SILICON METAL FROM THE PEOPLE'S REPUBLIC OF CHINA

Determination of the Commission in Investigation No. 731–TA–472 (Final) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigation

USITC PUBLICATION 2385

JUNE 1991

United States International Trade Commission
Washington, DC 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Anne E. Brunsdale, Acting Chairman

Seeley G. Lodwick

David B. Rohr

Don E. Newquist

Charles Ervin,
Director of Operations

Staff assigned:

Fred H. Fischer, Investigator
Ken Conant, Commodity–Industry Analyst
Catherine DeFilippo, Economist
Chand Mehta, Accountant–Financial Analyst
Rhonda Hughes, Attorney

Bob Carpenter, Supervisory Investigator

Address all communications to
Kenneth R. Mason, Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

United States International Trade Commission

Determination of the Commission Together with Information Obtained in the Investigation

---

Silicon Metal From the People's Republic of China
Investigation No. 731-TA-472 (Final)

June 1991

CONTENTS

CONTENTS—*Continued*

CONTENTS—*Continued*

Appendixes

Figures

CONTENTS—*Continued*

Page

Figures—*Continued*

CONTENTS—*Continued*

Page

Tables

CONTENTS—*Continued*

Page

Tables—*Continued*

CONTENTS—*Continued*

Page

Tables—*Continued*

Note.—Information that would reveal the business proprietary operations of individual concerns may not be published and, therefore, has been deleted from this report.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

Determination and Views of the Commission

DETERMINATION

Silicon Metal from the People's Republic of China
Inv. No. 731-TA-472 (Final)

On the basis of the record[1] developed in the subject investigation, the Commission unanimously determines, pursuant to section 735(b) of the Tariff Act of 1930 (19 U.S.C. § 1673d(b)) (the act), that an industry in the United States is materially injured by reason of imports from The People's Republic of China (China) of silicon metal,[2] that have been found by the Department of Commerce to be sold in the United States at less than fair value (LTFV). The Commission also unanimously determines, pursuant to section 735(b)(4)(A) of the act (19 U.S.C. § 1673d(b)(4)(A)), that critical circumstances do not exist with respect to imports of silicon metal from China; thus, the retroactive imposition of antidumping duties is not necessary.

BACKGROUND

The Commission instituted this investigation effective February 4, 1991, following a preliminary determination by the Department of Commerce that imports of silicon metal from China were being sold at LTFV within the meaning of section 733(b) of the act (19 U.S.C. § 1673b(b)). Notice of the institution of the Commission's final investigation and of a public hearing to be held in connection therewith, was given by posting copies of the notice in the Office of the Secretary,

---

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

[2] The merchandise covered by this investigation is silicon metal containing at least 96.00 but less than 99.99 percent of silicon by weight. Silicon metal is currently provided for in subheadings 2804.69.10 and 2804.69.50 of the Harmonized Tariff Schedule of the United States (HTS) as a chemical product, but is commonly referred to as a metal. Semiconductor-grade silicon (silicon metal containing by weight not less than 99.99 percent of silicon and provided for in subheading 2804.61.00 of the HTS) is not subject to this investigation.

U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of February 27, 1991 (56 F.R. 8216). The hearing was held in Washington, DC, on April 25, 1991, and all persons who requested the opportunity were permitted to appear in person or by counsel.

VIEWS OF THE COMMISSION

Silicon Metal from the People's Republic of China
Inv. No. 731-TA-472 (Final)

On the basis of the record developed in this final investigation, we determine that an industry in the United States is materially injured by reason of imports of silicon metal from the People's Republic of China (China) that the Department of Commerce has determined to have been sold in the United States at less than fair value.[1]

I. Like Product

In order to determine whether a domestic industry has been materially injured or threatened with material injury, the Commission must first determine the domestically produced product which is "like" the imports under investigation.[2] The statute defines "like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[3]

The Commission's like product determination is essentially a factual one, made on a case-by-case basis.[4] The Commission traditionally considers such factors as (1) physical characteristics, (2) uses, (3) interchangeabil-ity, (4) channels

---

[1] During the preliminary investigation and before Commerce, respondents have urged that the petition be dismissed for lack of standing. The Commission has since expressly stated that it does not have the statutory authority to terminate an investigation for lack of standing in its recent final determination in Gray Portland Cement and Cement Clinker from Japan, Inv. No. 731-TA-461 (Final), USITC Pub. 2376 (Apr. 1991), at 13.

[2] 19 U.S.C. § 1677(4)(A).

[3] Id. § 1677(10).

[4] See, e.g., Asociacion Colombiana de Exportadores de Flores v. United States, 693 F. Supp. 1165, 1169 & n.5 (Ct. Int'l Trade 1988); Fresh and Chilled Atlantic Salmon from Norway, Invs. Nos. 701-TA-302 (Final) and 731-TA-454 (Final), USITC Pub. 2371 (Apr. 1991), at 3; Sodium Thiosulfate from the Federal Republic of Germany, the People's Republic of China, and the United Kingdom, Invs. Nos. 731-TA-465-466, 468 (Final), USITC Pub. 2358 (Feb. 1991), at 4.

of distribution, (5) customer and producer perceptions, (6) common manufacturing facilities and employees, (7) production process, and (8) price.[5] No single factor is dispositive and the Commission may consider other factors it deems relevant based on the facts of a given investigation. Minor variations are not sufficient for finding separate like products. Rather, the Commission looks for clear dividing lines among articles.[6]

The Department of Commerce (Commerce) has defined the imported merchandise which is subject to this final investigation as—

> silicon metal containing at least 96.00 but less than 99.99 percent of silicon by weight. Silicon metal is currently provided for under subheadings 2804.69.10 and 2804.69.50 of the Harmonized Tariff Schedule (HTS) as a chemical product, but is commonly referred to as a metal. Semiconductor-grade silicon (silicon metal containing by weight not less than 99.99 percent of silicon and provided for in subheading 2804.61.00 of the HTS) is not subject to this investigation.[7]

In the preliminary investigation, the Commission found one like product: all silicon metal, regardless of grade, having a silicon content of at least 96.00 percent but less than 99.99 percent of silicon by weight, and excluding

---

[5] See Salmon at 3; Sodium Thiosulfate at 4; Sweaters Wholly or in Chief Weight of Manmade Fibers from Hong Kong, the Republic of Korea, and Taiwan, Invs. Nos. 731-TA-448-450 (Final); USITC Pub. 2312 (Sept. 1990), at 4-5.

[6] Salmon at 3-4; Sodium Thiosulfate at 4-5; Sweaters at 5.

[7] Final Determination of Sales at Less than Fair Value: Silicon Metal From the People's Republic of China, 56 Fed. Reg. 18,570 (Apr. 23, 1991) (Commerce's Final Determination). In its preliminary investigation, Commerce included the following sentence in its description of the subject merchandise: "The subject merchandise is used primarily as an alloying agent for aluminum and in the chemical industry as a precursor to silicons [sic]." Initiation of Antidumping Duty Investigation: Silicon Metal from the People's Republic of China, 55 Fed. Reg. 38,717, 38,718 (Sept. 20, 1990). Upon publication of its preliminary determination, Commerce deleted this sentence, clarifying that "this investigation is not limited to silicon metal used only as an alloying agent or in the chemical industry." Preliminary Determination of Sales at Less Than Fair Value: Silicon Metal From the People's Republic of China, 56 Fed. Reg. 4,596, 4,598 (Feb. 5, 1991). Accordingly, Commerce did not expand the scope of the final investigation.

semiconductor grade silicon.[8] While all parties agreed during the preliminary investigation that there is one like product, as defined above,[9] one purchaser and captive producer, Dow Corning Corporation (Dow Corning), urged during the final investigation that the Commission find two like products: chemical grade silicon and metallurgical grade silicon.[10]

In reaching a finding of one like product during the preliminary investigation, the Commission noted that silicon metal of different grades has the same physical appearance, is produced from the same raw material, is produced via identical processes in the same plants and using the same employees, and the

---

[8] Silicon Metal from Argentina, Brazil, and the People's Republic of China, Invs. Nos. 701-TA-304 (Preliminary) and 731-TA-470-472 (Preliminary), USITC Pub. 2325 (Oct. 1990), at 8, 10.

The Commission noted in its preliminary determination that it would seek additional information regarding the omission of semiconductor grade silicon metal from the definition of the like product. Id. at 10. While chemical, primary and secondary grade silicon metal are manufactured in the same facilities, with the same work force and from the same basic raw material as the other grades, semiconductor grade silicon metal is not. Prehearing Brief of Petitioners at 12 (Apr. 22, 1991). No domestic silicon metal manufacturer produces semiconductor grade silicon metal, as entirely different processes are required. Report at A-7 n.17. In addition, the semiconductor grade material is not substitutable for the chemical grade product. Id. n.18.

[9] See Preliminary Determination at 8 n.9.

[10] Prehearing Brief of Dow Corning Corporation at 1 (filed Apr. 23, 1991); Tr. at 163.

Chemical grade silicon metal contains less than 99.99 percent silicon, but not less than 99 percent silicon, by weight. Metallurgical grade silicon metal contains less than 99 percent silicon by weight. Metallurgical grade silicon metal is available in primary aluminum grade, which typically contains 5,000 ppm of iron and 700 ppm of calcium in the domestic product and secondary aluminum grade, which typically contains 10,000 ppm of iron and 3,500 ppm of calcium in the domestic product. Report at A-6. However, although the industry commonly refers to these ranges of specifications as grades, there is in fact no standard classification system. Id. at A-6, A-63.

One of the respondents, Camargo Corrêa Metais S.A. (CCM), took issue with the product definitions contained in the Commission's draft purchasers' questionnaires. Respondent contended that the definitions were overly broad and did not reflect actual product definitions used in the industry. As a result, respondent claimed the definitions would produce distorted and misleading results and would render the Commission's data unusable. Letter from Carrie A. Simon to the Honorable Kenneth R. Mason at 2 (Mar. 27, 1991). However, these same definitions were used in the preliminary investigations, when no objections were raised by any party. Likewise, no objections were raised by any party when these same definitions were used in the Commission's importers' and producers' questionnaires during the final investigations. The major producers, when queried as to the need to refine the definitions, had no problems with them. Accordingly, the Commission determined not to revise the definitions.

majority of both domestic and imported silicon is sold directly to end users.[11] Dow Corning argued during the final investigation that chemical grade silicon metal has specific physical and chemical characteristics distinguishing it from metallurgical grade silicon metal; that the end uses and customer base are entirely different for the two grades; that requirements with respect to customer service and quality control are higher for chemical grade customers than metallurgical grade customers; that the prices for chemical grade silicon metal have historically been higher and more stable than for metallurgical grade silicon metal; that the demand for chemical grade silicon metal differs from that for metallurgical grade silicon metal; and that there have been no significant imports of chemical grade silicon.[12]

Petitioners, on the other hand, argue that there is no bright line separating silicon metal into two readily distinguishable product types. They state that silicon metal is sold in a range of specifications and there exists a variety of specifications within all customer groups; differences between grades are relatively small; almost all grades manufactured in or imported into the United States are of a high grade; chemical grade silicon metal is not necessarily purer than other grades; silicon metal meeting the requirements of chemical manufacturers is fully interchangeable with all other grades of silicon metal for secondary aluminum production;[13] and several domestic manufacturers produce one product which

---

[11] Preliminary Determination at 8-9. Silicon metal is sold to chemical producers, who manufacture silicones for sealants and other purposes; to primary aluminum producers, who produce aluminum from ore; and to secondary aluminum producers, who manufacture aluminum from scrap. Tr. at 13; see Report at A-26, A-63 & n.82.

[12] Prehearing Brief of Dow Corning at 1-3.

[13] While higher grade silicon can be used in lower grade applications, the reverse is not true. Report at A-63 n.86; Prehearing Brief of Petitioners at 10; Prehearing Brief of Dow Corning at 9; Prehearing Brief of the Aluminum Smelting and Refining Company (ASRC) and Timco at 27, 29 (Apr. 23, 1991); Tr. at 51, 93, 101.

There was much discussion during the hearing regarding the substitution of higher grade silicon for the lower grade. There was testimony presented at the hearing that primary and secondary aluminum grade silicon metal producers sometimes compete

(continued...)

meets the requirements of and is sold to both aluminum and chemical manufacturers.[14] Moreover, petitioners state, all grades are very pure, the price differences are relatively minor and prices follow the same general pattern.[15] The prices for the higher grades of silicon metal are generally higher than those for the secondary aluminum grade.[16]

With respect to chemical grade silicon metal specifically, petitioners maintain that chemical grade cannot be separated from other grades of silicon metal because they represent various versions of a basic product which is produced to particular purchaser specifications.[17] Moreover, there are considerable variations within the chemical grade,[18] which is the purest form of silicon metal under investigation.

In contrast, Dow Corning, which uses substantial quantities of silicon in its products,[19] states that silicon metal used in chemical manufacturing, especially silicones, must meet detailed specifications for size, consistency and impurities and that the minimum quantity of an impurity can be as important as the maximum quantity.[20] There is also a lengthy and expensive qualification process for

---

[13] (...continued)
directly for sales to the same end users. Tr. at 31. An economics expert for a secondary aluminum producer stated that because such substitution is more expensive, it is not economically viable. Id. at 93, 101; see also Comments on the Staff Elasticities Memorandum of Associaçao Brasileira dos Produtores de Ferroligas (ABRAFE) and Its Constituent Members at 3 (May 3, 1991). However, officials of two of the petitioners claimed that it is profitable for a producer to sell chemical or primary aluminum grade silicon metal in the secondary aluminum market because the costs of manufacturing the higher grades are only slightly more than for the secondary grade, estimated at one cent per pound. The same raw materials are used, but there is additional oxygen refining at the end of the process. Tr. at 62, 67-68.

[14] Posthearing Brief of Petitioners at 2 (May 6, 1991); Tr. at 49-51.

[15] Tr. at 50-51.

[16] Report at A-63. There is evidence in the record that although chemical manufacturers realize that their grades require a premium for lower levels of impurities, they expect their prices to be adjusted according to the prices of secondary aluminum grade silicon metal. Id. at A-66, A-69; Tr. at 31, 57-58, 75; see also Tr. at 39.

[17] Prehearing Brief of Petitioners at 11. Specifications vary among the purchasers. Id.; Report at A-63.

[18] Tr. at 50.

[19] Prehearing Brief of Dow Corning at 5.

[20] Id. at 7, 8; Tr. at 164.

manufacturers of chemical grade silicon metal which can extend to a year or more.[21] The qualification requirements for the other grades are much less stringent. One-time qualification for the primary aluminum market to ensure that the material meets the indicated specifications is adequate and the testing of a shipment of the material to a secondary aluminum user is sufficient.[22]

In light of the similarity in physical characteristics,[23] production processes,[24] common manufacturing facilities and employees,[25] and channels of distribution,[26] as well as the complete substitutability of the higher grade product for the lower grades[27] and the minor differences in price for the production of all grades of silicon metal as well as in the overall pricing of the end product,[28] the Commission continues to define the like product to be all silicon metal, regardless of grade,[29] having a silicon content of at least 96.00 percent but less than 99.99 percent of silicon by weight, and excluding semiconductor grade silicon.

II. Domestic Industry

A. *Captive Producers*

The statute defines the domestic industry as "the domestic producers as a whole of a like product, or those producers whose collective output of the like product constitutes a major proportion of the total domestic production of that

---

[21] Prehearing Brief of Dow Corning at 11; Tr. at 70, 164; see Report at A-65; Prehearing Brief of ASRC and Timco at 28.

[22] Tr. at 70; see Report at A-65 n.96.

[23] See Report at A-5 - A-6.

[24] See id. at A-7 - A-9.

[25] See id.; A-35 - A-36 & Table 11.

[26] See id. at A-26 & Table 6.

[27] Id. at A-63 n.86.

[28] See id. at A-70, Table 24; A-73, Table 25.

[29] The Commission has generally declined to separate products of different grades into more than one like product. See generally, e.g., Sodium Thiosulfate at 6. Applying those same considerations in this investigation, we believe that there are no facts on the record which warrant a departure from this practice.

product."[30] Two domestic producers of silicon metal are captive producers who produce silicon metal for use in their own manufacturing operations.[31] The Commission has consistently included such producers as part of the domestic industry,[32] but has noted that it will be "mindful of the fact that unfairly traded imports 'may not affect open-market producers and integrated producers in the same way.'"[33]

Based on the statutory requirements that the Commission consider the industry as a whole and prior practice with respect to captive producers, the Commission does not exclude these captive producers from the domestic industry.

B. *Related Parties*

A majority of the domestic producers have imported silicon metal directly, or purchased such imports, from the subject countries during the period of investigation. The related parties provision of the statute permits the Commission to exclude certain producers from the domestic industry. That is, producers related to exporters or importers, or who are themselves importers of the product under investigation, may be excluded from the domestic industry "in appropriate circumstances."[34] The purpose of such exclusion is to avoid distortions in aggregate industry data resulting from the inclusion of data from a producer who is shielded from or who benefits from unfairly traded imports.[35]

---

[30] 19 U.S.C. § 1677(4)(A).

[31] These producers are Dow Corning and Reynolds Metals.

[32] See, e.g., Polyethylene Terephthalate (PET) Film, Sheet, and Strip from Japan, the Republic of Korea and Taiwan, Invs. Nos. 731-TA-458-460 (Preliminary), USITC Pub. 2292 (June 1990), at 12-13; Industrial Phosphoric Acid from Belgium and Israel, Invs. Nos. 731-TA-365 and 366 (Preliminary), USITC Pub. 1931 (Dec. 1986), at 6-7.

[33] PET Film at 13, citing Electrolytic Manganese Dioxide from Greece and Japan, Invs. Nos. 731-TA-406 and 408 (Final), USITC Pub. 2177 (Apr. 1989), at 9.

[34] 19 U.S.C. § 1677(4)(B).

[35] Empire Plow Co. v. United States, 675 F. Supp. 1348, 1353-54 (Ct. Int'l Trade 1987); Heavy Forged Handtools from the People's Republic of China, Inv. No. 731-TA-457

(continued...)

Application of the related parties provision is within the Commission's discretion and is based on the facts of each case.[36] The Commission generally applies a two-step analysis in making this decision. First, it decides whether the company qualifies as a related party under the statute. Second, the Commission determines whether, in view of the producer's status as a related party, there are "appropriate circumstances" for excluding the company in question from the definition of the domestic industry.[37] In making its decision, the Commission has examined the following factors—

(1) the position of the related producers vis-a-vis the rest of the domestic industry;

(2) the reasons why the domestic producers have chosen to import the product under investigation -- to benefit from the unfair trade practice, or to enable them to continue production and compete in the domestic market; and

(3) the percentage of domestic production attributable to related producers.[38]

The Commission has also considered whether each company's books are kept separately from its "relations" and whether the primary interests of the related producers lie in domestic production or in importation.[39]

As a consequence of its like product definition in the preliminary determination, the Commission found one domestic industry, which was described

---

[35] (...continued)
(Final), USITC Pub. 2357 (Feb. 1991), at 18; see S. Rep. No. 249, 96th Cong., 1st Sess. at 83.

[36] Empire Plow Co. v. United States, 675 F. Supp. at 1352; Handtools at 18.

[37] See, e.g., Gray Portland Cement and Cement Clinker from Mexico, Inv. No. 731-TA-451 (Final), USITC Pub. 2305 (Aug. 1990), at 19 (views of Acting Chairman Brunsdale); Digital Readout Systems and Subassemblies Thereof from Japan, Inv. No. 731-TA-390 (Final), USITC Pub. 2150 (Jan. 1989), at 15.

[38] Handtools at 18-19; see Empire Plow Co. v. United States, 675 F. Supp. at 1353-54 (commenting, with respect to the first two factors, that "[t]his is a reasonable approach when viewed in light of the legislative history").

[39] Handtools at 19; see Rock Salt from Canada, Inv. No. 731-TA-239 (Final), USITC Pub. 1798 (Jan. 1986), at 12.

as all producers of such silicon metal in the United States.[40] While no party argued for the exclusion of any producer in this final investigation, we note that the domestic producers who imported or purchased imported silicon metal from the subject countries during the period of investigation together accounted for a majority of the domestic production of silicon metal during that period[41] and a majority of net sales by value during those years.[42] With the exception of one company's imports for two years, these producers accounted for less than 3 percent of imports from the subject countries in any given year during the period of investigation.[43]

The aforementioned producer purchased a significant amount of imported silicon metal relative to its domestic shipments of the product. These purchases were substantial for 1988 and 1989, but declined considerably in 1990.[44]

We have again decided not to exclude these producers from the domestic industry. A review of the firms' operating income or loss data supports the conclusion that the imports do not appear to have shielded the companies from import competition.[45] On the contrary, it does appear that exclusion would present a distorted picture of the state of the domestic industry. In addition, while one of these producers opposes the petition,[46] it is a captive producer[47] and its role as an

---

[40] Preliminary Determination at 10.

[41] Report at A-19 - A-24.

[42] Id. at B-33, Table D-5.

[43] Information regarding the exception is confidential. See id. at A-34, Table 9; A-59, Table 23.

In its Preliminary Determination at 11 n.28, the Commission stated that it would attempt to acquire more information with regard to imports from the subject countries or other sources for certain domestic producers. That information is provided in the Report at A-34, Table 9.

[44] See id. at A-34, Table 9; B-30, Table D-2.

[45] Id. at B-33, Table D-5.

[46] See Prehearing Brief of Dow Corning at 1, 18; Tr. at 163.

[47] Report at A-22 n.44; Tr. at 162.

importer is minor.[48] Lastly, as noted above, no party has argued for the exclusion of these producers as related parties.

III. Condition of the Industry[49]

In assessing the condition of the domestic industry, we consider, among other factors, U.S. consumption, production, shipments, capacity utilization, inventories, employment, wages, financial performance, capital investment, and research and development expenditures.[50] No single factor is dispositive and in each investigation we consider the particular nature of the industry involved and the relevant economic factors that have a bearing on the state of the industry.[51]

---

[48] See Report at A-34, Table 9; B-30, Table D-2.

[49] Acting Chairman Brunsdale does not reach a separate legal conclusion regarding the presence or absence of material injury based on this information. While she does not believe an independent determination is either required by the statute or useful, she finds the discussion of the condition of the domestic industry helpful in determining whether any injury resulting from dumped imports is material.

[50] See 19 U.S.C. § 1677(7)(C)(iii).

[51] See id., which requires us to consider the condition of the industry within the context of the business cycle and conditions of competition that are distinctive to the affected industry. See also H.R. Rep. No. 317, 96th Cong., 1st Sess. 46 (1979) ("[i]t is expected that in its investigation the ITC will continue to focus on the conditions of trade and development within the industry concerned"); S. Rep. No. 249, 96th Cong., 1st Sess. 88 (1979) ("[i]t is expected that in its investigation the Commission will continue to focus on the conditions of trade, competition, and development regarding the industry concerned").

Respondents allege that, within the context of the business cycle, the domestic producers have not suffered material injury as a result of LTFV imports. See Posthearing Brief of Midland Export Ltd. at 3 (filed May 3, 1991); Prehearing Brief of ABRAFE at 4-5 (filed Apr. 23, 1991); Prehearing Brief of Midland Export Ltd. at 4 (filed Apr. 22, 1991); Prehearing Brief of CCM and Interpax, Inc. at 2-3 (Apr. 22, 1991). Much of the information obtained concerning the alleged business cycle as it pertains to silicon metal was disputed. Commissioners Lodwick, Rohr and Newquist are also concerned that the parties may view ups and downs as necessarily constituting a cycle, although Acting Chairman Brunsdale does not agree. The parties agree that the demand for metallurgical grade silicon metal is inclined to be cyclical because it tends to follow consumption trends in markets of products using large amounts of aluminum, such as the automobile industry. See, e.g., Report at A-57; Answers to Questions from Commissioners and Staff at 6-7, attached to Posthearing Brief of Petitioners; Memorandum from Andrew R. Wechsler and Henry B. McFarland to The Commission at 9 (May 3, 1991); Prehearing Brief of Midland Export Ltd. at 4; Tr. at 94, 116, 175. Because there are many uses for silicon metal in the chemical market, it is more difficult to relate trends in the overall

(continued...)

Although apparent domestic consumption decreased 8.2 percent from 1988 to 1989, it increased 10.7 percent from 1989 to 1990. Similarly, the value of apparent consumption of silicon metal in the United States decreased 12.3 percent from 1988 to 1989, and increased 2.8 percent from 1989 to 1990.[52] Domestic producers' share of the quantity of U.S. consumption increased from 71.7 to 75.2 percent from 1988 to 1989, but decreased to 66.7 percent from 1989 to 1990. Their share of the value of U.S. consumption increased from 72.5 percent in 1988 to 78.8 percent in 1989, but decreased to 71.1 percent from 1989 to 1990.[53]

Data relating to domestic production are also mixed. Domestic production decreased 5.0 percent from 1988 to 1989, but increased 2.8 percent in 1990. Average-of-period capacity decreased .2 percent from 1988 to 1989, but increased 2.8 percent from 1989 to 1990. Average-of-period capacity utilization decreased from 90.1 percent in 1988 to 85.8 percent in 1989 and remained steady at 85.8 percent in 1990.[54] End-of-period inventories increased 34.2 percent from 1988 to 1989, and increased 53.6 percent from 1989 to 1990.[55]

The quantity of U.S. shipments of silicon metal by domestic producers decreased 3.7 percent from 1988 to 1989, and decreased another 1.9 percent from 1989 to 1990. The value of these shipments decreased 4.7 percent from 1988 to 1989, and decreased further 7.3 percent from 1989 to 1990.[56]

---

[51] (...continued)
demand for chemical grade silicon metal to trends in the demand for any one product or group of products. Report at A-63; Answers to Questions from Commissioners and Staff at 6-7. Mindful of the several theories with regard to the existence of the cycle, its peak and whether the industry is experiencing a normal economic downturn, and thus giving such information limited weight, we have made our evaluation of data concerning the industry in light of its apparent cyclical nature viewed in conjunction with the offsetting impact of the various product segments.

[52] Report at A-59, Table 23.

[53] Id.

[54] Id. at A-28; A-29, Table 7.

[55] Id. at A-35 & Table 10.

[56] Id. at A-29 - A-33; A-32, Table 8.

Like the domestic production and consumption data, the employment data are mixed. The number of production and related workers producing silicon metal declined 4.6 percent from 1988 to 1989, but increased 4.6 percent from 1989 to 1990. The number of hours worked declined 9.4 percent from 1988 to 1989, but increased 6.9 percent from 1989 to 1990. Wages paid decreased 7.6 percent from 1988 to 1989, but increased 10.5 percent from 1989 to 1990. Total compensation paid decreased 5.8 percent from 1988 to 1989, but increased 12.8 percent from 1989 to 1990. Hourly wages paid increased 2.0 percent from 1988 to 1989, and increased 3.4 percent from 1989 to 1990. Hourly total compensation paid increased 3.9 percent from 1988 to 1989, and increased another 5.6 percent from 1989 to 1990. However, productivity decreased 3.9 percent from 1988 to 1989, and declined another .6 percent from 1989 to 1990. Unit labor costs increased 8.2 percent from 1988 to 1989 and increased another 6.1 percent from 1989 to 1990.[57]

With respect to the domestic producers' financial experience, we note that, in 1990, one producer filed a petition for reorganization under Chapter 11 of the U.S. Bankruptcy Code. Another producer had previously filed such a petition in 1986.[58]

Net sales of silicon metal declined by 16.8 percent in terms of value from 1988 to 1990. In terms of gross tons, net sales decreased by 10.5 percent during the same period. Also during this period, aggregate gross profit declined by 65.7 percent and gross profit margins decreased from 12.6 percent to 5.2 percent. Aggregate operating income dropped sharply from 7.9 percent of net sales in 1988 to .4 percent in 1989. Aggregate operating losses represented 1.0 percent of net sales in 1990. Pretax net income followed a similar trend.[59]

---

[57] Id. at A-35 - A-36 & Table 11.
[58] Id. at A-37.
[59] Id. at A-37 - A-38 & Table 12; A-39, Figure 11; A-37 - A-39.

Both the operating and net return on total assets for silicon metal operations have suffered steep declines during the period of investigation. The operating return declined from 12.0 percent in 1988 to .5 percent in 1989 and then to -1.1 percent in 1990. Similarly, the net return decreased from 15.4 percent in 1988 to -3.2 percent in 1989 and to -4.7 percent in 1990.[60] Total capital expenditures for silicon metal increased dramatically from 1988 to 1989: 169.8 percent. This figure declined 57.9 percent from 1989 to 1990.[61] Research and development expenses increased by 46.8 percent from 1988 to 1989, then decreased by 14.5 percent from 1989 to 1990.[62]

Accordingly, based on the data available in this investigation, we find that the domestic industry is materially injured.

IV. Cumulation

LTFV imports of silicon metal from two other countries are currently under investigation.[63] In determining material injury to a domestic industry by reason of the subject imports, the Commission is to assess the volume and price effects of imports of the merchandise which is the subject of the investigation. The statute provides that, for purposes of evaluating the volume of imports and the effect of such imports on prices,

> the Commission shall cumulatively assess the volume and effect of imports from two or more countries of like products subject to investigation if such imports compete with each other and with like products of the domestic industry in the United States market.[64]

---

[60] Id. at A-43, Table 16; A-44, Figure 12.

[61] Id. at A-45, Table 17.

[62] Id. at A-46, Table 18.

[63] See Preliminary Determination of Sales at Less Than Fair Value: Silicon Metal from Argentina, 56 Fed. Reg. 13,116 (Mar. 29, 1991); Preliminary Determination of Sales at Less Than Fair Value: Silicon Metal from Brazil, 56 Fed. Reg. 13,118 (Mar. 29, 1991).

[64] 19 U.S.C. § 1677(7)(C)(iv).

Imports are cumulated if they meet three criteria: (1) they must compete with other imported products and with the like domestic product; (2) they must be marketed within a reasonably coincidental period; and (3) they must be subject to investigation.[65] In deciding whether there is competition among imports and between imports and the like product, the Commission has looked to several factors: (1) the degree of fungibility of imports from different countries and between imports and the domestic like product, including consideration of specific customer requirements and other quality related questions; (2) the presence of sales or offers to sell in the same geographical markets of imports from different countries and the domestic like product; (3) the existence of common or similar channels of distribution for imports from different countries and the domestic like product; and (4) whether imports are simultaneously present in the market.[66]

These factors provide the Commission with a framework for determining whether the imports compete with each other and with the domestic like product, although no single factor is determinative and the list is not exclusive.[67] The Federal Circuit and the Court of International Trade have found that the competition requirement is satisfied so long as there is a "reasonable overlap" in the domestic market among imports and between imports and the like product.[68]

---

[65] See, e.g., Chaparral Steel Co. v. United States, 901 F.2d 1097, 1101 (Fed. Cir. 1990); Sodium Thiosulfate at 9; Sweaters at 35-36; Antifriction Bearings (Other Than Tapered Rollers Bearings) and Parts Thereof from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom, Invs. Nos. 303-TA-19 & 20, 731-TA-391-399 (Final), USITC Pub. 2185 (May 1989), at 61.

[66] See Certain Cast Iron Pipe Fittings from Brazil, the Republic of Korea and Taiwan, Invs. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986), aff'd, Fundicao Tupy S.A. v. United States, 678 F. Supp. 898 (Ct. Int'l Trade), aff'd, 859 F.2d 915 (Fed. Cir. 1988); see also Sodium Thiosulfate at 9; Sweaters at 35 n.105; Antifriction Bearings at 62.

[67] See Wieland Werke, AG v. United States, 718 F. Supp. 50, 52 (Ct. Int'l Trade 1989); Granges Metallverken AB v. United States, 716 F. Supp. 17, 19 (Ct. Int'l Trade 1989).

[68] See, e.g., Wieland Werke, AG v. United States, 718 F. Supp. at 52 (completely overlapping markets are not required); Granges Metallverken AB v. United States, 716 F. Supp. at 22 (only evidence of reasonable overlap in competition is necessary); Florex v. United States, 705 F. Supp. 582, 592 (Ct. Int'l Trade 1989) (complete overlap not required); see also Fundicao Tupy S.A. v. United States, 678 F. Supp. at 902 (sufficient evidence of

(continued...)

Section 1330 of the Omnibus Trade and Competitiveness Act of 1988 provides that the Commission is not required to cumulate imports if it determines that the imports are negligible and have no discernible adverse impact on the domestic industry.[69] In making this determination, the Commission is to consider all relevant economic factors, including whether

> (I) the volume and market share of the imports are negligible,
>
> (II) sales transactions involving the imports are isolated and sporadic, and
>
> (III) the domestic market for the like product is price sensitive by reason of the nature of the product, so that a small quantity of imports can result in price suppression or depression.[70]

The legislative history states that the Commission is to apply this exception narrowly and that it is not to be used to subvert the purpose and general application of the mandatory cumulation provision of the statute.[71] Further, whether imports are negligible may differ from industry to industry and, for that reason, the statute declines to specify a numerical definition of negligibility.[72]

---

[68] (...continued)
overlap in record to justify conclusion of competition among imports and between imports and like product).

[69] 19 U.S.C. § 1677(7)(C)(v).

[70] Id.

[71] See H.R. Rep. No. 40, 100th Cong., 1st Sess., pt. 1, at 131 (1987); H.R. Rep. No. 576, 100th Cong., 2d Sess. 621 (1988) (conference report). The exception is to be applied

> only in circumstances where it is clear that imports from that source are so small and so isolated that they could not possibly be having any injurious impact on the U.S. industry. The ITC shall apply this exception with particular care in situations involving fungible products, where a small quantity of low-priced imports can have a very real effect on the market.

H.R. Rep. No. 40, at 130.

[72] Id. at 131. Specifically, the House Ways and Means Committee Report notes that:

> For an industry which is already suffering considerable injury and has long been battered by unfair import competition, very small additional quantities of unfair imports may be more than negligible. For another industry, not so deeply injured, small additional quantities of unfair imports may have no discernible effect at all.

Id.

A. *Competition*

In its preliminary investigation, the Commission determined to assess cumulatively the volume and price effects of imports of the three countries, which are now subject to final investigations.[73] There was evidence that imports from each of the countries under investigation compete for sales with the domestic product,[74] that they were present in the United States market throughout the period of investigation and that they have similar channels of distribution.[75]

In this final investigation, petitioners assert that the above-cited requirements for cumulation continue to be satisfied.[76] While most of the other parties do not contest the representations made with respect to the presence of offers or sales in the same geographic markets,[77] the similarity in channels of distribution or the simultaneous presence of imports throughout the period of investigation,[78] conflicting evidence was presented concerning the quality of the imported products, especially Chinese silicon metal, calling into question the fungibility of the imports.[79]

---

[73] Preliminary Determination at 16.

[74] Id. at 15.

[75] Id. at 16.

[76] Prehearing Brief of Petitioners at 29-36; Posthearing Brief of Petitioners at 5.

[77] The Commission indicated in its Preliminary Determination that it would further examine the issue of competition within the same geographic markets. Preliminary Determination at 16. Electrometalurgica Andina S.A.I.C. (Andina) states that Argentine imports are narrowly circumscribed geographically. Posthearing Brief of Andina at 5 (May 23, 1991). However, the staff report shows that there is a reasonable overlap of geographic competition. See Report at A-25, Table 5; B-41, Figure F-1; B-42, Figure F-2; B-43, Figure F-3.

[78] ABRAFE maintains that because Chinese imports have been sporadic, they have not been simultaneously present in the market. A similar argument is made with respect to the rather long order cycle for Brazilian silicon metal. Prehearing Brief of ABRAFE at 7. Andina, an Argentine producer, also argues that Argentine sales are sporadic. Posthearing Brief of Andina at 6.

[79] The Commission indicated in its Preliminary Determination that it would seek information concerning the size of the three market segments. Preliminary Determination at 15 n.55. That information is presented in the staff report. See Report at A-17 - A-18, Table 3 & Figure 3.

According to the petitioners, Chinese silicon metal is of sufficient quality that it is widely accepted in the secondary aluminum grade market,[80] which is a significant market for silicon metal. It is generally agreed among the other parties that the Chinese product is inferior to the domestic product and to silicon metal imported from the other subject countries in quality and in consistency of quality.[81] The petitioners acknowledge that there have been quality problems with the Chinese product in the past,[82] but state that these problems have not been experienced with the principal Chinese suppliers in recent years.[83] This view is not shared by some purchasers.[84] In addition, it was argued that many users refuse the Chinese product under any circumstances.[85]

In response to Commission questionnaires, five of the seven responding producers indicated that the quality of domestic and imported silicon metal is generally comparable, with six of ten importers stating that there are quality differences. Most of the alleged discrepancies in quality relate to the Chinese product. The problems cited include a lower silicon content, i.e., less than 98

---

[80] Tr. at 15; see id. at 183 (domestic and all imported material are entirely substitutable for each other in secondary aluminum sales).

[81] Posthearing Brief of CCM and Interpax, Inc. at 1-2 (May 6, 1991); Posthearing Brief of ASRC and Timco at 8 (May 3, 1991); Posthearing Brief of Midland Export Ltd. at 7-8; Comments on the Staff Elasticities Memorandum of ABRAFE at 3; Prehearing Brief of ABRAFE at 5; Prehearing Brief of Dow Corning at 17; Prehearing Brief of ASRC and Timco at 31-32; Tr. at 108, 148-49. The domestic product is acknowledged to be of the best quality. See Prehearing Brief of ASRC and Timco at 31; Report at A-63 & n.88; Tr. at 64.

[82] See Tr. at 80.

[83] Id. at 15-16; see id. at 76-77 (silicon metal from China now being imported is composed of over 99 percent silicon), 79 (quality has improved within the last year and no complaints regarding it are known).

[84] See Prehearing Brief of ASRC and Timco at 31-32 (quality of Chinese silicon metal is "particularly suspect" and problems were not solved as of 1991); Tr. at 108 (secondary aluminum producer stated that overall, quality of Chinese product is not improving). Other problems with the Chinese product allegedly lie with its packaging, which increases internal handling costs, and the inability of importers and brokers to meet delivery times. Prehearing Brief of ASRC and Timco at 32.

[85] Prehearing Brief of ABRAFE at 6.

percent, and higher levels of impurities such as iron and calcium.[86] However, several purchasers have stated that the quality of Chinese material is acceptable.[87] U.S. importers of silicon metal from China have worked with their suppliers to meet the expectations of certain members of the secondary aluminum industry.[88] In addition, silicon metal from China may be blended with silicon metal from another source to reduce the level of impurities in the former product.[89] There was testimony that it is actually "quite easy" to sell the Chinese material.[90]

Producers and importers generally agree that the quality of the Brazilian product is better than that of the Chinese and is close to that of the domestic.[91] Petitioners state that it is interchangeable with domestic secondary aluminum grade silicon metal and is increasingly interchangeable with the domestic product in other market segments.[92] However, one producer imported a small amount of

---

[86] Report at A-63 - A-64.

[87] Id. at A-64; see Tr. at 42 (for secondary aluminum customers, quality does not really matter); id. at 108 (some facilities in China are improving their quality).

[88] Report at A-6; Posthearing Brief of Midland Export Ltd. at 7-8. The business volume of one U.S. importer of the Chinese product increased in 1989 because it had proven itself to be a reliable supplier of silicon metal and because the quality of its material was considered to be good. Prehearing Brief of Midland Export Ltd. at 1.

[89] Report at A-6. Available data indicate that no Chinese silicon metal was sold to chemical manufacturers or to primary aluminum companies during the period of investigation. Id. at A-5 - A-6; A-64.

[90] Tr. at 176.

[91] See Report at A-64; Comments on the Staff Elasticities Memorandum of ABRAFE at 3 (Brazilian product is inferior to domestic silicon metal and Chinese product is of considerably lower quality); Tr. at 64 (domestic product is superior); 108 (Brazilian better than Argentine material, which is better than Chinese silicon metal), 158 (Brazilian product generally equivalent in quality to the domestic), 181 (Brazilian product better than the Chinese). But see Tr. at 166 (Dow Corning attempted to qualify Brazilian material but was not successful); see also id. at 66 (the domestic, Chinese and Brazilian secondary aluminum products are interchangeable).

[92] Id. at 14; see id. at 66 (Brazilian product sold in primary aluminum or chemical sectors is entirely substitutable for domestic product). There was testimony that the secondary aluminum market is a commodity market, id. at 80, and that the elasticity of substitution between the domestic product and imports is very high. Id. at 183. In addition, all of the domestic product can be used in secondary aluminum applications and all imports are substitutable with the domestic product being sold for those applications. Id. at 63-64; see also id. at 66.

silicon metal from one of the subject countries and found it was not of good quality.[93]

The quality of the Argentine product is generally good. Petitioners state that it is difficult to distinguish it from the Brazilian product.[94]

There is evidence that while some purchasers consider quality to be the primary consideration in selecting a supplier, a significant number consider price to be the most important factor. Availability is the third most important criterion to purchasers.[95]

Based on the foregoing information, the Commission concludes that there is a reasonable overlap in competition sufficient to satisfy the requirements for cumulation, even with respect to the imports from China.[96] While the record indicates concerns with the quality of the imported product, the overall evidence

---

[93] Id. at 166.

[94] Id. at 14; see also Report at A-64 (quality of secondary aluminum grade Argentine and Brazilian products is near that of the domestic product); Tr. at 77 (quality of Argentine and Brazilian material has always been high).

[95] Report at A-80 - A-82; see also Testimony of Ronald Cunningham at 9 (filed Apr. 22, 1991) (secondary aluminum purchaser will purchase product on basis of price if it meets requirements); Testimony of Gary R. Korecky at 5 (filed Apr. 22, 1991) (despite complaints regarding Chinese product, secondary aluminum producers have bought large quantities); Prehearing Brief of Petitioners at 52-54, 55 (quality differences not a significant factor with respect to Brazilian, Chinese or Argentine sales); Prehearing Brief of ASRC and Timco at 34, 36 (availability is as important as quality and price always becomes secondary when availability is in question); Tr. at 28 (secondary aluminum customers have purchased large quantities of Chinese silicon metal); id. at 90 (price is a factor and reliability of supply is key); but see Posthearing Brief of CCM and Interpax at 2 (inferior quality Chinese silicon metal not competitive with other subject imports); Prehearing Brief of ABRAFE at 8 (Chinese material viewed as qualitatively different and is sold and used differently); Tr. at 125 (some people in industry will not buy Chinese material at any price).

See text, infra at 26 & n.101 for a discussion of the availability of domestically produced silicon metal.

[96] We note that, even absent cumulation, we would have made an affirmative material injury determination with respect to imports from China only.

Acting Chairman Brunsdale has not reached a separate conclusion on material injury caused by dumped imports from China, absent cumulation.

supports a finding of a reasonable overlap in competition.[97] In particular, the fact that three producers have imported silicon metal directly from one or more of the subject countries during the period of investigation and two of them have imported material from China,[98] that two other producers have purchased material imported from two or all three of the subject countries during this period and they both purchased imports from China,[99] and that at least one domestic producer has attempted to sell imported material as its own[100] support this conclusion. The extensive evidence proffered throughout this final investigation to show that the purchasers turned to imports because the domestic industry was unable to meet their demands due to insufficient capacity and resulting inconsistent supplies[101] is further justification for cumulating the subject imports.

B. *Negligible Imports*

In the preliminary investigation the Commission considered whether the imports of silicon metal from Argentina should not be subject to cumulation because they are negligible. The Commission found that the degree of import penetration did not support such a finding.[102]

Petitioners state that the Argentine exports do not comport with the statutory factors required for the Commission to decline to cumulate them with the other subject imports. Petitioners claim that these imports are more than a very low percentage of imports, that sales transactions have entered the United

---

[97] See, e.g., Posthearing Brief of Andina at 1 n.2 (it is assumed that imports of silicon metal from Argentina compete with those from Brazil and China and with the domestic like product).

