Ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia

Investigation Nos. 701-TA-712-715 and 731-TA-1679-1682 (Preliminary)

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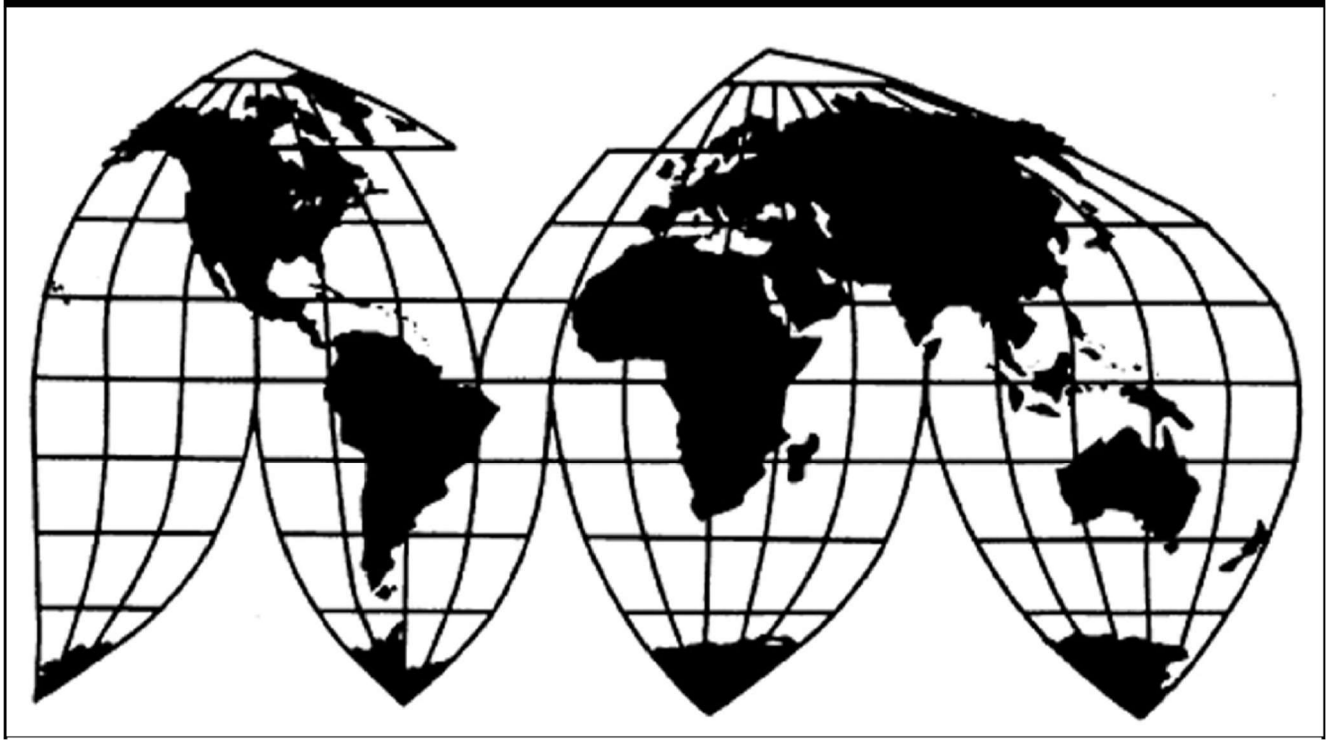
U.S. International Trade Commission



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Note.—Information that would reveal confidential operations of individual concerns may not be published. Such information is identified by brackets in confidential reports and is deleted and replaced with asterisks (***) in public reports.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-712-715 and 731-TA-1679-1682 (Preliminary)

Ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia, provided for in subheadings 7202.21.10, 7202.21.50, 7202.21.75, 7202.21.90, and 7202.29.00 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV") and imports of the subject merchandise from Brazil, Kazakhstan, Malaysia, and Russia that are alleged to be subsidized by the governments of Brazil, Kazakhstan, Malaysia, and Russia.[2]

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

Pursuant to section 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling, which will be published in the *Federal Register* as provided in § 207.21 of the Commission's rules, upon notice from the U.S. Department of Commerce ("Commerce") of affirmative preliminary determinations in the investigations under §§ 703(b) or 733(b) of the Act, or, if the preliminary determinations are negative, upon notice of affirmative final determinations in those investigations under §§ 705(a) or 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Any other party may file an entry of appearance for the final phase of the investigations after publication of the final phase notice of scheduling. Industrial users, and, if the merchandise under investigation is sold at the retail level, representative consumer organizations have the right to appear as parties in

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

[2] 89 FR 31133 and 89 FR 31137 (April 24, 2024).

Commission antidumping and countervailing duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations. As provided in section 207.20 of the Commission's rules, the Director of the Office of Investigations will circulate draft questionnaires for the final phase of the investigations to parties to the investigations, placing copies on the Commission's Electronic Document Information System (EDIS, https://edis.usitc.gov), for comment.

BACKGROUND

On March 28, 2024, CC Metals and Alloy, LLC, Calvert City, Kentucky, and Ferroglobe USA, Inc., Beverly, Ohio, filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened with material injury by reason of subsidized imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia and LTFV imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia. Accordingly, effective March 28, 2024, the Commission instituted countervailing duty investigation Nos. 701-TA-712-715 and antidumping duty investigation Nos. 731-TA-1679-1682 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of April 4, 2024 (89 FR 23042). The Commission conducted its conference on April 18, 2024. All persons who requested the opportunity were permitted to participate.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia that are allegedly sold in the United States at less than fair value and allegedly subsidized by the governments of Brazil, Kazakhstan, Malaysia, and Russia.

I. The Legal Standard for Preliminary Determinations

The legal standard for preliminary antidumping and countervailing duty determinations requires the Commission to determine, based upon the information available at the time of the preliminary determinations, whether there is a reasonable indication that a domestic industry is materially injured or threatened with material injury, or that the establishment of an industry is materially retarded, by reason of the allegedly unfairly traded imports.[1] In applying this standard, the Commission weighs the evidence before it and determines whether "(1) the record as a whole contains clear and convincing evidence that there is no material injury or threat of such injury; and (2) no likelihood exists that contrary evidence will arise in a final investigation."[2]

II. Background

The petitions in these investigations were filed on March 28, 2024, by CC Metals and Alloys, LLC ("CC Metals") and Ferroglobe USA, Inc. ("Ferroglobe") (collectively, "Domestic Producers"), both domestic producers of ferrosilicon in the United States.[3] Domestic Producers appeared at the staff conference, accompanied by counsel, and submitted a postconference brief.[4]

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[1] 19 U.S.C. §§ 1671b(a), 1673b(a) (2000); *see also American Lamb Co. v. United States*, 785 F.2d 994, 1001-04 (Fed. Cir. 1986); *Aristech Chem. Corp. v. United States, 2*0 CIT 353, 354-55 (1996). No party argues that the establishment of an industry in the United States is materially retarded by the allegedly unfairly traded imports.

[2] American Lamb Co., 785 F.2d at 1001; *see also Texas Crushed Stone Co. v. United States*, 35 F.3d 1535, 1543 (Fed. Cir. 1994).

[3] Petitions for the Imposition of Antidumping and Countervailing Duties: Ferrosilicon from the Federative Republic of Brazil, the Republic of Kazakhstan, Malaysia, and the Russian Federation, EDIS Doc. 817002 (Mar. 28, 2024) at 2.

[4] Preliminary Staff Conference Transcript, EDIS Doc. 819067 (Apr. 18, 2024) ("Tr.") at 2; Domestic Producers' Postconference Brief, EDIS Doc. 819538 (Apr. 24, 2024), Confidential Domestic Producers' Postconference Brief, EDIS Doc. 819407 (Apr. 23, 2024) ("Domestic Producers' Br.").

Several respondent entities participated in these investigations. Cia Ferro Ligas da Bahia – FERBASA, Minasligas S.A., Bozel Brasil S.A., Rima Industrial S.A., Nova Era Silicon S.A., and Libra Ligas do Brasil S.A. (collectively, "Brazilian Respondents"), producers of ferrosilicon in Brazil, submitted a postconference brief.[5] TNC Kazchrome JSC ("Kazchrome"), a producer of ferrosilicon in Kazakhstan, submitted a postconference brief.[6] YDD Corp. LLP ("YDD Corp."), a producer of ferrosilicon in Kazakhstan, had counsel appear at the staff conference and submitted a postconference brief.[7] OM Materials (Sarawak) Sdn Bhd and OM Materials (S) Pte Ltd (collectively, "OM Materials"), producers of ferrosilicon in Malaysia, submitted a postconference brief.[8]

Additionally, the Government of Brazil ("GOB") and the Ministry of Trade and Integration of the Republic of Kazakhstan ("GOK") each submitted a postconference brief.[9]

Data Coverage. U.S. industry data are based on the questionnaire responses of CC Metals and Ferroglobe, which account for all known U.S. production of ferrosilicon in 2023.[10] U.S. import data are based on official U.S. Department of Commerce ("Commerce") import statistics under Harmonized Tariff Schedule of the United States ("HTSUS") statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050 and questionnaire responses from 14 U.S. importers, estimated to have accounted for *** percent of imports from Brazil, *** percent of imports from Kazakhstan, *** percent of imports from Malaysia, and *** percent of imports from Russia. Responding U.S. importers also accounted for *** percent of nonsubject imports and *** percent of total

[5] Brazilian Respondents' Postconference Brief, EDIS Doc. 819536 (Apr. 24, 2024); Confidential Brazilian Respondents' Postconference Brief, EDIS Doc. 819468 (Apr. 23, 2024) ("Brazilian Br.").

[6] Kazchrome's Postconference Brief, EDIS Doc. 819463 (Apr. 23, 2024); Confidential Kazchrome's Postconference Brief, EDIS Doc. 819462 (Apr. 23, 2024) ("Kazchrome's Br.").

[7] Tr. at 3; YDD Corp's Postconference Brief, EDIS Doc. 819470 (Apr. 23, 2024), Confidential YDD Corp.'s Postconference Brief, EDIS Doc. 819469 (Apr. 23, 2024) ("YDD Corp.'s Br.").

[8] OM Materials' Postconference Brief, EDIS Doc. 819423 (Apr. 23, 2024); Confidential OM Materials' Postconference Brief, EDIS Doc. 819422 (Apr. 23, 2024) ("OM Materials' Br.").

[9] GOB's Postconference Brief, EDIS Doc. 819465 (Apr. 23, 2024) ("GOB's Br."); GOK's Postconference Brief, EDIS Doc. 819285 (Apr. 23, 2024) ("GOK's Br.").

[10] Confidential Staff Report, INV-WW-038 (May 6, 2024); *Ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia*, Inv. Nos. 701-TA-712-715 and 731-TA-1679-1682, USITC Pub. 5506 (May 2024) ("CR/PR") at I-4, III-1. The reported financial data from Domestic Producers differs from the data reported in the petition, which Domestic Producers later rectified in revised questionnaire responses. Between the filing of the petition and the submission of its questionnaire response, ***. Additionally, ***. *Id.* at VI-1 n.2.

Further, ***. In response, staff instructed ***. *Id.*

The postconference briefs of certain respondent parties base some arguments on the uncorrected data originally reported by Domestic Producers in the petition.

imports in 2023.[11] The Commission received responses to its questionnaires from 11 foreign producers of subject merchandise: two firms in Kazakhstan, which accounted for an estimated *** percent of overall production of ferrosilicon in Kazakhstan in 2023; two firms in Malaysia, which accounted for an estimated *** percent of overall production of ferrosilicon in Malaysia in 2023; and seven firms in Brazil, which accounted for an estimated *** percent of overall production of ferrosilicon in Brazil in 2023.[12] The Commission did not receive questionnaire responses from any foreign producers of ferrosilicon in Russia.[13] We note that Russia was, by far, the largest source of subject imports throughout the POI, accounting for more than half of the total subject imports.[14] While Commerce import statistics were used for subject import volumes and U.S. importers' U.S. shipments of subject imports, there is limited data on the Russian ferrosilicon industry, and limited Russian pricing data, on the record in these preliminary phase investigations due to the lack of responses from producers/exporters of ferrosilicon in Russia and limited responses from U.S. importers of ferrosilicon from Russia.[15]

III. Domestic Like Product

In determining whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[16] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines

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[11] CR/PR at I-4, IV-1. The percentages reflect the volume of imports reported in importer questionnaire responses for each country source (or sources) compared to the volume of imports reflected in official import statistics for the primary HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050. *Id.* at IV-1 n.3.

These data are based on the imports for consumption data series, which measures imports that enter into the Customs territory. Commerce also maintains a general imports data series that measures the total physical arrivals of merchandise from foreign countries, whether such merchandise enters the U.S. Customs territory immediately or is entered into bonded warehouses or Foreign Trade Zones ("FTZs"). *Id.* For Brazil, Kazakhstan, and Malaysia, the general imports and imports for consumption data series are not significantly different in most years during the 2021 to 2023 period. However, imports for consumption from Russia were approximately 15 to 20 percent less compared to general imports from Russia from 2018 to 2023. *Id.* at IV-1 n.3, Appendix D. In any final phase investigations, we intend to examine the nature of such imports, including the extent to which such imports may have entered into bonded warehouses and/or FTZs and potentially been re-exported prior to entry into U.S. consumption channels.

[12] CR/PR at VII-3. *** of its share of production of ferrosilicon in Brazil during 2023. *Id.* at VII-3 n.6.

[13] CR/PR at VII-3. As noted, the missing Russian data, if obtained, could be relevant to the cumulation and injury analyses in any final phase investigations.

[14] CR/PR at Tables IV-10, C-1.

[15] CR/PR at I-4, II-2, II-1, V-9 n.18.

[16] 19 U.S.C. § 1677(4)(A).

the relevant domestic industry as the "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[17] In turn, the Tariff Act defines "domestic 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."[18]

By statute, the Commission's "domestic like product" analysis begins with the "article subject to an investigation," *i.e.*, the subject merchandise as determined by Commerce.[19] Therefore, Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value is "necessarily the starting point of the Commission's like product analysis."[20] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[21] The decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[22] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[23] The Commission looks for clear dividing lines among possible like products and disregards minor

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[17] 19 U.S.C. § 1677(4)(A).

[18] 19 U.S.C. § 1677(10).

[19] 19 U.S.C. § 1677(10). The Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value. *See*, *e.g.*, *USEC, Inc. v. United States*, 34 Fed. App'x 725, 730 (Fed. Cir. 2002) ("The ITC may not modify the class or kind of imported merchandise examined by Commerce."); *Algoma Steel Corp. v. United States,* 688 F. Supp. 639, 644 (Ct. Int'l Trade 1988), *aff'd*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

[20] *Cleo Inc. v. United States*, 501 F.3d 1291, 1298 (Fed. Cir. 2007); *see also Hitachi Metals, Ltd. v. United States*, 949 F.3d 710, 715 (Fed. Cir. 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

[21] *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Hosiden Corp. v. Advanced Display Mfrs.,* 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Torrington Co. v. United States*, 747 F. Supp. 744, 748-52 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) (affirming the Commission's determination defining six like products in investigations where Commerce found five classes or kinds).

[22] *See, e.g., Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Dep't of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int'l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991) ("every like product determination 'must be made on the particular record at issue' and the 'unique facts of each case'"). The Commission generally considers a number of factors including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. *See Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

[23] *See*, *e.g.*, S. Rep. No. 96-249 at 90-91 (1979).

variations.[24] It may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.[25]

A. Scope Definition

In its notices of initiation, Commerce defined the imported merchandise within the scope of these investigations as:

> {A}ll forms and sizes of ferrosilicon, regardless of grade, including ferrosilicon briquettes. Ferrosilicon is a ferroalloy containing by weight four percent or more iron, more than eight percent but not more than 96 percent silicon, three percent or less phosphorous, 30 percent or less manganese, less than three percent magnesium, and 10 percent or less any other element. The merchandise covered also includes product described as slag, if the product meets these specifications.
>
> Subject merchandise includes material matching the above description that has been finished, packaged, or otherwise processed in a third country, including by performing any grinding or any other finishing, packaging, or processing that would not otherwise remove the merchandise from the scope of the investigations if performed in the country of manufacture of the ferrosilicon.[26]

Ferrosilicon is used mainly in the production of steel and cast iron. In steel production, the silicon in ferrosilicon serves as a deoxidizer, preventing bubbles in solidified steel by combining with dissolved oxygen in the molten steel. It is also used as the source of silicon for

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[24] *See*, *e.g.*, *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49*; see also* S. Rep. No. 96-249 at 90-91 (Congress has indicated that the like product standard should not be interpreted in "such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not 'like' each other, nor should the definition of 'like product' be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.").

[25] *See*, *e.g.*, *Pure Magnesium from China and Israel*, Inv. Nos. 701-TA-403 and 731-TA-895-96 (Final), USITC Pub. 3467 (Nov. 2001) at 8 n.34; *Torrington,* 747 F. Supp. at 748-49 (holding that the Commission is not legally required to limit the domestic like product to the product advocated by the petitioner, co-extensive with the scope).

[26] *Ferrosilicon from Brazil, Kazakhstan, Malaysia, and the Russian Federation: Initiation of Less-Than-Fair-Value Investigations*, 89 Fed. Reg. 31137 (Apr. 24, 2024*); Ferrosilicon from Brazil, Kazakhstan, Malaysia, and the Russian Federation: Initiation of Countervailing Duty Investigations*, 89 Fed. Reg. 31133 (Apr. 24, 2024). Commerce indicated that imports of the subject merchandise are currently provided for under statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050 of the Harmonized Tariff Schedule of the United States ("HTSUS").

alloying purposes in the production of certain cast iron and steel alloys, such as electrical steel. Additionally, ferrosilicon is used as a reducing agent, particularly in the production of stainless steel.[27]

Commercially, ferrosilicon is differentiated by grade and size. Ferrosilicon grades are defined by the percentages by weight of silicon and minor elements contained in the product. Almost all ferrosilicon consumed in the United States contains, by weight, approximately 75 silicon or, less commonly, approximately 50 percent silicon. Ferrosilicon grades are further defined by the percentages of minor elements present in the product. Regular grades of 75 percent ferrosilicon and 50 percent ferrosilicon contain the indicated percentages of silicon and recognized maximum percentages of minor elements, such as aluminum, titanium, or calcium. Specialty grades of ferrosilicon differ from regular grades by having more restrictive limits on the content of minor elements.[28]

B. Analysis

Domestic Producers argue that ferrosilicon should be treated as a single domestic like product,[29] and no respondent party argues to the contrary.[30] Based on the following analysis, and in the absence of any contrary party argument, we define ferrosilicon to be a single domestic like product for the purposes of our preliminary determinations.

Physical Characteristics and Uses. All ferrosilicon shares the same basic physical characteristics and end uses. Although ferrosilicon can differ in terms of its silicon content by weight or the presence or absence of minor elements, the principal use of all ferrosilicon is to introduce silicon into the production of steel and cast iron.[31]

Manufacturing Facilities, Production Processes, and Production Workers. The basic production process for the various grades of ferrosilicon is the same. All ferrosilicon is produced by smelting iron-containing materials and silicon-containing materials in submerged-arc electric furnaces. The materials are generally silica in the form of quartz gravel or sand and ferrous scrap combined with a carbonaceous reductant, such as coal or petroleum coke, and a bulking agent, usually wood chips. These are heated together to approximately 3,300 degrees

[27] CR/PR at I-9-12. As a reducing agent, the silicon in ferrosilicon reacts with chromium oxides to form silicon oxides, returning chromium to the molten steel and increasing the overall chromium recovery of the process. Ferrosilicon products sometimes referred to as inoculants contain controlled amounts of minor elements for the purpose of adding them to steel or foundry iron by using ferrosilicon as the carrier. *Id.* at I-10-11.

[28] CR/PR at I-9-10; Tr. at 21 (Hammer, Ferroglobe), 74-75 (Hammer, Ferroglobe), 75 (Sossonko, CC Metals).

[29] Petition at 15-18; Domestic Producers' Br. at 6.

[30] *See generally*, Brazilian Br.; GOB's Br.; GOK's Br.; Kazchrome's Br.; OM Materials' Br.; YDD Corp.'s Br.

[31] Petition at 16; CR/PR at I-10-11.

Fahrenheit, causing the release of silicon from the silica and the alloying of the ferrous scrap with that silicon. A higher purity product, if required, can be produced using raw materials with fewer impurities. Additionally, as the molten ferrosilicon is ladled from the furnace into large flat iron molds or onto beds of ferrosilicon fines, its composition can be altered by oxygen injection to remove impurities, such as aluminum and calcium, or by adding small amounts of alloying elements to create specialty grades of ferrosilicon. After cooling and solidification, the ferrosilicon, regardless of grade, is crushed and screened to produce the lump sizes required. Thus, regardless of ferrosilicon grade, the same production facilities, production processes, and employees can be used through the initial smelting steps, with the purity of raw material inputs and added elements potentially differing from one batch to another.[32]

Interchangeability. Ferrosilicon may differ with respect to such characteristics as percentages of silicon and other minor elements contained within it. There is information suggesting some degree of interchangeability among grades of ferrosilicon. In particular, 50 percent ferrosilicon and 75 percent ferrosilicon appear to be somewhat interchangeable.[33]

Customer and Producer Perceptions. Notwithstanding differences among the various grades of ferrosilicon, the record indicates that ferrosilicon is a product distinct from other products, such as silicon metal.[34]

Channels of Distribution. The *** of the domestic industry's U.S. shipments of ferrosilicon were made directly to end users, including steel producers and iron foundries.[35]

Price. The limited record in these preliminary phase investigations suggests that prices can differ among grades. For instance, the quarterly pricing data show ***.[36] Nonetheless, Domestic Producers contend that prices of all grades of ferrosilicon are interrelated to some extent and follow similar trends.[37]

Conclusion. The record in the preliminary phase of these investigations indicates that all forms and grades of ferrosilicon covered by the scope of these investigations share the same basic physical characteristics and uses; are manufactured using the same facilities, processes, and employees; and can be used interchangeably in some situations. While there appears to be some differentiation in price between grades of ferrosilicon, all forms and grades of ferrosilicon

[32] Petition at 16-17; CR/PR at I-12-14.

[33] Petition at 17; CR/PR at II-9. The overwhelming majority of Domestic Producers' and U.S. importers' U.S. shipments of ferrosilicon consisted of 75 percent ferrosilicon in 2023. Domestic Producers' U.S. shipments of ferrosilicon were *** percent 75 percent ferrosilicon in 2023, while U.S. importers' U.S. shipments of ferrosilicon from Brazil, Kazakhstan, and Malaysia were *** percent 75 percent ferrosilicon in 2023. There were no reported data for Russia. CR/PR at Table IV-6.

[34] Petition at 17; CR/PR at I-9-12.

[35] Petition at 17; CR/PR at Table II-1.

[36] CR/PR at Tables V-7, V-9. ***. *Id.* Nevertheless, pricing data indicate that the pricing of different grades of ferrosilicon generally follow similar trends. *See* Table V-10.

[37] Petition at 17.

are sold primarily to end users, specifically to steel producers and iron foundries, and are perceived as a distinct category of products by customers and producers.

Based on the record of the preliminary phase of the investigations, and the absence of any contrary argument, we define a single domestic like product consisting of all forms and grades of ferrosilicon, coextensive with the scope of the investigations.

IV. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[38] In defining the domestic industry, the Commission's general practice has been to include in the industry producers of all domestic production of the like product, whether toll-produced, captively consumed, or sold in the domestic merchant market.

Domestic Producers contend that the Commission should define the domestic industry as all U.S. producers of the domestic like product: CC Metals and Ferroglobe.[39] No respondent party addresses the definition of the domestic industry.[40] The record does not indicate the existence of any related party issues in these investigations[41]

Based on the record, and in light of the domestic like product definition, we define the domestic industry to encompass all known U.S. producers of ferrosilicon, *i.e.*, CC Metals and Ferroglobe.

V. Negligible Imports

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible.[42]

During the most recent 12-month period preceding the filing of the petitions in these investigations (March 2023 through February 2024), imports from Brazil subject to the antidumping and countervailing duty investigations accounted for 17.2 percent of total imports

[38] 19 U.S.C. § 1677(4)(A).

[39] Petition at 18; Domestic Producers' Br. at 6.

[40] *See generally* Brazilian Br.; GOB's Br.; GOK's Br.; Kazchrome's Br.; OM Materials' Br.; YDD Corp.'s Br.

[41] CR/PR at III-2. ***. There were no reported imports or purchases by U.S. producers of ferrosilicon from subject sources during the POI. *** purchased small amounts of domestically sourced ferrosilicon but did not indicate or know the origin of the product. *Id.*

[42] 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)).

of ferrosilicon by quantity; imports from Kazakhstan accounted for 6.3 percent of total imports of ferrosilicon; imports from Malaysia accounted for 12.4 percent of total imports of ferrosilicon; and imports from Russia accounted for 25.9 percent of total imports of ferrosilicon.[43] As subject imports in all investigations are above the statutory threshold, we find that imports from Brazil, Kazakhstan, Malaysia, and Russia subject to the antidumping and countervailing duty investigations are not negligible.

