weighted average (B)	Range (C)		Weighted average (D)	Range (E)		Weighted average (F)	(D-F)/F
	Angles, 2" x 2" x 1/4", A-36									
uary-March	134-	143	139	139-	141	140	164-	215	186	-25
il-June	145-	301	170	143-	175	155	184-	215	187	-17
y-September	151-	320	223	148-	183	169	188-	215	201	-16
ober-December	180-	402	188	182-	210	198	174-	194	180	10
uary-March	207-	348	287	212-	304	280	204-	206	205	37
il-June	265-	348	319	275-	400	332	240-	339	314	6
y-September	293-	363	332	331-	363	346	291-	366	342	1
ober-December	325-	471	368	334-	433	361	305-	317	310	16
uary-March	214-	474	333	214-	474	345	261-	317	269	28
il-June	221-	343	330	240-	400	341	314-	314	314	9
y-September	207-	254	221	210-	240	237	278-	341	308	-23
ober-December	196-	235	215	200-	240	221	243-	278	244	-9
uary-March	176-	207	199	181-	202	189	201-	278	243	-22
il-June	177-	229	187	198-	346	237	213-	267	230	3
y-September	181-	230	214	214-	230	220	239-	370	258	-15
ober-December	181-	229	207	202-	360	271	256-	370	262	3
uary-March	181-	239	190	176-	224	196	218-	299	231	-15
il-June	182-	207	190	186-	210	193	219-	289	272	-29
y-September	183-	211	188	187-	224	190	239-	298	265	-28
ober-December	195-	221	205	199-	213	202	274-	289	277	-27

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

75.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling ces, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or mium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices				U.S. producers' lowest selling price		Importers' price discount or premium (percent)
	Lowest purchase price		Lowest selling price				
	Range (A)	Weighted average (B)	Range (C)	Weighted average (D)	Range (E)	Weighted average (F)	(D-F)/F
	7/32" hot rolled rods, low carbon grade C-1008						
nuary-March-----	130- 142	136	134- 155	141	137- 156	137	3
ril-June--------	134- 281	213	138- 156	148	137- 161	139	6
ly-September----	136- 175	153	145- 176	160	137- 161	138	15
tober-December--	132- 189	152	135- 189	159	137- 161	137	16
nuary-March-----	178- 258	199	186- 258	212	142- 269	144	47
ril-June--------	116- 345	204	186- 348	256	141- 253	145	77
ly-September----	258- 394	297	258- 399	319	141- 273	151	111
tober-December--	277- 417	336	289- 420	347	190- 274	196	77
nuary-March-----	324- 411	372	324- 454	400	190- 274	199	101
ril-June--------	207- 252	217	216- 252	223	241- 275	241	-8
ly-September----	207- 255	232	216- 336	269	212- 274	214	25
tober-December--	210- 240	229	219- 270	231	213- 257	214	8
nuary-March-----	205- 230	218	210- 230	220	213- 287	214	3
ril-June--------	220- 230	222	220- 230	224	217- 280	222	1
ly-September----	222- 251	239	229- 270	249	227- 280	230	8
tober-December--	212- 266	237	232- 290	259	230- 280	232	12
nuary-March-----	223- 274	239	234- 250	241	227- 349	227	6
ril-June--------	207- 240	221	214- 252	232	215- 342	222	5
ly-September----	203- 240	231	208- 263	239	215- 260	224	7
tober-December--	206- 232	222	230- 298	245	225- 257	232	6

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

76.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling ices, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or emium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices						U.S. producers' lowest selling price			Importers' price discount or premium (percent)
	Lowest purchase price			Lowest selling price						
	Range (A)		Weighted average (B)	Range (C)		Weighted average (D)	Range (E)		Weighted average (F)	(D-F)/F
	Manufacturers coarse 12 Steel Wire Gauge,									
nuary-March-----	-			-			257-	461	419	
ril-June--------	221-	221	221	228-	228	228	281-	422	412	-45
ly-September----	-			-			286-	422	416	
tober-December--	-			-			283-	422	413	
nuary-March-----	-			-			232-	533	509	
ril-June--------	388-	388	388	400-	400	400	415-	709	693	-42
ly-September----	388-	388	388	400-	400	400	356-	709	692	-42
tober-December--	-			-			355-	769	722	
nuary-March-----	-			-			356-	769	689	
ril-June--------	-			-			378-	702	678	
ly-September----	-			-			339-	702	652	
tober-December--	-			-			347-	702	638	
nuary-March-----	-			-			328-	732	627	
ril-June--------	-			-			346-	732	623	
ly-September----	-			-			365-	732	670	
tober-December--	-			-			366-	732	698	
nuary-March-----	-			-			375-	732	687	
ril-June--------	339-	339	339	350-	350	350	307-	732	608	-42
ly-September----	-			-			317-	762	709	
tober-December--	-			-			291-	762	689	

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

77.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling ces, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or mium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices					U.S. producers' lowest selling price		Importers' price discount or premium (percent)
	Lowest purchase price		Lowest selling price					
	Range (A)	Weighted average (B)	Range (C)		Weighted average (D)	Range (E)	Weighted average (F)	(D-F)/F
	Galvanized wire 12 gauge, soft industrial quality							
nuary-March-----	-		-			239- 259	243	
ril-June--------	-		-			239- 285	276	
ly-September----	-		-			285- 286	285	
tober-December--	271- 271	271	-			285- 295	290	
nuary-March-----	-		-			310- 358	345	
ril-June--------	-		-			330- 500	407	
ly-September----	540- 540	540	540- 540		540	414- 500	457	18
tober-December--	-		-			325- 545	380	
nuary-March-----	-		-			667- 667	667	
ril-June--------	345- 345	345	356- 356		356	410- 410	410	-13
ly-September----	365- 365	365	-			410- 410	410	
tober-December--	374- 374	374	-			406- 600	476	
nuary-March-----	-		-			382- 476	416	
ril-June--------	366- 366	366	-			382- 499	413	
ly-September----	390- 390	390	-			382- 600	463	
tober-December--	-		-			406- 408	407	
nuary-March-----	369- 369	369	-			406- 496	432	
ril-June--------	362- 362	362	366- 366		366	406- 521	430	-15
ly-September----	397- 397	397	-			406- 481	421	
tober-December--	393- 393	393	-			406- 525	413	

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

78.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling
es, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or
ium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices						U.S. producers' lowest selling price		Importers' price discount or premium (percent)
	Lowest purchase price			Lowest selling price					
	Range (A)		Weighted average (B)	Range (C)		Weighted average (D)	Range (E)		Weighted average (F)	(D-F)/F
	Baling wire, 14-1/2 gauge ASAE No. 6500									
ry-March-----	95-	96	96	100-	101	100	88-	102	100	
-June--------	96-	96	96	100-	101	100	97-	103	102	-2
September----	96-	96	96	100-	100	100	96-	114	102	-2
er-December--	146-	146	146	160-	160	160	98-	156	115	39
ry-March-----	144-	255	212	151-	178	156	122-	168	154	1
-June--------	155-	271	191	164-	211	175	127-	225	206	-15
September----	165-	271	184	174-	211	178	188-	225	202	-12
er-December--	155-	259	227	158-	174	170	188-	225	206	-18
ry-March-----	145-	297	206	175-	288	193	188-	225	191	1
-June--------	150-	182	164	175-	186	176	181-	206	187	-6
September----	178-	300	296	157-	157	157	172-	181	174	-10
er-December--	135-	149	145	153-	153	153	144-	172	145	5
ry-March-----	135-	145	139	140-	148	144	144-	172	164	-12
-June--------	145-	145	145	142-	153	147	151-	172	165	-11
September----	148-	148	148	157-	166	159	160-	172	171	-7
er-December--	175-	175	175	163-	163	163	164-	171	165	-1
ry-March-----	165-	165	165	148-	175	155	162-	171	166	-7
-June--------	158-	172	166	166-	177	173	164-	180	176	-2
September----	160-	172	167	159-	179	171	173-	179	177	-4
er-December--	-			-			171-	184	175	

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

'rice data in the above table were converted to index numbers to avoid disclosure of individual company data.

79.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling
s, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or
um in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices					U.S. producers' lowest selling price		Importers' price discount or premium (percent)
	Lowest purchase price		Lowest selling price					
	Range (A)	Weighted average (B)	Range (C)	Weighted average (D)		Range (E)	Weighted average (F)	(D-F)/F
	Rails, 136 lbs. per yard							
ary-March	-		-			100- 100	100	
l-June	-		-			110- 110	110	
-September	-		-			113- 114	114	
ber-December	-		-			114- 114	114	
ary-March	-		-			118- 123	119	
l-June	-		-			126- 126	126	
-September	-		-			164- 164	164	
ber-December	-		-			164- 164	164	
ary-March	-		-			171- 171	171	
l-June	-		-			171- 171	171	
-September	-		-			171- 171	171	
ber-December	-		-			185- 185	185	
ary-March	-		-			185- 185	185	
l-June	-		-			185- 187	185	
-September	-		-			199- 199	199	
ber-December	215-	215	219-	219	219	199- 199	199	10
ary-March	-		-			199- 199	199	
l-June	-		-			199- 199	199	
-September	269-	269	271-	271	271	214- 214	214	27
ber-December	211-	211	212-	262	217	214- 214	214	1

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

80.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling es, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or ium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices: Lowest purchase price: Range (A)	Importers' prices: Lowest purchase price: Weighted average (B)	Importers' prices: Lowest selling price: Range (C)	Importers' prices: Lowest selling price: Weighted average (D)	U.S. producers' lowest selling price: Range (E)	U.S. producers' lowest selling price: Weighted average (F)	Importers' price discount or premium (percent) (D-F)/F
	Angle L 6" x 4" x 3/8"						
ary-March	-		-		96- 101	100	
l-June	-		-		97- 100	99	
-September	129- 129	129	-		100- 106	102	
ber-December	150- 150	150	-		100- 103	102	
ary-March	-		-		100- 116	109	
l-June	246- 246	246	-		136- 137	137	
-September	236- 245	240	-		160- 163	161	
ber-December	246- 246	246	-		166- 168	167	
ary-March	216- 216	216	-		168- 177	171	
l-June	147- 150	147	148- 148	148	160- 168	165	-10
-September	131- 247	182	124- 270	165	154- 168	166	-1
ber-December	129- 135	131	124- 141	139	160- 168	166	-17
ary-March	121- 137	125	123- 136	127	160- 168	166	-24
l-June	116- 130	125	118- 173	130	161- 168	167	-22
-September	124- 142	140	141- 141	141	164- 168	168	-16
ber-December	124- 141	136	135- 149	141	152- 152	152	-7
ary-March	123- 137	130	134- 144	135	171- 171	171	-21
l-June	114- 132	117	116- 137	118	124- 171	163	-27
-September	122- 141	132	124- 140	126	129- 171	145	-13
ber-December	137- 140	138	140- 140	140	140- 177	160	-13

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

81.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling es, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or ium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices					U.S. producers' lowest selling price			Importers' price discount or premium (percent)
	Lowest purchase price			Lowest selling price					
	Range (A)		Weighted average (B)	Range (C)		Weighted average (D)	Range (E)		Weighted average (F)	(D-F)/F
	Welded Standard Pipe - ASTM A-120, 3/4" nom. dia.									
ıary-March-----	67-	98	78	69-	82	77	100-	100	100	-23
l-June--------	71-	98	84	73-	99	81	101-	102	101	-20
-September----	71-	111	91	73-	111	92	101-	101	101	-8
ber-December--	70-	126	94	70-	126	95	100-	100	100	-6
ıary-March-----	80-	163	112	100-	153	115	108-	108	108	6
l-June--------	80-	250	119	106-	201	145	138-	138	138	5
-September----	78-	210	146	99-	231	174	166-	166	166	5
ber-December--	92-	225	180	96-	261	173	167-	167	167	4
uary-March-----	82-	212	155	112-	225	169	182-	182	182	-7
il-June--------	82-	196	135	109-	195	144	184-	184	184	-21
y-September----	107-	125	108	93-	134	110	182-	182	182	-40
ber-December--	82-	144	97	87-	151	105	182-	187	182	-42
uary-March-----	86-	113	108	110-	134	112	191-	191	191	-41
il-June--------	86-	143	108	108-	139	121	186-	186	186	-35
y-September----	86-	143	111	105-	150	126	159-	159	159	-21
ber-December--	86-	144	125	106-	145	125	139-	147	144	-13
uary-March-----	92-	144	120	99-	148	125	162-	162	162	-23
il-June--------	96-	145	123	98-	149	124	172-	176	174	-29
y-September----	117-	175	130	97-	164	141	176-	176	176	-20
ober-December--	105-	133	112	118-	133	120	188-	188	188	-36

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

82.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling es, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or ium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices						U.S. producers' lowest selling price		Importers' price discount or premium (percent)
	Lowest purchase price			Lowest selling price					
	Range (A)		Weighted average (B)	Range (C)		Weighted average (D)	Range (E)		Weighted average (F)	(D-F)/F
	Hot rolled square tubing, 14 ga. (.075 in.)									
ry-March-----	62-	72	69	-						
-June--------	85-	85	85	-			100-	100	100	
September----	68-	72	69	69-	72	70	100-	100	100	
er-December--	74-	75	74	74-	77	75	-			
ry-March-----	61-	109	71	80-	80	80	129-	129	129	-42
-June--------	82-	103	96	85-	85	85	129-	129	129	-38
September----	128-	128	128	128-	128	128	-			
er-December--	81-	116	109	85-	85	85	156-	156	156	-18
ry-March-----	-						-			
-June--------	109-	109	109	-			-			
September----	91-	91	91	93-	93	93	-			
er-December--	86-	86	86	-			114-	114	114	-18
ry-March-----	87-	87	87	-			-			
-June--------	73-	110	85	-			-			
September----	89-	108	99	98-	98	98	-			
er-December--	100-	100	100	-			-			
ry-March-----	-						-			
-June--------	101-	104	103	104-	104	104	-			
September----	100-	100	100	103-	103	103	115-	115	115	-9
er-December--	102-	109	107	-			-			

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

3.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling , importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or n in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices: Lowest purchase price: Range (A)	Importers' prices: Lowest purchase price: Weighted average (B)	Importers' prices: Lowest selling price: Range (C)	Importers' prices: Lowest selling price: Weighted average (D)	U.S. producers' lowest selling price: Range (E)	U.S. producers' lowest selling price: Weighted average (F)	Importers' price discount or premium (percent) (D-F)/F
	Barbed wire, 12-1/2 ga., 2 pt., 4", 2 ply, 80 Rodreels						
y-March	-		210- 210	210	95- 116	100	110
June	168- 168	168	202- 210	206	118- 118	118	74
eptember	-		202- 210	207	117- 122	117	77
r-December	-		210- 210	210	117- 122	118	78
y-March	-		210- 210	210	124- 130	128	64
June	-		210- 235	229	143- 172	166	38
eptember	196- 196	196	210- 235	219	170- 172	172	27
r-December	-		210- 210	210	173- 208	208	1
y-March	247- 247	247	237- 237	237	163- 184	172	37
June	144- 152	145	144- 237	180	168- 176	169	7
eptember	198- 198	198	237- 237	237	163- 176	168	41
r-December	146- 146	146	237- 237	237	163- 163	163	45
y-March	128- 144	143	144- 176	157	172- 172	172	-9
June	125- 125	125	176- 176	176	169- 175	172	2
eptember	129- 168	164	176- 202	195	173- 193	175	12
r-December	-		176- 176	176	180- 193	186	-5
y-March	141- 141	141	176- 176	176	168- 193	174	1
June	141- 141	141	176- 201	196	171- 205	181	8
eptember	168- 168	168	176- 176	176	172- 205	176	
r-December	138- 138	138	176- 176	176	169- 179	179	-1

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

84.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling es, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or ium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices: Lowest purchase price: Range (A)		Importers' prices: Lowest purchase price: Weighted average (B)	Importers' prices: Lowest selling price: Range (C)		Importers' prices: Lowest selling price: Weighted average (D)	U.S. producers' lowest selling price: Range (E)		U.S. producers' lowest selling price: Weighted average (F)	Importers' price discount or premium (percent) (D-F)/F
	Prestressed strand, 1/2 in., 7 wire, 270K									
ary-March-----	87-	92	91	90-	95	95	100-	105	100	-5
l-June--------	73-	91	90	94-	98	96	100-	101	100	-4
-September----	91-	93	92	96-	103	96	100-	101	100	-4
ber-December--	76-	91	90	96-	104	97	104-	105	105	-8
ary-March-----	91-	92	91	96-	108	100	106-	113	109	-8
l-June--------	107-	116	114	120-	127	123	129-	129	129	-4
-September----	107-	208	159	130-	166	154	209-	209	209	-26
ber-December--	129-	185	153	133-	233	170	209-	209	209	-19
ary-March-----	161-	223	199	206-	257	236	209-	209	209	13
l-June--------	193-	250	200	197-	234	220	197-	197	197	12
-September----	168-	250	182	197-	212	208	-			
ber-December--	156-	250	169	163-	199	182	-			
ary-March-----	134-	172	168	184-	187	186	166-	166	166	12
l-June--------	132-	150	145	135-	142	140	157-	157	157	-11
-September----	132-	184	140	135-	150	141	150-	150	150	-6
ber-December--	132-	137	135	135-	152	142	157-	157	157	-10
ary-March-----	132-	142	137	135-	152	144	149-	149	149	-3
l-June--------	132-	143	140	134-	147	146	149-	149	149	-2
-September----	114-	191	167	130-	146	139	149-	149	149	-7
ber-December--	115-	142	124	134-	146	139	149-	149	149	-7

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

85.--Carbon steel products: Ranges and weighted averages of importers' lowest purchase prices and selling es, importers' gross margins, U.S. producers' lowest selling prices, and importers' price discount or ium in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Importers' prices					U.S. producers' lowest selling price			Importers' price discount or premium (percent)
	Lowest purchase price			Lowest selling price					
	Range (A)		Weighted average (B)	Range (C)		Weighted average (D)	Range (E)		Weighted average (F)	(D-F)/F
	Nails, 16d common bright									
ary-March-----	95-	201	109	96-	197	125	100-	105	100	25
l-June--------	95-	226	119	122-	128	123	100-	108	100	23
-September----	122-	150	124	141-	141	141	100-	108	100	40
ber-December--	125-	202	156	141-	150	145	100-	112	102	42
ary-March-----	139-	301	205	141-	286	201	114-	118	118	71
l-June--------	196-	415	252	186-	425	269	146-	151	151	78
-September----	191-	271	214	222-	271	261	174-	184	180	45
ber-December--	140-	301	210	292-	292	292	185-	192	186	57
ary-March-----	145-	251	229	170-	271	189	185-	203	198	-5
l-June--------	127-	234	228	145-	271	228	182-	187	186	22
-September----	125-	159	158	143-	252	202	185-	188	186	9
ber-December--	126-	232	141	138-	230	187	173-	185	180	4
ary-March-----	117-	147	141	132-	230	164	164-	185	170	-3
l-June--------	125-	163	130	128-	306	155	164-	191	169	-9
-September----	141-	299	141	128-	230	172	172-	190	182	-5
ber-December--	149-	195	167	167-	230	192	171-	194	185	4
ary-March-----	146-	167	167	160-	230	207	172-	190	173	20
l-June--------	146-	182	162	155-	230	190	171-	202	182	4
-September----	141-	159	157	153-	230	186	171-	202	180	4
ber-December--	134-	149	145	139-	230	198	160-	192	169	17

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

86.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to producers' distributor price	Ratio of producers' end user price to importers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs	(Percent)	(Percent)	(Percent)	(Percent)
	Galvanized Sheet, commercial quality							
uary-March-----			99	101		98		
il-June--------		89	96	101		95		88
y-September----		90	95	101		94		89
ber-December--:		118	90	104		87		114
uary-March-----			108	117		92		
l-June--------		145	128	127		101		113
r-September----		168	134	163		82		104
ber-December--:		148	162	184		88		80
uary-March-----		152	170	171		99		89
l-June--------			157	161		97		
-September----			149	158		94		
ber-December--:			164	168		98		
ary-March-----			165	168		98		
l-June--------			158	166		95		
-September----		155	171	136		126		114
ber-December--:		159	169	136		124		117
ary-March-----		151	178	146		122		103
l-June--------		150	164	146		112		103
-September----	164	161	172	147	101	117	95	110
ber-December--:		158	171	147		116		107

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

87.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users abricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price-- Of importers to-- End users or fabricators	Weighted average lowest selling price-- Of importers to-- Distributors or steel service ctrs	Weighted average lowest selling price-- Of producers to-- End users or fabricators	Weighted average lowest selling price-- Of producers to-- Distributors or steel service ctrs	Ratio of importers' end user price to importers' distributor price (Percent)	Ratio of producers' end user price to producers' distributor price (Percent)	Ratio of importers' end user price to U.S. producers' end user price (Percent)	Ratio of importers' distributor price to U.S. producers' distributor price (Percent)
	Plate, structural grade, ASTM A-36, 3/8" x 72" x 240"							
ary-March		168	195	181		107		93
l-June		162	185	176		105		92
-September		188	186	185		100		102
ber-December		196	185	185		100		106
ary-March		271	185	191		97		142
l-June		304	189	214		88		142
-September		385	245	257		95		150
ber-December	404	432	228	265	93	86	177	163
ary-March		369	270	275		98		134
l-June		262	281	277		102		95
-September		241	272	275		99		88
ber-December	224	226	287	285	99	101	78	79
uary-March	220	224	285	269	98	106	77	83
il-June	244	239	287	285	102	101	85	84
y-September		268	289	286		101		94
ober-December		269	320	309		104		87
uary-March	246	266	309	309	92	100	80	86
il-June	300	257	309	305	117	101	97	84
y-September	242	278	294	329	87	89	82	85
ober-December		268	294	329		89		82

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

88.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs	(Percent)	(Percent)	(Percent)	(Percent)
	Hot rolled sheet, commercial quality, 14 ga. (.075 in.)							
ary-March-----		89	100					
1-June--------		92	100					
-September----		107	100					
ber-December--		107	102					
ary-March-----		115	105					
1-June--------		135	126					
-September----		132						
ber-December--								
ary-March-----		207	164					
1-June--------			163					
-September----		140	162					
ber-December--		136	168					
ary-March-----			169					
1-June--------		133	167					
-September----		133	177					
ber-December--		143	177					
ary-March-----			186					
1-June--------			184					
-September----			200					
ber-December--			200					

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

le 89.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users or fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs	(Percent)	(Percent)	(Percent)	(Percent)
	Cold rolled sheet, Class 1, commercial quality, .0299"							
'3:								
January-March-----		98	100					
April-June--------		99	100					
July-September----	123	109	99		113		124	
October-December--		113	100					
'4:								
January-March-----		133	112					
April-June--------		175	127					
July-September----	186	152	152		122		122	
October-December--	195	201	152		97		128	
'5:								
January-March-----		196	152					
April-June--------		187	152					
July-September----		141	145					
October-December--		138	158					
'6:								
January-March-----	142		156				91	
April-June--------			157					
July-September----		169	172					
October-December--		170	168					
'7:								
January-March-----		169	153					
April-June--------		188	150					
July-September----			175					
October-December--		147	174					

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

te: Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

90.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs				
	Cold rolled sheet, Class 1, commercial quality, .0359"				(Percent)	(Percent)	(Percent)	(Percent)
ary-March		89	100					
l-June		90	100					
-September	111	97	99					
ber-December		110	102		114		112	
ary-March		120	105					
l-June		138	106					
-September		138	140					
ber-December	176	182	142					
ary-March		177	140		97		124	
l-June		127	142					
-September		127	143					
ber-December	128	125	151					
ary-March			150		102		85	
-June		127	150					
September	147	127	160					
er-December	147	152	160		116		92	
ry-March		154	160		96		92	
-June		151	163					
September		151	165					
er-December		165	179					

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users
)ricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

eriod	Weighted average lowest selling price-- Of importers to-- End users or fabricators	Of importers to-- Distributors or steel service ctrs	Of producers to-- End users or fabricators	Of producers to-- Distributors or steel service ctrs	Ratio of importers' end user price to importers' distributor price (Percent)	Ratio of producers' end user price to producers' distributor price (Percent)	Ratio of importers' end user price to U.S. producers' end user price (Percent)	Ratio of importers' distributor price to U.S. producers' distributor price (Percent)
	Deformed reinforcing bars, ASTM 615, grade 40, No. 4							
						179		100
y-March		137	244	136		96		95
June		142	137	143		106		
eptember			162	153		100		177
r-December		255	145	144				
						84		82
y-March		233	238	284		66	168	111
June	351	353	209	318	99	110	112	124
eptember	375	376	335	304	100	111		
r-December			336	301				
						92		97
y-March		229	217	235		120	86	107
June	242	250	282	234	97	107		89
eptember		201	243	227			96	93
r-December	214	195	222	209	110	106		
					98	106	91	99
y-March	188	192	206	193	107	108	99	100
June	208	194	210	193	100	111	99	110
eptember	215	214	216	194		103	96	
r-December	197		205	199				
					98	103	103	108
y-March	198	201	192	186	100	94	105	98
June	199	198	190	201		100		100
eptember		207	207	208	96	100	100	104
er-December	219	228	218	218				

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

92.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs				
	Hot rolled bars (flats), 1/4" x 3"							
January-March-----		190	180					
April-June--------		163	187					
July-September----		370	191					
October-December--		370	190					
January-March-----		286	206					
April-June--------		378	263					
July-September----		372	303					
October-December--		410	309					
January-March-----			307					
April-June--------		265	296					
July-September----		236	304					
October-December--		246	278					
January-March-----		221	248					
April-June--------		209	273					
July-September----		244	259					
October-December--		234	298	360		83		65
January-March-----	243	229	274	300	106	92	89	76
April-June--------	214	221	256		97		83	
July-September----	220	230	261	310	95	84	84	74
October-December--		236	283	307		92		77