[98] Report at A-24 and n.54; A-34, Table 9.

[99] Id.

[100] Exhibit 10, Prehearing Brief of ASRC and Timco.

[101] See, e.g., Posthearing Brief of CCM and Interpax at 6-7; Prehearing Brief of ABRAFE at 3; Prehearing Brief of CCM and Interpax at 8-10; Tr. at 89. Acting Chairman Brunsdale notes that the domestic, Brazilian and Argentine products can be used to substitute for the Chinese product.

[102] Preliminary Determination at 17.

States steadily throughout the period of investigation and that the silicon metal market is a commodity market in which competition among certain products is principally based on price.[103] One Argentine producer counters by stating that while apparent domestic consumption increased from 1988 to 1990, imports from Argentina fell by more than 75 percent and that Argentine imports held only approximately a one percent market share, down from 4.5 percent in 1988.[104]

The record indicates that Argentine silicon metal exports have been present in the United States throughout the period of investigation. The data are mixed in terms of volume. Export shipments decreased steadily from 1988 to 1990.[105] With respect to the quantity of imports for consumption, there was a decrease of 22.4 percent from 1988 to 1989 and 68.2 percent from 1989 to 1990. The value of the imports also decreased.[106] In terms of market share by quantity, there was a decrease from 4.5 percent in 1988 to 3.8 percent in 1989, and the 1990 Argentine share of U.S. consumption was 1.1 percent.[107]

The Commission determines that the degree of import penetration throughout the investigation supports a finding that Argentine imports are not negligible.[108] In addition, there is evidence that the imports were not the result of isolated or sporadic sales.[109] There is also evidence that the domestic market for

---

[103] Prehearing Brief of Petitioners at 37-38.

[104] Prehearing Brief of Silarsa, S.A. of Argentina and Axel Johnson Ore and Metals, Inc. at 2 (Apr. 22, 1991).

There are two Argentine producers of silicon metal. Report at A-48. One producer, having only begun production in September 1990, stated that it has not yet exported any of its material to the United States. Id.; Tr. at 168. Nor does it have any sales contracts. Tr. at 174.

[105] Report at A-52, Table 21. Data for 1990 were available from only one firm. Id. n.1.

[106] Id. at A-55.

[107] Id. at A-58. The market share of the value of the imports from Argentina decreased from 3.8 percent in 1988 to 3.3 percent in 1989, and to 0.9 percent in 1990. Id.; A-59, Table 23.

[108] See, e.g., PET Film at 20 (less than .1 percent market share was sufficiently low to be negligible).

[109] Prehearing Brief of Petitioners at 38.

the like product is price sensitive.[110] Accordingly, we determine that imports from Argentina are not negligible and cumulatively assess the volume and price effects of the imports from the three countries.

V. Material Injury by Reason of LTFV Imports

The statute requires that the Commission determine during its final investigation whether a domestic industry is materially injured by reason of the imported products.[111]

We may consider alternative causes of injury, but are not to weigh causes.[112] We need not determine that imports are the principal or a substantial cause of material injury.[113] Rather, we are to determine whether imports are simply a cause of material injury.[114]

Imports of silicon metal from the three subject countries increased 8.0 percent from 1988 to 1989 and 74.6 percent from 1989 to 1990. The value of the

---

[110] Id.; see text, supra at 25 & n.95 for a discussion of the importance of price. Acting Chairman Brunsdale notes that petitioners, respondents and staff stated that the quantity of silicon metal demanded is not particularly responsive to changes in price. See Economic Memorandum, INV-0-085 (May 20, 1991), at 21-23.

[111] 19 U.S.C. § 1673d(b)(1).

[112] Citrosuco Paulista, S.A. v. United States, 708 F. Supp. 1075, 1101 (Ct. Int'l Trade 1988). Alternative causes may include:

> the volume and prices of imports sold at fair value, contraction in demand or changes in patterns of consumption, trade, restrictive practices of and competition between the foreign and domestic producers, developments in technology, and the export performance and productivity of the domestic industry.

S. Rep. No. 249, 96th Cong., 1st Sess. 74 (1979). Similar language is contained in the House Report. H.R. Rep. 317, 96th Cong., 1st Sess. 47 (1979).

[113] "Any such requirement has the undesirable result of making relief more difficult to obtain for industries facing difficulties from a variety of sources; industries that are often the most vulnerable to less-than-fair-value imports." S. Rep. No. 249, at 74-75.

[114] LMI-La Metalli Industriale, S.p.A. v. United States, 712 F. Supp. 959, 971 (Ct. Int'l Trade 1989); Citrosuco Paulista, S.A. v. United States, 704 F. Supp. at 1101; Hercules, Inc. v. United States, 673 F. Supp. 454, 481 (Ct. Int'l Trade 1987); British Steel Corp. v. United States, 593 F. Supp. 405, 413 (Ct. Int'l Trade 1984); see also Maine Potato Council v. United States, 613 F. Supp. 1237, 1244 (Ct. Int'l Trade 1985) (Commission must reach an affirmative determination if it finds that imports are more than a de minimis cause of injury).

imports decreased 1.7 percent from 1988 to 1989, but increased 48.2 percent from 1989 to 1990.[115] While the domestic share of U.S. consumption by quantity increased from 71.7 percent in 1988 to 75.2 percent in 1989, it declined to 66.7 percent in 1990. However, the market share of the subject imports by quantity increased substantially throughout the period: from 15.1 percent in 1988 to 17.8 percent in 1989 to 28.0 percent in 1990.[116] In terms of value, the domestic share of U.S. consumption increased from 72.5 percent in 1988 to 78.8 percent in 1989, but declined substantially to 71.1 percent in 1990. The subject imports' share increased steadily from 14.5 percent in 1988 to 16.2 percent in 1989 to 23.4 percent in 1990.[117]

The average unit value (dollars per gross ton) of the subject imports decreased 9.0 percent from 1988 to 1989 and 15.1 percent from 1989 to 1990.[118] With regard to spot prices for sales to secondary aluminum producers, domestic and import prices followed similar trends: increasing in 1988 and early 1989 and falling during late 1989. However, when domestic prices recovered in 1990, import prices generally continued to decline.[119] Spot market prices for domestic sales to primary aluminum producers also declined. Overall, such prices were 4.7 percent lower at the end of the period of investigation than they were at the beginning.[120]

There was significant underselling of the subject imports throughout the period of investigation. With respect to prices reported by purchasers of secondary aluminum grade silicon metal,[121] imports undersold the domestic product in 25 out of 35 quarterly comparisons for which data are available. The margins

---

[115] Report at A-55; A-56, Table 22.
[116] Id. at A-59, Table 23.
[117] Id.
[118] Id. at A-55; A-56, Table 22.
[119] Id. at A-68 - A-72.
[120] Id. at A-70- A-72.
[121] The largest group of imports is of secondary aluminum grade silicon metal. See id. at A-26, Table 6.

of underselling ranged from less than one percent to 13.6 percent.[122] Such underselling is particularly significant in light of the generally declining prices for the domestic product. Further, the impact of the imports through their price effects is indicated by the steady increase in the ratio of the cost of goods sold to net sales over the period of investigation,[123] indicating that prices have been suppressed relative to costs.

The producers have also enumerated a number of situations in which they are not able to modernize their facilities. In addition, they have curtailed expansion and are experiencing difficulty in raising capital due to the effects of the imports.[124]

We thus find material injury by reason of the subject imports.

VI. Critical Circumstances

When the Commerce Department makes an affirmative determination with respect to critical circumstances, the Commission is required to determine, for each domestic industry for which the Commission makes an affirmative injury determination, "whether retroactive imposition of antidumping duties on the merchandise appears necessary to prevent recurrence of material injury that was caused by massive imports of the merchandise over a relatively short period of time."[125] The Commission is to make an evaluation as to whether the effectiveness of the antidumping duty order would be materially impaired if retroactive duties

---

[122] Id. at A-85, Table 31.

[123] Id. at A-38, Table 12.

[124] See id. at App. E. A majority of the producers also alleged lost sales and revenues due to the lower priced imports. The Commission has verified 14 allegations of lost sales, id. at A-93 - A-97, pointing to the significance of the adverse impact of the lower prices and providing further support for our affirmative determination.

[125] 19 U.S.C. § 1673d(b)(4)(A)(i).

were not imposed.[126] If the Commission finds either no material injury or only a threat of material injury, it need not reach a critical circumstances determination.[127]

An affirmative critical circumstances determination is a finding that, absent retroactive relief, the surge of imports that occurred after the case was filed, but before Commerce issued its preliminary determination, will prolong or will cause a recurrence of material injury to the domestic industry.[128] The purpose of this provision is to provide relief from effects of the massive imports and to deter importers from attempting to circumvent the dumping laws by making massive shipments immediately after the filing of an antidumping petition.[129] However, the Congress was aware that critical circumstances determinations can be difficult and are not susceptible to precise mathematical calculations.[130] Rather, the Congress stated, the Commission is to focus on whether the effectiveness of the antidumping duty order would be materially impaired by failing to impose retroactive duties on the massive imports.[131]

---

[126] Id. § 1673d(b)(4)(A)(ii).

[127] See In-Shell Pistachio Nuts from Iran, Inv. No. 731-TA-287 (Final), USITC Pub. 1875 (July 1986), at 1; Natural Bristle Paint Brushes from the People's Republic of China, Inv. No. 731-TA-244 (Final), USITC Pub. 1805 (Jan. 1986), at 1; see also Handtools at 32 (no critical circumstances found to exist).

[128] In addressing an argument that the Commission must find a separate causal link between the massive imports and material injury, the Court of International Trade stated:

> [T]he ITC is not required by law or considerations of fairness to isolate the massive quantities [of imports] and make them the separate subject of an injury determination.
>
> In those circumstances it is sufficient if the ITC concentrates on the capacity of these massive imports to render ineffectual the normal imposition of duties (prospectively from the date of publication of the preliminary determination) and thereby bring about a recurrence of the material injury primarily caused by normal levels of importation.

ICC Industries, Inc. v. United States, 632 F. Supp. 36, 40 (Ct. Int'l Trade 1986), aff'd, 812 F.2d 694 (Fed. Cir. 1987).

[129] See H.R. Rep. No. 317, 96th Cong., 1st Sess. 63 (1979).

[130] H.R. Rep. No. 576, at 612.

[131] Id. at 611.

The statute requires that the Commission consider the following factors in evaluating the effectiveness of the antidumping duty order absent the retroactive imposition of antidumping duties:

(I) the condition of the domestic industry,

(II) whether massive imports of the merchandise in a relatively short period of time can be accounted for by efforts to avoid potential imposition of antidumping duties,

(III) whether foreign economic conditions led to the massive imports of the merchandise, and

(IV) whether the impact of the massive imports of the merchandise is likely to continue for some period after issuance of the antidumping duty order under this part.[132]

Congress has further stated that the Commission should examine the injury suffered as a result of the dumped imports. In addition, efforts by exporters to unload massive excess supply on the domestic market when international prices are depressed constitute a means for transferral of economic hardship and may call for retroactive duties if they materially increase the extent of injury suffered by the domestic industry.[133]

In this final investigation, Commerce has found that critical circumstances exist with regard to imports of silicon metal from China.[134] Relying on the petition as the best information available, Commerce found that average margins exceed 25 percent, that there is an outstanding antidumping duty order in the European Economic Community on silicon metal and that importers knew or should have known that the producers or resellers of silicon metal from China were selling it

---

[132] 19 U.S.C. § 1673d(b)(4)(A)(iii).

[133] H.R. Rep. No. 576, at 611.

[134] Commerce's Final Determination, 56 Fed. Reg. at 18,571. Commerce also found critical circumstances to exist with respect to one Brazilian exporter, Companhia Brasileira Carbureto de Calcio, in its preliminary investigation of silicon metal from Brazil. Preliminary Determination of Sales at Less Than Fair Value: Silicon Metal from Brazil, 56 Fed. Reg. 13,118, 13,120 (Mar. 29, 1991). Commerce's final determination regarding Brazil is due by June 5, 1991.

at less than its fair value. In comparing the period beginning with the date the proceeding commences and ending at least three months later with the three-month period prior to the filing of the petition, Commerce found that imports of silicon metal have been massive over a relatively short period of time and that the increase did not reflect seasonal increases in shipments.[135]

In previous investigations involving critical circumstances findings, the Commission has examined factors such as importers' inventories, the volume of the massive imports in relation to domestic demand and to historical import levels and the margin of underselling.[136] It is also appropriate to analyze any other factors which may affect the ability of the massive imports to postpone prompt and effective relief to the domestic industry.[137]

Based upon our evaluation of the relevant data,[138] we determine that the record does not indicate that the massive imports will prolong the injury to the domestic industry or cause its recurrence. While the Chinese product undersold the domestic in the secondary aluminum market throughout 1990, the margin of underselling decreased more than 10 percent from July-September 1990 to October-December 1990.[139] Data from the last quarter of 1990 show an increase in the weighted-average delivered price of silicon metal from China of more than 10 percent as compared to the third quarter of 1990.[140] The record is replete with

---

[135] Commerce's Final Determination, 56 Fed. Reg. at 18,571.

[136] Antifriction Bearings at 77; Oil Country Tubular Goods from Argentina and Spain, Invs. Nos. 731-TA-191 and 195 (Final), USITC Pub. 1694 (May 1985), at 12; Certain Flat-Rolled Carbon Steel Products from Brazil, Inv. No. 731-TA-123 (Final), USITC Pub. 1499 (Mar. 1984), at 14-15; Potassium Permanganate from the People's Republic of China, Inv. No. 731-TA-125 (Final), USITC Pub. 1480 (Jan. 1984), at 21.

[137] Antifriction Bearings at 78.

[138] The Commission experienced great difficulty in obtaining complete data on the Chinese silicon metal industry. See Report at A-54 & nn.75-76.

[139] Id. at A-74, Table 26.

[140] Id. at A-70, Table 24.

statements that purchasers buy the Chinese material largely because of its price.[141] Increasing prices will thus result in decreased sales, so that the injury caused by the massive imports will not be prolonged. Lastly, were duties to be imposed retroactively 90 days from the date of Commerce's preliminary determination,[142] the two months in which there was the greatest amount of imports would not be captured.[143] Thus, retroactive imposition of duties would be of marginal value in preventing the recurrence of the material injury. Accordingly, we determine that the effectiveness of the antidumping duty order will not be materially impaired by declining to impose retroactive duties on Chinese imports.

Conclusion

For all the reasons set forth above, we determine that the U.S. silicon metal industry is materially injured by reason of imports from the People's Republic of China.

---

[141] See, e.g., id. at A-93 - A-97; Tr. at 109, 148; see also Report at A-81 (12 of 13 purchasers stated that Chinese product was cheaper than domestic in 1990); A-81 (pricing was the only criterion for which majority of purchasers reported that Chinese product was better than domestic).

[142] See 19 U.S.C. § 1673b(e)(2). Commerce issued its preliminary determination on February 5, 1991. 56 Fed. Reg. 4596 (Feb. 5, 1991).

[143] See Report at A-13, Figure 1. In the first of these months, the increase was by 113.4 percent. Id. We note that this figure also includes imports from Hong Kong and Taiwan.

ADDITIONAL VIEWS OF ACTING CHAIRMAN ANNE E. BRUNSDALE

Silicon Metal from the People's Republic of China
Inv. No. 731-TA-472 (Final)

I concur with my colleagues that the domestic industry producing silicon metal is materially injured by reason of dumped imports from the People's Republic of China (China) and I join in their discussion of like product, domestic industry, condition of the industry, cumulation, and critical circumstances. I write these additional views to present my analysis of causation and to discuss the various issues that I found most important in this case.

Petitioners and Respondents painted very different pictures of the industry, both at the hearing and in their written submissions. While different interpretations of the facts are inevitable in Title VII proceedings, this time many of the facts themselves were in dispute.

Respondents claimed that the domestic silicon metal industry "abandoned" its secondary aluminum customers, in order to reap greater profits both by selling to chemical producers and by producing ferrosilicon instead of silicon metal.[1] Petitioners maintained that sales to secondary aluminum producers are vital to the silicon metal industry's profitability and that low prices due to dumping caused those producers to buy imported silicon metal.

Respondents claimed that in 1988 the domestic industry was operating at capacity. Petitioners asserted that there was excess capacity throughout the period of investigation.

---

[1] Yet, one group of respondents claimed that chemical firms exercise monopsony power and eliminate the price premium paid for chemical grade silicon metal over secondary aluminum grade. This would run counter to the argument that selling in the chemical market is more profitable than selling in other markets. See Response of Mr. Wechsler to Questions by Acting Chairman Brunsdale, p. 9.

Respondents claimed that prices in the chemical segment and the primary aluminum segment were unaffected by the subject imports because only the secondary aluminum producers can use imports. Petitioners claimed that chemical producers look to prices in the secondary market when negotiating their contract prices for silicon metal. They also claimed that because imports displaced domestic sales in the secondary aluminum market, more silicon metal became available for chemical producers. This put downward pressure on the price of silicon metal in the chemical sector.

Finally, respondents claimed that 1988 was the business cycle peak and that consequently the normal business cycle is responsible for any downward industry trends. In fact, taking the business cycle into consideration, they argued that domestic firms are doing quite well. Petitioners responded that although sales of silicon metal reached a record high in 1990, the domestic industry is doing poorly because of dumped imports taking a larger share of the market.[2]

These are just a few examples of the many discrepancies in the stories of the parties. Needless to say, it has been difficult, if not impossible, to get a clear picture of what is going on in this industry.[3]

If I had been relying on industry trends in order to make my determination, I would have found the murkiness surrounding this investigation particularly troubling. However, because my approach uses a more rigorous analysis and concentrates on the existence of present injury, I was able to sort out the claims and counterclaims, keeping first principals of economic theory in mind.[4] Any

---

[2] While 1988 was a peak year for sales, 1990 surpassed 1988. It is unclear whether sales will continue to grow or whether 1990 will be a new peak year for sales. Prices, however, were lower in 1990 than in 1988.

[3] See, for example, Economics Memo at 10 and Office of Investigations Response to Request for Information from Acting Chairman Brunsdale at 4.

[4] The Department of Commerce found dumping from March through August 1990. There is no basis for determining whether imports were or were not dumped during the rest of the period of the investigation.

argument that ran counter to the generally accepted relationships of supply and demand or that required suspension of the belief that a firm's goal is to maximize profits was not given much weight.

Furthermore, many of the arguments made, whether true or false, had little bearing on my decision, given the statute. First of all, even if the domestic industry did not find it profitable to sell to secondary aluminum producers in 1988 and in some sense did cause its customers to turn to the subject imports, that does not mean the domestic industry is not materially injured by dumped imports.[5] Second, even if the industry made bad long-run decisions by not being loyal to its customers, that does not prevent it from attaining relief under the statute.[6]

Material Injury by Reason of Dumped Imports

In considering whether an industry is materially injured by reason of the dumped imports, the Commission is required to consider (1) the volume of subject imports, (2) the effect of those imports on the price of the domestic like product, and (3) the impact of those imports on domestic producers. Commissioners may consider other economic factors that are relevant to their determinations.

The Market Share of Unfair Imports and the Dumping Margin. In addition to assessing the effects of the volume of imports in absolute terms, we are instructed to consider the market share of the subject imports.[7] The larger the market share

---

[5] It is not clear why the industry would have brought the case if it did not care about sales to secondary aluminum producers, since that is where the vast majority of subject imports are sold.

[6] The fact that secondary aluminum producers may prefer to deal with importers rather than domestic producers in order to ensure an available supply would affect substitutability and to that extent it is relevant to my analysis.

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

of the dumped imports, the greater the effect of the dumping on demand for the like product.

The value of imports of silicon metal from China, Brazil, and Argentina accounted for 9.7, 12.8 and 0.9 percent of domestic consumption, respectively, in 1990. Fairly traded imports accounted for 5.5 percent of domestic consumption, while domestic silicon metal held 71.1 percent of the domestic market.[8]

The dumping margin calculated by the Department of Commerce indicates the percentage difference between the dumped price of the subject imports and their price at "fair value." I find the dumping margin to be extremely important in determining the affect of the subject imports on domestic producers of the like product. The higher the dumping margin, the greater the difference between the dumped price and the "fair price" of the subject imports. It stands to reason that if subject imports are sold at 100 percent below their fair price, dumping will cause more lost sales for domestic producers and suppress domestic prices more than if imports are sold at only 5 percent below their fair price.

In this case, Commerce found the dumping margin for the Chinese product to be 139.49 percent. Thus, the fair price of Chinese silicon metal would be 139.49 percent higher than the dumped price. The preliminary dumping margins for Brazil and Argentina are much lower, 23.4-37.1 and 2.2 percent, respectively.[9]

Substitutability. The degree of substitutability between the domestic like product and the subject imports is crucial to the analysis of causation. If the products are close substitutes, customers will be more likely to switch to buying the dumped

---

[8] It is interesting to note that the market share of U.S firms was 72.5 percent in 1988.

[9] Given Argentina's very low market share in 1990 and its extremely low dumping margin, I am sympathetic with Argentine respondent's position that their imports should not be cumulated with those of China and Brazil. Given the statutory standards, however, Argentina does not qualify for the negligible imports exception and cumulation is therefore appropriate. See "Views of the Commission for a full discussion of cumulation.

imports if their price falls relative to the price of the domestic like product. If the products are perceived as being different, relative price changes will not affect purchases to the same extent.

In this case substitutability was a key issue. Because of the differences in the imports from China, on the one hand, and Brazil and Argentina on the other, I will discuss them separately.

(1) China. The substitutability of domestic silicon metal and imported silicon metal from China can best be characterized as asymmetric. Chinese silicon metal is considered a poor substitute for domestic silicon metal in many applications. Chemical or primary aluminum producers cannot use the Chinese product and only certain secondary aluminum producers will substitute it for the domestic product. By contrast, domestic silicon metal can be used in all the applications where Chinese silicon metal is currently used.[10]

Substitutability was an area of sharp disagreement between petitioners and respondents. Respondents argued that the substitutability between the Chinese and domestic products is quite low.[11] Respondents pointed out that the relatively low quality of the imported product prevented substitution of the Chinese product for the domestic product in primary and chemical applications and limited it in the secondary market.[12] On the other hand, they claimed that the relatively low price of the Chinese product prevented the domestic product from being a close substitute (in a practical sense) in secondary aluminum applications.[13]

---

[10] The only constraint is that if domestic silicon metal is priced considerably higher than Chinese silicon metal, some consumers may not consider them to be good substitutes.

[11] They postulated an elasticity of substitution of between 0.75 and 1.5. Staff suggested an elasticity between 1 and 3. See Economics Memo at 19-21.

[12] See Mr Wechsler's Answers to Questions by Acting Chairman Brunsdale at 2-5.

[13] See testimony of Dr. Kaplan, transcript at 101.

Petitioners stated that silicon metal from all countries is very substitutable for the domestic product.[14] Their economic expert argued that in looking at substitutability, only the secondary aluminum market segment, where competition is the most intense, should be considered and the other market segments should be ignored.[15] He further argued that the Chinese and U.S. products are interchangeable in secondary aluminum applications.

Overall substitutability is the relevant thing to look at in these cases and no market segments included in the like product definition can be excluded. In considering the substitutability of the domestic product for the Chinese product, domestic silicon metal currently used in all three market segments must be included.[16] Similarly, in considering the substitutability of the Chinese product for the domestic product, substitutability of that product in all market segments currently using the domestic product must be considered.

I also disagree with petitioners that the Chinese product is interchangeable with the domestic product in secondary applications. There is a great deal of evidence that the Chinese product is considered to be of lower quality.[17] While there is testimony pointing to particular distributors who are more reliable than others in getting acceptable Chinese silicon metal, they appear to be the exception rather than the rule. In addition, because using inferior quality silicon metal can

---

[14] Petitioners suggest an elasticity of substitution of 7.5. Using that number in their CADIC analysis, the effect of dumping by firms in China on the domestic firms' volume of sales in the secondary aluminum sector is estimated to be over 50 percent. However, that would translate to a much smaller volume effect for domestic firms on their total sales.

[15] See Testimony of Mr. Button, transcript at 66.

[16] Alternatively, if substitutability in only one market segment is considered, then the effect of the overall domestic industry must be taken into account by weighting the revenue effect appropriately. Petitioner did not do this.

[17] That is why the margins of underselling are distorted beyond usefulness in this case. When a product is considered to be of low quality, it can only be sold at a relatively low price. There is no way to evaluate the underselling margin when there are significant quality differences. If the Chinese product was equivalent to the domestic product but much cheaper, it is unclear why anyone would buy the domestic product.

cause serious damage to a secondary aluminum producer's facilities, these producers may be reluctant to try the Chinese product.

Chinese silicon metal is currently sold at prices well below the domestic product's price. Respondent's argument that large price differences can limit the practical substitutability of products that are technically comparable brought up a tricky issue in this case.

A customers' willingness to switch from buying one product to another for a small relative price change may be different at different relative price levels.[18] For example, at the current relative price, a small increase in the relative price of the Chinese product might lead only a few customers to switch from buying the Chinese product to buying the domestic product. However, if the price of the Chinese product approached and then surpassed the price of the domestic product, many more customers would switch. After all, why pay a price premium for a product of, if anything, inferior quality?[19]

Because the dumping margin is so large in this case, the relevant question is this: if the Chinese product had been sold at fair value, would customers have switched to buying the domestic product? Frankly, the dumping margins found by Commerce were so large that it is hard to believe that Chinese producers would sell any silicon metal at the "fair price." Of course, not all the Chinese sales would go to domestic firms. But it is safe to conclude that a portion of those sales would go to domestic firms.

---

[18] The elasticity of substitution measures the willingness of customers to switch products for a small change in their relative price. Experts generally present their analysis of the elasticity of substitution at the current relative price level. However, in cases where the elasticity of substitution changes at different relative price levels that are within the range relevant to the case, it is important to take that into consideration. Otherwise, the actual revenue effect may be over or underestimated.

[19] To see the other side, if the relative price of the Chinese product fell, because of quality problems and because primary and chemical manufacturers cannot use the Chinese product, additional sales would be limited. At some point, no matter how low the price of the Chinese product got, it would not be able to take sales away from domestic producers.

(2) Brazil and Argentina. Petitioners did not offer any separate statements about Brazil and Argentina. Their analysis makes clear, however, that they consider imports from Brazil and Argentina to be close substitutes for the domestic product in all market segments, including the chemical market where there are virtually no subject imports.[20]

Respondents argued that substitutability between the Brazilian/Argentine and the domestic silicon metal is limited in all three applications.[21] Subject imports have not qualified for use in chemical applications. In secondary metal applications, they state that because domestic firms proved to be unreliable suppliers, customers would not readily switch from buying imports to buying the domestic product. In addition, respondents testified that it makes no sense for customers to buy the more expensive domestic product for secondary aluminum applications.

I find that Brazilian/ Argentine and domestic silicon metal are technically comparable for secondary applications, less substitutable for primary applications, and not substitutable at all for chemical applications. On the other hand, domestic silicon metal is substitutable for all applications of imported silicon metal. I give credence to respondent's argument, however, that some customers may want to maintain a supplier abroad to ensure a secure supply of the product during an upturn in demand.

---

[20] Petitioner does separate CADIC runs for each market segment using an elasticity of substitution of 7.5 in each case. It offers no explanation for how there could possibly be an elasticity of substitution of 7.5 in the chemical market segment. See Posthearing Brief of Petitioner.

[21] The overall elasticity of substitution estimated by Respondents ranges from 1 to 2. Staff estimates the elasticity of substitution to be between 2 and 4. See Economics Memo at 16 -18. I consider the lower end of staff's range to be most plausible for the reasons discussed below.

The Relationship between Quantity Demanded and Price. In order to determine the extent to which prices are suppressed and the domestic producers are losing sales to the dumped imports, it is important to consider the sensitivity of demand for the product to changes in price. If the quantity of a product demanded is sensitive to changes in price, lower prices will generate increased sales. In such cases, dumping is likely to generate sales that would not have otherwise been made, rather than taking sales away from domestic producers and/or other foreign firms.

The demand for silicon metal depends on the demand for certain chemicals (silicones) using silicon metal and for products using aluminum such as automobiles. There are virtually no substitutes for silicon metal in its aluminum applications and using a substitute product in chemical applications would be costly.

Petitioners and respondents agree that demand for silicon metal is not particularly affected by small price changes.[22] Respondent claims that the existence of credible substitutes for the products that use silicon metal increase its elasticity. I agree with the parties and staff that demand for silicon metal is not very responsive to changes in price.[23]

The Ability of Firms to Increase Output. If dumping duties were imposed on the subject imports, additional sales would accrue to either domestic firms or other foreign firms, if they increased their production. If they did not increase production, the price of silicon metal would rise. An industry may be materially injured because of lost sales or suppressed prices.

---

[22] They disagree about the degree of inelasticity. Petitioner suggests that the elasticity of demand is .2. Respondent suggests an elasticity of between .5 and 1. Staff believes the elasticity is between .25 and .5.

[23] I think the upper range of staff's estimate is most plausible, an elasticity of demand of .5.

There was much debate about whether firms were operating at or under capacity in 1988. The report indicates there was some excess capacity has throughout the period of investigation. Yet, customers reported that they were unable to get silicon metal from domestic firms. There is also evidence that domestic producers bought and sold subject imports because they faced capacity constraints.

In the last two years, however, there has been some capacity added. In addition, some firms have the ability to switch from producing ferrosilicon to producing silicon metal. Therefore, it is likely that domestic producers would be able to raise their output to some extent if demand increased and that other foreign firms would expand their sales in the U.S. market.[24] I conclude, therefore, that dumping of silicon metal would be likely to have a greater effect on domestic producers' volume of sales than on the domestic price.[25]

Conclusion

I determine that the domestic industry producing silicon metal is materially injured by dumped imports from China. The volume of imports from China is significant and the dumping margin is very large. I do not believe that any silicon metal from China would be sold in the domestic market at "fair value." Although the substitutability of Chinese silicon metal for domestic silicon metal is limited, the domestic product could be used in all applications where the Chinese product is currently used.

Although we are not deciding the cases concerning Brazil and Argentina at this time, I have cumulated the effect of dumped imports from all three countries

---

[24] See Economics Memo at 6-8.

[25] Petitioner did not comment of the elasticity of supply, although in its CADIC submission it used an elasticity of 3. Respondent suggested that the elasticity was in the 1-3 range. Staff believes the elasticity to be between 3 and 5. I would estimate the elasticity to be about 3.

in reaching my conclusion that the domestic industry is materially injured. I conclude that the effect of the dumped imports on the volume of domestic sales and domestic prices is sufficiently large to constitute material injury. The effect of the dumped imports on the domestic industry, and the statutory factors such as employment, investment, and profit is also sufficiently large to constitute material injury.

Information Obtained in the Investigation

INTRODUCTION

Institution

Following preliminary determinations by the U.S. Department of Commerce (Commerce) that imports of silicon metal[1] from Argentina, Brazil, and the People's Republic of China (China) are being, or are likely to be, sold in the United States at less than fair value (LTFV), the U.S. International Trade Commission, effective February 4, 1991, instituted investigation No. 731-TA-472 (Final), and effective March 27, 1991, instituted investigations Nos. 731-TA-470-471 (Final) under section 735(b) of the Tariff Act of 1930 (the act) (19 U.S.C. § 1673d(b)). These investigations were instituted to determine whether an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports of such merchandise.

Notice of the institution of the Commission's final investigation regarding China, and of a public hearing to be held in connection therewith, was given by posting a copy of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* (56 F.R. 8216). Notice of the institution of the Commission's final investigations regarding Argentina and Brazil was given by posting a copy of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* (56 F.R. 15632).[2] A public hearing for all three investigations was held on Thursday, April 25, 1991.[3]

The statute directs the Commission to make a final determination within 120 days after notification of Commerce's preliminary determination or within 45 days after receiving notification of Commerce's final determination, whichever is the later date. The Commission received notification of Commerce's final determination on the subject product from China on April 19, 1991. Thus, the Commission is required to make its final determination in investigation No. 731-TA-472, regarding imports of silicon metal from China, by June 3, 1991. The briefing and vote on this investigation were held on Wednesday, May 22, 1991.

---

[1] The merchandise covered by these investigations is silicon metal containing at least 96.00 but less than 99.99 percent of silicon by weight. Silicon metal is provided for in subheadings 2804.69.10 and 2804.69.50 of the Harmonized Tariff Schedule of the United States (HTS) as a chemical product, but is commonly referred to as a metal. Semiconductor-grade silicon (silicon metal containing by weight not less than 99.99 percent of silicon and provided for in subheading 2804.61.00 of the HTS) is not subject to these investigations.

[2] A copy of the Commission's notices is presented in app. A.

[3] A list of the participants in the hearing is presented in app. B.

Commerce is scheduled to make its final determinations in the investigations regarding imports of silicon metal from Brazil and Argentina on or before June 5, 1991, and August 12, 1991, respectively. Although the China investigation is proceeding on an earlier schedule than the other two investigations, this report contains currently available information pertaining to all three investigations. A subsequent report (or reports) on Argentina and Brazil will contain only updated information relevant to those investigations.

Background

These investigations result from a petition filed by U.S. merchant producers of silicon metal[4] on August 24, 1990, alleging that an industry in the United States is materially injured or threatened with material injury by reason of subsidized imports of silicon metal from Brazil and LTFV imports of silicon metal from Argentina, Brazil, and China. In response to that petition, the Commission instituted investigations Nos. 701-TA-304 (Preliminary) and 731-TA-470-472 (Preliminary) under sections 703 and 733 of the act (19 U.S.C. §§ 1671b(a) and 1673b(a)) and, on October 9, 1990, unanimously determined that there was such a reasonable indication of material injury.[5]

PREVIOUS COMMISSION INVESTIGATION CONCERNING SILICON METAL

There has been one previous Commission investigation concerning silicon metal. On March 5, 1979, the Commission determined, pursuant to the Antidumping Act of 1921, as amended (19 U.S.C. 160(a)), that an industry in the United States was not being and was not likely to be injured, and was not

---

[4] The petitioners in the investigations regarding Argentina and China are American Alloys, Inc., Pittsburgh, PA; Elkem Metals Co., Pittsburgh, PA; Globe Metallurgical, Inc., Cleveland, OH; Silicon Metaltech Inc., Seattle, WA; SiMETCO, Inc., Canton, OH; and SKW Alloys, Inc., Niagara Falls, NY. The petitioners in the investigation regarding Brazil are American Alloys, Inc., Pittsburgh, PA; Globe Metallurgical, Inc., Cleveland, OH; Silicon Metaltech Inc., Seattle, WA; and SiMETCO, Inc., Canton, OH.

On Oct. 3, 1990, the petition was amended to add the following unions as petitioners: Oil, Chemical and Atomic Workers, Local 3-89; International Union of Electronics, Electrical, Machine and Furniture Workers, AFL-CIO Local 693; Textile Processors, Service Trades, Health Care Professional and Technical Employees International Union, Local 60; and United Steelworkers of America, Locals 5171, 8538, and 12646.

[5] On Nov. 27, 1990, Commerce published notice of its preliminary negative countervailing duty (CVD) determination regarding imports of silicon metal from Brazil (55 F.R. 49322). Commerce's final CVD determination is due on or before June 5, 1991.

prevented from being established, by reason of imports of silicon metal from Canada that were being, or were likely to be, sold at LTFV.[6]

THE PRODUCT

Description

Silicon is a chemical element metallic in appearance and steel gray in color.[7] It is a solid that melts at 1,410°C and is insoluble in water. Both imported and domestic silicon are usually sold in the form of lumps. Size is specified by establishing a maximum length, usually between 4 and 6 inches, and a minimum width, usually between one-quarter and one-half inch.[8] [9] Silicon metal is a polycrystalline material, whose crystals have a diamond cubic structure at atmospheric pressure.[10]

Silicon metal that contains by weight not less than 99.99 percent silicon (i.e., impurities are not more than one part in 10,000) is known as semiconductor-grade silicon metal and falls under HTS subheading 2804.61.00. The petitioners do not produce the semiconductor-grade product, which is excluded from the scope of these investigations.[11] Silicon metal containing by weight less than 99.99 percent silicon but not less than 99 percent silicon is generally known as chemical-grade and falls under HTS subheading 2804.69.10. U.S. commercial chemical grade silicon metal typically contains approximately 3,500 parts per million (ppm) of iron, 700 ppm of calcium, and less than 3,500 ppm of aluminum.[12] Both ***.[13] No silicon metal from China has qualified as chemical grade.

---

[6] *Silicon Metal From Canada: Determination of No Injury in Investigation No. AA1921-192 Under the Antidumping Act, 1921, as Amended, Together With the Information Obtained in the Investigation,* USITC Publication 954, March 1979.

[7] Although called silicon metal, it is actually a metalloid, meaning it has both metallic and nonmetallic properties. Silicon metal is classified by the Defense Logistics Agency as a strategic mineral.

[8] Petition, p. 8. Chemical manufacturers typically have smaller size requirements. ***.

[9] The small pieces of silicon that break off during shipment are called "fines." The imported products have a larger proportion of fines because of increased handling in packaging and transportation.

[10] J.S. Kasper and S.M. Richards, *Acta Crystallography,* vol. 17 (1964), p. 752.

[11] Unless otherwise specified, all references to "silicon metal" in this report mean silicon metal containing less than 99.99 percent but at least 96 percent silicon.

[12] Silicon metal produced in Brazil by Camargo Corrêa Metais S.A. (CCM) contains approximately 900 ppm of titanium (Ti). ***.

[13] See, e.g., prehearing brief of Dow Corning Corp., pp. 7-8 and exhibit 1.

Silicon metal containing by weight less than 99 percent silicon is generally known as metallurgical grade and falls under the residual HTS category 2804.69.50. The merchandise subject to investigation is limited to silicon metal containing by weight at least 96 percent silicon. Commercial metallurgical-grade silicon metal is available in a primary-aluminum grade, which typically contains 5,000 ppm of iron and 700 ppm of calcium, and a secondary-aluminum grade, which typically contains 10,000 ppm of iron and 3,500 ppm of calcium.[14] Higher grade silicon metal is sometimes shipped to a purchaser with a lower specification because of factors such as product availability and shipping cost.

Although silicon metal is frequently described in terms of different grades, there is no uniformly accepted grade classification system. Silicon metal "grades" actually refer to ranges of specifications that are typically sold to particular groups of customers, i.e., chemical, primary aluminum, and secondary aluminum. These specifications establish the minimum amounts of silicon and the maximum amounts of impurities, such as iron, calcium, aluminum, or titanium, that the silicon metal may contain.[15] Chemical customers each have their own detailed specifications. Requirements also vary widely among primary aluminum customers. Even some secondary-aluminum customers, whose product comes closest to representing a commodity, have differences in tolerances with regard to impurities.

Silicon metal imported from China usually contains a lower percentage of elemental silicon than does the domestic product. The uniformity and consistency of silicon metal from China varies because exporters ship silicon metal received from various Chinese producers. Even individual entries of Chinese product may not have uniformity throughout because of differences in maintenance of facilities, producers' process and control technologies, disposition of unreduced silica or slag, and qualifications of the workers. U.S. importers of silicon metal from China have worked with their suppliers to meet the expectations of certain members of the U.S. secondary-aluminum industry. These members often blend silicon metal from China with silicon metal from another source to reduce the effect of impurities in the Chinese product.

---

[14] These levels of impurities are typical of domestic product. Impurities present in imported silicon metal are somewhat different.

[15] *Testimony of Ronald Cunningham,* President of SiMETCO, Inc., Apr. 25, 1991, pp. 3-5.

Uses

The chemical industry uses both captively produced and purchased silicon metal to produce silanes, silicones,[16] and ultra-pure silicon for silicon memory chips.[17] [18] The chemical industry generally requires a higher grade silicon metal than aluminum alloy manufacturers.[19] [20]

The silicon in aluminum alloys reduces shrinkage and hot cracking, and improves castability, corrosion resistance, hardness, tensile strength, wear resistance, and weldability. The presence of iron in most aluminum alloys reduces these qualities, so aluminum alloy producers usually limit the iron content of the silicon metal to 1 percent or less. Silicon is also used in the production of brass and bronze. The silicon in copper alloys reduces dross formation and improves fluidity, corrosion resistance, and tensile strength. The steel industry uses silicon metal to increase permeability and electrical resistance and to reduce hysteresis loss in the magnetic materials used in power transformers, in energy-efficient motors and generators, and in communications equipment.

There are no commercially feasible substitutes for silicon metal in either the chemical or metallurgical industries. However, higher grade silicon metal can usually be, and often is, substituted for lower grade material.

Manufacturing Processes

The raw material for silicon metal is a silica containing at least 99 percent silicon dioxide and less than 1 percent iron. There are many quartzite deposits that meet this specification throughout the world. Foreign producers of silicon metal are believed to use a process identical to their U.S. counterparts. The silicon-containing material is mined, washed, crushed, and screened. The production of 1 ton of silicon metal requires about 2.7 tons of quartzite. This silicaceous material is combined with a carbon-containing reducing agent, such as

---

[16] Silicones are a family of products encompassing liquids, lubricants, resins, rubbers, and solids.

[17] No U.S. silicon metal manufacturer produces semiconductor-grade silicon. ***. Semiconductor grade silicon metal is produced on entirely different equipment using a totally different process than other grades of silicon metal.

[18] ***.

[19] The term *higher grade* or *chemical grade* silicon metal refers to a product with tighter specifications, including a higher minimum silicon content and maximum impurities levels. In particular, chemical purchasers are very sensitive to the levels of titanium, iron, calcium, and aluminum present in the silicon metal.

[20] ***.

low-ash coal, petroleum coke, charcoal, or coal char, and a bulking agent, such as wood chips.

The carbon in the reducing agent separates 0.53 tons of oxygen from each ton of silica, so at least 0.85 tons of carbon are required to produce 1 ton of silicon metal. Since the reducing agent usually does not contain 100 percent available carbon, up to 1.8 tons of reducing agent may be required per ton of silicon metal produced. Carbon has been chosen as the chemical reducing agent because of its high electrical resistivity. The commercial reducing agent must also have low ash to minimize contaminants. The bulking agent provides pores for the flow of byproduct gases.

The mixture of carbon, silica, and bulking agent is placed in a submerged arc-electric furnace. U.S. furnaces range in size from 10 to 30 feet in diameter and from 20 to 40 feet in depth.[21] Electricity is delivered to the furnace from a transformer system, which lowers the normal voltage. Three electrodes deliver a large current to the reactants. The electrodes are typically made of prefabricated amorphous carbon.

The production of silicon metal consumes more energy per ton than any other metal (with the exception of an equivalent consumption for aluminum), approximately six times the power consumed in the production of pig iron in an electric arc furnace. Power consumption at U.S. furnaces ranges from 10 to 35 megawatts (MW) per day, yielding between 15 and 65 tons of silicon metal. Accordingly, the preferred locations for silicon furnaces are in areas where power is readily available at low cost. In submerged-arc furnaces, electrode size, spacing, gap, voltage, and current must be closely regulated to optimize power consumption, reactant consumption, and silicon metal production.

The reactant mixture is heated to approximately 1,650°C by electrodes operating near 3,700°C, melting the silica. The molten silica is reduced to silicon metal, and the carbon is oxidized to carbon monoxide gas.[22] The chemical reaction may be shown as:

$$SiO_2(l) + 2\ C(g) \rightarrow Si(l) + 2\ CO(g)$$

[21] Submerged arc furnaces of this size cost between $10 million and $25 million. A new silicon metal plant would cost between $30 million and $40 million. Occupational safety and health and environmental protection regulations require silicon metal producers to invest in pollution-control equipment with a capital cost of between $6 and $8 million per plant.