VI. Cumulation

For purposes of evaluating the volume and effects for a determination of reasonable indication of material injury by reason of subject imports, section 771(7)(G)(i) of the Tariff Act requires the Commission to cumulate subject imports from all countries as to which petitions were filed and/or investigations self-initiated by Commerce on the same day, if such imports compete with each other and with the domestic like product in the U.S. market. In assessing whether subject imports compete with each other and with the domestic like product, the Commission generally has considered four factors:

(1) the degree of fungibility between subject imports from different countries and between subject 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 geographic markets of subject imports from different countries and the domestic like product;

(3) the existence of common or similar channels of distribution for subject imports from different countries and the domestic like product; and

(4) whether the subject imports are simultaneously present in the market.[44]

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the subject imports compete with each other and with the domestic like product.[45] Only a "reasonable overlap" of competition is required.[46]

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[43] CR/PR at Table IV-3.

[44] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. 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).

[45] *See*, *e.g.*, *Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[46] The Statement of Administrative Action (SAA) to the Uruguay Round Agreements Act (URAA), expressly states that "the new section will not affect current Commission practice under which the statutory requirement is satisfied if there is a reasonable overlap of competition." H.R. Rep. No. 103-316, Vol. I at 848 (1994) (*citing Fundicao Tupy*, 678 F. Supp. at 902); *see Goss Graphic Sys., Inc. v. United*

A. Arguments of the Parties

Petitioners' Arguments. Domestic Producers argue that subject imports from Brazil, Kazakhstan, Malaysia, and Russia should be cumulated because all requirements for cumulation are satisfied.[47] Specifically, Domestic Producers assert that they filed the petitions with respect to ferrosilicon imports from all four countries on the same day and that ferrosilicon from each subject country and the domestic like product compete with each other in the U.S. market.[48] Domestic Producers maintain that because ferrosilicon is a fungible commodity product, there is at least some degree of interchangeability between different grades of ferrosilicon, and ferrosilicon imports from each of the subject countries during the POI were heavily concentrated in the HTSUS category concerning "ferrosilicon over 55 but not more than 80 percent silicon and 3 percent or less calcium."[49] Domestic Producers further assert that U.S. producers and subject importers compete in the same geographic markets; sell ferrosilicon through the same channels of distribution, primarily to end users; and were simultaneously present in the U.S. market during the POI.[50]

Respondents' Arguments. GOK argues that subject imports from Kazakhstan should not be cumulated with subject imports from Brazil, Malaysia, and Russia.[51] It asserts that a significant quantity of imports from Kazakhstan were sold on the spot market, while other subject imports were sold through long-term contracts.[52] GOK also asserts that imports from Kazakhstan are in much smaller quantities and hold a smaller market share in comparison to other subject imports.[53] Finally, GOK states that subject imports were not present simultaneously in the U.S. market, as they were not present at all in 12 months during the POI and were present in negligible quantities, at less than 3 percent of total U.S. imports, in seven months during the POI.[54]

The remaining respondent parties do not address the Domestic Producers' argument that subject imports from all four subject countries should be cumulated.[55]

States, 33 F. Supp. 2d 1082, 1087 (Ct. Int'l Trade 1998) ("cumulation does not require two products to be highly fungible"); *Wieland Werke, AG*, 718 F. Supp. at 52 ("Completely overlapping markets are not required.").

[47] Petition at 20-24; Domestic Producers' Br. at 6-14.

[48] Petition at 21; Domestic Producers' Br. at 7.

[49] Petition at 21-22; Domestic Producers' Br. at 8-11.

[50] Petition at 23-24; Domestic Producers' Br. at 11-14.

[51] GOK's Br. at 3.

[52] GOK's Br. at 3.

[53] GOK's Br. at 3.

[54] GOK's Br. at 3.

[55] *See generally* Brazilian Br.; GOB's Br.; Kazchrome's Br.; OM Materials' Br.; YDD Corp.'s Br.

B. Analysis

We consider subject imports from Brazil, Kazakhstan, Malaysia, and Russia on a cumulated basis because the statutory criteria for cumulation are satisfied. As an initial matter, Domestic Producers filed the antidumping and countervailing duty petitions with respect to the four countries on the same day, March 28, 2024.[56]

Fungibility. The record indicates that there is a substantial degree of fungibility between and among domestically produced ferrosilicon and imports from each subject country. Both U.S. producers reported that subject imports from all subject countries were "always" interchangeable with each other and with the domestic like product.[57] A majority of responding U.S. importers reported that imports from subject countries were "always" or "frequently" interchangeable with the domestic like product and that subject imports were "always" or "frequently" interchangeable with each other.[58] U.S. importers reported the following factors as affecting the interchangeability of a product: Brazilian ferrosilicon was a higher purity grade; production by ***, was sold to consumers needing, at most, 0.10 percent carbon; and nonsubject countries produced a wider range of ferrosilicon grades.[59]

When asked whether differences other than price were ever significant to purchasers choosing between the domestic like product and subject imports, both domestic producers reported that non-price differences were "never" significant.[60] A majority of U.S. importers reported that there were "sometimes" differences other than price between ferrosilicon from all country pairs.[61] Importers reported the following differences other than price as affecting their sales: different chemical contents for titanium, aluminum, and carbon in the final ferrosilicon production; the difficulty of sourcing ferrosilicon from Malaysia and Brazil; and domestic producers providing better availability, transport, and technical support.[62]

Furthermore, subject imports from each subject country overlapped with the domestic like product in terms of ferrosilicon forms (lump or bulk and granular),[63] silicon contents (75

[56] Petition at 21; Domestic Producers' Br. at 7. Additionally, none of the statutory exceptions to cumulation applies in these investigations. *See* 19 U.S.C. § 1677(7)(G)(ii).

[57] CR/PR at Table II-5.

[58] CR/PR at Table II-6.

[59] CR/PR at II-9.

[60] CR/PR at Table II-7.

[61] CR/PR at Table II-8.

[62] CR/PR at II-11.

[63] CR/PR at Table IV-5. In 2023, U.S. producers' shipments of ferrosilicon that were in lump or bulk form accounted for *** percent of their total shipments, and shipments of ferrosilicon that were in granular form accounted for *** percent of their total shipments. U.S. importers' U.S. shipments of ferrosilicon imports from Brazil that were in lump or bulk form accounted for *** percent of their total shipments, and shipments of ferrosilicon that were in granular form accounted for *** percent of their total shipments. U.S. importers' U.S. shipments of ferrosilicon imports from Kazakhstan that were in

percent or 50 percent),[64] and grades (regular and other).[65] [66] Additionally, purchaser responses to the Commission's lost sales and lost revenues survey show that *** responding purchasers purchased ferrosilicon from both domestic and subject sources.[67]

Channels of Distribution. Responding U.S. producers and importers of ferrosilicon from all four subject countries reported selling ferrosilicon primarily to end users, including iron foundries and steel producers.[68]

Geographic Overlap. Responding U.S. producers reported selling ferrosilicon to ***.[69] Importers from Brazil reported selling to all regions in the contiguous United States; importers from Kazakhstan and Malaysia reported selling to all regions in the contiguous United States, except the *** regions; and importers from Russia reported selling to the *** regions.[70] Official import statistics also indicate that imports from each subject country entered the United States through overlapping borders of entry in 2023.[71]

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lump or bulk form accounted for *** percent of their total shipments. U.S. importers' U.S. shipments of ferrosilicon imports from Malaysia that were in lump or bulk form accounted for *** percent of their total shipments, and shipments of ferrosilicon that were in granular form accounted for *** percent of their total shipments.

[64] CR/PR at Table IV-6. In 2023, U.S. producers' shipments of 75 percent ferrosilicon accounted for *** percent of their total shipments, and shipments of 50 percent ferrosilicon accounted for *** percent of their total shipments. U.S. importers' U.S. shipments of 75 percent ferrosilicon accounted for *** percent of total shipments from each of Brazil, Kazakhstan, and Malaysia.

[65] CR/PR at Table IV-7. U.S. producers' shipments of regular grade ferrosilicon accounted for *** percent of their total shipments, and shipments of all other ferrosilicon grades accounted for *** percent of their total shipments. U.S. importers' U.S. shipments of regular grade ferrosilicon from Brazil accounted for *** percent of their total shipments, and shipments of all other ferrosilicon grades from Brazil accounted for *** percent of their total shipments. U.S. importers' U.S. shipments of regular grade ferrosilicon from Kazakhstan accounted for *** percent of their total shipments. U.S. importers' U.S. shipments of regular grade ferrosilicon from Malaysia accounted for *** percent of their total shipments, and shipments of all other ferrosilicon grades from Malaysia accounted for *** percent of their total shipments.

[66] There were no reported data on the form, silicon content, or grade of subject imports from Russia in these investigations. CR/PR at Table IV-5; *see generally* section II (Data Coverage), above. We note that the vast majority of subject imports from Russia entered the United States under HTS statistical reporting number 7202.21.5000, which includes ferrosilicon containing 56 to 80 percent contained silicon and less than 3 percent calcium, since January 2021. *Id.* at Tables E-1, E-2. We will further examine the form, silicon content, and grade in any final phase investigations.

[67] CR/PR at Table V-14.

[68] CR/PR at Table II-1.

[69] CR/PR at Table II-2.

[70] CR/PR at Table II-2.

[71] CR/PR at Table IV-8. Imports from all four subject countries entered through ports in the South. Imports from Brazil and Malaysia also entered through ports in the East, North, and West, while imports from Kazakhstan also entered through ports in the East and West. *Id.*

Simultaneous Presence in Market. As reflected by the pricing data, the domestic like product was present in the U.S. market throughout the POI.[72] Imports from all four subject sources were also present in the U.S. market throughout January 2021 to February 2024.[73]

Conclusion. The record in the preliminary phase of the investigations indicates that subject imports from Brazil, Kazakhstan, Malaysia, and Russia are fungible with the domestic like product and each other. The record also indicates that imports from each of the subject countries and the domestic like product were sold in overlapping channels of distribution and geographic markets and were simultaneously present in the U.S. market during the POI. Because there is a reasonable overlap of competition between and among subject imports from Brazil, Kazakhstan, Malaysia, and Russia and the domestic like product, we cumulate subject imports from these sources for our analysis of whether there is a reasonable indication of material injury by reason of subject imports.

VII. Reasonable Indication of Material Injury by Reason of Subject Imports

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[74] In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production

[72] CR/PR at Tables V-6-10.

[73] CR/PR at Table IV-9. From January 2021 to February 2024, subject imports from Brazil were present during all 38 months; subject imports from Kazakhstan were present in 25 of 38 months; subject imports from Malaysia were present in 34 of 38 months; and subject imports from Russia were present in 23 of 38 months. *Id.*

Russian imports entered the U.S. market in substantial quantities in 2021, 2022, and 2023 – 55,463 short tons, 74,361 short tons, and 59,896 short tons, respectively. *Id.* Starting in 2022, after subject imports became subject to heightened duties, the pace of importation changed from imports on an essentially monthly basis to larger amounts of imports in some months with some other months reporting zero imports. *Id.*; *see also* section VII.B.3. (effective July 28, 2022, ferrosilicon from Russia imported became subject to an increased duty rate of 35 percent *ad valorem*, which was increased to 70 percent *ad valorem*, effective April 1, 2023), below. Thus, although imports of subject merchandise from Russia occurred in relatively fewer months in 2023, they were present in the market in quantities comparable to previous years. We note that there were no imports of subject merchandise from Russia in January and February 2024, but do not consider that this information detracts from a conclusion that subject imports from Russia were simultaneously present in the marketplace with subject merchandise from Brazil, Kazakhstan, and Malaysia and the domestic like product. *Id.*

[74] 19 U.S.C. §§ 1671b(a), 1673b(a).

operations.[75] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[76] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[77] No single factor is dispositive, and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[78]

Although the statute requires the Commission to determine whether there is a reasonable indication that the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[79] it does not define the phrase "by reason of," indicating that this aspect of the injury analysis is left to the Commission's reasonable exercise of its discretion.[80] In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the "by reason of" standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.[81]

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to

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[75] 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[76] 19 U.S.C. § 1677(7)(A).

[77] 19 U.S.C. § 1677(7)I(iii).

[78] 19 U.S.C. § 1677(7)(C)(iii).

[79] 19 U.S.C. §§ 1671b(a), 1673b(a).

[80] *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) ("{T}he statute does not 'compel the commissioners' to employ {a particular methodology}."), *aff'd,* 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

[81] The Federal Circuit, in addressing the causation standard of the statute, observed that "{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement." *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that "this court requires evidence in the record 'to show that the harm occurred "by reason of" the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.'" *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass'n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.[82] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[83] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[84] It is clear that the existence of injury caused by other factors does not compel a negative determination.[85]

Assessment of whether material injury to the domestic industry is "by reason of" subject imports "does not require the Commission to address the causation issue in any particular way" as long as "the injury to the domestic industry can reasonably be attributed to the subject

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[82] SAA at 851-52 ("{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports."); S. Rep. 96-249 at 75 (1979) (the Commission "will consider information which indicates that harm is caused by factors other than less-than-fair-value imports."); H.R. Rep. 96-317 at 47 (1979) ("in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;" those factors include "the volume and prices of nonsubsidized imports or 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"); *accord Mittal Steel*, 542 F.3d at 877.

[83] SAA at 851-52 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports."); *Taiwan Semiconductor Industry Ass'n,* 266 F.3d at 1345 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports ... . Rather, the Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports." (emphasis in original)); *Asociacion de Productores de Salmon y Trucha de Chile AG v. United States*, 180 F. Supp. 2d 1360, 1375 (Ct. Int'l Trade 2002) ("{t}he Commission is not required to isolate the effects of subject imports from other factors contributing to injury" or make "bright-line distinctions" between the effects of subject imports and other causes.); *see also Softwood Lumber from Canada*, Inv. Nos. 701-TA-414 and 731-TA-928 (Remand), USITC Pub. 3658 at 100-01 (Dec. 2003) (Commission recognized that "{i}f an alleged other factor is found not to have or threaten to have injurious effects to the domestic industry, *i.e*., it is not an 'other causal factor,' then there is nothing to further examine regarding attribution to injury"), *citing Gerald Metals,* 132 F.3d at 722 (the statute "does not suggest that an importer of LTFV goods can escape countervailing duties by finding some tangential or minor cause unrelated to the LTFV goods that contributed to the harmful effects on domestic market prices.").

[84] S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

[85] *See Nippon Steel Corp*., 345 F.3d at 1381 ("an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the 'dumping' need not be the sole or principal cause of injury.").

imports."[86] The Commission ensures that it has "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and that it is "not attributing injury from other sources to the subject imports." [87] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[88]

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.[89] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[90]

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is a reasonable indication of material injury or threat of material injury by reason of cumulated subject imports.

1. Demand Conditions

Ferrosilicon is used primarily as an alloying agent in the production of iron and steel; thus, the steel industry is the principal user of ferrosilicon and demand for ferrosilicon is driven by demand for steel products and general economic conditions.[91] Overall demand for ferrosilicon would likely experience only small changes in response to changes in price because

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[86] *Mittal Steel*, 542 F.3d at 876, 878; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology."), *citing United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

[87] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 877-79. We note that one relevant "other factor" may involve the presence of significant volumes of price-competitive nonsubject imports in the U.S. market, particularly when a commodity product is at issue. In appropriate cases, the Commission collects information regarding nonsubject imports and producers in nonsubject countries in order to conduct its analysis.

[88] *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); *see also Mittal Steel*, 542 F.3d at 879 ("*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was 'by reason' of subject imports.").

[89] We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

[90] *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp*., 458 F.3d at 1350, *citing U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 ("The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.").

[91] CR/PR at II-1; Domestic Producers' Br. at 18.

there are few economically viable substitutes for ferrosilicon, and it accounts for a small share of the total cost of most of its end-use products.[92]

The record indicates that demand for ferrosilicon fluctuated overall but remained elevated throughout the POI.[93] Questionnaire responses varied regarding whether demand in the United States had increased, declined, or fluctuated during the POI, with most responding firms reporting that demand either increased or remained steady.[94] Domestic Producers and Brazilian Respondents argue that apparent U.S. consumption increased overall during the POI, especially in 2022, due to market recovery after the COVID-19 pandemic.[95]

Apparent U.S. consumption by quantity increased irregularly by *** percent overall between 2021 and 2023, increasing from *** shorts tons contained silicon in 2021 to *** short tons contained silicon in 2022, before decreasing to *** short tons contained silicon in 2023.[96]

2. Supply Conditions

Cumulated subject imports supplied the largest share of the U.S. market throughout the POI. Subject imports' share of apparent U.S. consumption fluctuated during the POI, declining from *** percent in 2021 to *** percent in 2022 before increasing to *** percent in 2023.[97]

The domestic industry was the second-largest supplier of ferrosilicon in the U.S. market during the POI. The industry's market share fluctuated during the POI, declining from *** percent in 2021 to *** percent in 2022 before increasing to *** percent in 2023.[98] CC Metals and Ferroglobe accounted for all domestic production of ferrosilicon during the POI.[99] In December 2023, CC Metals reported that ***.[100] The domestic industry's capacity fluctuated during the POI, increasing from *** short tons contained silicon in 2021 to *** short tons contained silicon in 2022 before declining to *** short tons contained silicon in 2023.[101]

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[92] CR/PR at II-6.

[93] CR/PR at Tables IV-10, C-1. Apparent U.S. consumption increased irregularly by *** percent overall during the POI. *Id.*

[94] CR/PR at Table II-4. *** reported that domestic demand for ferrosilicon *** since January 1, 2021, while *** reported that foreign demand for ferrosilicon ***. Two U.S. importers of ferrosilicon reported that domestic demand increased steadily, one importer reported that it increased with fluctuations, three importers reported no change in domestic demand, and four importers reported that demand decreased with fluctuations. *Id.*

[95] Petition at 26-27; Domestic Producers' Br. at 18; Brazilian Br. at 4-5.

[96] CR/PR at Tables IV-10, C-1. As discussed above in the Data Coverage section, Domestic Producers argue that these figures are understated, especially in 2023.

[97] CR/PR at Tables IV-10, C-1.

[98] CR/PR at Tables IV-10, C-1.

[99] CR/PR at Table III-1.

[100] Petition at 46-47; Domestic Producers' Br. at 26; Tr. at 22-23 (Mr. Sossonko, CC Metals).

[101] CR/PR at Tables III-5, C-1. Thus, the domestic industry's capacity increased by *** percent overall during the POI but declined by *** percent from 2022 to 2023. *Calculated from id.*

Nonsubject imports were the third-largest source of supply to the U.S. market throughout the POI. Their share of apparent U.S. consumption increased from *** percent in 2021 to *** percent in 2022 before declining to *** percent in 2023.[102] The largest sources of nonsubject imports were Canada, China, Iceland, and Norway.[103]

Both Domestic Producers and three of 12 responding importers reported that they had experienced supply constraints during the POI.[104] Additionally, two U.S. importers reported supply constraints caused by shipping problems, particularly in 2021 and 2022.[105]

3. Substitutability and Other Conditions

Based on the record of the preliminary phase of these investigations, we find that there is a high degree of substitutability between domestically produced ferrosilicon and subject imports.[106] Both U.S. producers reported that subject imports from all subject countries were "***" interchangeable with each other and with the domestic like product.[107] A majority of responding U.S. importers reported that imports from subject countries were "always" or "frequently" interchangeable with the domestic like product and that subject imports were "always" or "frequently" interchangeable with each other. A plurality of responding U.S. importers also ranked the domestic like product as "sometimes" interchangeable with ferrosilicon from nonsubject countries.[108] Differences in some factors, such as the availability of different purity grades, may limit substitutability to some extent.[109]

The current record also indicates that price is an important factor in purchasing decisions for ferrosilicon, among other important factors. Purchaser responses to the Commission's lost sales/lost revenue survey identified price as a top purchasing factor, along

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[102] CR/PR at Tables IV-10, C-1.

[103] CR/PR at Table IV-3.

[104] CR/PR at II-5.

[105] CR/PR at II-5. The third importer that experienced supply constraints did not elaborate on what constraints it experienced. *Id.* at II-5 n.5.

[106] *See* CR/PR at II-8. Domestic Producers characterize ferrosilicon as a commodity product. Domestic Producers' Br. at 15-17. Brazilian Respondents claim that unlike standard ferrosilicon grades, specialty ferrosilicon grades cannot be deemed a commodity product because specialty grades are often produced to order based on customer needs with specific characteristics. Brazilian Br. at 7-8.

[107] CR/PR at Table II-5.

[108] CR/PR at Table II-6.

[109] CR/PR at II-3. Respondents claim that the different purity grades of ferrosilicon, including standard grades of 75 percent and 50 percent ferrosilicon and specialty grades made to order, did not directly compete with each other because each grade provides a unique technical advantage. *See* Brazilian Br. at 7-8; OM Materials' Br. at 3-5; Kazchrome's Br. at 4-5; GOK's Br. at 9. Domestic Producers disagree and maintain that ferrosilicon consumers do not distinguish between foreign and domestic sources, or among foreign sources, of the same grade based on physical characteristics or quality, and imports from all sources and the domestic like product all compete on the basis of price. Domestic Producers' Br. at 8-11.

with quality, availability, security of supply, packaging, and service.[110] Both Domestic Producers indicated that differences other than price were "***" significant in sales of the domestic like product and subject imports from each source.[111] A majority of responding importers reported that there were "sometimes" differences other than price between ferrosilicon from all country pairs.[112]

Domestic Producers reported that *** percent of their commercial shipments were from inventory, with lead times averaging *** days.[113] Responding U.S. importers reported that *** percent of their commercial shipments were sold from U.S. inventory, with lead times averaging *** days.[114] Of U.S. importers' remaining commercial shipments, *** percent were produced to order, with lead times averaging *** days, and *** percent were from foreign inventory, with ***-day lead times.[115]

Domestic Producers and U.S. importers primarily sold directly to end users, mainly steel producers and iron foundries.[116] Both groups reported selling a majority of their commercial U.S. shipments of ferrosilicon through annual contracts, although the proportion was higher for Domestic Producers.[117] Domestic Producers and importers reported that their contracts were ***.[118]

Coal, quartz gravel or sand, iron and steel scrap, and wood chips are the principal raw materials used to produce ferrosilicon.[119] Domestic Producers' cost of raw materials increased from $*** per short ton contained silicon in 2021 to $*** per short ton contained silicon in 2022 and $*** per short ton contained silicon in 2023.[120] Raw materials accounted for *** percent of the domestic industry's cost of goods sold ("COGS") for ferrosilicon in 2021, *** percent in 2022, and *** percent in 2023.[121]

Effective January 1, 2021, legal authorization for duty-free treatment under the Generalized System of Preferences Program expired, and U.S. imports entering the United

[110] CR/PR at II-8.

[111] CR/PR at Table II-7.

[112] CR/PR at Table II-8. Importers reported the following differences other than price as affecting their sales: different chemical contents for titanium, aluminum, and carbon in the final ferrosilicon product; the difficulty of sourcing ferrosilicon from Malaysia and Brazil; and domestic producers providing better availability, transportation, and technical support. *Id.* at II-11.

[113] CR/PR at II-7.

[114] CR/PR at II-7.

[115] CR/PR at II-7.

[116] CR/PR at Table II-1.

[117] CR/PR at Table V-4.

[118] CR/PR at V-6.

[119] CR/PR at V-1.

[120] CR/PR at Table VI-1.

[121] CR/PR at Table VI-1.

States that were previously eligible for duty-free treatment under this program, such as ferrosilicon from Brazil, are now subject to Normal Trade Relations ("NTR") rates of duty.[122]

Effective April 9, 2022, the United States suspended NTR with Russia, and imports from Russia, including ferrosilicon, became subject to the following rates: under HTS subheadings 7202.21.10 and 7202.21.50, 11.5 percent *ad valorem*; under HTS subheading 7202.21.75, 9 percent *ad valorem*; under HTS subheading 7202.21.90, 40 percent *ad valorem*; and under HTS subheading 7202.29.00, 4.4 cents per kilogram on the silicon content. Effective July 28, 2022, ferrosilicon from Russia imported under HTS subheadings 7202.21.10 and 7202.29.00 became subject to an increased duty rate of 35 percent *ad valorem*, which was increased to 70 percent *ad valorem*, effective April 1, 2023.[123]

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[124]

Cumulated subject imports were the largest source of supply, *i.e.*, held the greatest market share, throughout the POI.[125] Cumulated subject imports, by volume, increased irregularly by 20.8 percent between 2021 and 2023, increasing from 98,536 short tons in 2021 to 120,762 short tons in 2022 before decreasing to 119,042 short tons in 2023.[126]

Cumulated subject imports as a share of apparent U.S. consumption declined irregularly by *** percentage points, decreasing from *** percent in 2021 to *** percent in 2022 before increasing to *** percent in 2023.[127] The ratio of cumulated subject imports to U.S. production remained elevated during the POI, increasing from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023.[128]

Based on the record in the preliminary phase of these investigations, we find that the volume of cumulated subject imports is significant in absolute terms and relative to

[122] CR/PR at I-7 n.24.