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

93.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price-- Of importers to-- End users or fabricators	Weighted average lowest selling price-- Of importers to-- Distributors or steel service ctrs	Weighted average lowest selling price-- Of producers to-- End users or fabricators	Weighted average lowest selling price-- Of producers to-- Distributors or steel service ctrs	Ratio of importers' end user price to importers' distributor price (Percent)	Ratio of producers' end user price to producers' distributor price (Percent)	Ratio of importers' end user price to U.S. producers' end user price (Percent)	Ratio of importers' distributor price to U.S. producers' distributor price (Percent)
	Angles, 2" x 2" x 1/4", A-36							
uary-March-----		140	185	215		86		65
l-June--------	154	155	187	215	99	87	82	72
-September----		169	189	215		88		79
ber-December--	210	189	180		111		116	
uary-March-----	273	281	205		97		133	
l-June--------	288	335	314	281	86	112	92	119
-September----	344	347	348	302	99	116	99	115
ber-December--	339	365	312	307	93	102	109	119
uary-March-----		345	269	317		85		109
l-June--------	400	338	314		118		127	
-September----		237	294	341		86		70
ber-December--		221	244					
uary-March-----	202	188	242	268	107	90	83	70
l-June--------	227	242	225	267	94	85	100	91
-September----		220	261	250		105		88
ber-December--	229	287	256	370	80	69	89	78
uary-March-----		196	226	241		94		81
l-June--------	210	192	267	289	109	93	78	67
-September----		190	274	262		105		73
ber-December--	205	202	275	279	101	99	74	73

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

le 94.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users or fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs	(Percent)	(Percent)	(Percent)	(Percent)
	7/32" hot rolled rods, low carbon grade C-1008							
;:	:	:	:	:	:	:	:	:
anuary-March-----:	141:	:	137:	:	:	:	103:	:
pril-June--------:	148:	:	139:	:	:	:	106:	:
uly-September----:	160:	:	138:	:	:	:	115:	:
ctober-December--:	159:	:	137:	:	:	:	116:	:
;:	:	:	:	:	:	:	:	:
anuary-March-----:	212:	:	144:	:	:	:	147:	:
pril-June--------:	256:	:	145:	:	:	:	177:	:
uly-September----:	319:	:	151:	:	:	:	211:	:
ctober-December--:	347:	:	196:	:	:	:	177:	:
;:	:	:	:	:	:	:	:	:
anuary-March-----:	402:	385:	199:	:	105:	:	202:	:
pril-June--------:	223:	:	241:	:	:	:	92:	:
uly-September----:	269:	:	214:	:	:	:	125:	:
ctober-December--:	231:	:	214:	:	:	:	108:	:
;:	:	:	:	:	:	:	:	:
anuary-March-----:	220:	:	214:	:	:	:	103:	:
pril-June--------:	224:	:	222:	:	:	:	101:	:
uly-September----:	249:	:	230:	:	:	:	108:	:
ctober-December--:	259:	:	232:	:	:	:	112:	:
':	:	:	:	:	:	:	:	:
anuary-March-----:	241:	:	227:	:	:	:	106:	:
pril-June--------:	232:	:	222:	:	:	:	105:	:
uly-September----:	239:	:	224:	:	:	:	107:	:
ctober-December--:	245:	:	232:	:	:	:	106:	:

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

ble 95.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users or fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs	(Percent)	(Percent)	(Percent)	(Percent)
	Manufacturers coarse 12 Steel Wire Gauge,							
73:								
January-March			320					
April-June		228	281					
July-September			286					
October-December			283					
74:								
January-March			290					96
April-June	400		415					96
July-September	400		415					
October-December			401					
75:								
January-March			379					
April-June			405					
July-September			363					
October-December			391					
76:								
January-March			340					
April-June			355					
July-September			381					
October-December			383					
77:								
January-March			380					
April-June		350	320					
July-September			317					
October-December			317					

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

le 96.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users or fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs				
					(Percent)	(Percent)	(Percent)	(Percent)
	Galvanized wire 12 gauge, soft industrial quality							
nuary-March-----			259	239		108		
ril-June--------			285	239		119		
ly-September----			285	285		100		
tober-December--			285	295		97		
nuary-March-----			332	358		93		
ril-June--------			413	393		105		
ly-September----		540	460	455		101		119
tober-December--			380					
nuary-March-----			667					
ril-June--------		356	410					
ly-September----			410					
tober-December--			476					
nuary-March-----			435	382		114		
ril-June--------			417	382		109		
ly-September----			485	406		120		
tober-December--			408	406		100		
nuary-March-----			442	406		109		
ril-June--------		366	441	406		109		90
ly-September----			425	406		105		
tober-December--			417	406		103		

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

97.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs	(Percent)	(Percent)	(Percent)	(Percent)
	Baling wire, 14-1/2 gauge ASAE No. 6500							
								100
uary-March-----		100		100				98
il-June--------		100		102				98
y-September----		100		102				139
ober-December--		160		115				
								101
uary-March-----		156		154				85
il-June--------		175		206				88
y-September----		178		202				82
ober-December--		170		206				
								101
uary-March-----		193		191				94
il-June--------		176		187				90
y-September----		157		174				105
ober-December--		153		145				
								88
uary-March-----		144		164				89
il-June--------		147		165				93
y-September----		159		171				99
ober-December--		163		165				
								93
uary-March-----		155		166				98
il-June--------		173		176				96
y-September----		171		177				
ober-December--				175				

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

le 98.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users or fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs				
					(Percent)	(Percent)	(Percent)	(Percent)
	Rails, 136 lbs. per yard							
3:								
anuary-March-----			100					
pril-June--------			110					
uly-September----			114					
ctober-December--			114					
4:								
anuary-March-----			119					
pril-June--------			126					
uly-September----			164					
ctober-December--			164					
5:								
anuary-March-----			171					
pril-June--------			171					
uly-September----			171					
ctober-December--			185					
6:								
anuary-March-----			185					
pril-June--------			185					
uly-September----			199					
ctober-December--	219		199				110	
7:								
anuary-March-----			199					
pril-June--------			199					
uly-September----	271		214				127	
ctober-December--	217		214				101	

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

e: Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

99.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price (Percent)	Ratio of producers' end user price to producers' distributor price (Percent)	Ratio of importers' end user price to U.S. producers' end user price (Percent)	Ratio of importers' distributor price to U.S. producers' distributor price (Percent)
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs				
	Angle L 6" x 4" x 3/8"							
uary-March-----			100	96		105		
il-June--------			98	100		98		
y-September----			104	100		104		
ober-December--			103	100		103		
uary-March-----			116	100		116		
il-June--------			137	136		101		
y-September----			161					
ober-December--			167					
uary-March-----			172	168		102		88
il-June--------		148	164	168		97	163	82
y-September----	270	138	166	168	196	99		82
ober-December--		139	164	168		98		
uary-March-----	127	128	160	168	98	95	79	76
il-June--------	135	124	166	168	108	99	81	74
y-September----	141	141	164	168	100	98	86	84
ober-December--	143	140	152		102		94	
uary-March-----	134	139	171	171	97	100	78	81
il-June--------		118	163	171		95		69
y-September----		126	140	171		81		74
ober-December--		140	156	177		88		79

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

Note: Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

a 100.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users
- fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs	(Percent)	(Percent)	(Percent)	(Percent)
	Welded Standard Pipe - ASTM A-120, 3/4" nom. dia.							
nuary-March-----		77		100				77
ril-June--------	82	81		101	101			80
ly-September----	103	92		101	111			92
tober-December--	103	94		100	109			94
nuary-March-----		115		108				106
ril-June--------	174	142		138	123			103
ly-September----		174		166				105
tober-December--		173		167				104
nuary-March-----		169		182				93
ril-June--------		144		184				79
ly-September----	120	109		182	110			60
tober-December--	114	105		182	109			58
nuary-March-----	115	112		191	103			59
ril-June--------	116	121		186	96			65
ly-September----	131	126		159	104			79
tober-December--	121	129		144	94			89
nuary-March-----	148	122		162	121			76
ril-June--------		124		174				71
ly-September----	125	142		176	88			81
tober-December--		120		188				64

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

: Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users
ricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

riod	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price (Percent)	Ratio of producers' end user price to producers' distributor price (Percent)	Ratio of importers' end user price to U.S. producers' end user price (Percent)	Ratio of importers' distributor price to U.S. producers' distributor price (Percent)
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs				
	Hot rolled square tubing, 14 ga. (.075 in.)							
-March-----				100				
une--------				100				
ptember----		70						
-December--		75		129				
-March-----		80		129				
une--------		85						
ptember----		128		156				82
-December--		85						
-March-----								
une--------								
ptember----		93		114				82
-December--								
-March-----								
une--------								
ptember----		98						
-December--								
-March-----								91
une--------		104		115				
ptember----		103						
-December--								

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

rice data in the above table were converted to index numbers to avoid disclosure of individual company data.

102.--Carbon steel products: Weighted average lowest selling prices of importers and of U.S. producers to end users fabricators and to distributors or steel service centers in 10 Western States, by quarters, 1973-77

(Prices are per ton)

Period	Weighted average lowest selling price--				Ratio of importers' end user price to importers' distributor price	Ratio of producers' end user price to producers' distributor price	Ratio of importers' end user price to U.S. producers' end user price	Ratio of importers' distributor price to U.S. producers' distributor price
	Of importers to--		Of producers to--					
	End users or fabricators	Distributors or steel service ctrs	End users or fabricators	Distributors or steel service ctrs	(Percent)	(Percent)	(Percent)	(Percent)
	Barbed wire, 12-1/2 ga., 2 pt., 4", 2 ply, 80 Rodreels							
uary-March-----				100				
il-June--------		202		118				171
y-September----		202		117				172
ober-December--				118				
uary-March-----				128				
il-June--------		235		166				142
y-September----		235		172				137
ober-December--				208				
uary-March-----				172				
il-June--------		165		169				98
y-September----		237		168				141
ober-December--				163				
uary-March-----		144		172				84
il-June--------				172				
y-September----		202		175				116
ober-December--				186				
uary-March-----				174				
il-June--------		201		181				111
y-September----			175	187		94		
ober-December--			179	178		100		

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

Price data in the above table were converted to index numbers to avoid disclosure of individual company data.

Table 105.—Major European and Japanese steel producers' sales, profits, and after-tax profits, 1976 and 1977 1/

Company	Industry	Sales		Profit or (loss)	Profit after taxes as a share of sales	
		1977	Percentage change, 1977 from 1976	1977	1977	1976
		Million dollars		Million dollars	Percent	Percent
Belgium						
Bekaert	Steelwire, engineering	691.1	6	17.7	2.6	2.7
Cockerill	Steel	1,449.9	-9	(222.9)	2/	2/
United Kingdom						
British Steel	Steel	5,252.5	30	(163.4)	2/	2/
Tube Investments	Steel tubes, bicycles	1,520.2	11	61.6	4.1	4.8
France						
Creusot-Loire	Steel, heavy equipment	2,247.9	23	(41.9)	2/	2/
Schneider	Steel, machinery	3,889.3	19	41.4	1.1	0.6
Vallourec	Steel pipe	1,600.7	-6	(25.5)	2/	0.9
West Germany						
Fried Krupp	Iron & steel	5,327.6	15	3/	3/	2/
Klockner-Werke	Iron & steel	1,402.2	9	(45.9)	2/	2/
Neunkircher-Eisenwerke	Iron & steel	294.3	-18	(26.7)	2/	2/
Salzgitter	Steel, shipping	2,780.8	-5	(41.2)	2/	2/
Stahlwerke Roch-ling-Burbach	Iron & steel	851.5	-8	3/	3/	3/
Thyssen	Steel	8,539.9	-3	67.4	0.8	1.3
Italy						
Finsider	Steel	48.8	15	(9.2)	2/	0.4
Italsider	Iron & steel	2,697.1	3	(453.7)	2/	2/
Luxembourg						
Arbed	Steel	1,025.3	-5	(137)	2/	2/
Japan						
Kawasaki Steel	Steel	4,204.4	-5	30.6	0.7	0.8
Kobe Steel	Steel	3,746.5	-7	31.6	0.8	1.3
Nippon Kokan	Steel	5,404.3	-3	23.4	0.4	0.9
Nippon Steel	Steel	10,459.3	-7	71.3	0.7	1.1
Sumitomo Metal Industries	Steel	4,382.2	-8	24.2	0.6	0.4

1/ Data are for fiscal year, which varies from firm to firm.
2/ Sustained loss.
3/ Not available.

Source: Compiled from data by Standard and Poors' Compustat Services as published in Business Week, July 24, 1978.

Appendix D

The Japanese Steel Industry

The Japanese Steel Industry 1/

Industry structure

The Japanese steel industry is composed of over 50 companies. Eight large integrated companies operating 21 mills account for the bulk of the nation's output of crude steel.

The five largest companies 2/--Nippon Steel Corp., Nippon Kokan K.K., Kawasaki Steel Corp., Sumitomo Metal Industries, Ltd., and Kobe Steel Corp.--account for about 125 million metric tons of crude steel capacity, or more than 80 percent of Japan's total steelmaking capacity of approximately 151 million metric tons.

Nippon Steel Corp., which operates nine plants, is the world's largest steelmaker, accounting for about 50 million metric tons of Japan's crude steel capacity. This giant company's market power influences steelmaking policies and decisions in Japan and throughout the world. In addition to steel, Nippon Steel Corp. has a large number of subsidiaries and affiliates involved in other products such as aluminum, chemicals, cement, engineering and construction, and related activities.

Nippon Kokan K.K., with 24 million metric tons of steelmaking capacity, is the second largest Japanese producer. Its Fukuyama works, with a capacity of about 16 million tons, is the world's largest steel mill. The Ogishima works, expected to be completed in 1978, will have a capacity of approximately 6 million tons and will be one of the world's most efficient integrated mills. 3/ Nippon Kokan K.K. is Japan's fifth largest shipbuilder and is one of the world's leading companies in engineering, fabrication, and construction of steel structures.

Kawasaki Steel Corp. and Sumitomo Metal Industries, Ltd., have about 20 million metric tons of steel capacity each. Kawasaki Steel Corp. has been a leader in technological advances. Sumitomo Metals produces a large variety of steel products; however, it is a leader in the production of pipe and tube. The company supplied large quantities of large diameter pipe for the Alaska pipeline. Sumitomo Metals accounts for almost one-third of Japan's capacity to produce steel pipe and tube.

1/ In January 1978, Mr. Howard Gooley and Mr. Quay Williams of the Commission staff conducted onsite interviews with leading officials of the Japanese steel industry and inspected six of the industry's large integrated mills. This field research provided the Commission's staff with a unique opportunity to witness firsthand Japan's steelmaking operations and their competitive capability, to acquire knowledge as to conditions and forecasts of domestic demand including export patterns, and to discuss other factors relevant to Japan's position in the world's steel market.

2/ All of these companies were visited by representatives of the U.S. International Trade Commission in January 1978.

3/ The Ogishima works, when completed, will replace virtually all of the adjacent Kehin works.

Kobe Steel Corp., with annual capacity of about 10 million metric tons of crude steel, owns about one-third of Japan's wire rod capacity.

About 82 percent of Japan's crude steel capacity has been built on land reclaimed from the sea. These mills, all built since 1960, have spacious plant layouts organized efficiently, from raw material inflow through the steelmaking process to product outshipment. They employ the latest in pollution-control technology including large greenbelt areas. 1/ All of these complexes possess highly automated computer-controlled equipment.

Raw materials

Japan is almost totally dependent upon imported iron ore and coking coal for steel production. In recent years, Japan has imported 99 percent of its iron ore needs and 89 percent of its coal requirements. Japan has been highly successful in developing dependable long-term sources of supply for its raw material needs. Australia, Brazil, and India are its principal sources of iron ore, and Australia, the United States, and Canada supply most of the coal. These raw materials are transported by huge cargo vessels largely built, owned, or leased by the major steel firms. By contrast, Japan is almost totally self-sufficient for its scrap needs.

Facilities

The Japanese steelmaking facilities are vast, employing huge blast furnaces, 2/ some of which are capable of producing 12,000 metric tons of pig iron per day. The large basic oxygen furnaces employ the latest technology; 28 of these BOF's have a capacity of more than 200 metric tons per charge. At the beginning of 1977, Japan had 72 blast furnaces and 101 BOF's.

Rolling and finishing facilities are fast, efficient, and capable of producing the largest sizes of steel material produced in the world. Individual mills tend to concentrate on a limited range of products reflecting Japan's goal of rationalized production.

Japan's production and trade in steel for 1973-77 are shown in the tabulation below (in millions of metric tons): 3/

	Production	Exports	Imports
1973----------	119.3	25.6	1.9
1974----------	117.1	33.1	1.8
1975----------	102.3	30.0	.6
1976----------	107.4	37.0	.9
1977----------	102.4	35.0	1.0

1/ In recent years, environmental control expenditures have averaged about 18 to 20 percent of total annual capital expenditures.

2/ Japan has 14 of the 20 largest blast furnaces in the world.

3/ Data were obtained from the Japan Iron and Steel Federation.

About 82 percent of Japanese crude steel production is by the BOF, the remainder, by the electric furnace process. By early 1978, all of the remaining open-hearth furnaces had been phased out of production. About 35 percent of Japan's production is continuous cast, which provides for savings in thermal energy and scrap, eliminates some production processes, and provides for greater yields. Japan has about 130 continuous-casting machines in operation. Among the major steel producers of the world, Japan is the leader in continuous-casting installations.

Japanese work force

According to the Japan Iron and Steel Exporters Association (JISEA), 317,000 persons (excluding contract employees) were employed in the Japanese steel industry in 1976. Production workers totaled 230,000, a reduction from the previous year. While the exact number of contract employees is not known, the staff of the U.S. International Trade Commission, on the basis of field research, estimates that contract employees 1/ account for between 70 and 80 percent (160,000 to 185,000) of the number of production workers.

The Japanese labor force is relatively young, well educated, and highly motivated. Although Japanese labor productivity is among the highest in the world, actual productivity figures are difficult to calculate because contract employees are not included in Japan's labor productivity calculations. Thus, some published data on Japanese labor productivity may be suspect.

The Japanese steel industry is a recognized leader in technological advances, such as pretreatment of iron ore, coke quenching and reduction, blast-furnace enrichment and BOF control, and continuous annealing. Coke and energy consumption rates per ton of output have steadily declined, reducing costs per ton.

In recent years, Japan has become a net exporter of steel technology. Research and development expenditures have averaged slightly in excess of 1 percent of gross sales.

Japan has made heavy capital investments over three 5-year programs to modernize and expand its steel industry. In 1976, such expenditures for facilities and equipment were in the magnitude of between $4 billion and $5 billion. Currently no new investments are contemplated for greenfield plants.

Steel demand in the world and in Japan

World steel demand is important to Japan's steel industry and to the Japanese economy. Japan's steel industry in turn has a strong influence on the overall economy of the country. The following ratios highlight the steel

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1/ The Japanese steel companies use contract labor for many tasks associated with the production, finishing, and shipping of steel mill products. Contract workers are not employees of the steel mill; they are employed by both independent and subsidiary firms. Contract workers are used in such jobs as furnace repairing, maintenance, and packaging and shipping.

industry's key role: In 1975, Japan's steel industry was responsible for 7 percent of cash wages and salaries paid by all manufacturing industries, contributed 9 percent of the total value of manufactured products, and accounted for 20 percent of total investment in fixed assets.

Japan's domestic demand for steel has declined since the peak year 1973, when crude steel output reached a level of 120 million metric tons. Japanese steel sources peg the change in pattern and level of demand to the 1973 oil crisis and its effect on world economic growth.

Since the oil shock and the attendant decline in world economic growth rates, world demand for steel--on a steady uptrend for more than 2 decades--has faltered. In the industrialized countries, which account for about 70 percent of world demand, steel consumption levels declined most sharply. In contrast, steel consumption in the Communist bloc countries has grown steadily through the 1970's. Although apparent consumption of steel in the developing countries has varied, the overall pattern reflects a steady uptrend led by increased demand in Latin America, North Africa, and the Middle East.

The level of demand for steel in Japan follows the pattern in the industrialized countries. Apparent steel consumption has not recovered from the successive declines that began in 1974, as shown in the table below.

Apparent steel consumption in the world, 1972-77

(In millions of metric tons)

Area	1972	1973	1974	1975	1976	1977 1/
Advanced countries	381	436	418	341	364	386
U.S.A	138	156	150	114	128	141
EEC	117	127	122	100	113	115
Japan	71	89	78	68	65	68
Developing countries	49	57	69	71	74	83
Communist bloc	194	210	224	233	244	255
World total	624	703	711	645	682	724

1/ Estimated.

Source: International Iron and Steel Institute.

Following the oil crisis, Japan's rate of economic growth dropped sharply to a low of 3.4 percent in fiscal 1976, in contrast to a rate of 10 percent or more during the 1960's and early 1970's. Moreover, there has been a change in the structure of gross national product (GNP) in Japan that has altered the level and structure of demand for steel.

Private plant and equipment investment in Japan dropped sharply from 20.5 percent of GNP in 1973 to 15.1 percent in 1976. The resultant decline in construction had an adverse effect on demand for steel. Steel consumption for construction, which has been about half of overall demand in the past, dropped to 36.9 percent in 1976. The post-oil-crisis tanker glut 1/ and sharp competition from new entrant countries in the shipbuilding industry (Korea and Taiwan) cut steel demand from Japan's shipbuilders. In 1976, the Japanese automobile industry was the only segment of steel demand in which consumption was above the 1973 level, as shown in the following table.

Indexes of Japanese steel demand, by sectors, fiscal years 1973-76

Demand sector	1973	1974	1975	1976
Construction	100.0	71.5	61.6	61.7
Shipbuilding	100.0	90.2	83.4	69.1
Automobiles	100.0	89.4	94.0	109.6
Industrial machinery	100.0	85.8	60.0	69.6
Electrical machinery	100.0	74.6	71.5	95.9
Others	100.0	76.9	72.1	74.1
Total	100.0	80.5	72.0	74.0

Source: From data provided by Japan Iron and Steel Exporters Association.

Although public investment has increased somewhat during the recession period, the pattern of such expenditures has changed from steel-intensive construction of expressways and bridges to housing and welfare projects using much less steel. However, the Japanese Government reportedly is budgeting funds for large steel-intensive projects such as a floating steel airport at Osaka, said to require 4 million to 5 million metric tons of steel.

Estimates of demand for steel in 1978 provided to the Commission's staff in Japan by steel industry economists were cautious, conservative, and contingent on the level of business and consumer confidence plus the strength of the Government's effort to reach a "target" economic growth rate of 7 percent. 2/ The industry spokesmen were not optimistic in their forecasts of steel production for 1978. Steel inventories, said to be about 7 million metric tons in January, were expected to be worked down to 6.7 million metric tons by the end of the first quarter. If inventories are replenished, stimulated by increased demand, crude steel production could reach 102 million to 104 million metric tons. If inventories are not rebuilt, crude steel output will be about 100 million metric tons.

1/ Tankers accounted for about 50 percent of total ship tonnage built prior to 1974. Steel demand for shipbuilding, 13 million metric tons in 1973, will only be 6 million metric tons by 1980 according to Japanese forecasts.

2/ For the fiscal year ending March 31, 1979, Japan's economic growth is expected to reach slightly in excess of 5 percent.

Japan's steel exports

In contrast to the lag in domestic consumption of steel, Japan's steel exports reached an alltime high of 37 million metric tons in 1976. Japan's exports of steel products increased from 25.6 million metric tons in 1973 to 33.1 million metric tons in 1974, declined to 30.0 million metric tons in 1975, then rose to 37 million metric tons in 1976. Exports amounted to about 35 million metric tons in 1977. Average export price declined from $345 per ton in 1975 to $294 per ton in 1976, or by about 15 percent. In tonnage terms most of the 7-million-metric-ton increase in 1976 was accounted for by larger exports of bars, shapes, sheet piling, and cold-rolled and galvanized sheets. In 1976, Asian countries, Japan's largest export market, increased their steel imports from Japan from 8.9 million to 10.9 million metric tons. Exports to North America, Japan's second largest market, grew by 30 percent to 7.9 million metric tons. The U.S. market accounted for more than 90 percent of this tonnage. The Middle East, the third largest market for Japan's steel exports, took 9.4 million metric tons, amounting to a 14-percent increase over 1975.

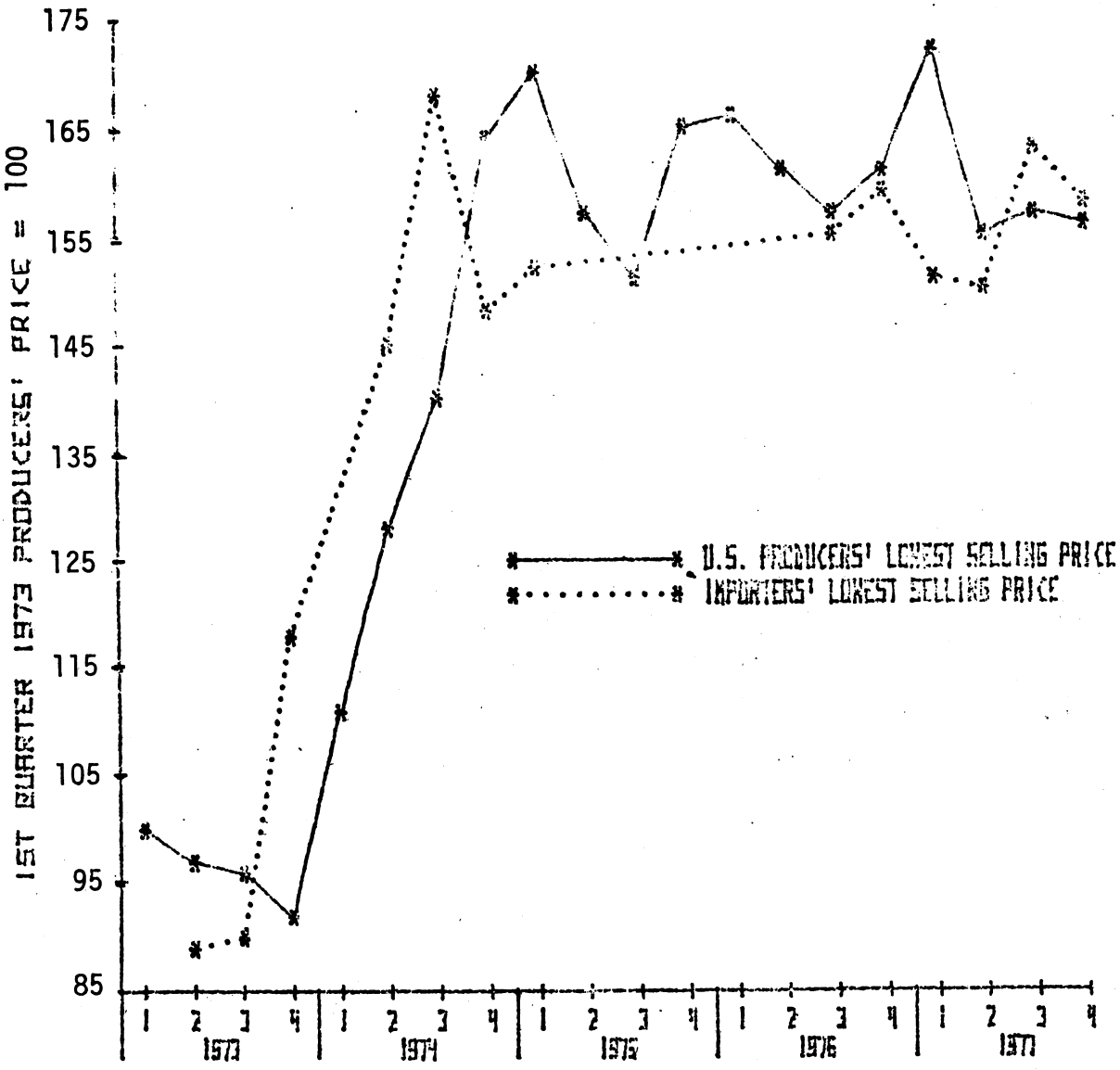
This export-destination pattern is sharply different from that of a decade ago when exports to North America accounted for 54 percent of total exports, compared with 21 percent in 1976. The developing countries accounted for about 40 percent of Japan's exports in 1968; their share in 1976 increased to almost 67 percent. According to trade sources, Japan, facing the problem of voluntary export restraint in Western Europe and the trigger price system in the United States, is counting on the growth in steel demand in the developing countries, the People's Republic of China, and the U.S.S.R. to bolster its steel exports.