[22] Two molecular units of carbon monoxide are produced as a byproduct of the production of 1 molecular unit of silicon metal.

Silicon is removed or tapped intermittently from the furnace at approximately 1,760°C in U.S. plants. No plants capable of continuous tapping have been identified. The molten alloy is often refined by oxygen, *** injection to remove aluminum and calcium impurities. Some impurities, such as chromium, iron, and titanium, cannot be removed from silicon metal by chemical means, so the raw material is selected on the basis of assays of these impurities. The impurities present in the imported products are different from the impurities present in the domestic product. The molten alloy is poured into iron molds or onto beds of silicon metal fines. After cooling, the ingot or billet is crushed to the desired size and stored for shipment.

Most of the U.S. silicon metal producers also produce ferrosilicon[23] and can switch production between the two products with varying degrees of cost, downtime, and efficiency loss.[24] It is generally easier for firms to switch from silicon metal production to ferrosilicon production than the reverse. Ferrosilicon contains more impurities than silicon metal and tends to contaminate the furnace lining with impurities intolerable in silicon metal production. Typically when production is switched from ferrosilicon to silicon metal, the furnace must, at a minimum, be relined. In addition, certain furnace designs are more efficient at producing one product than another, leading to a consideration of an efficiency loss when switching production.

U.S. Tariff Treatment

Imports of silicon metal containing 99 percent to less than 99.99 percent silicon are classified in subheading 2804.69.10 of the HTS. They were previously classifiable in items 632.42 and 632.43 of the former Tariff Schedules of the United States (TSUS), depending on whether they contained by weight not over or over 99.7 percent, respectively, of silicon. This TSUS item was established when technology limited polycrystalline silicon to 99.7 percent purity. The most-favored-nation (MFN) (col. 1—general) rate of duty,[25] applicable to imports

---

[23] Ferrosilicon is a product used by the steel industry as an alloying agent in the production of steel products. Ferrosilicon differs from silicon metal in that it has a much lower silicon content, ranging from 50 percent to 96 percent, and greater impurity levels.

[24] ***.

[25] Rates of duty in the general subcolumn of HTS column 1 are MFN rates; for the most part, they represent the final concession rate from the Tokyo Round of Multilateral Trade Negotiations. Column 1-general duty rates are applicable to imported goods from all countries except those enumerated in general note 3(b) to the HTS, whose products are dutied at the rates set forth in column 2. Goods from the People's Republic of China, Czechoslovakia, Hungary, Poland, and Yugoslavia are among those eligible for MFN treatment. Among articles dutiable at column 1-general rates, particular products of enumerated countries may be eligible for reduced rates of duty or for duty-free entry

(continued...)

from Argentina, Brazil, China,[26] and all other MFN countries, is 5.3 percent ad valorem.[27] Imports of silicon metal of this purity from Argentina are eligible for duty-free entry under the Generalized System of Preferences (GSP).[28] The column 2 rate of duty[29] is 21 percent ad valorem.

Imports of silicon metal containing less than 99 percent silicon are classified in subheading 2804.69.50 of the HTS. They were previously classifiable in former TSUS item 632.86 if they contained 96 percent or more of silicon, or item 632.88 if less than 96 percent. The MFN rate of duty, applicable to imports from Argentina, Brazil, China, and all other MFN countries, is 9 percent ad valorem. Imports classified in this subheading are not eligible for duty-free entry under the GSP. The column 2 rate of duty is 45 percent ad valorem.

---

[25] (...continued)
under one or more preferential tariff programs. Such tariff treatment is set forth in the special subcolumn of HTS column 1.

[26] The President must notify Congress by June 3, 1991 of his recommendation regarding the continuation of MFN trade status for China. Should the President or Congress not wish to extend this status, then imports of this product will be subject to the column 2 rate of duty.

[27] In addition, pursuant to the Omnibus Budget Reconciliation Act of 1986, a user fee (to cover the cost of the U.S. Customs Service's processing of imports) of 0.17 percent ad valorem on most imports is in effect.

[28] The GSP affords nonreciprocal tariff preferences to developing countries to aid their economic development and to diversify and expand their production and exports. The U.S. GSP, enacted in title V of the Trade Act of 1974 and renewed in the Trade and Tariff Act of 1984, applies to merchandise imported on or after Jan. 1, 1976, and before July 4, 1993. Indicated by the symbol "A" or "A*" in the special subcolumn of column 1, the GSP provides duty-free entry to eligible articles the product of and imported directly from designated beneficiary developing countries, as set forth in general note 3(c)(ii) to the HTS.

[29] The rates of duty in column 2 apply to imported products from those Communist countries and areas enumerated in general note 3(b) of the HTS.

THE NATURE AND EXTENT OF SALES AT LTFV

Sales at LTFV

On April 23, 1991, Commerce published in the *Federal Register* its final determination that imports of silicon metal from China are being, or are likely to be, sold in the United States at LTFV (56 F.R. 18570).[30] On March 29, 1991, Commerce published in the *Federal Register* its preliminary determinations that imports of silicon metal from Argentina and Brazil are being, or are likely to be, sold in the United States at LTFV (56 F.R. 13116).[31] [32] Commerce's LTFV margins for Argentina, Brazil, and China are presented in table 1.

Table 1
U.S. Department of Commerce's LTFV margins for China, Argentina, and Brazil

Country/company	*Status*	*LTFV margins*	*Critical circumstances*
		Percent	
China (all companies)	Final	139.49	Affirmative.[1]
Argentina (all companies)	Preliminary[2]	2.16	Not alleged.
Brazil:			
Cia Brasileira Carbureto de Cálcio (CBCC)	Preliminary[3]	37.08	Affirmative.[4]
Camargo Corrêa Metais (CCM)	Preliminary[3]	23.38	Negative.
All other companies (5 firms)	Preliminary[3]	28.90	Negative.

[1] Although Commerce published its preliminary determination regarding China on Feb. 5, 1991, it assessed provisional duties retroactive to Nov. 7, 1990.
[2] Commerce has extended the date for its final determination regarding Argentina from June 5, 1991, to not later than Aug. 12, 1991.
[3] Commerce is scheduled to make its final determination regarding Brazil on or before June 5, 1991.
[4] Although Commerce published its preliminary determination regarding Brazil on Mar. 29, 1991, it assessed provisional duties on imports from CBCC retroactive to Dec. 30, 1990.

Source: U.S. Department of Commerce.

[30] According to its preliminary and final determinations, Commerce encountered serious problems in obtaining from Chinese producers price and production data needed for its analysis. Therefore, information submitted by the petitioners was used as "best information available" to determine the LTFV margins for China. A copy of Commerce's final determination is presented in app. C.

[31] Commerce will make its final LTFV determination in the investigation regarding Brazil on or before June 5, 1991, and in the investigation regarding Argentina on or before Aug. 12, 1991.

[32] copy of Commerce's preliminary determinations is presented in app. C.

Critical Circumstances

Petitioners alleged the existence of "critical circumstances" within the meaning of section 735(a)(3) of the act with respect to imports of the subject merchandise from China and Brazil. Section 735(a)(3) states that in any investigation in which the presence of critical circumstances has been alleged under section 733(e), Commerce shall make a finding as to whether—[33]

> *(A)(i) there is a history of dumping in the United States or elsewhere of the class or kind of merchandise which is the subject of the investigation, or*
>
> *(ii) the person by whom, or for whose account, the merchandise was imported, knew or should have known that the exporter was selling the merchandise which is the subject of the investigation at less than its fair value, and*
>
> *(B) there have been massive imports of the merchandise which is the subject of the investigation over a relatively short period*

Commerce found that there is a reasonable basis to believe or suspect that imports of silicon metal from China met the requirements for an affirmative determination of critical circumstances.[34] In its final determination regarding China, Commerce noted that a dumping margin of 25 percent or greater was found, that a history of dumping outside the United States existed because of an outstanding antidumping order of the European Community (EC) of 38.73 percent,[35] and that imports have been massive over a relatively short period of time.[36] Figure 1 presents monthly U.S. imports of silicon metal from China for the period January 1990 through February 1991.

---

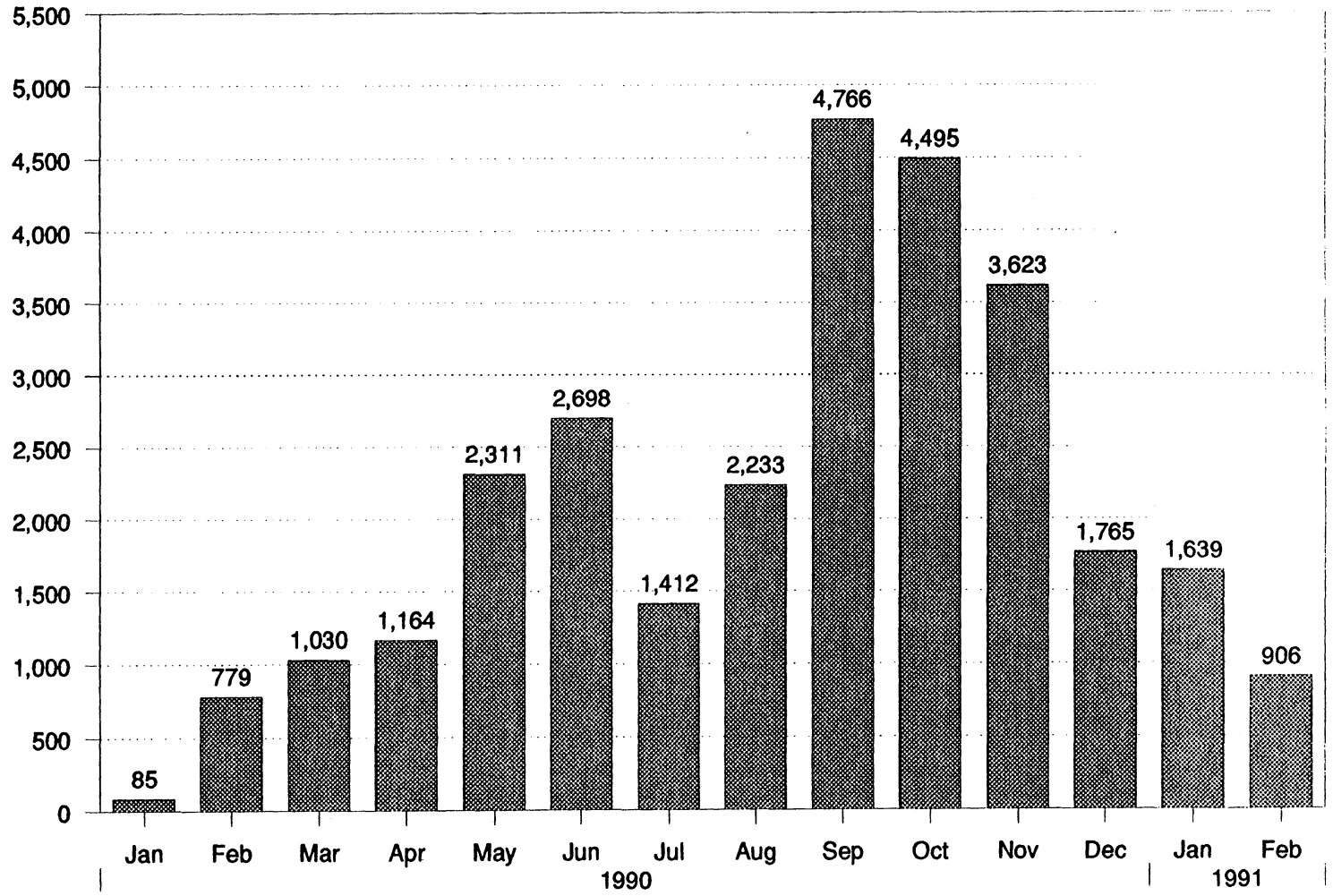
[33] Such findings may be affirmative even though the preliminary determination under section 733(e)(1) was negative.

[34] Commerce also made a preliminary affirmative determination of critical circumstances with respect to imports of silicon metal from one Brazilian firm, Cia Brasileira Carbureto de Cálcio (CBCC).

[35] *Council Regulation (EEC) No. 2200/90*, July 27, 1990.

[36] Commerce compared imports during the 3-month periods before and after August 24, 1990, the date the petition was filed. Commerce found no indication of any seasonal increases in shipments.

Figure 1
Silicon metal: U.S. imports from China,* by months,
January 1990-February 1991



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

* Includes imports from China, Hong Kong, and Taiwan.

THE DOMESTIC MARKET

Apparent U.S. Consumption

Data on apparent U.S. consumption of silicon metal are presented in table 2 and figure 2, and are based on U.S. producers' shipments compiled from questionnaires of the Commission and official import statistics of Commerce. Apparent U.S. consumption decreased 8.2 percent from 1988 to 1989, from 213,583 gross short tons (gross tons)[37] to 196,166 gross tons, but increased 10.7 percent from 1989 to 1990 to 217,078 gross tons.[38] Apparent consumption was higher by 3,495 gross tons in 1990 than in 1988.

Table 2
Silicon metal: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, 1988-90

(In gross tons)

Item	*1988*	*1989*	*1990*
Producers' U.S. shipments	153,222	147,538	144,729
U.S. imports from--			
Argentina	9,652	7,488	2,380
Brazil	12,911	16,670	32,083
China	9,682	10,675	26,360
Subtotal	32,245	34,833	60,823
Other sources	28,116	13,795	11,525
Total	60,361	48,628	72,349
Apparent consumption	213,583	196,166	217,078

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

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

According to questionnaire data, in 1990, *** percent of U.S. producers' shipments was chemical grade silicon metal, *** percent primary-aluminum grade, and *** percent secondary-aluminum grade material. Virtually all imports are secondary-grade silicon metal.

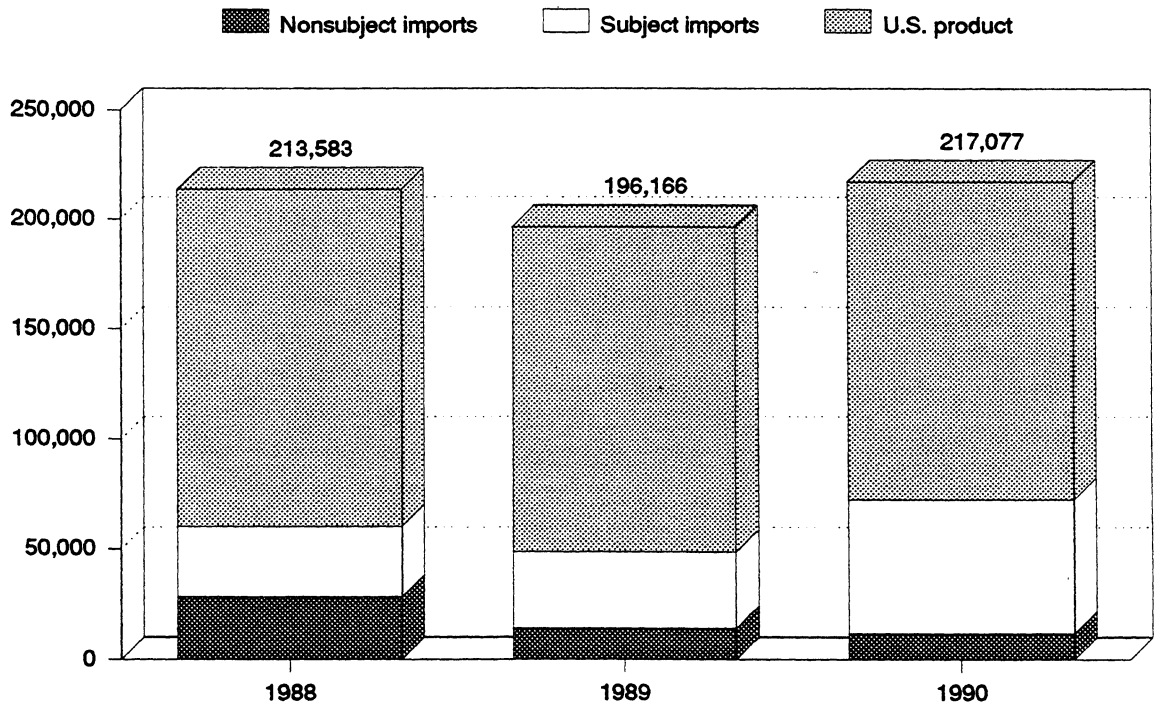
---

[37] Throughout this report, gross tons equals short tons (2,000 pounds) of contained silicon plus the weight of additional elements such as iron, calcium, or aluminum present.

[38] The European Community was the largest market for silicon metal consumption in 1990, consuming approximately *** percent more than the United States, which ranked second. Japan ranked third and consumed approximately *** percent less than the United States. Resources Strategies, Inc., *Silicon Metal Analysis (December 1990)* in app. B of ABRAFE's prehearing brief.

Figure 2

Silicon metal: Apparent U.S. consumption, by sources, 1988-90



Source: Table 2.

U.S. Consumption by Market Segment

Suppliers of silicon metal in the United States sell into three distinct market segments: chemical, primary aluminum, and secondary aluminum. *** and ***, together with one or two smaller purchasers, account for all or nearly all consumption in the chemical market segment. Sales in the primary aluminum segment are made to ***, and 10 smaller purchasers. Estimates of the number of purchasers in the secondary-aluminum market vary from 33 to 39. These purchasers recycle aluminum scrap into specification ingot for the casting and other foundry industries.[39] The automotive industry accounts for approximately 60 percent of the consumption of secondary-aluminum production.[40]

Table 3 and figure 3 present U.S. producers' and importers' shipments to each of the market segments. According to data compiled from questionnaires of the Commission, the size of each market segment remained relatively constant over the period of investigation. The only significant changes were in shipments to the secondary-aluminum market. U.S.-produced shipments to the secondary-aluminum market declined from 27.3 percent of total shipments in 1988 to 22.4 percent in 1989 and 14.2 percent in 1990. Subject country import shipments to the secondary-aluminum market increased from 11.4 percent of total shipments in 1988 to 18.3 percent in 1989 and 23.4 percent in 1990.

U.S. producers' and importers' shipments to chemical producers accounted for 42.7 percent of total shipments in 1988, 43.2 percent in 1989, and 44.9 percent in 1990. U.S. producers' and importers' shipments to secondary-aluminum producers accounted for 38.7 percent of total shipments in 1988, 40.7 percent in 1989, and 37.6 percent in 1990. U.S. producers' and importers' shipments to primary-aluminum producers accounted for 14.0 percent of total shipments in 1988, 11.4 percent in 1989, and 14.1 percent in 1990. U.S. producers' and importers' shipments to "other" producers, which include steel, die cast, foundries, brass, and extrusion producers, accounted for 4.6 percent of total shipments in 1988, 4.8 percent in 1989, and 3.4 percent in 1990.

---

[39] According to Mr. Viland, president of Wabash Alloys and the Aluminum Recycling Association (ARA), silicon is the second largest purchase that secondary-aluminum producers make, the first being scrap. Transcript of public hearing, p. 86.

[40] Prehearing brief of ABRAFE, pp. 1 and 9-11, and prehearing brief of the Aluminum Smelting and Refining Co. and Timco, p. 2.

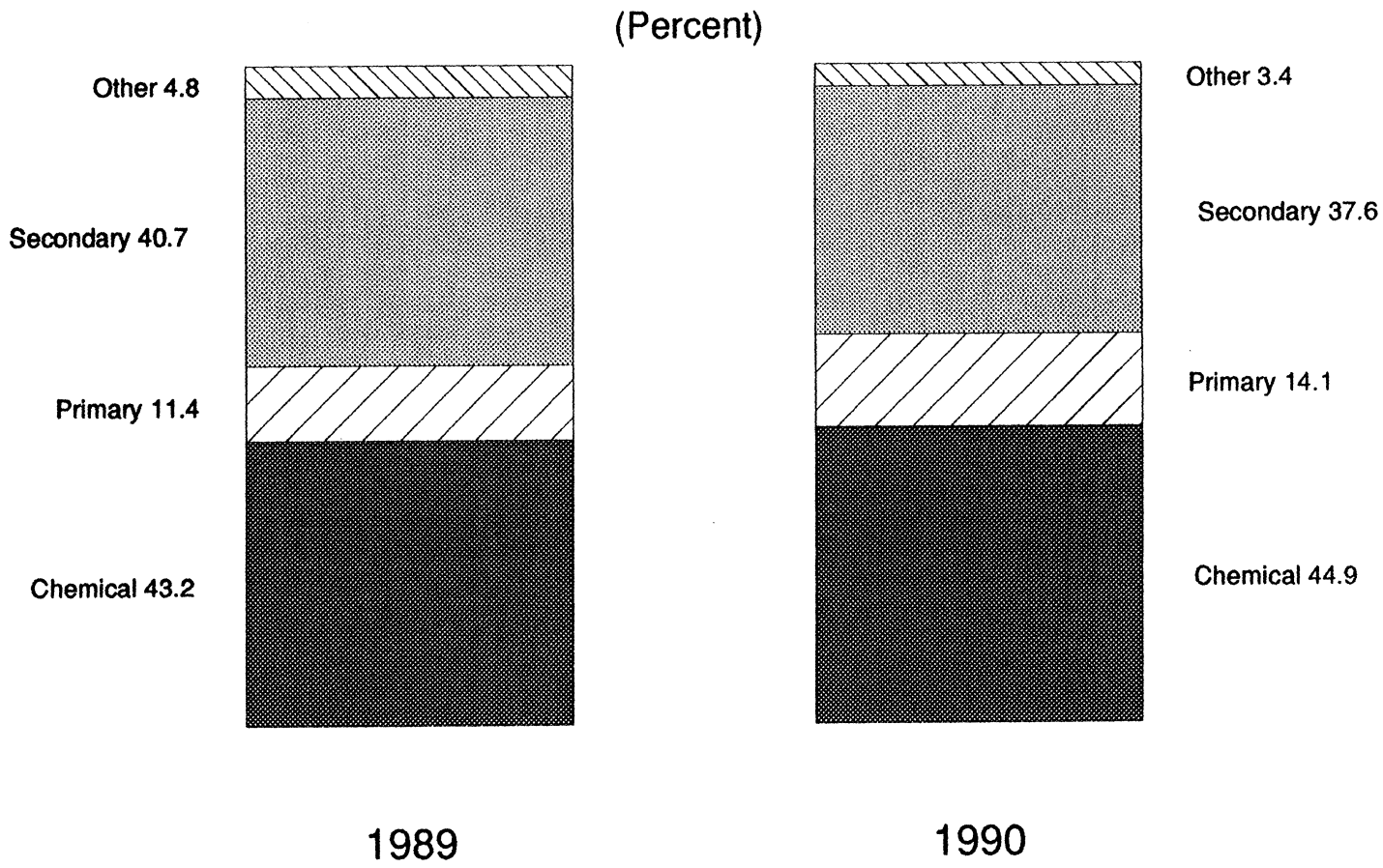
Table 3
Silicon metal: U.S. producers' and importers' shipments[1] to chemical, primary-aluminum, and secondary-aluminum producers, 1988-90

Destination and source	*1988*	*1989*	*1990*
	Quantity (gross tons)		
Chemical producers:			
U.S.-produced	***	***	***
Imported	***	***	***
Subtotal	75,916	79,848	88,871
Primary-aluminum producers:			
U.S.-produced	***	***	***
Imported	***	***	***
Subtotal	24,924	20,976	27,944
Secondary-aluminum producers:			
U.S.-produced	48,599	41,388	28,099
Imported	20,221	33,740	46,177
Subtotal	68,820	75,128	74,276
"Other" producers:[2]			
U.S.-produced	7,976	8,662	5,843
Imported	122	164	866
Subtotal	8,098	8,826	6,709
All markets:			
U.S.-produced	156,415	150,362	149,429
Imported	21,343	34,416	48,371
Total	177,758	184,778	197,800
	Ratio to total shipments (percent)		
Chemical producers:			
U.S.-produced	***	***	***
Imported	***	***	***
Subtotal	42.7	43.2	44.9
Primary-aluminum producers:			
U.S.-produced	***	***	***
Imported	***	***	***
Subtotal	14.0	11.4	14.1
Secondary-aluminum producers:			
U.S.-produced	27.3	22.4	14.2
Imported	11.4	18.3	23.4
Subtotal	38.7	40.7	37.6
"Other" producers:[2]			
U.S.-produced	4.5	4.7	3.0
Imported	0.1	0.1	0.4
Subtotal	4.6	4.8	3.4
All markets:[3]			
U.S.-produced	88.0	81.4	75.6
Imported	12.0	18.6	24.5
Total	100.0	100.0	100.0

[1] Shipments to customers are not necessarily of the corresponding grade of silicon metal. Importers' shipments consist only of subject imports.
[2] Includes steel, die cast, foundries, brass, and extrusion producers.
[3] These market-share ratios differ from those presented in the "U.S. Market Penetration by Imports" section of this report. The latter ratios are based on official import statistics of Commerce and include nonsubject imports.

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

Figure 3
Silicon metal: Breakdown of U.S. producers' and importers' shipments to customers, 1989 and 1990



Source: Table 3.

U.S. Producers

There were eight producers of silicon metal in the United States during the period of investigation.[41] The Commission received questionnaire responses from all eight. The names of these producers, the locations of their headquarters and plants, and the products produced at each plant are presented in table 4. Figure 4 presents the geographic distribution of the nine U.S. silicon metal plants. Figure 5 presents each producers' share of production for the years 1988-90. Appendix D presents selected trade data for each producer separately.

Table 4
Silicon metal: U.S. producers, corporate headquarters, plant locations, and products produced, 1990

Firm	*Corporate headquarters*	*Plant location(s)*	*Products produced*[1]
American Alloys, Inc.[2]	Pittsburgh, PA	New Haven, WV	FeSi and Si
Dow Corning Corp.	Midland, MI	Springfield, OR	Si
Elkem Metals Co.	Pittsburgh, PA	Alloy, WV	FeSi and Si
Globe Metallurgical, Inc.	Cleveland, OH	Beverly, OH	FeSi and Si
		Selma, AL	Si
Reynolds Metals Co.	Richmond, VA	Sheffield, AL	Si
Silicon Metaltech, Inc.[3]	Wenatchee, WA	Rock Island, WA	FeSi and Si
SiMETCO, Inc.[4]	Canton, OH	Mt. Meigs, AL	Si
SKW Alloys, Inc.	Niagara Falls, NY	Niagara Falls, NY	FeSi and Si

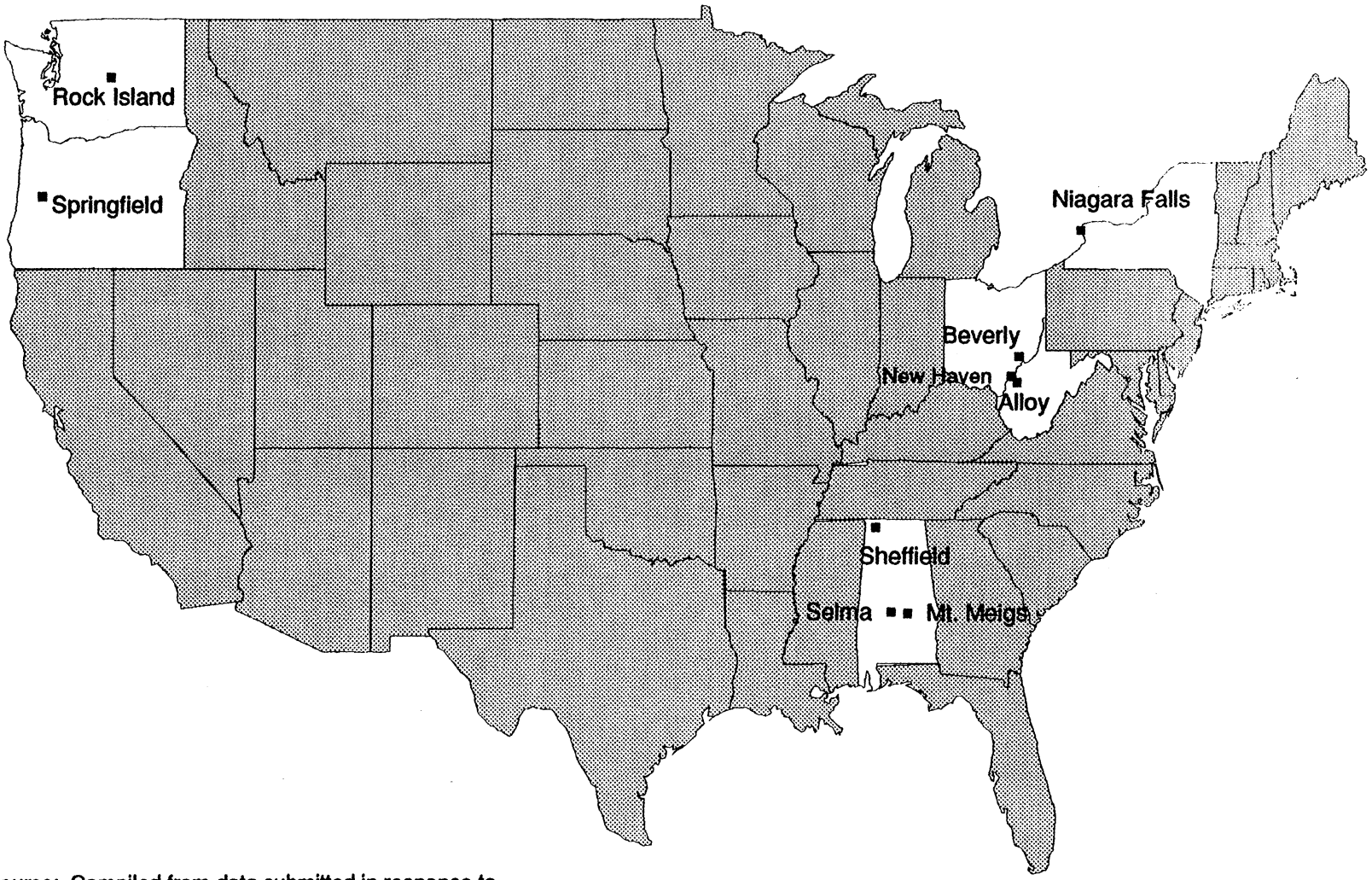
[1] FeSi is ferrosilicon, and Si is silicon metal.
[2] Formerly Foote Mineral Co., Ferroalloy Division.
[3] Formerly M.A. Hanna Co., Silicon Division.
[4] Formerly Ohio Ferro-Alloys Corp.

Source: Bureau of Mines.

According to the U.S. Bureau of Mines, the United States was the world's largest producer of silicon metal in 1989, producing 150,000 gross tons. The second-largest producer was Brazil (129,000 tons), followed by Norway (110,000 tons), China (110,000 tons), France (77,000 tons), Spain (77,000 tons), the Soviet Union (72,000 tons), and South Africa (39,000 tons).

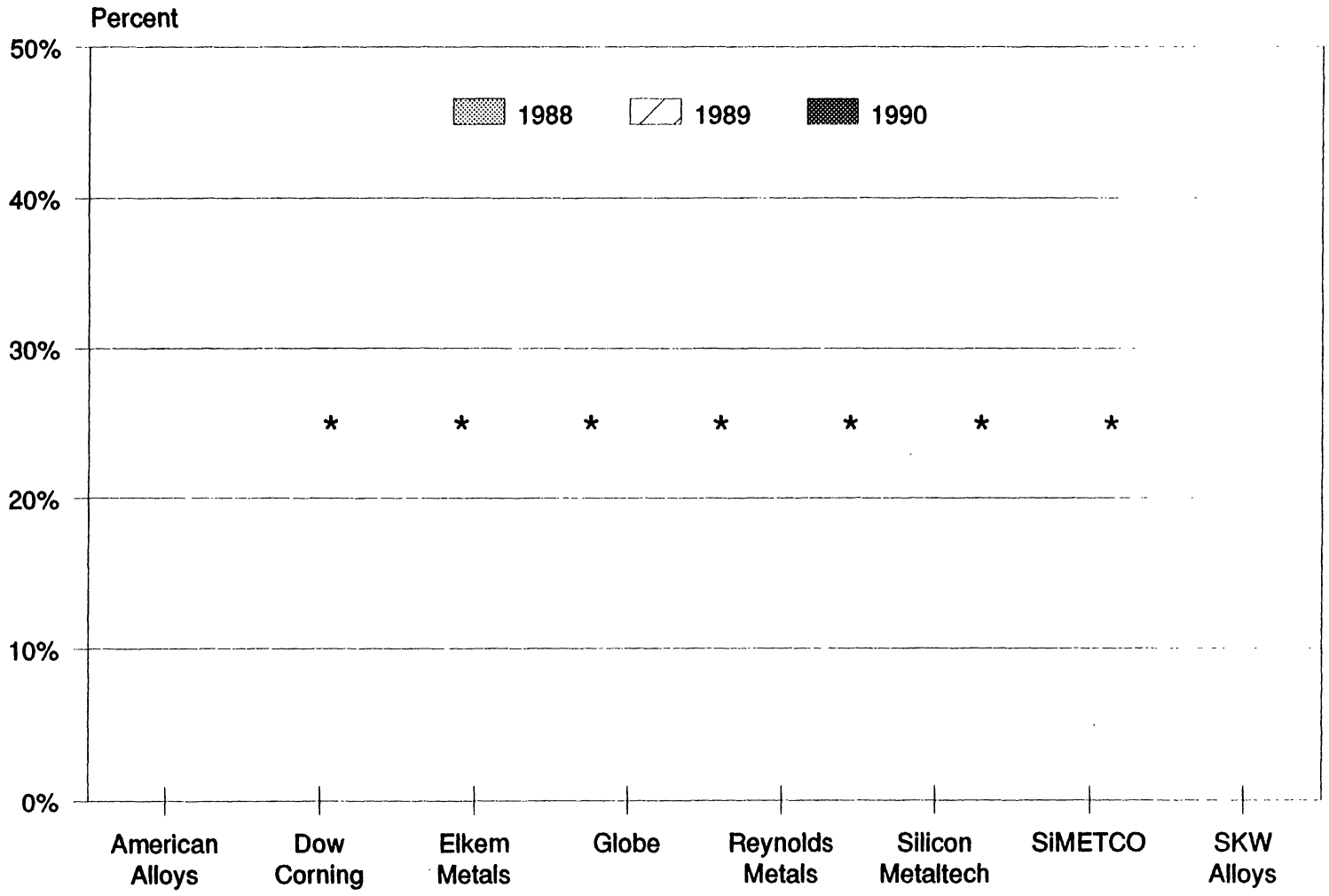
[41] One producer, ***, ceased production of silicon metal in ***, and another producer, ***, ceased production of silicon metal on ***. There are currently only 6 U.S. producers of silicon metal.

Figure 4
Plant locations of U.S. silicon metal producers



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

Figure 5
Silicon metal: U.S. producers' shares of production, 1988-90



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

American Alloys

American Alloys, a petitioner, is a merchant producer of silicon alloys and silicon metal. It began production of silicon metal in September 1989, following the construction of a new furnace dedicated exclusively to silicon metal production.[42] ***. The company accounted for *** percent of U.S. production of silicon metal in 1989 and *** percent in 1990. ***.

Dow Corning

Dow Corning,[43] a captive producer,[44] is a *** joint-venture company owned by the Dow Chemical Co. and Corning, Inc. The company develops, manufactures, and markets silicones and related specialty chemical materials. Dow Corning owns one silicon metal production facility in the United States, which produces a relatively small percentage of its total silicon supply needs.[45] Dow Corning accounted for *** percent of U.S. production of silicon metal in 1988, *** percent in 1989, and *** percent in 1990.

Internal production accounted for *** percent of Dow Corning's total consumption in 1988, *** percent in 1989, and *** percent in 1990. Purchases from other U.S. producers accounted for *** percent in 1988, *** percent in 1989, and *** percent in 1990. ***.

Elkem Metals

Elkem Metals (Elkem), a petitioner,[46] is a merchant producer of silicon alloys and silicon metal. ***.[47] Elkem accounted for *** percent of U.S. production of silicon metal in 1988, *** percent in 1989, and *** percent in 1990. ***.

---

[42] ***.

[43] Although Dow Corning ***, the company is in opposition to the petition in the final investigations. Prehearing brief of Dow Corning filed on Apr. 22, 1991.

[44] ***.

[45] ***.

[46] Elkem Metals supports the petition with respect to Argentina and China; however, the company has elected not to support the petition with respect to Brazil for the following reasons: ***. William D. Kramer, counsel for petitioners, telephone conversation with USITC staff, Sept. 20, 1990.

[47] ***.

Globe Metallurgical

Globe Metallurgical (Globe), a petitioner, is a merchant producer of silicon alloys and silicon metal.[48] Globe accounted for *** percent of U.S. production in 1988, *** percent in 1989, and *** percent in 1990. ***.

Reynolds Metals

Reynolds Metals (Reynolds) is one of the largest U.S. aluminum manufacturers. Until late-1990, Reynolds produced silicon metal to meet its internal need for primary-aluminum grade silicon metal to be used as an alloying agent in its aluminum production.[49] Reynolds accounted for *** percent of U.S. production in 1988, *** percent in 1989, and *** percent in 1990. Internal production accounted for *** percent of its total consumption in 1988, *** percent in 1989, and *** percent in 1990. Purchases from other U.S. producers accounted for *** percent in 1988, *** percent in 1989, and *** percent in 1990. ***.

Silicon Metaltech

Silicon Metaltech, a petitioner, is a merchant producer of silicon alloys and silicon metal.[50] Since June 1990, the company has been operating under Chapter 11 of the U.S. Bankruptcy Code. Silicon Metaltech accounted for *** percent of U.S. production of silicon metal in 1988, *** percent in 1989, and *** percent in 1990. ***.

SiMETCO

SiMETCO, a petitioner, is a merchant producer of silicon metal.[51] SiMETCO accounted for *** percent of U.S. production in 1988, *** percent in 1989, and *** percent in 1990. ***.

---

[48] ***.

[49] ***.

[50] ***.

[51] ***.

SKW Alloys

SKW Alloys (SKW), a petitioner,[52] is a merchant producer of silicon alloys and silicon metal. SKW accounted for *** percent of U.S. production of silicon metal in 1988, *** percent in 1989, and *** percent in 1990.[53] ***.

U.S. Importers

Sixteen firms, including three U.S. producers,[54] were identified by Commission staff as importers of silicon metal from the subject countries during the period of investigation. The Commission sent importers' questionnaires to each of these firms. Respondents to the Commission's importers' questionnaire are believed to represent greater than 90 percent of imports of silicon metal from the subject countries from 1988 through 1990. Table 5 presents a listing of those firms that received the Commission's producers' and importers' questionnaire and indicated that they imported silicon metal from the subject countries during the period of investigation.

---

[52] SKW, ***, supports the petition with respect to Argentina and China; however, the company elected not to support the petition with respect to Brazil for the following reasons: ***. Staff telephone conversation with William D. Kramer, counsel for petitioners, Sept. 20, 1990.

[53] SKW has a sister plant, SKW Canada, located across the border in Becancour, Quebec. ***.

[54] ***.

Table 5
Silicon metal: U.S. importers, company locations, and subject countries from which they import, 1988-90

Firm	*Company location*	*Subject country imports*
*	*	*
*	*	*
*	*	*

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

Channels of Distribution

The majority of both domestic and imported silicon metal is sold directly to end users. In 1990, 98.4 percent of U.S. producers' shipments went to end users; *** percent of U.S. importers' shipments went to end users and *** percent went to distributors.

The market for silicon metal consists of three principal market segments: chemical manufacturers, secondary-aluminum manufacturers, and primary-aluminum manufacturers. Table 6 and figures 6 and 7 present U.S. producers' and importers' shipments of silicon metal, by grades, to distributors and end users in 1990.[55]

Table 6
Silicon metal: U.S. producers' and importers' shipments, by grades, to distributors and end users, 1990

(In percent)

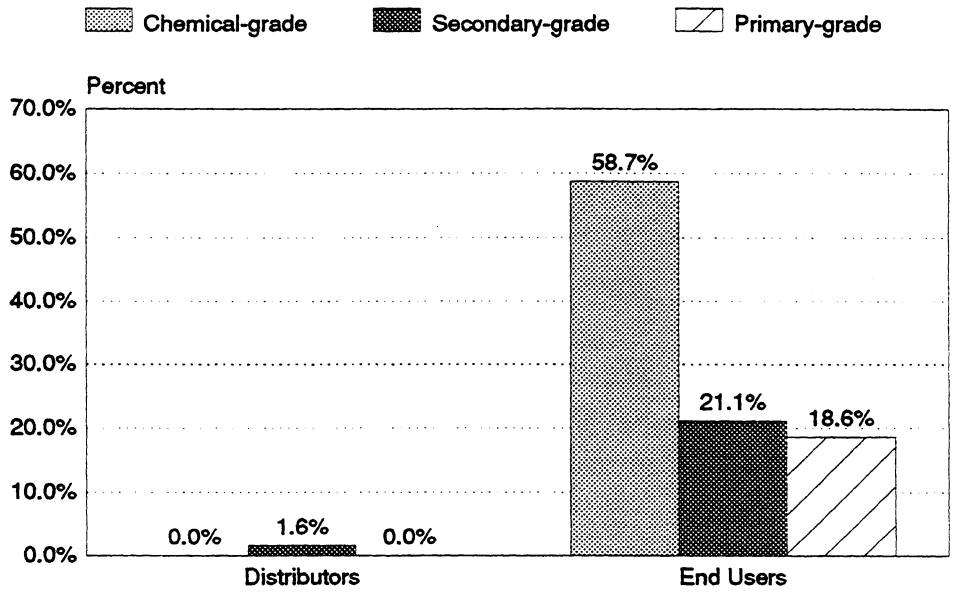
Supplier/grade	Share of shipments to— Distributors	End users	Percent unrelated
U.S. producers:			
Chemical grade	0.0	58.7	***
Secondary-aluminum grade	1.6	21.1	100.0
Primary-aluminum grade	0.0	18.6	***
U.S. importers:			
Chemical grade	***	13.0	30.0
Secondary-aluminum grade	23.3	60.0	***
Primary-aluminum grade	***	***	100.0

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

[55] *** was unable to breakout its shipments by grade, and therefore supplied shipments on a customer-type basis.

Figure 6

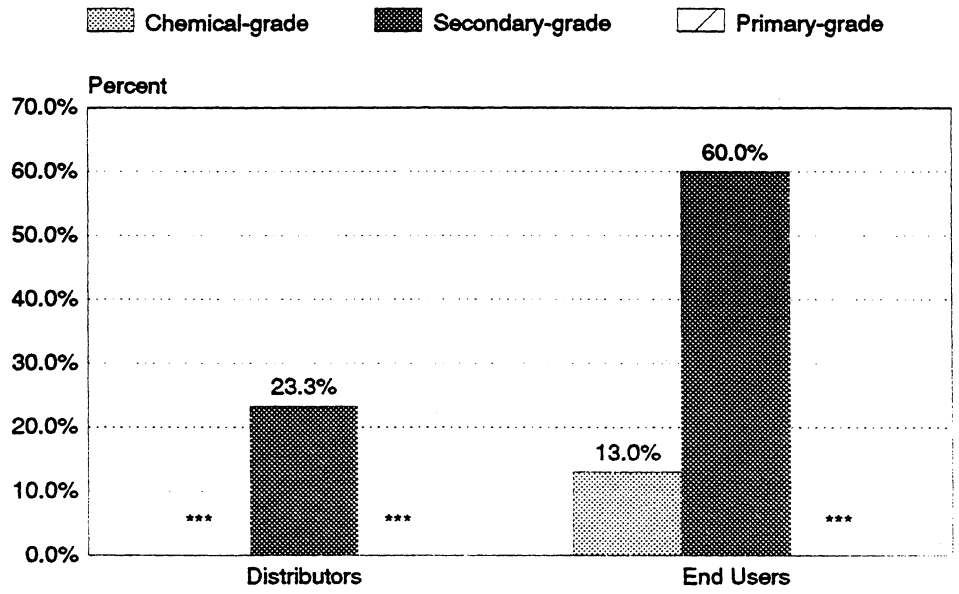
Silicon metal: U.S. producers' shipments, by grades, to distributors and end users, 1990



Source: Table 6.