[123] CR/PR at I-7-8. OM Materials argues that the sanctions on Russia had a significant effect on imports of subject merchandise from Russia. OM Materials' Br. at 6. OM Materials suggests that Russian imports have effectively ended as of November 2023. *Id.* At the staff conference, Domestic Producers asserted that the sanctions on Russia may have affected the grades of ferrosilicon Russian exporters were able to produce and import into the United States. Tr. at 65-66 (Mr. Bay, Petitioners' Counsel). In any final phase of these investigations, we intend to further investigate this issue.

[124] 19 U.S.C. § 1677(7)(C)(i).

[125] CR/PR at Tables IV-2, C-1.

[126] CR/PR at Table IV-2.

[127] CR/PR at Table IV-10.

[128] CR/PR at Table IV-2.

consumption and production in the United States and that the increase in the volume of subject imports is significant in absolute terms.

D. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of subject imports, the Commission shall consider whether –

(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and

(II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[129]

As discussed in section VII.B.3 above, we find that there is a high degree of substitutability between cumulated subject imports and the domestic like product, and that price is an important factor in purchasing decisions for ferrosilicon.

The Commission collected quarterly quantity and f.o.b. pricing data on sales of four pricing products shipped to unrelated U.S. customers during the POI.[130] Two U.S. producers and ten importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[131] The pricing data reported by these firms accounted for *** percent of U.S. producers' U.S. commercial shipments of domestically produced ferrosilicon, *** percent of U.S. commercial shipments of subject

[129] 19 U.S.C. § 1677(7)(C)(ii).

[130] CR/PR at V-8-9. The four pricing products are:

Product 1.—Bulk Regular grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 percent to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorous; more than 0.50 percent, but not more than 1.50 percent aluminum; and 0.40 percent or less manganese;

Product 2.—In Super Sacks Regular grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorous; more than 0.50 percent, but not more than 1.50 percent aluminum; and 0.40 percent or less manganese;

Product 3.—Bulk Low aluminum grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorous; not more than 0.50 percent aluminum but more than 0.10 percent aluminum; and 0.40 percent or less manganese; and

Product 4.—In Super Sacks Low aluminum grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorous; not more than 0.50 percent aluminum but more than 0.10 percent aluminum; and 0.40 percent or less manganese. *Id.*

[131] CR/PR at V-9.

imports from Brazil, *** percent from Kazakhstan, and *** percent from Malaysia in.[132] Only a few quarters of pricing data for pricing product 2 were reported for subject imports from Russia, and no pricing data reported in 2023.[133]

The pricing data on the record in these preliminary phase investigations show that underselling by cumulated subject imports was substantial over the POI, particularly in 2023. Prices for cumulated subject imports were below those for domestically produced ferrosilicon in 38 of 78 quarterly comparisons, or 48.7 percent of the time, with underselling margins ranging from 0.1 to 46.0 percent and averaging 15.0 percent.[134] Cumulated subject imports oversold the domestic like product in the remaining 40 quarterly comparisons, or 51.2 percent of the time, with overselling margins ranging from 0.5 percent to 109.1 percent and averaging 25.6 percent.[135] Quarters in which there was underselling accounted for 47.1 percent of total reported subject import sales volume (59.3 million pounds contained silicon) covered by the Commission's pricing data during the POI, and quarters in which there was overselling accounted for 52.9 percent of total reported subject import sales volume (66.7 million pounds contained silicon).[136] The average unit values ("AUVs") of U.S. shipments of subject imports exceeded the AUVs of U.S. shipments of domestically produced ferrosilicon in 2021 and 2022, but were lower in 2023.[137]

Importantly, the pricing data show predominant underselling by cumulated subject imports in 2023.[138] Underselling, in terms of the number of instances and quantity of ferrosilicon involved, was greater than overselling in 2023. In that year, prices for cumulated subject imports were below those for domestically produced ferrosilicon in 16 of 26 quarterly comparisons, or 61.5 percent of the time, with underselling margins ranging from *** percent to *** percent and averaging *** percent.[139] Quarters in which there was underselling in 2023

[132] CR/PR at V-9.

[133] CR/PR at V-9. Subject imports from Russia accounted for the majority, *i.e.*, 50.3 percent in 2023, of the total volume of cumulated subject imports during the POI. *Id.* at Table C-1, V-9 n.18. The Commission invites the parties in their comments on the draft questionnaires in any final phase of these investigations to comment on ways to improve the coverage of pricing data of subject imports from Russia.

[134] CR/PR at Table V-11.

[135] CR/PR at Table V-11.

[136] CR/PR at Table V-11.

[137] CR/PR at Table C-1. The AUVs of U.S. shipments of subject imports were $3,070 per short ton contained silicon in 2021, $4,846 per short ton contained silicon in 2022, and $2,694 per short ton contained silicon in 2023. The AUVs of U.S. shipments of domestic ferrosilicon were $*** per short ton contained silicon in 2021, $*** per short ton contained silicon in 2022, and $*** per short ton contained silicon in 2023. *Id.*

[138] There was an increasing amount of underselling over the POI, particularly in the latter portion (2023). CR/PR at Table V-13.

[139] CR/PR at Table V-13.

accounted for *** percent of total reported subject import sales volume (*** pounds contained silicon) covered by the Commission's pricing data during that year.[140]

We have also considered purchaser responses regarding lost sales/lost revenue. Eight of nine responding purchasers reported that since 2021, they had purchased subject imports instead of the domestic like product.[141] Six of these purchasers reported that subject import prices were lower than the domestic like product.[142] Two of these purchasers reported that price was a primary reason for their decision to purchase *** short tons contained silicon of ferrosilicon imported from the subject countries rather than the domestic like product.[143]

Based on the high degree of substitutability between the domestic like product and cumulated subject imports, evidence that price is an important factor in purchasing decisions for ferrosilicon, the substantial underselling by cumulated subject imports, which increased over the course of the POI, and the fact that six of nine purchasers reported that subject imports were lower priced, we find that underselling by the cumulated subject imports was significant, particularly in 2023.

We have also examined whether subject imports have suppressed or depressed prices to a significant degree. Domestic prices fluctuated during the POI, increasing from 2021 to 2022 and then decreasing in 2023 for all pricing products.[144] Over the POI, domestic prices increased *** percent for pricing product 1; *** percent for pricing product 2; *** percent for pricing product 3; and *** percent for pricing product 4.[145] Domestic prices increased from 2021 to 2022 for all four pricing products, but declined considerably from 2022 to 2023.[146] Specifically, domestic prices decreased from the fourth quarter of 2022 as compared to the fourth quarter of 2023: by *** percent, from $*** to $***, for pricing product 1; by *** percent, from $*** to $***, for pricing product 2; by *** percent, from $*** to $***, for pricing product 3; and by *** percent, from $*** to $***, for pricing product 4.[147] Prices of cumulated subject imports followed similar trends during the POI.[148] In light of the domestic

[140] CR/PR at Table V-13.

[141] CR/PR at V-22.

[142] CR/PR at V-22.

[143] CR/PR V-22, Table V-15. Two other purchasers that reported that price was not the primary factor in their purchasing decisions noted that price was a factor in their decision to purchase subject imports. *Id.*

[144] CR/PR at Tables V-6-9.

[145] CR/PR at Table V-10.

[146] *Derived from* CR/PR at Tables V-6-9.

[147] *Derived from* CR/PR at Tables V-6-9.

[148] CR/PR at Tables V-6-9. Prices for cumulated subject imports also decreased from the fourth quarter of 2022 as compared to the fourth quarter of 2023. For pricing product 1, prices for subject imports from Brazil decreased by *** percent, from $*** to $***, and prices for subject imports from Malaysia decreased by *** percent, from $*** to $***. *Id.* at Table V-6. There were no reported prices for subject imports from Kazakhstan in the fourth quarter of 2022, and there were no reported data for

price declines from 2022 to 2023 for all four pricing products and the significant volume and underselling by cumulated subject imports during this time period, we conclude, for preliminary phase purposes based on the available data, that cumulated subject imports had significant price-depressing effects.[149]

We have also considered whether cumulated subject imports prevented price increases for domestically produced ferrosilicon which otherwise would have occurred to a significant degree. The domestic industry's ratio of COGS to net sales rose by *** percentage points overall between 2021 and 2023.[150] The ratio first decreased from *** percent in 2021 to *** percent in 2022 before increasing to *** percent in 2023.[151]

From 2021 to 2023, the domestic industry's unit COGS increased by $*** per short tons contained silicon, or *** percent, while its unit net sales value increased by only $*** per short ton contained silicon, or *** percent.[152] Thus, the industry's average unit net sales value increased by $*** per short tons contained silicon less than its unit COGS.[153] Particularly from 2022 to 2023, the industry's average unit net sales value decreased by $*** per short ton contained silicon, or *** percent, while its unit COGS increased by $*** per short ton contained silicon, or *** percent.[154]

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subject imports from Russia. *Id.* For pricing product 2, prices for subject imports from Brazil decreased by *** percent, from $*** to $***, and prices for subject imports from Malaysia decreased by *** percent, from $*** to $***. *Id.* at Table V-7. There were no reported prices for subject imports from Kazakhstan for pricing product 2, and there were no reported prices for subject imports from Russia in the fourth quarters of 2022 or 2023. *Id.* For pricing product 3, prices for subject imports from Brazil decreased by *** percent, from $*** to $***. *Id.* at Table V-8. There were no reported prices for subject imports from Kazakhstan, Malaysia, or Russia. *Id.* For pricing product 4, there were no reported data for any subject imports in the fourth quarter of 2022, and there were no reported prices for subject imports from Kazakhstan, Malaysia, or Russia. *Id.* at Table V-9.

[149] As domestic prices declined from 2022 to 2023, domestic COGS increased, as discussed below. CR/PR at Tables VI-1, C-1. While apparent U.S. consumption declined *** percent from 2022 to 2023, it remained elevated in 2023 relative to the beginning of the POI, and domestic prices declined to an even greater extent over the same period, with domestic net sales AUVs declining *** percent from 2022 to 2023. *Id.* at Tables IV-10, VI-1, C-1. Further, most responding firms reported increasing or steady demand for ferrosilicon during the POI. *Id.* at Table II-4.

[150] *See* CR/PR at Tables VI-1, C-1.

[151] CR/PR at Tables VI-1, C-1.

[152] CR/PR at Tables VI-2, C-1.

[153] CR/PR at Tables VI-2, C-1.

[154] CR/PR at Tables VI-2, C-1. The domestic industry's unit COGS increased from $*** per short tons contained silicon in 2021 to $*** per short tons contained silicon in 2022 and $*** per short tons contained silicon in 2023. *Id.* The domestic industry's unit net sales value increased from $*** per short tons contained silicon in 2021 to $*** per short tons contained silicon in 2022 before decreasing to $*** per short tons contained silicon in 2023. *Id.*

We also note that the ratio of raw material costs to net sales value increased over the POI as well, first declining from *** percent in 2021 to *** percent in 2022 before increasing to *** percent in 2023.[155]

Based on the available evidence detailed above, including the significant underselling by cumulated subject imports, particularly in 2023, and the domestic price declines from 2022 to 2023 for all of the pricing products, we find for purposes of the preliminary phase of these investigations that cumulated subject imports had significant adverse price effects.

E. Impact of the Subject Imports[156]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry." These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, research and development ("R&D"), and factors affecting domestic prices. No single factor is dispositive, and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[157]

Although the domestic industry's performance was mixed in the first two years of the POI, many key measures worsened from 2022 to 2023, particularly in its financial performance, as subject imports continued to hold the largest share of the market and increasingly undersold the domestic like product.[158] The industry's practical capacity declined by *** percent between 2022 and 2023, increasing from *** short tons in 2021 to *** short tons in 2022 before decreasing to *** short tons in 2023.[159] The domestic industry's production quantity increased by *** percent over the POI, increasing from *** short tons in 2021 to *** short tons in 2022

[155] CR/PR at Table VI-1.

[156] Commerce initiated the investigations based on estimated dumping margins of 21.78 percent for subject imports from Brazil, 237.75 percent for subject imports from Kazakhstan, 162.66 percent for subject imports from Malaysia, and 283.27 percent for subject imports from Russia. *Ferrosilicon from Brazil, Kazakhstan, Malaysia, and the Russian Federation: Initiation of Less-Than-Fair-Value Investigations*, 89 Fed. Reg. 31137, 31140 (Apr. 24, 2024).

Commerce initiated its countervailing duty investigations for 19 alleged subsidy programs by the government of Brazil, 21 alleged subsidy programs by the government of Kazakhstan, 13 alleged subsidy programs by the government of Malaysia, and 23 alleged subsidy programs by the government of Russia. *Ferrosilicon from Brazil, Kazakhstan, Malaysia, and the Russian Federation: Initiation of Countervailing Duty Investigations*, 89 Fed. Reg. 31133 (Apr. 24, 2024).

[157] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act ("TPEA") of 2015, Pub. L. 114-27.

[158] CR/PR at Tables V-11, V-13, C-1.

[159] CR/PR at Tables III-5, C-1.

and *** short tons in 2023.[160] Capacity utilization also increased by *** percentage points over the POI, increasing from *** percent in 2021 to *** percent in 2022 and *** percent in 2023.[161]

The domestic industry's employment-related data saw some positive developments. The number of production and related workers ("PRWs") increased by *** percent over the POI, increasing from *** in 2021 to *** in 2022 and *** in 2023.[162] Total hours worked increased by *** percent over the POI, increasing from *** hours in 2021 to *** hours in 2022 and 2023.[163] Wages paid also increased by *** percent over the POI, increasing from $*** in 2021 to $*** in 2022 and $*** in 2023.[164] However, productivity (in short tons contained silicon per 1000 hours) decreased by *** percent over the POI, decreasing from *** short tons contained silicon per 1000 hours in 2021 to *** short tons contained silicon per 1000 hours in 2022 and *** short tons contained silicon per 1000 hours.[165]

The domestic industry's U.S. shipments increased by *** percent over the POI, increasing from *** short tons contained silicon in 2021 to *** short tons contained silicon in 2022 and *** short tons contained silicon in 2023.[166] Although the domestic industry's U.S. shipments increased by *** percent from 2022 to 2023, the value of those shipments decreased by *** percent over this period, declining from $*** in 2022 to $*** in 2023.[167] The domestic industry's market share increased by *** percentage points over the POI, decreasing from *** percent in 2021 to *** percent in 2022 before increasing to *** percent in 2023.[168]

The domestic industry's end-of-period inventories increased by *** percent over the POI, increasing from *** short tons contained silicon in 2021 to *** short tons contained silicon in 2022 and *** short tons contained silicon in 2023.[169] As a ratio to total shipments, the domestic industry's end-of-period inventories increased *** percentage points over the POI, increasing from *** percent in 2021 to *** percent in 2022 and 2023.[170]

Although the domestic industry's performance improved in some respects over the POI, key financial indicators worsened between 2022 and 2023. The domestic industry's net sales value increased by *** percent over the POI, but decreased by *** percent from 2022 to 2023, increasing from $*** in 2021 to $*** in 2022 before decreasing to $*** in 2023.[171] However,

[160] CR/PR at Tables III-5, C-1.
[161] CR/PR at Tables III-5, C-1.
[162] CR/PR at Tables III-12, C-1.
[163] CR/PR at Tables III-12, C-1.
[164] CR/PR at Tables III-12, C-1.
[165] CR/PR at Tables III-12, C-1.
[166] CR/PR at Tables III-9, C-1.
[167] CR/PR at Tables III-9, C-1. The value of U.S. shipments totaled $*** in 2021. *Id.*
[168] CR/PR at Tables IV-10, C-1.
[169] CR/PR at Tables III-11, C-1.
[170] CR/PR at Tables III-11, C-1.
[171] CR/PR at Tables VI-1, C-1. The decrease in the value of the domestic industry's total net sales from 2022 to 2023 resulted from declining unit sales values, which decreased *** percent in the same

the domestic industry's gross profits decreased by *** percent over the POI, first increasing from $*** in 2021 to $*** in 2022 before decreasing to $*** in 2023.[172] The domestic industry's operating income decreased by *** percent over the POI, increasing from $*** in 2021 to $*** in 2022 and decreasing to $*** in 2023.[173] Its net income decreased by *** percent over the POI, and by *** percent from 2022 to 2023, increasing from $*** in 2021 to $*** in 2022 before decreasing to $*** in 2023.[174]

The domestic industry's ratio of operating income to net sales decreased by *** percentage points over the POI, and by *** percentage points from 2022 to 2023, increasing from *** percent in 2021 to *** percent in 2022 and decreasing to *** percent in 2023.[175] Its net income margin decreased *** percentage points over the POI, and by *** percentage points from 2022 to 2023, increasing from *** percent in 2021 to *** percent in 2022 before decreasing to *** percent in 2023.[176] The domestic industry's net assets increased by *** percent over the POI, rising from $*** in 2021 to $*** in 2022 and $*** in 2023.[177] The domestic industry's return on assets declined by *** percentage points over the POI, and decreased by *** percentage points from 2022 to 2023, increasing from *** percent in 2021 to *** percent in 2022 and declining to *** percent in 2023.[178]

The domestic industry made substantial capital investments during the POI on ***.[179] The industry's capital expenditures increased by *** percent over the POI, increasing from $*** in 2021 to $*** in 2022 and $*** in 2023.[180] However, *** Domestic Producers reported that subject imports had negative effects on their investments, growth, and development over the POI. ***, and ***.[181]

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period, from $*** to $*** per short ton contained silicon. *Id.* at Tables VI-1, C-1. Coupled with costs that continued to increase, the industry's COGS-to-net-sales ratio increased *** percentage points from 2022 to 2023, from *** percent in 2022 to *** percent in 2023. *Id.*

[172] CR/PR at Tables VI-1, C-1.

[173] CR/PR at Tables VI-1, C-1.

[174] CR/PR at Tables VI-1, C-1.

[175] CR/PR at Tables VI-1, C-1.

[176] CR/PR at Tables VI-1, C-1.

[177] CR/PR at Tables VI-8, C-1.

[178] CR/PR at Table VI-9.

[179] CR/PR at Table VI-7.

[180] CR/PR at Tables VI-6, C-1. Domestic Producers ***. *Id.* at VI-17 n.17.

[181] CR/PR at Table VI-12; Petition at 46-47; Domestic Producers' Br. at 26; Tr. at 22-23 (Mr. Sossonko, CC Metals). Respondents argue that any domestic closures or curtailments in production resulted from causes other than subject imports. *See* Brazilian Br. at 14-15; OM Materials' Br. at 8; YDD Corp.'s Br. at 9; Kazchrome's Br. at 8-9. In any final phase of these investigations, we intend to further investigate the effects of alleged other causes of injury.

Based on the record in the preliminary phase of these investigations, we find that the increasing volumes of low-priced subject imports resulted in the domestic industry's declining performance, despite the domestic industry gaining market share from 2022 to 2023.[182]

The record of these preliminary phase investigations indicates that cumulated subject import volume was significant over the POI, and in 2023, cumulated subject imports significantly undersold the domestic like product and depressed domestic prices, at the same time that many of the domestic industry's financial indicators worsened.

We have considered whether there were other factors that may have had an impact on the domestic industry, to ensure that we are not attributing injury from such other factors to subject merchandise. We recognize that apparent U.S. consumption decreased from 2022 to 2023; however, it increased by *** percent over the POI and remained elevated in 2023 relative to 2021. Given this elevated level of consumption, we find that changes in apparent consumption cannot explain the declines in the domestic industry's financial indicators over the full POI, particularly from 2022 to 2023.[183] Although the volume of nonsubject imports increased 25.7 percent overall during the POI, it declined 30.9 percent from 2022 to 2023.[184] Similarly, nonsubject imports' market share increased *** percentage points over the POI, but declined *** percentage points from 2022 to 2023.[185]

Further, in 2023, nonsubject import AUVs were $3,960 per short ton contained silicon, significantly above subject import AUVs of $2,694 per short ton contained silicon and above the domestic industry's AUVs of $*** per short ton contained silicon.[186] Nonsubject imports' declining volume and market share from 2022 to 2023, in tandem with higher average unit values than those of subject merchandise, do not explain declines in the domestic industry's financial performance in that same period.

Based on the available information in these preliminary phase investigations, we conclude that cumulated subject imports had a significant adverse impact on the domestic industry.

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[182] *See* CR/PR at Tables IV-10, C-1. The domestic industry's market share increased *** percentage points from 2022 to 2023. *Id.*

[183] CR/PR at Tables IV-10, C-1.

[184] CR/PR at Tables IV-10, C-1. The volume of nonsubject imports of ferrosilicon was 39,707 short tons contained silicon in 2021, 72,218 short tons contained silicon in 2022, and 49,928 short tons contained silicon in 2023. *Id.*

[185] CR/PR at Tables IV-10, C-1. The market share of nonsubject imports of ferrosilicon was *** percent in 2021, *** percent in 2022, and *** percent in 2023. *Id.*

[186] CR/PR at Tables IV-10, VII-15, C-1.

VIII. Conclusion

For the reasons stated above, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia that are allegedly sold in the United States at less than fair value and that are allegedly subsidized by the governments of Brazil, Kazakhstan, Malaysia, and Russia.

Part I: Introduction

Background

These investigations result from petitions filed with the U.S. Department of Commerce ("Commerce") and the U.S. International Trade Commission ("USITC" or "Commission") by Ferroglobe USA, Inc., ("Ferroglobe"), Beverly, Ohio, and CC Metals and Alloys, LLC, ("CC Metals"), Calvert City, Kentucky on March 28, 2024, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and less-than-fair-value ("LTFV") imports of ferrosilicon[1] from Brazil, Kazakhstan, Malaysia, and Russia. Table I-1 presents information relating to the background of these investigations.[2] [3]

Table I-1
Ferrosilicon: Information relating to the background and schedule of this proceeding

Effective date	Action
March 28, 2024	Petitions filed with Commerce and the Commission; institution of the Commission investigations (89 FR 23042, April 3, 2024)
April 17, 2024	Commerce's notice of initiation of LTFV investigations (89 FR 31137, April 24, 2024) and initiation of CVD investigations (89 FR 31133, April 24, 2024)
April 18, 2024	Commission's conference
May 10, 2024	Commission's vote
May 13, 2024	Commission's determinations
May 20, 2024	Commission's views

Statutory criteria

Section 771(7)(B) of the Tariff Act of 1930 (the "Act") (19 U.S.C. § 1677(7)(B)) provides that in making its determinations of injury to an industry in the United States, the Commission--

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

[1] See the section entitled "The subject merchandise" in Part I of this report for a complete description of the merchandise subject in this proceeding.

[2] Pertinent Federal Register notices are referenced in appendix A, and may be found at the Commission's website (www.usitc.gov).

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

the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--[4]

In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.. . .In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) 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 domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.

In addition, Section 771(7)(J) of the Act (19 U.S.C. § 1677(7)(J)) provides that—[5]

(J) EFFECT OF PROFITABILITY.—The Commission may not determine that there is no material injury or threat of material injury to an industry in the United States merely because that industry is profitable or because the performance of that industry has recently improved.

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[4] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.
[5] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

Organization of report

Part I of this report presents information on the subject merchandise, alleged subsidy and dumping margins, and domestic like product. Part II of this report presents information on conditions of competition and other relevant economic factors. Part III presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. Parts IV and V present the volume of subject imports and pricing of domestic and imported products, respectively. Part VI presents information on the financial experience of U.S. producers. Part VII presents the statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury as well as information regarding nonsubject countries.

Market summary

Ferrosilicon is used primarily as an alloying agent in steel and cast-iron production. The two U.S. producers of ferrosilicon are CC Metals and Ferroglobe. Leading producers of ferrosilicon outside the United States include Cia de Ferro Ligas da Bahia – Ferbasa ("Ferbasa") of Brazil, YDD Corporation LLP ("YDD") of Kazakhstan, and OM Materials (Sarawak) Sdn Bhd ("OM Materials") of Malaysia.[6] The leading U.S. importers of ferrosilicon from Brazil are ***, while the leading importers of ferrosilicon from Kazakhstan are ***, and leading importers of ferrosilicon from Malaysia are ***. Leading importers of product from nonsubject countries (primarily Canada, Iceland, and Norway) include ***. U.S. purchasers of ferrosilicon are firms that manufacture steel or operate iron foundries; leading purchasers in 2023 include ***.