According to industry economists, steel exports probably will fall in 1978, dampened by the voluntary restraint policy with respect to the U.S. and Western European markets and energy-related foreign-exchange problems in some of the developing countries. Direct exports of steel by Japan are only one dimension of demand for Japan's steel. More than 20 percent of steel produced is exported indirectly as input material in autos, ships, industrial machinery, and other related products. The steel industry has benefited from a sharp increase in Japan's exports of manufacturing plants, valued at an estimated $8 billion in 1977.

Appendix E

Indexes of, or weighted averages of, importers' lowest selling price and U.S. producers' lowest selling price of selected carbon steel mill products

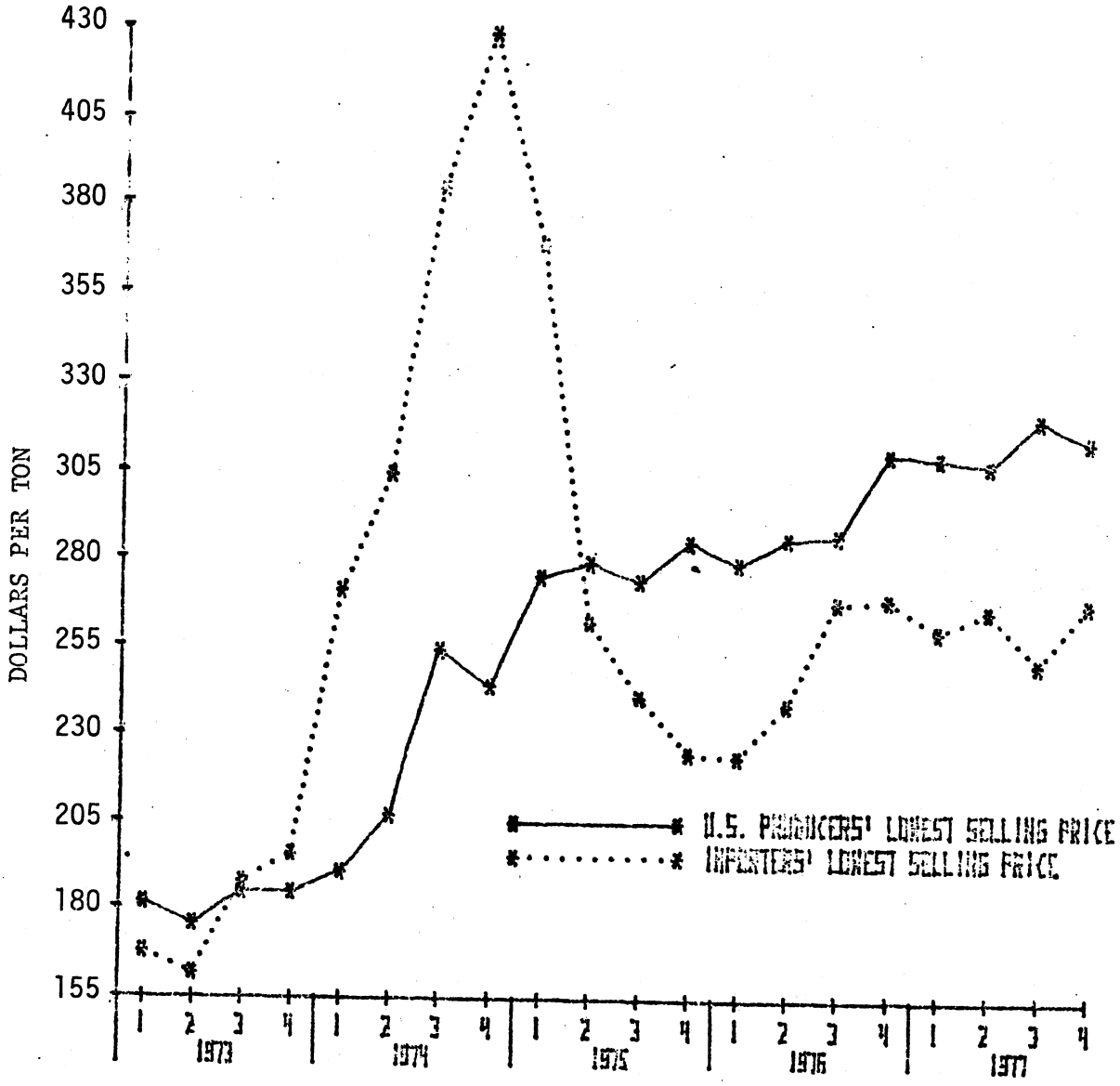
Figure E-1--Galvanized sheet, commercial quality: Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77



Source: Table 67

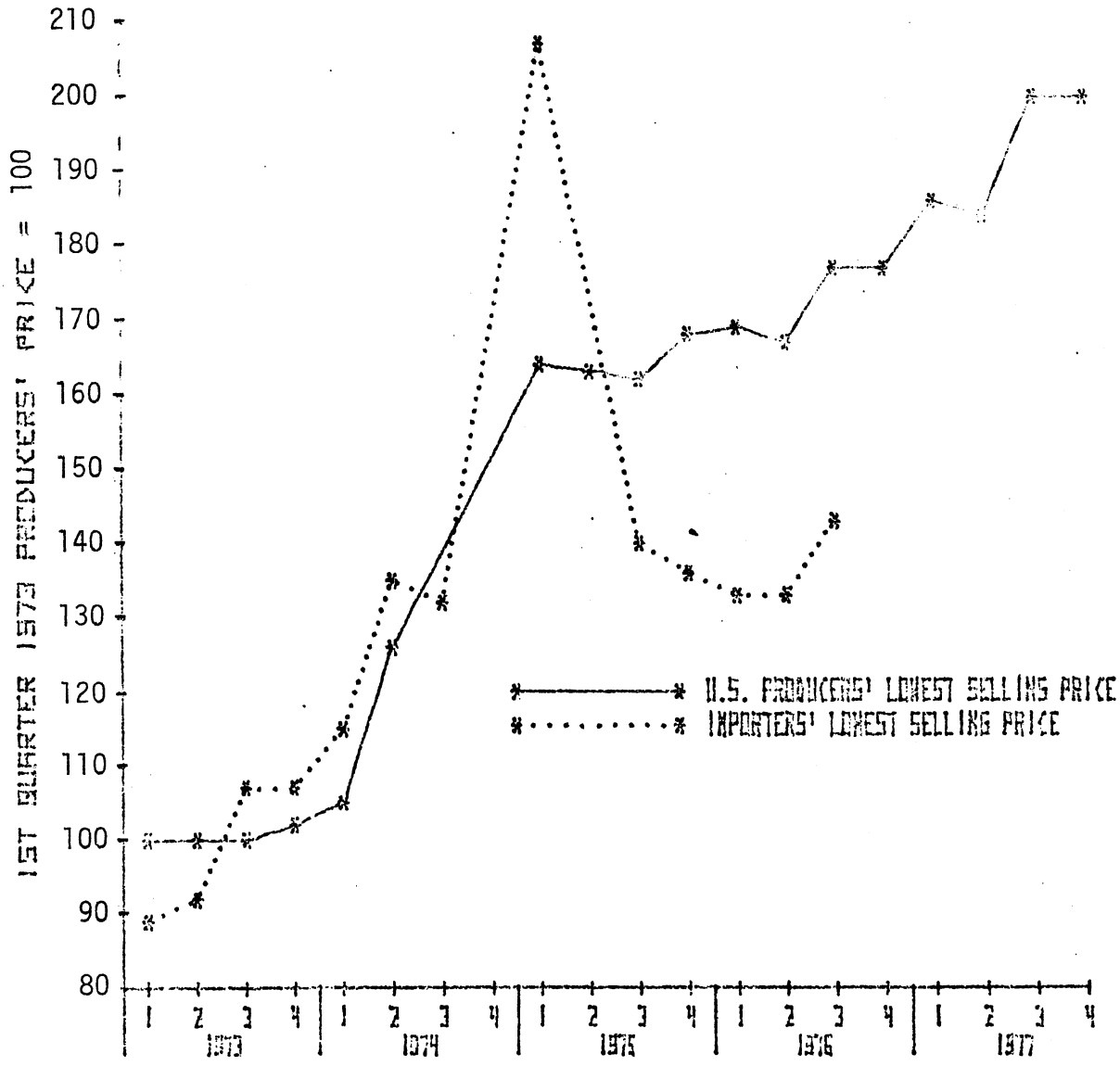
Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

Figure E-2--Plate, structural grade, ASTM A-36, 3/8"x72"x240": Weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973.77.



Source: Table 68

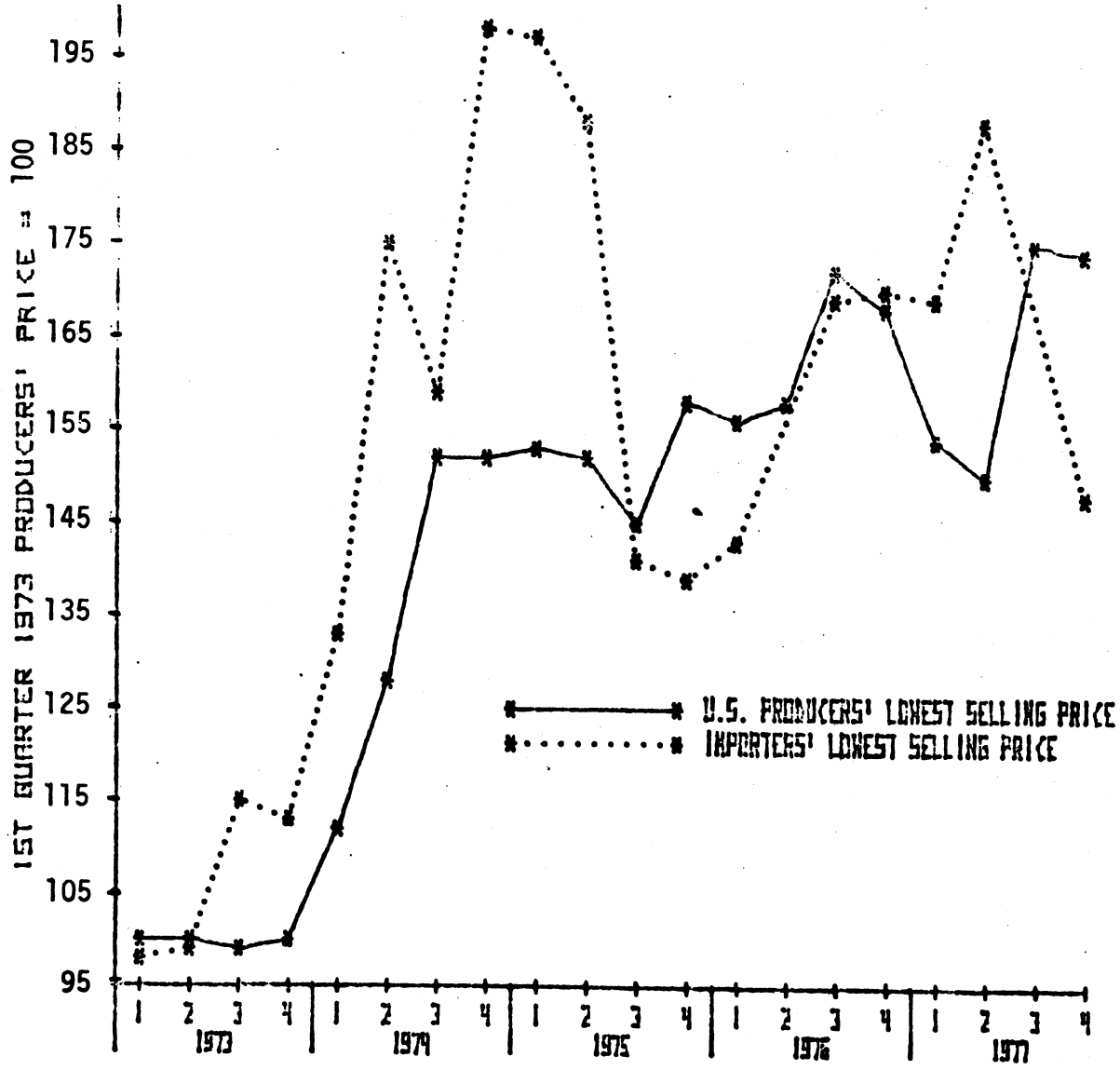
Figure E-3.--Hot rolled sheet, commercial quality, 14 ga. (.075"): Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 69

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

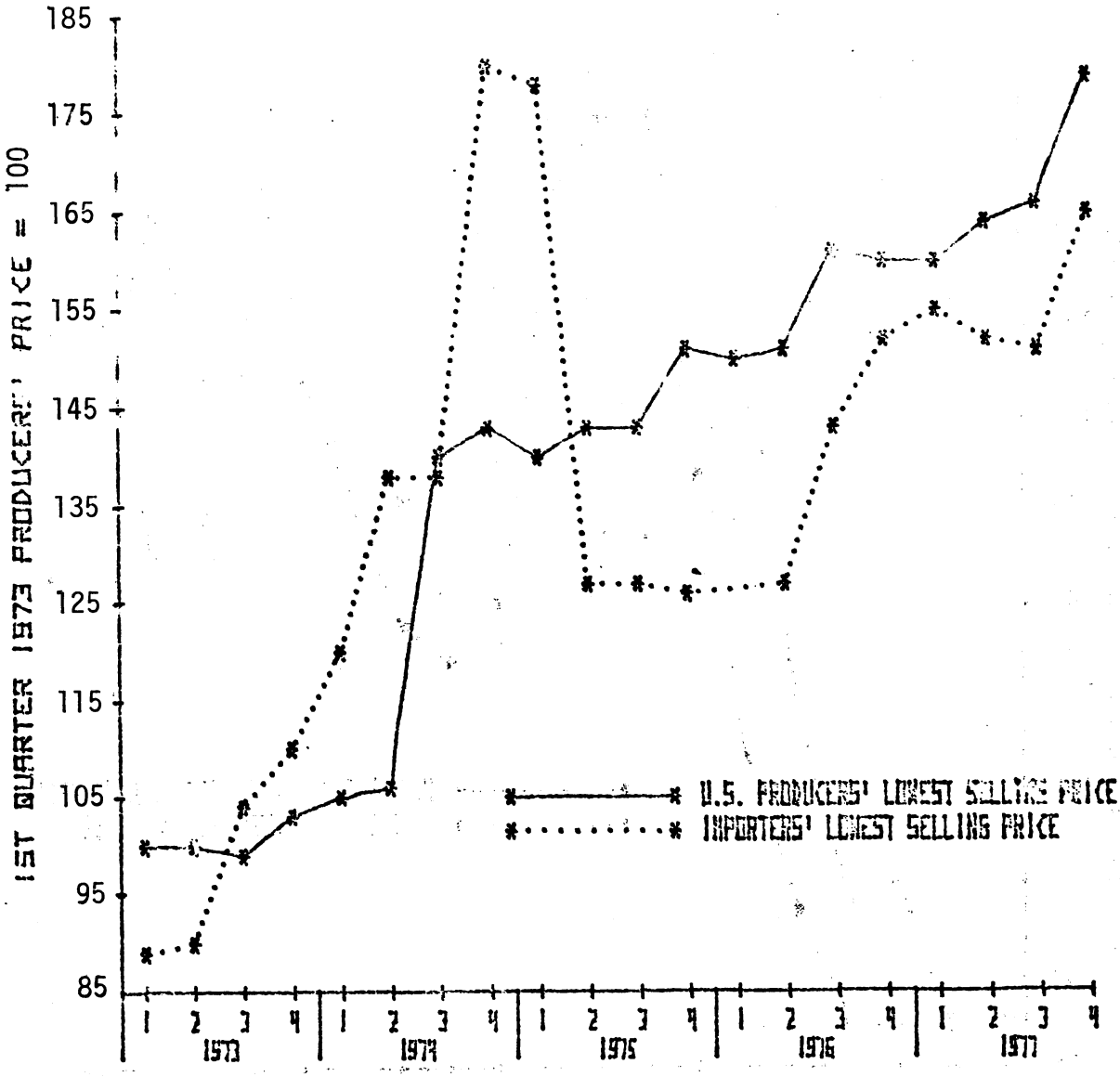
Figure E-4.--Cold rolled sheet, Class 1, commercial quality, .0299": Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 70

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

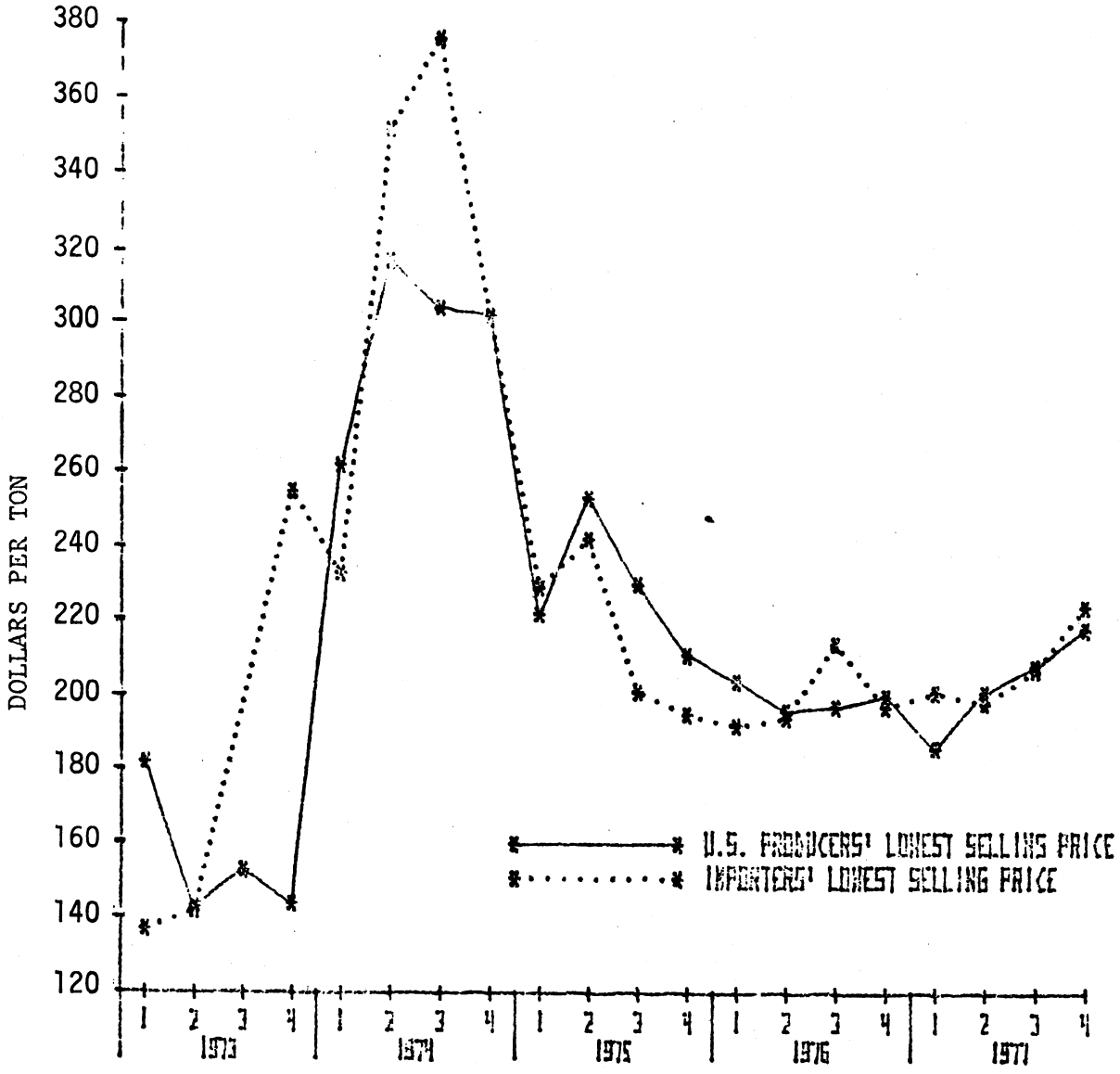
Figure E-5.--Cold rolled sheet, Class 1, commercial quality, .0359": Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 71

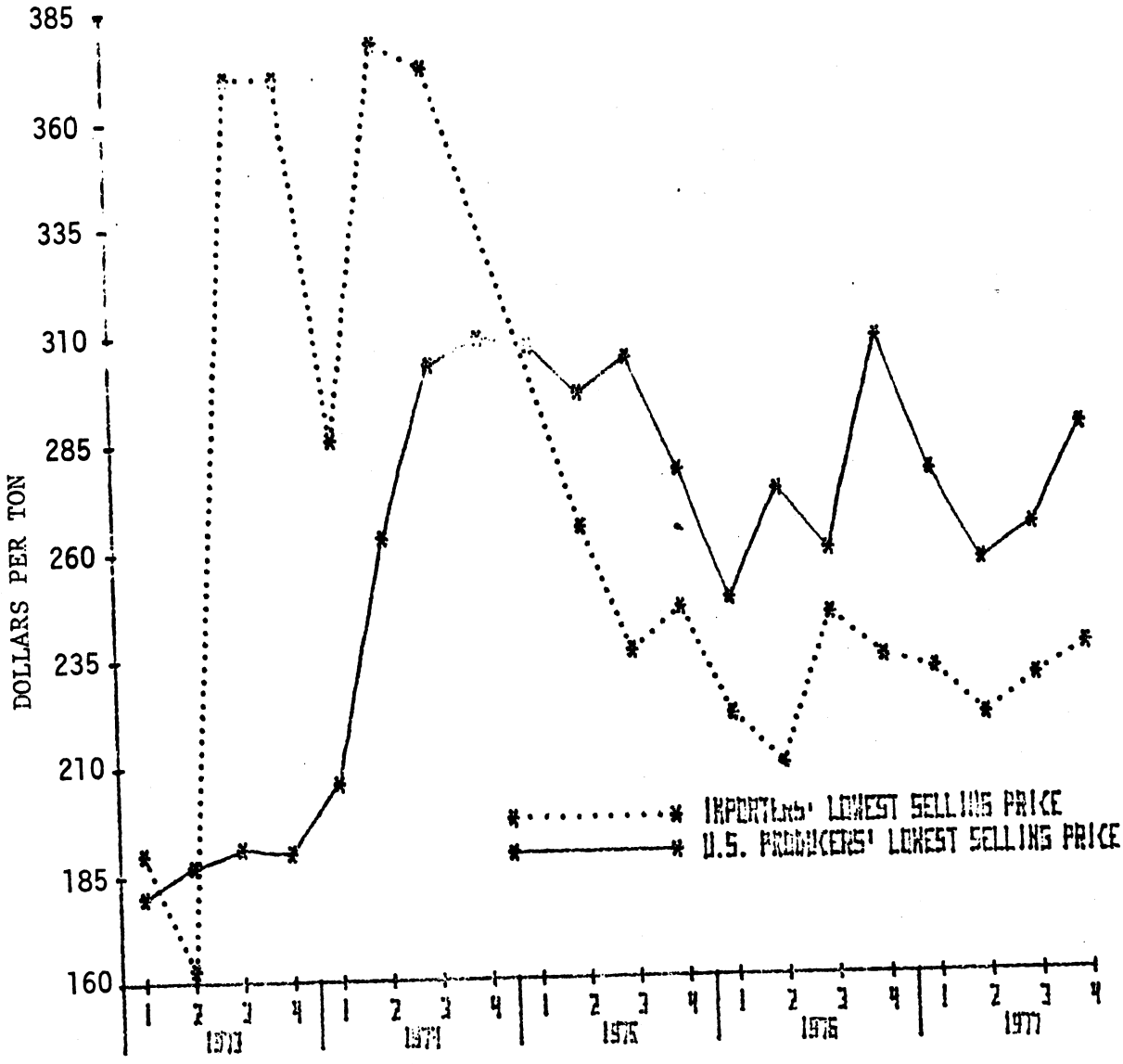
Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

Figure E-6.--Deformed reinforcing bars, ASTM 615, grade 40, No. 4: Weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



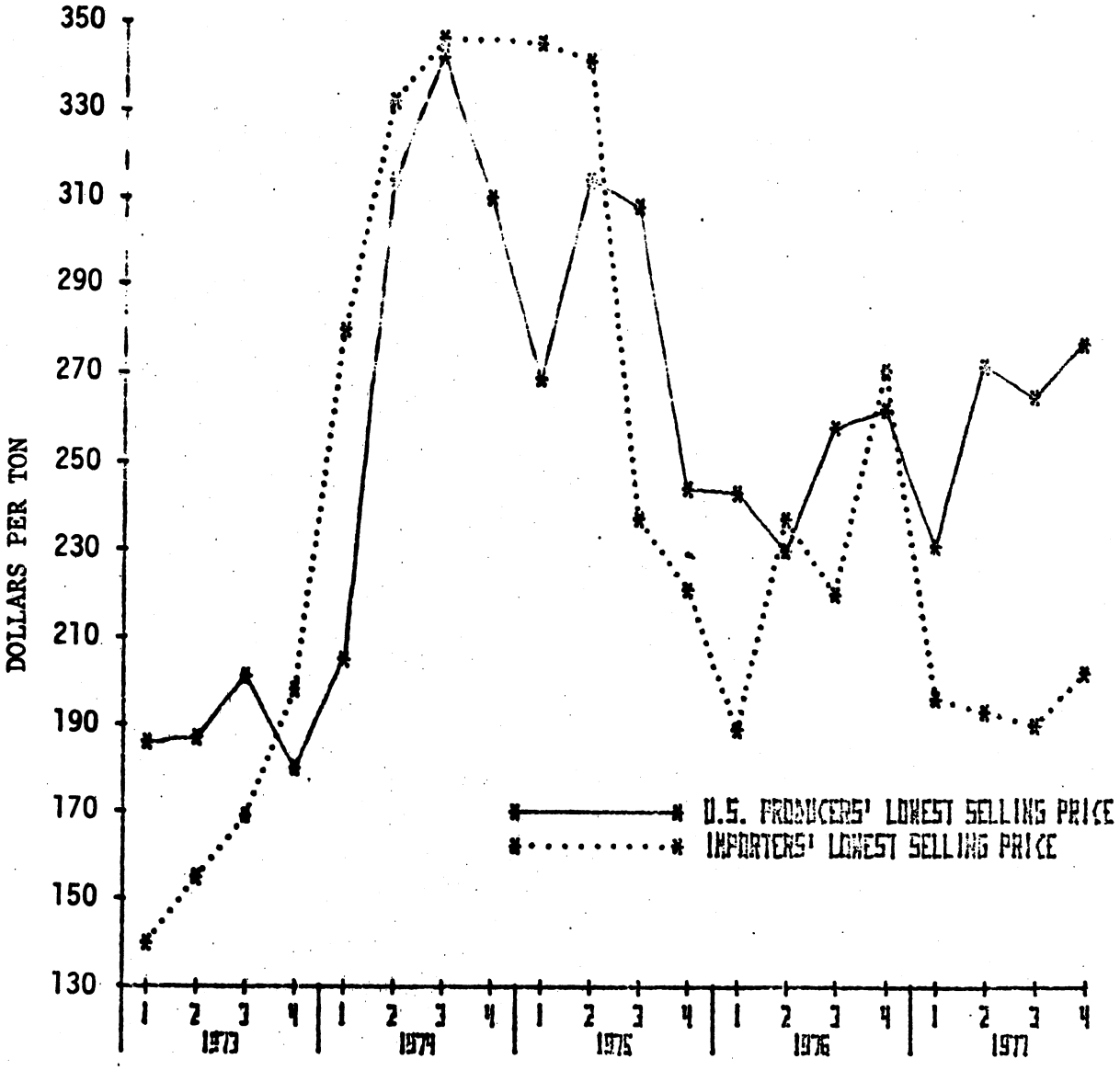
Source: Table 72

Figure E-7.--Hot Rolled bars (flats), 1/4" x 3": Weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, in quarters, 1973-77.