Figure 7

Silicon metal: U.S. importers' shipments, by grades, to distributors and end users, 1990



Source: Table 6.

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

U.S. Capacity, Production, and Capacity Utilization

The Commission requested U.S. silicon metal producers to provide data on their average-of-period and end-of-period practical capacity, production, and capacity utilization for 1988-90. These data are presented in table 7 and figure 8. Capacity, production, and capacity utilization data, by firms, are presented in table D-1 in appendix D.[56] Figure 9 presents U.S. producers' average-of-period capacity utilization by firms for the period 1988-90.

Reported average-of-period capacity decreased 0.2 percent from 1988 to 1989, but increased 2.8 percent from 1989 to 1990. Production of silicon metal decreased 5.0 percent from 1988 to 1989 but increased 2.8 percent from 1989 to 1990. Average-of-period capacity utilization decreased from 90.1 percent in 1988 to 85.8 percent in 1989 and remained steady at 85.8 percent in 1990.

---

[56] The Commission defined capacity or full production capability as the maximum level of production that an establishment could reasonably expect to attain under normal operating conditions. In estimating full production capability, the following was to be taken into consideration:

- Assume that only the machinery and equipment in place and ready to operate will be utilized. Do not consider facilities or equipment that would require extensive reconditioning before they can be made operable.
- Assume normal downtime, maintenance, repair, and cleanup.
- Do not assume number of shifts and hours of plant operations under normal conditions to be higher than that attained by your plant any time during the past 5 years.
- Do not consider overtime pay, availability of labor, materials, utilities, etc., to be limiting factors.
- Assume a product mix that was typical or representative of your production during the period. If your plant is subject to considerable short-run variation, assume the product mix of the current period.
- Do not assume increased use of productive facilities outside the plant for services (such as contracting out subassembly work) in excess of the proportion that would be normal during the time periods covered by this questionnaire.

End-of-period capacity was defined as full production capability of a plant(s) to produce for a period of time using the machinery and equipment in place at the end of the period.

Average-of-period capacity was defined as full production capability of a plant(s) to produce for a period of time using the machinery and equipment actually in place during the period. Unless there has been a change in full production capability (e.g., as a result of equipment or plant startup or shutdown) during the period, the end-of-period and average-of-period capabilities should be the same.

Table 7
Silicon metal: U.S. capacity,[1] production, and capacity utilization, 1988-90

Item	*1988*	*1989*	*1990*
Production (gross tons)	160,892	152,895	157,218
End-of-period capacity (gross tons)	189,482	176,937	186,267
Average-of-period capacity (gross tons)	178,515	178,166	183,174
End-of-period capacity utilization (percent)	84.9	86.4	84.4
Average-of-period capacity utilization (percent)	90.1	85.8	85.8

[1] Practical capacity was defined as the greatest level of output a plant can achieve within the framework of a realistic work pattern. Producers were asked to consider, among other factors, a normal product mix and an expansion of operations that could be reasonably attained in their industry and locality in setting capacity in terms of the number of shifts and hours of plant operations. The capacity was reported using industry ranges of 162-168 hours per week and 49-52 weeks per year.

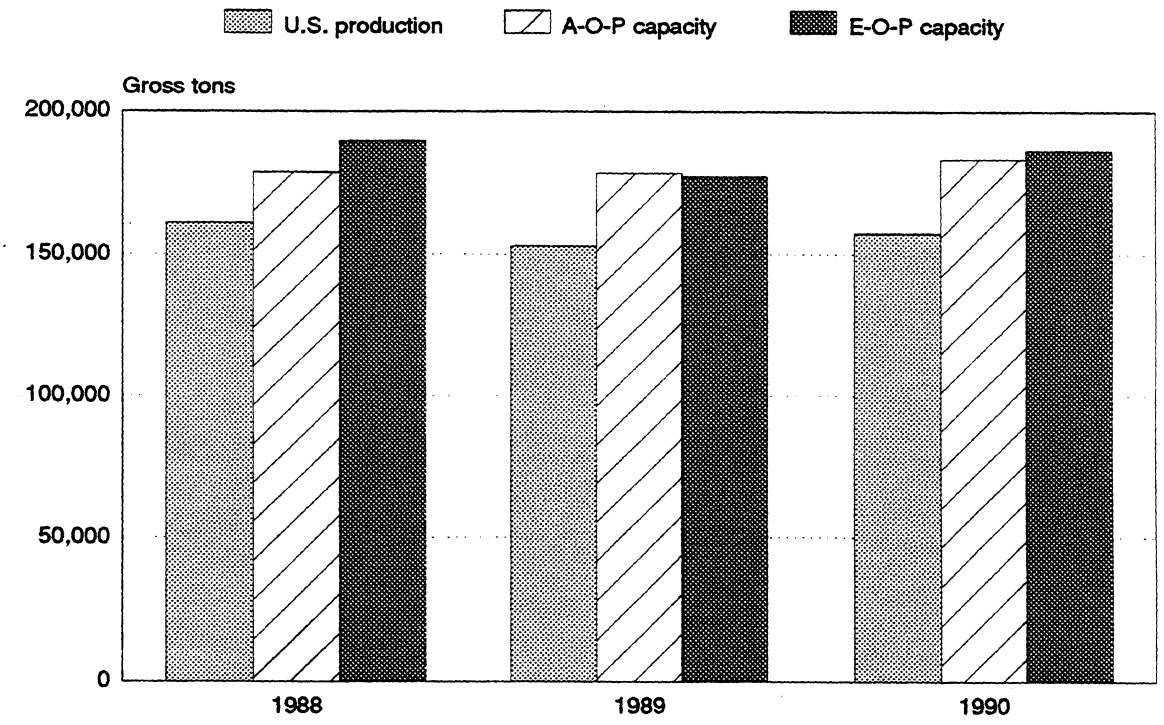
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

U.S. Producers' Shipments

Data for U.S. producers' shipments are presented in table 8 and figure 10. The quantity and value of U.S. shipments (intracompany transfers plus domestic market shipments) by individual producers are presented in table D-2 in appendix D.

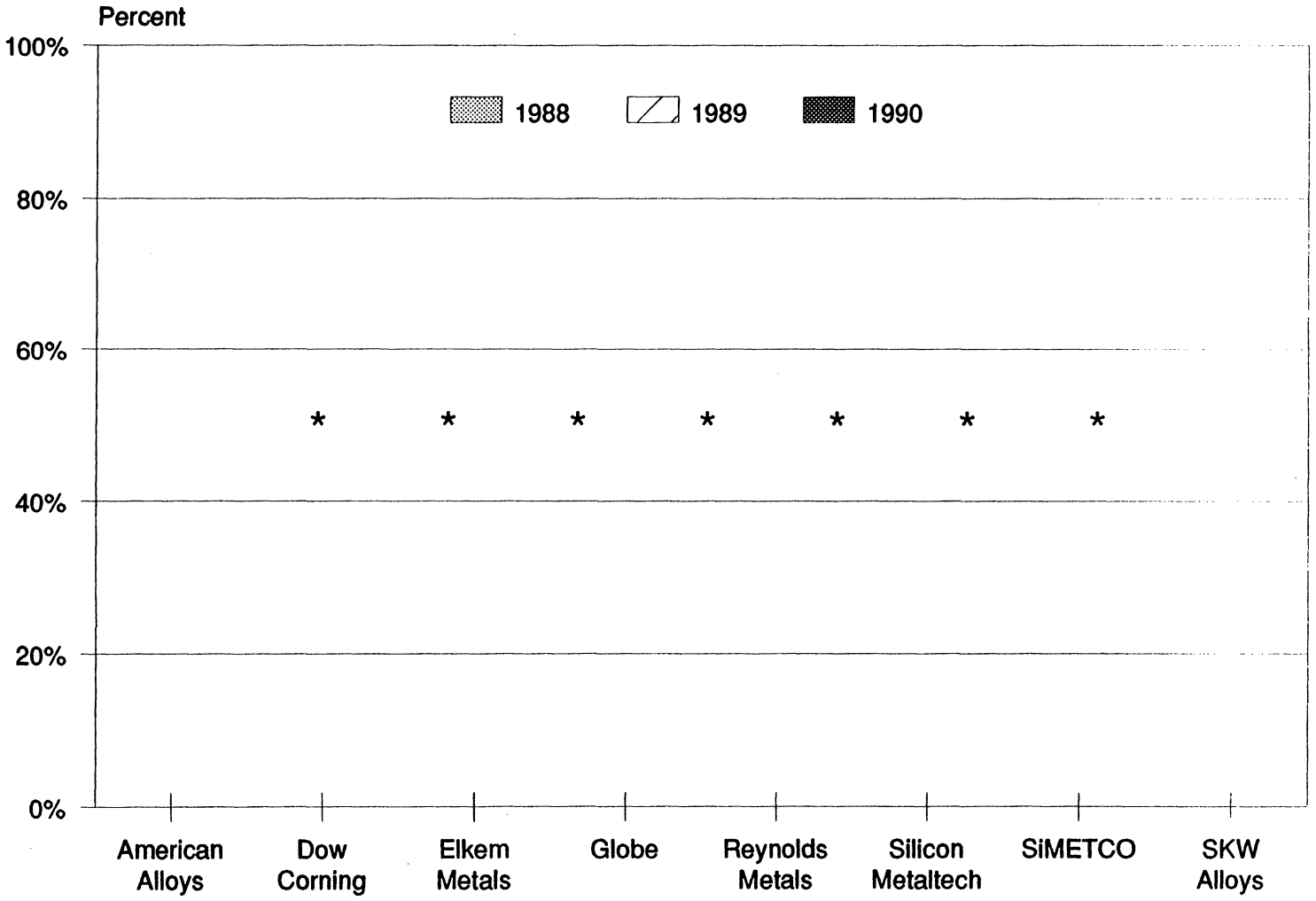
According to data collected from the Commission's questionnaires, U.S. shipments of silicon metal by U.S. producers decreased 3.7 percent in quantity from 1988 to 1989 and decreased a further 1.9 percent from 1989 to 1990. The value of U.S. shipments decreased 4.7 percent from 1988 to 1989, and decreased a further 7.3 percent from 1989 to 1990.

Figure 8
Silicon metal: U.S. production, average-of-period capacity, and end-of-period capacity, 1988-90



Source: Table 7.

Figure 9
Silicon metal: U.S. producers' average-of-period capacity utilization, by firms, 1988-90



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

Table 8
Silicon metal: Shipments of U.S. producers, by types, 1988-90

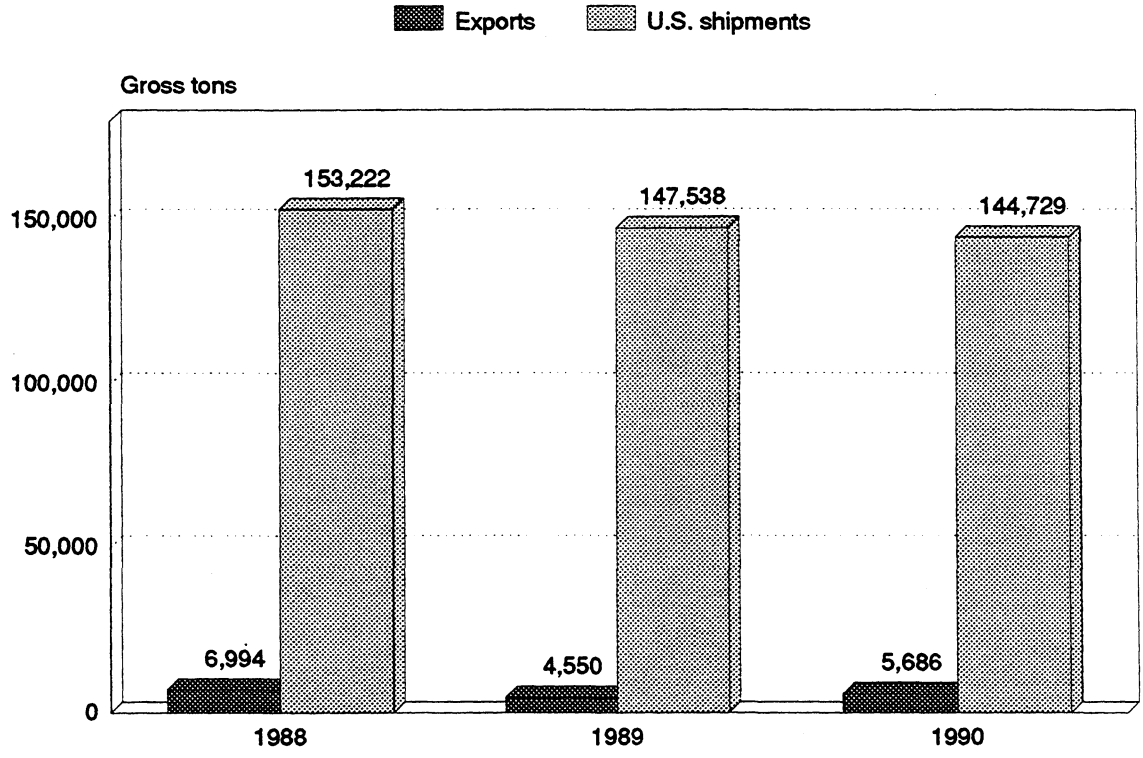
Item	1988	1989	1990
	Quantity (gross tons)		
Company transfers	***	***	***
Domestic shipments	***	***	***
Subtotal, U.S. shipments	153,222	147,538	144,729
Exports	6,994	4,550	5,686
Total	160,216	152,088	150,415
	Value (1,000 dollars)		
Company transfers	***	***	***
Domestic shipments	***	***	***
Subtotal, U.S. shipments	194,751	185,541	171,964
Exports	9,084	5,734	7,050
Total	203,835	191,275	179,014
	Unit value (per gross ton)		
Company transfers	***	***	***
Domestic shipments	***	***	***
Average, U.S. shipments	$1,271	$1,258	$1,188
Exports	1,299	1,260	1,240
Average	1,272	1,258	1,190

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

Intracompany transfers represented *** percent of aggregate U.S. producers' shipments in 1988, *** percent in 1989, and *** percent in 1990. Export shipments represented 4.4 percent of aggregate U.S. producers' shipments in 1988, 3.0 percent in 1989, and 3.8 percent in 1990. The unit value per gross ton of domestic market shipments (excluding transfers) decreased 1.8 percent from 1988 to 1989 and declined a further 3.8 percent from 1989 to 1990.

Figure 10

Silicon metal: Shipments of U.S. producers, by types, 1988-90



Source: Table 8.

U.S. Producers' Imports and Purchases

***. Table 9 presents U.S. producers' imports and purchases, by sources, for the years 1988 to 1990.

With the exception of ***, U.S. producers accounted for less than 6 percent of imports from the subject countries in any given year during the period of investigation.[57] ***.

Table 9
Silicon metal: U.S. producers' imports and purchases, by sources, 1988-90

(In gross tons)

Item	1988	1989	1990
*	*	*	*	*	*	*

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

[57] ***.

U.S. Producers' Inventories

Data for U.S. producers' inventories are presented in table 10. The inventories of individual producers are presented in table D-3 in appendix D. According to data collected from the Commission's questionnaires, end-of-period inventories of silicon metal by U.S. producers increased 34.2 percent from 1988 to 1989 and increased a further 53.6 percent from 1989 to 1990.

Table 10
Silicon metal: U.S. producers' end-of-period inventories, 1988-90

Item	*1988*	*1989*	*1990*
	Quantity (gross tons)		
End-of-period inventories	7,201	9,664	14,848
	Ratio of inventories to-- (in percent)		
Production	4.5	6.3	9.4
U.S. shipments[1]	4.7	6.6	10.3
Total shipments	4.5	6.4	9.9

[1] U.S. shipments equals company transfers plus domestic market shipments.

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

U.S. Employment, Wages, Compensation, and Productivity

Data for employment, wages, and productivity are presented in table 11. Data for employment, wages, compensation, and productivity on an individual company basis are presented in table D-4 in appendix D.

According to data collected from the Commission's questionnaires, the number of production and related workers (PRWs) producing silicon metal declined 4.6 percent from 1988 to 1989, but increased 4.6 percent from 1989 to 1990. The number of hours worked by PRWs declined 9.4 percent from 1988 to 1989, but increased 6.9 percent from 1989 to 1990. Wages paid to PRWs decreased 7.6 percent from 1988 to 1989, but increased 10.5 percent from 1989 to 1990. Total compensation paid to PRWs decreased 5.8 percent from 1988 to 1989, but increased 12.8 percent from 1989 to 1990. Hourly wages paid to PRWs increased 2.0 percent from 1988 to 1989 and increased 3.4 percent from 1989 to 1990. Hourly total compensation paid to PRWs increased 3.9 percent from 1988 to 1989 and increased another 5.6 percent from 1989 to 1990.

Table 11
Average number of production and related workers producing silicon metal, hours worked,[1] wages and total compensation paid to such employees, hourly wages, productivity, and unit production costs, 1988-90[2]

Item	1988	1989	1990
Number of production and related workers (PRWs)	572	546	571
Hours worked by PRWs (1,000 hours)	1,256	1,138	1,216
Wages paid to PRWs (1,000 dollars)	17,046	15,757	17,413
Total compensation paid to PRWs (1,000 dollars)	22,951	21,610	24,380
Hourly wages[3] paid to PRWs	$13.57	$13.85	$14.32
Hourly total compensation[3] paid to PRWs	$18.27	$18.99	$20.05
Productivity[4] (gross tons per 1,000 hours)	104.5	100.4	99.8
Unit labor costs[5] (per gross ton)	$174.80	$189.21	$200.80

[1] Includes hours worked plus hours of paid leave time.
[2] Firms providing employment data accounted for 75 percent of reported total U.S. shipments (based on quantity) in 1990. Two firms, ***, did not provide employment data.
[3] Calculated using data from firms that provided information on both compensation paid and hours worked.
[4] Calculated using data from firms that provided information on both hours worked and production.
[5] On the basis of total compensation paid. Calculated using data from firms that provided information on both total compensation paid and production.

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

Productivity (gross tons per 1,000 hours) decreased 3.9 percent from 1988 to 1989 and declined a further 0.6 percent from 1989 to 1990. Unit labor costs increased 8.2 percent from 1988 to 1989 and increased a further 6.1 percent from 1989 to 1990.

* * * * * * *

Financial Experience of U.S. Producers

Seven U.S. producers,[58] accounting for *** percent of U.S. production of silicon metal in 1990, provided income-and-loss data on their silicon metal operations and on their overall establishment operations. ***.

* * * * * * *

On June 15, 1990, Silicon Metaltech filed a petition for reorganization under Chapter 11 of the U.S. Bankruptcy Code. SiMETCO, previously Ohio Ferro-Alloys Corp., assumed its new name effective December 8, 1988, under its reorganization plan filed under Chapter 11. Ohio Ferro-Alloys Corp. filed a Chapter 11 petition on October 30, 1986.

Silicon Metal Operations

Aggregated income-and-loss data are presented in table 12. Selected key income-and-loss data by individual firms are presented in table D-5 in appendix D. Figure 11 presents the operating income and pretax net income of U.S. producers of silicon metal as a share of net sales for 1988-90.

Net sales of silicon metal declined by 16.8 percent from $202.7 million in 1988 to $168.7 million in 1990. Net sales in terms of gross tons decreased by 10.5 percent from 158,010 gross tons in 1988 to 141,451 gross tons in 1990. Aggregate gross profit declined by 65.7 percent from $25.6 million in 1988 to $8.8 million in 1990. During the same period, gross profit margins dropped from 12.6 percent to 5.2 percent. Aggregate operating income dropped precipitously from $15.9 million, or 7.9 percent of net sales, in 1988 to only $753,000, or 0.4 percent of net sales, in 1989. In 1990, U.S. producers reported aggregate operating losses of $1.7 million, or 1.0 percent of net sales. Pretax net income-or-loss margins followed a similar trend as operating income-or-loss margins. However, in 1988, the net income margin was higher than the operating income margin because ***.

[58] These 7 firms are ***. ***.

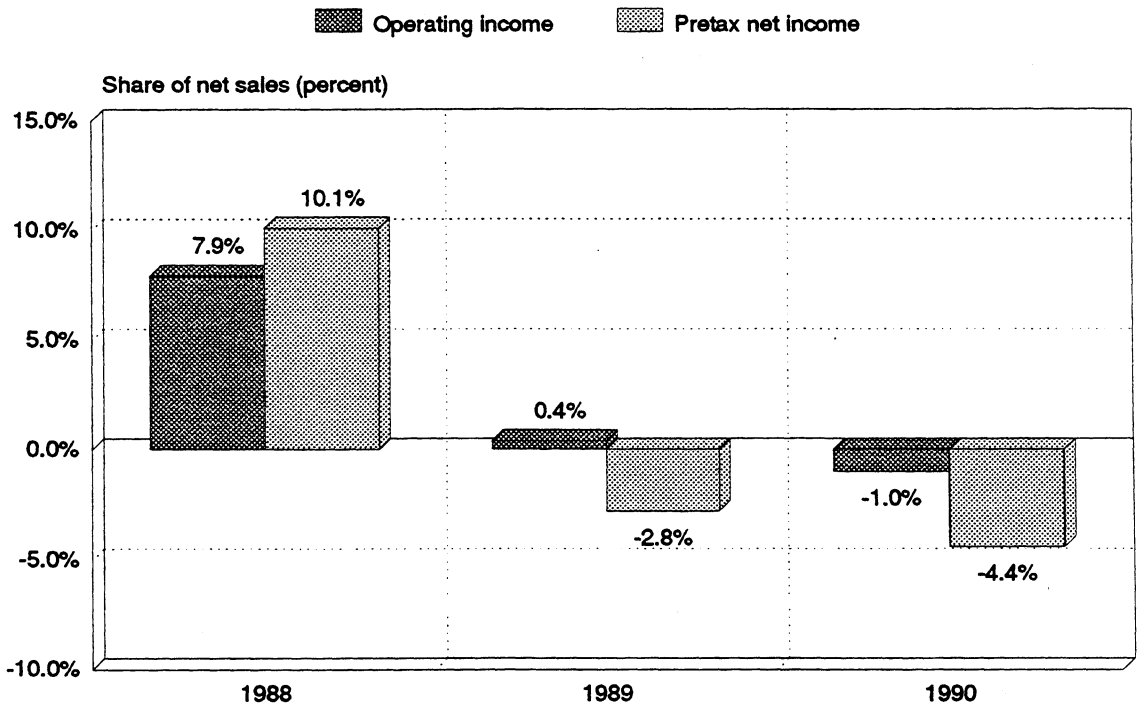
Table 12
Income-and-loss experience of U.S. producers on their operations producing silicon metal, calendar years 1988-90

Item	1988	1989	1990
	Quantity (gross tons)		
Net sales	158,010	142,936	141,451
	Value (1,000 dollars)		
Net sales	202,670	179,170	168,679
Cost of goods sold	177,060	167,769	159,900
Gross profit	25,610	11,401	8,779
Selling, general, and administrative expenses	9,666	10,648	10,487
Operating income or (loss)	15,944	753	(1,708)
Startup or shutdown expense	***	***	***
Interest expense	4,707	5,823	5,377
Other income or (expense), net	***	***	***
Net income or (loss) before income taxes	20,401	(5,036)	(7,496)
Depreciation and amortization	7,830	8,218	8,971
Cash flow[1]	28,231	3,182	1,475
	Ratio to net sales (percent)		
Cost of goods sold	87.4	93.6	94.8
Gross profit	12.6	6.4	5.2
Selling, general, and administrative expenses	4.8	5.9	6.2
Operating income or (loss)	7.9	0.4	(1.0)
Net income or (loss) before income taxes	10.1	(2.8)	(4.4)
	Number of firms reporting		
Operating losses	0	4	5
Net losses	1	5	6
Data	6	7	7

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

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

Figure 11
Operating income and pretax net income of U.S. producers on silicon metal operations, calendar years 1988-90



Source: Table 12.

Income-and-loss experience (on a per-gross-ton basis) of U.S. producers on their operations producing silicon metal for calendar years 1988-90 are presented in table 13.

Table 13
Income-and-loss experience of U.S. producers on their operations producing silicon metal, calendar years 1988-90

Item	1988	1989	1990
	(Per gross ton)		
Net sales	$1,282.64	$1,253.50	$1,192.49
Cost of goods sold	1,120.56	1,173.74	1,130.43
Gross profit	162.08	79.76	62.06
Selling, general, and administrative expenses	61.17	74.49	74.14
Operating income or (loss)	100.91	5.27	(12.07)

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

Average net sales value per gross ton decreased by 7.0 percent from $1,282.64 in 1988 to $1,192.49 in 1990. During the same period, per-gross-ton average gross profit dropped by 61.7 percent, reflecting this decline in sales value as well as a small increase in cost of goods sold. Operating income fell by 94.8 percent from $100.91 per gross ton in 1988 to $5.27 per gross ton in 1989, and declined further to a loss of $12.07 per gross ton in 1990. Average selling, general, and administrative (SG&A) expenses per gross ton rose by 21.8 percent from 1988 to 1989 and then remained almost at the same level in 1990. Two firms reported large increases in their SG&A expenses.[59] [60]

All firms except *** reported higher per-gross-ton SG&A expenses in 1989, as sales quantities declined by 9.5 percent. Four of seven producers continued to show higher SG&A expenses in 1990 as sales quantities fell another 1.0 percent.

[59] ***.

[60] ***.

The percentage distribution of the components of cost of goods sold as a share of total cost of goods sold for U.S. producers on their operations producing silicon metal for calendar years 1988-90 is presented in table 14.

Table 14
Cost of goods sold reported by U.S. producers on their operations producing silicon metal, calendar years 1988-90[1]

Item	*1988*	*1989*	*1990*
	Value (1,000 dollars)		
Raw materials	***	***	***
Direct labor	***	***	***
Other factory costs[2]	***	***	***
Cost of goods sold[3]	***	***	***
	Share of cost of goods sold (percent)		
Raw materials	29.0	27.0	29.8
Direct labor	8.7	9.2	10.4
Other factory costs[2]	62.3	63.8	59.8
Total	100.0	100.0	100.0

[1] ***.
[2] Includes energy costs.
[3] Differs from the cost of goods sold presented in table 12 because not all firms presented a breakdown of their cost of goods sold.

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

Overall Establishment Operations

Aggregated income-and-loss data on the overall operations of establishments within which silicon metal is produced are presented in table 15. Key selected income-and-loss data by firms are presented in table D-6 in appendix D.

Table 15
Income-and-loss experience of U.S. producers on the overall operations of their establishments wherein silicon metal is produced, calendar years 1988-90

Item	1988	1989	1990
	Value (1,000 dollars)		
Net sales	449,495	446,126	381,817
Cost of goods sold	386,652	416,149	378,908
Gross profit	62,843	29,977	2,909
Selling, general, and administrative expenses	15,867	18,396	17,101
Operating income or (loss)	46,976	11,581	(14,192)
Startup or shutdown expense	***	***	***
Interest expense	10,336	13,432	11,481
Other income, net	***	***	***
Net income or (loss) before income taxes	47,325	(897)	(23,897)
Depreciation and amortization	12,618	14,027	13,969
Cash flow[1]	59,943	13,130	(9,928)
	Ratio to net sales (percent)		
Cost of goods sold	86.0	93.3	99.2
Gross profit	14.0	6.7	0.8
Selling, general, and administrative expenses	3.5	4.1	4.5
Operating income or (loss)	10.5	2.6	(3.7)
Net income or (loss) before income taxes	10.5	(0.2)	(6.3)
	Number of firms reporting		
Operating losses	0	1	5
Net losses	0	4	6
Data	7	7	7

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

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

Investment in Productive Facilities

The value of property, plant, and equipment, total assets, and returns on the book value of fixed assets and on total assets of the reporting firms are presented in table 16. Figure 12 presents the return on total assets of U.S. producers on silicon metal operations for 1988-90. Operating and net returns on the book value of fixed assets and on total assets followed generally the same

trend as did the ratios of operating and net income to net sales during the reporting periods.

Table 16
Value of assets and return on assets of U.S. producers' establishments wherein silicon metal is produced, calendar years 1988-90

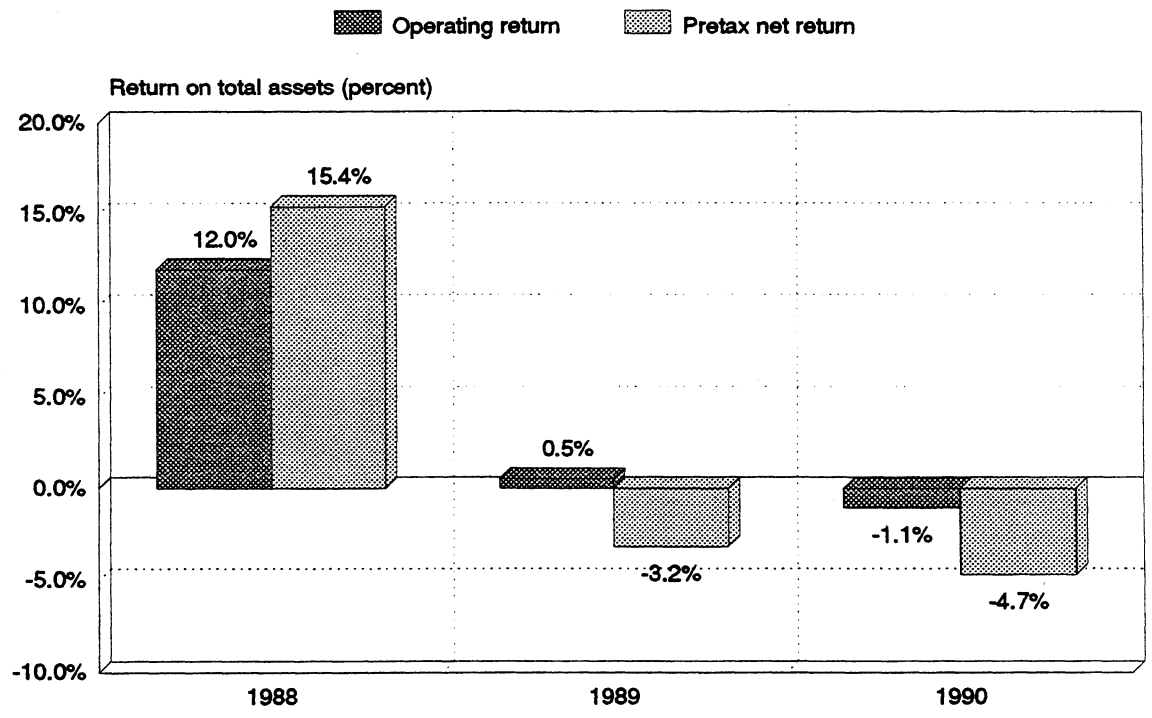
Item	*1988*	*1989*	*1990*
	Value (1,000 dollars)		
All products:			
Fixed assets:			
Original cost	245,636	267,185	273,460
Book value	124,153	137,726	130,650
Total assets[1]	234,860	259,475	247,809
Silicon metal:			
Fixed assets:			
Original cost	118,487	134,589	145,924
Book value	70,119	79,637	78,582
Total assets[2]	132,558	155,299	158,513
	Return on book value of fixed assets (percent)[3]		
All products:			
Operating return[4]	37.8	8.4	(10.9)
Net return[5]	38.1	(0.7)	(18.3)
Silicon metal:			
Operating return[4]	22.7	0.9	(2.2)
Net return[5]	29.1	(6.3)	(9.5)
	Return on total assets (percent)[3]		
All products:			
Operating return[4]	20.0	4.5	(5.7)
Net return[5]	20.2	(0.3)	(9.6)
Silicon metal:			
Operating return[4]	12.0	0.5	(1.1)
Net return[5]	15.4	(3.2)	(4.7)

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

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

In 1988, assets were revalued when ***. Total assets were written down over ***.

Figure 12
Return on total assets of U.S. producers on silicon metal operations, calendar years 1988-90



Source: Table 16.

Capital Expenditures

The capital expenditures incurred by the reporting firms are shown in table 17. The majority of capital expenditures were for machinery, equipment, and fixtures. ***.

Table 17
Capital expenditures by U.S. producers of silicon metal, calendar years 1988-90

(In 1,000 dollars)

Item	1988	1989	1990
All products:			
Land and land improvements	***	***	***
Building and leasehold improvements	***	***	***
Machinery, equipment, and fixtures	17,140	25,255	10,524
Total	17,928	25,516	10,586
Silicon metal:			
Land and land improvements	***	***	***
Building and leasehold improvements	***	***	***
Machinery, equipment, and fixtures	7,272	20,153	8,533
Total	7,541	20,348	8,576

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

Research and Development Expenses

Research and development expenses of U.S. producers of silicon metal for calendar years 1988-90 are presented in table 18.

Impact of Imports on Capital and Investment

The Commission requested each firm to describe any actual or potential negative effects of imports of silicon metal from Argentina, Brazil, China, or all three countries on existing development and production efforts, growth, investment, and ability to raise capital. Their responses are shown in appendix E.

Table 18
Research and development expenses of U.S. producers of silicon metal, calendar years 1988-90

(In 1,000 dollars)

Item	1988	1989	1990
All products	9,643	8,921	7,708
Silicon metal	1,364	2,002	1,711

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

CONSIDERATION OF ALLEGED THREAT OF MATERIAL INJURY

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

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the merchandise, the Commission shall consider, among other relevant economic factors*[61]—
>
> *(I) If a subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the subsidy is an export subsidy inconsistent with the Agreement),*
>
> *(II) any increase in production capacity or existing unused capacity in the exporting country likely to result in a significant increase in imports of the merchandise to the United States,*
>
> *(III) any rapid increase in United States market penetration and the likelihood that the penetration will increase to an injurious level,*

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

(IV) the probability that imports of the merchandise will enter the United States at prices that will have a depressing or suppressing effect on domestic prices of the merchandise,

(V) any substantial increase in inventories of the merchandise in the United States,

(VI) the presence of underutilized capacity for producing the merchandise in the exporting country,

(VII) any other demonstrable adverse trends that indicate the probability that the importation (or sale for importation) of the merchandise (whether or not it is actually being imported at the time) will be the cause of actual injury,

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

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

(X) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the like product.[62]

---

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

Subsidies (item (I)) and agricultural products (item (IX)) are not issues in these investigations; information on the volume, U.S. market penetration, and pricing of imports of the subject merchandise (items (III) and (IV) above) is presented in the section entitled "Consideration of the Causal Relationship Between Imports of the Subject Merchandise and the Alleged Material Injury;" and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts (item (X)) is presented in the section entitled "Consideration of Alleged Material Injury to an Industry in the United States." Following is available information on U.S. inventories of the subject products (item (V)); foreign producers' operations, including the potential for "product-shifting" (items (II), (VI), and (VIII) above); any other threat indicators, if applicable (item (VII) above); and any dumping in third-country markets.

U.S. Importers' Inventories

U.S. importers' end-of-period inventory data are presented in table 19 and figure 13. According to responses to Commission questionnaires representing approximately 68 percent of subject imports in 1990, aggregate U.S. importers' end-of-period inventories of silicon metal from Argentina, Brazil, and China increased 2.4 percent from 1988 to 1989 and 27.6 percent from 1989 to 1990.

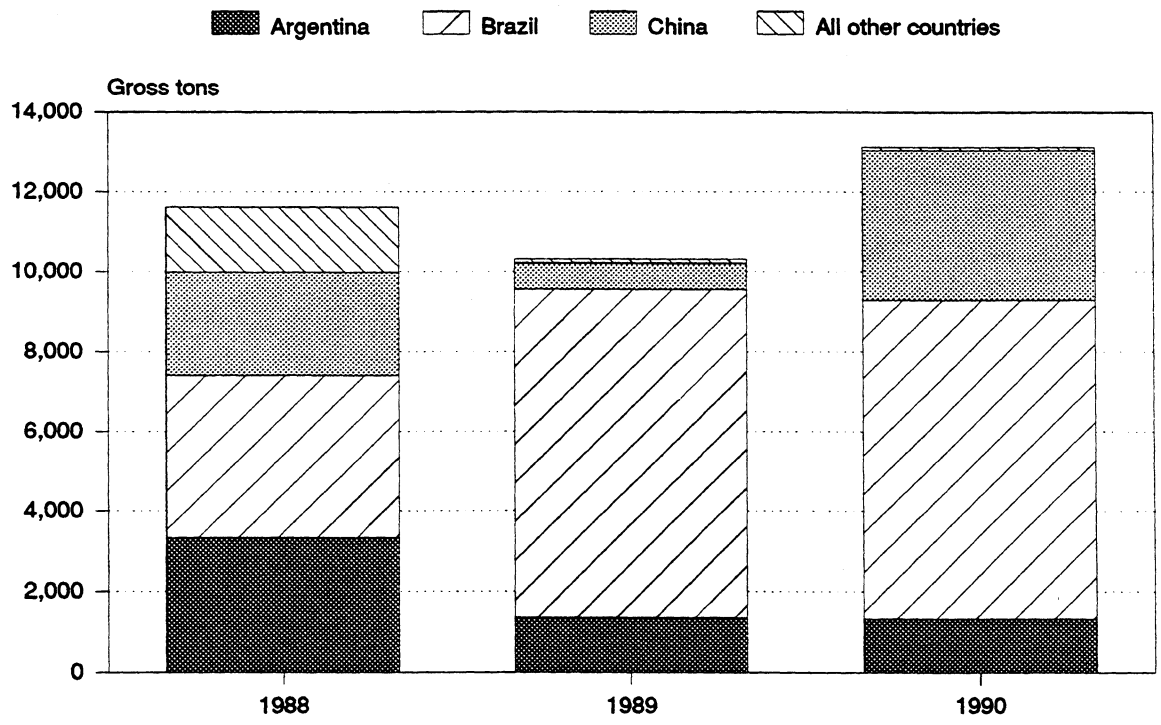
Table 19
Silicon metal: End-of-period inventories of U.S. importers, by sources, 1988-90

(In gross tons)

Item	*1988*	*1989*	*1990*
Argentina	3,323	1,362	1,340
Brazil	4,092	8,194	7,947
China	2,569	666	3,753
Subtotal	9,984	10,222	13,040
Other sources	1,635	109	79
Total	11,619	10,331	13,119

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

Figure 13
Silicon metal: End-of-period inventories of U.S. importers, 1988-90



Source: Table 19.

Ability of Foreign Producers to Generate Exports and Availability of Export Markets Other Than the United States[63]

A list of silicon metal producers in Argentina, Brazil, and China is presented in table 20. Table 21 (based on currently available data) presents foreign producers' production capacity, production, capacity utilization, home-market shipments, and exports, by subject country. Some of the data in this section are from the preliminary investigations. Any updated data on Argentina and Brazil will be presented in the final report on those investigations.

Argentina

There are two producers of silicon metal in Argentina: Electrometalurgica Andina S.A.I.C. (Andina), and Silarsa, S.A. Andina is a diversified producer, with silicon metal accounting for *** percent of sales in its most recent fiscal year. Andina has *** furnaces that can produce silicon metal.[64] [65] Silarsa began production of silicon metal in September 1990, with the placing on line of its furnace #1.[66] Silarsa has a second furnace under consideration, but no timetable has been set for construction. The earliest date that this furnace could come into production is late 1992, but more likely not until 1993.[67]

---

[63] Information on the Chinese industry is based on data collected from various trade publications. Because no Chinese producers are represented by counsel, no letter requesting information on foreign producers was sent. Letters requesting foreign producer information were, however, sent to counsel representing Brazilian producers and Silarsa of Argentina. A letter was also sent directly to Andina Metallurgica of Argentina. Responses to these questionnaires are forthcoming.

The Commission also sent to U.S. embassies in each country letters requesting information on the countries' silicon metal industries. To date, the U.S. Embassy in Brazil is the only embassy to respond (Apr. 29, 1991). The Embassy stated that it had contacted several of the Brazilian producers and was told by several of the firms that they had already submitted responses directly to counsel, Royal Daniel, III, in Washington, DC.

[64] ***.

[65] According to counsel representing Andina in the preliminary investigations, Andina's projected production capacity was *** gross tons in 1990 and *** in 1991. Production was estimated to be *** gross tons in 1990 and 1991. Exports to the United States were projected to equal *** percent of total shipments in 1990 and *** percent in 1991.

[66] According to counsel representing Silarsa in the preliminary investigations, Silarsa's projected production capacity and production was *** gross tons in 1990 and *** in 1991. Exports to the United States were projected to equal *** percent of total shipments in 1990 and *** percent in 1991.

[67] Prehearing brief of Silarsa, S.A., and Axel Johnson Ore and Metals, Inc., pp. 1 and 3.

Table 20
Silicon metal: Producers in Argentina, Brazil, and China, company headquarters, and estimated annual capacity, 1990

Country/producer or trading company	*Company headquarters*	*Estimated current annual capacity (Gross tons)*
Argentine producers:		
Electrometalurgica Andina SAIC	Buenos Aires	***
Silarsa, SA	Buenos Aires	***
		***
Brazilian producers:		
Camargo Corrêa Metais S/A	Sao Paulo, SP	***
Companhia Brasileira de Carbureto de Cálcio (CBCC)	Rio de Janeiro, RJ	***
Eletroila S/A	Belo Horizonte, MG	***
Ligas de Alumínio S/A (Liasa)	Belo Horizonte, MG	***
Cia Ferroligas Minas Gerais (Minas Ligas)	Contagem, MG	***
RIMA Electrometalurgica S/A	Belo Horizonte, MG	***
		154,500
China:[2]		
Trading Companies—		
China National Metals & Minerals Import & Export Corp.	Beijing	
China National Non-ferrous Metals Imports & Export Corp. (CNIEC)	Beijing	
Cometals China Inc.	Beijing	
Elders Resources Marketing Americas Inc.	Beijing	
Producers (31)	16 provinces/regions	110,000[1]

[1] As of December 1989.
[2] As of December 1990.

Source: Data submitted in response to questionnaires of the U.S. International Trade Commission, ABRAFE's prehearing brief (app. F), and the U.S. Bureau of Mines.

Table 21
Silicon metal: Foreign production capacity, production, capacity utilization, home-market shipments, and exports, by subject country, 1988-90, and projections for 1991 and 1992

(In gross tons, unless otherwise noted)

Item	1988	1989	1990	Projections 1991	Projections 1992
Production capacity:					
Argentina[1]	***	***	***	***	***
Brazil	***	***	***	***	***
China	(2)	(2)	(2)	(2)	(2)
Total	***	***	***	***	***
Production:					
Argentina[1]	***	***	***	***	***
Brazil	***	***	***	***	***
China	(2)	(2)	(2)	(2)	(2)
Total	***	***	***	***	***
Capacity utilization (in percent):					
Argentina[1]	***	***	***	***	***
Brazil	***	***	***	***	***
China	(2)	(2)	(2)	(2)	(2)
Weighted-average	***	***	***	***	***
Home-market shipments:					
Argentina[1]	***	***	***	***	***
Brazil	***	***	***	***	***
China	(2)	(2)	(2)	(2)	(2)
Total	***	***	***	***	***
Exports to the United States:					
Argentina[1]	***	***	***	***	***
Brazil	***	***	***	***	***
China	(2)	(2)	(2)	(2)	(2)
Total	***	***	***	***	***
Exports to all other countries:					
Argentina[1]	***	***	***	***	***
Brazil	***	***	***	***	***
China	(2)	(2)	(2)	(2)	(2)
Total	***	***	***	***	***
Ratio of U.S. exports to total shipments (in percent):					
Argentina[1]	***	***	***	***	***
Brazil	***	***	***	***	***
China	(2)	(2)	(2)	(2)	(2)
Weighted-average	***	***	***	***	***

[1] ***.