Apparent U.S. consumption of ferrosilicon totaled approximately *** value in 2023. CC Metals and Ferroglobe currently produce ferrosilicon in the United States. U.S. producers' U.S. shipments of ferrosilicon totaled *** in 2023, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled 119,042 short tons ($320.6 million) in 2023 and accounted

[6] Staff received no response from any ferrosilicon producers/exporters from Russia regarding these investigations.

for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled 49,928 short tons ($197.7 million) in 2023 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

Summary data and data sources

A summary of data collected in these investigations is presented in appendix C, table C-1. Except as noted, U.S. industry data are based on questionnaire responses of two firms that accounted for all known U.S. production of ferrosilicon during 2023. U.S. imports are based on official import statistics from Commerce.

Previous and related investigations

Ferrosilicon has been the subject of several investigations. In 1983, the Commission instituted an investigation under section 406(a)(1) of the Trade Act following a request received from the United States Trade Representative. In 1984, the Commission found that market disruption did not exist.[7]

The Commission instituted investigations concerning ferrosilicon from Argentina, China, Kazakhstan, Russia, Ukraine, and Venezuela in June 1992. In March 1993, the Commission determined that a domestic industry was materially injured by reason of dumped ferrosilicon imports from China, Kazakhstan, and Ukraine, and in June 1993, the Commission determined that a domestic industry was materially injured by reason of dumped and subsidized ferrosilicon imports from Venezuela and dumped ferrosilicon imports from Russia.[8] Commerce reached a negative determination with respect to Argentina.[9]

The Commission instituted investigations concerning ferrosilicon from Brazil and Egypt in January 1993. In January 1994, the Commission determined that a domestic industry was materially injured by reason of dumped ferrosilicon imports from Brazil.[10] The Commission reached a negative determination with respect to Egypt.[11]

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[7] *Ferrosilicon from the Union of Soviet Socialist Republic, Inv. No. TA-406-10*, USITC Publication 1484, February 1984.

[8] *Ferrosilicon from the People's Republic of China, Inv. No. 731-TA-566 (Final)*, USITC Publication 2606, March 1993; *Ferrosilicon from Kazakhstan and Ukraine, Inv. Nos. 731-TA-566 and 569 (Final)*, USITC Publication 2616, March 1993, F*errosilicon from Russia and Venezuela, Inv. Nos. 731-TA-568 and 570 (Final)*, USITC Publication 2650, June 1993.

[9] 58 FR 27534, May 10, 1993.

[10] *Ferrosilicon from Brazil, Inv. No. 731-TA-641 (Final)*, USITC Publication 2722, January 1994.

[11] 58 FR 58709, November 3, 1993.

In April 1998, the Commission received a request for a changed circumstance review of its affirmative determination with respect to imports of ferrosilicon from Brazil, alleging that since the Commission's original investigation, a nationwide criminal ferrosilicon price-fixing conspiracy maintained by major U.S. ferrosilicon producers from as early as late 1989 to at least mid-1991 was uncovered and successfully prosecuted. The Commission determined that reconsideration was a more appropriate procedure for review of the original determinations. In May 1999, the Commission suspended the changed circumstances review and instituted a reconsideration of the original determination. In August 1999, it determined on reconsideration that the domestic ferrosilicon industry was not materially injured or threatened with material injury by reason of subject imports from Brazil, China, Kazakhstan, Russia, Ukraine, and Venezuela.[12] The Commission's determination was then appealed to the U.S. Court of International Trade (CIT), which remanded the matter to the Commission four times. The Commission made negative determinations in all four remands.[13]

On July 19, 2013, the Commission and Commerce received petitions alleging that an industry in the United States is materially injured and threatened with material injury by reason of LTFV imports of ferrosilicon from Russia and Venezuela.[14] On March 11, 2014, Commerce published a negative preliminary determination on ferrosilicon from Russia,[15] and on July 31, 2014, Commerce published a negative final determination on ferrosilicon from Russia.[16] Following Commerce's negative final determination, the Commission terminated its investigation on ferrosilicon from Russia.[17] On July 31, 2014, Commerce published an affirmative final determination on ferrosilicon from Venezuela.[18] On September 8, 2014, the Commission determined that an industry in the United States was not materially injured or threatened with material injury, by reason of imports from Venezuela of ferrosilicon.[19]

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[12] *Ferrosilicon from Brazil, China, Kazakhstan, Russia, Ukraine, and Venezuela, Inv. Nos. 303-TA-23, 731-TA-566-570 and 731-TA-641 (Final) (Reconsideration*), USITC Publication 3218, August 1999.

[13] *Ferrosilicon from Brazil, China, Kazakhstan, Russia, Ukraine, and Venezuela, Inv. Nos. 303-TA-23, 731-TA-566-570 and 731-TA-641 (Final) (Reconsideration) (Fourth Remand)*, USITC Publication 3890, October 2006.

[14] 78 FR 44969, July 25, 2013.

[15] 79 FR 13620, March 11, 2014.

[16] 79 FR 44393, July 31, 2014.

[17] 79 FR 46450, August 8, 2014.

[18] 79 FR 44397, July 31, 2014.

[19] *Ferrosilicon from Venezuela: Investigation No. 731-TA-1225 (Final)*, USITC Publication 4490, September 2014, p. 1. See also 79 FR 54744, September 12, 2014.

Nature and extent of alleged subsidies and sales at LTFV

Alleged subsidies

On April 24, 2024, Commerce published a notice in the Federal Register of the initiation of its countervailing duty investigations on ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia.[20]

- Brazil—19 programs on which Commerce is initiating investigations;
- Kazakhstan—21 programs on which Commerce is initiating investigations;
- Malaysia—13 programs on which Commerce is initiating investigations; and
- Russia—23 programs on which Commerce is initiating investigations.

Alleged sales at LTFV

On April 24, 2024, Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigations on ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia.[21] Commerce has initiated antidumping duty investigations based on estimated dumping margins of percent for ferrosilicon from Brazil is 21.78 percent, from Kazakhstan is 237.75 percent, from Malaysia is 162.66 percent, and from Russia is 283.27 percent.

The subject merchandise

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[22]

> *The scope of these investigations covers all forms and sizes of ferrosilicon, regardless of grade, including ferrosilicon briquettes. Ferrosilicon is a ferroalloy containing by weight four percent or more iron, more than eight percent but not more than 96 percent silicon, three percent or less phosphorus, 30 percent or less manganese, less than three percent magnesium, and 10 percent or less any other element. The merchandise covered also includes product described as slag, if the product meets these specifications.*

[20] For further information on the alleged subsidy programs see Commerce's notice of initiation and related CVD Initiation Checklist. 89 FR 31133, April 24, 2024.

[21] 89 FR 31137, April 24, 2024.

[22] 89 FR 31137, April 24, 2024.

Subject merchandise includes material matching the above description that has been finished, packaged, or otherwise processed in a third country, including by performing any grinding or any other finishing, packaging, or processing that would not otherwise remove the merchandise from the scope of the investigations if performed in the country of manufacture of the ferrosilicon.

Ferrosilicon is currently classifiable under subheadings 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050 of the Harmonized Tariff Schedule of the United States (HTSUS). While the HTSUS numbers are provided for convenience and customs purposes, the written description of the scope remains dispositive.

Tariff treatment

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to these investigations is imported under the following statistical reporting numbers in the Harmonized Tariff Schedule of the United States ("HTSUS" or "HTS"): 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050.[23] The 2024 general rate of duty is 1.1 percent ad valorem for HTS subheading 7202.21.10; 1.5 percent ad valorem for HTS subheading 7202.21.50; 1.9 percent ad valorem for HTS subheading 7202.21.75; 5.8 percent ad valorem for HTS subheading 7202.21.90; and "free" for HTS subheading 7202.29.00.[24]

Effective April 9, 2022, the United States suspended Normal Trade Relations (NTR) with Russia and Belarus, and imports from Russia and Belarus were subject to the column 2 duty rates of the HTS. Ferrosilicon imported from Russia under HTS subheadings 7202.21.10 and 7202.21.50 is subject to a column 2 duty rate of 11.5 percent ad valorem; under HTS subheading 7202.21.75, 9 percent ad valorem; under HTS subheading 7202.21.90, 40 percent

[23] USITC, HTSUS (2024) Revision 1, Publication 5491, January 2024, p. 72-9.

[24] Ferrosilicon imported from Brazil is eligible to enter the United States at a column 1 special duty rate of "Free," as Brazil is an eligible beneficiary country for the Generalized System of Preferences ("GSP") Program. However, legal authorization for duty-free treatment under the GSP Program expired on January 1, 2021. As a result, U.S. imports entering the United States that were eligible for duty-free treatment under GSP up to December 31, 2020, are now subject to regular, Normal Trade Relations (NTR) rates of duty. USITC, HTSUS (2024) Revision 1, Publication 5491, January 2024, General Note 4, p. 11; HTS Chapter 72, p. 72-9; Office of the Unites States Trade Representative ("USTR"), "Generalized System of Preferences (GSP) Program Information: 2021 Expiration," January 2021, https://ustr.gov/sites/default/files/gsp/GSPexpiration2021.pdf.

ad valorem; and under HTS subheading 7202.29.00, 4.4 cents per kilogram ("¢/kg") on the silicon content.[25] Effective July 28, 2022 ferrosilicon imported from Russia under HTS subheadings 7202.21.10 and 7202.29.00 became subject to an increased column 2 duty rate of 35 percent ad valorem.[26] Effective April 1, 2023, ferrosilicon imported from Russia of under HTS subheadings 7202.21.10 and 7202.29.00 are subject to an increased column 2 duty rate of 70 percent ad valorem.[27]

Effective May 9, 2019, ferrosilicon originating in China is subject to an additional 25 percent ad valorem duty under Section 301 of the Trade Act of 1974, as amended.[28] USTR had not excluded any imported products reported under HTS headings 9903.88.67 and 9903.88.68 from these duties on ferrosilicon originating in China, as of April 2024.[29]

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[25] An Act to Suspend Normal Trade Relations Treatment for the Russian Federation and the Republic of Belarus, and for Other Purposes (Suspending Normal Trade Relations with Russia and Belarus Act), Pub. L. No. 117-110 136 Stat. 1159 (April 8, 2022).

[26] Presidential Proclamation 10420: Increasing Duties on Certain Articles from the Russian Federation, June 27, 2022. 88 FR 38875, June 30, 2022. See also HTS heading 9903.90.08 U.S. notes 30(a) and 30(b) to HTS subchapter 99-III for this duty treatment. HTSUS (2022) Revision 8, USITC Publication 5345, January 2022, pp. 99-III-247 – 99-III-251, 99-III-303.

[27] Presidential Proclamation 10523: Increasing Duties on Certain Articles from the Russian Federation, February 24, 2023. 88 FR 13277, March 2, 2023. See also HTS heading 9903.90.09 U.S. notes 30(c) and 30(d) to HTS subchapter 99-III for this duty treatment. HTSUS (2024) Revision 1, USITC Publication 5491, January 2024, pp. 99-III-258 – 99-III-259, 99-III-314.

[28] Section 301 of the Trade Act, as amended (19 U.S.C. § 2411) authorizes the Office of the United States Trade Representative ("USTR"), at the direction of the President, to take appropriate action to respond to a foreign country's unfair trade practices. Following investigations into "China's acts, policies, and practices related to technology transfer, intellectual property, and innovation" (82 FR 40213, August 24, 2017), USTR published its determination, on April 6, 2018, that the acts, policies, and practices of China under investigation are unreasonable or discriminatory and burden or restrict U.S. commerce and are thus actionable under section 301(b) of the Trade Act (83 FR 14906, April 6, 2018).

The products included in the third enumeration ("Tranche 3") of goods produced in China are subject to additional Section 301 duties. Tranche 3 tariffs with a duty rate of 10 percent were put in place September 24, 2018 (83 FR 47974, September 21, 2018). On May 10, 2019, tranche 3 tariffs were increased to 25 percent ad valorem (84 FR 20459, May 9, 2019). If a Tranche 3 good was exported from China to the United States prior to May 10, 2019, and entered the United States prior to June 1, 2019, it was not subject to the escalated 25 percent duty (84 FR 21892, May 15, 2019). See HTS heading 9903.88.03 and U.S. notes 20 (e) and (f) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTSUS (2024) Revision 1, Publication 5491, January 2024, pp. 99-III-27, 99-III-28, 99-III-46.

[29] HTS headings 9903.88.67 and 9903.88.68 U.S. notes 20(ttt)(iii) and 20(uuu)(iii) to subchapter III of chapter 99 and related tariff provisions for this duty treatment. USITC, HTSUS (2024) Revision 1, Publication 5491, January 2024, pp. 99-III-231 – 99-III-241, 99-III-245 – 99-III-246, 99-III-296.

Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

The product

Description and applications[30]

The merchandise that is subject to these investigations is ferrosilicon, which contains by weight 4 percent or more iron, more than 8 percent but not more than 96 percent silicon, 3 percent or less phosphorus, 30 percent or less manganese, less than 3 percent magnesium, and 10 percent or less any other element. Ferrosilicon is a ferroalloy composed of iron and silicon, along with small proportions of minor elements, such as aluminum, calcium, carbon, manganese, phosphorus, and sulfur. Ferrosilicon is silver in color.

Commercially, ferrosilicon is differentiated by grade and size. Ferrosilicon grades are defined by the percentages by weight of silicon and minor elements contained in the product. The principal characteristic is the percentage of silicon contained in the alloy; grades are referred to primarily by reference to that percentage. In the United States, almost all ferrosilicon produced and/or consumed is either 75 percent ferrosilicon (the predominant form produced by the domestic industry) or 50 percent ferrosilicon.[31] Witness testimony presented at the staff conference suggested that some ferrosilicon consumers are able to blend different grades of material (e.g., lower and higher grades) to reach the desired silicon level for their applications.[32]

Ferrosilicon grades are further defined by the percentages of minor elements present in the product. "Regular grade 75 percent ferrosilicon" and "regular grade 50 percent ferrosilicon" denote products containing the indicated percentages of silicon and recognized maximum percentages of minor elements. Other grades of ferrosilicon differ from regular grades by

[30] Unless otherwise noted, the information in this section is based on the Petition, Vol. I, pp. 3-5 and Ferrosilicon from Venezuela, Inv. No. 731-TA-1225 (Final), USITC Publication 4490, September 2014, pp. I-7–I-8.

[31] A standard specification for ferrosilicon from the American Society for Testing and Materials (ASTM) is ASTM A100 Standard Specification for Ferrosilicon. To be in compliance with this specification, 75 percent ferrosilicon must contain from 74.0 through 79.0 percent silicon, and 50 percent ferrosilicon must contain from 47.0 through 51.0 percent silicon. Individual producers and consumers may have their own specifications that may be broader or narrower than the ASTM standard. ASTM International, "A100-07: Standard Specification for Ferrosilicon," Annual Book of ASTM Standards 2017, Section 1 Iron and Steel Products, Volume 01.02 Ferrous Castings: Ferroalloys, 2017, pp. 64–68.

[32] Conference transcript, p. 21 (Hammer).

having more restrictive limits on the content of elements such as aluminum, titanium, and/or calcium in the alloy.[33] Witness testimony presented at the staff conference suggested that while there are no specific standards or requirements to designate a product as "high-purity," such forms of ferrosilicon typically have lower levels of impurities than regular grades and commonly are produced to meet customer specifications.[34] For example, one domestic producer indicated that it produces "high-purity products used in the production of grain-oriented and non-oriented electrical sheet and specialty steels requiring low levels of aluminum, titanium, boron and other residual elements." [35] Higher purity products can substitute for standard grade ferrosilicon.[36]

Domestic and foreign producers also manufacture ferrosilicon that contains controlled amounts of minor elements for the purpose of adding them to steel or foundry iron using ferrosilicon as the carrier.[37] Such ferrosilicon products are sometimes called "inoculants."

Ferrosilicon is primarily used in steel and cast-iron production. Approximately 88 percent of ferrosilicon produced is used in steel production.[38] In steel, ferrosilicon products are used to make stainless steel, carbon steel, electrical steel, and other steel alloys. [39] In steel production, the silicon contained in ferrosilicon serves as a deoxidizer by combining with dissolved oxygen in molten steel. Deoxidation is necessary to permit casting of the steel without undesirable bubbles in the solidified steel. Ferrosilicon is also used as a reducing agent, particularly in the production of stainless steel. As a reducing agent, silicon reacts with chromium oxides to form silicon oxides, returning chromium to the molten steel, and increasing

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[33] ASTM A100 includes chemical requirements for a number of grades of ferrosilicon. Grade C, regular 75 percent ferrosilicon, for example, may contain a maximum of 1.50 percent of aluminum, by weight, whereas grade CA may contain a maximum of 0.50 percent, and grade CB a maximum of 0.10 percent of aluminum. Further, grades C1 and C2 are required to contain at least 1.00 percent but not more than 1.50 percent of aluminum and must contain a minimum of 0.50 percent or 1.50 percent of calcium, respectively. See ASTM International, "Table 1 Chemical Requirements," in "A100-07: Standard Specification for Ferrosilicon," Annual Book of ASTM Standards 2017, Section 1 Iron and Steel Products, Volume 01.02 Ferrous Castings: Ferroalloys, 2017, p. 65.

[34] Conference transcript, p. 75 (Sossonko), pp. 74-75 (Hammer).

[35] Ferroglobe webpage, "Ferrosilicon," https://www.ferroglobe.com/solutions/ferrosilicon/, retrieved April 10, 2024.

[36] Conference transcript, p. 16 (Hammer).

[37] Ferrosilicon used by the foundry industry typically contains higher levels of calcium than ferrosilicon used for steel production. Conference transcript, p. 82 (Elazazzy).

[38] Ferroglobe's 2022 Form 20-F, p. 45 (as filed), May 1, 2023, https://www.ferroglobe.com/static-files/da594404-4280-4c62-8b0e-a340aef9cc2a.

[39] Ferroglobe's 2022 Form 20-F, p. 45 (as filed), May 1, 2023, https://www.ferroglobe.com/static-files/da594404-4280-4c62-8b0e-a340aef9cc2a.

the overall chromium recovery of the process. Finally, ferrosilicon is used as the source of silicon for alloying purposes in the production of certain steel alloys, particularly silicon electrical steel, which may contain three percent or more of silicon.

Ferrosilicon is also used by iron foundries as the source of silicon needed for alloying purposes in iron castings. Ferrosilicon, specifically in atomized form, is used in mining where it is mixed with water to form a dense medium to aid in the separation of mineral ore in a "sink/float" or gravity separation process. Atomized ferrosilicon is also used in the production of welding rod, where it is added as the coating to improve deoxidization.

Ferrosilicon is sold primarily in sized lump form, and can also be sold in granular form, fines, formed briquettes, and as atomized powders.[40] Size is important because it affects the performance of the ferrosilicon in its designated use. Most steel producers have feeder systems that require specific sizes of ferrosilicon to feed into their steelmaking furnaces.[41] Large lumps are generally used in primary steelmaking furnaces because they penetrate the layer of slag on top of the molten metal more readily. Smaller lumps are more commonly used for alloying purposes to insure rapid dissolution in molten steel. Fines are less desirable than lumps because it is more difficult to recover the silicon content in them. Briquettes are made from fines that have been combined into larger size pieces.[42] Ferrosilicon is considered relatively friable (easily crumbled or pulverized), and excessive handling of lumps or formed pieces will generate unwanted fines.[43]

Silica fume is a byproduct of the electrometallurgical process of silicon metal and ferrosilicon production.[44] This dust-like material, collected through factories' air filtration systems, is mainly used in the production of high-performance concrete and mortar. The controlled addition of silica fume to these products results in increased durability, improving

[40] Ferrosilicon sizes are stated as the maximum and minimum dimensions of the lumps found in a given shipment. The dimensions refer to the openings in standardized sieves used to size the product. Sizes vary from eight inches by four inches to one-quarter inch by down. ASTM A100 includes standard sizes and tolerances for a number of grades of ferrosilicon. See ASTM International, "Table 2 Standard Sizes and Tolerances," in "A100-07: Standard Specification for Ferrosilicon," Annual Book of ASTM Standards 2017, Section 1 Iron and Steel Products, Volume 01.02 Ferrous Castings: Ferroalloys, 2017, p. 66.

[41] Conference transcript, pp. 80-81 (Sossonko).

[42] Briquettes are sometimes sold at a discounted price compared to lump, which is a solid formed piece and more desirable. Conference transcript, pp. 81-82 (Sossonko).

[43] AMG Vanadium, Inc., "Ferroalloys & Alloying Additives Online Handbook – Silicon," November 23, 2000.

[44] Silica fume is not covered by the scope of these investigations.

their impermeability from external agents, such as water. These types of concrete and mortar are used in projects such as bridges, viaducts, ports, skyscrapers and offshore platforms.[45]

Manufacturing processes[46]

In general, all silicon metal, regardless of specification, is produced using essentially the same process and inputs. Ferrosilicon is produced by smelting iron or steel scrap and quartz gravel or sand (which contain silicon) in submerged-arc electric furnaces. These are combined with carbonaceous material such as coal or petroleum coke and a bulking agent such as wood chips.[47] The raw materials are weighed, combined in the required proportions, and fed into the furnace. High-current, low-voltage electricity is delivered through a transformer and into the furnace through carbon electrodes. The process is very energy-intensive, requiring about 8,000 to 9,000 kilowatt-hours of electricity to produce one short ton of 75 percent ferrosilicon. The source of electricity generation can vary between domestic and foreign producers. Some subject producers in Brazil and Malaysia are known to use electricity generated from hydropower, wind energy, and solar power to produce ferrosilicon and other ferroalloys.[48] To

[45] Conference transcript, pp. 69-70 (Sossonko); Ferroglobe 2022 20-F Report, May 1, 2023, https://www.ferroglobe.com/static-files/da594404-4280-4c62-8b0e-a340aef9cc2a, p. 45

[46] Unless otherwise noted, the information in this section is based on the Petition, Vol. I, pp. 5-7 and Ferrosilicon from Venezuela, Inv. No. 731-TA-1225 (Final), USITC Publication 4490, September 2014, pp. I-8–I-8.

[47] Producers in Brazil produce "green" ferrosilicon which has lower carbon emissions when compared to the ferrosilicon production process in other countries, including the United States. Producers in Brazil use charcoal made largely from eucalyptus or other wood either instead of coal or petroleum coke, as inputs in the production of ferrosilicon. Respondents from Brazil stated that charcoal has lower CO2 emissions than coke, which is the reducer used by domestic producers. Additionally, the use of coal and coke as reducers introduces several undesirable chemical elements into specialty steel products, which may not be acceptable for certain customers that require specialty or high-purity ferrosilicon. Brazilian respondents postconference brief, pp. 8-9; Rima webpage, "Green Silicon-based Products," https://www.rima.com.br/silicio-metalico/, retrieved April 5, 2024; Ferbasa webpage, "Ferrosilicon 75 (FeSi 75)," https://www.ferbasa.com.br/en/performance/metalurgia/our-products/, retrieved April 5, 2024.

[48] Brazilian respondents postconference brief, p. 9; Rima webpage, "Green Silicon-based Products," https://www.rima.com.br/silicio-metalico/, retrieved April 5, 2024; OM Holdings, "August 2022 Investor Presentation," https://www.omholdingsltd.com/wp-content/uploads/2022/08/20220810-OMH-Investor-Presentation-Update-.pdf, p. 5, retrieved April 19, 2024. See also CRU Insight, What is the role of ferrosilicon on the route to Net Zero?, posted June 16, 2023.

operate efficiently and reduce unit fixed cost, a submerged-arc electric furnace must run continuously, 24 hours per day.[49]

In the furnace, the raw materials (charge) are heated to approximately 3,300 degrees Fahrenheit. At that temperature, the quartzite combines with the carbon in the reductants forming carbon monoxide and releasing silicon, which forms an alloy with molten iron. Due to its relatively higher weight, the molten ferrosilicon accumulates in the bottom of the furnace, from which it is drawn off into ladles on either a continuous or intermittent basis. Refining the ferrosilicon to remove any unwanted impurities and to add any special alloying elements occurs in the ladles at this point in the process.

The molten ferrosilicon is then poured from the ladles into large, flat cast-iron molds or onto a bed of ferrosilicon fines to cool. After cooling and solidification, the ferrosilicon is crushed and screened to produce specific lump sizes. In the process of crushing, some product may be too small for sale; such material may be further ground to a powder, combined with a binder, and formed into briquettes. All sizes of ferrosilicon, including briquettes and fines, are subject to these investigations.

As noted earlier, all grades of ferrosilicon are produced using essentially the same process, but certain additional steps are required to produce higher-purity grades of ferrosilicon. Such grades are produced using raw materials containing lower amounts of impurities.[50] In addition, higher-purity ferrosilicon undergoes further processing known as "ladle metallurgy" which injects oxygen into the molten metal in the ladle to oxidize and further reduce the level of impurities. Atomized ferrosilicon, such as specialty grade 15 percent ferrosilicon for dense medium separation applications is typically produced by remelting 75 percent ferrosilicon with steel scrap in an electric arc furnace and casting the resulting mixture into a high-pressure water spray.