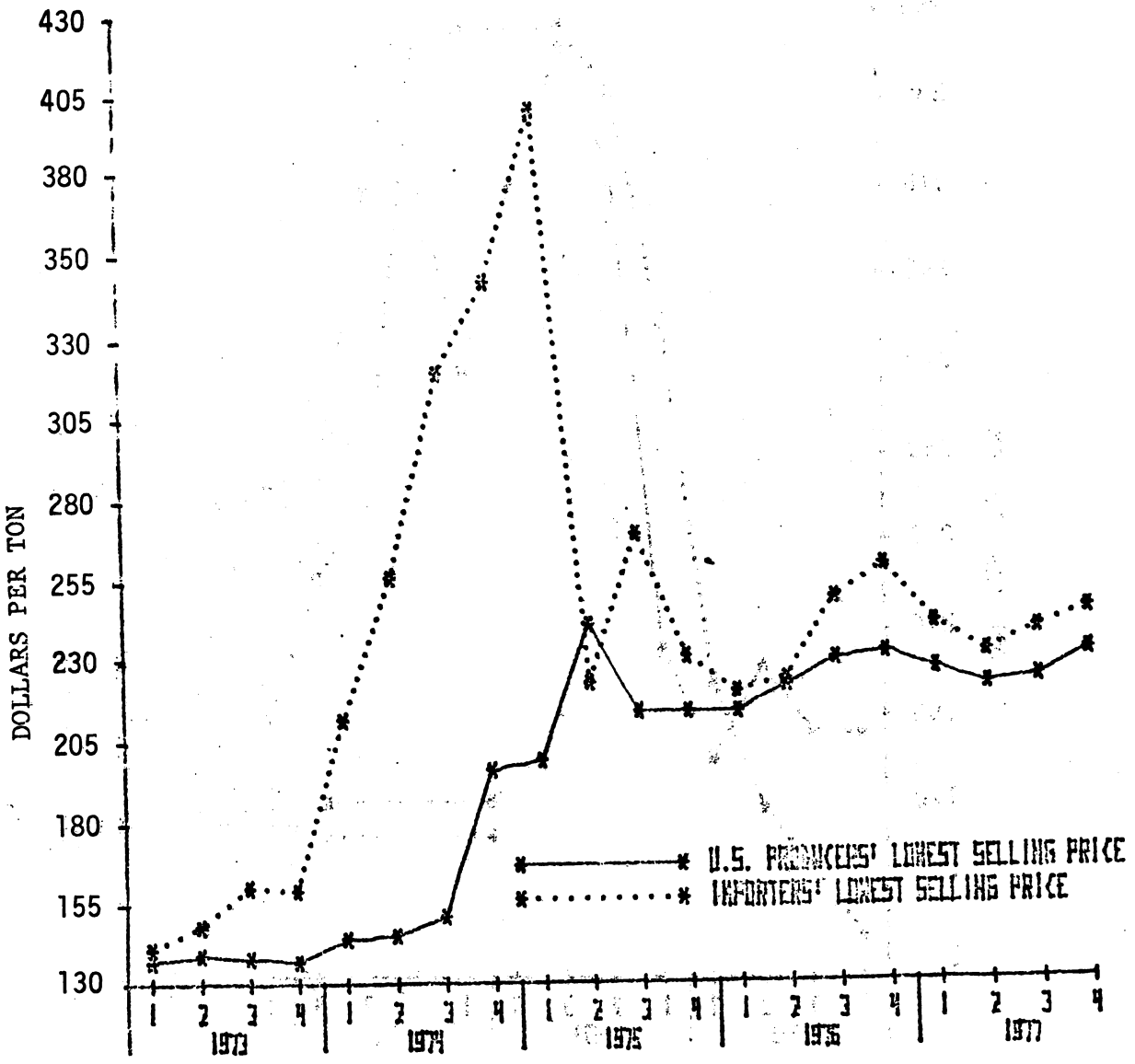
Source: Table 73

Figure E-8.--Angles, 2" x 2" x 1/4", A-36: Weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, in quarters, 1973-77.



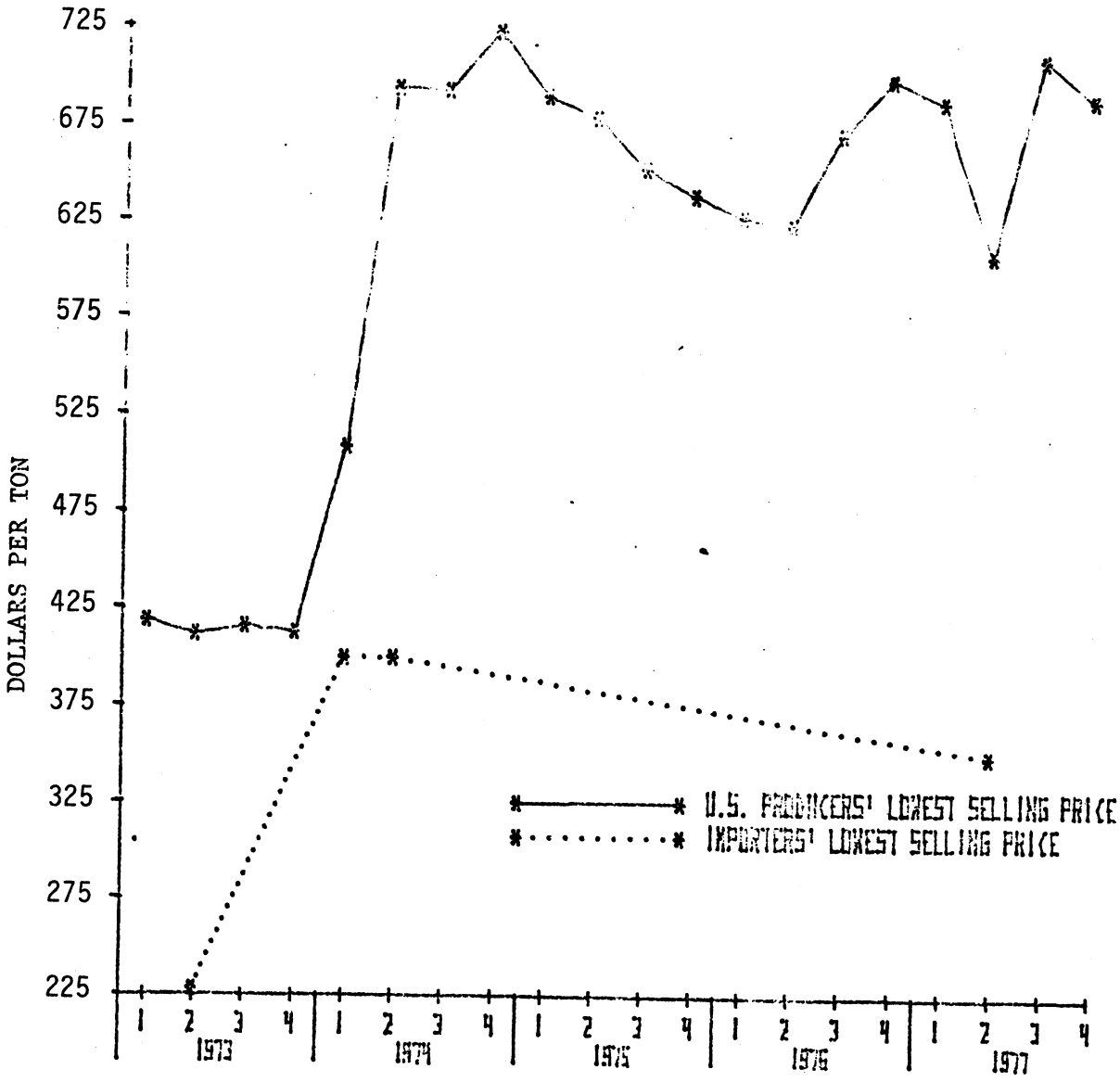
Source: Table 74

Figure E-9.--Hot rolled rods, 7/32", low carbon grade C-1008: Weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, in quarters, 1973-77.



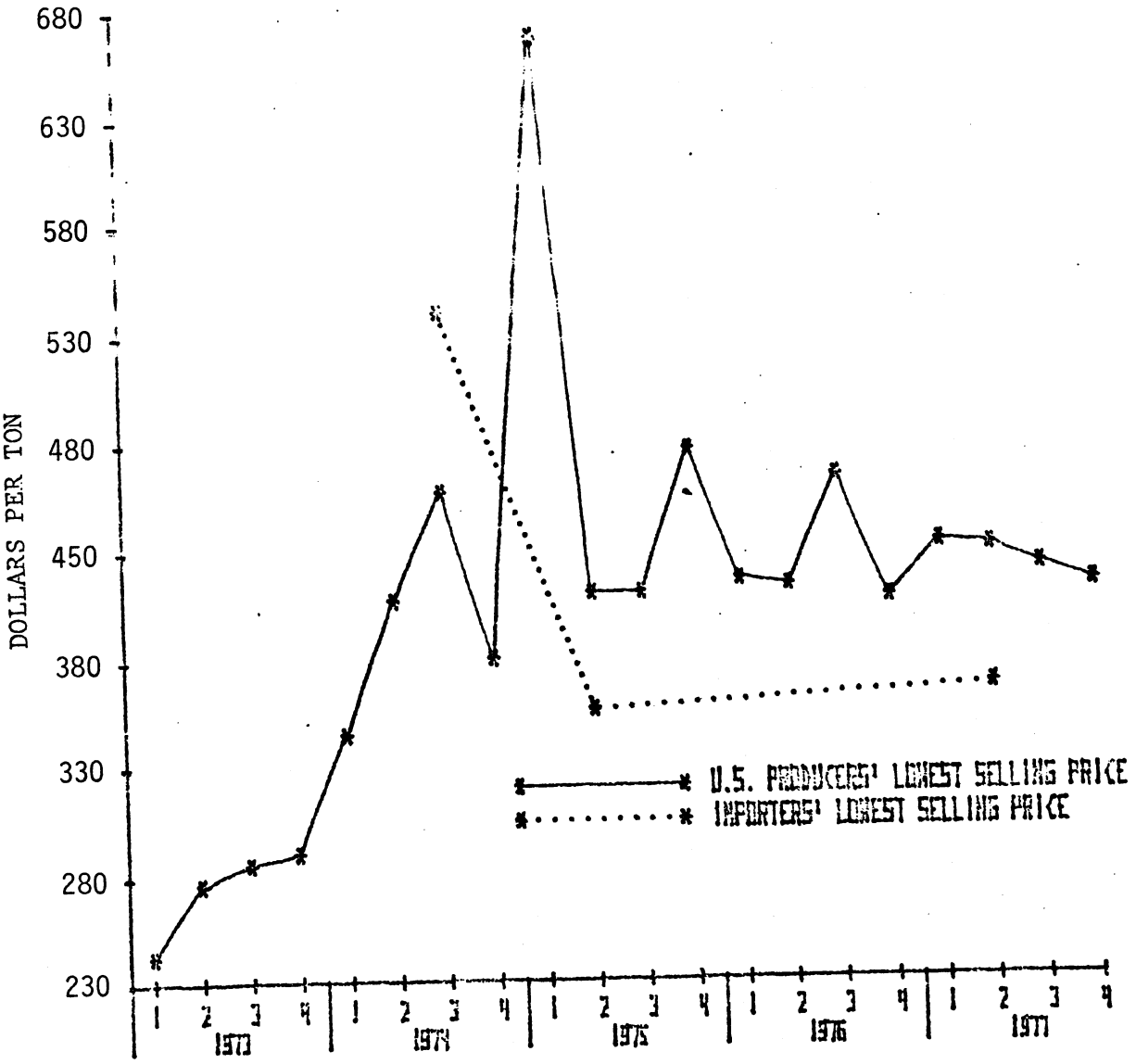
Source: Table 75

Figure E-10.--Manufacturers coarse steel wire, 12 gauge: Weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



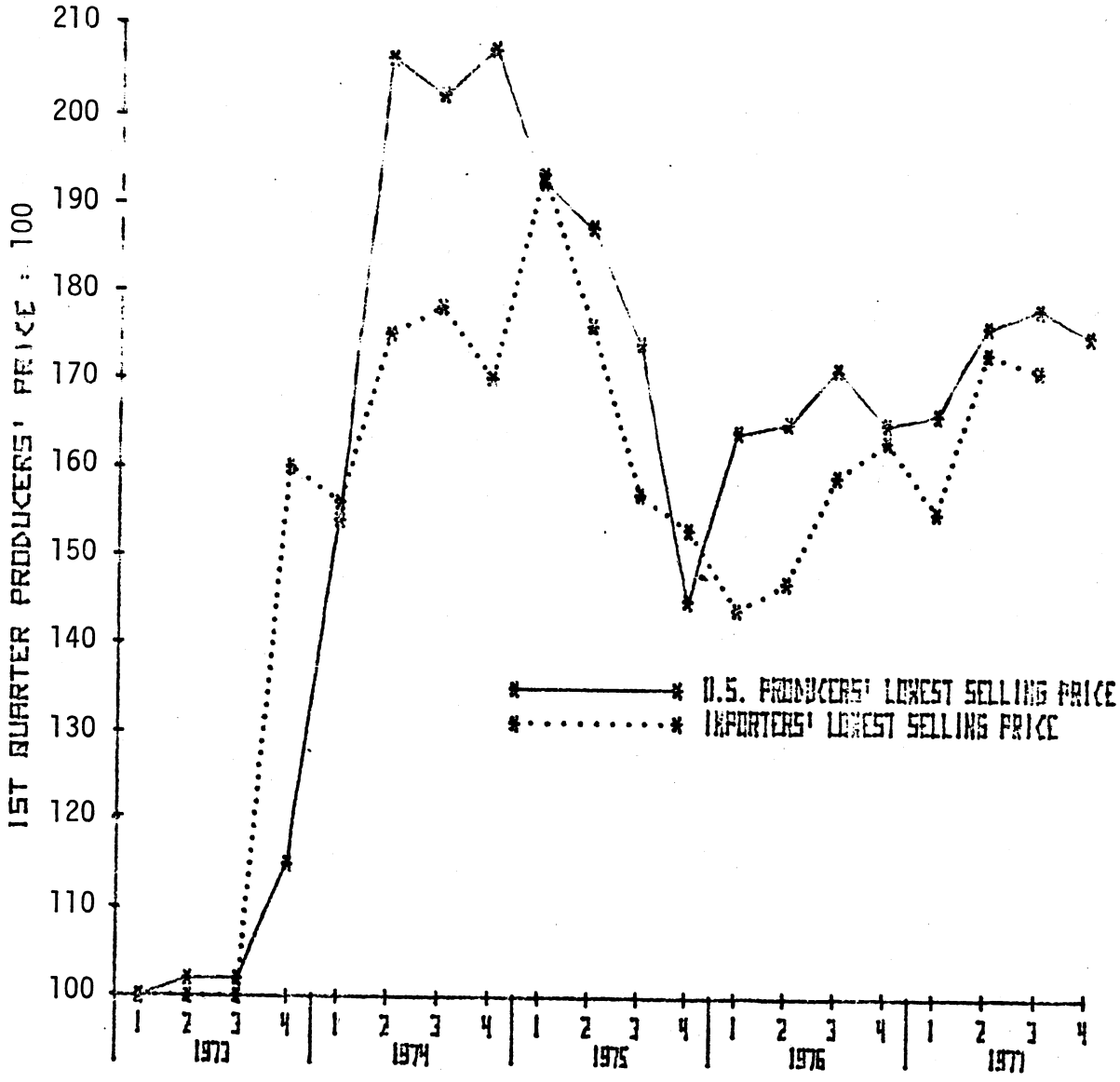
Source: Table 76

Figure E-11.--Galvanized wire, 12 gauge, soft industrial quality: Weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 77

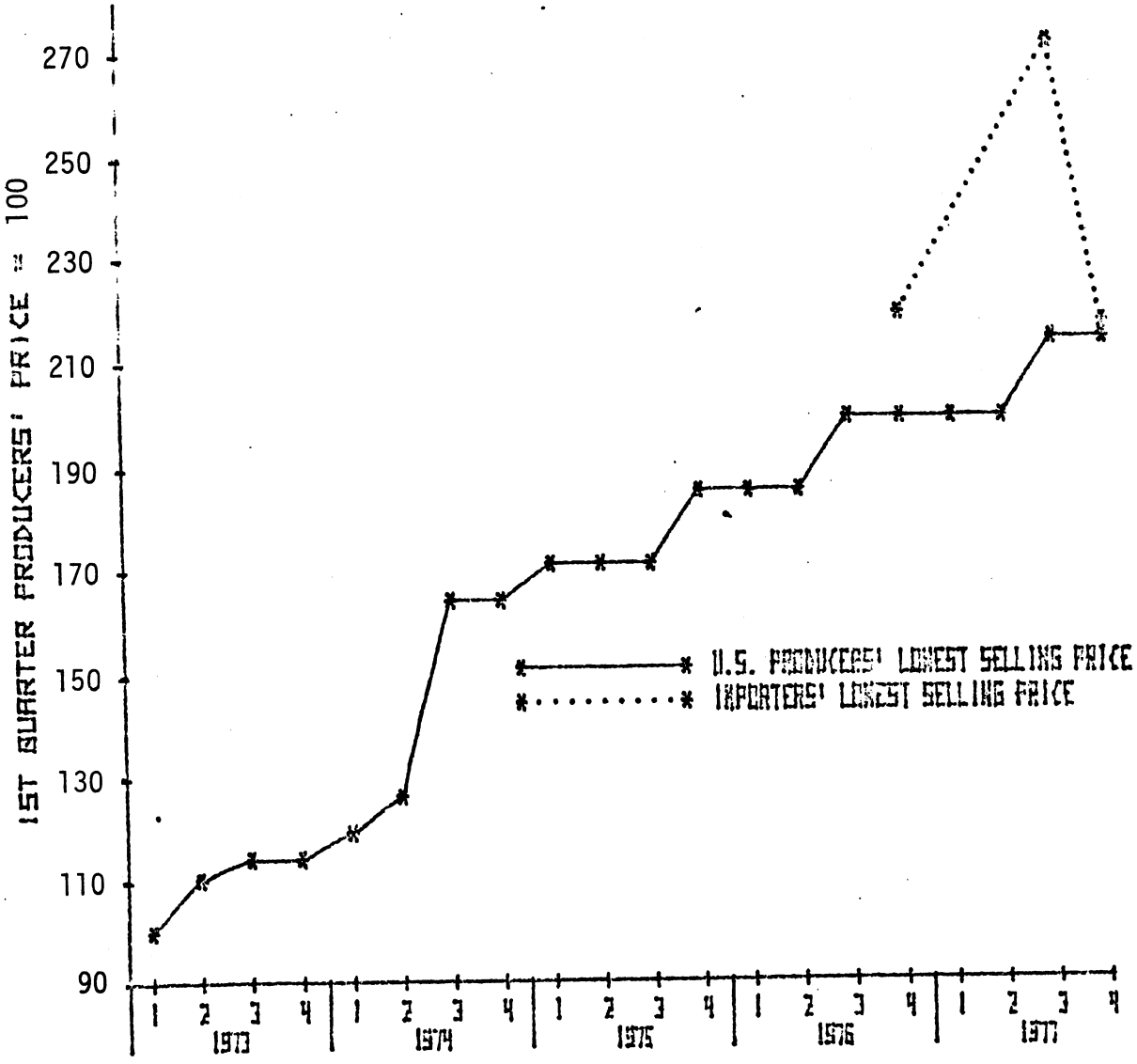
Figure E-12--Baling wire, 14-1/2 gauge, ASAE No. 6500: Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 78

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

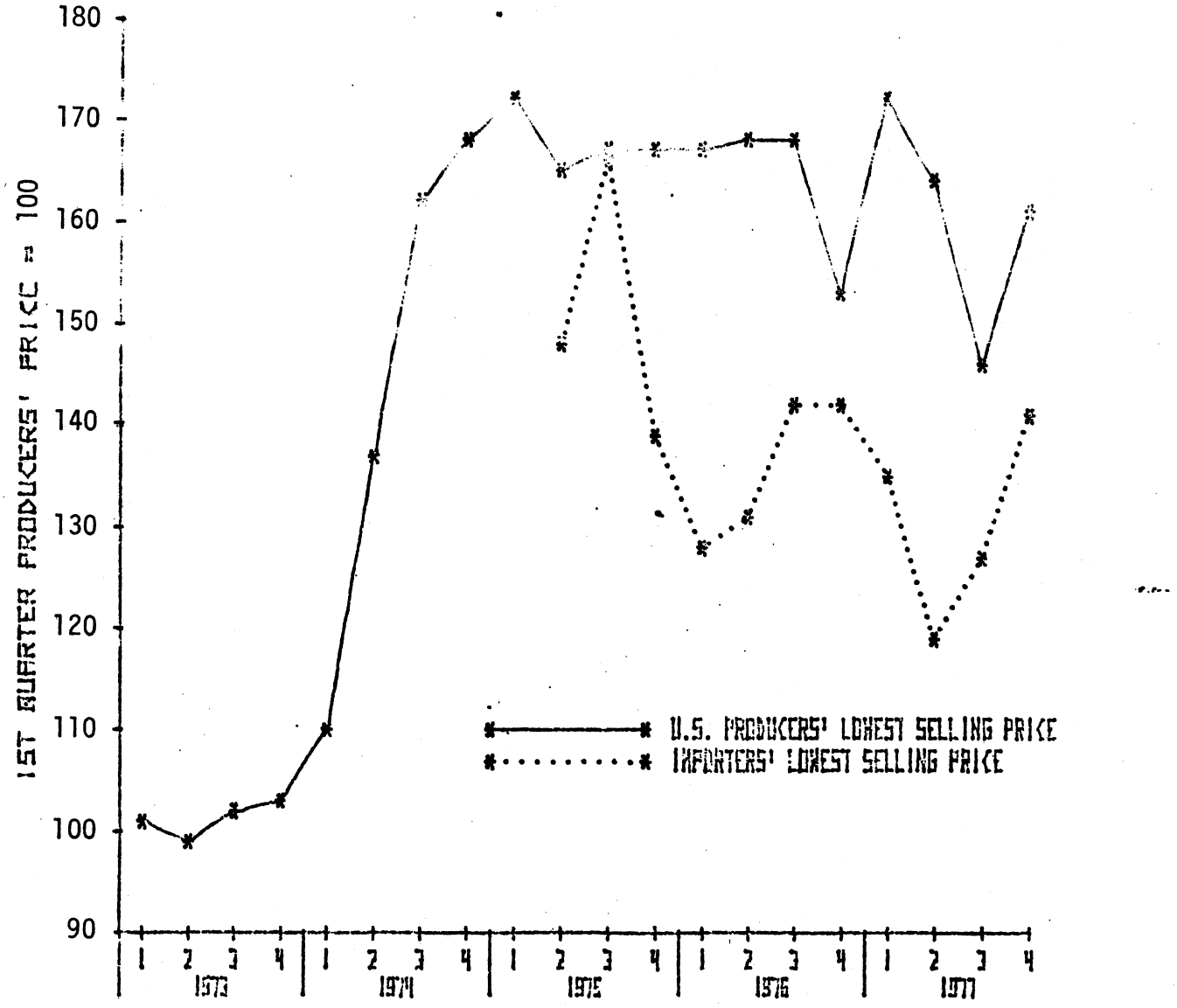
Figure E-13--Rails, 136 pounds per yard: Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States by quarters, 1973-77.