[2] Data not available.

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

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

Brazil

Because of its natural endowments, Brazil has all of the necessary factors of production for silicon metal production: abundant supplies of quartz, charcoal, hydroelectric energy, and inexpensive labor. There are currently six producers of silicon metal in Brazil employing similar technologies as producers of silicon metal in the United States.[68] The one exception is CBCC, which uses a process employing the Søderberg electrode.[69]

The Brazilian silicon metal industry began production in 1976 and underwent a tremendous expansion in the 1980s.[70] From 1988 to 1990, Brazilian producers expanded their annual production capacity by approximately *** tons.[71] Currently, CCM has idle *** furnaces, Rima *** furnaces, and CBCC *** furnaces.[72]

Home-market shipments, which equaled *** percent of total shipments in 1988 and *** in 1989, fell to *** percent in 1990. Exports, which equaled *** percent of total shipments in 1988 and *** in 1989, rose to *** percent in 1990. The EC received *** percent of Brazil's total shipments in 1990, the United States *** percent, and Japan *** percent.[73] [74]

The EC has instituted an antidumping investigation concerning imports of silicon metal from Brazil. A preliminary determination is not expected before June 1991.

---

[68] ***.

[69] This process is claimed by CBCC to give it a considerable cost advantage in the production of secondary-grade silicon metal, according to the *Statement of Joao Samuel Valle*, Commercial Manager of CBCC, presented at the public hearing for these investigations. ***.

[70] ***. ABRAFE prehearing brief, pp. 32-34. No additions to capacity have been executed since early 1990.

[71] ABRAFE submission of May 16, 1991.

[72] ABRAFE prehearing brief, p. 33.

[73] Japan ceased production of silicon metal in 1974. In the late 1970s, West Germany and Portugal also exited the silicon metal market. Ibid., pp. 32-34.

[74] According to ABRAFE's prehearing brief (p. 36), the majority of Brazilian capacity is designed for chemical grade silicon metal production. However, because of the stricter specifications required by the U.S. chemical manufacturers (particularly titanium levels), this product cannot be sold in the United States.

China

The Commission staff contacted several sources in order to find complete data on the Chinese silicon metal industry. Data have been difficult to gather because no National Governmental agency compiles statistics on the Chinese silicon metal industry. Production and recordkeeping are typically performed at the Provincial level, whereas export data are typically recorded on a port-by-port basis. Therefore, data on the Chinese silicon metal industry are limited.[75]

The Commerce Department found that there were at least 17 producers of silicon metal in China.[76] [77] The petition alleges that capacity in China more than trebled from 35,400 tons in 1985 to 132,300 tons in 1989 and that most of the additional capacity was intended for export.[78] Commercial Metals Co., an importer, disputed these figures in the preliminary investigations, arguing that Chinese capacity is difficult to determine but is unlikely to exceed 50,000 tons per year, of which less than 20,000 tons would be of a quality and grade acceptable for consumption in the United States.[79] This claim has since been refuted by current import statistics that show that imports from China exceeded 26,000 tons in 1990. According to the U.S. Bureau of Mines, China had a production capacity of 110,000 tons of silicon metal in 1989.

On July 27, 1990, the EC imposed a final antidumping duty of 38.73 percent on imports of silicon metal from China. Petitioners argue that this duty will divert substantial quantities of silicon metal from the EC to the United States.[80]

---

[75] None of the Chinese producers were represented by counsel during the course of these investigations.

[76] None of these producers submitted a timely response to Commerce's questionnaire. See Commerce's final determination in app. C.

[77] According to the *1990 Ferro Alloy Manual* (TEX Reporting Co., Ltd.), there are 31 silicon metal producers in 16 provinces/regions.

[78] Petition, pp. 24, 78, and 79.

[79] Postconference statement of Commercial Metals Co., p. 1.

[80] Petition, p. 82 and exhibits 29 and 30.

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

U.S. Imports

Data on U.S. imports have been compiled from official statistics of the Department of Commerce, unless otherwise noted. Table 22 and figure 14 present U.S. imports for consumption, by sources, for the period under investigation. Imports from Hong Kong and Taiwan have been included in the import data for China.[81]

Imports of silicon metal from the subject countries increased 8.0 percent from 1988 to 1989 and 74.6 percent from 1989 to 1990. The value of subject imports decreased 1.7 percent from 1988 to 1989 but increased 48.2 percent from 1989 to 1990. The average unit value (dollars per gross ton) of subject imports decreased 9.0 percent from 1988 to 1989 and decreased a further 15.1 percent from 1989 to 1990. Appendix F presents maps detailing the distribution of U.S. imports, by sources, States, and customs districts in 1989 and 1990.

Argentina

Imports of silicon metal from Argentina decreased 22.4 percent from 1988 to 1989 and decreased a further 68.2 percent from 1989 to 1990. The value of imports from Argentina decreased 24.6 percent from 1988 to 1989 and decreased a further 71.5 percent from 1989 to 1990. The average unit value of imports decreased 2.8 percent from 1988 to 1989 and decreased a further 10.4 percent from 1989 to 1990.

Brazil

Imports of silicon metal from Brazil increased 29.1 percent from 1988 to 1989 and increased 92.5 percent from 1989 to 1990. The value of imports from Brazil increased 9.7 percent from 1988 to 1989 and increased a further 66.9 percent from 1989 to 1990. The average unit value of imports decreased 15.1 percent from 1988 to 1989 and decreased a further 13.2 percent from 1989 to 1990.

---

[81] Petitioners allege that some of the silicon metal produced in China is transshipped through Hong Kong and Taiwan. See petition, p. 59, and petitioner's brief filed in response to "request for additional evidence" dated Sept. 19, 1990. Petitioners cite a number of sources indicating that neither Hong Kong nor Taiwan has any silicon metal production capacity. This allegation, which has not been challenged by other parties, has been confirmed by several U.S. importers through their responses to related questions in the Commission's importers' questionnaire.

Table 22
Silicon metal: U.S. imports for consumption, by sources, 1988-90

Source	1988	1989	1990
	Quantity (gross tons)		
Argentina	9,652	7,488	2,380
Brazil	12,911	16,670	32,083
China	9,682	10,675	26,360
Subtotal	32,245	34,833	60,823
Other sources	28,116	13,795	11,525
Total	60,361	48,628	72,349
	Value[1] (1,000 dollars)		
Argentina	10,274	7,747	2,206
Brazil	16,876	18,511	30,894
China	11,723	11,964	23,539
Subtotal	38,873	38,222	56,639
Other sources	34,946	11,673	13,426
Total	73,820	49,895	70,064
	Unit value (per gross ton)		
Argentina	$1,064	$1,034	$927
Brazil	1,307	1,110	963
China	1,211	1,121	893
Average	1,206	1,097	931
Other sources	1,243	846	1,165
Average	1,223	1,026	968

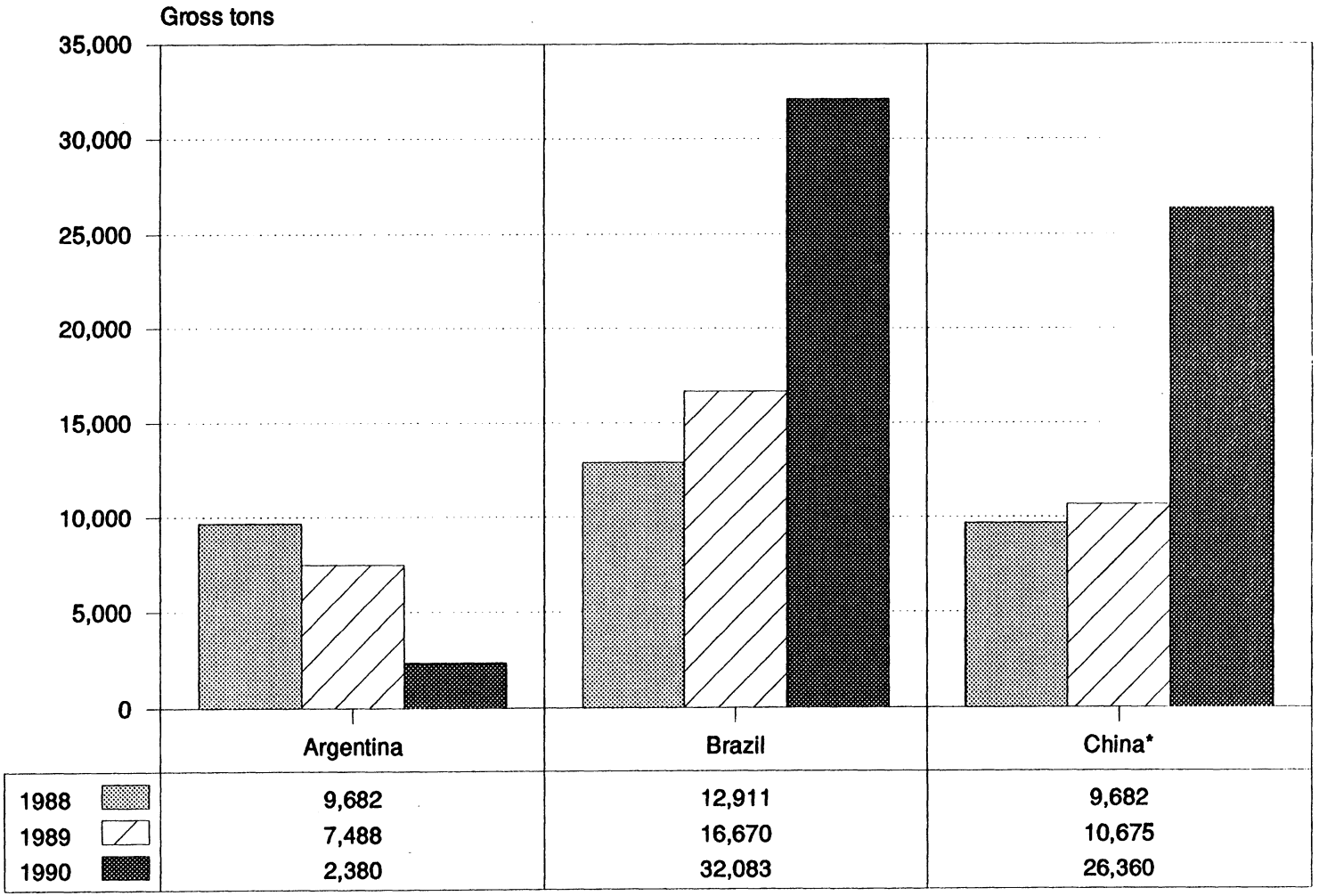
[1] Landed duty paid.

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

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

Figure 14

Silicon metal: U.S. imports for consumption, by sources, 1988-90



	Argentina	Brazil	China*
1988	9,682	12,911	9,682
1989	7,488	16,670	10,675
1990	2,380	32,083	26,360

Source: Table 22.

* Includes imports from Hong Kong and Taiwan.

China

Imports of silicon metal from China increased 10.3 percent from 1988 to 1989 and increased 146.9 percent from 1989 to 1990. The value of imports from China increased 2.1 percent from 1988 to 1989 and increased 96.8 percent from 1989 to 1990. The average unit value of imports decreased 7.4 percent from 1988 to 1989 and decreased a further 20.3 percent from 1989 to 1990.

All Other Countries

Imports from all other countries decreased 50.9 percent from 1988 to 1989 and decreased a further 16.5 percent from 1989 to 1990. The value of imports from all other countries decreased 66.6 percent from 1988 to 1989 and then increased 15.0 percent from 1989 to 1990. The average unit value of these imports decreased 31.9 percent from 1988 to 1989, but increased 37.7 percent from 1989 to 1990.

U.S. Market Penetration By Imports

Market penetration ratios of imports from the subject countries as a share of the quantity and value of U.S. consumption are presented in table 23 and figure 15. Figure 16 presents the market penetration ratios, by sources, for the years 1988 through 1990.

Subject Imports

The U.S. market share of the quantity of imports of silicon metal from the subject countries increased from 15.1 percent in 1988 to 17.8 percent in 1989 and 28.0 percent in 1990. The U.S. market share of the value of imports of silicon metal from the subject countries increased from 14.5 percent in 1988 to 16.2 percent in 1989 and 23.4 percent in 1990.

Argentina

The U.S. market share of the quantity of imports of silicon metal from Argentina decreased from 4.5 percent in 1988 to 3.8 percent in 1989 and 1.1 percent in 1990. The U.S. market share of the value of imports of silicon metal from Argentina decreased from 3.8 percent in 1988 to 3.3 percent in 1989 and 0.9 percent in 1990.

Table 23
Silicon metal: Apparent U.S. consumption, U.S. imports, and ratios of imports to consumption, 1988-90

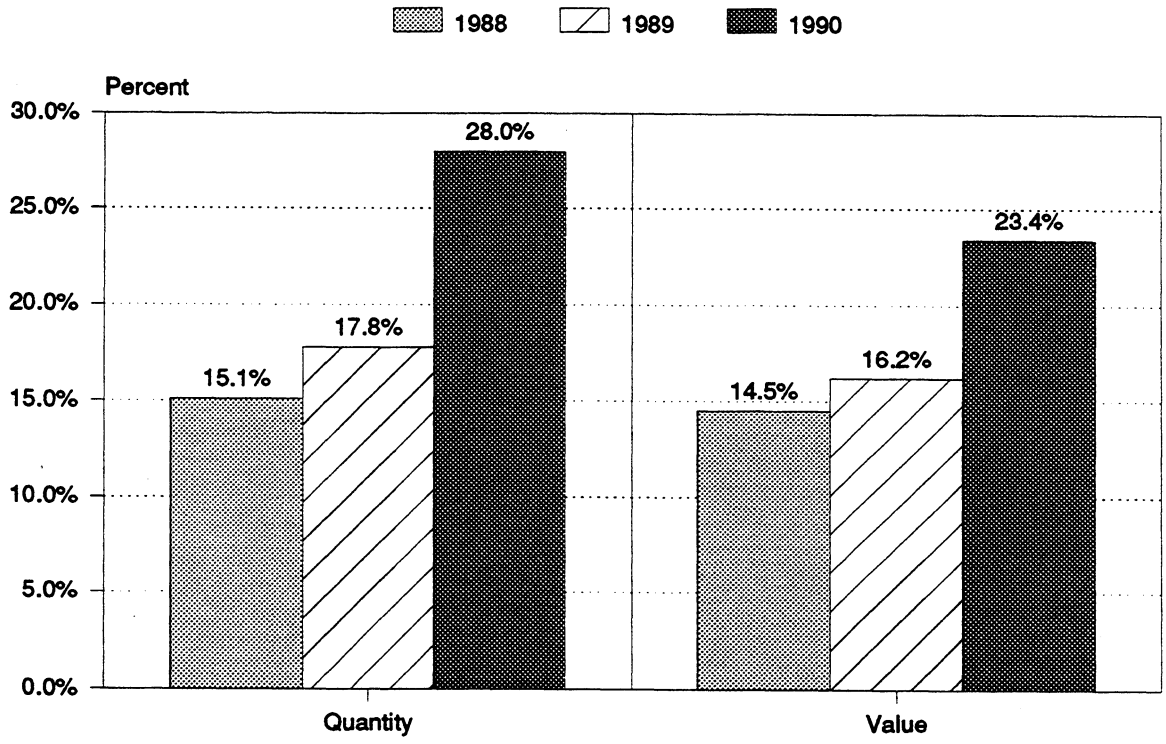
Item	1988	1989	1990
	Quantity (gross tons)		
Producers' U.S. shipments	153,222	147,538	144,729
U.S. imports from—			
Argentina	9,652	7,488	2,380
Brazil	12,911	16,670	32,083
China	9,682	10,675	26,360
Subtotal	32,245	34,833	60,823
Other sources	28,116	13,795	11,525
Total	60,361	48,628	72,349
Apparent consumption	213,583	196,166	217,078
	Value (1,000 dollars)		
Producers' U.S. shipments	194,751	185,541	171,964
U.S. imports from—			
Argentina	10,274	7,747	2,206
Brazil	16,876	18,511	30,894
China	11,723	11,964	23,539
Subtotal	38,873	38,222	56,639
Other sources	34,946	11,673	13,426
Total	73,820	49,895	70,064
Apparent consumption	268,571	235,436	242,028
	Share of the quantity of U.S. consumption (percent)		
Producers' U.S. shipments	71.7	75.2	66.7
U.S. imports from—			
Argentina	4.5	3.8	1.1
Brazil	6.0	8.5	14.8
China	4.5	5.4	12.1
Subtotal	15.1	17.8	28.0
Other sources	13.2	7.0	5.3
Total	28.3	24.8	33.3
	Share of the value of U.S. consumption (percent)		
Producers' U.S. shipments	72.5	78.8	71.1
U.S. imports from—			
Argentina	3.8	3.3	.9
Brazil	6.3	7.9	12.8
China	4.4	5.1	9.7
Subtotal	14.5	16.2	23.4
Other sources	13.0	5.0	5.5
Total	27.5	21.2	28.9

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

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

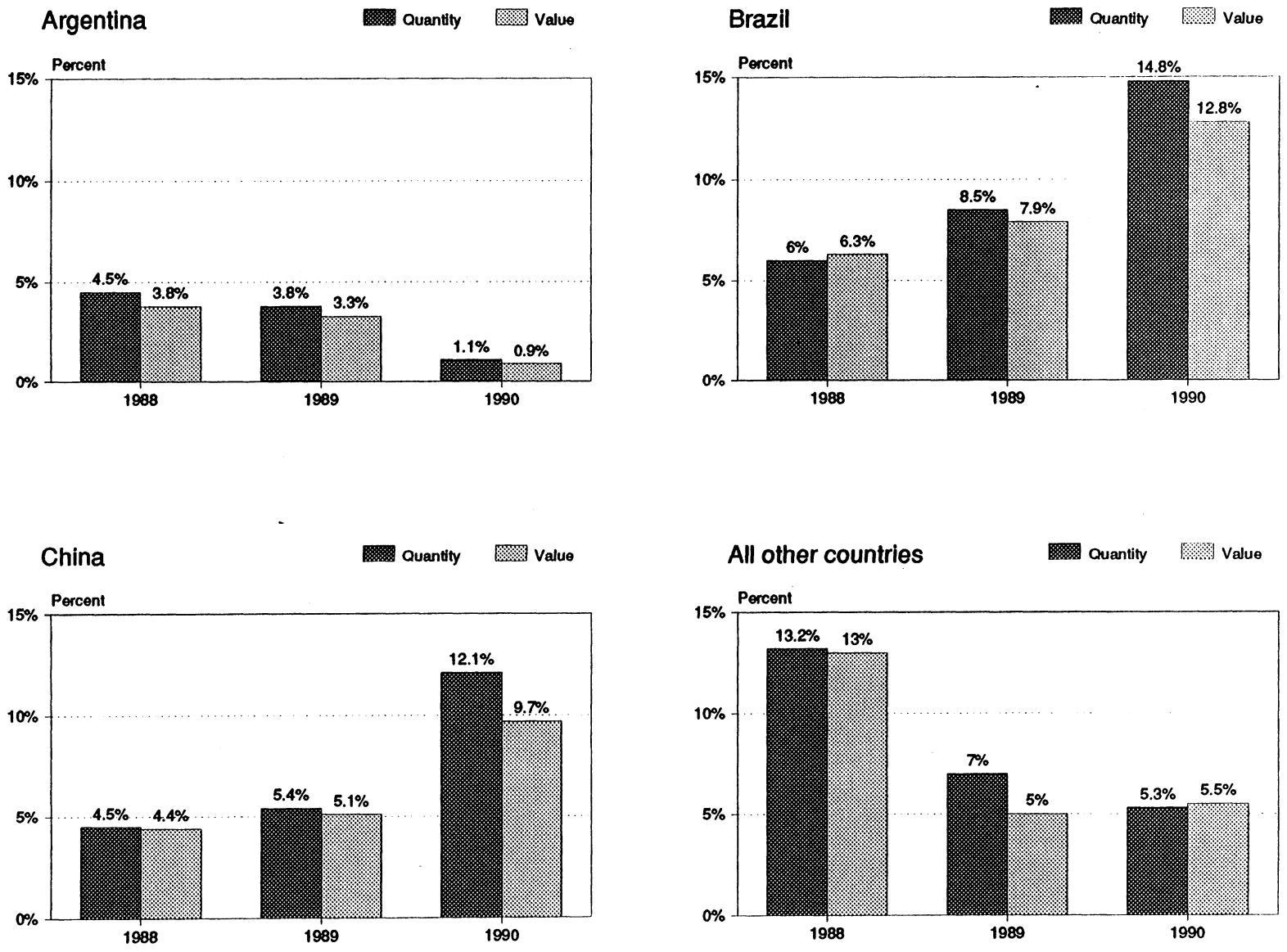
Figure 15

Silicon metal: Market penetration ratios of subject country imports based on quantity and value, 1988-90



Source: Table 23.

Figure 16
Silicon metal: Market penetration ratios based on quantity and value of imports, by sources, 1988-90



Source: Table 23

Brazil

The U.S. market share of the quantity of imports of silicon metal from Brazil increased from 6.0 percent in 1988 to 8.5 percent in 1989 and 14.8 percent in 1990. The U.S. market share of the value of imports of silicon metal from Brazil increased from 6.3 percent in 1988 to 7.9 percent in 1989 and 12.8 percent in 1990.

China

The U.S. market share of the quantity of imports of silicon metal from China increased from 4.5 percent in 1988 to 5.4 percent in 1989 and 12.1 percent in 1990. The U.S. market share of the value of imports of silicon metal from China increased from 4.4 percent in 1988 to 5.1 percent in 1989 and 9.7 percent in 1990.

All Other Countries

The U.S. market share of the quantity of imports of silicon metal from all other countries decreased from 13.2 percent in 1988 to 7.0 percent in 1989 and 5.3 percent in 1990. The U.S. market share of the value of imports of silicon metal from all other countries decreased from 13.0 percent in 1988 to 5.0 percent in 1989, but increased to 5.5 percent in 1990.

Prices

Silicon metal is sold to three types of customers—primary-aluminum producers, secondary-aluminum producers, and chemical producers.[82] The demand for metallurgical grade silicon metal tends to follow consumption trends in markets of products that use large amounts of aluminum, such as the automobile market. As a result, the demand for metallurgical grade silicon metal tends to be cyclical.[83] In the chemical market, there are many uses for silicon metal; therefore, it is more difficult to relate trends in the overall demand for chemical grade silicon metal to trends in the demand for any one product or group of products.[84] Demand in the chemical market has generally increased during the past few years.[85] The overall demand for silicon metal was high during 1988, declined in 1989, but then increased in 1990.

Silicon metal is produced to different specifications, which vary from customer to customer. Although the industry commonly refers to ranges of such specifications as grades (i.e., metallurgical and chemical grade), there is actually no standard classification system. Generally, secondary-aluminum producers have the least stringent requirements; thus, they can purchase silicon metal that contains more impurities than material purchased by primary-aluminum and chemical companies.[86] Primary-aluminum and chemical producers tend to have more stringent product specifications, require higher standards, and thus, often pay higher prices.[87]

Producers and importers disagree on the issue of product-quality comparability. Whereas five of the seven responding producers indicated that the quality of domestic and imported silicon metal is generally comparable,[88] the

---

[82] Secondary-aluminum producers manufacture aluminum from scrap, whereas primary-aluminum companies make aluminum from ore. Chemical companies use silicon metal in the production of other products.

[83] According to data from the Bureau of Mines, apparent consumption of aluminum fell 7.7 percent in 1989 (*Bauxite, Alumina, and Aluminum, 1989*).

[84] Petitioners' postconference submission, p. 20.

[85] Petitioners' posthearing brief, p. 7, and transcript of the hearing, p. 74.

[86] All types of silicon metal customers can use a product with high levels of silicon and low levels of impurities; however, they cannot use silicon metal that has a lower silicon content or higher impurities than their specific requirements. Transcript of the hearing, p. 51.

[87] U.S. producers argue that the prices in the secondary-aluminum producers' segment of the market have a "ripple effect" into the other two segments. U.S. producers assert that chemical and primary-aluminum companies are aware of the prices paid in the secondary-aluminum market and that those companies try to use the secondary-aluminum prices as a guideline in their negotiations with U.S. producers. Ibid., p. 59.

[88] Two U.S. producers, ***, reported that the level of calcium and aluminum impurities is lower in the domestic product than in the imported product.

majority (6 of 10) of importers stated that there are quality differences. Nevertheless, there is general agreement that the quality of the Argentine and Brazilian products is close to that of the domestic product in the secondary-aluminum market. Most of the alleged discrepancies in quality relate to the Chinese product.[89] The quality of the Chinese product reportedly has been lower than that of the domestic product.

Problems cited with the Chinese product include a lower silicon content (i.e., below 98 percent) and higher levels of impurities such as iron and calcium. One major concern of purchasers with respect to the Chinese product is that of consistency. Several purchasers have stated that the quality of some silicon metal manufactured by Chinese firms is acceptable; however, other suppliers have provided very poor quality. Some shipments of Chinese material reportedly never arrived, and others contained rocks, slag, excessive fines, and ripped bags.[90] Often, a purchaser cannot be sure of the exact Chinese supplier, and, therefore, will not buy the Chinese product because it does not wish to risk receiving poor quality material. Available data indicate that Chinese silicon metal was not sold to chemical producers or primary-aluminum companies during the period of investigation. These producers generally have stricter standards, which may be the reason they did not purchase Chinese silicon metal.[91]

Although the quality of silicon metal imported from Argentina and Brazil tends to be comparable to that of the U.S. product in the secondary-aluminum market, only small quantities have been sold to primary-aluminum or chemical producers.[92] ***. One reason for the difficulty in selling imported material to most chemical producers is that the imports have trouble meeting the higher specifications.[93]

---

[89] Joseph S. Viland, president of Wabash Alloys, the largest U.S. purchaser in the secondary-aluminum market, stated that he generally pays about 2 cents per pound less for Brazilian material and 5 cents per pound less for Chinese material in comparison with U.S. product because U.S. producers provide better quality and service. He explained that quality is more than chemistry, that is, imported material contains more fines (small particles) as a result of more extensive handling, and fines do not alloy as well as larger chunks. Transcript of the hearing, pp. 89-90.

[90] Posthearing brief of Midland Export, Ltd., pp. 7-8.

[91] Dow Corning stated that it tested some Chinese silicon metal a while ago but could not use it at all. Dow stated that the Chinese material was not even close to being the right quality. Transcript of the hearing, p. 165.

[92] Some very small quantities of Brazilian silicon metal were sold to primary-aluminum manufacturers during the period. ***.

[93] For example, CCM, a Brazilian producer, stated that its product contains too much titanium to be acceptable to the U.S. chemical producers. Transcript of the conference, p. 101).

Silicon metal can be sold in either bulk or packaged form. It is shipped in various types of containers, such as wooden pallet boxes, drums, and supersacks.[94] Some purchasers request a particular type of container;[95] however, packaging is not generally considered an important factor in a purchaser's decision. Although many producers and importers reported that the cost of the container is not included in the price of the silicon metal, some stated that there is often no extra charge for packaging because of competitive pressures. The costs of wooden pallet boxes range from approximately $30 to $50. Supersacks generally cost between $20 and $35.

Silicon metal is generally shipped by truck or rail. U.S. producers reported using both of these modes of transportation, whereas importers reported using trucks for the majority of their shipments. Transportation costs are usually paid by the supplier and generally range between $0.01 and $0.02 per pound (prices are generally $0.56-$0.70 per pound). Leadtimes for delivery vary from supplier to supplier, with U.S. producers averaging 1 to 14 days and importers averaging anywhere from 7 to 60 days.

Before silicon metal is purchased by chemical producers it must be qualified for use.[96] This procedure can be lengthy, lasting anywhere from 3 to 12 months. First, chemical companies make a test run of the silicon metal to determine how it behaves in the reactors and in the company's production process. If the silicon metal works properly, then a larger sample is tested. After successful completion of all trial runs, the supplier is considered a qualified source. Because of the time required to qualify suppliers, switching sources may be difficult unless the potential new supplier is already qualified.

Silicon metal is sold both on a spot and contract basis. Although there are some short-term contracts in the secondary-aluminum market segment (usually 1- to 3-month agreements), the majority of sales in this market are on a spot basis. Most sales to primary-aluminum producers are made without a formal contract; however, some formal agreements are made. These agreements, usually 6 months in length, generally set the price, quantity, and delivery terms. Although prices are negotiated, formal bidding procedures are not typical.

Sales to chemical producers are nearly always on a contract basis. Agreements are usually reached after lengthy negotiations between the purchaser and supplier. The time frames of the contracts are longer, ranging anywhere from

---

[94] Supersacks are large bags often lined with plastic.

[95] For example, one producer reported that chemical customers request finely ground silicon. This material is shipped to these customers in drums and lined supersacks.

[96] Most primary-aluminum manufacturers also have a qualification process; however, it is shorter and less involved. Some secondary-aluminum producers have qualification processes; others do not.

6 months to several years.[97] Although the price of the silicon metal is usually set in advance, it can change during the course of the contract. Some contracts contain "meet or release" clauses that affect the price, and others contain stipulations for yearly price reviews.[98]

Some U.S. producers reported having price lists; however, they also reported that they often cannot adhere to these list prices due to competitive pressures. None of the importers reported that they publish price lists. Prices for silicon metal are published in the magazine *Metals Week* and these prices are sometimes used as a guide in price negotiations. Four of seven producers stated that their firms' prices of silicon metal are related to those reported in *Metals Week*. In general, producers reported that *Metals Week* prices serve as an indicator of the strength of the market. Figure 17 shows trends of *Metals Week* prices for imported silicon metal and U.S. producer prices for secondary-aluminum and primary-aluminum grade silicon metal.[99] The trends in the three price series are somewhat similar, with the *Metals Week* import prices generally lower than the U.S. producer prices.

Most U.S. producers reported that prices of silicon metal to chemical producers and/or primary-aluminum producers are affected by prices of silicon metal to secondary-aluminum producers. These producers claim that although chemical producers realize that their grades require a premium for lower levels of impurities, they are aware of prices in the secondary-aluminum market and expect their prices to be adjusted accordingly. Two producers reported that as prices in the secondary- and primary-aluminum markets decline, silicon suppliers try to increase their sales in the higher-priced chemical market. This added competition also tends to depress the prices of chemical grade silicon metal.

Two of three importers reported that there was no relationship between the prices of secondary-aluminum grade silicon metal and those of chemical and primary-aluminum grade; one importer, ***, reported that since secondary-aluminum grade silicon metal cannot be used by either primary-aluminum or chemical producers, there is no relationship between the prices. However, a third importer, ***, agreed with the majority of producers on this issue. *** stated that because the secondary-aluminum industry was the largest market for silicon metal, the supply-and-demand situation in the secondary-aluminum market would affect the overall supply and demand conditions and, thus, the price of silicon metal in the primary-aluminum and chemical markets.

---

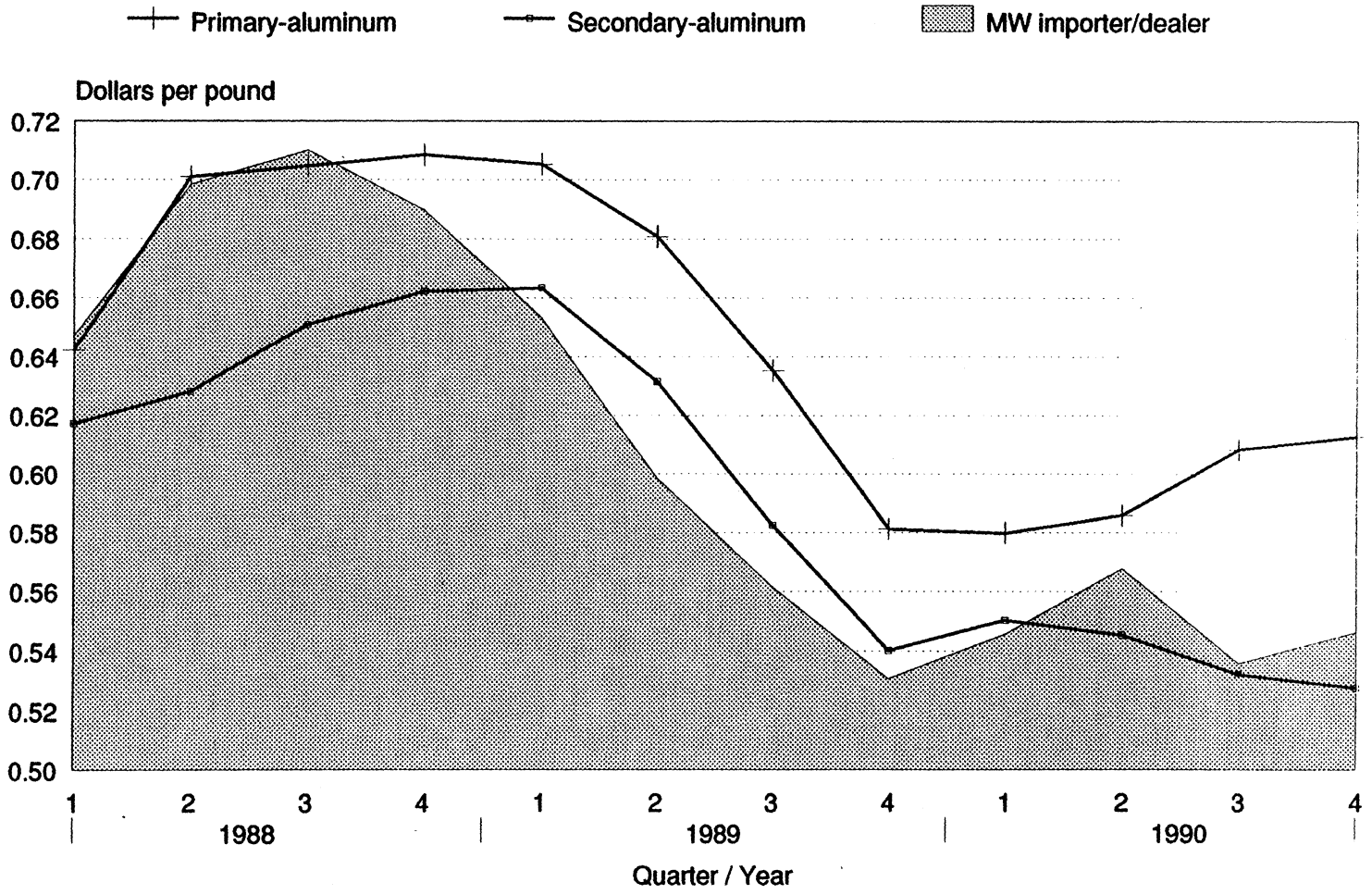
[97] The majority of contracts in the chemical market range from 6 to 15 months. ***.

[98] ***.

[99] *Metals Week* prices are landed, duty-paid (f.o.b. Midwest or East Coast).

Figure 17

Silicon metal: U.S. producers' prices for primary-aluminum and secondary-aluminum grade silicon metal, and Metals Week import prices, by quarters, January 1988-December 1990



Source: Metals Week and data compiled from questionnaires of the U.S. International Trade Commission.

Spot Price Trends

The Commission requested price and quantity information from U.S. producers and importers for their spot sales of silicon metal to the three purchaser groups during the period January 1988-December 1990.[100] Product specifications for which pricing data were requested differ for each purchaser group. The product definitions are as follows:

> *For sales to secondary-aluminum producers.*—Silicon metal that contains a minimum of 98.0 percent silicon, a maximum of 1.00 percent iron, a maximum of 0.40 percent calcium, and no restriction on the aluminum content.
>
> *For sales to primary-aluminum producers.*—Silicon metal that contains a minimum of 98.5 percent silicon, a maximum of 1.00 percent iron, a maximum of 0.07 percent calcium, and no restriction on the aluminum content.
>
> *For sales to chemical producers.*—Silicon metal that contains a minimum of 98.5 percent silicon, a maximum of 0.65 percent iron, a maximum of 0.20 percent calcium, and a maximum of 0.35 percent aluminum.

These specifications represent the specific requirements of each group of consumers.[101] Usable spot pricing data were received from six producers and seven importers.[102] The domestic products for which pricing data were reported accounted for approximately 75 percent of U.S. producers' domestic shipments during 1990. The imported products accounted for approximately 68, 58, and 31 percent of U.S. imports from Argentina, Brazil, and China, respectively, during 1990.

---

[100] Prices in the silicon metal market are quoted on the basis of dollars per pound of contained silicon.

[101] Because there is no uniformly accepted classification system, the actual specifications of the products reported by producers and importers may vary slightly; however, they fall within the defined ranges of contained silicon and impurities.

[102] ***.

SALES TO SECONDARY-ALUMINUM PRODUCERS

In general, prices reported by U.S. producers and importers followed similar trends, increasing in 1988 and early 1989 before falling during late 1989. However, whereas domestic prices recovered in 1990, import prices generally continued to decline.

Weighted-average delivered prices for U.S.-produced silicon metal sold to secondary-aluminum producers fluctuated during the period of investigation (table 24 and fig. 18).[103] Prices for the domestic product increased steadily from January-March 1988 to January-March 1989, rising 8.1 percent during that period. Prices fell 20.9 percent during 1989 before rising about 15.1 percent from the fourth quarter of 1989 to the fourth quarter of 1990. Delivered prices for domestic silicon metal sold to secondary-aluminum producers were slightly lower in October-December 1990 than they were in January-March 1988.

Prices for the imported product also fluctuated but showed an overall decline. Weighted-average delivered prices for silicon metal imported from Argentina and sold to secondary-aluminum producers rose *** percent from January-March 1988 to October-December 1988. Prices fluctuated downward throughout the remainder of the period of investigation. Prices for imports from Argentina were *** percent lower in October-December 1990 than they were in January-March 1988.

Delivered prices for silicon metal imported from Brazil and sold to secondary-aluminum producers increased 8.1 percent from January-March 1988 through the same quarter of 1989. Prices then declined steadily from January-March 1989 to October-December 1989, falling 17.6 percent during that time. Prices then fluctuated in 1990 and were 17.5 percent lower in October-December 1990 than they were in January-March 1988.

Prices for silicon metal imported from China and sold in the secondary-aluminum market increased *** percent during 1988 and then declined *** percent from October-December 1988 to July-September 1990 before increasing *** percent in the final quarter of 1990. Prices for the Chinese product were *** percent lower in the fourth quarter of 1990 than they were in the first quarter of 1988.

---

[103] Delivered prices are analyzed in this report because all producers and importers reported that the transportation costs are paid by the supplier.

Table 24
Silicon metal: Weighted-average delivered prices for U.S.-produced silicon metal and silicon metal imported from Argentina, Brazil, and China for sales to secondary-aluminum producers,[1] by quarters, January 1988-December 1990

(Per pound of contained silicon)

Period	United States	Argentina	Brazil	China
1988:				
January-March	$0.62	***	$0.63	***
April-June	.63	***	.66	***
July-September	.66	***	.66	***
October-December	.66	***	.68	***
1989:				
January-March	.67	***	.68	***
April-June	.64	***	.65	***
July-September	.58	***	.59	***
October-December	.53	***	.56	***
1990:				
January-March	.56	***	.55	***
April-June	.58	***	.54	***
July-September	.63	***	.55	***
October-December	.61	***	.52	***

[1] For product specifications see the beginning of section entitled "Spot price trends."

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

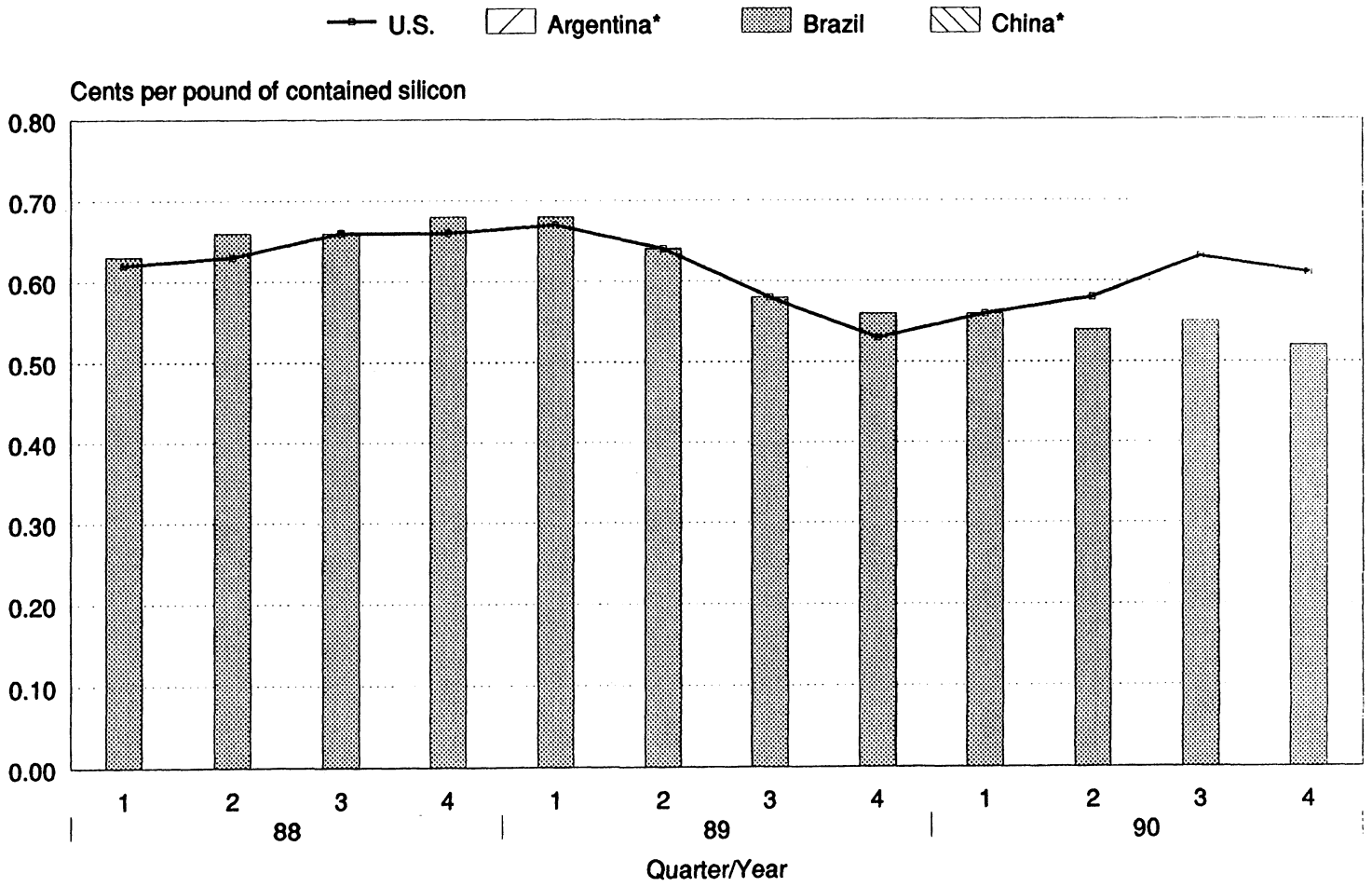
SALES TO PRIMARY-ALUMINUM PRODUCERS

Weighted-average delivered prices for sales to these customers were reported by U.S. producers and one importer of Brazilian silicon metal (table 25).[104] U.S. prices increased from January-March 1988 to the corresponding quarter of 1989, rising 14.1 percent during that time. Prices then declined 20.5 percent from the first quarter of 1989 to the first quarter of 1990 but then rose by 5.2 percent during 1990. Overall, prices were 4.7 percent lower at the end of the period of investigation than they were at the beginning.