Some producers of silicon metal also produce ferrosilicon.[51] Producers can switch production on a furnace between ferrosilicon and silicon metal with varying degrees of cost, downtime, and efficiency loss. It is generally easier for firms to switch from silicon metal production to ferrosilicon production than the reverse.[52] Iron and other elements that may be

[49] Conference transcript, pp. 73-73 (Sossonko).

[50] Domestic producer CCMA stated that the grades of ferrosilicon produced depend on the type of raw materials used as inputs. To produce higher purity ferrosilicon, they would use coal or quartz inputs with less trace elements or impurities in them. Conference transcript, p. 39 (Sossonko).

[51] Domestic producer Ferroglobe produces silicon metal and ferrosilicon while CCMA only produces ferrosilicon. Conference transcript, p. 34 (Hammer).

[52] Conference transcript, p. 34 (Hammer).

contained in ferrosilicon tend to remain in a furnace lining and result in impurities intolerable in silicon metal production. In addition, certain furnace designs are more efficient at producing one product than another, leading to efficiency loss when switching production to the other product. The conversion would require removal of the material from the furnace, the replacement of the electrodes, and possibly some modifications to the supporting materials.[53] Switching from silicon metal production to ferrosilicon can be done in about one week with minimal capital investment while switching from ferrosilicon to silicon metal takes about one month and is more capital intensive.[54]

Some ferrosilicon producers also make magnesium ferrosilicon products at the same plants as ferrosilicon.[55] Magnesium ferrosilicon alloys are known as "nodularisers" and improve the mechanical properties of cast iron by ensuring the formation of graphite in the spheroidal or compacted nodules.[56] The resulting product is commonly known as ductile iron.[57]

Domestic like product issues

No issues with respect to domestic like product have been raised in these investigations.

[53] Silicon Metal from Russia, Inv. No. 731-TA-997 (Third Review), USITC Publication 5058, May 2020, p. I-20.

[54] Conference transcript, p. 34 (Hammer).

[55] Ferroglobe webpage, "Beverly," https://www.ferroglobe.com/about-ferroglobe/industrial-footprint/beverly, retrieved April 10, 2024.

[56] Magnesium ferrosilicon is not covered by the scope of these investigations.

[57] Ferroglobe webpage, "Foundry Products," https://www.ferroglobe.com/solutions/foundry-products, retrieved April 10, 2024.

Part II: Conditions of competition in the U.S. market

U.S. market characteristics

Ferrosilicon is used primarily in the production of steel and iron to introduce silicon into molten steel or iron. U.S. demand trends for ferrosilicon tend to follow U.S. steel production. Different grades of ferrosilicon can be manufactured, such as regular, high purity, low aluminum, and foundry grade. Each grade is defined by the percentage of silicon and minor elements contained in the product by weight. The lower the share of elements other than silicon and iron, the higher the purity level of the ferrosilicon.[1] Ferrosilicon is also available with differing levels of silicon and in a range of forms, from large lumps to granular fines.

Customers typically require their own specifications of ferrosilicon with reduced levels of certain nonsilicon elements.[2] Brazilian respondents state that the use of charcoal reduces the introduction of "several undesirable chemical elements into specialty steel products, which may not be acceptable for certain customers that require specialty or high-purity."[3]

Both U.S. producers and 5 of 10 importers indicated that the market was subject to distinctive conditions of competition. Specifically, firms reported the market is becoming more limited with ferrosilicon producers purchasing suppliers; competition between U.S. and imported production; suppliers compete more during economic slowdowns; and as long as ferrosilicon meets specifications, sales are solely on price.

U.S. producers and importers were asked to report the impact on exports of ferrosilicon of the Russian loss of NTR. No firm that imported ferrosilicon from Russia in 2023 responded to the Commission's questionnaires. However, among those firms that did respond, *** none of the 13 importers reported that it had had an impact. *** reported that Russia's loss of NTR did not change the duty rate on ferrosilicon containing 75 percent silicon.

Apparent U.S. consumption of ferrosilicon increased by *** percent from 2021 to 2022. However, in 2023 apparent U.S. consumption of ferrosilicon declined by *** percent.

[1] Conference transcript, p. 76 (Sossonko).
[2] Conference transcript, pp. 37-38 (Sossonko). Brazilian respondents' postconference brief, Exhibit 4.
[3] Brazilian respondents' postconference brief, pp. 8-9.

Channels of distribution

Steel producers were the main channel of distribution for both U.S. producers and subject and nonsubject imports during 2021-2023 (table II-1). Most imports from Kazakhstan and Malaysia were shipped to steel producers during 2021-23. Steel producers were also the largest U.S. market for Brazilian ferrosilicon in 2021 and 2022, and in 2023, importers from Brazil shipped nearly equal shares of shipments to steel producers and to other end users. Most imports from Russia were sold to steel producers and other end users in 2021 and *** were to iron foundries in 2022.

Table II-1
Ferrosilicon: Share of U.S. shipments by source, channel of distribution, and period

Shares in percent

Source	Channel	2021	2022	2023
United States	Distributors	***	***	***
United States	Iron foundries	***	***	***
United States	Steel producers	***	***	***
United States	Other end users	***	***	***
Brazil	Distributors	***	***	***
Brazil	Iron foundries	***	***	***
Brazil	Steel producers	***	***	***
Brazil	Other end users	***	***	***
Kazakhstan	Distributors	***	***	***
Kazakhstan	Iron foundries	***	***	***
Kazakhstan	Steel producers	***	***	***
Kazakhstan	Other end users	***	***	***
Malaysia	Distributors	***	***	***
Malaysia	Iron foundries	***	***	***
Malaysia	Steel producers	***	***	***
Malaysia	Other end users	***	***	***
Russia	Distributors	***	***	***
Russia	Iron foundries	***	***	***
Russia	Steel producers	***	***	***
Russia	Other end users	***	***	***
Subject sources	Distributors	***	***	***
Subject sources	Iron foundries	***	***	***
Subject sources	Steel producers	***	***	***
Subject sources	Other end users	***	***	***
Nonsubject sources	Distributors	***	***	***
Nonsubject sources	Iron foundries	***	***	***
Nonsubject sources	Steel producers	***	***	***
Nonsubject sources	Other end users	***	***	***
All import sources	Distributors	***	***	***
All import sources	Iron foundries	***	***	***
All import sources	Steel producers	***	***	***
All import sources	Other end users	***	***	***

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

Geographic distribution

U.S. producers reported selling ferrosilicon to *** (table II-2). Subject imports were shipped to all regions in the contiguous United States. Importers from Brazil reported selling to all regions in the contiguous United States, importers from Kazakhstan reported selling to all regions in the contiguous United States except the Mountains and Pacific Coast regions, importers from Malaysia reported selling to all regions in the contiguous United States except *** regions, and importers from Russia sold in the *** regions. For U.S. producers, *** percent of sales were within 100 miles of their production facility, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold 38.8 percent within 100 miles of their U.S. point of shipment, 57.1 percent between 101 and 1,000 miles, and 4.1 percent over 1,000 miles.

Table II-2
Ferrosilicon: Count of U.S. producers' and U.S. importers' geographic markets

Region	U.S. producers	Brazil	Kazakhstan	Malaysia	Russia	Subject sources
Northeast	***	4	2	***	***	7
Midwest	***	4	3	***	***	8
Southeast	***	3	2	***	***	7
Central Southwest	***	2	2	***	***	5
Mountain	***	1	0	***	***	1
Pacific Coast	***	2	0	***	***	2
Other	***	0	0	***	***	0
All regions (except Other)	***	1	0	***	***	1
Reporting firms	2	5	4	2	1	10

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

Note: Other U.S. markets include AK, HI, PR, and VI.

Supply and demand considerations

U.S. supply

Table II-3 provides a summary of the supply factors regarding ferrosilicon from U.S. producers and from subject countries. No Russian producers responded to the Commission's questionnaire, however, according to the U.S. Geological Survey, Russia produced an estimated 1.2 million pounds (silicon content) of ferrosilicon in 2023 and Russia was the world's second largest ferrosilicon producer after China (table VII-13).[4]

[4] U.S. Geological Survey, Mineral Commodity Summaries 2024, "Silicon," January 31, 2024, p. 161.

Table II-3
Ferrosilicon: Supply factors that affect the ability to increase shipments to the U.S. market, by country

Quantity in pounds contained silicon; ratio and share in percent; count in number of firms reporting

Factor	Measure	United States	Brazil	Kazakhstan	Malaysia	Russia
Capacity 2021	Quantity	***	***	***	***	***
Capacity 2023	Quantity	***	***	***	***	***
Capacity utilization 2021	Ratio	***	***	***	***	***
Capacity utilization 2023	Ratio	***	***	***	***	***
Inventories to total shipments 2021	Ratio	***	***	***	***	***
Inventories to total shipments 2023	Ratio	***	***	***	***	***
Home market shipments 2023	Share	***	***	***	***	***
Non-US export market shipments 2023	Share	***	***	***	***	***
Ability to shift production (firms reporting “yes”)	Count	***	***	***	***	***

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

Note: Responding U.S. producers accounted for all known U.S. production of ferrosilicon in 2023. Responding foreign producer/exporter firms accounted for virtually all of U.S. imports of ferrosilicon from Malaysia during 2023, nearly all U.S. imports of ferrosilicon from Brazil, and more than 75 percent of U.S. imports of ferrosilicon from Kazakhstan during 2023. No Russian producers provided responses. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Part I, “Summary Data and Data Sources.

Domestic production

Based on available information, U.S. producers of ferrosilicon have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced ferrosilicon to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and the ability to shift production to or from alternate products. Factors mitigating responsiveness of supply include limited inventories and limited ability to shift shipments from alternate markets.

U.S. producers’ capacity utilization increased while both capacity and production increased. The only export market reported was ***. Other products that producers reportedly can produce on the same equipment as ferrosilicon are ***. ***.

Subject imports from subject countries

Based on available information, producers of ferrosilicon from subject countries generally have the ability to respond to changes in demand with large changes in the quantity of shipments of ferrosilicon to the U.S. market. Factors contributing to responsiveness include increased capacity (Brazil and Kazakhstan), substantial third-country exports (Brazil, Kazakhstan, and Malaysia), increased inventories (Brazil and Kazakhstan), and the ability to shift production to or from other products (reported by 6 of 11 foreign producers). This is somewhat offset by relatively high-capacity utilizations in 2023 for *** and increasing capacity utilization for ***.

Foreign producers from Brazil, Kazakhstan, and Malaysia responded to the Commission's questionnaire. Producers in Brazil and Kazakhstan reported increased capacity to produce ferrosilicon between 2021 and 2023. Producers in Brazil and Malaysia reported that their capacity utilization rates were above *** percent in 2023. Producers in Kazakhstan reported their capacity utilization was under *** percent. Producers from subject countries reported overall capacity increased by *** tons from 2021 to 2023.

Imports from nonsubject sources

Imports from nonsubject sources accounted for 29.5 percent of total U.S. imports in 2023 (see table IV-3). The largest source of imports from nonsubject sources during 2021-23 was Canada. It accounted for 44.8 percent of nonsubject imports in 2023.

Supply constraints

Both U.S. producers and 3 of 12 responding importers reported that they had experienced supply constraints since January 1, 2021. Supply constraints reported by U.S. producers included ***. Two importers reported shipping problems had caused supply constraints, particularly in 2021 and 2022.[5]

[5] A third importer, ***, reported that it was a small importer but did not explain how this caused supply constraints.

U.S. demand

Based on available information, the overall demand for ferrosilicon is likely to experience small changes in response to changes in price. The main contributing factors are the limited range of substitute products and the small cost share of ferrosilicon in most of its end-use products.

End uses and cost share

Petitioners state that most ferrosilicon is used in steel production and about 20 percent is used in cast iron.[6] Ferrosilicon gives specific metallurgical properties to the final products produced with its inclusion, including superior corrosion resistance and wear resistance to stainless steel and added strength in carbon steel for high-stress applications, such as suspension bridges. Additionally, high purity ferrosilicon is used in the production of grain-oriented and non-grain-oriented electrical steels, which are used to make electrical transformers for the power grid and require low levels of aluminum, titanium, boron, and other residual elements.[7] These electrical steels can have relatively high silicon requirements.[8]

Ferrosilicon can be used as a deoxidizer in steel production by combining with dissolved oxygen when steel is in its molten form permitting casting of the steel without undesirable bubbles in the solidified steel. Ferrosilicon can be used in stainless steel to increase the overall chromium recovery.

U.S. producers and importers identified a range of end uses for ferrosilicon, including the production of steel generally, rebar and stainless steel in particular; iron foundries; and aluminum recycling. They estimated that ferrosilicon accounted for 2 to 5 percent of the cost of those end uses.

Business cycles

*** U.S. producers and 6 of 10 importers described the U.S. ferrosilicon market as subject to business cycles, usually citing the close relationship between ferrosilicon demand and steel production. Other cycles reported included: inventory cycles to reduce end of year inventories, contractual cycles that culminate in the autumn, and increased customer interest in longer purchase contracts since Russia's invasion of Ukraine.

[6] Conference transcript, pp. 61-62 (Cook, Hammer, Sossonko).
[7] Conference transcript, p. 15 (Hammer).
[8] Petition, p. 8.

*** reported that U.S. demand for ferrosilicon *** since January 1, 2021 (table II-4). Importer responses were mixed with three firms reporting increased demand (either steadily or with fluctuations), four reporting decreased demand (with fluctuations), and three reporting no change in demand.

Table II-4
Ferrosilicon: Count of firms' responses regarding overall domestic and foreign demand, by firm type

Market	Firm type	Increased steadily	Increased with fluctuations	No change	Decreased with fluctuations	Decreased steadily
Domestic demand	U.S. producers	***	***	***	***	***
Domestic demand	Importers	2	1	3	4	0
Foreign demand	U.S. producers	***	***	***	***	***
Foreign demand	Importers	1	0	4	3	0

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

Note: One importer (***) responded both increased and decreased with fluctuations. Its response is not included.

Lead times

Ferrosilicon is primarily sold from inventory. U.S. producers reported that *** percent of their commercial shipments were from inventories and the remaining *** percent were produced-to-order, with lead times averaging *** days.[9] Importers reported that *** percent of their commercial shipments were sold from inventories, with lead times averaging *** days. Of their remaining commercial shipments, *** percent were produced-to-order with lead times averaging *** days, and *** percent were from foreign inventories with *** day lead times.

Substitute products

*** and 8 of 11 importers reported that there were no substitutes for ferrosilicon. Importers identified substitutes included silica carbide and silicon metal. Two importers reported that silica carbide did influence the price of ferrosilicon by decreasing demand for ferrosilicon. These importers reported that silicon metal was much more expensive to use than ferrosilicon and thus did not affect the price of ferrosilicon.

[9] ***.

Substitutability issues

The degree of substitution between domestic and imported ferrosilicon depends upon such factors as relative prices, quality (e.g., purity and proportion of minor elements, lump size consistency, reliability of supply, defect rates), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, payment terms, product services). Based on available data, staff believes that there is a high degree of substitutability between domestically produced ferrosilicon and ferrosilicon imported from subject countries when the grade of ferrosilicon is the same. Substitutability may be limited by the different purity, the different levels of various secondary elements in the ferrosilicon, and the lack of subject imports of 50% ferrosilicon and "other grades." [10]

Factors affecting purchasing decisions

Purchasers responding to lost sales lost revenue allegations[11] were asked to identify the main purchasing factors their firm considered in their purchasing decisions for ferrosilicon. The major purchasing factors identified by firms include quality (chemistry, sizing, purity, performance); availability (reliability of deliveries and continuity of supply); security of supply (diverse supply base, country of origin, and sustainability); price; packaging; and service (logistics and inventories).

The government of Brazil argues that Brazilian ferrosilicon production is cleaner because of use of greater use of renewable energy and the use of charcoal rather than coal.[12] Petitioners argue that "no one's paying a premium to get … some sort of added greenness to the end product."[13]

[10] As discussed in greater detail in Part IV, these forms of ferrosilicon represent a relatively small portion of ferrosilicon consumed in the U.S. market.

[11] This information is compiled from responses by purchasers identified by petitioners in their lost sales lost revenue allegations. See Part V for additional information.

[12] Government of Brazil's postconference brief, p. 4.

[13] Conference transcript, p. 94 (Bay).

Interchangeability of 50 percent silicon and 75 percent silicon ferrosilicon

Producers and importers were asked if 50 percent and 75 percent silicon ferrosilicon were interchangeable. *** while 75 percent ferrosilicon could be used in applications that normally used 50 percent ferrosilicon, 50 percent ferrosilicon could not be used in applications that used 75 percent ferrosilicon. Three importers reported that 50 percent silicon and 75 percent silicon ferrosilicon were sometimes interchangeable. These importers stated that 70 to 72 percent ferrosilicon is interchangeable with 75 percent but 50 percent and 75 percent "are not really interchangeable"; the "hazmat nature of 50 percent FeSi limits and restricts operations ranging from end user handling, storage, warehousing, transportation etc.;" and customers have shifted from 50 percent to 75 percent silicon ferrosilicon in the steel and foundry industries limiting demand for 50 percent silicon ferrosilicon. Six importers reported that 50 percent silicon and 75 percent silicon ferrosilicon were never interchangeable. Three of these provided explanations including: silicon units in 75 percent cost less; customers have different specifications; and customers do not use these grades interchangeably.

Comparison of U.S.-produced and imported ferrosilicon

In order to determine whether U.S.-produced ferrosilicon can generally be used in the same applications as imports from subject countries, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in tables II-5 to II-6, both U.S. producers reported that ferrosilicon from all country pairs was always interchangeable and most importers reported that product from all country pairs (except U.S. vs. other) was either frequently or sometimes interchangeable. Factors that some importers reported as reducing interchangeability included: Brazilian product was reported to be high purity grades, *** production is sold to consumers needing with at most 0.10 percent carbon, and nonsubject countries produce a wide range of ferrosilicon.

Table II-5
Ferrosilicon: Count of U.S. producers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. Brazil	***	***	***	***
U.S. vs. Kazakhstan	***	***	***	***
U.S. vs. Malaysia	***	***	***	***
U.S. vs. Russia	***	***	***	***
U.S. vs. other	***	***	***	***
Brazil vs. Kazakhstan	***	***	***	***
Brazil vs. Malaysia	***	***	***	***
Brazil vs. Russia	***	***	***	***
Kazakhstan vs. Malaysia	***	***	***	***
Kazakhstan vs. Russia	***	***	***	***
Malaysia vs. Russia	***	***	***	***
Brazil vs. Other	***	***	***	***
Kazakhstan vs. Other	***	***	***	***
Malaysia vs. Other	***	***	***	***
Russia vs. Other	***	***	***	***

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

Table II-6
Ferrosilicon: Count of importers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. Brazil	3	3	3	0
U.S. vs. Kazakhstan	3	2	1	0
U.S. vs. Malaysia	2	2	2	1
U.S. vs. Russia	1	3	1	0
U.S. vs. other	1	2	3	0
Brazil vs. Kazakhstan	1	2	2	1
Brazil vs. Malaysia	1	3	1	0
Brazil vs. Russia	2	2	1	1
Kazakhstan vs. Malaysia	1	2	2	0
Kazakhstan vs. Russia	1	2	2	0
Malaysia vs. Russia	1	2	2	0
Brazil vs. Other	1	2	2	0
Kazakhstan vs. Other	2	2	1	0
Malaysia vs. Other	2	2	1	0
Russia vs. Other	1	2	1	0

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

In addition, U.S. producers and importers were asked to assess how often differences other than price were significant in sales of ferrosilicon from the United States, subject, or nonsubject countries. As seen in tables II-7 to II-8, both producers reported that there were never differences other than price between all country pairs while most importers reported that there were sometimes differences other than price between ferrosilicon from all country pairs. Differences other than price reported by importers included: other countries have different chemical content for titanium, aluminum, and carbon; it is difficult for some firms to get ferrosilicon from Malaysia and Brazil; and U.S. producers have better availability, transport, and technical support.

Table II-7
Ferrosilicon: Count of U.S. producers reporting the significance of differences other than price between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. Brazil	***	***	***	***
U.S. vs. Kazakhstan	***	***	***	***
U.S. vs. Malaysia	***	***	***	***
U.S. vs. Russia	***	***	***	***
U.S. vs. other	***	***	***	***
Brazil vs. Kazakhstan	***	***	***	***
Brazil vs. Malaysia	***	***	***	***
Brazil vs. Russia	***	***	***	***
Kazakhstan vs. Malaysia	***	***	***	***
Kazakhstan vs. Russia	***	***	***	***
Malaysia vs. Russia	***	***	***	***
Brazil vs. Other	***	***	***	***
Kazakhstan vs. Other	***	***	***	***
Malaysia vs. Other	***	***	***	***
Russia vs. Other	***	***	***	***

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

Table II-8
Ferrosilicon: Count of importers reporting the significance of differences between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
U.S. vs. Brazil	1	1	6	1
U.S. vs. Kazakhstan	1	0	4	1
U.S. vs. Malaysia	1	0	4	2
U.S. vs. Russia	1	0	4	0
U.S. vs. other	1	1	4	0
Brazil vs. Kazakhstan	2	0	4	0
Brazil vs. Malaysia	1	0	4	0
Brazil vs. Russia	1	0	4	0
Kazakhstan vs. Malaysia	1	0	3	1
Kazakhstan vs. Russia	1	0	4	0
Malaysia vs. Russia	1	0	4	0
Brazil vs. Other	1	1	3	0
Kazakhstan vs. Other	1	1	3	0
Malaysia vs. Other	1	1	3	0
Russia vs. Other	1	0	3	0

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

Part III: U.S. producers' production, shipments, and employment

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in Part I of this report and information on the volume and pricing of imports of the subject merchandise is presented in Part IV and Part V. Information on the other factors specified is presented in this section and/or Part VI and (except as noted) is based on the questionnaire responses of CC Metals and Ferroglobe that accounted for all known U.S. production of ferrosilicon during 2023.

U.S. producers

The Commission issued a U.S. producer questionnaire to two firms based on information contained in the petition. Two firms provided usable data on their operations.[1] Table III-1 lists U.S. producers of ferrosilicon, their production locations, positions on the petition, and shares of total production.

Table III-1
Ferrosilicon: U.S. producers, their positions on the petition, production locations, and shares of reported production, 2023

Firm	Position on petition	Production location(s)	Share of production
CC Metals	Petitioner	Calvert City, KY	***
Ferroglobe	Petitioner	Beverly, OH Bridgeport, AL	***
All firms	Various	Various	***

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

Table III-2 presents information on U.S. producers' ownership, related and/or affiliated firms.

[1] ***.

As indicated in table III-2, *** that are producers of the subject merchandise. There were no reported imports or purchases by U.S. producers of ferrosilicon from subject sources from 2021 to 2023, although *** purchased the ferrosilicon that was domestically sourced during 2021-23.[2]

Table III-2
Ferrosilicon: U.S. producers' ownership, related and/or affiliated firms

Reporting firm	Relationship type and related firm	Details of relationship
***	***	***
***	***	***
***	***	***
***	***	***
***	***	***

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

Table III-3 presents events in the U.S. industry since January 1, 2021.[3]

[2] *** indicated it had purchased small amounts of U.S. sourced ferrosilicon during 2021-23, but did not indicate or know the origin of the domestically sourced product. *** U.S. producer questionnaire, sections II-13 and II-16.

[3] In late 2023, Ferroglobe's Selma, Alabama production facility shut down. This plant had 36,000 short tons of annual capacity and was primarily a silicon metal production facility. Ferroglobe officials indicated that if market conditions were to improve for ferrosilicon, the Selma plant could produce ferrosilicon. Conference transcript, p. 35 (Hammer).