Source: Table 79

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

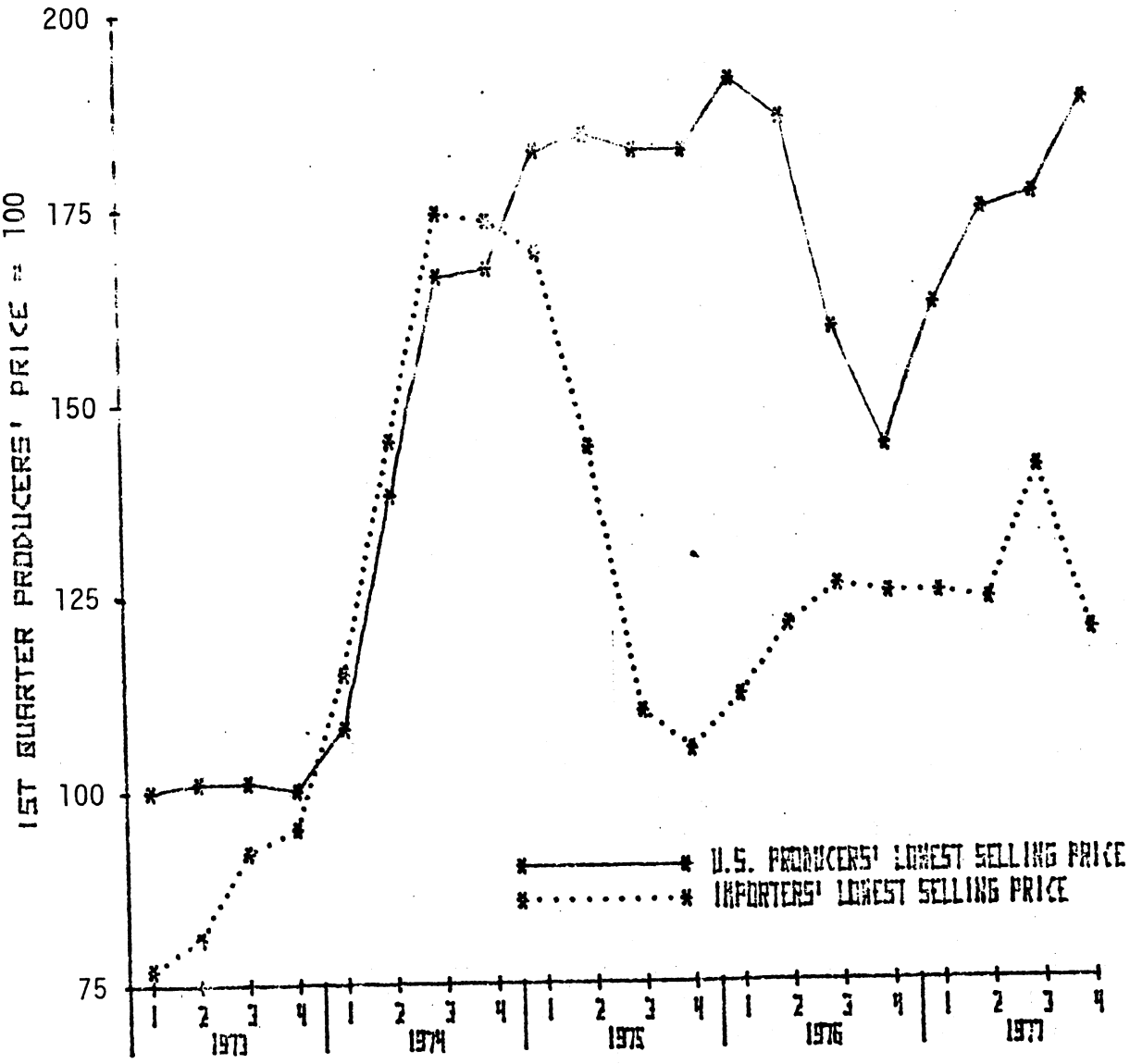
Figure E-14.--Angle L, 6" x 4" x 3/8": Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 80

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

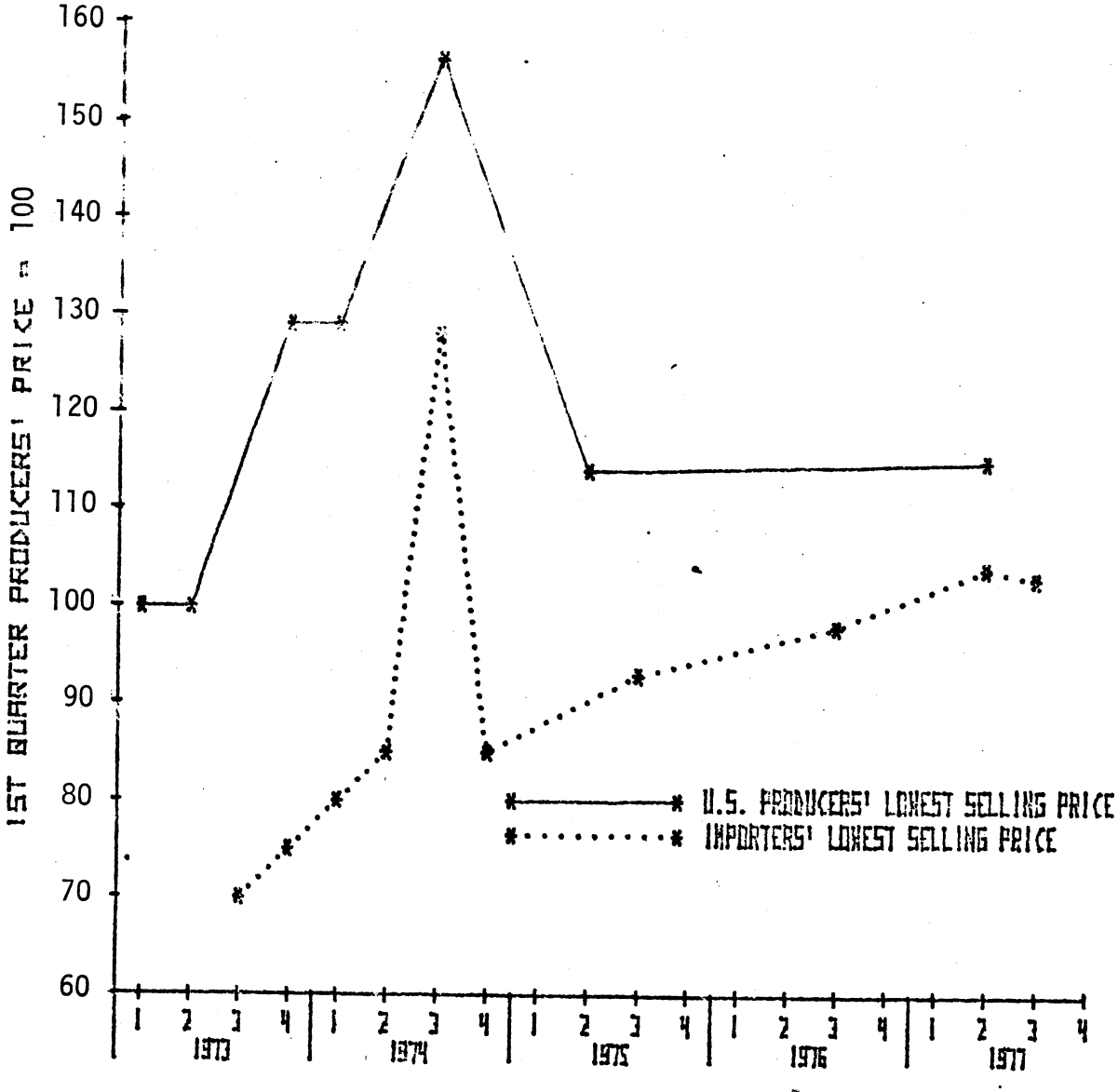
Figure E-15.--Welded standard pipe, ASTM A-120, 3/4" nominal diameter: Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 81

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

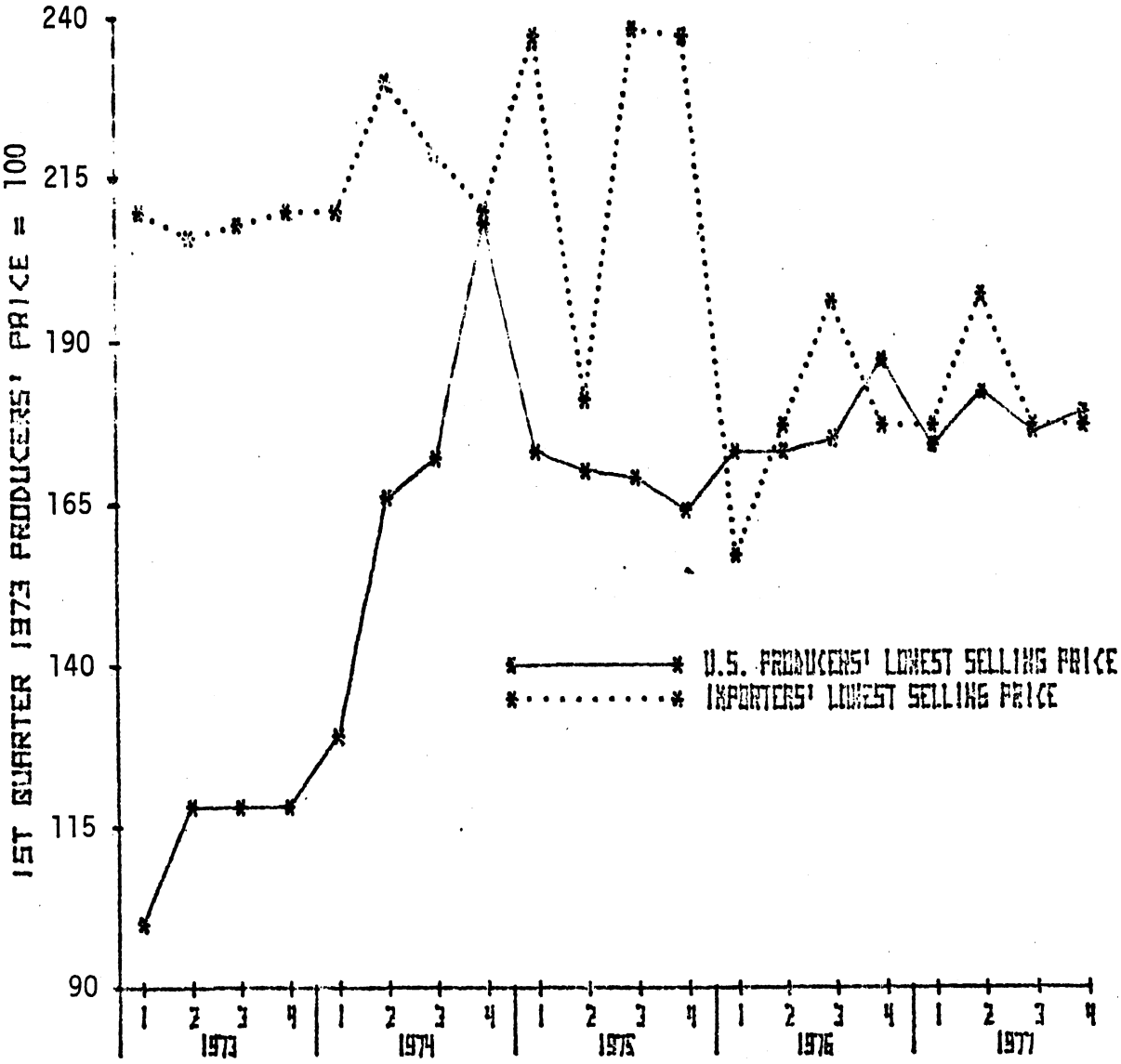
Figure E-16.--Hot rolled square tubing, 14 gauge (.075 inches): Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 82

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

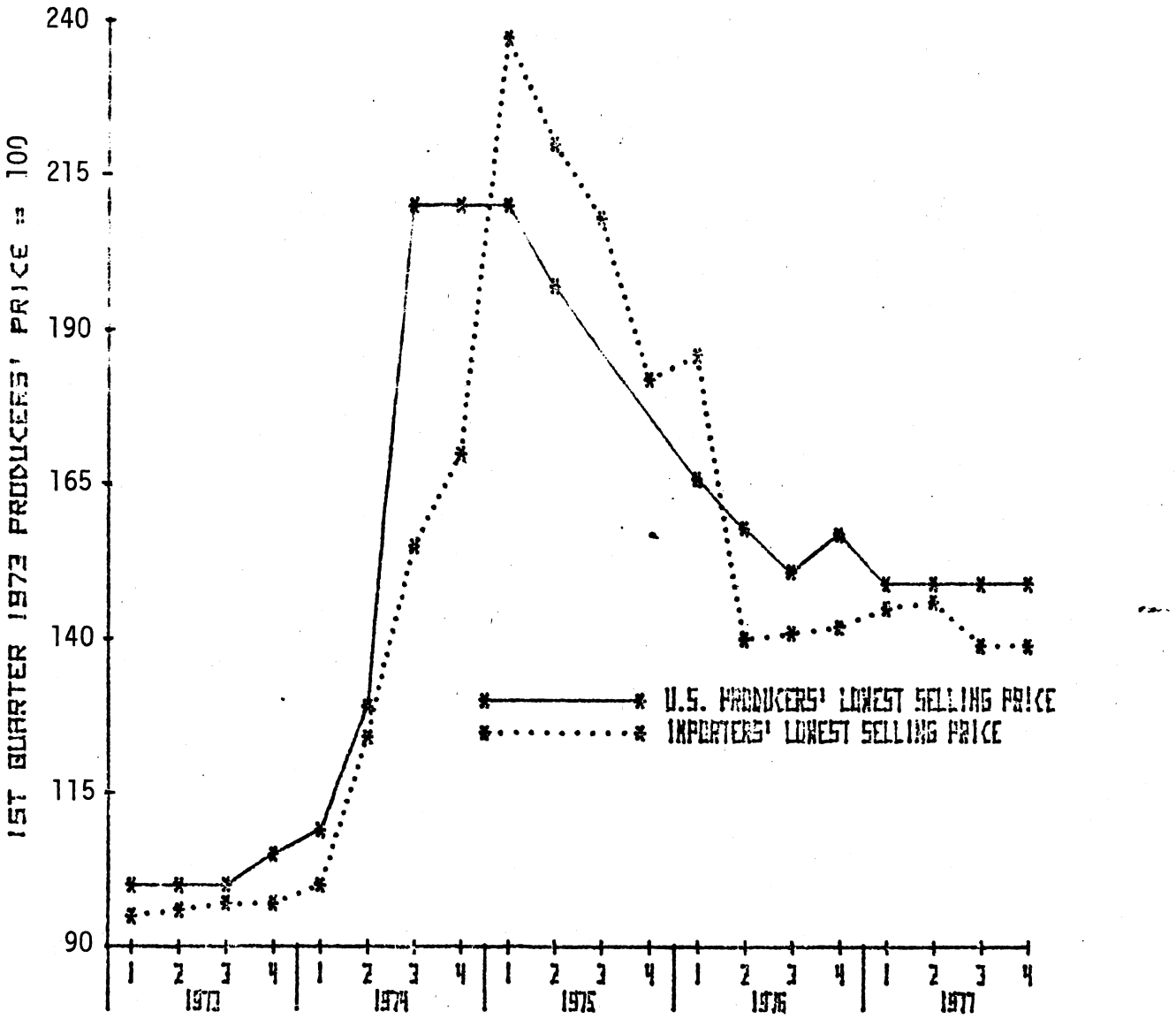
Figure E-17.--Barbed wire, 12-1/2 gauge, 2 pt., 4", 2 ply 80 rodreels: Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 83

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

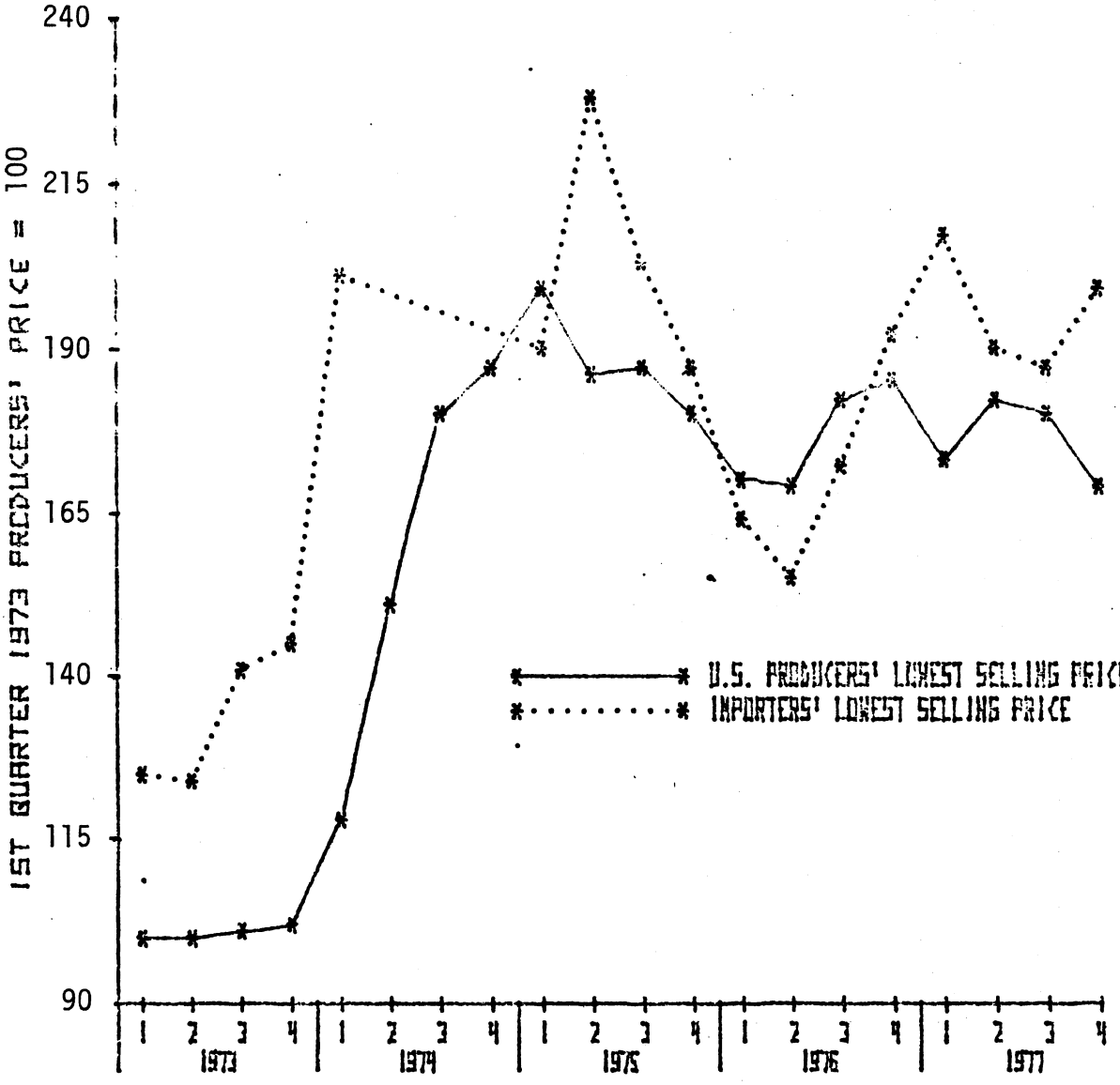
Figure E-18.--Prestressed strand, 1/2 inch, 7 wire, 270 K: Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



Source: Table 84

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

Figure E-19.--Nails, 16d common bright: Indexes of weighted averages of importers' lowest selling price and U.S. producers' lowest selling price in 10 Western States, by quarters, 1973-77.



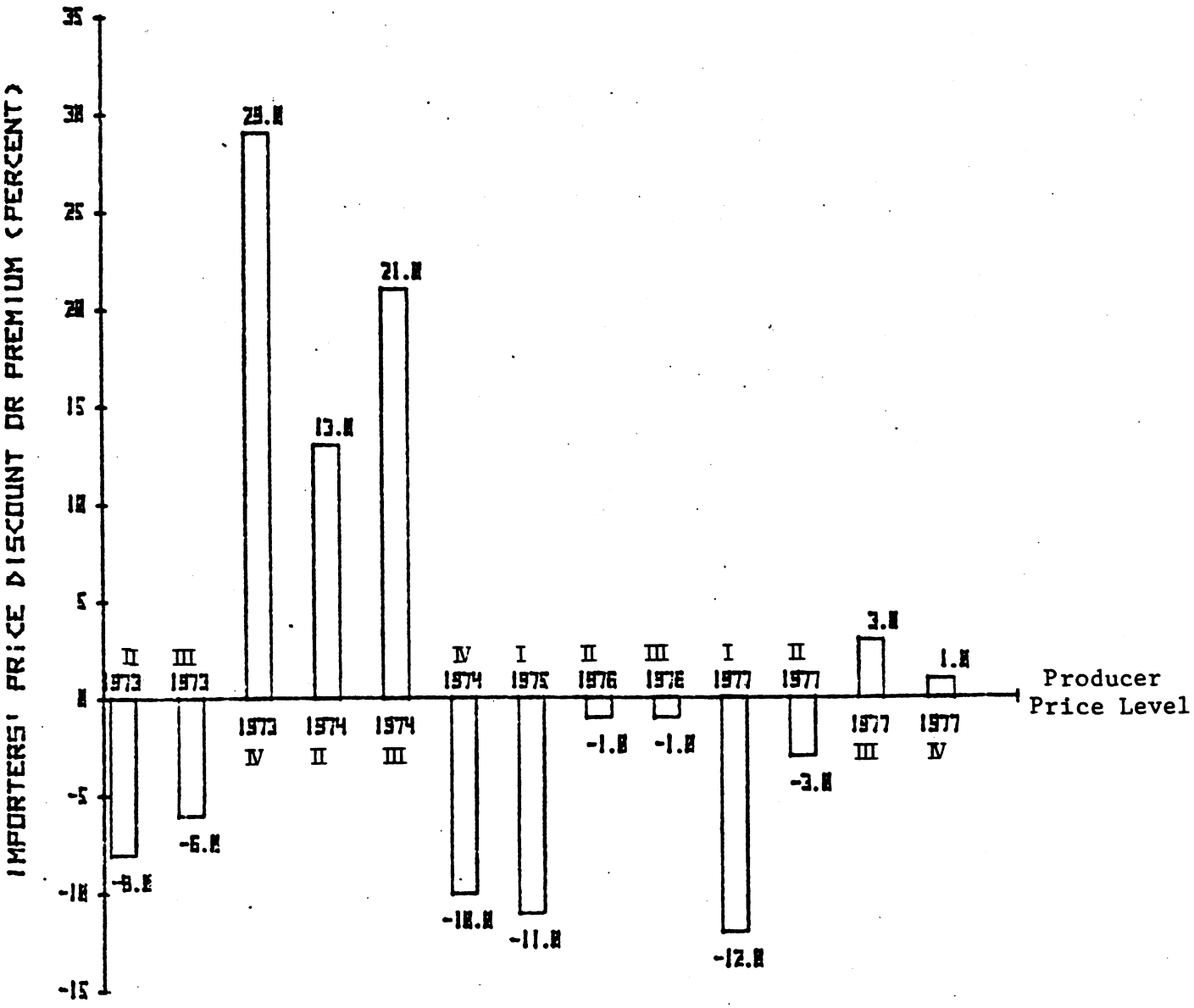
Source: Table 85

Note.--Transaction prices were changed to index numbers to avoid disclosure of confidential data supplied by a single U.S. producer or only two U.S. producers.