[104] As stated earlier, many importers reported that they do not sell their products to primary-aluminum producers.

Figure 18

Silicon metal: Weighted-average delivered prices for U.S.-produced silicon metal and silicon metal imported from Argentina, Brazil, and China for sales to secondary-aluminum producers, by quarters, January 1988-December 1990



Source: Table 24.

* Data are confidential and, therefore, are not presented.

Prices for Brazilian silicon metal sold to primary-aluminum producers declined steadily from July-September 1988 to the same quarter of 1990, falling *** percent during that time. These prices then recovered slightly in the fourth quarter of 1990 but were still *** percent lower in October-December 1990 than they were in July-September 1988.

SALES TO CHEMICAL PRODUCERS[105]

Virtually all sales to this market segment are on a contract basis; however, some U.S. producers reported making some spot sales to chemical producers (table 25). Delivered prices for U.S.-produced silicon metal sold to chemical producers increased *** percent from January-March 1988 to October-December 1988. These prices decreased *** percent from the fourth quarter of 1988 to the third quarter of 1989 and then *** for the rest of the period. Overall, prices were slightly lower in October-December 1990 than they were in the first quarter of 1988.

Price Comparisons

Price comparisons between domestic and imported silicon metal are shown in table 26. In the secondary-aluminum market, prices for silicon metal imported from Argentina were below those for the U.S.-produced product in 7 of the 12 quarters for which comparisons were possible, with margins ranging from 0.3 to 15.6 percent. In the remaining 5 quarters, imports from Argentina were priced between 2.8 and 8.6 percent higher than the domestic product. Imports from Brazil sold in the secondary-aluminum market were priced below the domestic product in 4 of 12 quarters for which comparisons were possible; margins ranged from 0.7 to 15.2 percent. In the remaining 8 quarters the Brazilian product was priced higher than the domestic product, by 1.3 to 6.0 percent. The Chinese product was priced below the domestic product in 9 of 12 quarters, with margins ranging from 1.9 to 28.7 percent. In 3 quarters, the Chinese product was priced between 0.7 and 3.7 percent higher than the domestic product.

In the primary-aluminum market, the Brazilian product undersold the domestic product in 7 of the 10 quarters for which price comparisons were possible; margins ranged from 0.3 to 8.2 percent. In the remaining 3 quarters, the Brazilian product was higher priced than the domestic product, with margins ranging from 0.2 to 5.7 percent.

---

105 ***.

Table 25
Silicon metal: Weighted-average delivered prices for U.S.-produced silicon metal and silicon metal imported from Brazil for sales to primary-aluminum producers and chemical producers,[1] by quarters, January 1988-December 1990

(Per pound of contained silicon)

Period	Primary-aluminum market		United States chemical manufacturer market
	United States	Brazil	United States
1988:			
January-March	$0.64	***	***
April-June	.70	***	***
July-September	.70	***	***
October-December	.71	***	***
1989:			
January-March	.71	***	***
April-June	.68	***	***
July-September	.64	***	***
October-December	.58	***	***
1990:			
January-March	.58	***	***
April-June	.59	***	***
July-September	.61	***	***
October-December	.61	***	***

[1] For product specifications, see the beginning of section entitled "Spot price trends."

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

Contract Sales

The Commission requested total quantity and total value information from U.S. producers and importers on contracts or agreements made by each firm to supply silicon metal during the period January 1988-December 1990. Five U.S. producers provided usable information; no importers provided any usable data. Information submitted by these U.S. producers is discussed below, by purchaser.[106]

[106] Information presented in the tables consists of those contracts or agreements that were for time periods of at least 3 months. Information submitted concerning monthly sales is not included in this section.

Table 26
Silicon metal: Margins of under/(over)selling reported by U.S. producers and importers for sales of silicon metal made to secondary-aluminum producers and primary-aluminum producers,[1] by quarters, January 1988-December 1990

(In percent)

Period	Secondary-aluminum market			Primary aluminum market
	Argentina	Brazil	China	Brazil
1988:				
January-March	***	(1.7)	***	***
April-June	***	(5.3)	***	***
July-September	***	(1.3)	***	***
October-December	***	(2.9)	***	***
1989:				
January-March	***	(2.7)	***	***
April-June	***	(1.4)	***	***
July-September	***	(1.5)	***	***
October-December	***	(6.0)	***	***
1990:				
January-March	***	0.8	***	***
April-June	***	8.1	***	***
July-September	***	12.8	***	***
October-December	***	15.2	***	***

[1] For product specifications see the beginning of section entitled "Spot price trends."

Note.--Percentage margins are calculated from unrounded figures; thus, margins cannot always be directly calculated from the rounded prices in the table.

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

Information obtained indicates that producers and purchasers generally negotiate prices at the onset of the contract period; however, prices are often adjusted during the length of the contract. The information presented in the tables displays total shipments and the unit value of those shipments.

***[107]

*** reported selling chemical-grade silicon metal to *** during the period of investigation (see table 27). In the preliminary investigations, *** reported that it offered to supply silicon metal to *** for *** per pound in ***. The terms of the contract required yearly quantity estimates and a fixed price for 6-month periods. *** stated that this offer was reduced from the original level of ***.

Table 27
Silicon metal: U.S. producers' total quantity sold and unit values for contract sales of chemical grade silicon metal to *, by quarters, January 1988-December 1990**

*	*	*	*	*	*	*

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

According to ***, *** argued for a lower price because aluminum-grade silicon metal was priced lower. *** also reported that it would increase the price to *** for 1991. Unit value data for *** sales to *** increased *** percent from January-March 1988 to the corresponding quarter of 1989, but then declined *** percent by July-September 1989. These unit values were constant through the remainder of the period. Overall, *** unit values were generally lower in 1990 than they were in 1988. *** shipped approximately *** pounds of silicon metal to *** in 1988, *** pounds in 1989, and *** pounds in 1990.

[107] *** reported total quantity and total value data for its purchases of silicon metal during the period of investigation. This information is presented in the section on "Purchaser responses."

*** reported that it offered its silicon metal in *** at a price of *** per pound for a 1-year period. Although *** allegedly mentioned that lower-priced imports were available, *** price remained firm. *** was later able to increase the price from *** to ***, effective ***. Unit value data reported by *** were stable during 1988 at *** before increasing *** percent to ***. Unit values were constant during both 1989 and 1990. *** shipped approximately *** pounds in 1988, *** pounds in 1989, and *** pounds in 1990.

*** also reported supplying *** with silicon metal during 1988-90. *** unit value for these shipments generally declined from *** before increasing slightly. Overall, *** unit values were *** percent lower at the end of the period than they were at the beginning. *** shipped approximately *** pounds in 1988, *** pounds in 1989, and *** pounds in 1990.

***[108]

*** reported selling chemical grade silicon metal to *** (see table 28).[109] *** reported offering to supply *** with chemical grade silicon metal for *** per pound in ***. *** price had been approximately *** per pound in the ***. However, *** reduced its price because *** allegedly cited other price offers in the range of *** to *** in ***. According to ***, *** felt the decrease in price was justified due to a decline in the price of aluminum grade silicon metal. Unit values had increased from *** in January-March 1988 to *** in October-December 1988, before declining to *** in 1990. Unit values were about *** percent higher in October-December 1990 than they were in January-March 1988. *** shipped approximately *** pounds to *** in 1988, *** pounds in 1989, and *** pounds in 1990.

*** reported total quantity and total value data for its sales to ***. Unit values increased from *** in January-March 1988 to *** in the first and second quarters of 1989. *** unit values then decreased *** percent to *** in July-September 1990 before increasing slightly in the fourth quarter of 1990. These unit values had an overall increase of *** percent. *** shipped approximately *** pounds of silicon metal to *** in 1988, *** pounds in 1989, and *** pounds in 1990.

---

[108] *** provided information on its purchases of silicon metal which is discussed in the section on "Purchaser responses."

[109] ***.

Table 28
Silicon metal: U.S. producers' total quantity sold and unit values for contract sales of chemical grade silicon metal to *, by quarters, January 1988-December 1990**

*	*	*	*	*	*	*

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

*** also reported information on its shipments to *** during the period of investigation. These unit values increased *** percent during 1988, then declined in both 1989 and 1990, reaching a level in April-June 1990 that was *** percent lower than at the beginning of the period. *** reported shipping approximately *** pounds of silicon metal to *** in 1988, *** pounds in 1989, and *** pounds in the first half of 1990.[110]

***[111]

*** and *** reported data for sales of primary-aluminum grade silicon metal to *** (see table 29). *** unit values increased irregularly from January-March 1988 to January-March 1989, rising *** percent during that time, before declining irregularly by *** percent during the rest of 1989. *** unit values increased steadily from the fourth quarter of 1989 through the end of 1990, reaching a level

[110] ***.

[111] *** provided information on its purchases of silicon metal during the period of investigation; this information is presented in the section entitled "Purchaser responses."

that was *** percent higher than at the beginning of the period.[112] *** shipped *** pounds of silicon metal to *** in 1988, *** pounds in 1989, and *** pounds in 1990.

*** unit values for shipments to *** increased *** percent from *** in January-March 1988 to *** in the fourth quarter of 1988 and the first quarter of 1989. These unit values then declined *** percent through the first quarter of 1990 before rising in the last quarter of 1990 to a level that was about *** percent higher than that of January-March 1988. *** shipped about *** pounds of silicon metal to *** in 1988, *** pounds in 1989, and *** pounds in 1990.

***

*** and *** reported total quantity and total value information with respect to *** (see table 29). In the preliminary investigations, *** reported that it made three offers to supply *** with primary-aluminum grade silicon metal in *** (for a one-year period) at prices of ***, ***, and *** per pound. *** reported that the initial contracts were accepted for the amount quoted; however, price and quantity were both reduced through 1989 due to *** demands for *** to be competitive with prices of imported products. *** reported that *** asked for reductions in price on three occasions during 1989, citing offers of Brazilian and Chinese product. *** discussed one of these contracts in detail, stating that it reduced its initial price of *** to *** in ***, to *** in ***, and *** in ***. *** unit values had increased from *** in 1988 to *** in 1989. They then decreased to *** in 1990. *** shipped a total of about *** pounds in 1988, *** pounds in 1989, and *** pounds in 1990.

*** unit values for shipments under its contracts with *** increased steadily by *** percent from January-March 1988 to the corresponding quarter of 1989; these unit values then declined through 1989 before increasing irregularly during 1990 to a level *** percent below that of January-March 1988. *** shipped about *** pounds of silicon metal to *** in 1988, *** pounds in 1989, and *** pounds in 1990.

[112] In the preliminary investigations, *** reported that *** mentioned that prices for Brazilian silicon metal were attractive; however, *** stated that quality is an important consideration for ***.

Table 29
Silicon metal: U.S. producers' total quantity sold and unit values for contract sales to primary-aluminum producers, by quarters, January 1988-December 1990

*	*	*	*	*	*	*	*

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

Although *** did not supply specific total value and quantity data for its purchases, it did provide some general information. *** reported that it has bought silicon metal from ***.[113] *** has received only one shipment of *** material; the silicon content in the product was lower than agreed upon, thus, *** was not happy with this product. *** reported that it has found the quality of the silicon metal from *** acceptable for use in its ***.[114] *** reported that it generally does not use import prices as a bargaining tool for lower U.S. prices. *** is a *** purchaser of silicon metal and, thus, ***.[115] Although *** stated that prices in the secondary-aluminum market can be a guide for prices in the primary-aluminum market, U.S. producers are generally aware that secondary-aluminum grade silicon metal cannot be used in primary-aluminum applications. According to ***, price is usually negotiated within the range of published prices in *Metals Week* and those offered by U.S. producers. According to ***, *Metals Week* prices are at the low end and producers' prices are at the high end.

Purchaser Responses

Questionnaires were sent to approximately 50 firms that were identified as purchasers of silicon metal during the period of investigation. Responses were received from 28 firms, with 26 providing usable data. These firms accounted for approximately 62 percent of shipments of U.S.-produced silicon metal in 1990, and 51, 26, and 33 percent of imports from Argentina, Brazil, and China, respectively. Information obtained from these purchasers is presented for each of the three purchaser groups: secondary-aluminum producers, primary-aluminum producers, and chemical producers.

Secondary-Aluminum Producers

Seventeen firms that purchased secondary-aluminum grade silicon metal during the period of investigation responded to the Commission's questionnaire. Purchasers of secondary-aluminum grade silicon metal sell aluminum to auto producers, aluminum diecasters, and aluminum extruders. These purchasers buy silicon metal approximately once a month and generally contact between two and six suppliers when they are making a purchase. Virtually all secondary-aluminum producers reported that transportation costs are included in the price of the silicon metal; however, most purchasers also reported that transportation costs were not considered to be a major factor in their purchasing decisions.

---

[113] Staff interview with ***, Sept. 25, 1990.

[114] ***.

[115] ***.

Purchasers were asked if imported silicon metal was available at a lower delivered price than the domestic product during 1990. The vast majority of secondary-aluminum producers reported that the imported products were less expensive than the domestic product. All three purchasers that responded with respect to Argentina reported that the Argentine product was available at a price lower than that of the domestic product. Two of these purchasers reported that the quality of the Argentine product was similar to that of the domestic; the other reported that the Argentine product was inferior. All three purchasers reported buying the domestic product at a higher price because of better availability, quicker delivery, and better technical service.

Eleven of 12 purchasers stated that the Brazilian silicon metal was lower priced than the domestic product in 1990. Seven of these purchasers reported that the quality of the Brazilian product was comparable to that of the domestic, and four reported that it was inferior to the domestic. Purchasers that bought the domestic product at a higher price did so because of Buy American policies, better quality, better availability, and better reliability. One purchaser reported that although the domestic product had a higher absolute price, it was a better value because the level of recoverable silicon was higher and it had less fines.

Twelve of 13 purchasers stated that the Chinese product was less expensive than the domestic in 1990. Seven of 10 purchasers reported that the quality of the Chinese product was inferior, whereas the other three found it comparable to the domestic. One of the three purchasers who found the quality comparable reported that it purchased the domestic product because the availability of the domestic product was better.

Purchasers were also asked to list the three major factors generally considered by the firm in choosing a supplier to purchase silicon metal from. The reasons given included price, quality, availability, delivery, and contractual agreements. Nine purchasers mentioned quality as the number one consideration, and four purchasers ranked price as the most important factor. Price was named as the second most important criterion in a purchasing decision by seven purchasers. Availability was mentioned by six purchasers, with most ranking it as the third most important criterion.

Secondary-aluminum producers were also asked to compare the imports and the domestic product with respect to nine factors.[116] With regard to Argentina, the majority of purchasers reported that the domestic product was superior to the imported product for seven of the stated factors. The only areas in which the Argentine product was reported to be comparable or better than the domestic

[116] These nine factors include availability, delivery time, delivery terms, packaging, price, product consistency, product quality, reliability of supply, and technical support.

product were packaging and pricing. The majority of purchasers comparing the Brazilian product found it to be similar to the domestic product for most of the nine factors. In eight of the nine categories, the Brazilian product was rated comparable by about 75 percent of the responding purchasers. The majority found that the Brazilian product had a better price. For China, purchasers reported that in most cases the Chinese product was inferior to the domestic. For only two criteria— pricing and packaging—did more purchasers report that the two were at least comparable. Pricing was the only criterion for which the majority of purchasers reported that the Chinese product was better than the domestic.

The Commission requested price and quantity information from U.S. purchasers for their largest spot purchases during the period January 1988 to December 1990.[117] Weighted-average prices for secondary-aluminum producers' spot purchases generally declined during the period of investigation (table 30 and fig. 19). Prices for domestic secondary-aluminum grade silicon metal increased *** percent during 1988 but then declined *** percent in 1989. Prices recovered slightly in the first two quarters of 1990 before falling *** percent by October-December 1990 to a level that was *** percent lower than at the beginning of the period.

Weighted-average prices for silicon metal imported from Argentina increased *** percent from January-March 1988 to July-September 1988. These prices then decreased irregularly through the end of 1989. Prices for Argentine secondary-aluminum grade silicon metal increased *** percent in the first quarter of 1990. These prices fluctuated during 1990 and were *** percent lower in October-December 1990 than they were in January-March 1988. In 6 of the 11 quarters for which comparisons were possible, the Argentine product undersold the domestic by between 0.3 and 11.4 percent (table 31). In the remaining five quarters, the Argentine product was between 1.1 and 5.2 percent higher than the domestic.

Weighted-average purchase prices for Brazilian secondary-aluminum grade silicon metal increased *** percent from January-March 1988 to July-September 1988 before falling *** percent by October-December 1989. Prices were *** percent higher in the first quarter of 1990 than they were at the end of 1989 and then fluctuated during the rest of 1990. Overall, prices for Brazilian silicon metal were *** percent lower in October-December 1990 than they were in January-March 1988. In 8 of the 12 quarters for which price comparisons were possible, the Brazilian product undersold the domestic product, with margins ranging between 0.6 and 3.8 percent. In the four other quarters, the Brazilian product was higher priced than the domestic. Margins ranged from 3.4 to 14.5 percent.

---

[117] Product specifications for purchase prices were the same as those for producer and importer pricing specifications reported at the beginning of the section entitled "Spot price trends."

Table 30
Silicon metal: Weighted-average delivered purchase prices for U.S.-produced silicon metal and silicon metal imported from Argentina, Brazil, and China for purchases by secondary-aluminum producers,[1] by quarters, January 1988-December 1990

(Per pound of contained silicon)

Period	*United States*	*Argentina*	*Brazil*	*China*
1988:				
January-March	***	***	***	***
April-June	***	***	***	***
July-September	***	***	***	***
October-December	***	***	***	***
1989:				
January-March	***	***	***	***
April-June	***	***	***	***
July-September	***	***	***	***
October-December	***	***	***	***
1990:				
January-March	***	***	***	***
April-June	***	***	***	***
July-September	***	***	***	***
October-December	***	***	***	***

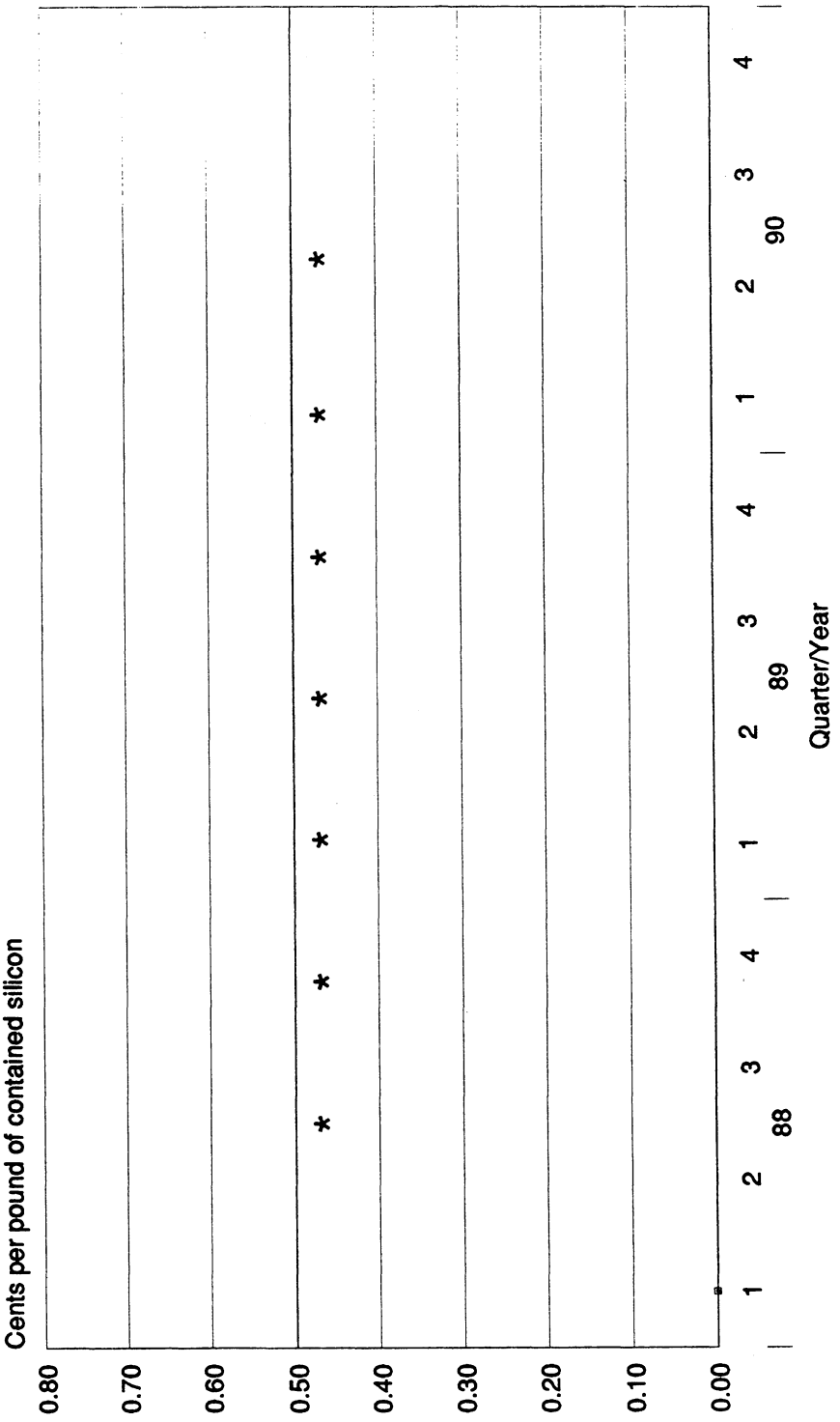
[1] For product specifications see the beginning of section entitled "Spot price trends."

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

Weighted-average prices for Chinese silicon metal increased *** percent from January-March 1988 to July-September 1988. Prices then generally declined from the third quarter of 1988 through the end of 1989, falling *** percent during that time. Prices increased *** percent by the second quarter of 1990 before falling at the end of 1990. Overall, prices were *** percent lower in October-December 1990 than they were in January-March 1988. In 11 of 12 quarters, the Chinese product undersold the domestic product by between 3.6 and 13.6 percent. In the other quarter, the Chinese product was 1.7 percent higher-priced than the domestic product.

Figure 19

Silicon metal: Weighted-average delivered prices for U.S. produced silicon metal and silicon metal imported from Argentina, Brazil, and China for purchases by secondary-aluminum producers, by quarters, January 1988-December 1990



Source: Table 30.

Table 31
Silicon metal: Margins of under/(over)selling reported by U.S. purchasers for purchases of secondary-aluminum grade silicon metal,[1] by quarters, January 1988-December 1990

(In percent)

Period	Argentina	Brazil	China
1988:			
January-March	***	***	***
April-June	***	***	***
July-September	***	***	***
October-December	***	***	***
1989:			
January-March	***	***	***
April-June	***	***	***
July-September	***	***	***
October-December	***	***	***
1990:			
January-March	***	***	***
April-June	***	***	***
July-September	***	***	***
October-December	***	***	***

[1] For product specifications see the beginning of section entitled "Spot price trends."

Note.--Percentage margins are calculated from unrounded figures; thus, margins cannot always be directly calculated from the rounded prices in the table.

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

Primary-Aluminum Producers

Five firms that purchase primary-aluminum grade silicon metal responded to the Commission's questionnaire.[118] These firms manufacture aluminum from ore and generally sell their products to auto producers and aluminum foundries. They generally purchase silicon metal on a contract basis, with contracts ranging from 3 to 12 months in length. The firms reported that the price that they pay for silicon metal sometimes changes during the length of the contract; one reported that prices change every 3 months while others reported that they change semiannually or annually. Two of four purchasers reported that they refer to

[118] These purchasers include ***.

price offers of other suppliers when they are negotiating for silicon metal purchases.[119] The other two firms reported that they do not mention other suppliers' price offers.

These purchasers were also asked to compare imported and domestic silicon metal on the basis of nine different factors.[120] Primary-aluminum producers unanimously reported that while silicon metal imported from Argentina was lower-priced than the domestic, the domestic product was superior to the Argentine product with respect to both technical support and packaging. One purchaser reported that the domestic silicon metal was superior to the Argentine product with respect to availability, delivery time, delivery terms, product consistency, product quality, and reliability of supply; the other purchaser who commented on the Argentine product reported that the two products were comparable with respect to these factors. The majority of the purchasers found the domestic and Brazilian products to be comparable with respect to many of the characteristics. The only difference noted was with respect to price; three of the five purchasers reported that the price of the Brazilian product was better than that of the domestic product. Except for price, which was reported to be better for the Chinese product, purchasers stated that the domestic product was superior in all areas.

Primary-aluminum producers were asked if imported silicon metal was available in 1990 at a lower delivered price than the domestic product. While two of three purchasers reported that the Argentine product was available for a lower price, all five stated that the Brazilian product was less expensive than the domestic product. Two of three purchasers reported that the Chinese product was available for a lower price than the domestic. These purchasers generally agreed that the quality of the Chinese product was inferior to that of the domestic; however, there was some disagreement over the comparability between domestic silicon metal and the Brazilian and Argentine products.[121] Purchasers reported paying more for the domestic product because of the better quality and the reliability of supply.

Weighted-average prices for U.S.-produced silicon metal purchased by primary-aluminum producers increased *** percent from January-March 1988 to July-September 1988 but then declined *** percent by July-September 1989 (table 32). Prices for domestic primary-aluminum grade silicon metal fluctuated

---

[119] One of these purchasers reported that although competitive offers are discussed, names of suppliers with different prices are not identified.

[120] Only two primary-aluminum manufacturers provided data comparing domestic silicon metal and that imported from Argentina.

[121] While one purchaser reported that the Argentine product was of a lower quality, two others found the two to be comparable. With respect to Brazil, two found it comparable to domestic, one found it inferior, and another reported that it was superior.

throughout the remainder of the period and were *** percent lower in October-December 1990 than they were in January-March 1988.

Table 32
Silicon metal: Weighted-average delivered purchase prices and margins of under/(over) selling reported by U.S. firms for purchases of primary-aluminum grade silicon metal,[1] by quarters, January 1988-December 1990

Period	U.S. price	Brazil price	Margin
	(Per pound of contained silicon)		(Percent)
1988:			
January-March	***	***	***
April-June	***	***	***
July-September	***	***	***
October-December	***	***	***
1989:			
January-March	***	***	***
April-June	***	***	***
July-September	***	***	***
October-December	***	***	***
1990:			
January-March	***	***	***
April-June	***	***	***
July-September	***	***	***
October-December	***	***	***

[1] For product specifications see the beginning of section entitled "Spot price trends."

Note.--Percentage margins are calculated from unrounded figures; thus, margins cannot always be directly calculated from the rounded prices in the table.

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

Prices for Brazilian silicon metal purchased by primary-aluminum producers declined *** percent from January-March 1989 to the same period of 1990. Prices then increased *** percent in April-June 1990 before falling *** percent to a level *** percent below that of January-March 1989. In 4 of the 8 quarters where comparisons were possible, Brazilian silicon metal undersold the domestic product; margins ranged from 2.2 to 6.0 percent. In the remaining 4 quarters, the price of the Brazilian product was between 1.0 and 5.3 percent above that of the domestic product.

Only two primary-aluminum producers provided usable contract data, ***.[122] *** purchased virtually all of its silicon metal from domestic sources but did buy a relatively small amount of Brazilian silicon metal during 1990.[123] *** reported making contract purchases from one source—***. In general, the unit values of these purchases increased during 1988 and the early part of 1989, fell during most of 1989, and then recovered in 1990.

*** reported that it has semi-annual or annual agreements with its suppliers, and the prices are fixed for the length of the contract. *** reported that the price is negotiated and it usually uses the imported prices in *Metals Week* as a starting point for negotiations. Unit values for *** purchases *** (table 33). These unit values then declined *** percent by the first quarter of 1990 before rising *** percent by the end of 1990. Overall, these unit values were slightly higher (***) in October-December 1990 than they were in January-March 1988. Unit values for *** purchases from *** increased *** percent from January-March 1988 to the same quarter of 1989. These unit values fell during 1989 and then increased in 1990. Overall, these unit values were *** percent lower at the end of the period than they were at the beginning of the period. *** only purchased Brazilian silicon metal during the period ***. Unit values for purchases were relatively constant during that time and were lower than unit values for domestic silicon metal. *** reported that the quality of the Brazilian product was comparable and that it purchased the Brazilian material as a backup source at a competitive price.

*** only purchased silicon metal from *** during the period of investigation. *** reported that its agreement with its supplier has a 6-month fixed price and then quarterly adjustments. Unit values for *** purchases of silicon metal increased *** percent from January-March 1988 to April-June 1989 (table 33). These generally declined in the remainder of 1989 but then rose during 1990. Overall, *** unit values were *** percent higher in October-December 1990 than they were in January-March 1988. *** reported that it was offered some imported material but the iron and calcium contents were unacceptable. *** stated that it prefers to deal with a supplier whose reliability and quality is known.

---

[122] ***.

[123] ***.

Table 33
Silicon metal: U.S. purchasers' total quantity and unit values for contract purchases of primary-aluminum grade silicon metal, by quarters, January 1988-December 1990

*	*	*	*	*	*	*

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

Chemical Producers

There are three silicon metal purchasers that manufacture chemical products—Dow Corning, ***, and ***.[124] *** is the largest consumer of chemical grade silicon metal, accounting for approximately *** percent of consumption. Questionnaire responses were received from all three of these firms.

Chemical producers purchase silicon metal for use in the production of silicones, related specialty chemicals, and certain health care products. Virtually all of the sales in this market segment are on a contract basis, with contracts generally ranging from 6 months to one year.[125] ***. *** stated that *** percent of its purchases are done on a contract basis. Prices are negotiated with individual suppliers prior to the contract period; however, prices can change during the period of the contract. Both *** and *** reported that in some instances, competitive price offers are discussed in price negotiations. ***.[126] Dow disagrees that the prices in the secondary-aluminum grade market affect the prices in the other markets. It reported that it has never used prices for other grades of silicon metal in its negotiations for purchases of chemical grade product.[127]

Dow stated that making references to metallurgical grade silicon metal is irrelevant because ***.[128] ***.

Both *** and *** reported that they cannot substitute lower grade silicon metal for higher grade silicon metal in their production process. In addition, both firms reported that semiconductor grade silicon metal is also not substitutable for the chemical grade silicon metal that they purchase. ***.

Before chemical producers purchase silicon metal, it must be qualified for use. In general, the qualification process is lengthy (lasting up to a year). ***. ***.[129] ***.

Both *** and *** supplied total value and total quantity data for their purchases of chemical grade silicon metal. In general, unit values for purchases of silicon metal *** during 1988 and the first half of 1989, and *** during the latter part of 1989; trends were *** in 1990, ***.

---

[124] ***.

[125] ***.

[126] Prehearing brief of Dow Corning Corp., p. 15.

[127] Transcript of the hearing, p. 165.

[128] Prehearing brief of Dow Corning Corp., p. 15.

[129] Prehearing brief of Dow Corning Corp., p. 12.

*** reported buying silicon metal from *** suppliers, ***, during the period of investigation. *** did not purchase any commercial quantities of *** silicon metal during the period of investigation.[130] *** purchased the majority of its requirements from *** during the period. The unit values for purchases from ***. ***. Overall, these unit values were slightly *** at the end of the period of the investigation than they were at the beginning (table 34). Unit values for *** purchases from ***. In 1990, these unit values ***. Unit values for *** purchases from *** ***. ***. Overall, unit values for *** were ***.

Table 34
Silicon metal: Total quantity and unit values for contract purchases of chemical grade silicon metal by *, by quarters, January 1988-December 1990**

*	*	*	*	*	*	*

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

[130] ***.

***. ***.[131] ***.

*** unit values for its purchases from *** percent from January-March 1988 to July-September 1988 and then *** through the second quarter of 1989 (table 35). These unit values *** percent in the third quarter of 1989 and *** for the rest of the period. These unit values were *** at the end of the period than at the beginning. Unit values for *** purchases from *** percent from January-March 1988 to the same quarter in 1989. The unit values then *** percent in the third quarter of 1989 and were *** until the third quarter of 1990, when they *** percent. Overall, these unit values were *** percent *** at the end of the period than they were at the beginning. *** unit values for its purchases from *** to that of the unit values for ***. These unit values *** in July-September 1988 and then *** in the same quarter of 1989. The unit values *** in 1990 and were *** in October-December 1990 than they were in January-March 1988.

Table 35
Silicon metal: Total quantity and unit values for contract purchases of chemical grade silicon metal by *, by quarters, January 1988-December 1990**

*	*	*	*	*	*	*

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

[131] Staff interview with ***, Sept. 26, 1990.

Lost Sales and Lost Revenues

The Commission received lost sales and lost revenue allegations from *** U.S. producers: *** during the final investigations. The 14 lost sales allegations pertaining to imports from Brazil totaled approximately $3.8 million and involved approximately 3,175 tons of silicon metal. The 24 lost-sale allegations involving imports from China totaled approximately $4.2 million and involved approximately 3,420 tons of silicon metal. Twenty-nine lost sales allegations were submitted that concerned imports of silicon metal from both Brazil and China.[132] These allegations totaled approximately $11.4 million and involved 9,054 tons of silicon metal. These producers also alleged that they lost revenues of $323,671 and $63,356 from competition from Brazilian and Chinese silicon metal, respectively. The lost revenue allegations concerning Brazil and China involved 7,528 and 216 tons, respectively. Fourteen lost revenue allegations were submitted that involved both imports from Brazil and China; these allegations totaled $355,294 and involved 1,909 tons. Staff sent questionnaires to purchasers concerning these allegations and received responses from 20 purchasers. The information obtained is summarized below.

*** was named by *** in *** lost sales allegations totaling approximately *** and involving *** tons of silicon metal allegedly purchased from Brazilian and Chinese sources. *** also alleged that they lost a total of *** on *** sales of silicon metal involving a total of *** tons of material allegedly purchased from Brazilian and Chinese sources. *** denied all of these allegations and stated that the company has never placed specific orders such as those indicated by U.S. producers. Prior to ***. In *** was placed on allocation by its domestic suppliers.[133] As a result, *** tried to find alternate sources of silicon metal and began buying foreign material. *** stated that the purchases of imported material were based solely on availability; if the imported product was not available, *** would not have been able to meet its customers' demands.

*** also reported that domestic producers became aggressive in their pricing strategies during the period January 1989 to December 1989. As business began to decline, the domestic producers began offering discounts from their prices. During that time, prices for domestic silicon metal were marginally higher than those for the imported product. *** made significant purchases from domestic producers in order to maintain a relationship with these domestic suppliers. *** stated that U.S. producers uniformly raised their prices at the beginning of 1990 and again in March 1990. At this point, *** reported that *** began to purchase less domestic silicon metal.

---

[132] One of these allegations concerned imports from all three countries.

[133] ***.

*** was named by *** in *** lost sales allegations. In addition, *** was named in *** lost revenues allegations by ***. The lost sales allegations submitted by all *** producers totaled *** and involved approximately *** tons of product; *** of these allegations concerned imports from Brazil while the *** involved imports from Brazil and China.[134] *** alleged that it lost a total of *** on *** sales of silicon metal totaling *** tons due to competition from Brazilian material. *** alleged that it lost revenues of *** on *** tons of silicon metal due to competition from both Brazilian and Chinese products.

*** was unable to verify these specific allegations; however, he was able to provide information concerning *** purchasing. *** reported that *** usually purchases silicon metal from several suppliers at the same time to fulfill its requirements. *** reported that *** did switch some of its purchases of U.S.-produced silicon to Brazilian product during the period of investigation. According to ***, this switch was made because the imported product provided better availability, service, product size, and price. *** stated that, in many cases, price was not the single most important factor; issues such as quality, availability, service, and timely deliveries were also considered. In addition, *** stated that the vendors selling imported material were able to accommodate *** more readily than domestic suppliers.

*** alleged that it lost a sale totaling *** and involving about *** tons of silicon metal to ***, due to competition from Chinese product.[135] *** acknowledged this allegation and stated that *** purchased the Chinese material because the price was lower than that of the domestic product. *** reported that it was necessary to buy the lower-priced imported product in order to remain competitive in its markets.

*** was named by *** in *** lost sales allegations and *** lost revenue allegation due to competition from Chinese product. The lost sales allegations totaled *** and involved about *** tons of product; the lost revenue allegation totaled *** and involved about *** tons of product. ***, representative for ***, could not verify these specific transactions. *** reported that *** purchased about *** percent of its requirements from *** in 1990, and the remainder from *** importers, ***. *** stated that the reason *** switched some of its purchases from domestic to imported silicon metal was because the price for the imported product was better.

*** was cited by *** in *** lost sales allegations that totaled approximately *** and involved *** of silicon metal allegedly purchased from Brazilian suppliers. *** stated that the company did switch some of its purchases from domestic

---

[134] ***.

[135] ***.

suppliers to import suppliers during the period 1988-90. *** reported that its major supplier, ***. *** found the Brazilian product to have more competitive pricing and equivalent quality.

*** alleged that it lost approximately *** on a sale of about *** tons of silicon metal to ***. *** acknowledged that the company purchased the Chinese product instead of the domestic product. *** also reported that price was a determining factor in its decision to buy the Chinese product. *** stated that he purchased the lower-priced Chinese product because the lower cost allows *** to be more competitive in its markets.

Both *** named *** in lost sales allegations. *** reported that it allegedly lost *** on a sale of *** tons of silicon metal, and *** reported that it lost *** on a sale of *** tons of product.[136] Although *** denied these allegations, he stated that *** did switch some of its purchases from domestic silicon metal to imported product during 1988-90. According to ***, domestic producers set their prices high at *** per pound. Foreign silicon metal could be purchased for about *** per pound less than the domestic product. *** still purchases some domestic silicon metal, about *** percent in 1990.

*** was cited by *** in a lost sales allegation totaling *** and involving *** tons of silicon metal allegedly purchased from Chinese suppliers during 1990. *** reported that the firm did not buy any domestic silicon metal during the period 1988-90. *** purchases all its silicon metal from Brazilian and Chinese suppliers.

*** was named by *** in a lost sales allegation totaling *** and involving *** tons of silicon metal allegedly purchased from Brazilian sources. *** could not recall the alleged transaction but did state that *** shifted some purchases from domestic sources to foreign sources. *** reported that the reason that *** switched was that the imported product was available at a lower price and the quality was comparable.

*** named *** in a lost sales allegation totaling *** and involving *** tons of silicon metal allegedly purchased from Chinese suppliers. *** reported that the company did switch some purchases to Brazilian suppliers; however, the quantity shifted was *** tons. *** purchased the Brazilian product because it was available for *** per pound while the domestic product was *** per pound. According to ***, *** still purchased the majority of its silicon metal from domestic suppliers in 1990, with about *** percent coming from domestic sources and *** percent from foreign suppliers.

---

[136] ***.

*** reported that it lost *** on a sale of *** tons of silicon metal to *** in *** because of imports from Brazil. *** reported that it lost revenues of *** on a sale of about *** tons of silicon metal due to competition from Brazilian and Chinese products in ***. *** reported that it bought both domestic and imported silicon metal in ***; *** purchased about *** of domestic product at about *** per pound and about *** of Brazilian product at *** per pound. With respect to *** allegation, *** reported that *** did not purchase any imported silicon metal during ***. *** stated that *** purchased imported silicon metal because the quality of the Brazilian product was acceptable and availability in the *** was good. *** stated that *** has continued to support domestic producers within a certain price range; however, U.S. producers raised prices without reasonable notice. When this occurred in 1989, ***. *** stated that U.S. producers are aware that many *** sales are made on a quarterly basis and they wait until the quarterly business is set before announcing the price increase. *** believes that this pricing policy is unfair and thus ***.

*** named *** in *** lost sales and one lost revenue allegation due to competition from Brazilian product. The lost sales allegations totaled *** and involved *** tons of silicon metal, whereas the lost revenue allegation totaled *** and involved *** tons of product. *** was able to recall the alleged lost sales transaction but could not recall the one lost revenue allegation.[137] *** reported that *** did purchase the imported product; however, price was not a determining factor in *** purchasing decision. *** stated that *** has purchased a majority of its silicon metal from ***. According to ***, *** chose to source its silicon metal from Brazil at that time, and the Brazilian product proved to be of good quality at a competitive price. *** also stated that *** has purchased silicon metal from ***. According to ***, *** bought product from *** when ***.[138] *** stated that *** ability to purchase from ***.

*** alleged that it lost revenues of *** on *** sales that involved a total of *** tons of silicon metal made to ***, due to competition from Brazilian product. *** could not recall these specific transactions. However, *** reported that *** did switch some of its purchases from domestic to imported silicon metal during 1988-90. The reason given for this switch was that Brazilian silicon metal had quality characteristics (e.g., analysis, sizing, and packaging) that meet the requirements of some of *** facilities. In addition, *** reported that Brazilian metal was generally available at a lower price than domestic product during 1988-90.

*** named *** in *** lost sales allegations totaling *** and involving *** tons of silicon metal allegedly purchased from Chinese suppliers. *** recalled two of these *** specific transactions. In ***, *** purchased the Chinese product because it

---

137 ***.

138 ***.

was told by its domestic suppliers that *** could not get enough domestic silicon metal to satisfy its needs. *** purchased the Chinese silicon metal to supplement the domestic silicon metal that it was buying in order to satisfy its total needs. According to ***, it was the unreliable delivery of the domestic suppliers that caused *** to buy the Chinese product.

*** was named by *** in a lost sales allegation that totaled *** and involved about *** tons of silicon metal allegedly purchased from Brazilian and Chinese suppliers in ***. ***, representative for ***, reported that the company did not buy the imported product in this instance; the material was purchased from a domestic producer because that supplier provided the best value and availability. *** also reported that the domestic suppliers did not have secondary-aluminum grade silicon metal available for the secondary-aluminum industry. According to ***, price was not an issue to the silicon producers because they did not have the material for this industry. *** stated that *** did purchase some Brazilian silicon metal, however, this imported product was purchased from a domestic producer, ***. According to ***, *** could not supply *** with its own domestic product; therefore, it sold *** some Brazilian product.

*** was named by *** in one lost sales allegation and *** lost revenue allegations. The lost sale allegation totaled *** and involved *** tons of silicon metal allegedly purchased from Chinese sources, and the lost revenue allegations totaled *** and involved *** tons of product from Brazilian suppliers. *** of *** acknowledged that the lost sale allegation was accurate but reported that *** records do not show any transactions on the dates given for the lost revenue allegations. *** reported that *** did purchase the imported silicon metal instead of the domestic product because the price was better and *** was looking for a new source.

*** was named in *** lost sales allegations and one lost revenue allegation. The lost sales totaled approximately *** and involved *** tons of silicon metal, and the lost revenue allegation totaled *** and involved *** tons of material.[139] These allegations involved all three countries under investigation.[140] *** could not recall these specific transactions; however, he was able to provide some information on the company's purchasing habits. According to ***, the supply of silicon metal became very tight during 1988-89 and domestic producers had trouble filling the needs of ***. During 1988, *** purchased about *** percent of its total silicon metal needs from domestic suppliers. In 1990, only about *** percent of *** total purchases were domestic silicon metal. *** reported that domestic suppliers were even shipping imported material under their own names because they could not fill the needs of the market.

---

[139] ***.

[140] ***.

*** alleged that it lost revenue of *** on a sale of *** tons of silicon metal to ***, due to competition from Brazilian and Chinese silicon metal in ***. *** reported that it did not recall this specific transaction but it did switch some purchases of U.S.-produced silicon metal to Brazilian and Chinese products. The reasons for this shift were price and quality.