Table III-3
Ferrosilicon: Important industry events since January 1, 2021

Item	Firm	Event
Plant restart (after temporary idling)	CC Metals	On July 1, 2020, CC Metals announced an indefinite suspension of business operations at its Calvert City, KY ferrosilicon production facility. The company attributed the closure to poor market and pricing conditions brought on by the economic impact of the COVID-19 pandemic. The shutdown resulted in the layoff of more than 80 plant workers, approx. 77% of CCMA's workforce. The facility reopened in March 2021.
New labor agreement	CC Metals	In Sept. 2021, CC Metals announced that it had reached a labor agreement with the United Automobile Aerospace and Agricultural Implement Workers of America (UAW) and its affiliated Local Union No. 523 (UAW Local 523), covering over 100 union jobs at its ferrosilicon plant in Calvert City, KY.
Plant restart (silicon metal)	Ferroglobe	In Sept. 2021, Ferroglobe announced was considering plans to restart its silicon metal plant in Selma, AL. Ferroglobe was working with state and local representatives in seeking tax credits for the project, which would help offset commissioning costs and enable the company to acquire and upgrade equipment to begin production of silicon metal. Combined, the two-furnace operation has total annual capacity of 22k metric tons of silicon metal. Ferroglobe restarted one of the two furnaces in early 2022. The Selma plant is considered a "swing plant" by Ferroglobe and could be converted from silicon metal to ferrosilicon production if the company chooses. If converted, the plant has the capacity to produce 36k metric tons of ferrosilicon yearly.
Plant restart (silicon metal)	Ferroglobe	In May 2022, Ferroglobe announced that it had successfully restarted its second furnace at the Selma, AL facility. The restart of this furnace added an incremental 11,000 metric tons of annual silicon metal, bringing total annual silicon metal capacity at the plant to 22,000 metric tons.
New legislation introduced to increase tariffs on ferrosilicon from Russia	U.S. Senators Sherrod Brown (D-OH) and Tommy Tuberville (R-AL)	In September 2023, U.S. Senators Sherrod Brown (D-OH) and Tommy Tuberville (R-AL) introduced new legislation to Congress to support domestic production and increase duties on imports of ferrosilicon from Russia and Belarus. The proposed legislation, H.R.5766, Increasing American Ferrosilicon Production Act, would increase the duty rate on ferrosilicon imported from Russia or Belarus under HTS subheading 7202.21.50 to 35 percent ad valorem. (See the tariff treatment section for information on current tariff rates for ferrosilicon.) This new legislation followed a January 2023 letter from the same senators to Troy Miller, Acting Commissioner at the U.S. Customs and Border Protection, and Katherine Tai, U.S. Trade Representative, urging the administration to increase duties on Russian ferrosilicon that contains 75 percent silicon to a "35 percent tax per unit." The Senators stated that "This effort will help bolster domestic production of ferrosilicon and replace Russian imports that finance the country's illegal invasion of Ukraine." No further actions related to this proposed legislation were reported as of April 2024.

Table continued on next page.

Table III-3 Continued
Ferrosilicon: Important industry events since January 1, 2021

Item	Firm	Event
Acquisition of source for raw materials	Ferroglobe	In October 2023, Ferroglobe announced the acquisition of a high-purity quartz mine in South Carolina. The purchase price was approximately $11 million in cash and an additional $4 million expected in capital expenditures to build out the infrastructure, including rail access, loadout, and a processing facility. Quartz is one of the raw materials used to produce silicon metal and ferrosilicon. The mine has the capacity to produce more than 300,000 metric tons of high-purity quartz per year, with more than ten years of reserve life. Production is expected to begin in the second half of 2024. Ferroglobe stated that "The purchase of the mine is part of Ferroglobe's long-term strategy to be fully self-sufficient in quartz supply, a critical raw material in the production of silicon metal."
Plant idling and layoffs	Ferroglobe	During the fourth quarter of 2023, Ferroglobe shut down production of silicon metal at its plant in Selma, AL. The company attributed the shutdown to poor market conditions. It was reported that Ferroglobe laid off 40 out of 100 employees at the plant.
Capacity reduction and layoffs	CC Metals	In December 2023, CC Metals idled two of the three furnaces at its ferrosilicon plant in Calvert, KY, and laid off 45 employees which were "a significant portion of its workforce." As of April 2024, those two furnaces were still idle and the plant is operating at a reduced capacity

Source: The Marshall County Tribune-Courier, "CC Metals and Alloys, LLC announces a new labor agreement," September 14, 2021, https://www.tribunecourier.com/news/cc-metals-and-alloys-llc-announces-a-new-labor-agreement/article_8e542f8c-d967-59cf-a6cd-309cec72d38e.html. Ferroglobe, "Ferroglobe Announces Plans to Restart Silicon Metal Facility in the United States," September 29, 2021, https://www.ferroglobe.com/news-releases/news-release-details/ferroglobe-announces-plans-restart-silicon-metal-facility-united; Conference transcript, p. 14 (Hammer); Ferroglobe's 2022 Form 20-F, pp. 65, 67, 111 (as filed). U.S. Senator Sherod Brown news release, "Brown, Cassidy urge administration to increase duties on Russian ferrosilicon imports," January 31, 2023, https://www.brown.senate.gov/newsroom/press/release/brown-tuberville-legislation-american-production-steel-industry/. U.S. Senator Sherod Brown news release, "Brown, Tuberville introduce new legislation To support American production of key steel industry input," September 27, 2023, https://www.brown.senate.gov/newsroom/press/release/brown-tuberville-legislation-american-production-steel-industry. WSFA 12 News, December 21, 2023, "Selma facility set to lay-off close to 40 workers in right sizing," https://www.wsfa.com/2023/12/22/selma-facility-set-lay-off-close-40-workers-right-sizing/; Increasing American Ferrosilicon Production Act, full text, https://www.brown.senate.gov/imo/media/doc/increasing_american_ferrosilicon_production_act_bill_text.pdf, retrieved April 10, 2024; Conference transcript, p. 23 (Sossonko) and (Cobb), p. 36. Ferroglobe, "Ferroglobe announces restart of second silicon metal furnace at the Selma facility in the United States," May 25, 2022, https://www.ferroglobe.com/news-releases/news-release-details/ferroglobe-announces-restart-second-silicon-metal-furnace-selma. Ferroglobe, "Ferroglobe Acquires Strategic High-purity Quartz Mine in the U.S.," October 30, 2023, https://www.ferroglobe.com/news-releases/news-release-details/ferroglobe-acquires-strategic-high-purity-quartz-mine-us; Conference transcript, pp. 14, 33 (Hammer).

Producers in the United States were asked to report any change in the character of their operations or organization relating to the production of ferrosilicon since 2021. *** U.S. producers indicated in their questionnaires that they had experienced such changes. Table III-4 presents the changes identified by these producers.

Table III-4
Ferrosilicon: U.S. producers' reported changes in operations, since January 1, 2021

Item	Firm name and narrative response on changes in operations
Prolonged shutdowns	***
Production curtailments	***
Acquisitions	***
Other	***

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

U.S. production, capacity, and capacity utilization

Table III-5 presents U.S. producers' installed and practical capacity and production on the same equipment. During 2021-23 installed overall capacity ***, practical overall capacity ***, and reported practical ferrosilicon capacity ***. During 2021-23, overall production on the same equipment as ferrosilicon production decreased slightly during 2021-23 with overall production decreasing by *** percent and ferrosilicon production increasing by *** percent.[4] During 2021-23, installed overall capacity utilization decreased from *** percent to *** percent, practical overall capacity utilization decreased from *** percent to *** percent, and reported practical ferrosilicon capacity increased from *** percent to *** percent.

[4] During 2021-23, *** increased its ferrosilicon production by ***, while ***. *** U.S. producer questionnaire responses, section II-3a.

Table III-5
Ferrosilicon: U.S. producers' installed and practical capacity and production on the same equipment as in-scope production, by period

Capacity and production in short tons; utilization in percent

Item	Measure	2021	2022	2023
Installed overall	Capacity	***	***	***
Installed overall	Production	***	***	***
Installed overall	Utilization	***	***	***
Practical overall	Capacity	***	***	***
Practical overall	Production	***	***	***
Practical overall	Utilization	***	***	***
Practical ferrosilicon	Capacity	***	***	***
Practical ferrosilicon	Production	***	***	***
Practical ferrosilicon	Utilization	***	***	***

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

Table III-6 presents U.S. producers' reported narratives regarding practical capacity constraints. *** U.S. producers reported capacity constraints since 2021.

Table III-6
Ferrosilicon: U.S. producers' reported capacity constraints since January 1, 2021

Item	Firm name and narrative response on constraints to practical overall capacity
Existing labor force	***
Other constraints	***
Other constraints	***

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

Table III-7 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. Practical capacity increased by *** percent during 2021-23. Ferrosilicon production increased by *** percent during 2021-23. Capacity utilization increased from *** percent to *** percent during 2021-23. During 2021-23, *** capacity utilization decreased by *** percentage points, while *** capacity utilization increased by ***

percentage points during 2021-23. During 2021-23, *** increased its share of U.S. ferrosilicon production by *** percentage points, while *** share of U.S. ferrosilicon production decreased by the same amount.

Table III-7
Ferrosilicon: U.S. producers' output, by firm and period

Practical capacity

Capacity in short tons contained silicon

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table III-7 Continued
Ferrosilicon: U.S. producers' output, by firm and period

Production

Production in short tons contained silicon

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table III-7 Continued
Ferrosilicon: U.S. producers' output, by firm and period

Capacity utilization

Capacity utilization in percent

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Note: Capacity utilization ratio represents the ratio of the U.S. producer's production to its production capacity.

Table III-7 Continued
Ferrosilicon: U.S. producers' output, by firm and period

Share of production

Share in percent

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

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

Figure III-1
Ferrosilicon: U.S. producers' output, by period

* * * * * * *

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

Table III-8 presents U.S. producers' production by type during 2021-23. U.S. producers reported production of both 75 percent and 50 percent ferrosilicon. During 2021-23, U.S. producers reported *** ferrosilicon, by type. *** U.S. producer reported production of any other types of ferrosilicon.

Table III-8
Ferrosilicon: U.S. producers' output: production by type

Production in short tons contained silicon; share of production in percent

Product type	Measure	2021	2022	2023
75 percent silicon ferrosilicon	Quantity	***	***	***
50 percent silicon ferrosilicon	Quantity	***	***	***
All other ferrosilicon	Quantity	***	***	***
All types	Quantity	***	***	***
75 percent silicon ferrosilicon	Share	***	***	***
50 percent silicon ferrosilicon	Share	***	***	***
All other ferrosilicon	Share	***	***	***
All types	Share	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Alternative products

As shown in table III-9, *** of the product produced during 2021-23, by U.S. producers was ferrosilicon. Ferroglobe reported producing silicon metal and magnesium ferrosilicon on the same equipment as it produced ferrosilicon, during 2021-23.[5] CC Metals did not produce any other products on the same equipment as its ferrosilicon production during 2021-23. In 2021, *** percent of all production on the same machinery was out-of-scope product, while *** percent of all production during 2023 was out-of-scope product. *** accounted for *** of all out-of-scope production on the same equipment during 2021-23, while *** accounted for the other *** of out-of-scope production on the same equipment.

[5] Conference transcript, p. 104 (Hammer).

Table III-9
Ferrosilicon: U.S. producers' overall production on the same equipment as in-scope production, by period

Quantity in short tons; ratio and share in percent

Product type	Measure	2021	2022	2023
Ferrosilicon, contained silicon	Quantity	***	***	***
Ferrosilicon, weight of other elements	Quantity	***	***	***
Ferrosilicon, gross weight	Quantity	***	***	***
Silicon metal	Quantity	***	***	***
Magnesium ferrosilicon	Quantity	***	***	***
Other products	Quantity	***	***	***
All out-of-scope products	Quantity	***	***	***
All products	Quantity	***	***	***
Ferrosilicon, contained silicon	Share	***	***	***
Ferrosilicon, weight of other elements	Share	***	***	***
Ferrosilicon, gross weight	Share	***	***	***
Silicon metal	Share	***	***	***
Magnesium ferrosilicon	Share	***	***	***
Other products	Share	***	***	***
All out-of-scope products	Share	***	***	***
All products	Share	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

U.S. producers' U.S. shipments and exports

Table III-10 presents U.S. producers' U.S. shipments, export shipments, and total shipments. U.S. shipments[6] increased by *** percent by quantity from 2021 to 2023. The unit value of U.S. shipments increased by *** percent from 2021 to 2023. Export shipments *** of total U.S. shipments, during 2021-23.[7] U.S. shipments by quantity were at their highest levels in 2023, while they were at their highest levels by value in 2022.

Most U.S. shipments were of commercial shipments; in no period was the share of U.S. shipments accounted for by commercial shipments lower than *** percent.

[6] *** U.S. shipments increased by *** percent during 2021-23, while *** U.S. shipments fluctuated during 2021-23, but decreased by *** percent during 2022-23.

[7] ***, which accounted for less than *** percent of its total shipments during 2023.

Table III-10
Ferrosilicon: U.S. producers' shipments, by destination and period

Quantity in short tons contained silicon; value in 1,000 dollars; unit value in dollars per short ton contained silicon; shares in percent

Item	Measure	2021	2022	2023
U.S. shipments	Quantity	***	***	***
Export shipments	Quantity	***	***	***
Total shipments	Quantity	***	***	***
U.S. shipments	Value	***	***	***
Export shipments	Value	***	***	***
Total shipments	Value	***	***	***
U.S. shipments	Unit value	***	***	***
Export shipments	Unit value	***	***	***
Total shipments	Unit value	***	***	***
U.S. shipments	Share of quantity	***	***	***
Export shipments	Share of quantity	***	***	***
Total shipments	Share of quantity	***	***	***
U.S. shipments	Share of value	***	***	***
Export shipments	Share of value	***	***	***
Total shipments	Share of value	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

U.S. producers' inventories

Table III-11 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments**.** U.S. producers' inventories increased by *** percent from 2021 to 2023. Inventories as a ratio to U.S. production increased *** percentage points from 2021 to 2023. Inventories as a ratio to U.S. shipments and total shipments both increased *** percentage points from 2021 to 2023. ***'s end-of-period inventories increased by *** percent during 2021-23, while ***'s end-of-period inventories decreased by *** percent during the same period.

Table III-11
Ferrosilicon: U.S. producers' inventories and their ratio to select items, by period

Quantity in short tons contained silicon; ratio in percent

Item	2021	2022	2023
End-of-period inventory quantity	***	***	***
Inventory ratio to U.S. production	***	***	***
Inventory ratio to U.S. shipments	***	***	***
Inventory ratio to total shipments	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

U.S. producers' purchases of imports from subject sources

U.S. producers reported no purchases of imports from subject sources.

U.S. employment, wages, and productivity

Table III-12 shows U.S. producers' employment-related data. While most metrics showed improvement from 2021 to 2023, productivity decreased and unit labor costs increased at the same time hourly wages were increasing, resulting in noticeably higher unit labor costs. Thus PRWs increased by *** percent from 2021 to 2023.[8] Hours worked fluctuated but increased by *** percent from 2021 to 2023. Wages paid and hourly wages increased by *** percent and *** percent, respectively from 2021 to 2023. However, productivity decreased by *** percent from 2021 to 2023. Unit labor costs increased *** percent from 2021 to 2023.

Table III-12
Ferrosilicon: U.S. producers' employment related information, by period

Item	2021	2022	2023
Production and related workers (PRWs) (number)	***	***	***
Total hours worked (1,000 hours)	***	***	***
Hours worked per PRW (hours)	***	***	***
Wages paid ($1,000)	***	***	***
Hourly wages (dollars per hour)	***	***	***
Productivity (STCS per 1,000 hours)	***	***	***
Unit labor costs (dollars per STCS)	***	***	***

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

[8] ***. Email correspondence with *** April 19, 2024.

Part IV: U.S. imports, apparent U.S. consumption, and market shares

U.S. importers

The Commission issued importer questionnaires to 30 firms believed to be importers of subject ferrosilicon, as well as to all U.S. producers of ferrosilicon.[1] Usable questionnaire responses were received from 14 companies, representing the following percentages of U.S. imports of ferrosilicon (based on short tons contained weight) in 2023 under HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050.

- Brazil: *** percent
- Kazakhstan: *** percent
- Malaysia: *** percent
- Russia: *** percent[2]
- Subject sources: *** percent
- Nonsubject sources: *** percent
- All import sources: *** percent[3]

[1] The Commission issued questionnaires to those firms identified in the petitions; staff research; and proprietary, Census-edited Customs' import records.

[2] Staff identified (based on information identified in the petitions, and through the *** one U.S. importer, ***. Staff attempted to contact *** on multiple occasions (via phone and e-mail) but the firm did not respond or complete the U.S. importer questionnaire. ***.

[3] The coverage estimates presented are calculated from official U.S. import statistics based on U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500,7202.21.9000, 7202.29.0010, and 7202.29.0050. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

General imports measure the total physical arrivals of merchandise from foreign countries, whether such merchandise enters the U.S. customs territory immediately or is entered into bonded warehouses or FTZs under Customs custody. In comparing general imports to imports for consumption, there were little or no difference in quantities for U.S. imports of ferrosilicon (based on official import statistics) for the three subject countries; Brazil, Kazakhstan, and Malaysia. Imports for consumption, based on quantity were approximately five percent less than general imports for Brazil during any year 2021 to 2023, while imports for consumption were approximately 20 percent less than general imports from Kazakhstan during 2021 to 2023 (with no reported differences during the years 2021 and 2022). There were no differences with respect to Malaysia from 2021 to 2023.

General imports compared to imports for consumption, specific to Russia, had differences in quantity, with imports for consumption being approximately 15-20 percent less than compared to general imports from Russia from 2021 to 2023.

Table IV-1 lists all responding U.S. importers of ferrosilicon from Brazil, Kazakhstan, Malaysia, Russia, and other sources, their locations, and their shares of U.S. imports, in 2023.

Table IV-1
Ferrosilicon: U.S. importers, their headquarters, and share of imports within each source, 2023

Share in percent

Firm	Head-quarters	Brazil	Kazakh-stan	Malaysia	Russia	Subject sources	Non subject sources	All import sources
Asia Minerals	Pittsburgh, PA	***	***	***	***	***	***	***
CCMA	Getzville, NY	***	***	***	***	***	***	***
Dakota	Webster, SD	***	***	***	***	***	***	***
Elkem	Moon Township, PA	***	***	***	***	***	***	***
Great Metals	New York, NY	***	***	***	***	***	***	***
Greenwich	Greenwich, CT	***	***	***	***	***	***	***
Grondmet	Duesseldorf, GR	***	***	***	***	***	***	***
Hanwa	Fort Lee, NJ	***	***	***	***	***	***	***
Helvetia	Zug, ZU	***	***	***	***	***	***	***
Inter-national Metal	Medina, OH	***	***	***	***	***	***	***
LS Alloys	Windhof, LU	***	***	***	***	***	***	***
MTC	Austria,	***	***	***	***	***	***	***
Polymet	Birmingham, AL	***	***	***	***	***	***	***
ProFound	Canonsburg, PA	***	***	***	***	***	***	***
All firms	Various	***	***	***	***	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

U.S. imports

Table IV-2 presents data for U.S. imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, Russia and all other sources.[4] Subject imports, by quantity, increased by 20.8 percent

[4] During 2023, *** accounted for the vast majority of all reported nonsubject imports and the plurality of all reported imports of ferrosilicon. ***. Email correspondence with ***, April 26, 2024.

from 2021 to 2023, reflecting in particular increased imports from Brazil and Malaysia. Subject imports' values increased by 6.0 percent from 2021 to 2023, while unit values decreased by 12.3 percent during the same period. Quantities, values, and unit values for ferrosilicon imports from nonsubject and all import sources increased from 2021 to 2023. Subject sources' share of imports decreased based on quantity and by value from 2021 to 2023, while nonsubject sources' share of imports increased based on quantity and by value from 2021 to 2023. U.S. imports of ferrosilicon from subject sources collectively exceeded those from nonsubject sources in each year between 2021 and 2023.

U.S. subject imports of ferrosilicon from Russia, the largest subject source, by quantity, increased by 7.6 percent from 2021 to 2023, but decreased based on value by 11.6 percent during the same period. Such imports decreased, on a quantity basis, as a share of total imports from 40.3 percent in 2021 to 35.4 percent in 2023. U.S. subject imports of ferrosilicon from Russia as a share of U.S. production fluctuated but decreased by *** percentage points from 2021 to 2023.

U.S. subject imports of ferrosilicon from Brazil increased by 53.6 percent based on quantity and 84.7 percent based on value, from 2021 to 2023.[5] Such imports increased, on a quantity basis, as a share of total imports from 13.1 percent in 2021 to 16.4 percent in 2023. Additionally, they increased, on a value basis, as a share of total imports from 8.4 percent in 2021 to 12.4 percent in 2023. As a share of U.S. production, U.S. imports of ferrosilicon from Brazil increased from *** percent to *** percent from 2021 to 2023, resulting in a *** increase.

U.S. subject imports of ferrosilicon from Kazakhstan, based on quantity fluctuated but increased by 11.4 percent from 2021 to 2023, which included a 145.1 percent increase from 2022 to 2023, and increased by 25.8 percent from 2021 to 2023, based on value.[6] Such imports decreased, on a quantity basis, as a share of total imports from 8.0 percent in 2021 to 7.3 percent in 2023. As a share of U.S. production, U.S. imports of ferrosilicon decreased from Kazakhstan *** percent in 2021 to *** percent in 2023.

U.S. subject imports of ferrosilicon from Malaysia, based on quantity increased by 38.5 percent from 2021 to 2023, and fluctuated but increased by 12.0 percent from 2021 to 2023, based on value.[7] As a share of U.S. production, U.S. imports of ferrosilicon from Malaysia fluctuated but increased from *** percent in 2021 to *** percent in 2023.

[5] *** was the largest importer of ferrosilicon from Brazil during 2023.
[6] *** was the largest importer of ferrosilicon from Kazakhstan during 2023.
[7] *** was the largest importer of ferrosilicon from Malaysia during 2023.

Unit values for of U.S. subject imports of ferrosilicon fluctuated but decreased by 12.3 percent from 2021 to 2023, while the unit values for nonsubject imports increased by 38.1 percent during the same period. Unit values of subject imports from Brazil fluctuated but increased by 20.2 percent from 2021 to 2023. Unit values for imports of ferrosilicon from Kazakhstan increased by 12.9 percent from 2021 to 2023. For imports of ferrosilicon from Malaysia, unit values decreased by 19.2 percent from 2021 to 2023. Unit values for imports of ferrosilicon from Russia decreased by 17.9 percent from 2021 to 2023.

Table IV-2
Ferrosiilcon: U.S. imports by source and period

Quantity in short tons contained silicon; value in 1,000 dollars; unit value in dollars per STCS

Source	Measure	2021	2022	2023
Brazil	Quantity	18,049	24,886	27,729
Kazakhstan	Quantity	11,046	5,020	12,304
Malaysia	Quantity	13,797	16,496	19,113
Russia	Quantity	55,643	74,361	59,896
Subject	Quantity	98,536	120,762	119,042
Nonsubject sources	Quantity	39,707	72,218	49,928
All import sources	Quantity	138,243	192,981	168,971
Brazil	Value	34,838	82,201	64,349
Kazakhstan	Value	27,159	31,426	34,164
Malaysia	Value	40,653	77,783	45,530
Russia	Value	199,839	393,806	176,601
Subject	Value	302,490	585,217	320,643
Nonsubject sources	Value	113,837	340,126	197,706
All import sources	Value	416,327	925,343	518,349
Brazil	Unit value	1,930	3,303	2,321
Kazakhstan	Unit value	2,459	6,260	2,777
Malaysia	Unit value	2,946	4,715	2,382
Russia	Unit value	3,591	5,296	2,948
Subject	Unit value	3,070	4,846	2,694
Nonsubject sources	Unit value	2,867	4,710	3,960
All import sources	Unit value	3,012	4,795	3,068

Table continued on next page.