Appendix F

The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price

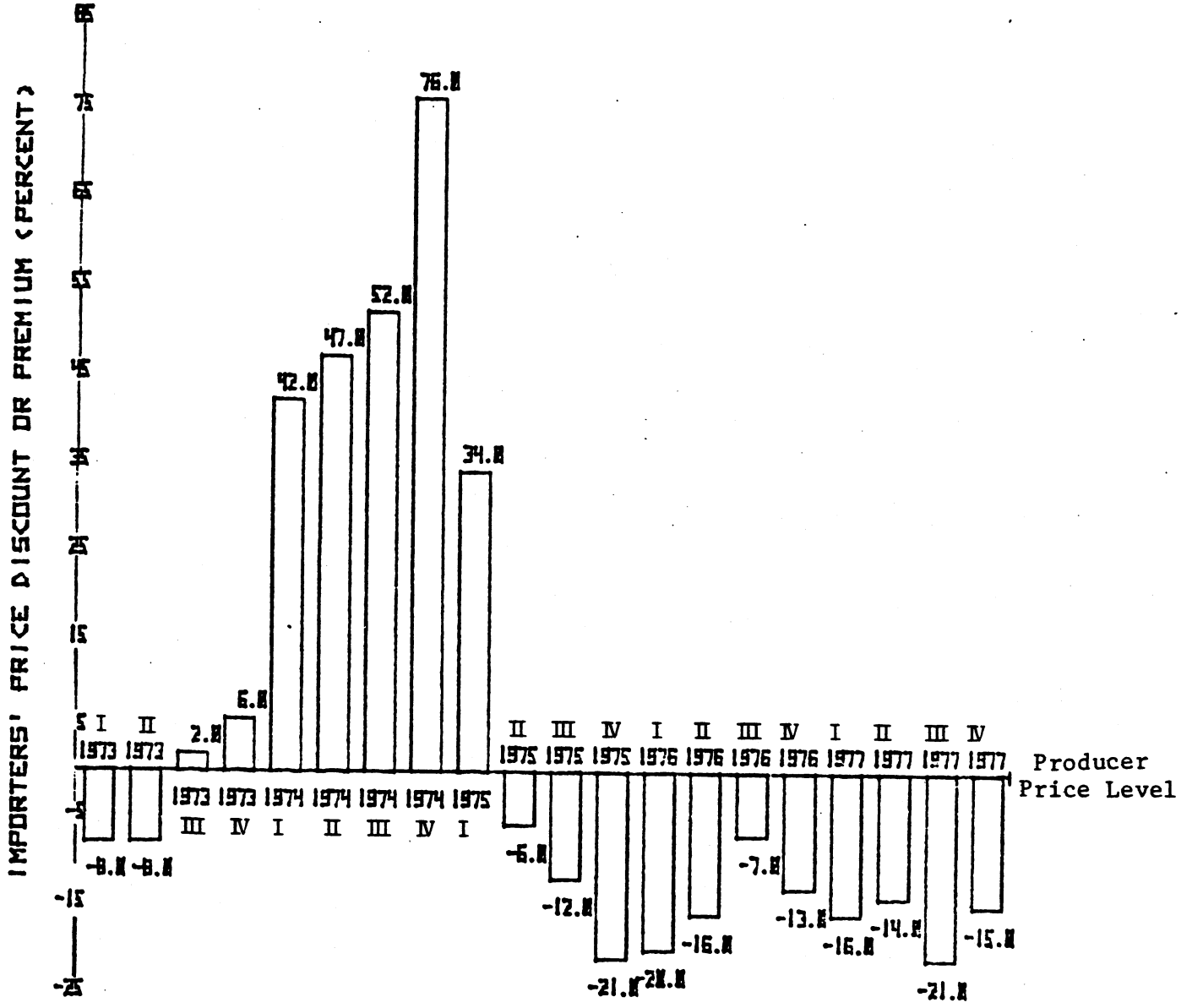
Figure F-1.--Galvanized sheet, commercial quality: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

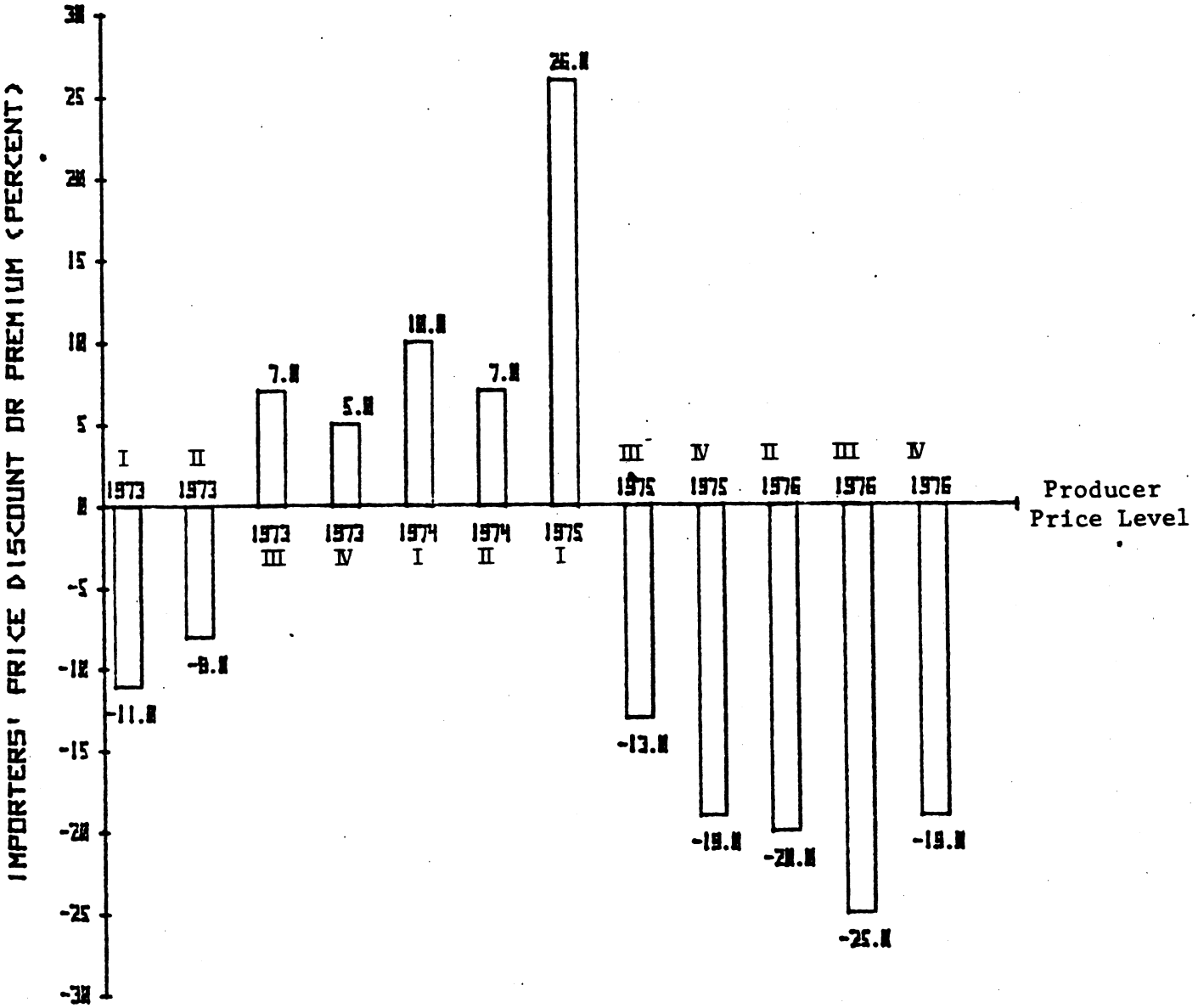
Figure F-2.--Plate, structural grade, ASTM A-36, 3/8"x72"x240": The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

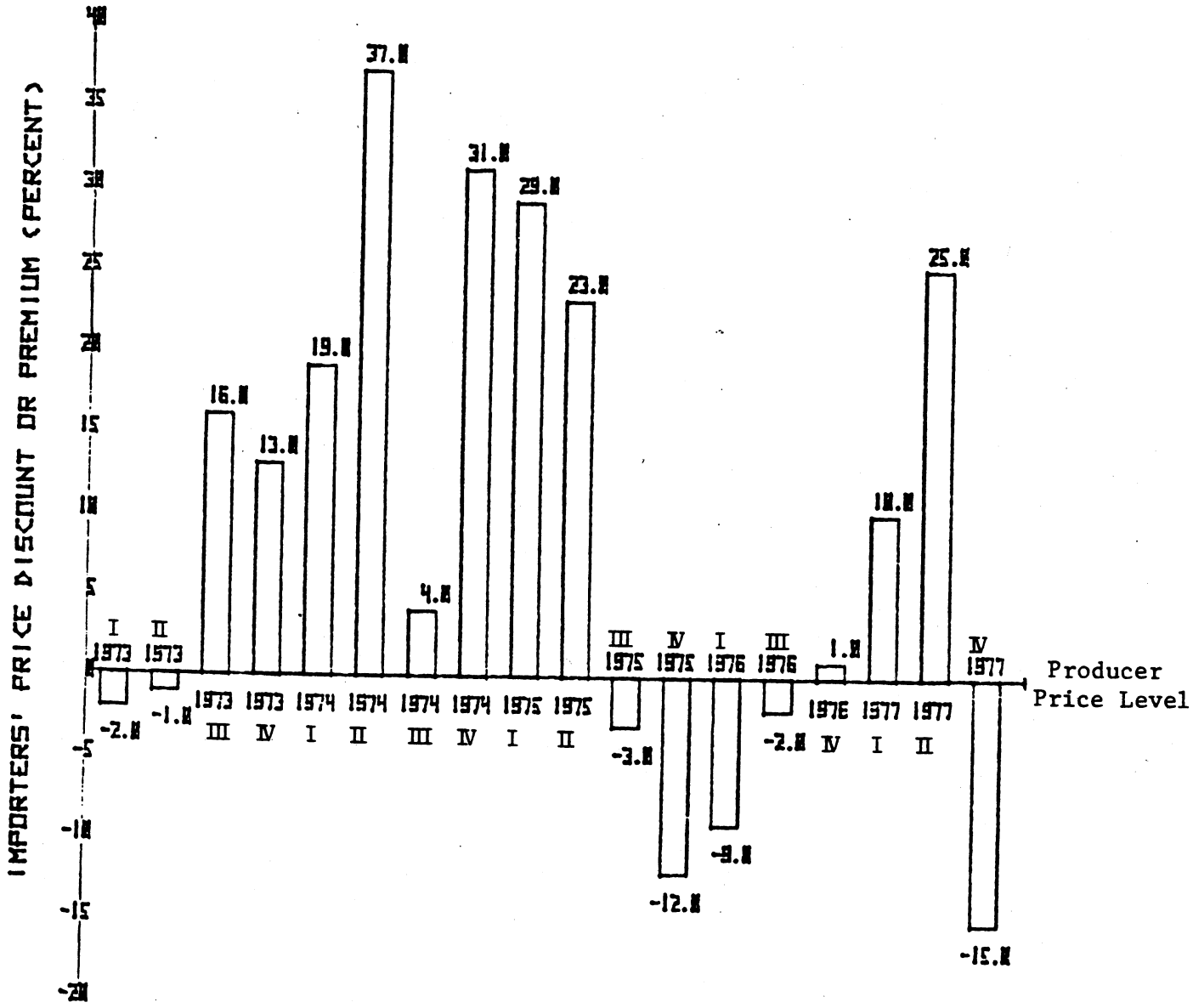
Figure F-3.--Hot rolled sheet, commercial quality, 14 ga. (.075"): The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

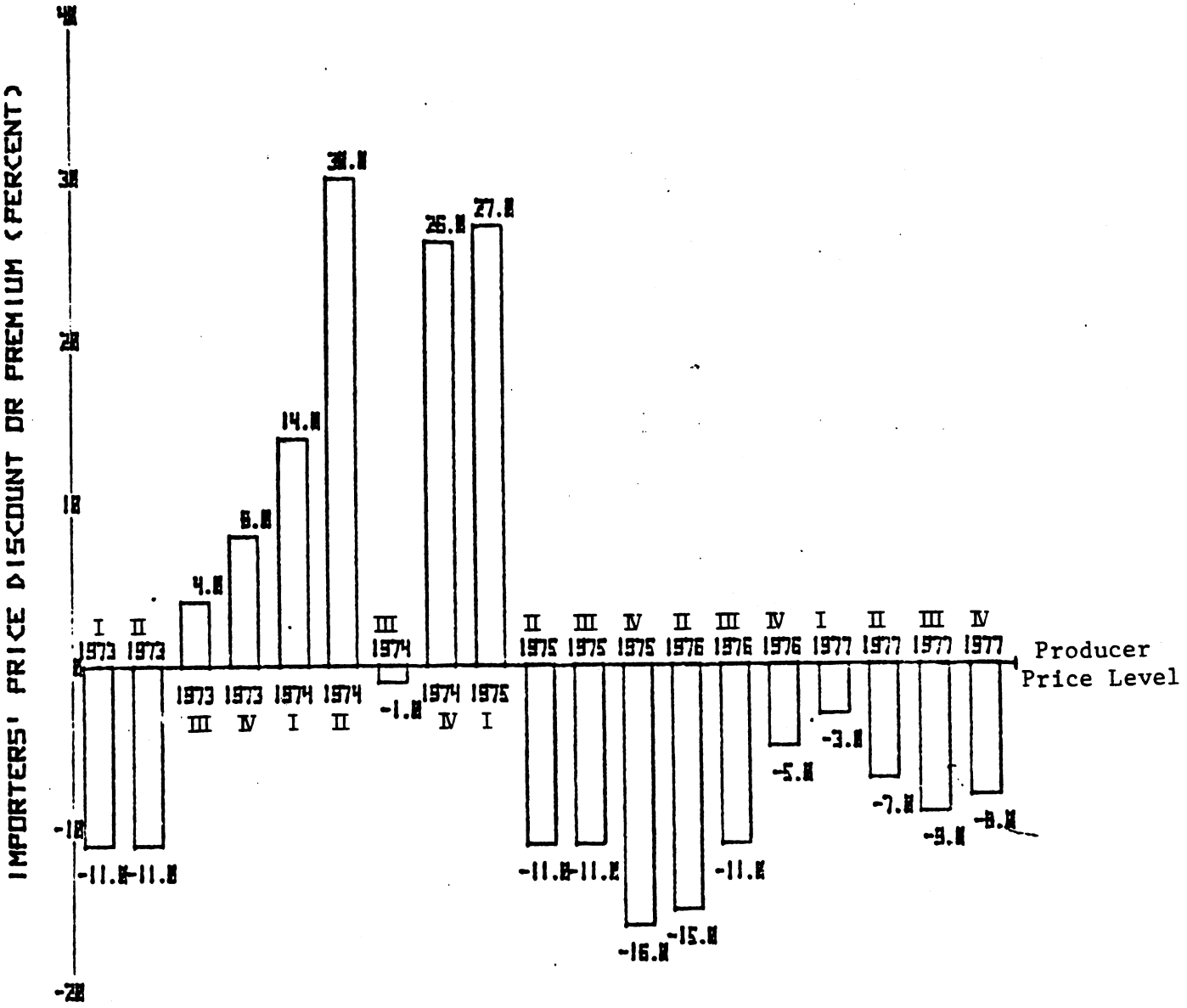
Figure F-4.—Cold rolled sheet, class 1, commercial quality, .0299": The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

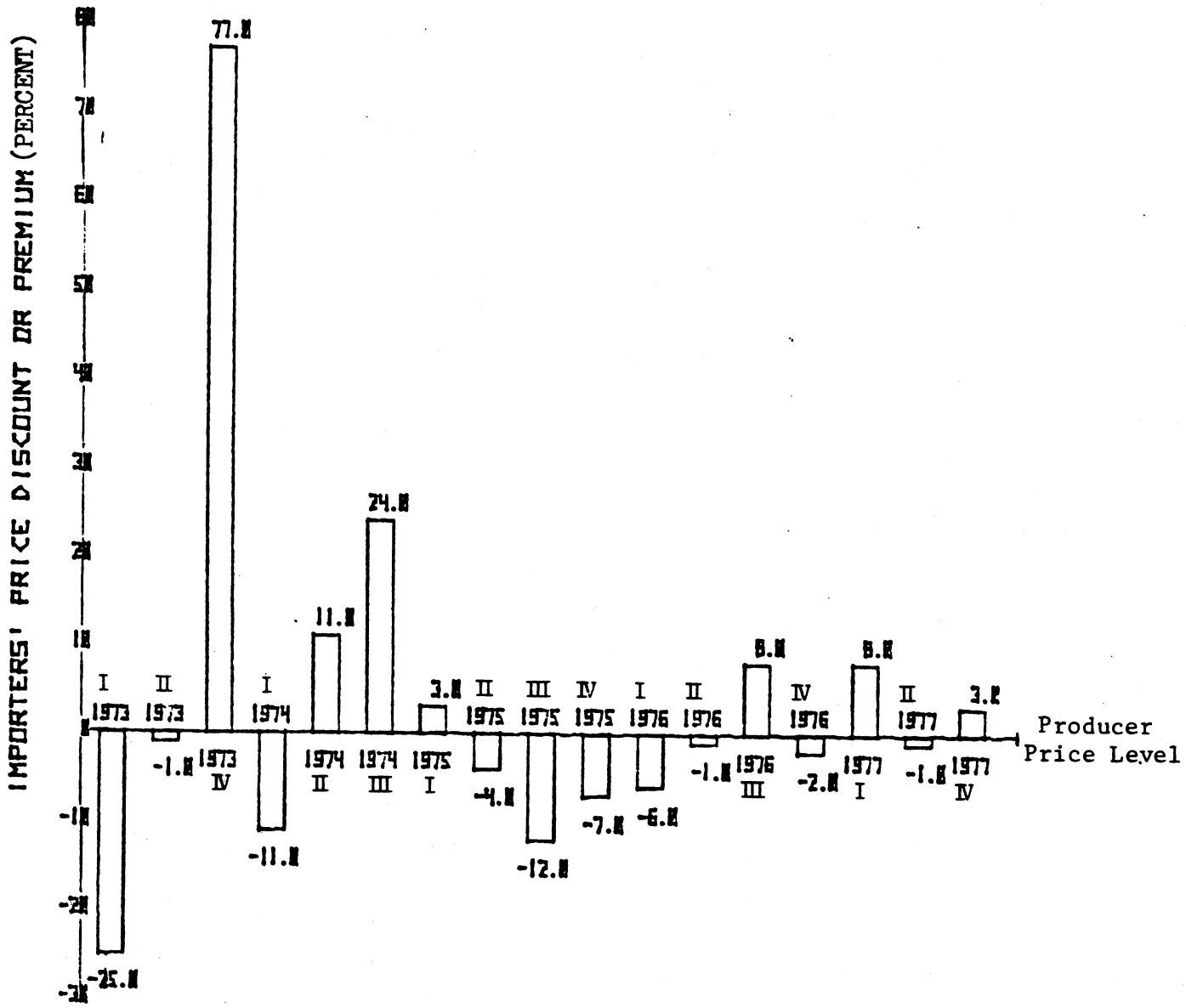
Figure F-5.--Cold rolled sheet, class 1, commercial quality, .0359": The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

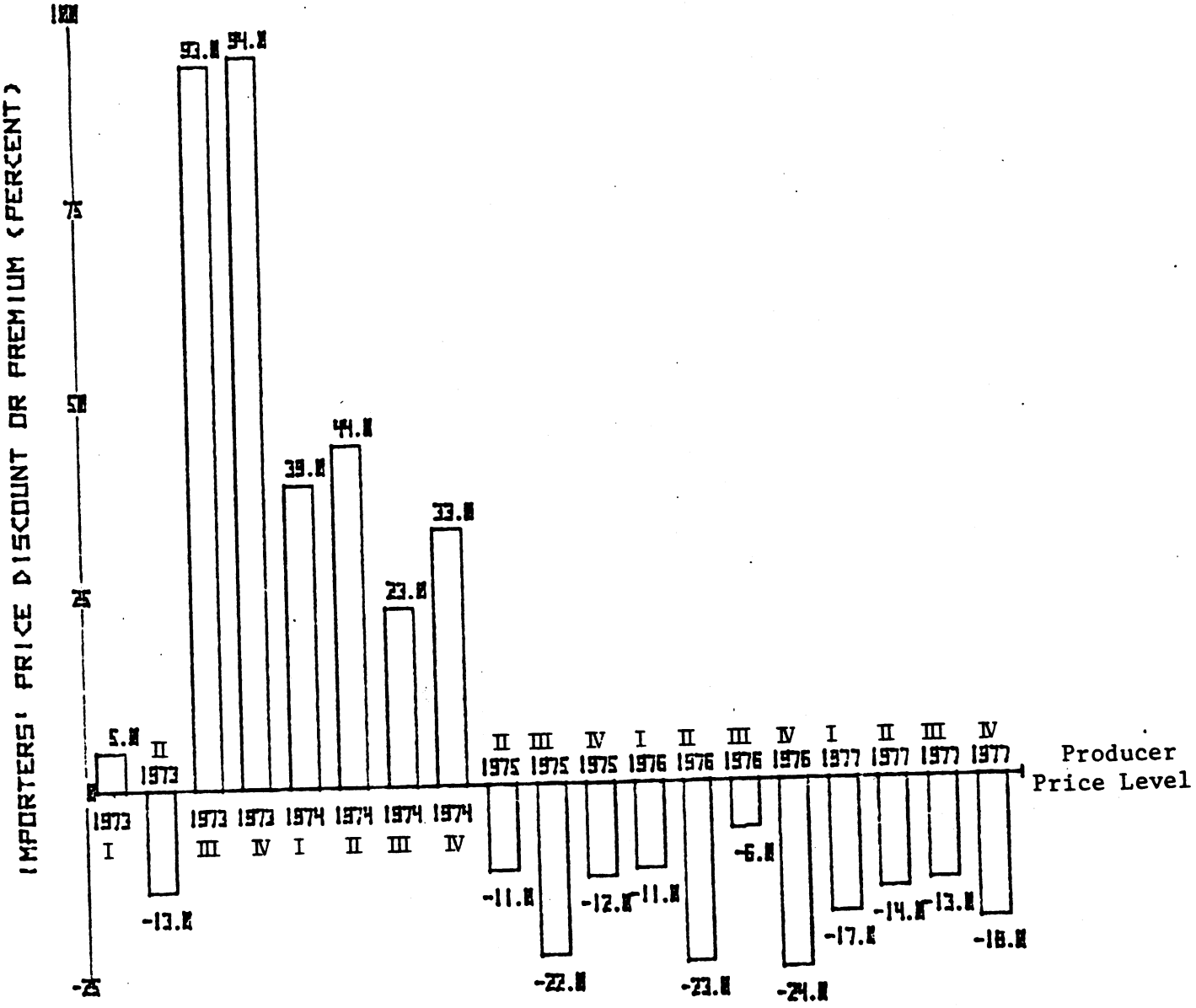
Figure F-6 .--Deformed reinforcing bars, ASTM 615, grade 40, No. 4: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

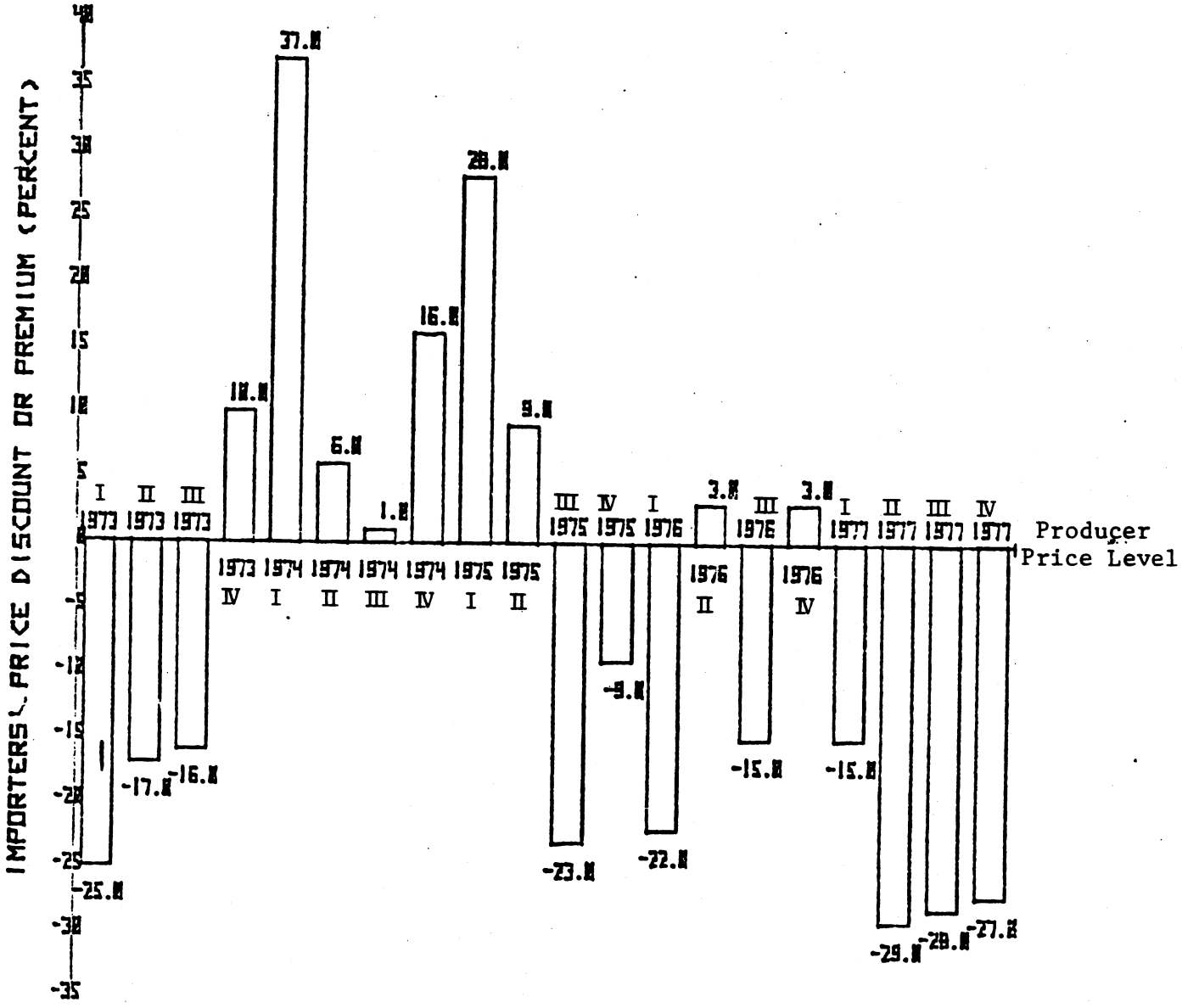
Figure F-7.--Hot rolled bars (flats), 1/4" x 3": The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