*** was named by *** in *** lost sales allegations and *** lost revenue allegations. The lost sales allegations totaled approximately *** and involved *** tons of silicon metal, whereas the lost revenue allegations totaled *** and involved *** tons of product. *** reported that the reason *** switched from domestic to imported silicon metal was that the domestic suppliers were totally inflexible. According to ***, U.S. producers uniformly increased prices in late 1989. When *** requested discounts because of the large quantities that it was buying, the domestic firms refused.

Exchange Rates

Quarterly data reported by the International Monetary Fund indicate that the currencies of two of the three countries subject to these investigations depreciated sharply in relation to the U.S. dollar over the period from January-March 1988 through October-December 1990 (table 36).[141] [142] The nominal values of the Argentine and Brazilian currencies both depreciated by nearly 100 percent against the dollar. When adjusted for movements in producer price indexes in the United States and the specified countries, the real value of the Argentine currency depreciated by 74.3 percent while the Brazilian currency appreciated by 45.4 percent relative to the dollar during the periods for which data were collected.

[141] IMF, *International Financial Statistics*, March 1991.

[142] The value of the currency of the People's Republic of China is determined by the Government of China rather than the free market. Therefore, an accurate description of movements in the Chinese exchange rate cannot be presented.

Table 36
Exchange rates:[1] Indexes of nominal and real exchange rates of selected currencies and indexes of producer prices in specified countries,[2] by quarters, January 1988-December 1990

Period	U.S. producer price index	Argentina			Brazil		
		Producer price index	Nominal exchange rate index	Real exchange rate index[3]	Producer price index	Nominal exchange rate index	Real exchange rate index[3]
1988:							
January-March	100.0	100.0	100.0	100.0	100.0	100.0	100.0
April-June	101.6	167.8	64.4	106.4	172.5	60.6	103.0
July-September	103.1	317.4	39.2	120.6	318.1	34.1	105.1
October-December	103.5	392.4	34.6	131.2	651.1	17.1	107.7
1989:							
January-March	105.8	495.4	31.3	146.5	1,217.8	9.5	109.3
April-June	107.7	2,338.5	3.3	71.5	1,572.1	8.0	116.6
July-September	107.3	14,108.5	0.7	92.4	3,697.5	3.6	124.1
October-December	107.7	17,588.6	0.5	77.5	10,698.8	1.4	137.0
1990:							
January-March	109.3	36,518.4[4]	0.1	25.7[4]	51,161.6	0.4	170.6
April-June	109.1	(5)	(6)	(5)	90,443.5[7]	0.2	145.4[7]
July-September	111.0	(5)	(6)	(5)	(5)	0.1	(5)
October-December	114.4	(5)	(6)	(5)	(5)	(6)	(5)

[1] Exchange rates expressed in U.S. dollars per unit of foreign currency.
[2] Producer price indexes, intended to measure final product prices, are based on period-average quarterly indexes presented in line 63 of the *International Financial Statistics.*
[3] The real exchange rate is derived from the nominal rate adjusted for relative movements in producer prices in the United States and the specified countries.
[4] Derived from Argentine price data reported for January only.
[5] Not available.
[6] Less than 0.05 percent.
[7] Derived from Brazilian price data reported for April only.

Note.--January-March 1988 = 100.0. The real exchange rates are calculated from unrounded figures; thus, they cannot always be directly calculated from the rounded nominal exchange rates and the producer price indexes.

Source: International Monetary Fund, *International Financial Statistics*, March 1991.

Appendix A

U.S. International Trade Commission's *Federal Register* notices

[Inv. No. 731-TA-472 (Final)]

Silicon Metal From the People's Republic of China; Notice of Institution

AGENCY: United States International Trade Commission.

ACTION: Institution of a final antidumping investigation and scheduling of a hearing to be held in connection with the investigation.

SUMMARY: The Commission hereby gives notice of the institution of final antidumping investigation No. 731-TA-472 (Final) under section 735(b) of the Traiff Act of 1930 (19 U.S.C. 1673(b)) (the act) to determine whether an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from the People's Republic of China (China) of silicon metal,[1] that have been found by the Department of Commerce, in a preliminary determination, to be sold in the United States at less than fair value (LTFV). Unless the investigation is extended, Commerce will make its final LTFV determination on or before April 16, 1991, and the Commission will make its final injury determination by June 3, 1991 (see sections 735(a) and 735(b) of the act (19 U.S.C. 1673d(a) and 1673d(b))).

For further information concerning the conduct of this investigation and rules of general application, consult the Commission's Rules of Practice and Procedure, part 207, subparts A and B (19 CFR part 207), and part 201, subparts A through E (19 CFR part 201).

EFFECTIVE DATE: February 4, 1991.

FOR FURTHER INFORMATION CONTACT: Fred Fischer (202-252-1179), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-252-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-252-1000.

SUPPLEMENTARY INFORMATION:

Background.—This investigation is being instituted as a result of an affirmative preliminary determination by the Department of Commerce that imports of silicon metal from China are being sold in the United States at less than fair value with the meaning of section 733 of the act (19 U.S.C. 1673b). The investigation was requested in a petition filed on August 24, 1990, by the merchant-producer members of the U.S. silicon metal industry.[2] In response to that petition the Commission conducted a preliminary antidumping investigation and, on the basis of information developed during the course of that investigation, determined that there was a reasonable indication that an industry in the United States was materially injured by reason of imports of the subject merchandise (55 FR 42079, October 17, 1990).

Participation in the investigation — Persons wishing to participate in this investigation as parties must file an entry of appearance with the Secretary to the Commission, as provided in § 201.11 of the Commission's rules (19 CFR 201.11), not later than twenty-one (21) days after publication of this notice in the **Federal Register**. Any entry of appearance filed after this date will be referred to the Chairman, who will determine whether to accept the late entry for good cause shown by the person desiring to file the entry.

Public service list.—Pursuant to § 201.11(d) of the Commission's rules (19 CFR 201.11(d)), the Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to this investigation upon the expiration of the period for filing entries of appearance. In accordance with §§201.16(c) and 207.3 of the rules (19 CFR 201.16(c) and 207.3) each public document filed by a party to this investigation must be served on all other parties to the investigation (as identified by the public service list), and a certificate of service must accompany the document. The Secretary will not accept a document for filing without a certificate of service.

Limited disclosure of business proprietary information under a protective order and business proprietary information service list.— Pursuant to § 207.7(a) of the Commission's rules (19 CFR 207.7(a)), the Secretary will make available business proprietary information gathered in this final investigation to authorized applicants under a protective order, provided that the application be made not later than twenty-one (21) days after the publication of this notice in the **Federal Register**. A separate service list will be maintained by the Secretary for those parties authorized to receive business proprietary information under a protective order. The Secretary will not accept any submission by parties containing business proprietary information without a certificate of service indicating that it has been served on all the parties that are authorized to receive such information under a protective order.

Staff report.—The prehearing staff report in this investigation will be placed in the nonpublic record on Friday, April 12, 1991, and a public version will be issued thereafter,

[1] The merchandise covered by this investigation is silicon metal containing at least containing at least 96.00 but less than 99.99 percent of silicon by weight. Silicon metal is provided for in subheadings 2804.69.10 and 2804.69.50 of the Harmonized Tariff Schedule of the United States (HTS) as a chemical product, but is commonly referred to as a metal. Semiconductor-grade silicon (silicon metal containing by weight not less than 99.99 percent of silicon and provided for in subheading 2804.61.00 of the HTS) is not subject to this investigation.

[2] Members of the merchant-producer industry include American Alloys, Inc., Pittsburg, PA; Elkem Metals Company, Pittsburg, PA; Globe Metallurgical, Inc., Cleveland, OH; Silicon Metaltech Inc., Seattle WA; SiMETCO, Inc., Canton, OH; and SKW Alloys, Inc., Niagara Falls, NY.

pursuant to § 207.21 of the Commission's rules (19 CFR § 207.21).

Hearing.—The Commission will hold a hearing in connection with this investigation beginning at 9:30 a.m. on Thursday, April 25, 1991, at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission not later than the close of business (5:15 p.m.) on Tuesday, April 16, 1991. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the hearing. All parties and nonparties desiring to appear at the hearing and make oral presentations should attend a prehearing conference to be held at 9:30 a.m. on Friday, April 19, 1991, at the U.S. International Trade Commission Building. Pursuant to § 207.22 of the Commission's rules (19 CFR 207.22) each party is encouraged to submit a prehearing brief to the Commission. The deadline for filing preharing briefs is Monday, April 22, 1991. If prehearing briefs contain business proprietary information, a nonbusiness proprietary version is due on Tuesday, April 23, 1991.

Testimony at the public hearing is governed by § 207.23 of the Commission's rules (19 CFR 207.23). This rule requires that testimony be limited to a nonbusiness proprietary summary and analysis of material contained in prehearing briefs and to information not available at the time the prehearing brief was submitted. Any written materials submitted at the hearing must be filed in accordance with the procedures described below and any business proprietary materials must be submitted at least three (3) working days prior to the hearing (see § 201.6(b)(2) of the Commission's rules (19 CFR 201.6(b)(2))).

Written submissions.—Prehearing briefs submitted by parties must conform with the provisions of § 207.22 of the Commission's rules (19 CFR 207.22) and should include all legal arguments, economic analyses, and factual materials relevant to the public hearing. Posthearing briefs submitted by parties must conform with the provisions of § 207.24 (19 CFR 207.24) and must be submitted not later than the close of business on Wednesday, May 1, 1991. if posthearing briefs contain business proprietary information, a nonbusiness proprietary version is due on Thursday, May 2, 1991. In addition, any person who has not entered an appearance as a party to the investigation may submit a written statement of information pertinent to the subject of the investigation on or before Wednesday, May 1, 1991.

A signed original and fourteen (14) copies of each submission must be filed with the Secretary to the Commission in accordance with § 201.8 of the Commission's rules (19 CFR 201.8). All written submissions except for business proprietary data will be available for public inspection during regular business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary to the Commission.

Any information for which business proprietary treatment is desired must be submitted separately. The envelope and all pages of such submissions must be clearly labeled "Business Proprietary Information." Business proprietary submissions and requests for business proprietary treatment must conform with the requirements of §§ 201.6 and 207.7 of the Commission's rules (19 CFR 201.6 and 207.7).

Parties which obtain disclosure of business proprietary information pursuant to § 207.7(a) of the Commission's rules (19 CFR 207.7(a)) may comment on such information in their prehearing and posthearing briefs, and may also file additional written comments on such information no later than Monday, May 6, 1991. Such additional comments must be limited to comments on business proprietary information received in or after the posthearing briefs. A nonbusiness proprietary version of such additional comments is due Tuesday, May 7, 1991.

Authority: This investigation is being conducted under authority of the Tariff Act of 1930, title VII. This notice is published pursuant to § 207.20 of the Commission's rules (19 CFR 207.20).

By order of the Commission.

Issued: February 19, 1991.

Kenneth R. Mason,

Secretary.

[FR Doc. 91–4590 Filed 2–26–91; 8:45 am]

BILLING CODE 7020–02–M

[Invs. Nos. 731-TA-470-471 (Final)]

Silicon Metal From Argentina and Brazil; Institution

AGENCY: United States Trade Commission.

ACTION: Institution of final antidumping investigations. To the maximum extent possible, the Commission shall conduct these investigations on the same schedule as the Commission's investigation No. 731-TA-472 (Final), silicon metal from the People's Republic of China (China) (56 FR 8216, February 27, 1991).

SUMMARY: The Commission hereby gives notice of the institution of final antidumping investigations Nos. 731-TA-470 and 471 (Final) under section 735(b) of the Tariff Act of 1930 (the act) (19 U.S.C. 1673d(b)) to determine whether an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from Argentina and Brazil of silicon metal,[1] that have been found by the Department of Commerce, in preliminary determinations, to be sold in the United States at less than fair value (LTFV). Unless these investigations are extended, Commerce will make its final LTFV determinations on or before Wednesday, June 5, 1991, and the Commission will make its final injury determinations by Wednesday, July 24, 1991 (see sections 735(a) and 735(b) of the act (19 U.S.C. 1673d(a) and 1673d(b))).

For further information concerning the conduct of these investigations and rules of general application, consult the Commission's Rules of Practice and Procedure, part 207, subparts A and B (19 CFR part 207), and part 201, sugparts A through E (19 CFR part 201).

EFFECTIVE DATE: March 27, 1991.

FOR FURTHER INFORMATION CONTACT: Fred Fischer (202-252-1179), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-252-1810. Persons with mobility impairments who will need special asssistance in gaining access to the Commission should contact the Office of the Secretary at 202-252-1000.

SUPPLEMENTARY INFORMATION:

Background

These investigations are being instituted as a result of affirmative preliminary determinations by the Department of Commerce that imports of silicon metal from Argentina and Brazil are being sold in the United States at less than fair value within the meaning of section 733 of the act (19 U.S.C. 1673b). The investigations were requested in a petition filed on August 24, 1990, by merchant-producer members of the U.S. silicon metal industry.[2] In response to that petition the Commission conducted preliminary antidumping investigations and, on the basis of information developed during the course of those investigations, determined that there was a reasonable indication that an industry in the United States was materially injured by reason of imports of the subject merchandise (55 FR 42079, October 17, 1990).

Participation in the Investigations

Persons wishing to participate in these investigations as parties must file entry of appearance with the Secretary to the Commission, as provided in section 201.11 of the Commission's rules (19 CFR 201.11), not later than twenty-one (21) days after publication of this notice in the **Federal Register**. Any entry of appearance filed after this date will be referred to the Chairman, who will determine whether to accept the late entry for good cause shown by the person desiring to file the entry.

Public Service List

Pursuant to § 201.11(d) of the Commission's rules (19 CFR § 201.11(d)), the Secretary will prepare a public service list containing the names and

[1] The merchandise covered by these investigations is silicon (silicon metal containing at least 96.00 but less than 99.99 percent of silicon by weight. Silicon metal is provided for in subheadings 2804.69.10 and 2804.69.50 of the Harmonized Tariff Schedule of the United States (HTS) as a chemical product, but is commonly referred to as a metal. Semiconductor-grade silicon (silicon metal containing by weight not less than 99.99 percent of silicon and provided for in subheading 2804.61.00 of the HTS) is not subject to these investigations.

[2] The petitioners in the investigation regarding Argentina are American Alloys, Inc., Pittsburgh, PA; Elkem Metals Company, Pittsburgh, PA; Globe Metallurgical, Inc., Cleveland, OH; Silicon Metaltech Inc., Seattle WA; SiMETCO, Inc., Canton, OH; and SKW Alloys, Inc., Niagara Falls, NY. The petitioners in the investigation regarding Brazil are American Alloys, Inc., Pittsburgh, PA; Globe Metallurgical, Inc., Cleveland, OH; Silicon Metaltech Inc., Seattle WA; and SiMETCO, Inc., Canton, OH.

addressees of all persons, or their representatives, who are parties to these investigations upon the expiration of the period for filing entries of appearance. In accordance with §§ 201.16(c) and 207.3 of the rules (19 CFR 201.16(c) and 207.3), each public document filed by a part to these investigations must be served on all other parties to the investigations (as identified by the public service list), and a certificate of service must accompany the document. The Secretary will not accept a document for filing without a certificate of service.

Limited Disclosure of Business Proprietary Information Under a Protective Order and Business Proprietary Information Service List

Pursuant to § 207.7(a) of the Commission's rules (19 CFR 207.7(a)), the Secretary will make available business proprietary information gathered in these final investigations to authorized applicants under a protective order, provided that the application be made not later than twenty-one (21) days after the publication of this notice in the Federal Register. A separate service list will be maintained by the Secretary for those parties authorized to receive business proprietary information under a protective order. The Secretary will not accept any submission by parties containing business proprietary information without a certificate of service indicating that it has been served on all the parties that are authorized to receive such information under a protective order.

Staff Report

The prehearing staff report in these investigations will be placed in the nonpublic record on Friday, April 12, 1991, and a public version will be issued thereafter, pursuant to section 207.21 of the Commission's rules (19 CFR 207.21).

Hearing

The Commission will hold a hearing in connection with these investigations; the hearing will be a consolidated proceeding for investigations Nos. 731–TA–470 throgh 472, silicon metal from Argentina, Brazil, and China. The hearing will begin at 9:30 a.m. on Thursday, April 25, 1991, at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission not later than the close of business (5:15 p.m.) on Tuesday, April 16, 1991. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the hearing. All parties and nonparties desiring to appear at the hearing and make oral presentations should attend a prehearing conference to be held at 9:20 a.m. on Friday, April 19, 1991, at the U.S. International Trade Commission Building. Pursuant to § 207.22 of the Commission's rules (19 CFR 207.22) each party is encouraged to submit a prehearing brief to the Commission. The deadline for filing prehearing briefs is Monday, April 22, 1991. If prehearing briefs contain business proprietary information, a nonbusiness proprietary version is due on Tuesday, April 23, 1991.

Testimony at the public hearing is governed by § 207.23 of the Commission's rules (19 CFR 207.23). This rule requires that testimony be limited to a nonbusiness proprietary summary and analysis of material contained in prehearing briefs and to information not available at the time the prehearing brief was submitted. Any written materials submitted at the hearing must be filed in accordance with the procedures described below and any business proprietary materials must be submitted at least three (3) working days prior to the hearing (see § 201.6(b)(2) of the Commission's rules (19 CFR 201.6(b)(2))).

Written Submissions

Prehearing briefs submitted by parties must conform with the provisions of § 207.22 of the Commission's rules (19 CFR 207.22) and should include all legal arguments, economic analyses, and factual materials relevant to the public hearing. Posthearing briefs submitted by parties must conform with the provisions of § 207.24 (19 CFR 207.24) and must be submitted not later than the close of business on Wednesday, June 12, 1991. If posthearing briefs contain business proprietary information, a nonbusiness proprietary version is due on Thursday, June 13, 1991. In addition, any person who has not entered an appearance as a party to the investigations may submit a written statement of information pertinent to the subject of the investigations on or before Wednesday, June 12, 1991.

A signed original and fourteen (14) copies of each submission must be filed with the Secretary to the Commission in accordance with § 201.8 of the Commission's rules (19 CFR 201.8). All written submissions except for business proprietary data will be available for public inspection during regular business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary to the Commission.

Any information for which business proprietary treatment is desired must be submitted separately. The envelope and all pages of such submissions must be clearly labeled "Business Proprietary Information." Business proprietary submissions and requests for business proprietary treatment must conform with the requirements of §§ 201.6 and 207.7 of the Commission's rules (19 CFR 201.6 and 207.7).

Parties which obtain disclosure of business proprietary information pursuant to § 207.7(a) of the Commission's rules (19 CFR 207.7(a)) may comment on such information in their prehearing and posthearing briefs, and may also file additional written comments on such information no later than Tuesday, June 18, 1991. Such additional comments must be limited to comments on business proprietary information received in or after the posthearing briefs. A nonbusiness proprietary version of such additional comments is due Wednesday, June 19, 1991.

Authority: These investigations are being conducted under authority of the Tariff Act of 1930, title VII. This notice is published pursuant to § 207.20 of the Commission's rules (19 CFR 207.20).

Issued: April 8, 1991.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 91–8978 Filed 4–16–91; 8:45 am]

BILLING CODE 7020-02-M

Appendix B

Calendar of the Public Hearing

United States International Trade Commission

Calendar of Public Hearing

Silicon Metal From Argentina, Brazil, and The People's Republic of China

Invs. Nos. 731-TA-470-471 (Final)

DATE AND TIME

April 25, 1991 - 9:30 a.m.

LOCATION

Sessions were held in connection with the investigations in the Main Hearing Room 101 of the United States International Trade Commission, 500 E Street, S.W., Washington, D.C.

WITNESS LIST

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

In Support of Imposition of Antidumping Duties:

Squire, Sanders & Dempsey, Washington, D.C.
On behalf of--

American Alloys, Inc.
Elkem Metals Co.
Globe Metallurgical, Inc.
Silicon Metaltech, Inc.
SiMETCO, Inc.
SKW Alloys, Inc.

Ronald Cunningham, President, SiMETCO, Inc.
Gary R. Korecky, Vice President Marketing and Sales, Silicon Metaltech, Inc.
Kenneth R. Button, Vice President, Economic Consulting Services, Inc.

William D. Kramer)
Ritchie T. Thomas)--OF COUNSEL

In Opposition to Imposition of Antidumping Duties:

Perkins Coie, Washington, D.C.
On behalf of--

Aluminum Recycling Association (ARA)
Aluminum Smelting and Refining Company (ASRC)
Timco

Joseph S. Viland, President, Wabash Alloys and Aluminum Recycling Association (ARA)
Seth Kaplan, Economist, Trade Resources Company

Leonard E. Santos)--OF COUNSEL

Royal Daniel III, Washington, D.C.
On behalf of--

Brazilian Association of Ferroalloy Producers (ABRAFE)

Andrew Weschler, Consultant
Joao Samuel Valle, Commercial Manager, Cia Brasileira Carbureto (CBCC)
Sam Zickel, President, Pickands Mather Sales Company, Inc.

Royal Daniel III)--OF COUNSEL

Dow, Lohnes & Albertson, Washington, D.C.
On behalf of--

Camargo Correa Metais S.A. (CCM) of Brazil
Interpax, Inc. (Interpax)

Richard C. Fontana, Independent Consultant to Comargo Correa Metais S.A. (CCM)
Stuart Cohn, President, Behr Metals

William Silverman)
)--OF COUNSEL
Carrie A. Simon)

***In Opposition to Imposition of Antidumping Duties:**--Continued*

Popham Haik Schnobrich & Kaufman, Ltd., Washington, D.C.
On behalf of--

Dow Corning Corp.
Dow Corning Silicon Energy Systems, Inc.

John C. Rothaar, Staff Counsel, Dow Corning Corp.
James B. May, President, Dow Corning Silicon Energy Systems, Inc.

George M. Rehm)--OF COUNSEL

Kaplan, Russin & Vecchi, Washington, D.C.
On behalf of--

Axel-Johnson Ore & Metal, Inc. (AXORE)
Silarsa, S.A., Argentina

Carlos Aguirre, President, Axel-Johnson Ore and Metal, Inc.
Carlos Alfaro, Counsel, Allende and Brea

Marcia A. Wiss)
Dennis James, Jr.)--OF COUNSEL
Kathleen Patterson)

Midland Export, Ltd., Bensalem, Pennsylvania

Andrew J. Lubin, President

Appendix C

U.S. Department of Commerce's *Federal Register* notices

[A-570-806]

Final Determination of Sales at Less Than Fair Value: Silicon Metal From the People's Republic of China

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

ACTION: Notice.

SUMMARY: The Department of Commerce (the Department) has determined that imports of silicon metal from the People's Republic of China (PRC) are being, or are likely to be, sold in the United States at less than fair value. Furthermore, the Department has determined that critical circumstances exist for imports of silicon metal from the PRC. We have notified the U.S. International Trade Commission (ITC) of our determination and have directed the U.S. Customs Service to continue to suspend liquidation of all entries of silicon metal from the PRC, as described in the "Suspension of Liquidation" section of this notice.

EFFECTIVE DATE: April 23, 1991.

FOR FURTHER INFORMATION CONTACT: James Terpstra or James Maeder, Office of Antidumping Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th and Constitution Avenue, NW., Washington, DC 20230; telephone (202) 377-3965 or 377-4929, respectively.

SUPPLEMENTARY INFORMATION:

Final Determination

We determine that imports of silicon metal from the PRC are being, or are likely to be, sold in the United States at less than fair value, as provided in section 735(a) of the Tariff Act of 1930, as amended (the Act). The estimated weighted-average margin is shown in the "Suspension of Liquidation" section of this notice. We also determine that critical circumstances exist with respect to imports of silicon metal from the PRC.

Case History

Since the publication of the notice of preliminary determination (56 FR 4596, February 5, 1991), the following events have occurred.

On February 11, 1991, Xiamen Xing Xia Company Ltd., a producer of silicon metal in the PRC, submitted a response to the Department's questionnaire, and requested a postponement of the final determination. On February 28, 1991, we returned this submission because it was submitted in an untimely manner. On the same day, the Embassy resubmitted Xiamen Xing Xia Company Ltd.'s request for a postponement of the final determination. On March 1, 1991, American Carbon & Metals Corporation (ACMC), an interested party in this investigation, submitted letters from Guangzhou Foreign Economic Development Corp., Kachant Development Ltd., Lianyungang Metal Mineral & Machinery Import & Export Corp., and China National Nonferrous Metal Import & Export Corp., Jiangsu Branch, requesting that the Department postpone its final determination. On March 4, 1991, petitioners submitted a letter opposing the above-referenced postponement requests. On March 7, 1991, we informed the Embassy that the Department had no basis on which to postpone the final determination. On March 11, 1991, the Department denied the postponement requests because we had no information on the record that would indicate that the exporters requesting the postponement constituted a significant proportion of PRC exports of silicon metal to the United States. (See, DOC Position to Comment 2 in the "Interested Party Comments" section of this notice.)

On March 4, 1991, the Department extended the March 4, 1991, deadline for filing of case briefs until March 5, 1991. On March 5, 1991, case briefs were filed by petitioners, ACMC and Midland Export Limited (Midland). On March 11, 1991, rebuttal briefs were filed by petitioners, Timco, the Aluminum Recycling Association (ARA), and the Aluminum Smelting and Refining Company, Inc. (ASRC). On March 12, 1991, ACMC filed its rebuttal brief. A public hearing was held on March 13, 1991.

Scope of Investigation

The merchandise covered by this investigation is silicon metal containing at least 96.00 but less than 99.99 percent of silicon by weight. Silicon metal is currently provided for under subheadings 2804.69.10 and 2804.69.50 of the Harmonized Tariff Schedule (HTS) as a chemical product, but is commonly referred to as a metal. Semiconductor-grade silicon (silicon metal containing by weight not less than 99.99 percent of silicon and provided for in subheading 2804.61.00 of the HTS) is not subject to this investigation. Given that this investigation is not limited to silicon metal used only as an alloying agent or in the chemical industry, we have deleted the sentence regarding the uses for silicon metal from the scope of this investigation. The HTS numbers are provided for convenience and customs purposes. The written description remains dispositive.

Period of Investigation

The period of investigation (POI) is March 1, 1990, through August 31, 1990.

Best Information Available

We have determined, in accordance with section 776(c) of the Act, that the use of best information available is appropriate in this investigation. In deciding whether to use best information available, section 776(c) provides that the Department may take into account whether the respondent was able to produce information requested in a timely manner and in the form required. In this case, exporters of silicon metal from the PRC were not able to do so.

During the course of this investigation, serious problems were encountered in obtaining the price and production data needed for the Department's analysis. In spite of repeated requests since the initiation of this investigation, the Embassy was never able to identify the universe of potential respondents in the PRC or provide adequate price and production data. This information was necessary in order for the Department to base its analysis on sales data that is reflective of the exporting industry. Consequently, we have based our final determination in this investigation on best information available. As best information available, we used the highest margin listed in the notice of initiation for this investigation, which was based on the petition.

Critical Circumstances

Petitioners allege that "critical circumstances" exist with respect to imports of the subject merchandise from the PRC. Section 735(a)(3) of the Act provides that critical circumstances exist if we determine that there is a reasonable basis to believe or suspect that:

(A)(i) There is a history of dumping in the United States or elsewhere of the class or kind of merchandise which is the subject of the investigation, or

(ii) The person by whom, or for whose account, the merchandise was imported knew or should have known that the exporter was selling the merchandise which is the subject of the investigation at less than fair value, and

(B) There have been massive imports of the class or kind of merchandise which is the subject of the investigation over a relatively short period.

Pursuant to 19 CFR 353.16(f), we generally consider the following factors in determining whether imports have been massive over a short period of time: (1) The volume and value of the imports; (2) seasonal trends (if

applicable); and (3) the share of domestic consumption accounted for by imports.

In determining knowledge of dumping, we normally consider margins of 25 percent or more sufficient to impute knowledge of dumping under section 735(a)(3)(A)(ii). (See, e.g., Final Determination of Sales at Less Than Fair Value; Tapered Roller Bearings and Parts Thereof, Finished or Unfinished, from Italy, 52 FR 24198, June 29, 1987). Because we are relying on the petition for purposes of our final determination regarding sales at less than fair value (see, the "Best Information Available" section of this notice), we have also relied on the petition as best information available in determining knowledge of dumping.

Average margins contained in the petition for silicon metal exceed 25 percent. In addition, there is an outstanding antidumping duty order in the European Economic Community (EEC) on silicon metal from the PRC (Council Regulation (EEC) No. 2200/90, July 27, 1990). The EEC found a dumping margin of 38.73 percent. Therefore, in accordance with sections 735(a)(3)(A)(i) and (ii) of the Act, we determine that there is both a history of dumping outside the United States and that importers knew or should have known that the producers or resellers of silicon metal from the PRC were selling it at less than its fair value.

Because the Department did not receive a timely response in the form required, we have relied upon best information available for determining whether there have been massive imports of silicon metal. As best information available, we used the Commerce Department's import statistics to measure import levels of silicon metal from the PRC.

Pursuant to § 353.16(g) of the Department's regulations, in making critical circumstances determinations, the Department normally compares the period beginning on the date the proceeding begins and ending at least three months later (the comparison period) with the three-month period prior to the filing of the petition (the base period). The Department considers the comparison period because it is the period immediately prior to a preliminary determination in which exporters of the subject merchandise could take advantage of their knowledge of the antidumping investigation to increase exports to the United States without being subject to antidumping duties. (See, e.g., Final Determination of Sales at Less Than Fair Value; Certain Internal-Combustion, Industrial Forklift Trucks from Japan, 53 FR 12552, April 15, 1988.)

Based on our analysis of the monthly Commerce Department import statistics, we have found that imports of silicon metal have been massive over a relatively short period of time. We also examined Commerce Department import statistics to ensure that the increase in imports did not simply reflect seasonal trends. The data did not indicate any seasonal increases in shipments. Therefore, we find that the requirements of section 735(a)(3) have been met with respect to silicon metal from the PRC.

Standing

ASRC, Timco, and ARA argue that petitioners lacked standing to file a petition on behalf of the domestic industry. Respondents assert that (1) silicon metal with a silicon content of between 96 and 97.49 percent, and silicon metal having a silicon content of between 97.5 but less than 99.99 percent are different like products and (2) petitioners do not produce silicon metal in the 96 to 97.49 percent range. However, the ITC has preliminarily determined that there is one like product, which includes all of the merchandise defined by the scope of this investigation. Moreover, ASRC, Timco, and ARA do not challenge the fact that petitioners do produce silicon metal in the higher range. Accordingly, we determine that petitioners have standing to file and maintain a case on behalf of the domestic industry producing silicon metal covered by the scope of this investigation.

Verification

Because we never received a timely response to our questionnaire and are using best information available for our determination, we did not conduct verification.

Interested Party Comments

All comments raised by parties to the proceeding in this antidumping duty investigation of silicon metal from the PRC are discussed below.

Comment 1

ACMC argues that the Department should not accept petitioners' surrogate country analysis contained in the petition as the best information available. ACMC asserts that the use of India as a surrogate country is ill-suited for this investigation because of the disparity in the amount of exports of silicon metal from India and the PRC. Midland contends that India is not an appropriate surrogate country because India is not a significant producer of the subject merchandise. Timco, ARA, and ASRC contend that the Department should value the factors of production in a market economy which is a net exporter of the subject merchandise. They maintain that India is a net importer of silicon metal. (See, e.g., Shop Towels of Cotton from the People's Republic of China, Notice of Final Results of Antidumping Duty Administrative Review, 56 FR 4040, 1991.) In addition, Timco, ARA, and ASRC argue that electricity costs, which constitute a large portion of the cost of production of silicon metal, should not be valued in India. They maintain that because of power shortages (see, Metal Bulletin Fast Track, March 5, 1991), Indian electricity costs are three to four times greater than in South Africa and Norway, other significant producers of silicon metal (see, Metal Bulletin, March 7, 1991). Instead, they argue that Yugoslavia is a more appropriate surrogate for electricity costs in the factors of production analysis. They argue that Yugoslavia is a net exporter of silicon metal and is only moderately more developed than the PRC.

Petitioners argue that the use of India as a surrogate country for the PRC is appropriate because India is a market economy country that is at a level of economic development comparable to the PRC, and is a significant producer of silicon metal. To support its argument, petitioners point out that India has been used as a surrogate for the PRC in previous determinations by the Department. (See, e.g., Tapered Roller Bearings from the People's Republic of China, 52 FR 19748, 1987.) Finally, petitioners argue that the use of India is appropriate because the Department should use, as best information available, the highest margin listed in the notice of initiation, and not cost information from other sources.

DOC Position

In the preliminary determination, we relied exclusively upon best information available (i.e., the adjusted petition rate of 139.49 percent based, in part, upon surrogate information from India), because the respondent failed to submit a timely questionnaire response. (See, 19 U.S.C. 1677e(c) (1991)). The interested party importers have challenged the Department's selection of best information available in this case and have submitted additional information for the Department to consider.

Best information available is usually information that is prejudicial to a respondent. This well-established proposition follows from the long-standing tenet that the best information rule is a rule of reasonable adverse

inference designed to induce respondents, in the absence of any subpoena power vested in the Department, to submit timely, complete, and accurate questionnaire responses. This is imperative to permit the completion of investigations in accordance with the Act's strict statutory time limits.

When the respondent failed to submit any information in a timely manner for use in this case, the Department could only presume that the withheld information would establish margins in excess of 139.49 percent. Otherwise, in the words of the Federal Circuit, the respondent "knowing of the rule, would have produced current information showing the margin to be less." (*Rhone Poulenc, Inc.* v. *United States*, 899 F.2d 1185, 1190 (Fed. Cir. 1990).) Therefore, the department would not accept factual information challenging the Department's calculation of BIA from respondents who failed to submit timely answers to our questionnaires.

However, in this case unrelated importers have alleged that the BIA information used by the Department reflects extraordinary or aberrant conditions or circumstances regarding electricity rates in India. These importers supported their allegation with information available in the public domain. Under these circumstances, the Department deemed it appropriate to accept their information and consider their arguments. After reviewing the information submitted, the Department found that the Indian electricity rates relied on by the petitioner and used by the Department as BIA do not reflect extraordinary or aberrant conditions or circumstances in India. While there may very well be electricity shortages in India, the importers have presented no evidence that the shortages are in any way aberrant or extraordinary. In fact, it appears from the importer's rebuttal brief that India suffers from chronic electricity shortages. Therefore, the Department's use of Indian electricity rates as BIA is appropriate.

Comment 2

ACMC contends that the Department's rejection of the requests for postponement of the final determination is not based on compelling reasons. ACMC asserts that a significant proportion of producers of silicon metal from the PRC requested the postponement and that such a postponement would provide an opportunity to develop data relevant to the Department's calculation of foreign market value (FMV).

Petitioners maintain that none of the parties requesting the postponement of the final determination satisfy the requirement that they account for a significant proportion of exports of the merchandise, in accordance with 19 U.S.C. 1673d(a)(2)(A). Petitioners further contend that any data submitted after the preliminary determination could not provide the basis for the Department's calculation of FMV.

DOC Position

We agree with petitioners. While information on the record indicates that there are at least 17 producers of silicon metal in the PRC, we never received a timely response to our questionnaire from any of these producers. Moreover, we have no way of determining how many other producers there may be. Therefore, we had no way of determining if the five PRC exporters of silicon metal requesting the postponement of the final determination accounted for a significant proportion of exports of the subject merchandise, in accordance with 19 CFR 353.20(b). In addition, because we received no timely response and we relied on best information available for purposes of the preliminary determination, we cannot accept or consider additional factual information for FMV calculations not provided in response to our questionnaire for purposes of our final determination, pursuant to 19 CFR 353.31(b). Thus, even if a request had been made by exporters who accounted for a significant proportion of exports, compelling reasons existed for not posponing the final determination.

Comment 3

Midland contends that critical circumstances do not exist with respect to imports of silicon metal from the PRC. Midland maintains that there is no history of dumping in the United States of silicon metal from the PRC, and that in the EEC, only an 18.9 percent antidumping duty was imposed. Midland also contends that import levels of Chinese silicon metal have not been massive since the filing of the petition in this investigation. ACMC, Timco, ARA, and ASRC assert that the Department should rescind its critical circumstances determination based on the substantial imports of silicon metal by petitioners. Timco, ARA, and ASCR contend that the Department should not permit petitioners to obtain a critical circumstances determination unless they will assert that they are not responsible for imports during the period when they allege critical circumstances existed.

Petitioners maintain that critical circumstances exist with respect to imports of silicon metal from the PRC because of the high margins preliminarily found to exist in this investigation, and because imports from the PRC have been massive over a relatively short period of time.

DOC Position

We agree with petititioners. (See, the "Critical Circumstances" section of this notice.)

Comment 4

Petitioners argue that the Department should redefine the scope of this investigation to encompass all imports of silicon metal, other than semiconductor grade silicon metal, including "silicon metal" containing less than 96 percent silicon. Petitioners assert that Census Bureau imports statistics indicate that silicon metal containing less than 96 percent silicon has entered the United States since the filing of the petition. In addition, petitioners submitted a telefax from an importer indicating that it could offer silicon metal containing less than 96 percent silicon. Petitioners assert that this indicates that importers may attempt to circumvent an antidumping duty order by importation of "silicon metal" containing less than 96 percent silicon.

Timco, ARA, and ASRC contend that scope should not include silicon metal with a silicon content less than 97.50 percent. ACMC maintains that the scope should remain as it has been defined in the initiation and the preliminary determination of the investigation. ACMC, Timco, ARA, and ASRC assert that the secondary aluminum industry, a significant purchaser of silicon metal, cannot and does not utilize silicon metal containing less than 96.00 percent silicon. ACMC contends that the physical characteristics and chemical composition of silicon metal containing less than 96.00 percent silicon are different than those of silicon metal as defined by the scope of this investigation. ACMC further contends that petitioners' assertion that the aluminum industry may be interested in purchasing silicon metal with a silicon content lower than 96.00 percent is speculative; petitioners' proof of one instance of such as a sale does not indicate any pattern of such production or sales.

DOC Position

We agree with ACMC. No party has submitted evidence on the record that a substance containing less than 96 percent silicon is silicon metal. Petitioners have simply alleged that (1) an importer has attempted to ofer a substance containing less than 96

percent silicon that could be be used for the same applications as silicon metal; and, (2) import statistics indicate that a substance containing less than 96 percent silicon may have been classified as silicon metal containing greater than 96 percent silicon. While this suggests that an importer may be attempting to sell a product that is to be used as silicon metal, this is not evidence that this substance is silicon metal. Also, the posibility that an imported good may have been misclassified as silicon metal does not establish the product actually is silicon metal.

In addition, at the time of initiation, the Department researched the definition of silicon metal in establishing the scope of this investigation. All of the parties we contacted and sources we consulted, including the petitioners, indicated that the industry standard for silicon metal is a silicon content of between 96 and 99.99 percent.

For these reasons, we are not redefining the scope of this investigation. (See, also, the "Scope of Investigation" section of this notice.)

Suspension of Liquidation

In accordance with section 733(d)(1) of the Act, we are directing the Customs Service to continue to suspend liquidation of all entries of silicon metal from the PRC, as defined in the "Scope of Investigation" section of this notice, that are entered or withdrawn from warehouse, for consumption on or after the date which is 90 days prior to the date of publication of our preliminary determination (56 FR 4596, February 5, 1991). The Customs Service shall require a cash deposit or posting of a bond equal to 139.49 percent on all entries of silicon metal from the PRC. This suspension of liquidation will remain in effect until further notice.

ITC Notification

In accordance with section 735(c) of the Act, we have notified the ITC of our determination. In addition, we are making available to the ITC all nonprivileged and nonproprietary information relating to this investigation. We will allow the ITC access to all privileged and business proprietary information in our files, provided the ITC confirms that it will not disclose such information, either publicly or under administrative protective order, without the written consent of the Deputy Assistant Secretary for Investigations, Import Administration.

If the ITC determines that material injury, or threat of material injury, does not exist with respect to the product under investigation, the applicable proceeding will be terminated and all securities posted as a result of the suspension of liquidation will be refunded or cancelled.

However, if the ITC determines that such injury does exit, the Department will issue an antidumping duty order directing Customs officials to assess antidumping duties on silicon metal from the PRC entered or withdrawn from warehouses, for consumption, on or after the effective date of the suspension of liquidation, equal to the amount by which the FMV exceeds the United States price.

This determination is published pursuant to section 735(d) of the Act (19 U.S.C. section 1673d(d) and 19 CFR 353.20(a)(4)).

Dated: April 16, 1991.

Eric I. Garfinkel,

Assistant Secretary for Import Administration.

[FR Doc. 91-9499 Filed 4-22-91; 8:45 am]

BILLING CODE 3510-DS-M

International Trade Administration

[A-357-804]

Preliminary Determination of Sales at Less Than Fair Value: Silicon Metal from Argentina

AGENCY: Import Administration, International Trade Administration, Commerce.

ACTION: Notice.

SUMMARY: We preliminarily determine that imports of silicon metal from Argentina are being, or are likely to be, sold in the United States at less than fair value. We have notified the International Trade Commission (ITC) of our determination and have directed the Customs Service to suspend liquidation of all entries of silicon metal from Argentina, as described in the "Suspension of Liquidation" section of this notice. If this investigation proceeds normally, we will make a final determination by June 5, 1991.

EFFECTIVE DATE: March 29, 1991.

FOR FURTHER INFORMATION CONTACT: James Terpstra or James Maeder, Office of Antidumping Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230; telephone (202) 377-3965 or (202) 377-4929, respectively.

SUPPLEMENTARY INFORMATION:

Preliminary Determination

We preliminarily determine that imports of silicon metal from Argentina are being, or are likely to be, sold in the United States at less than fair value, as provided in section 733 of the Tariff Act of 1930, as amended (19 U.S.C. 1673b) (the Act). The estimated margin is shown in the "Suspension of Liquidation" section of this notice. The statutory deadline for the final determination is June 5, 1991.

Case History

Since the publication of our notice of initiation (initiating investigations on imports of silicon metal from Argentina, Brazil, and the People's Republic of China (PRC)) on September 20, 1990, (55 FR 38716), the following events have occurred.

On October 17, 1990, the ITC published its preliminary determination that there is a reasonable indication that an industry in the United States is being materially injured by reason of imports from Argentina, Brazil and the PRC of silicon metal that are alleged to be sold in the United States at less than fair value (55 FR 42079).

On October 17, 1990, the Department presented its questionnaire to Electrometalurgica Andina, S.A.I.C. (Andina). During the period of investigation (POI), Andina accounted for 100 percent of exports of silicon metal to the United States. The response to section A of the questionnaire was due on November 5, 1990, and the remaining sections were due on November 19, 1990. At Andina's request, we extended the response deadline for section A of the questionnaire to November 19, 1990, and for sections B and C to December 10, 1990. We received the responses to sections A, B, and C of the questionnaire on their respective extended due dates. On December 18, 1990, the Department presented a deficiency letter to Andina. The response to the deficiency letter was due on January 1, 1991. At Andina's request, we extended the deficiency response deadline to January 11, 1991. We received the response to the deficiency letter on its extended due date. On January 24, 1991, we received comments from petitioners on the questionnaire responses and the deficiency response submitted by Andina.

On October 19, 1990, Silarsa, S.A. (Silarsa) filed a timely request for exclusion from the antidumping duty order, should one be issued in this investigation, pursuant to 19 CFR 353.14. Silarsa based its request on the fact that it (1) is a new producer of silicon metal; (2) had only begun production in September 1990, the month following the filing of the petition; and (3) had not yet made any sales to either the U.S. or home markets.

On October 26, 1990, and March 29, 1991, petitioners filed comments in opposition to Silarsa's request. Petitioners argued that, as a new exporter, Silarsa is not eligible to invoke 19 CFR 353.14 and, therefore, does not qualify for exclusion. Further, petitioners argue that the Department should apply the "All Others" Rate to Silarsa.