Table IV-2 Continued
Ferrosilicon: Share of U.S. imports by source and period

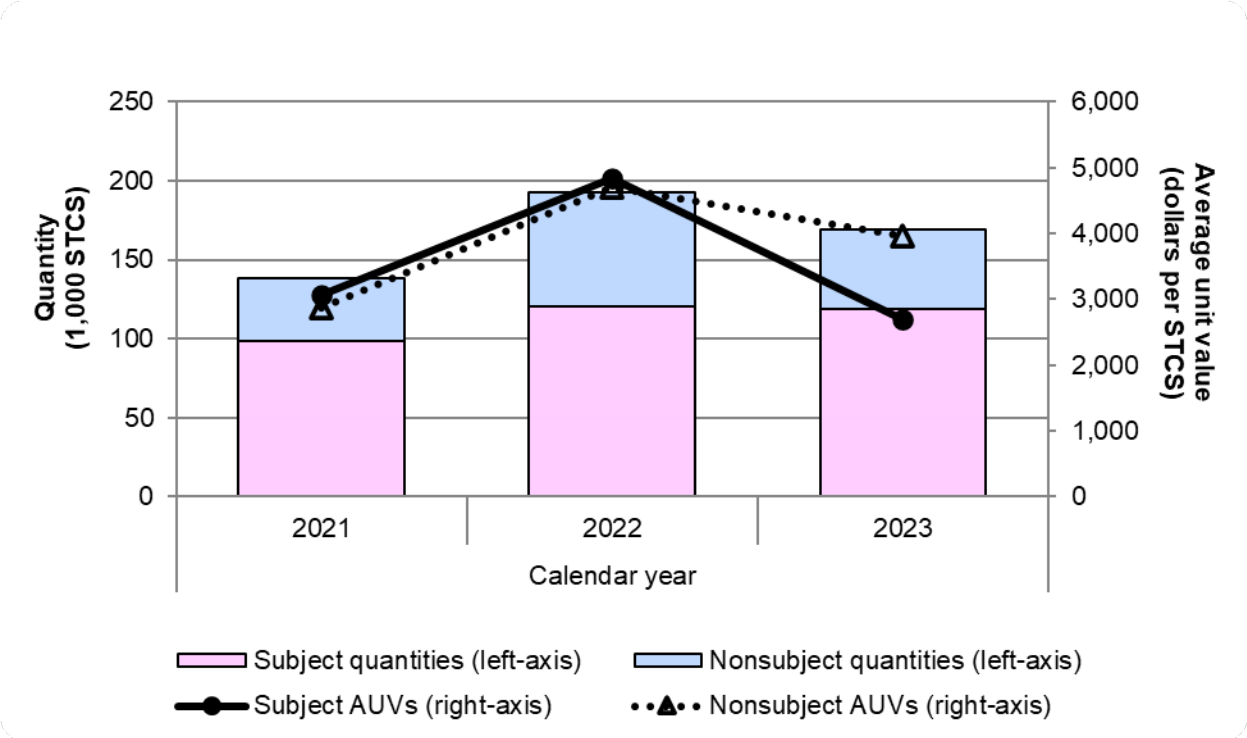
Share and ratio in percent; ratios represent the ratio to U.S. production

Source	Measure	2021	2022	2023
Brazil	Share of quantity	13.1	12.9	16.4
Kazakhstan	Share of quantity	8.0	2.6	7.3
Malaysia	Share of quantity	10.0	8.5	11.3
Russia	Share of quantity	40.3	38.5	35.4
Subject	Share of quantity	71.3	62.6	70.5
Nonsubject sources	Share of quantity	28.7	37.4	29.5
All import sources	Share of quantity	100.0	100.0	100.0
Brazil	Share of value	8.4	8.9	12.4
Kazakhstan	Share of value	6.5	3.4	6.6
Malaysia	Share of value	9.8	8.4	8.8
Russia	Share of value	48.0	42.6	34.1
Subject	Share of value	72.7	63.2	61.9
Nonsubject sources	Share of value	27.3	36.8	38.1
All import sources	Share of value	100.0	100.0	100.0
Brazil	Ratio	***	***	***
Kazakhstan	Ratio	***	***	***
Malaysia	Ratio	***	***	***
Russia	Ratio	***	***	***
Subject	Ratio	***	***	***
Nonsubject sources	Ratio	***	***	***
All import sources	Ratio	***	***	***

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Share of quantity is the share of U.S. imports by quantity; share of value is the share of U.S. imports by value; ratio are U.S. imports to production.

Figure IV-1
Ferrosilicon: U.S. import quantities and average unit values, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Table IV-3 presents data for U.S. imports of ferrosilicon from nonsubject sources including the largest nonsubject countries; Canada, China, Iceland, Norway, and all other sources. Canada was the largest nonsubject source of ferrosilicon imports during the years 2021 and 2023, while China was the largest in 2022, based on quantity. Iceland was the second largest source of nonsubject imports of ferrosilicon from 2021 to 2023.[8]

[8] *** was the largest U.S. importer of ferrosilicon from nonsubject countries, and it accounted for the majority of imports of ferrosilicon from Iceland and Norway during 2023.

Table IV-3
Ferrosiilcon: U.S. imports from nonsubject sources, by source and period

Quantity in short tons contained silicon; share in percent

Source	Measure	2021	2022	2023
Canada	Quantity	18,705	22,406	22,375
China	Quantity	189	24,462	538
Iceland	Quantity	5,562	7,374	11,208
Norway	Quantity	5,409	5,477	81
All other nonsubject sources	Quantity	9,842	12,500	15,727
Nonsubject sources	Quantity	39,707	72,218	49,928
Canada	Share	13.5	11.6	13.2
China	Share	0.1	12.7	0.3
Iceland	Share	4.0	3.8	6.6
Norway	Share	3.9	2.8	0.0
All other nonsubject sources	Share	7.1	6.5	9.3
Nonsubject sources	Share	28.7	37.4	29.5

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---". Shares shown in table represent the share of U.S. imports from all sources (i.e., including both subject and nonsubject sources) from table IV-2.

Negligibility

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[9] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all

[9] Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).

such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[10] Table IV-4 presents information on imports from Brazil, Kazakhstan, Malaysia, Russia and all other sources the 12-month period preceding the filing of the petition (i.e., March 2023 through February 2024). Between March 2023 and February 2024, imports from Russia accounted for 28.2 percent of total U.S. imports of ferrosilicon, imports from Brazil accounted for 17.9 percent, imports from Malaysia accounted for 13.0 percent, and imports from Kazakhstan accounted for 6.7 percent.

Table IV-4
Ferrosilicon: U.S. imports in the twelve-month period preceding the filing of the petition, March 2023 through February 2024

Quantity in short tons contained silicon; share of quantity in percent

Source of imports	Quantity	Share of quantity
Brazil	27,850	17.9
Kazakhstan	10,469	6.7
Malaysia	20,195	13.0
Russia	43,821	28.2
All other sources	52,980	34.1
All import sources	155,315	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series.

Cumulation considerations

In assessing whether imports should be cumulated, the Commission determines whether U.S. imports from the subject countries compete with each other and with the domestic like product and has generally considered four factors: (1) fungibility, (2) presence of sales or offers to sell in the same geographical markets, (3) common or similar channels of distribution, and (4) simultaneous presence in the market. Information regarding channels of distribution, market areas, and interchangeability appear in Part II. Additional information concerning fungibility, geographical markets, and simultaneous presence in the market is presented below.

[10] Section 771 (24) of the Act (19 U.S.C § 1677(24)).

Fungibility

Table IV-5 and figure IV-2 present information on U.S. producers' and U.S. importers' U.S. shipments of ferrosilicon by source and form, specifically lump/bulk and other (principally granular) forms.

U.S. producers and U.S. importers shipped ferrosilicon in both forms during 2023. Shipments of imports from both subject and nonsubject sources also included both forms of ferrosilicon. Lump or bulk form of ferrosilicon was the majority of U.S. shipments for both U.S. producers and U.S. importers. Granular ferrosilicon, however, accounted for a *** share of shipments by U.S. producers, which accounted for *** shipments in the U.S. market.

Table IV-5
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and form, 2023

Quantity in short tons contained silicon

Source	Lump or bulk	Granular	All forms
U.S. producers	***	***	***
Brazil	***	***	***
Kazakhstan	***	***	***
Malaysia	***	***	***
Russia	***	***	***
Subject	***	***	***
Nonsubject sources	***	***	***
All import sources	***	***	***
All sources	***	***	***

Table continued.

Table IV-5-continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and form, 2023

Share across in percent

Source	Lump or bulk	Granular	All forms
U.S. producers	***	***	100.0
Brazil	***	***	100.0
Kazakhstan	***	***	100.0
Malaysia	***	***	100.0
Russia	***	***	---
Subject	***	***	100.0
Nonsubject sources	***	***	100.0
All import sources	***	***	100.0
All sources	***	***	100.0

Table continued.

Table IV-5-continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and form, 2023

Share down in percent

Source	Lump or bulk	Granular	All forms
U.S. producers	***	***	***
Brazil	***	***	***
Kazakhstan	***	***	***
Malaysia	***	***	***
Russia	***	***	***
Subject	***	***	***
Nonsubject sources	***	***	***
All import sources	***	***	***
All sources	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Figure IV-2
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and form, 2023

* * * * * * *

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

Table IV-6 and figure IV-3 present information on U.S. producers' and U.S. importers' U.S. shipments of ferrosilicon by source and silicon content –75 percent, 50 percent, and all other silicon content. *** of reported U.S. producers' and U.S importers' U.S. shipments were of 75 percent ferrosilicon, while nonsubject U.S. importers' U.S. shipments included other silicon content (than 75 or 50 percent), during 2023.[11]

Table IV-6
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and silicon content, 2023

Quantity in short tons contained silicon

Source	75 percent	50 percent	Other	All contents
U.S. producers	***	***	***	***
Brazil	***	***	***	***
Kazakhstan	***	***	***	***
Malaysia	***	***	***	***
Russia	***	***	***	***
Subject	***	***	***	***
Nonsubject sources	***	***	***	***
All import sources	***	***	***	***
All sources	***	***	***	***

Table continued.

Table IV-6--continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and silicon content, 2023

Share across in percent

Source	75 percent	50 percent	Other	All silicon content
U.S. producers	***	***	***	100.0
Brazil	***	***	***	100.0
Kazakhstan	***	***	***	100.0
Malaysia	***	***	***	100.0
Russia	***	***	***	---
Subject	***	***	***	100.0
Nonsubject sources	***	***	***	100.0
All import sources	***	***	***	100.0
All sources	***	***	***	100.0

Table continued.

[11] *** accounted for all of the reported other silicon content from 2021 to 2023. *** U.S. importer questionnaire, section II-10b.

Table IV-6--continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and silicon content, 2023

Share down in percent

Source	75 percent	50 percent	Other	All silicon content
U.S. producers	***	***	***	***
Brazil	***	***	***	***
Kazakhstan	***	***	***	***
Malaysia	***	***	***	***
Russia	***	***	***	***
Subject	***	***	***	***
Nonsubject sources	***	***	***	***
All import sources	***	***	***	***
All sources	100.0	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Figure IV-3
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and silicon content, 2023

Quantity in short tons contained silicon

* * * * * * *

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

Table IV-7 and figure IV-4 present information on U.S. producers' and U.S. importers' U.S. shipments of ferrosilicon by source and grade –specifically regular or all other grades.[12]

U.S. producers and U.S. importers shipped ferrosilicon in *** during 2023. *** of reported U.S. producers' and U.S importers' U.S. shipments were of regular grade ferrosilicon. Other (non-regular) ferrosilicon, however, accounted for a *** share of shipments by U.S. producers, which accounted for *** of non-regular ferrosilicon shipments in the U.S. market. U.S. producers' U.S. shipments included *** grades of ferrosilicon, during 2023.[13]

[12] Regular grade ferrosilicon is a ferrosilicon product that contains over 0.50 but not over 1.50 percent aluminum. The other grades of ferrosilicon include; low aluminum grade, high purity grade, low titanium grade, foundry grade, inoculant/supplemental grade, and any other unspecified grades), for both U.S. producers and U.S. importers (U.S. shipments).

[13] ***. *** U.S. producers' questionnaire responses, section II-10b.

Table IV-7
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and grade, 2023

Quantity in short tons contained silicon

Source	Regular	All other	All grades
U.S. producers	***	***	***
Brazil	***	***	***
Kazakhstan	***	***	***
Malaysia	***	***	***
Russia	***	***	***
Subject	***	***	***
Nonsubject sources	***	***	***
All import sources	***	***	***
All sources	***	***	***

Table continued

Table IV-7--continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and grade, 2023

Share across in percent

Source	Regular	All other	All grades
U.S. producers	***	***	100.0
Brazil	***	***	100.0
Kazakhstan	***	***	100.0
Malaysia	***	***	100.0
Russia	***	***	---
Subject	***	***	100.0
Nonsubject sources	***	***	100.0
All import sources	***	***	100.0
All sources	***	***	100.0

Table continued

Table IV-7--continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and grade, 2023

Share down in percent

Source	Regular	All other	All grades
U.S. producers	***	***	***
Brazil	***	***	***
Kazakhstan	***	***	***
Malaysia	***	***	***
Russia	***	***	***
Subject	***	***	***
Nonsubject sources	***	***	***
All import sources	***	***	***
All sources	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Figure IV-4
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments by source and grade, 2023

Quantity in short tons contained silicon

* * * * * * *

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

Geographical markets

Ferrosilicon produced in the United States is shipped nationwide.[14] In 2023, official import statistics show that the vast majority of U.S. imports of ferrosilicon from subject sources entered through the Southern border of entry of the United States, followed by the Eastern border of entry with 71.6 and 27.1 percent, respectively. A plurality of imports of ferrosilicon from nonsubject sources entered (42.1 percent) through the Northern border of entry; and 52.9 percent entered through the Eastern border of entry. There were no imports from Russia through the Northern, Eastern, or Western borders of entry, while there were no imports of ferrosilicon from Kazakhstan through the Northern borders of entry. Table IV-8 presents U.S. import quantities of ferrosilicon by sources and border of entry during 2023.

[14] See Part II for additional information on geographic markets.

Table IV-8
Ferrosilicon: U.S. imports by source and border of entry, 2023

Quantity in short tons contained silicon

Source	East	North	South	West	All borders
Brazil	21,776	87	5,704	162	27,729
Kazakhstan	1,799	---	10,427	78	12,304
Malaysia	8,709	158	9,265	980	19,113
Russia	---	---	59,896	---	59,896
Subject	32,284	245	85,292	1,221	119,042
Nonsubject sources	26,424	21,038	1,374	1,093	49,928
All import sources	58,708	21,283	86,666	2,314	168,971

Table continued

Table IV-8--Continued
Ferrosilicon: U.S. imports by source and border of entry, 2023

Share across in percent

Source	East	North	South	West	All borders
Brazil	78.5	0.3	20.6	0.6	100.0
Kazakhstan	14.6	---	84.7	0.6	100.0
Malaysia	45.6	0.8	48.5	5.1	100.0
Russia	---	---	100.0	---	100.0
Subject	27.1	0.2	71.6	1.0	100.0
Nonsubject sources	52.9	42.1	2.8	2.2	100.0
All import sources	34.7	12.6	51.3	1.4	100.0

Table continued

Table IV-8--Continued
Ferrosilicon: U.S. imports by source and border of entry, 2023

Share down in percent

Source	East	North	South	West	All borders
Brazil	37.1	0.4	6.6	7.0	16.4
Kazakhstan	3.1	---	12.0	3.4	7.3
Malaysia	14.8	0.7	10.7	42.4	11.3
Russia	---	---	69.1	---	35.4
Subject	55.0	1.2	98.4	52.8	70.5
Nonsubject sources	45.0	98.8	1.6	47.2	29.5
All import sources	100.0	100.0	100.0	100.0	100.0

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500,7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 15, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “---“.

Presence in the market

Table IV-9 and figures IV-5 and IV-6 present monthly official U.S. import statistics of ferrosilicon for subject countries and nonsubject sources. U.S. imports from subject sources, nonsubject sources, and Brazil were present during all months from January 2021 to February 2024, while U.S. imports of ferrosilicon from Malaysia were present in all but 4 months during the same period. U.S. imports of ferrosilicon from Kazakhstan and Russia were present in the majority of all months during January 2021 to February 2024.

Table IV-9
Ferrosilicon: Quantity of U.S. imports, by source and month

Quantity in short tons contained silicon

Year	Month	Brazil	Kazakhstan	Malaysia	Russia
2021	January	1,697	1,687	---	225
2021	February	894	1,965	1,248	21
2021	March	1,793	2,656	1,648	19,463
2021	April	1,044	---	423	224
2021	May	949	921	1,410	14
2021	June	1,468	1,190	1,272	14,214
2021	July	645	---	754	---
2021	August	870	1,093	263	5
2021	September	2,662	551	2,979	346
2021	October	1,616	982	41	14,942
2021	November	2,771	---	3,597	10
2021	December	1,640	---	162	6,179
2022	January	1,235	1,092	2,271	8,899
2022	February	1,389	21	---	20
2022	March	2,864	---	---	10,776
2022	April	1,565	1,369	3,990	---
2022	May	1,576	---	110	---
2022	June	1,897	90	110	17,707
2022	July	3,524	866	4,367	---
2022	August	2,146	364	5,315	19,542
2022	September	1,529	---	---	---
2022	October	2,671	943	9	---
2022	November	3,233	275	158	---
2022	December	1,256	---	165	17,416
2023	January	3,128	---	3,199	---
2023	February	3,395	2,539	907	16,074
2023	March	2,380	1,276	521	---
2023	April	2,486	---	592	27,559
2023	May	616	4,646	3,702	---
2023	June	2,975	---	459	---
2023	July	2,930	1,180	839	---
2023	August	1,894	82	737	145
2023	September	1,377	41	1,512	---
2023	October	3,668	1,879	2,683	---
2023	November	1,716	661	636	16,117
2023	December	1,164	---	3,325	---
2024	January	4,447	110	2,600	---
2024	February	2,196	593	2,587	---

Table continued

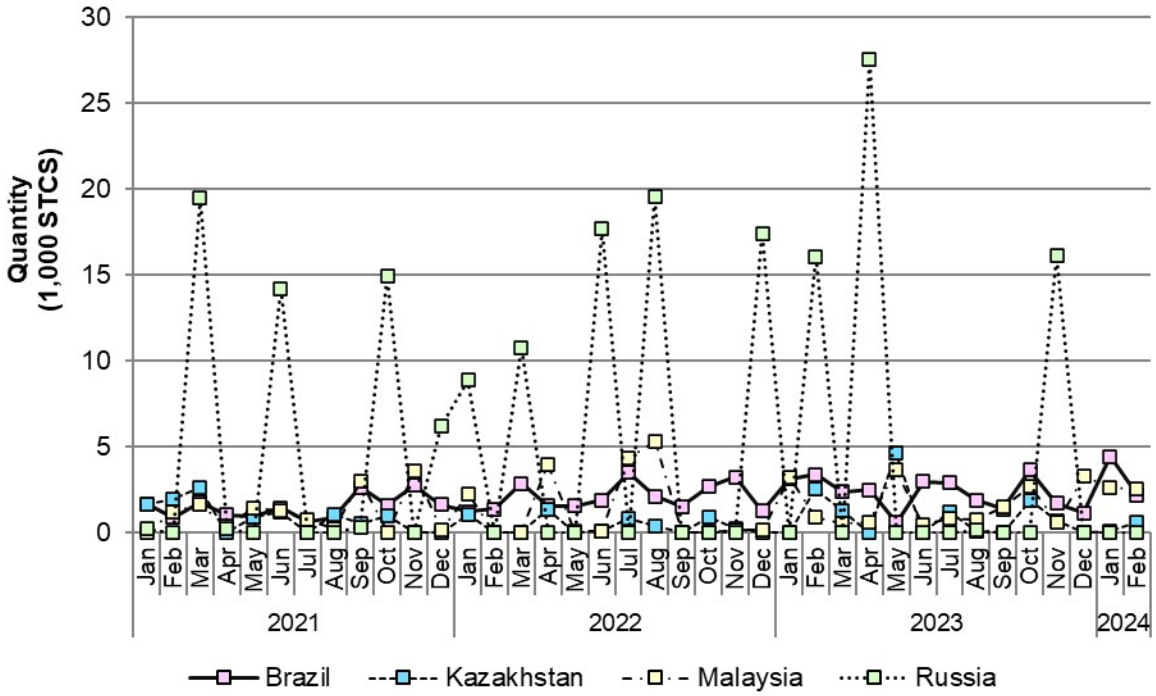
Table IV-9--continued
Ferrosilicon: Quantity of U.S. imports, by source and month

Quantity in short tons contained silicon

Year	Month	Subject sources	Nonsubject sources	All import sources
2021	January	3,609	2,936	6,545
2021	February	4,128	2,834	6,961
2021	March	25,560	3,163	28,723
2021	April	1,690	4,069	5,759
2021	May	3,294	3,388	6,683
2021	June	18,144	2,939	21,083
2021	July	1,399	2,500	3,900
2021	August	2,230	3,888	6,118
2021	September	6,539	3,255	9,794
2021	October	17,581	3,885	21,466
2021	November	6,379	3,712	10,091
2021	December	7,982	2,945	10,927
2022	January	13,497	3,853	17,351
2022	February	1,431	3,180	4,610
2022	March	13,640	5,475	19,114
2022	April	6,924	3,999	10,923
2022	May	1,686	9,080	10,765
2022	June	19,805	11,804	31,609
2022	July	8,757	6,509	15,266
2022	August	27,368	8,469	35,838
2022	September	1,529	5,926	7,455
2022	October	3,623	4,497	8,120
2022	November	3,666	4,955	8,620
2022	December	18,837	4,328	23,165
2023	January	6,327	2,716	9,043
2023	February	22,915	3,726	26,641
2023	March	4,177	5,382	9,559
2023	April	30,637	4,361	34,998
2023	May	8,964	3,537	12,501
2023	June	3,434	3,854	7,288
2023	July	4,949	3,610	8,559
2023	August	2,859	5,555	8,413
2023	September	2,930	3,844	6,774
2023	October	8,230	4,626	12,856
2023	November	19,131	3,769	22,901
2023	December	4,490	4,947	9,437
2024	January	7,158	3,997	11,155
2024	February	5,377	5,497	10,874

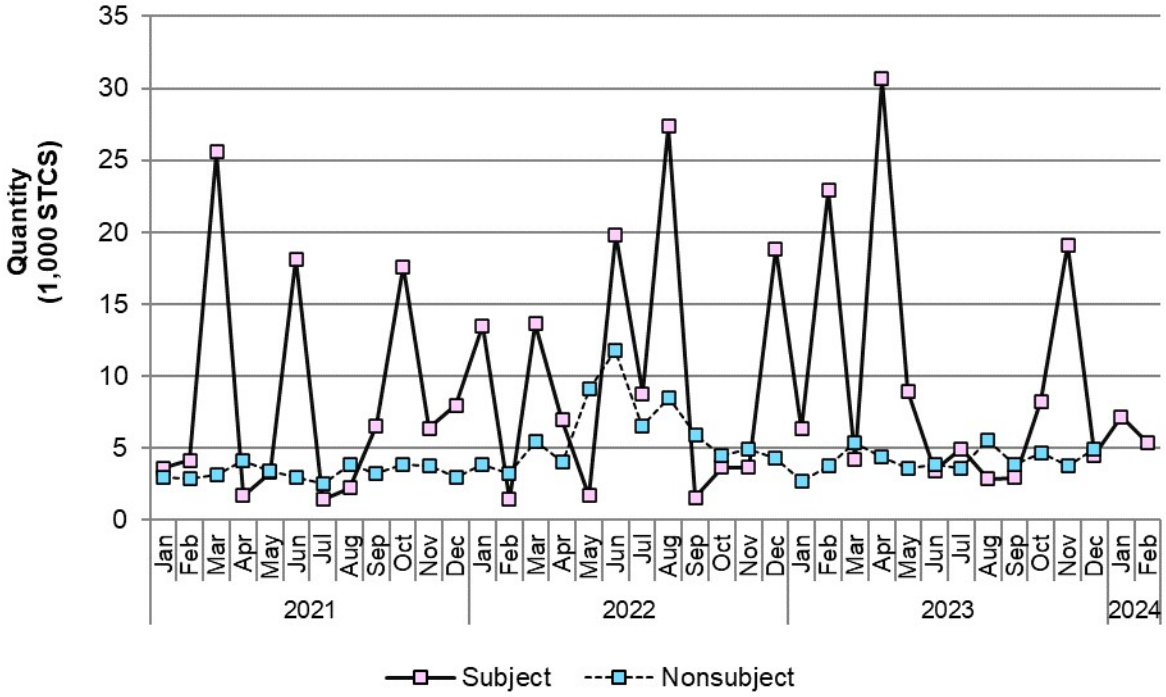
Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500,7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 15, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Figure IV-5
Ferrosilicon: U.S. imports from individual subject sources, by month



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500,7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 15, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Figure IV-6
Ferrosilicon: U.S. imports from aggregated subject and nonsubject sources, by month



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500,7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 15, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Apparent U.S. consumption and market shares

Quantity

Table IV-10 and figure IV-7 presents data on apparent U.S. consumption and U.S. market shares by quantity for ferrosilicon from 2021 to 2023. From 2021 to 2023, apparent U.S. consumption, by quantity, increased *** percent. U.S. producers' market share based on quantity increased by *** percentage points, from 2021 to 2023. The market share of subject imports decreased based on quantity by *** percentage points from 2021 to 2023. From 2021 to 2023, the market shares of subject imports from Brazil and Malaysia increased, while the market shares of subject imports from Kazakhstan and Russia decreased based on quantity, respectively. Market shares of imports from all subject sources decreased from 2021 to 2023. Imports of ferrosilicon from nonsubject imports of ferrosilicon *** as a share of quantity from 2021 to 2023.

Table IV-10
Ferrosilicon: Apparent U.S. consumption and market shares based on quantity, by source and period

Quantity in short tons contained silicon; shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Quantity	***	***	***
Brazil	Quantity	18,049	24,886	27,729
Kazakhstan	Quantity	11,046	5,020	12,304
Malaysia	Quantity	13,797	16,496	19,113
Russia	Quantity	55,643	74,361	59,896
Subject sources	Quantity	98,536	120,762	119,042
Nonsubject sources	Quantity	39,707	72,218	49,928
All import sources	Quantity	138,243	192,981	168,971
All sources	Quantity	***	***	***
U.S. producers	Share	***	***	***
Brazil	Share	***	***	***
Kazakhstan	Share	***	***	***
Malaysia	Share	***	***	***
Russia	Share	***	***	***
Subject sources	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500,7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series.