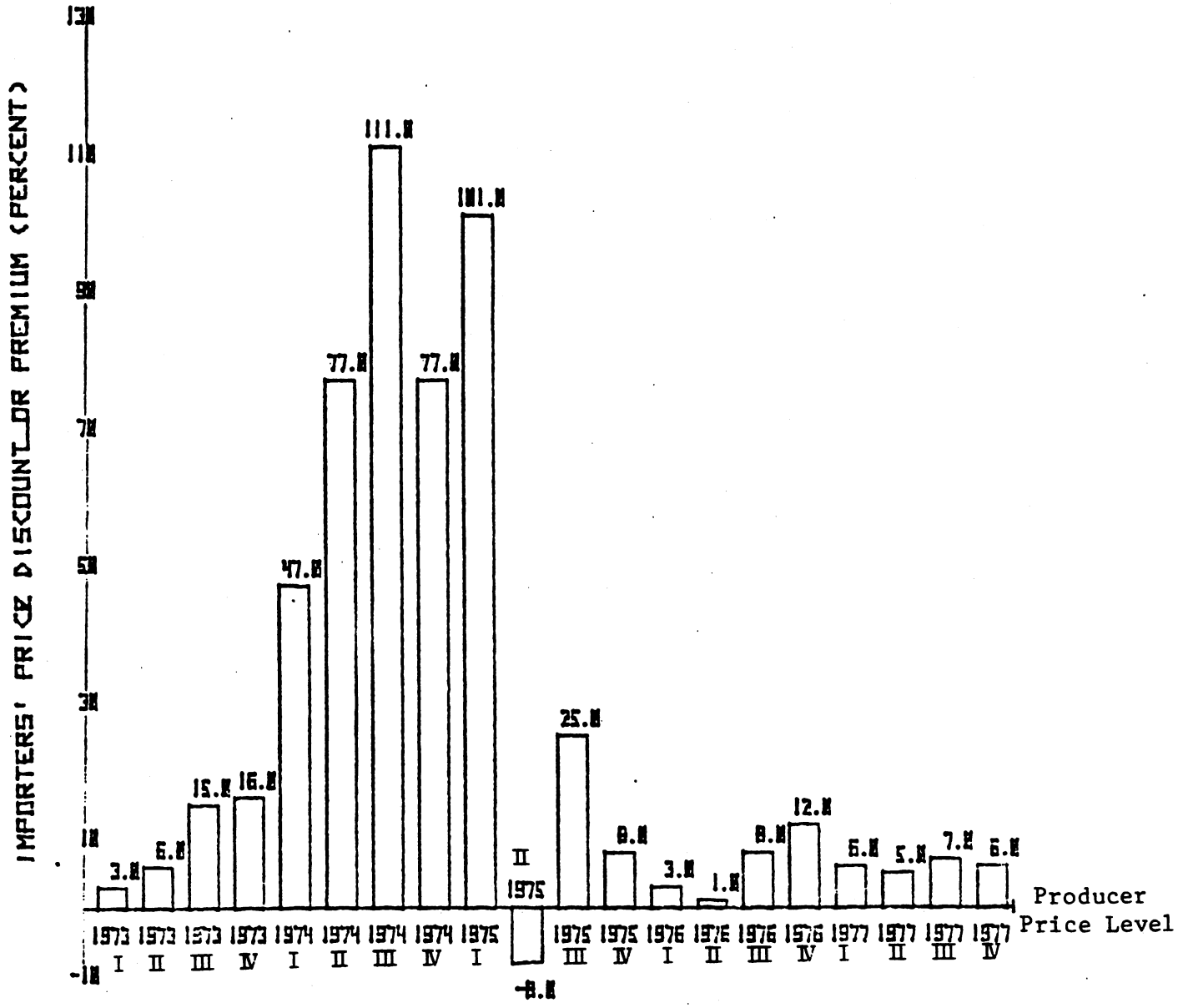
Figure F-8.--Angles, 2"x2"x1/4", A-36: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

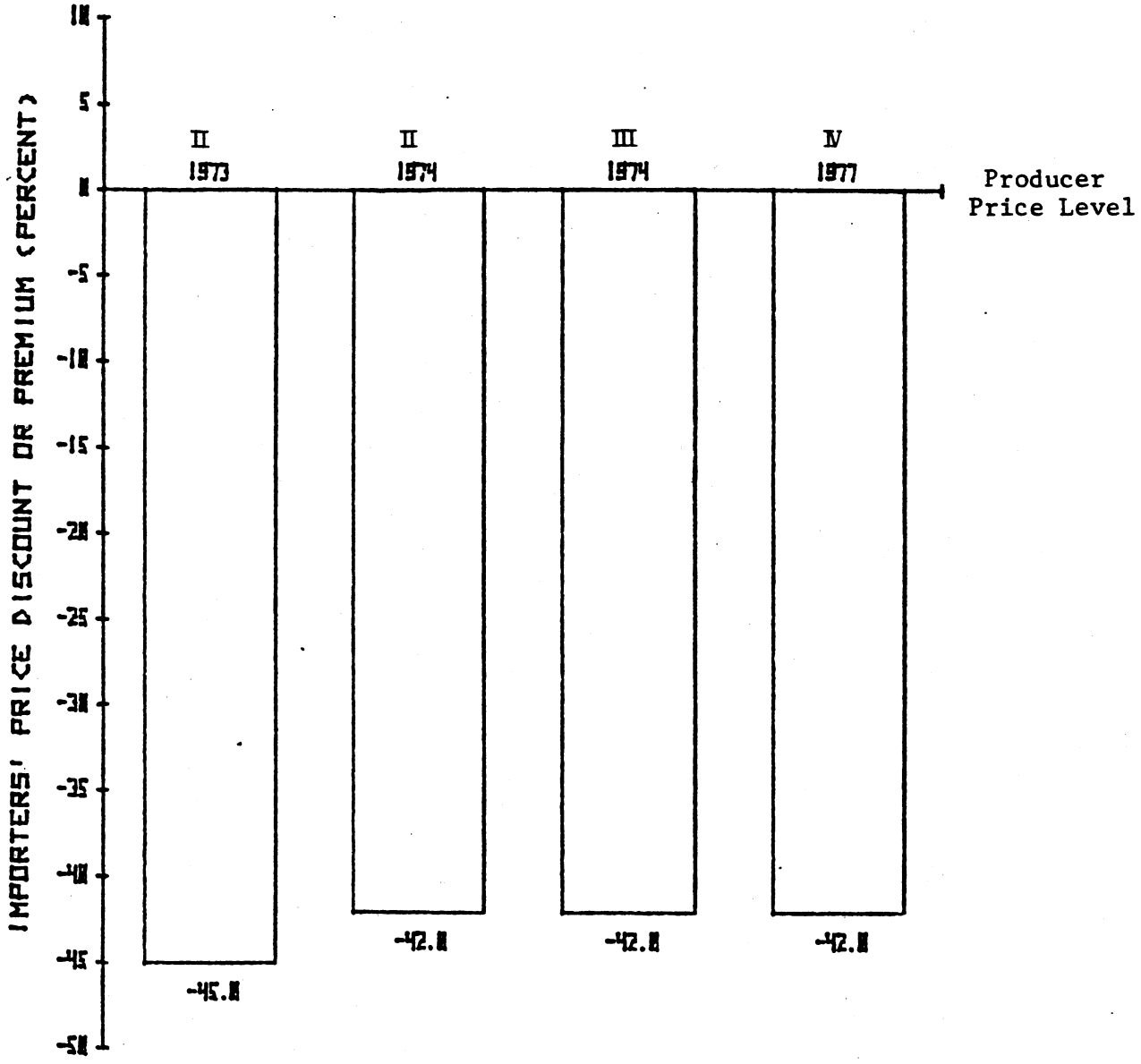
Figure F-9.--Hot rolled rods, 7/32", low carbon grade C-1008: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

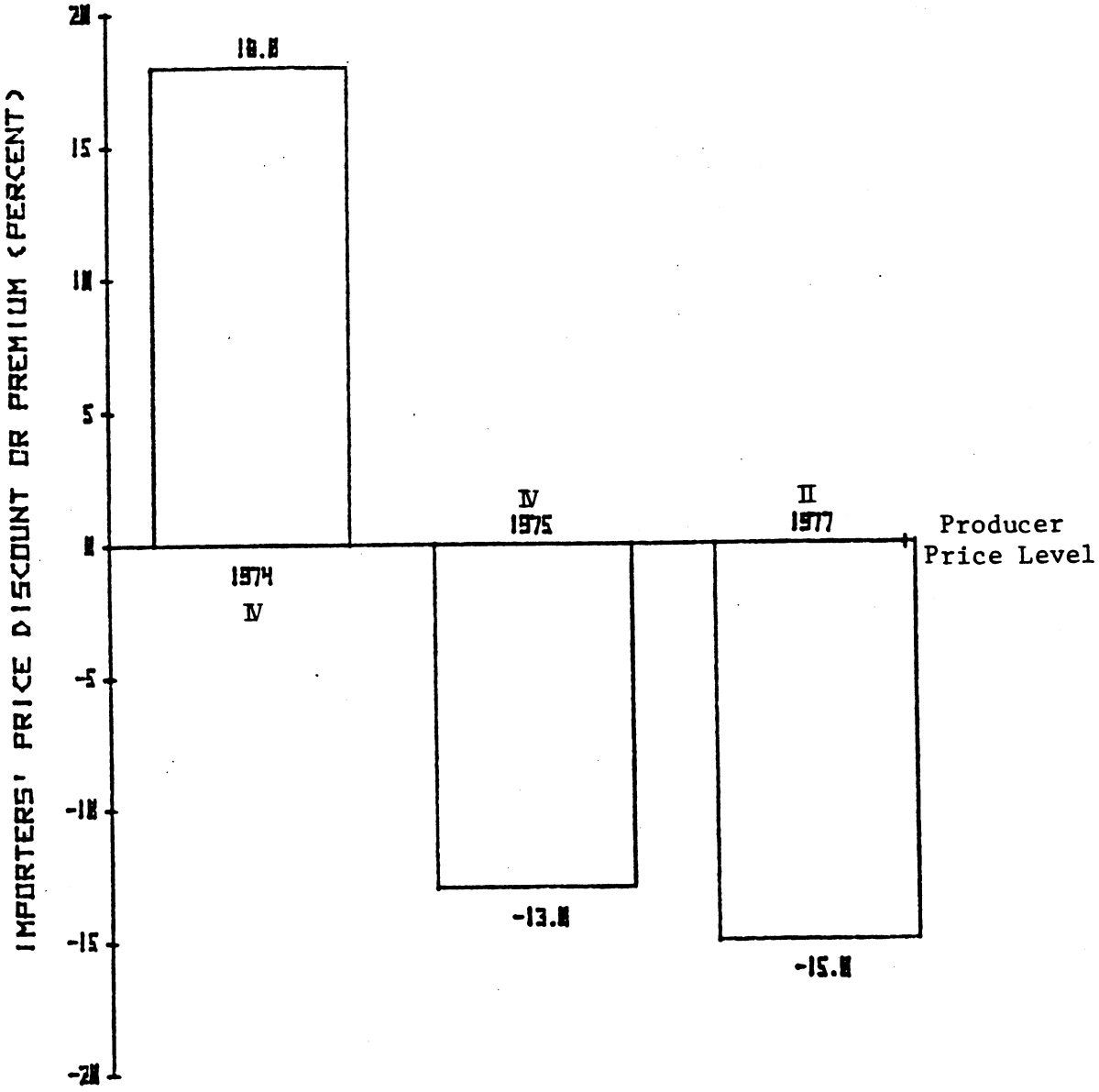
Figure F-10.--Manufacturers coarse steel wire, 12 gauge: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers; lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

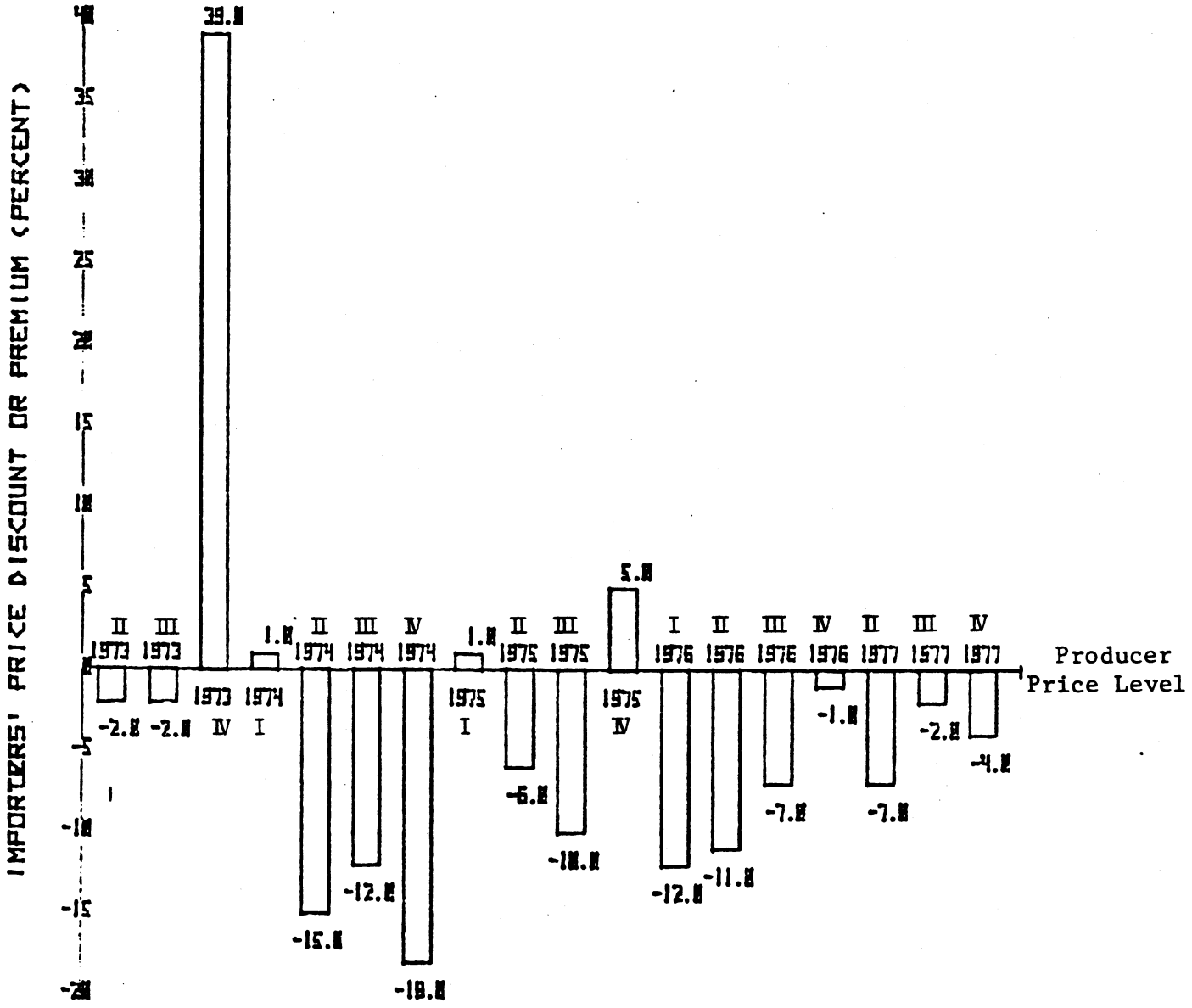
Figure F-11--Galvanized wire, 12 gauge, soft industrial quality: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

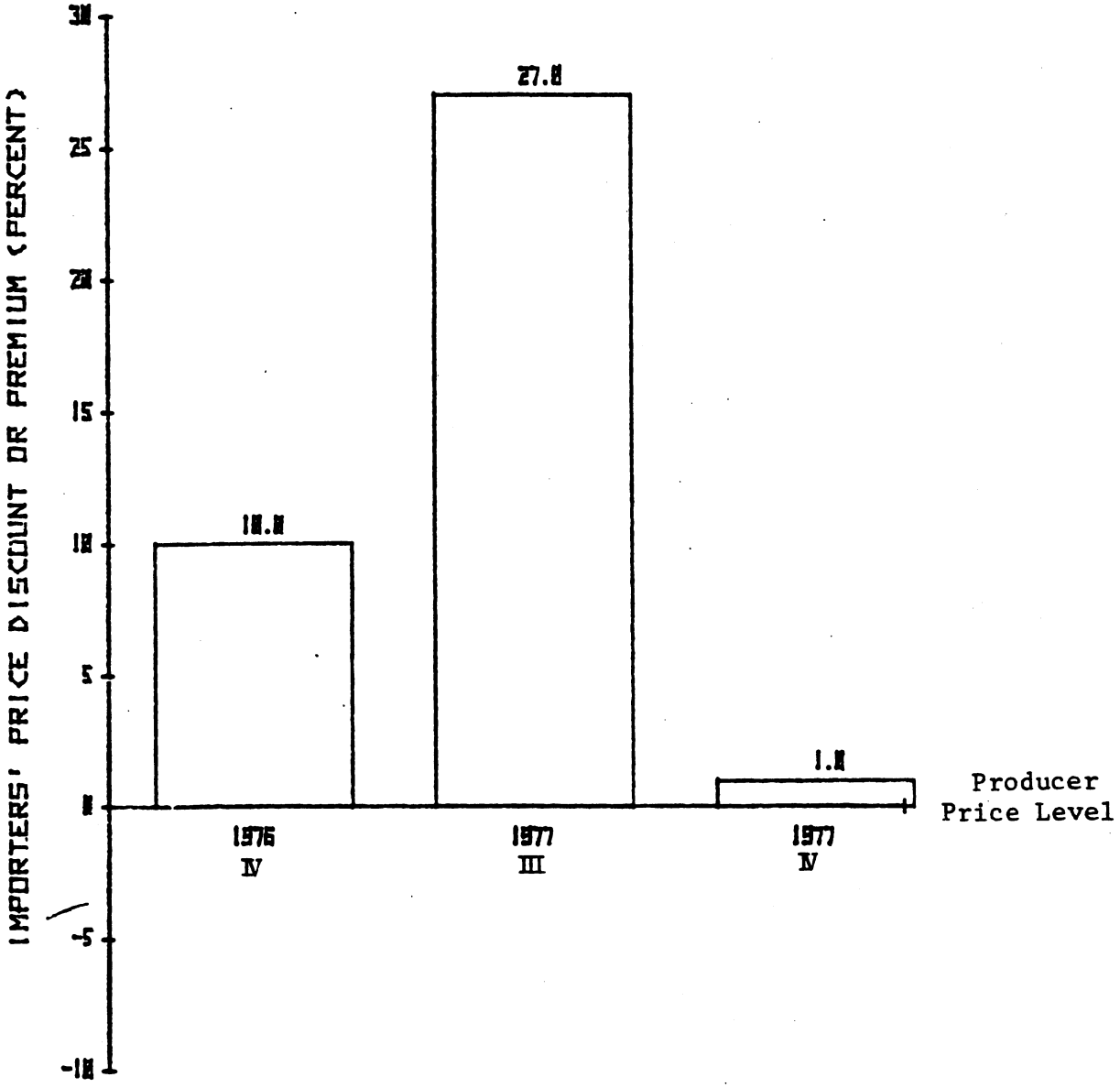
Figure F-12--Baling wire, 14-1/2 gauge, ASAE No. 6500: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

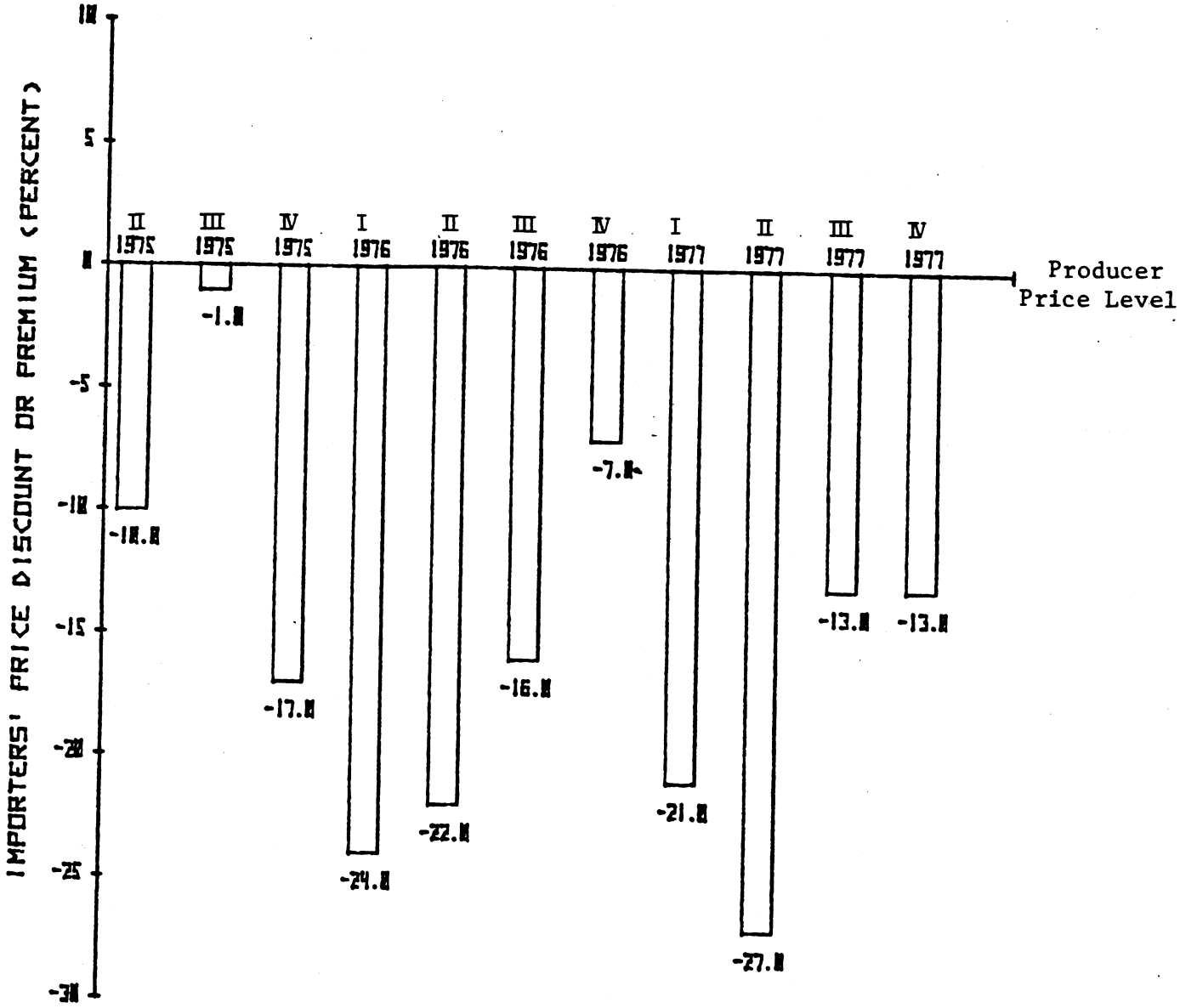
Figure F-13.--Rails, 136 pounds per yard: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

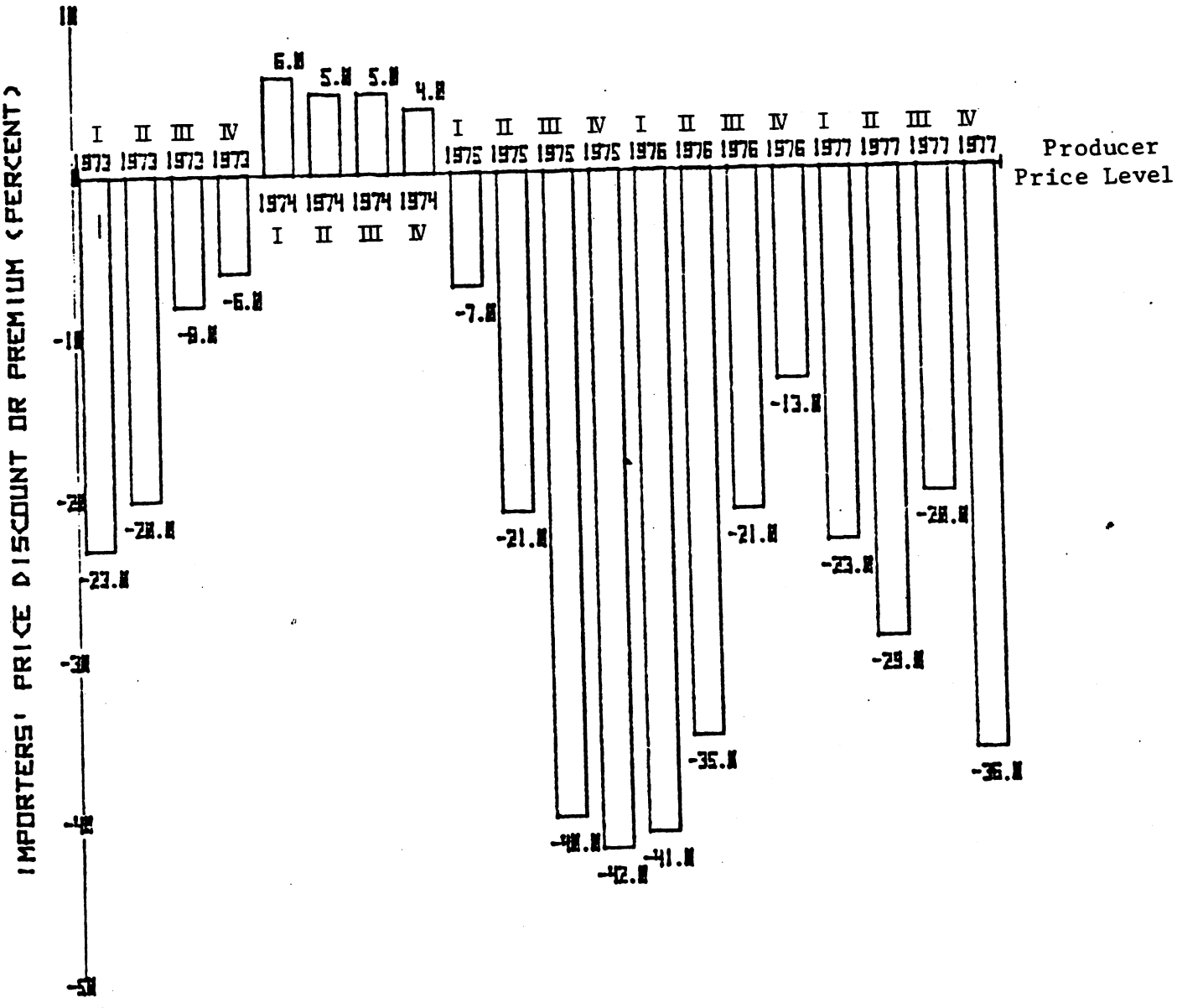
Figure F-14--Angle L, 6"x4"x3/6": The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source: Table

Note.--Applicable quarter appears above or below each designated year.