On November 5 and 19, 1990, Silarsa submitted a voluntary response to our questionnaire, indicating that it had no sales to either the U.S. or home markets during the POI. Silarsa submitted additional comments in support of its exclusion request on November 21, 1990, and February 21, 1991. In addition, we held several meetings with representatives of Silarsa and petitioners between January 25 and March 15, 1991, to discuss Silarsa's exclusion request.

On December 17, 1990, petitioners alleged that Andina was selling silicon metal in the home market at prices below the cost of production (COP). On January 4, 1991, we received Andina's comments regarding petitioners' COP allegation. On January 10, 1991, the Department rejected the COP allegation with regard to Andina because of (1) methodological inconsistencies in calculating COP and the home market prices; (2) failure to use available company-specific data; and, (3) use of inappropriate data for determining certain component costs in the COP. A petitioners' request, Department representatives met with counsel for petitioners on January 23, 1991, to discuss the Department's January 10, 1991, decision. On February 5, 1991, petitioners submitted a revised cost allegation, addressing the above-referenced problems. Based on this revised allegation, we initiated a cost investigation of Andina.

On January 4, 1991, petitioners requested that the Department postpo the preliminary determination until 21 days after the date upon which the petition was filed. On January 11, 1991 Silarsa submitted comments arguing that the Department reject this reques We granted petitioners' request for postponement and postponed the preliminary determination until Marc 22, 1991, in accordance with section 733(c)(1)(A) of the Act (56 FR 5980, February 14, 1991).

On January 18, 1991, the Aluminum Smelting and Refining Company, Inc. (ASRC), Timco, and the Aluminum Recycling Association (ARA), interes parties in this investigation, challeng petitioner's standing to file on behalf the domestic producers of the like product. For a discussion of this issu see the "Scope of Investigation" secti of this notice.

On February 15, 1991, we presente section D of the Department's questionnaire to Andina. The respon to section D was due on March 8, 19 On February 20, 1991, Andina reques an extension of time to respond to Section D of the questionnaire. On February 21, 1991, we extended the response deadline for section D to March 15, 1991. We received the response to section D of the questionnaire on its extended due d

Scope of Investigation

The merchandise covered by this investigation is silicon metal containing at least 96.00 but less than 99.99 percent of silicon by weight. Silicon metal is currently provided for under subheadings 2804.69.10 and 2804.69.50 of the *Harmonized Tariff Schedule* (HTS) as a chemical product, but is commonly referred to as a metal. Semiconductor-grade silicon (silicon metal containing by weight not less than 99.99 percent of silicon and provided for in subheading 2804.61.00 of the HTS) is not subject to this investigation. Because this investigation is not limited to silicon metal used as an alloying agent or in the chemical industry, we have deleted the sentence regarding the uses for silicon metal from the scope of this investigation. The HTS numbers are provided for convenience and customs purposes. The written description remains dispositive.

On January 29, 1991, petitioners requested that the scope of this investigation be defined to encompass all imports of silicon metal, other than semiconductor grade silicon metal, including silicon metal containing less than 96 percent silicon. We preliminarily determine not to expand the scope of this investigation. We do not have adequate evidence on the record that would compel us to conclude that a substance containing less than 96.00 percent silicon is considered silicon metal. We invite comments concerning this issue from all interested parties in this investigation.

Period of Investigation

The POI is March 1, 1990, through August 31, 1990.

Such or Similar Comparisons

We established one such or similar category of merchandise, consisting of silicon metal, in accordance with section 771(16) of the Act. Comparisons were made on the basis of the following grade classifications: (1) Chemical grade, having a silicon content from 98.50 through 99.98 percent and an iron content from 0.00 through 0.65 percent; (2) primary-aluminum grade, having a silicon content from 98.50 through 99.98 percent and an iron content from 0.66 through 1.00 percent; (3) secondary-aluminum grade, having a silicon content from 98.00 through 98.49 percent; and (4) other, with a silicon content from 96.00 through 97.99 percent.

We found sales of identical merchandise in the home market with which to compare to all sales in the United States.

Standing

In its letter of January 18, 1991, the ASRC, Timco, and the ARA challenged petitioners' standing to file on behalf of the domestic producers of the like product. This challenge was based on their assertions that (1) silicon metal with a silicon content of between 96 and 97.49 percent, and silicon metal having a silicon content of between 97.50 but less than 99.99 percent, are different like products, and (2) petitioners do not produce silicon metal in the 96 to 97.49 percent range. However, the ITC has preliminary determined that there is one like product, which includes all of the merchandise defined by the scope of this investigation. Moreover, the ASRC, Timco, and the ARA neither challenge the fact that petitioners produce silicon metal in the higher range, nor assert that they are themselves members of the U.S. industry producing silicon metal. Accordingly, we preliminary determine that petitioners have standing to file on behalf of the domestic industry in this investigation.

Critical Circumstances

Petitioner alleges that "critical circumstances" exist with respect to imports of silicon metal from Argentina. Section 733(e)(1) of the Act provides that critical circumstances exist if we determine that there is a reasonable basis to believe or suspect that:

(A)(i) There is a history of dumping in the United States or elsewhere of the class or kind of merchandise which is the subject of the investigation, or

(ii) The person by whom, or for whose account, the merchandise was imported knew or should have known that the exporter was selling the merchandise which is the subject of the investigation at less than its fair value, and

(B) There have been massive imports of the class of kind of merchandise which is the subject of the investigation over a relatively short period.

Pursuant to section 733(e)(1)(B), we generally consider the following factors in determining whether imports have been massive over a short period of time: (1) The volume and value of the imports; (2) seasonal trends (if applicable); and (3) the share of domestic consumption accounted for by imports.

In determining knowledge of dumping, we normally consider either an outstanding antidumping order in the United States or elsewhere on the subject merchandise, or margins of 25 percent or more, as being sufficient to impute knowledge of dumping under section 733(e)(1)(A). (*See, e.g., Final Determination of Sales at Less Than Fair Value; Heavy Forged Hand Tools, Finished or Unfinished, With or Without Handles, from the People's Republic of China*, 56 FR 241, January 3, 1991). Since there are no outstanding antidumping orders on silicon metal from Argentina, and the preliminarily determined dumping margin is less than 25 percent, we cannot impute knowledge of dumping under section 733(e)(1)(A). Therefore, in accordance with section 733(e)(1)(A), we preliminarily determine that critical circumstances do not exist with respect to imports of the subject merchandise from Argentina.

Exclusion Request

Silarsa contends that the Antidumping Code supports the granting of an exclusion in this case. Specifically, given that it has not yet sold or exported any silicon metal to the United States, it argues that the ITA cannot determine that Silarsa is selling at less than fair value, nor can the ITC determine that the U.S. industry is being injured by Silarsa. As such, Silarsa asserts that it cannot be included in any affirmative determination. We disagree.

While the specific facts underlying Silarsa's request may appear unique (*i.e.*, Silarsa had not yet begun production when the petition in this case was filed), we are unable to grant Silarsa's exclusion request. In accordance with 19 CFR 353.14, exclusion of a particular exporter is possible only if that exporter can demonstrate that it is not dumping. That is, if a company is to be excluded from an order (a very significant action given that once excluded, it would not be subject to any future administrative review), the company must certify that it will not dump in the future and establish a "track record" indicating that its pricing practices during the POI would not have resulted in sales at less than fair value. Silarsa cannot satisfy this requirement. The Department's antidumping determinations are not limited only to those exporters who are respondents in an investigation; rather, our determinations cover all exports of the specified merchandise from the country subject to an investigation, regardless of whether particular exporters had sales during the POI. Accordingly, we preliminarily determine that Silarsa will not be excluded from the determination.

Furthermore, we cannot assign Silarsa a zero deposit rate because Silarsa's position, once it begins exporting to the United States, will be identical to that of a new shipper of the subject merchandise. Accordingly, Silarsa is subject to the "All Others" rate, as

would be any new shipper of the subject merchandise from Argentina. This is consistent with the Department's long-standing practice. Given the competitive conditions in both the home and U.S. markets, the Department is justified in concluding that Silarsa, which made no sales during the POI, would price similarly to Andina, the producer that had. Absent actual sales by Silarsa, assigning it the "All Others" rate based on the data of the other Argentine company that has been preliminarily found to sell at less than fair value is the only action supported by the facts developed in this investigation.

If an antidumping duty order is issued in this investigation, Silarsa will have an opportunity to request an administrative review under section 751 of the Act. If its entries are found to be priced at fair value, no duties will be assessed and any deposits of estimated antidumping duties it is required to make will be refunded with interest.

Fair Value Comparisons

To determine whether sales of silicon metal from Argentina to the United States were made at less than fair value, we compared the United States price (USP) to the foreign market value (FMV), as specified in the "United States Price" and "Foreign Market Value" sections of this notice.

United States Price

We based the USP on purchase price, in accordance with section 772(b) of the Act, because all sales were made directly to unrelated parties prior to importation into the United States.

We calculated purchase price based on packed, f.o.b. prices to unrelated customers in the United States. We made deductions, where appropriate, for foreign inland freight, labor at port, customs fees, and Argentine export duties, in accordance with section 772(d)(2) of the Act. Because of inconsistencies found in the response, we recalculated Argentine export duties using the duty rates specified in Argentine Government Resolution 100/89, included in Andina's January 11, 1991, submission. Finally, we increased purchase price for taxes rebated and taxes uncollected by reason of exportation, in accordance with section 772(d)(1) of the Act.

Foreign Market Value

We determined that sales in the home market were the most appropriate basis for calculating FMV because the home market was viable, pursuant to section 773(a)(1) of the Act.

We calculated FMV based on the unpacked, ex-factory prices denominated in U.S. dollars to unrelated customers in Argentina. These prices appear on the customer invoices. According to Andina, prices are converted to australes on each invoice, according to the date and time the invoice is produced. Furthermore, according to the response, the australe invoice price is then adjusted on the date of payment to account for the effect of hyperinflation between the date of invoicing and date of payment. Such adjusted prices were not reported in the response. For this reason, we have used the reported U.S. dollar price as best information available. We added U.S. packing costs to the home market price, in accordance with section 773(a)(1) of the Act.

Because all comparisons involved purchase price sales, we made a circumstance of sale adjustement for differences in credit expenses, in accordance with 19 CFR 353.56. We recalculated credit using interest rates available to Andina during the POI for borrowings in foreign currencies.

We made an upward adjustment to the tax-exclusive home market prices for the taxes we computed for the USP.

Verification

As provided in section 776(b) of the Act, we will verify all information used in reaching the final determination in this investigation.

Suspension of Liquidation

In accordance with section 733(d)(1) of the Act, we are directing the Customs Service to suspend liquidation of all entries of silicon metal from Argentina, as defined in the "Scope of Investigation" section of this notice, that are entered, or withdrawn from warehouse, for consumption, on or after the date of publication of this notice in the **Federal Register**. The Customs Service shall require a cash deposit or posting of a bond equal to 2.16 percent on all entries of silicon metal from Argentina. The suspension of liquidation will remain in effect until further notice.

ITC Notification

In accordance with section 733(f) of the Act, we have notified the ITC of our determination. In addition, we are making available to the ITC all nonprivileged and nonproprietary information relating to this investigation. We will allow the ITC access to all privileged and business proprietary information in our files, provided the ITC confirms in writing that it will not disclose such information, either publicly or under administrative protective order, without the written consent of the Deputy Assistant Secretary for Investigations, Import Administration.

If our final determination is affirmative, the ITC will determine whether these imports are materially injuring, or threaten material injury to, the U.S. industry before the later of 120 days after the date of this preliminary determination or 45 days after our final determination.

Public Comment

In accordance with 19 CFR 353.38, case briefs or other written comments in at least ten copies must be submitted to the Assistant Secretary for Import Administration no later than May 13, 1991, and rebuttal briefs no later than May 20, 1991. In accordance with 19 CFR 353.38(b), we will hold a public hearing, if requested, to afford interested parties an opportunity to comment on arguments raised in case or rebuttal briefs. The hearing will be held at 1:30 p.m. on May 22, 1991, at the U.S. Department of Commerce, room 3708, 14th Street and Constitution Avenue, NW., Washington, DC, 20230. Interested parties who wish to participate in the hearing must submit a written request to the Assistant Secretary for Import Administration, U.S. Department of Commerce, room B-099, within 10 days of the publication of this notice. Requests should contain: (1) The party's name, address, and telephone number; (2) the number of participants; (3) the reasons for attending; and (4) a list of the issues to be discussed. In accordance with 19 CFR 353.38(b), oral presentations will be limited to arguments raised in the briefs.

This determination is published pursuant to section 733(f) of the Act (19 U.S.C. 1673b(f)) and 19 CFR 353.15(a)(4).

Dated: March 22, 1991.

Eric L. Garfinkel,

Assistant Secretary for Import Administration.

[FR Doc. 91-7501 Filed 3-28-91; 8:45 am]

BILLING CODE 3510-DS-M

[A-351-806]

Preliminary Determination of Sales at Less Than Fair Value: Silicon Metal from Brazil

AGENCY: Import Administration, International Trade Administration, Commerce.

ACTION: Notice.

SUMMARY: We preliminarily determine that imports of silicon metal from Brazil are being, or are likely to be, sold in the United States at less than fair value. We

have notified the International Trade Commission (ITC) of our determination and have directed the Customs Service to suspend liquidation of all entries of silicon metal from Brazil, as described in the "Suspension of Liquidation" section of this notice. If this investigation proceeds normally, we will make a final determination by June 5, 1991.

EFFECTIVE DATE: March 29, 1991.

FOR FURTHER INFORMATION CONTACT: James Maeder or Brad Hess, Office of Antidumping Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC 20230; telephone (202) 377–4929 or (202) 377–3773 respectively.

SUPPLEMENTARY INFORMATION:

Preliminary Determination

We preliminarily determine that imports of silicon metal from Brazil are being, or are likely to be, sold in the United States at less than fair value, as provided in section 733 of the Tariff Act of 1930, as amended (19 U.S.C. 1673b) (the Act). The estimated margins are shown in the "Suspension of Liquidation" section of this notice. The statutory deadline for the final determination is June 5, 1991.

Case History

Since the publication of our notice of initiation (initiating investigations on imports of silicon metal from Argentina, Brazil, and the People's Republic of China (PRC) on September 20, 1990 (55 FR 38716), the following events have occurred.

On October 17, 1990, the ITC published its preliminary determination that there is a reasonable indication that an industry in the United States is being materially injured by reason of imports from Argentina, Brazil and the PRC of silicon metal that are alleged to be sold in the United States at less than fair value (55 FR 42079).

On October 17, 1990, the Department presented its questionnaire to Camargo Correa Metais, S.A. (CCM) and Companhia Brasileira Carbureto de Calcio (CBCC). During the period of investigation (POI), these companies accounted for over 60 percent of the total quantity of exports of silicon metal to the United States. The response to section A of the questionnaire was due on October 31, 1990, and the remaining sections were due on November 14, 1990. At CCM and CBCC's request, we extended the response deadline for section A of the questionnaire to November 6, 1990, and for sections B and C to November 21, 1990. We received CCM's responses to sections A, B, and C of the questionnaire, and CBCC's response to sections B and C, on their respective extended due dates. On November 7, 1990, we received CBCC's section A questionnaire respeonse as well as voluntary responses from the Eletrometalurgia S.A. (Rima), Eletroila S.A. (Eletroila), and Companhia Ferroligas Minas Gerais (Minasligas). We received Rima, Eletroila, and Minasligas' responses to sections B and C of the questionnaire on November 23, 1990. On December 7, 1990, we sent deficiency letters to CBCC, Rima, Eletroila, and Minasligas based on their responses to sections A, B, and C of the questionnaire. The responses to the deficiency letters were due on December 21, 1990. We received responses to the deficiency letters from CBCC, Rima, Minasligas, and Eletroila on December 24, 1990.

On February 5, 1991, we issued second deficiency letters to CBCC, Rima, Eletroila, and Minasligas. The deficiency responses were due on February 12, 1991. On February 12, 1991, we received extension requests on behalf of CBCC, Rima, Eletroila, and Minasligas. On February 15, 1991, we received deficiency responses from CBCC, Rima, Minasligas, and Eletroila.

On December 17, 1990, we received allegations of sales below the cost of production (COP) with regard to all five Brazilian respondents. On December 19 and 27, 1990 we received CCM's comments regarding petitioners' COP allegations. On December 20 and 28, 1990, we received CBCC's Rima's, Eletroila's, and Minasligas' comments regarding petitioners' COP allegations. On January 10, 1991, the Department rejected the COP allegations with regard to CCM, Rima, and Eletroila because of (1) methodological inconsistencies in calculating COP and the home market price; (2) failure to use available company-specific data; and (3) use of inappropriate data for determining certain component costs in the COP. On January 14, 1991, we presented section D of the questionnaire to CBCC and Minasligas. The responses to Section D of the questionnaire were due on February 4, 1991. At petitioners' request, Department representatives met with counsel for petitioners on January 18, 1991, to discuss the Department's January 10, 1991, decisions. CBCC and Minasligas requested that we extend the February 4, 1991, response deadline for section D of the questionnaire to March 1, 1991. We extended the deadline to February 11, 1991. CBCC and Minasligas submitted their responses to section D of the questionnaire by the extended deadline. On February 5, 1991, petitioners submitted revised COP allegations. Based on the revised allegations, we decided to initiate cost investigations of CCM, Rima, and Eletroila and, on February 15, 1991, we presented section D of the Department's questionnaire to these companies. The responses to section D of the questionnaire were due on March 8, 1991.

On January 4, 1991, petitioners requested that the Depratment postpone the preliminary determination until 210 days after the date upon which the petition was filed. We granted petitioners' request and postponed the preliminary determination until March 22, 1991, in accordance with section 733(c)(1)(A) of the Act (56 FR 5980, February 14, 1991).

By letter dated January 18, 1991, the Aluminum Smelting and Refining Company, Inc. (ASRC), Timco, and the Aluminum Recycling Association (ARA), interested parties in this investigation, challenged petitioner's standing to file on behalf of the domestic producers of the like product. For a discussion of this issue, see the "Scope of Investigation" section of this notice.

On March 1, 1991, we received petitioners' comments on CBCC's and Minasligas' responses to section D of the questionnaire. On March 1, 1991, we also received petitioners' comments on the questionnaire responses of CBCC, Rima, Eletroila, and Minasligas. CCM submitted its response to section D of the questionnaire by the original deadline of March 8, 1991. At the request of Rima and Eletroila, the deadline for the responses to section D of the questionnaire was extended to March 15, 1991. We received Eletroila's response on March 14, and Rima's response on March 15, 1991.

Scope of Investigation

The merchandise covered by this investigation is silicon metal containing at least 96.00 but less than 99.99 percent of silicon by weight. Silicon metal is currently provided for under subheadings 2804.69.10 and 2804.69.50 of the *Harmonized Tariff Schedule* (HTS) as a chemical product, but is commonly referred to as a metal. Semiconductors-grade silicon (silicon metal containing by weight not less than 99.99 percent of silicon and provided for in subheading 2804.61.00 of the HTS) is not subject to this investigation. Given that this investigation is not limited to silicon metal used as an alloying agent or in the chemical industry, we have deleted the sentence regarding the uses for silicon metal from the scope of this investigation. The HTS numbers are

provided for convenience and customs purposes. The written description remains dispositive.

On January 29, 1991, petitioners requested that the scope of this investigation be defined to encompass all imports of silicon metal, other than semiconductor grade silicon metal, including silicon metal containing less than 96 percent silicon. We preliminarily determine not to expand the scope of this investigation. We do not have adequate evidence on the record that would lead us to conclude that a substance containing less than 96.00 percent silicon is considered silicon metal. We invite comments concerning this issue from all interested parties in this investigation.

Period of Investigation

The period of investigation (POI) is March 1, 1990, through August 31, 1990.

Such or Similar Comparisons

We established one such or similar category of merchandise, consisting of silicon metal, in accordance with section 771(16) of the Act. Comparisons were made on the basis of the following grade classifications: (1) chemical grade, having a silicon content from 98.50 through 99.98 percent and an iron content from 0.00 through 0.65 percent; (2) primary-aluminum grade, having a silicon content from 98.50 through 99.98 percent and an iron content from 0.66 through 1.00 percent; (3) secondary-aluminum grade, having a silicon content from 98.00 through 98.49 percent; and (4) other, with a silicon content from 96.00 through 97.99 percent.

For CCM, we found sales of identical merchandise in the home market with which to compare all sales in the United States. As explained in the "Foreign Market Value" section of this notice, for comparison with all of CBCC's sales in the United States, we used either sales of identical merchandise in the home market or constructed value.

Standing

In its letter of January 18, 1991, the ASRC, Timco, and the ARA challenged petitioners' standing to file on behalf of the domestic producers of the like product. This challenge is based on their assertions that (1) silicon metal with a silicon content of between 96 and 97.49 percent, and silicon metal having a silicon content of between 97.50 but less than 99.99 percent, are different like products, and (2) petitioners do not produce silicon metal in the 96 to 97.49 percent range. The ITC has preliminarily determined that there is one like product, which includes all of the merchandise defined by the scope of this investigation. Moreover, the ASRC, Timco, and the ARA neither challenge the fact that petitioners produce silicon metal in the higher range, nor assert that they are themselves members of the U.S. industry producing silicon metal. Accordingly, we preliminarily determine that petitioners have standing to file on behalf of the domestic industry in this investigation.

Critical Circumstances

Petitioner alleges that "critical circumstances" exist with respect to imports of the silicon metal from Brazil. Section 733(e)(1) of the Act provides that critical circumstances exist if we determine that there is a reasonable basis to believe or suspect that:

(A)(i) There is a history of dumping in the United States or elsewhere of the class or kind of merchandise which is the subject of the investigation, or

(ii) The person by whom, or for whose account, the merchandise was imported knew or should have known that the exporter was selling the merchandise which is the subject of the investigation at less than its fair value, and

(B) There have been massive imports of the class of kind of merchandise which is the subject of the investigation over a relatively short period.

Pursuant to section 733(e)(1)(B), we generally consider the following factors in determining whether imports have been massive over a short period of time: (1) The volume and value of the imports; (2) seasonal trends (if applicable); and (3) the share of domestic consumption accounted for by imports.

In determining knowledge of dumping, we normally consider either an outstanding antidumping order in the United States or elsewhere on the subject merchandise, or margins of 25 percent or more sufficient to impute knowledge of dumping under section 733(e)(1)(A) of the Act. (*See, e.g., Final Determination of Sales at Less Than Fair Value: Heavy Forged Hand Tools, Finished or Unfinished, With or Without Handles, from the People's Republic of China*, 56 FR 241, January 3, 1991).

As regards CCM, since there are no outstanding antidumping orders on silicon metal from Brazil, and the preliminarily-determined dumping margin is less than 25 percent, we cannot impute knowledge of dumping under section 733(e)(1)(A) of the Act. Therefore, in accordance with section 733(e)(1)(A) of the Act, we preliminarily determine that, for CCM, critical circumstances do not exist with respect to imports of silicon metal from Brazil. For CBCC, because the preliminarily-determined dumping margin exceeds 25 percent, in accordance with section 733(e)(1)(A)(ii), we determine that knowledge of dumping existed for silicon metal from Brazil.

For CBCC, in determining whether there have been massive imports of silicon metal, we relied upon the company-specific export data submitted by CBCC. Pursuant to 19 CFR 353.16(g), we compared the export volume for the three-month period beginning with the month the petition was filed (the comparison period) with the three-month period prior to the filing of the petition (the base period). The comparison period, running from August through October, represents the months from the beginning of the investigation until the most recent month for which export data was submitted. The Department considers the comparison period because it is the period immediately prior to a preliminary determination in which exporters of the subject merchandise could take advantage of their knowledge of the antidumping investigation to increase exports to the United States without being subject to antidumping duties. (*See, e.g., Final Determination of Sales at Less than Fair Value, Certain Internal-Combustion, Industrial Forklift Trucks from Japan*, 53 FR 12552, April 15, 1988.)

Based on our analysis of the exports of silicon metal submitted by CBCC, we have preliminarily found that exports of silicon metal by CBCC have increased by at least 15 percent. Therefore, in accordance with 19 CFR 353.16(f)(2), we find that exports by CBCC have been massive over a relatively short period of time.

We also examined CBCC's export data to ensure that the increase in imports did not simply reflect seasonal trends. The seasonal data did not indicate any seasonal increases in shipments.

Because the preliminarily determined dumping margin for CBCC is sufficient to impute knowledge of dumping, and because imports have been massive, in accordance with sections 733(e)(1)(A)(ii) and 733(e)(1)(B) of the Act, we find that critical circumstances exist with respect to exports of silicon metal by CBCC.

Based on our analysis of the cumulative export data for silicon metal submitted by both CCM and CBCC, we preliminarily find that cumulative exports of silicon metal by CCM and CBCC have not increased. Therefore, in accordance with 19 CFR 353.16(f)(2), we find that exports by all producers/manufacturers/exporters other than CBCC have not been massive over a relatively short period of time. As a

result, we preliminarily find that critical circumstances do not exist with respect to exports of silicon metal by all producers/manufacturers/exporters other than CBCC.

Voluntary Respondents

The voluntary responses submitted by three companies, Rima, Eletroila, and Minasligas, contain numerous deficiencies, even after we provided two opportunities for the companies to correct the data in their submissions. In particular, none of the voluntary respondents documented the interest rate used to calculate U.S. credit expenses or even reported the interest rate used. Moreover, none of the voluntary respondents broke down material and labor costs for packing as we had requested and, except for Rima, the packing amounts that were reported varied greatly between the U.S. and home markets even though the same packing method reportedly was used in both markets. All of the voluntary respondents also failed to include replacement costs for the COP as requested. In addition, numerous other deficiencies remain unresolved in each of the voluntary responses. The outstanding deficiencies in the three voluntary responses are of such magnitude that the voluntary responses could not be used for the preliminary determination unless we resorted to the considerable use of best information available (BIA).

It has been our consistent practice to impose rigid standards of completeness for responses submitted by voluntary respondents. Furthermore, in recent cases, we have accepted and used voluntary responses in our preliminary determinations, and subsequently varified those responses, only when the responses were substantially free from deficiencies (*see, e.g., Preliminary Determination of Sales at Less Than Fair Value: Gray Portland Cement and Clinker from Mexico* (55 FR 13817, April 12, 1990), and *Preliminary Determination of Sales at Less Than Fair Value: Certain Granite Products from Spain* (53 FR 6023, February 29, 1988)). As noted above, the three voluntary responses in this case are replete with deficiencies. Therefore, we are not considering the voluntary responses by Rima, Minasligas, and Eletroila in our preliminary determination and will not do so in our final determination. As a result, these companies will be assigned the "all others" rate.

Fair Value Comparisons

To determine whether sales of silicon metal from Brazil to the United States were made at less than fair value, we compared the United States price (USP) to the foreign market value (FMV), as specified in the "United States Price" and "Foreign Market Value" sections of this notice.

United States Price

A. CCM

We based the USP on purchase price, in accordance with section 772(b) of the Act, because all sales by the exporter were made directly to unrelated parties prior to importation into the United States. We calculated purchase price for CCM based on packed, C&F prices to unrelated customers in the United States. We made deductions, where appropriate, for foreign inland freight, foreign handling, and foreign inland insurance, in accordance with section 772(d)(2) of the Act. Although the terms of sale were C&F, CCM reported that charges for ocean freight were not included in the gross unit price. We increased purchase price for taxes rebated and taxes uncollected by reason of exportation, in accordance with section 772(d)(1) of the Act.

In its response, CCM converted the prices, charges and adjustments per gross ton of silicon metal into amounts per ton of pure silicon. It did this by dividing the gross ton amounts by the percentage silicon per gross ton of silicon metal. CCM argues that silicon metal will command a price that is directly related to its pure silicon content. The Department has seen no evidence that would lead it to conclude that prices are established in accordance with the specific silicon content per gross ton of silicon metal. No other party in this or the other concurrent silicon metal investigations has indicated that prices are established on the basis of pure silicon content. Therefore, for purposes of the preliminary determination, we have converted all of CCM's reported prices, charges, and adjustments to amounts per gross ton of silicon metal.

B. CBCC

We calculated purchase price for DBCC based on packed, C & F prices to unrelated customers in the United States. We made deductions, where appropriate, for foreign inland freight, foreign inland insurance, ocean freight, brokerage wharfage, handling, stevedoring, and Brazilian export duties in accordance with section 772(d)(2) of the Act. When USP was compared to home market prices, we increased purchase price for taxes rebated and taxes uncollected by reason of exportation in accordance with section 772(d)(1) of the Act.

Foreign Market Value

In accordance with section 773(a) of the Act, we calculated FMV based on home market sales or constructed value (CV).

In order to determine whether there were sufficient sales of silicon metal in the home market to serve as the basis for calculating FMV, we compared the volume of home market sales of the such or similar category (i.e., all silicon metal) to the aggregate volume of third country sales, in accordance with section 773(a)(1) of the Act. For both CCM and CBCC, the volume of home market sales was greater than five percent of the aggregate volume of third country sales. Therefore, for both CCM and CBCC, we determined that home market sales constitute a viable basis for calculating FMV in accordance with 19 CFR 353.48.

Petitioner alleged that both CCM and CBCC were selling in the home market at prices below the COP. Based on petitioners' allegations, we requested and received data on the production costs of both CCM and CBCC. Because we requested CCM's cost data later than we requested cost data from CBCC, CCM's cost data were not submitted in time to be considered for the preliminary determination. However, CCM's submitted cost data will be examined at verification and may be used for our final determination. CBCC's cost data are being considered for purposes of the preliminary determination.

We determined Brazil's economy to be hyperinflationary. In order to eliminate the distortive effect of inflation, we calculated separate weighted average FMBs for each month for which home market sales were reported. (*See, e.g., Final Determination of Sales at Less Than Fair Value: Industrial Nitrocellulose from Brazil*, 55 FR 23120, June 6, 1990).

A. CCM

We calculated FMV for CCM based on packed, ex-factory prices to unrelated customers in Brazil. We deducted home market packing costs and added U.S. packing costs, in accordance with section 773(a)(1)(B) of the Act.

In its response, CCM converted the prices, charges and adjustments per gross ton of silicon metal into amounts per ton of pure silicon. For the reasons outlined in the "United States Price" section of this notice, we have converted these back to amounts per gross ton of silicon metal.

Because all comparisons involved purchase price sales, we made a circumstance of sale adjustment for differences in credit expenses, in accordance with 19 CFR 353.56. To calculate imputed home market credit expense for a portion of its home market sales, CCM used as an interest rate the inflation rate during the month preceding the month of the sale, plus an interest premium. CCM used these rates, arguing that the economy was particularly hyperinflationary at the time and short-term borrowings were unavailable. However, Department officials conducting the concurrent countervailing duty investigation of silicon metal from Brazil have verified that certain inflation-adjusted interest rates used by Brazilian banks were in effect during the POI. Therefore, for purposes of the preliminary determination, we recalculated home market credit expenses using these monthly-average interest rates.

We also recalculated U.S. credit expenses using as the credit period the time between the date of payment and date of shipment and an average of the interest rates in effect during the POI, as reported in CCM's response.

Furthermore, we deducted the taxes included in the home market price and added the taxes we computed for the USP. In addition, where appropriate, we made further adjustments to FMV for differences in physical characteristics of the merchandise, in accordance with 19 CFR 353.57.

B. CBCC

In order to determine whether home market sales were above the COP, we calculated the COP on the basis of CBCC's cost of materials, labor, other fabrication costs, general expenses, and packing. We relied on the COP data submitted by CBCC except in the following instance where the costs were not appropriately quantified or valued. As CBCC did not provide information on the methodology used to determine its submitted general and administrative expenses (G&A), we used BIA for calculating G&A. As BIA, we used information from CBCC's financial statements.

It should be noted that the Department used the finance costs as reflected on CBCC's financial statement. However, the Department usually relies on the consolidated financial statements of the parent company to determine the interest expense related to manufacturing the product. For the final determination, the Department may consider an alternative methodology to the methodology used for the preliminary determination.

We found that all sales in the home market were made at prices above the COP. However, for only one month for which home market sales were reported was there a U.S. sale in the same month. For this one month we calculated FMB based on the packed, ex-factory price to an unrelated customer in Brazil. For comparisons with U.S. sales in all other months, we used constructed value as the basis for determining FMV in accordance with section 773(e)(1) of the Act because there were no home market sales in the same month.

When FMV was based on home market prices, as set forth above, we added a reported surcharge for sales of silicon metal made in small quantities.

Because of the broad range of packing costs reported for the same packing method, and because of CBCC's failure to explain these wide variations, we cannot rely on CBCC's reported packing costs. Therefore, as BIA, we have used the packing costs reported in the public version of the CCM's questionnaire response (BIA packing). We deducted the BIA packing costs described above and added the BIA packing costs described in the "United States Price" section of this notice. Because all price-to-price comparisons involved purchase price sales, we made circumstance of sale adjustments, where appropriate, for differences in credit expenses, where appropriate, for differences in credit expenses, in accordance with 19 CFR 353.56(a). We did not allow CBCC's claim for technical services because CBCC did not submit sufficient information to support its claim. Finally, we made an upward adjustment to the tax-exclusive home market prices to account for the tax which would have been paid on the U.S. sales had they been sales in the home market.

When FMV was based on constructed value, as set forth above, we calculated constructed value in accordance with section 773(e)(1) of the Act. Constructed value includes materials, fabrication, general expenses, profit, and BIA packing. We used the following as the basis for calculating constructed value:

(1) The actual general expenses because these amounts exceed the statutory ten percent minimum of materials and fabrication, in accordance with section 773(e)(1)(B)(i) of the Act: and

(2) The actual profit on home market sales because it exceeds the statutory minimum eight percent of COP in accordance with section 773(e)(1)(B)(ii) of the Act.

We used CBCC's submitted monthly costs adjusted for payment terms. We used BIA for calculating G&A as CBCC did not provide information on the methodology used to determine its submitted G&A. We did not adjust interest expense to that which was reflected on the parent company's financial statement as there was insufficient information to determine the appropriateness of this amount. However, the Department may adjust the financial expenses in the final determination depending on the results of verification.

In addition, we added the BIA packing costs described in the "United States Price" section of this notice. We also made circumstance of sale adjustments, where appropriate, for differences in credit expenses, in accordance with 19 CFR 353.56(a). We did not, however, make a circumstance of sale adjustment for technical services because CBCC did not explain the basis for its claim or provide any requested information.

Currency Conversion

No certified rates of exchange, as furnished by the Federal Reserve Bank of New York, were available for the POI. In place of the official certified rates, we used the daily official exchange rates for Brazil published by the Bank of Brazil.

Verification

As provided in section 776(b) of the Act, we will verify all information used in making our final determination.

Suspension of Liquidation

In accordance with section 733(e)(2) of the Act, we are directing the Customs Service to suspend liquidation of entries of silicon metal exported from Brazil by CBCC, as defined in the "Scope of Investigation" section of this notice, that are entered, or withdrawn from warehouses, for consumption, on or after the date which is 90 days prior to the date of publication of this notice in the **Federal Register**.

In accordance with section 733(d)(1) of the Act, for CCM and all other producers/manufacturers/exporters, we are directing the Customs Service to suspend liquidation of entries of silicon metal exported from Brazil by CCM, as defined in the "Scope of Investigation" section of this notice, that are entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice in the **Federal Register**.

The Customs Service shall require a cash deposit or posting of a bond equal to the estimated preliminary dumping margin, as shown below. The suspension of liquidation will remain in effect until further notice.

Producer/ manufacturer/exporter	Weighted-average margin percentage	Critical circumstances
Companhia Brasileira Carbureto de Calcio (CBCC)	37.08	Yes.
Camargo Correa Metais, S.A. (CCM)	23.38	No.
All others	28.90	No.

ITC Notification

In accordance with section 733(f) of the Act, we have notified the ITC of our determination. In addition, we are making available to the ITC all nonprivileged and nonproprietary information relating to this investigation. We will allow the ITC access to all privileged and business proprietary information in our files, provided the ITC confirms in writing that it will not disclose such information, either publicly or under administrative protective order, without the written consent of the Deputy Assistant Secretary for Investigations, Import Administration.

If our final determination is affirmative, the ITC will determine whether these imports are materially injuring, or threaten material injury to, the U.S. industry before the later of 120 days after the date of this preliminary determination or 45 days after our final determination.

Public Comment

In accordance with 19 CFR 353.38, case briefs or other written comments in at least ten copies must be submitted to the Assistant Secretary for Import Administration no later than May 14, 1991, and rebuttal briefs no later than May 21, 1991. In accordance with 19 CFR 353.38(b), we will hold a public hearing, if requested, to afford interested parties an opportunity to comment on arguments raised in case or rebuttal briefs. The hearing will be held at 1:30 p.m. on May 23, 1991, at the U.S. Department of Commerce, room 3708, 14th Street and Constitution Avenue, NW., Washington, DC 20230. Interested parties who wish to participate in the hearing must submit a written request to the Assistant Secretary for Import Administration, U.S. Department of Commerce, room B-099 within 10 days of the publication of this notice. Requests should contain: (1) The party's name, address, and telephone number; (2) the number of participants; (3) the reasons for attending; and (4) a list of the issues to be discussed. In accordance with 19 CFR 353.38(b), oral presentations will be limited to arguments raised in the briefs.

This determination is published pursuant to section 733(f) of the Act (19 U.S.C. 1673b(f)).

Dated: March 22, 1991.

Eric I. Garfinkel,

Assistant Secretary for Import Administration.

[FR Doc. 91-7502 Filed 3-28-91; 8:45 am]

BILLING CODE 3510-DS-M

Appendix D

Selected data by firm

Table D-1
Silicon metal: U.S. capacity, production, and capacity utilization, by firms, 1988-90

Item	*1988*	*1989*	*1990*
*	*	*	*

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

Table D-2
Silicon metal: U.S. shipments[1] of U.S. producers, by firms, 1988-90

Item	1988	1989	1990
*	*	*	*

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

Table D-3
Silicon metal: U.S. producers' end-of-period inventories, by firms, 1988-90

Item	*1988*	*1989*	*1990*
*	*	*	*

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

Table D-4
Average number of production and related workers producing silicon metal, hours worked,[1] wages and total compensation paid to such employees, hourly wages, productivity, and unit production costs, by firms, 1988-90[2]

Item	1988	1989	1990
*	*	*	*

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

Table D-5
Income-and-loss experience of U.S. producers on their operations producing silicon metal, by firms, calendar years 1988-90

Item	*1988*	*1989*	*1990*
*	*	*	*	*	*	*

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

Table D-6
Income-and-loss experience of U.S. producers on the overall operations of their establishments wherein silicon metal is produced, by firms, calendar years 1988-90

Item	1988	1989	1990
*	*	*	*

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

Appendix E

Effects of imports on producers' existing development and production efforts, growth, investment, and ability to raise capital

EFFECTS OF IMPORTS ON PRODUCERS' EXISTING DEVELOPMENT AND PRODUCTION EFFORTS, GROWTH, INVESTMENT, AND ABILITY TO RAISE CAPITAL

The Commission requested U.S. producers to describe the actual and potential negative effects of imports of silicon metal from Argentina, Brazil, and China on the producers' existing development and production efforts, growth, investment, and ability to raise capital. The responses by producers are shown below.

* * * * * * *

Appendix F

Percentage distribution of U.S. imports, by sources and customs districts, 1989-90

Figure F-1
Silicon metal: Percentage distribution of U.S. imports from Argentina, by Customs districts, aggregated, 1989-90

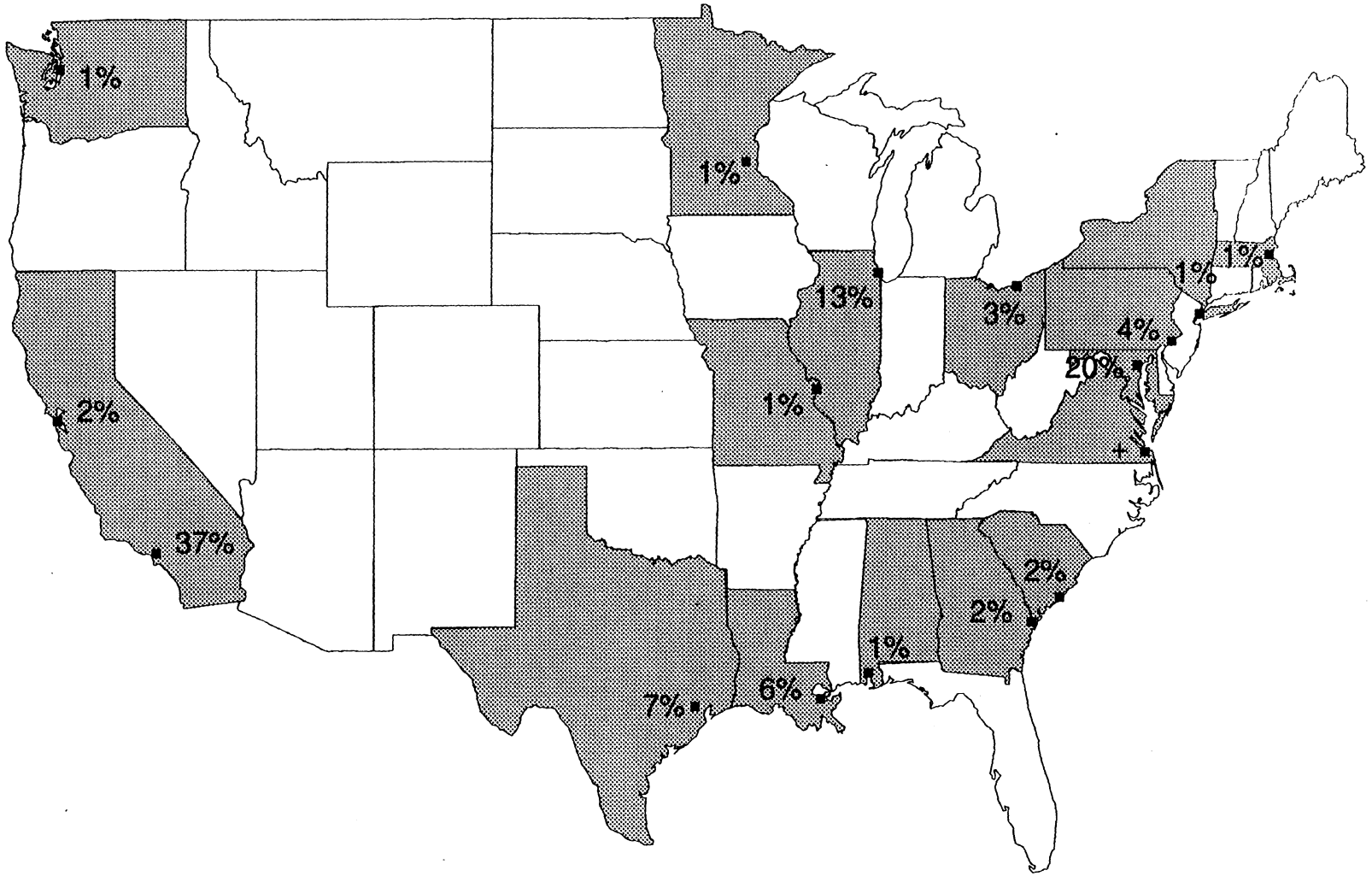
Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure F-2
Silicon metal: Percentage distribution of U.S. imports from Brazil, by Customs districts, aggregated, 1989-90

+ = Less than 0.5 percent.

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

Figure F-3
Silicon metal: Percentage distribution of U.S. imports from China, by Customs districts, aggregated, 1989-90



+ = Less than 0.5 percent.

Note.--Because of rounding, percentages may not add to 100.

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