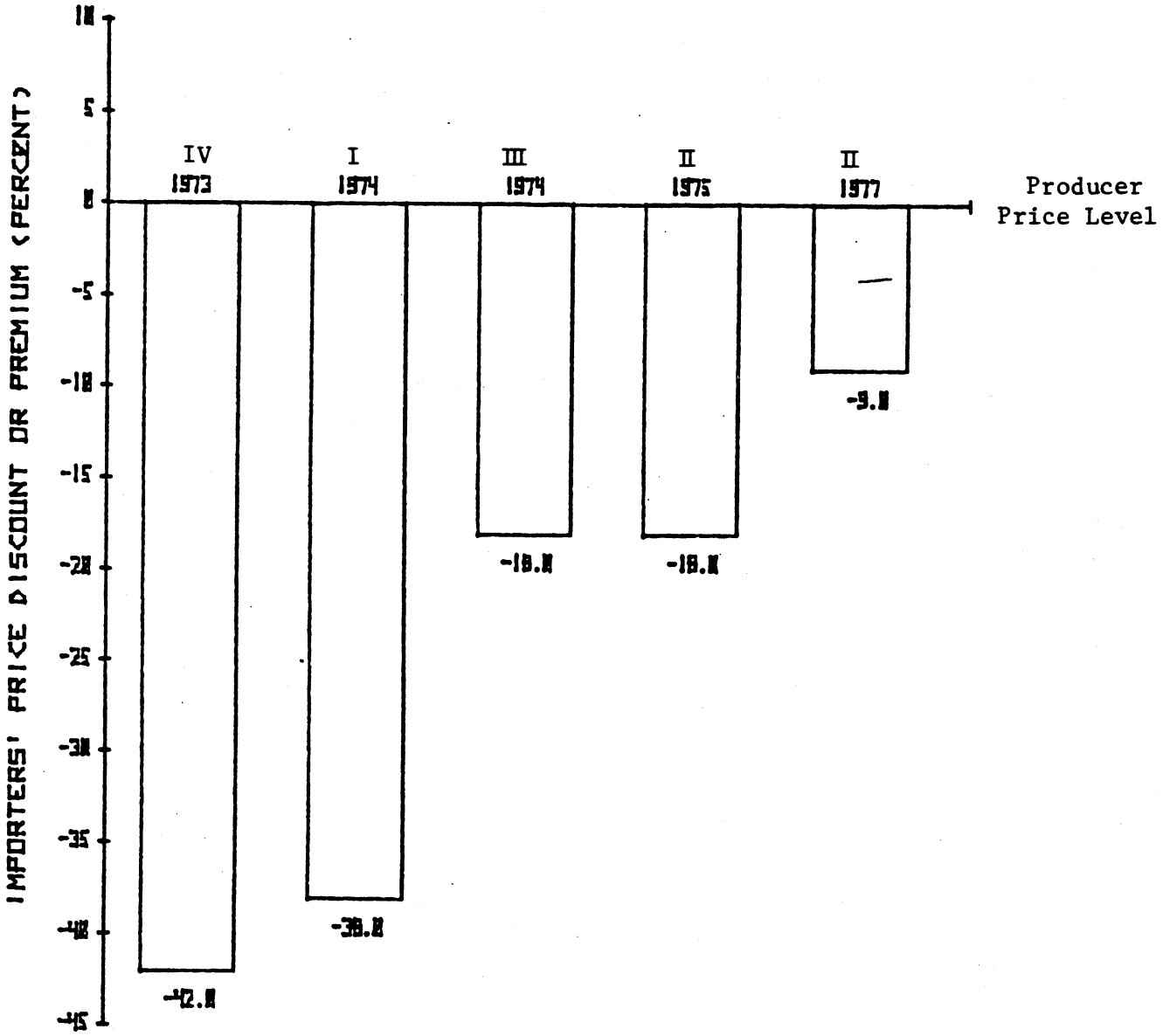
Figure F-15.--Welded standard pipe, ASTM A-120, 3/4" nominal diameter: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source:

Note.--Applicable quarter appears above or below each designated year.

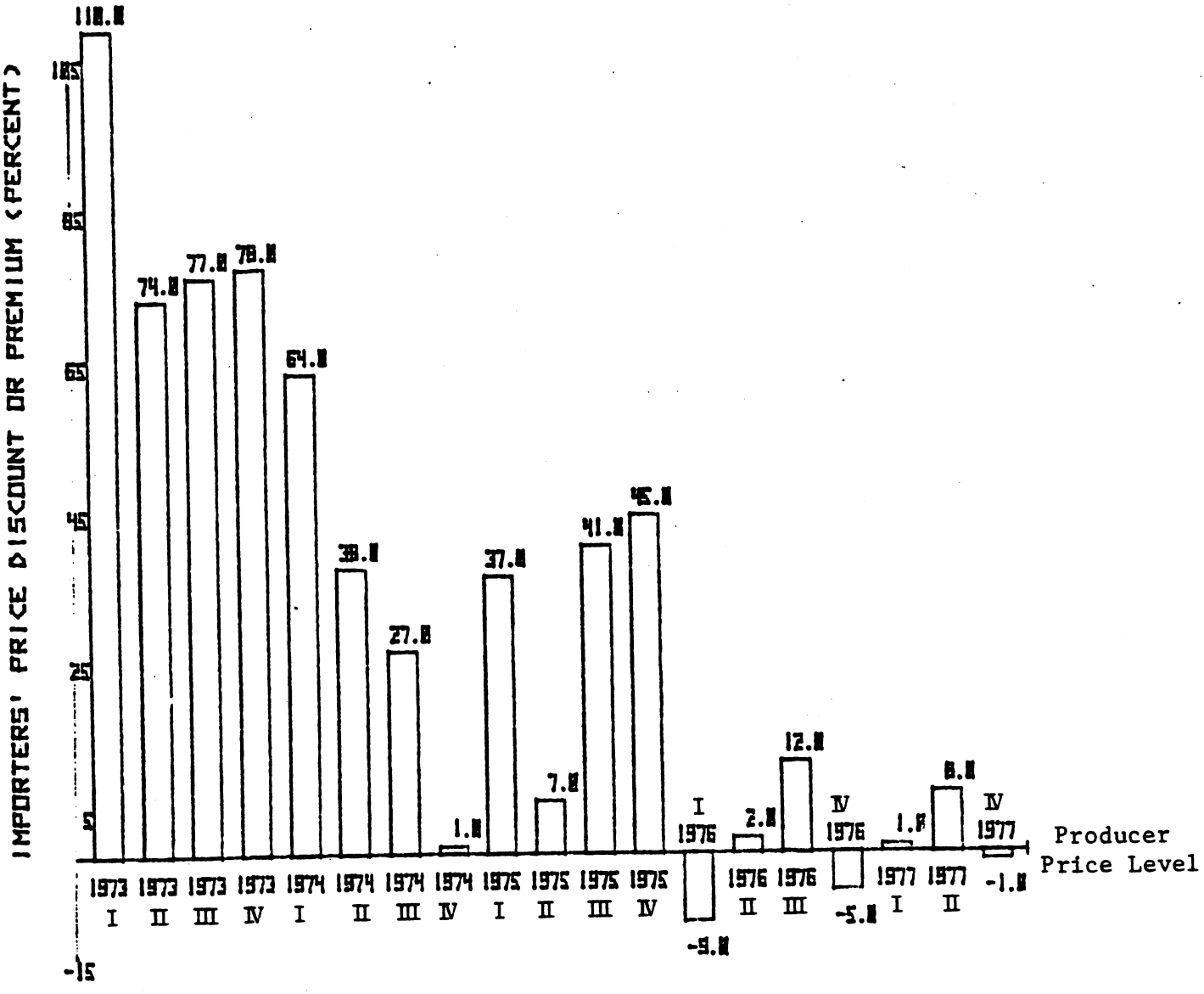
Figure F-16--Hot rolled square tubing, 14 gauge (.075 inches): The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source:

Note.--Applicable quarter appears above or below each designated year.

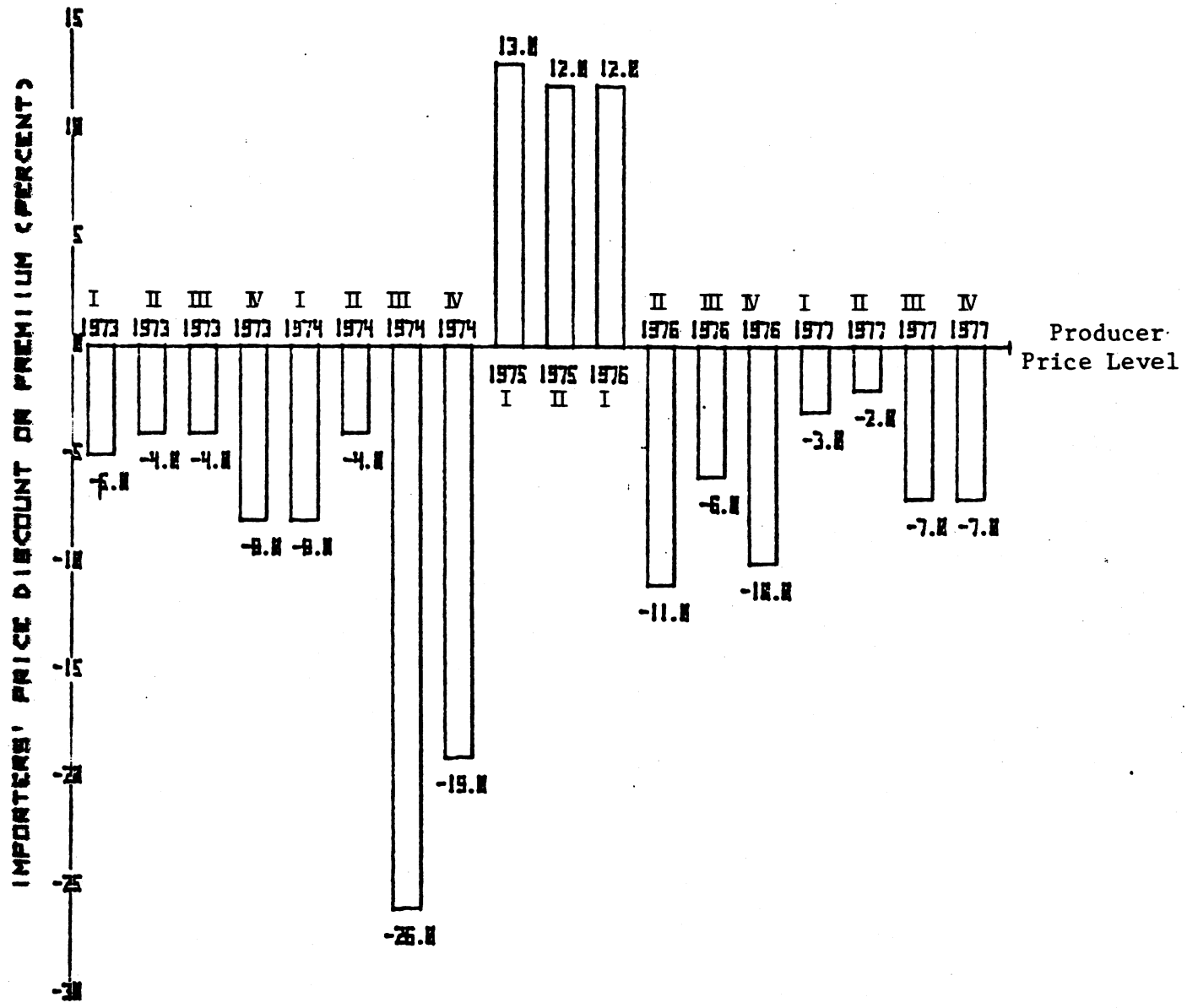
Figure F-17.--Barbed wire, 12-1/2 gauge, 2 pt., 4", 2 ply 80 rodreels: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source:

Note.--Applicable quarter appears above or below each designated year.

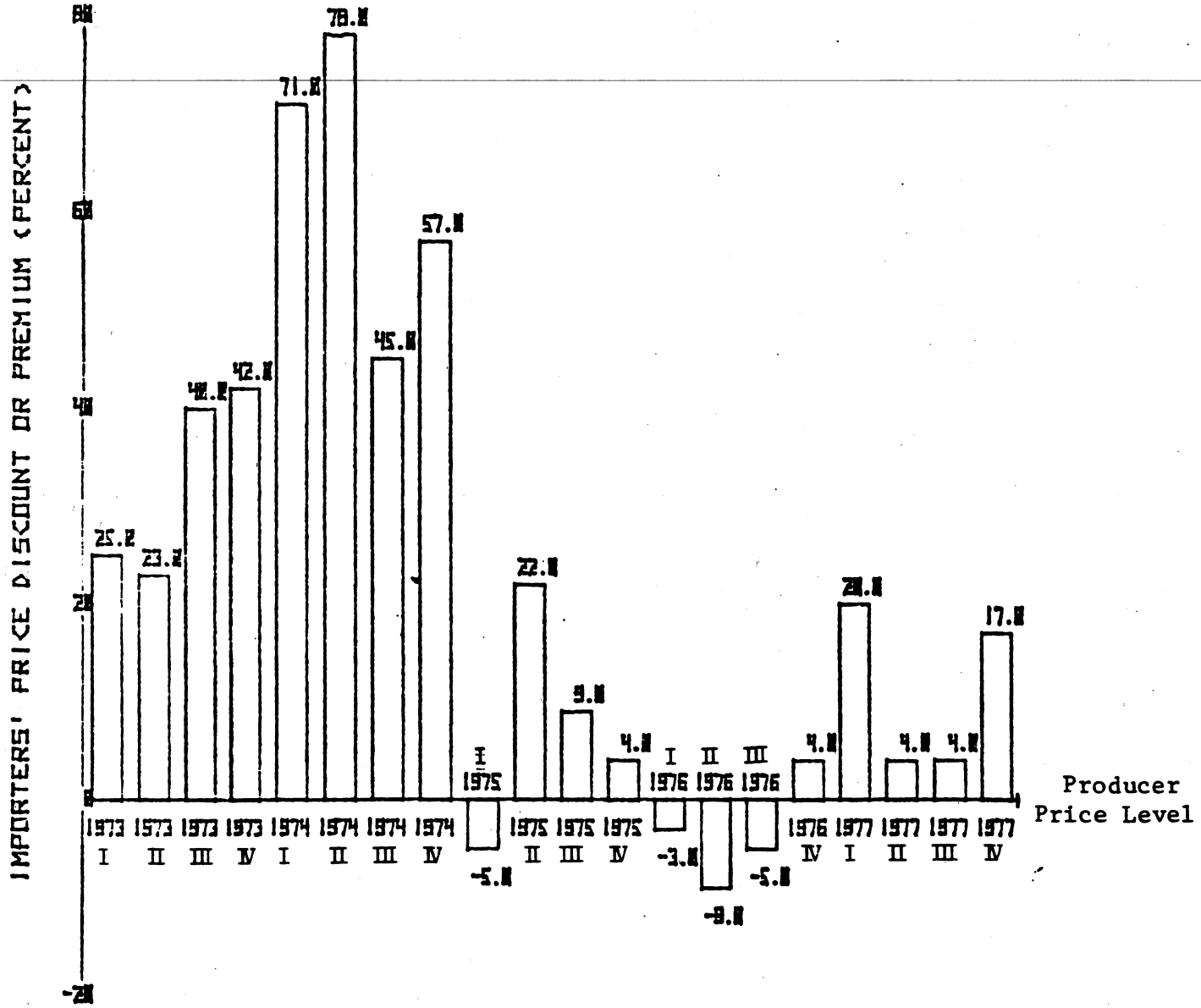
Figure F-18.-Prestressed strand, 1/2 inch, 7 wire, 270 K: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source:

Note.--Applicable quarter appears above or below each designated year.

Figure F-19--Nails, 16 d common bright: The percent discount of importers' lowest selling price below (-) U.S. producers' lowest selling price, or, the percent premium of importers' lowest selling price above (+) U.S. producers' lowest selling price, by quarters, 1973-77.



Source:

Note.--Applicable quarter appears above or below each designated year.

Appendix G

Mill sources of Japanese trading companies, by product group, 1976 and 1977

Table G-1.--Tin mill products: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading Company	Mill source end year																							
	Mill No. 18		Mill No. 19		Mill No. 17		Mill No. 9		Mill No. 45		Mill No. 46		Mill No. 24		Mill No. 25		Mill No. 15		Mill No.		Mill No.		Mill No.	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
A	B	B	B	B																				
B																								
C	P	P																						
D																								
E	P	P	S							S			S					S						
F	S	S	P	P		S																		
G	S	S	S			S					P	P												
H	P	P			S	S					S	S												
I																								
J																								
K	P	P			S	S							S			S								
L																								
M		S					P	P		S														
N																								
O																								
P																								
Q																								

1/ The letter "P" denotes a primary source; the letter "S", a secondary source; the letter "B" a balanced sourcing among 2 or more supplying mills.

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

Table G-2.--Carbon steel plate: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading company	Mill source and year																							
	Mill No. 17		Mill No. 9		Mill No. 15		Mill No. 18		Mill No. 19		Mill No. 20		Mill No. 21*		Mill No.		Mill No.		Mill No.		Mill No.		Mill No.	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
A		S			S	P	S	S	P															
B					S	P	S	S			P													
C																								
D									P	P														
E					S		S	P	P															
F	P	S			S	P		S																
G		S			B	P	B	S	B															
H	S	B	S	B			P	B																
I	P	P					S	S	S	S														
J			S	S	S	S	P	P																
K	B	B	S				B	B																
L	P																							
M			P	P																				
N					P	P	S	S	S					S										
O	P		S			P																		
P																								
Q	P				S																			

1/ The letter "P" denotes a primary source; the letter "S", a secondary source; the letter "B", a balanced sourcing among 2 or more supplying mills.

(*) Non-Japanese mill sources.

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

Table G-3.--Sheets and strip: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading company	Mill source and year																													
	Mill No. 19		Mill No. 22		Mill No. 23		Mill No. 17		Mill No. 18		Mill No. 24		Mill No. 25		Mill No. 26		Mill No. 15		Mill No. 27		Mill No. 9		Mill No. 28		Mill No. 29		Mill No. 30	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
A	S	S							P	P			S	S																
B										B					P	B	S	S	S									
C																													P	
D	P	P												S																
E	S	S							S	S							P	P												
F		S					B	P	B	S	S																			
G	S	S							P	P												S	S							
H							B	B	B	B							S	S												
I	S	S					S	S	P	P																				
J					P	P			S	S			S	S								S	S							
K							B	B		B							B												S	S
L									B	S													B	B	B	S				
M										S												P	P							
N	S	P							P	S							S	S												
O	P	P	S	S	S	S																								
P																														
Q									S	S	B	P					B	S												

1/ The letter "P" denotes a primary source; the letter "S" a secondary source; the letter "B" a balanced sourcing among 2 or more supplying mills.

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

Table G-4.--Deformed concrete reinforcing bars: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

ading mpany	Mill No.: 31		Mill No.: 32		Mill No.: 33		Mill No.: 13		Mill No.: 34		Mill No.: 35		Mill No.: 36		Mill No.: 37		Mill No 38		Mill No.: 39		Mill No.: 14		Mill No. 40		Mill No.: 7		Mill No.: 41		Mill No.: 42		Mill No. 43	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977

----------			S	P			B		B																							

----------	S		P					P																								
----------								P																	P	S			S			
----------						P																										
----------													P																			
----------							P											P														
----------															P	P																
----------	VARIOUS JAPANESE MILLS																															
----------																		P	P			S		S								

----------			P	P							S																					
----------			S																S	P											P	

1/ The letter "P" denotes a primary source; the letter "S", a secondary source; the letter "B", a balanced sourcing among 2 or more supplying mills.

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

Table C-5.--Bar size shapes: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading Company	Mill source and year																							
	Mill No. 7		Mill No. 3		Mill No. 8		Mill No. 48		Mill No. 52		Mill No. 53		Mill No. 54		Mill No. 55		Mill No. 56		Mill No. 57*		Mill No. 58		Mill No. 36	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
A																								
B							P	P	S	S	S			S										
C																	P	P						
D																								
E															P				B		S		B	
F	P	P	S	S	S	S																		
G																								
H															P	P								
I	S										P	P		S	S	S								
J	Included in angles, shapes and sections																							
K							P		S	P														
L																								
M																								
N									B	P	B	S												
O																								
P																								
Q																								

1/ The letter "P" denotes a primary source; the letter "S", a secondary source; the letter "B", a balanced sourcing among 2 or more supplying mills.

(*) Non-Japanese mill sources.

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

Table C-6.—Bars other than deformed concrete reinforcing bars: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading company	Mill source and year																															
	Mill No. 1		Mill No. 2		Mill No. 3		Mill No. 4		Mill No. 5		Mill No. 6		Mill No. 7		Mill No. 8		Mill No. 9		Mill No. 10		Mill No. 11		Mill No. 12		Mill No. 13		Mill No. 14		Mill No. 15	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
					P	P			S	S			S		S															
							B	S			B	P																		
					S								P	P		S									S		S			
			P	P		S																								
					S	S		P		P								S	S											
						B		P		B			S	S	S															
					S	P	P	S	S	S																				
													VARIOUS JAPANESE MILLS																	
			P	B											S	S							S	B						
																					P									
																	P	P												
	S				S								P	S														S	P	
							P	P	S																					

1/ The letter "P" denotes a primary source; the letter "S", a secondary source; the letter "B", a balanced sourcing among 2 or more supplying mills.

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

Table G-7.--Wire rods: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading Company	Mill source and year																							
	Mill No. 18		Mill No. 44		Mill No. 9		Mill No. 2		Mill No. 15		Mill No. 23		Mill No.		Mill No.		Mill No.		Mill No.		Mill No.		Mill No.	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
A									P	P														
B																								
C			P	P																				
D																								
E									P	P														
F	P	P	S	S																				
G	P	P			S	S					S	S												
H	P	P		S		S	S		S															
I																								
J									P	P														
K																								
L																								
M					P		S	P																
N			S						P	P														
O																								
P																								
Q																								

1/ The letter "P" denotes a primary source; the letter "S", a secondary source.

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

Table G-8.--Wire: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading Company	Mill source and year																																			
	Mill No. 2		Mill No. 46		Mill No. 63		Mill No. 64		Mill No. 65		Mill No. 66		Mill No. 67		Mill No. 68		Mill No. 69		Mill No. 70		Mill No. 71		Mill No. 12		Mill No. 72		Mill No. 73		Mill No. 74		Mill No. 75		Mill No. 4		Mill No. 76	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
A																													P	P	S	S				
B			S		P	P																														
C					S	S																					P	P								
D																																				
E																																				
F							P	P	S	S																										
G							P	B							S	B																				
H					B	B	B										B		B		B															
I																																				
J	Various Japanese Mills																																			
K	P	S																					S	P	S	S										
L			P	P																																
M	P	P									S	S	S	S																						
N																	B	B	B	B											S				S	
O																																				
P																																				
Q																																				

1/ The letter "P" denotes a primary source; the letter "S", a secondary source; the letter "B", a balanced sourcing among 2 or more supplying mills.

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

Table G-9.--Angles, shapes and sections: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading company	Mill source and year																													
	Mill No. 18		Mill No. 17		Mill No. 53		Mill No. 55		Mill No. 19		Mill No. 36		Mill No. 50		Mill No. 52		Mill No. 20		Mill No. 48		Mill No. 59*		Mill No. 60		Mill No. 61		Mill No. 55		Mill No. 62	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
A	P	P									S	S	S	S																
B					S										P	S	S	P		S										
C																														
D									B	P	B		S																	
E											P	S																		P
F			P	P	S	S	S	S																						
G	S	S									B	P	B	S																
H	P	P											S	S	S													S		
I						S							B	S									B	P	S					
J	P	P	+ Various Japanese Mills																											
K					S								S		P	P														
L							P	P																						
M											S										P									
N									S	S			P	S	S	P														
O									P																					
P									P	P																				
Q									P	P			S																	

1/ The letter "P" denotes a primary source; the letter "S", a secondary source; the letter "B", a balanced sourcing among 2 or more supplying mills.

(*) Non-Japanese mill sources.

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

Table G-10.--Rails: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading company	Mill source and year																							
	Mill No. 47		Mill No. 48		Mill No. 49		Mill No. 17		Mill No. 18		Mill No.		Mill No.		Mill No.		Mill No		Mill No.		Mill No.		Mill No.	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
A																								
B																								
C																								
D																								
E																								
F																								
G																								
H	B	B	B	B				B																
I																								
J																								
K																								
L																								
M																								
N									P	P														
O			S	S	P	P																		
P																								
Q																								

1/ The letter "P" denotes a primary source; the letter "S", a secondary source; the letter "B", a balanced sourcing among 2 or more supplying mills.

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

Table G-11.--Joint bars and tie plates: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading company	Mill source and year																									
	Mill No. 50		Mill No. 49		Mill No. 48		Mill No. 51		Mill No.		Mill No.		Mill No.		Mill No.		Mill No		Mill No.		Mill No.		Mill No.		Mill No.	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
A																										
B																										
C																										
D																										
E																										
F																										
G																										
H		P																								
I																										
J																										
K																										
L																										
M																										
N								P		P																
O				P			S																			
P																										
Q																										

1/ The letter "P" denotes a primary source; the letter "S", a secondary source.

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

Table G-12.---Pipes and tubes: Mill sources of Japanese trading companies, by types, 1/ 1976 and 1977

Trading company	Mill source and year																																					
	Mill No. 18		Mill No. 17		Mill No. 19		Mill No. 77		Mill No. 78*		Mill No. 79		Mill No. 80		Mill No. 81		Mill No. 82		Mill No. 83		Mill No. 84		Mill No. 85		Mill No. 86		Mill No. 15		Mill No. 60		Mill No. 87		Mill No. 88*		Mill No. 31		Mill No. 89*	
	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977
		S							S																													
															P	S	S	P	S			S				S					P	P		S		
					P	P					S	S	S	S																								
	B	S										S														B									S	P
	B	P	B	S			S	S																														
			P	P			S	S																			S	S										
			S	P	S		P	S												S																		
			S			S	P	P													S	S																
							P	P							S	S							S	S														
								S			S	S	P	P							S																	
					S																							B	P	B	S							
								S			P	S											P															
	S	S				S					S														P	P											
					P	S	S	S	S	P																												
			P	P									S													S	S											

1/ The letter "P" denotes a primary source; the letter "S", a secondary source; the letter "B", a balanced sourcing among 2 or more supplying mills.

(*) Non-Japanese mill sources.

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

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