Figure IV-7
Ferrosilicon: Apparent U.S. consumption based on quantity, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500,7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 15, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Value

Table IV-10 and figure IV-8 present data on apparent U.S. consumption and U.S. market shares by value for ferrosilicon from 2021 to 2023. From 2021 to 2023, apparent U.S. consumption, based on value, by *** percent. U.S. producers' market share based on value increased by *** percentage points, from 2021 to 2023. The market share of subject imports decreased based on value by *** percentage points. From 2021 to 2023, the market shares of subject imports from Brazil increased, while the market shares of subject imports from Kazakhstan, Malaysia, and Russia all decreased based on value, respectively. Market shares of imports from all subject sources decreased from 2021 to 2023. Imports of ferrosilicon from nonsubject imports of ferrosilicon increased as a share of value from 2021 to 2023.

Table IV-11
Ferrosilicon: Apparent U.S. consumption and market shares based on value, by source and period

Value in 1,000 dollars; shares in percent

Source	Measure	2021	2022	2023
U.S. producers	Value	***	***	***
Brazil	Value	34,838	82,201	64,349
Kazakhstan	Value	27,159	31,426	34,164
Malaysia	Value	40,653	77,783	45,530
Russia	Value	199,839	393,806	176,601
Subject sources	Value	302,490	585,217	320,643
Nonsubject sources	Value	113,837	340,126	197,706
All import sources	Value	416,327	925,343	518,349
All sources	Value	***	***	***
U.S. producers	Share	***	***	***
Brazil	Share	***	***	***
Kazakhstan	Share	***	***	***
Malaysia	Share	***	***	***
Russia	Share	***	***	***
Subject sources	Share	***	***	***
Nonsubject sources	Share	***	***	***
All import sources	Share	***	***	***
All sources	Share	100.0	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500,7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Figure IV-8
Ferrosilicon: Apparent U.S. consumption based on value, by source and period

* * * * * * *

Source: Compiled from data submitted in response to Commission questionnaires and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500,7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 15, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Part V: Pricing data

Factors affecting prices

Raw material costs

Coal, quartz gravel or sand, iron and steel scrap, and wood chips are the principal raw materials used to produce ferrosilicon.

Steel scrap prices decreased by *** percent from January 2021 to December 2023 with prices fluctuating typically above $400 per ton between January 2021 and May 2022, reaching a peak of *** percent above the January 2021 price in March 2022. After May 2022, the price fluctuated below $400 after reaching a minimum in November 2022, down *** percent from the January 2021 price (figure V-1).

Producing ferrosilicon is an energy intensive process.[1] The cost of electricity normally has seasonal fluctuations with prices reaching their annual peak in August, but these seasonal fluctuations were less apparent between 2021 and 2023 because of the unusual energy cost fluctuations and the large price increase in 2022 (figure V-2). Overall, electricity prices increased by 21.2 percent from January 2021 to December 2023. Electricity prices peaked in August 2022 at 48.4 percent above the price in January 2021.

Respondent OM stated that a key driver of the price of ferrosilicon is energy costs and that "the invasion of Ukraine resulted in substantial spikes in the cost of energy."[2]

[1] Petition, p. 24.

[2] Respondent OM's postconference brief, p. 5.

Figure V-1

Raw materials: Average consumer steel scrap prices (No. 1 heavy melt, Chicago), monthly, January 2021-March 2024

***** ***** ***** ***** ***** ***** *****

Source: ***, retrieved April 1, 2024.

Table V-1

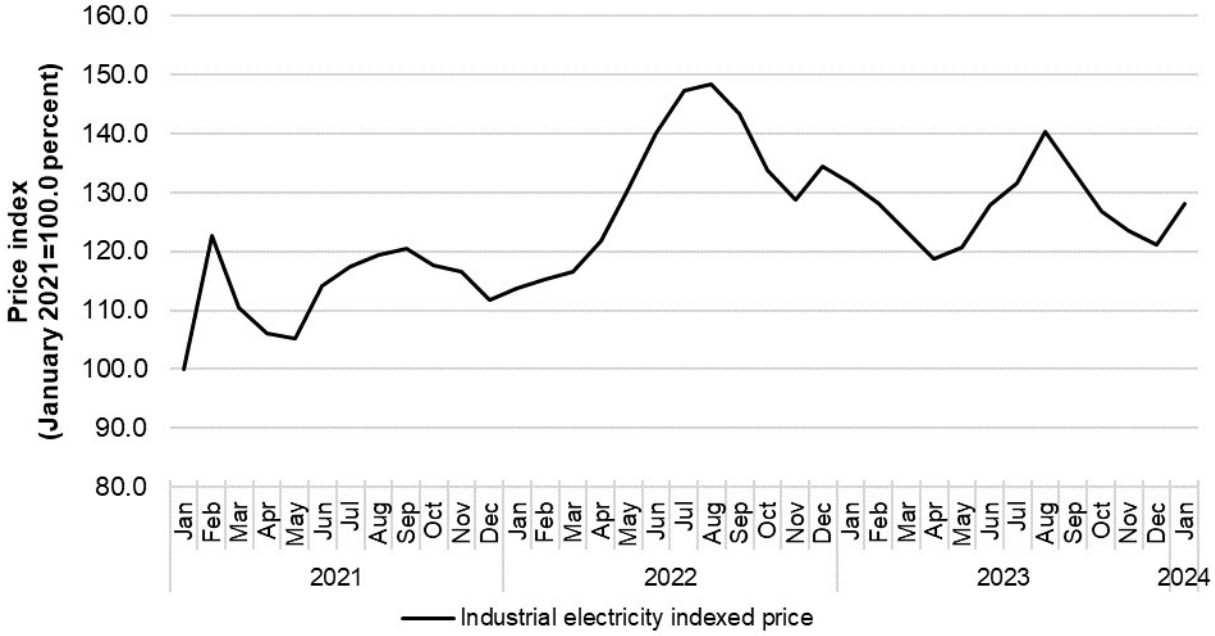
Raw materials: Average consumer steel scrap prices (No. 1 heavy melt, Chicago), monthly, January 2021-March 2024

Price in dollars per gross ton

Month	2021	2022	2023	2024
January	***	***	***	***
February	***	***	***	***
March	***	***	***	***
April	***	***	***	NA
May	***	***	***	NA
June	***	***	***	NA
July	***	***	***	NA
August	***	***	***	NA
September	***	***	***	NA
October	***	***	***	NA
November	***	***	***	NA
December	***	***	***	NA

Source: ***, retrieved April 1, 2024.

Figure V-2
Energy costs: Average indexed price of industrial energy, monthly, January 2021-January 2024



Source: U.S. Energy Information Administration, http://www.eia.doe.gov, accessed on March 29, 2024.

Table V-2
Energy costs: Average indexed price of industrial energy, monthly, January 2021 to January 2024

Price index where January 2021 = 100.0 percent

Month	2021	2022	2023	2024
January	100.0	113.8	131.6	128.2
February	122.6	115.2	128.2	NA
March	110.4	116.6	123.3	NA
April	106.0	121.8	118.7	NA
May	105.2	130.5	120.6	NA
June	114.2	140.0	127.8	NA
July	117.4	147.3	131.6	NA
August	119.3	148.4	140.3	NA
September	120.4	143.4	133.5	NA
October	117.7	133.7	126.7	NA
November	116.6	128.8	123.6	NA
December	111.7	134.5	121.2	NA

Source: https://www.eia.gov/electricity/data/browser/#/topic/7?agg=2, retrieved March 29, 2024.

Transportation costs to the U.S. market

Transportation costs for ferrosilicon shipped from subject countries to the United States averaged 4.3 percent for Brazil, 6.6 percent for Kazakhstan, 6.8 percent for Malaysia, and 2.1 percent for Russia during 2023. These estimates were derived from official import data and represent the transportation and other charges on imports.[3]

U.S. inland transportation costs

*** and 10 of 11 responding importers reported that they typically arrange transportation to their customers. U.S. producers reported that their U.S. inland transportation costs ranged from *** percent while most importers reported costs of 2 to 5 percent.

Pricing practices

Pricing methods

Contract and spot sales

*** importers reported setting prices mainly using transaction-by-transaction negotiations and contracts (table V-3). ***. Two importers reported other price setting methods. Other methods included using published prices from CRU or Platts and price agreed between buyer and seller.

Table V-3
Ferrosilicon: Count of U.S. producers' and importers' reported price setting methods

Method	U.S. producers	Importers
Transaction-by-transaction	***	9
Contract	***	8
Set price list	***	0
Other	***	2
Responding firms	2	12

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

Note: The sum of responses down may not add up to the total number of responding firms as each firm was instructed to check all applicable price setting methods employed.

[3] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2023 and then dividing by the customs value based on the HTS statistical reporting number 7202.21.10, 7202.21.50, 7202.21.75, 7202.21.90, 7202.29.00, and 7202.29.00.

U.S. producers reported selling most of their ferrosilicon using one-year contracts, and *** of their sales were under some type of contract (table V-4). The majority of Ferroglobe's sales are made under contracts.[4] Importers also reported selling mostly under annual contracts but a larger share of their sales was under short-term contracts than were those of U.S. producers.

Petitioners stated that most contracts are made during September to November each year, and most have the price based on the published price of ferrosilicon at that time.[5] Depending on the product specification, the price could be at a discount to or a premium above the published price.[6] Contracts also typically require producers to hold a certain amount of inventory.[7]

Table V-4
Ferrosilicon: U.S. producers' and importers' shares of commercial U.S. shipments by type of sale, 2023

Share in percent

Type of sale	U.S. producers	Subject importers
Long-term contracts	***	***
Annual contracts	***	***
Short-term contracts	***	***
Spot sales	***	***
Total	100.0	100.0

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

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

[4] Conference transcript, p. 16 (Hammer).

[5] Conference transcript, pp. 7, 49 (Gordon, Hammer). Email from Adam Gordon, counsel to petitioner, April 19, 2024.

[6] Conference transcript, pp. 20, 50 (Sossonko).

[7] Conference transcript, p. 111 (Hammer).

Both U.S. producers reported that their contracts were ***. ***,[8] and ***. ***, [9] and reported that ***.[10] Petitioners also stated that ***. [11]

Importers reported the average duration of a short-term contract ranged from 30 to 180 days, these contracts typically did not allow price renegotiation, fixed both price and quantity, and were not indexed to raw materials. Importers annual and long-term contracts typically did not allow price negotiations and were not indexed to raw materials.

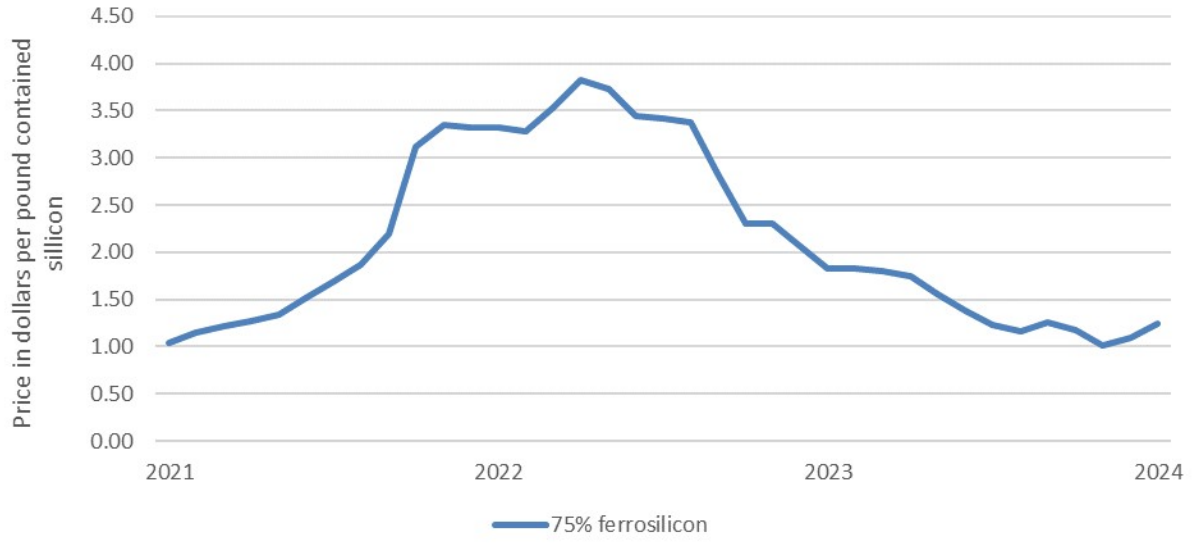
Published price indexes

Monthly published prices of ferrosilicon are available from the U.S. Geological Survey, Mineral Industries Surveys. This price index shows that 75% ferrosilicon prices increased by 265.8 percent between January 2021 and their peak in April 2022, but were only 4.5 percent higher in December 2023 than in January 2021 (figure V-3 and table V-5).

Petitioners stated that they report their spot prices to CRU but that contract prices are not disclosed to CRU and may be covered by nondisclosure agreements.[12] Spot prices of imports may also be included in published CRU or Platts prices and petitioners claim that this is one way that import prices influence domestic prices.[13] Petitioners claim that "when as few as one or two low-priced spot sales are reported to CRU or Platts, those sales usually set the price that customers expect to be quoted."[14]

[8] Email from ***, ***, April 19, 2024.
[9] Email from ***, ***, April 19, 2024.
[10] Petitioner's postconference brief, p. A-3.
[11] Petitioner's postconference brief, p. A-3.
[12] Conference transcript, pp. 49, 115 (Hammer, Cook).
[13] Conference transcript, p. 20 (Sossonko).
[14] Conference transcript, p. 21 (Sossonko).

Figure V-3
Ferrosilicon: Average ferrosilicon 75% silicon, spot price, monthly, January 2021-January 2024



Source: U.S. Geological Survey, Mineral Industry Surveys, "Silicon in January 2023," April 2023, and "Silicon in January 2024," April 2024.

Note: January 2024 is the latest available data.

Table V-5
Ferrosilicon: Average ferrosilicon 75% silicon, spot price, monthly, January 2021-January 2024

Price in dollars per pound contained silicon

Month	2021	2022	2023	2024
January	1.05	3.33	1.83	1.24
February	1.15	3.29	1.83	NA
March	1.21	3.55	1.80	NA
April	1.27	3.83	1.75	NA
May	1.34	3.74	1.56	NA
June	1.52	3.45	1.38	NA
July	1.69	3.41	1.23	NA
August	1.86	3.38	1.17	NA
September	2.20	2.84	1.26	NA
October	3.12	2.30	1.17	NA
November	3.36	2.30	1.01	NA
December	3.33	2.06	1.09	NA

Source: U.S. Geological Survey, Mineral Industry Surveys, "Silicon in January 2023," April 2023, and "Silicon in January 2024," April 2024.

Note: January 2024 is the latest available data.

Petitioners explained that ferrosilicon price increases between January 2021 and April 2022 were mainly the result of logistical problems that resulted from the COVID-19 pandemic.[15] Respondents claim that increases in energy prices also were a reason for the increase in ferrosilicon prices.[16]

Sales terms and discounts

*** and most responding importers typically quote prices on a delivered basis. While ***. Most responding importers (7 of 10) reported no discount policy, one reported volume discounts, and two reported other discounts including discounts based on the market and discounts based on price index.

Price data

The Commission requested U.S. producers and importers to provide quarterly data for the total quantity and f.o.b. value of the following ferrosilicon products shipped to unrelated U.S. customers during 2021-23.

Product 1.-- **Bulk** Regular grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; more than 0.50 percent, but not more than 1.50 percent aluminum; and 0.40 percent or less manganese.

Product 2.--**In Super Sacks** Regular grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; more than 0.50 percent, but not more than 1.50 percent aluminum; and 0.40 percent or less manganese.

Product 3.-- **Bulk** Low aluminum grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; not more than 0.50 percent aluminum but more than 0.10 percent aluminum; and 0.40 percent or less manganese.

[15] Conference transcript, p. 52 (Cook and Gordon).
[16] Respondent OM's postconference brief, p. 5.

Product 4.-- **In Super Sacks** Low aluminum grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; not more than 0.50 percent aluminum but more than 0.10 percent aluminum; and 0.40 percent or less manganese.

Pricing products 1 and 2 are regular grade 75 percent ferrosilicon, in bulk and in supersacks, respectively. Pricing products 3 and 4 are low aluminum grade 75 percent ferrosilicon, in bulk and in supersacks, respectively.

Two U.S. producers and 10 importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[17] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' commercial U.S. shipments of ferrosilicon and the following shares of reported commercial U.S. shipments of subject imports in 2023: *** percent for Brazil, *** percent for Kazakhstan, *** percent for Malaysia, and none for Russia.[18]

Price data for products 1-4 are presented in tables V-6 to V-9 and figures V-4 to V-7. U.S. producers and importers of Brazilian product reported data for all four pricing products. Data for Malaysia were reported for products 1 and 2, data for Kazakhstan were reported for product 1, and data for Russia were reported for product 2.

[17] Per-unit pricing data are calculated from total quantity and total value data provided by U.S. producers and importers. The precision and variation of these figures may be affected by rounding, limited quantities, and producer or importer estimates.

[18] Pricing coverage is based on U.S. shipments reported in questionnaires. Russian price data were not available in 2023.

Table V-6
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by source and quarter

Price in dollars per pound contained silicon, quantity in 1,000 pounds contained silicon, margin in percent.

Period	US price	US quantity	Brazil price	Brazil quantity	Brazil margin	Kazakhstan price	Kazakhstan Quantity	Kazakhstan margin
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***

Period	Malaysia price	Malaysia quantity	Malaysia margin
2021 Q1	***	***	***
2021 Q2	***	***	***
2021 Q3	***	***	***
2021 Q4	***	***	***
2022 Q1	***	***	***
2022 Q2	***	***	***
2022 Q3	***	***	***
2022 Q4	***	***	***
2023 Q1	***	***	***
2023 Q2	***	***	***
2023 Q3	***	***	***
2023 Q4	***	***	***

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

Note: Product 1: **Bulk** Regular grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; more than 0.50 percent, but not more than 1.50 percent aluminum; and 0.40 percent or less manganese.

Note: Quantities less than 5,000 pounds have been removed because they were not commercial volumes.

Table V-7
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by source and quarter

Price in dollars per pound contained silicon, quantity in 1,000 pounds contained silicon, margin in percent.

Period	US price	US quantity	Brazil price	Brazil quantity	Brazil margin	Malaysia price	Malaysia quantity	Malaysia margin
2021 Q1	***	***	***	***	***	***	***	***
2021 Q2	***	***	***	***	***	***	***	***
2021 Q3	***	***	***	***	***	***	***	***
2021 Q4	***	***	***	***	***	***	***	***
2022 Q1	***	***	***	***	***	***	***	***
2022 Q2	***	***	***	***	***	***	***	***
2022 Q3	***	***	***	***	***	***	***	***
2022 Q4	***	***	***	***	***	***	***	***
2023 Q1	***	***	***	***	***	***	***	***
2023 Q2	***	***	***	***	***	***	***	***
2023 Q3	***	***	***	***	***	***	***	***
2023 Q4	***	***	***	***	***	***	***	***

Period	Russia price	Russia quantity	Russia margin
2021 Q1	***	***	***
2021 Q2	***	***	***
2021 Q3	***	***	***
2021 Q4	***	***	***
2022 Q1	***	***	***
2022 Q2	***	***	***
2022 Q3	***	***	***
2022 Q4	***	***	***
2023 Q1	***	***	***
2023 Q2	***	***	***
2023 Q3	***	***	***
2023 Q4	***	***	***

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

Note: Product 2: **In Super Sacks Regular** grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; more than 0.50 percent, but not more than 1.50 percent aluminum; and 0.40 percent or less manganese.

Table V-8
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by source and quarter

Price in dollars per pound contained silicon, quantity in 1,000 pounds contained silicon, margin in percent.

Period	US price	US quantity	Brazil Price	Brazil Quantity	Brazil margin
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

Note: Product 3: **Bulk** low aluminum grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; not more than 0.50 percent aluminum but more than 0.10 percent aluminum; and 0.40 percent or less manganese.

Note: One importer (***) reported price data for Brazilian product 3. ***.

Table V-9
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by source and quarter

Price in dollars per pound contained silicon, quantity in 1,000 pounds contained silicon, margin in percent.

Period	US price	US quantity	Brazil price	Brazil Quantity	Brazil margin
2021 Q1	***	***	***	***	***
2021 Q2	***	***	***	***	***
2021 Q3	***	***	***	***	***
2021 Q4	***	***	***	***	***
2022 Q1	***	***	***	***	***
2022 Q2	***	***	***	***	***
2022 Q3	***	***	***	***	***
2022 Q4	***	***	***	***	***
2023 Q1	***	***	***	***	***
2023 Q2	***	***	***	***	***
2023 Q3	***	***	***	***	***
2023 Q4	***	***	***	***	***

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

Note: Product 4: In Super Sacks low aluminum grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; not more than 0.50 percent aluminum but more than 0.10 percent aluminum; and 0.40 percent or less manganese.

Note: Quantities less than 5,000 pounds have been removed because they were not commercial volumes.

Figure V-4
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by source and quarter

Price of product 1

*	*	*	*	*	*	*

Volume of product 1

*	*	*	*	*	*	*

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

Note: Product 1: **Bulk** Regular grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; more than 0.50 percent, but not more than 1.50 percent aluminum; and 0.40 percent or less manganese.

Figure V-5
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by source and quarter

Price of product 2

*	*	*	*	*	*	*

Volume of product 2

*	*	*	*	*	*	*

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

Note: Product 2: **In Super Sacks** Regular grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; more than 0.50 percent, but not more than 1.50 percent aluminum; and 0.40 percent or less manganese.

Figure V-6
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, by source and quarter

Price of product 3

*	*	*	*	*	*	*

Volume of product 3

*	*	*	*	*	*	*

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

Note: Product 3: **Bulk** low aluminum grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; not more than 0.50 percent aluminum but more than 0.10 percent aluminum; and 0.40 percent or less manganese.

Figure V-7
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 4, by source and quarter

Price of product 4

* * * * * * *

Volume of product 4

* * * * * * *

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

Note: Product 4: In Super Sacks low aluminum grade 75 percent ferrosilicon. – Ferrosilicon containing by weight 74.0 to 79.0 percent silicon; 0.10 percent or less carbon; 0.025 percent or less sulfur; 0.035 percent or less phosphorus; not more than 0.50 percent aluminum but more than 0.10 percent aluminum; and 0.40 percent or less manganese.

Price trends

In general, prices were higher in Q4 2023 than they were in Q1 2021. Prices increased in 2021 and the first two quarters of 2022 and then decreased. Table V-10 summarizes the price trends, by country and by product. As shown in the table, domestic price increases ranged from *** percent during 2021-23 while import price increases ranged from *** percent. One import price series (product 1 from Kazakhstan) decreased by ***.

Table V-10
Ferrosilicon: Summary of price data, by product and source, January 2021-December 2023

Quantity in 1,000 pounds contained silicon, price in dollars per pound contained silicon

Product	Source	Number of quarters	Quantity of shipments	Low price	High price	First quarter price	Last quarter price	Percent change in price over period
Product 1	United States	***	***	***	***	***	***	***
Product 1	Brazil	***	***	***	***	***	***	***
Product 1	Kazakhstan	***	***	***	***	***	***	***
Product 1	Malaysia	***	***	***	***	***	***	***
Product 1	Russia	***	***	***	***	***	***	***
Product 2	United States	***	***	***	***	***	***	***
Product 2	Brazil	***	***	***	***	***	***	***
Product 2	Kazakhstan	***	***	***	***	***	***	***
Product 2	Malaysia	***	***	***	***	***	***	***
Product 2	Russia	***	***	***	***	***	***	***
Product 3	United States	***	***	***	***	***	***	***
Product 3	Brazil	***	***	***	***	***	***	***
Product 3	Kazakhstan	***	***	***	***	***	***	***
Product 3	Malaysia	***	***	***	***	***	***	***
Product 3	Russia	***	***	***	***	***	***	***
Product 4	United States	***	***	***	***	***	***	***
Product 4	Brazil	***	***	***	***	***	***	***
Product 4	Kazakhstan	***	***	***	***	***	***	***
Product 4	Malaysia	***	***	***	***	***	***	***
Product 4	Russia	***	***	***	***	***	***	***

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

Note: Percent change column is percentage change from the first quarter 2021 to the last quarter in 2023.

Price comparisons

As shown in tables V-11 and V-12, prices for product imported from subject countries were below those for U.S.-produced production in 38 of 78 instances (59.3 million pounds). Ferrosilicon from Brazil was below those for U.S.-produced product in *** number of instances (*** pounds), Kazakhstan in 1 of 5 instances (*** pounds), Malaysia in 10 of 24 instances (*** pounds), and Russia in 1 of 3 instances (*** pounds). Margins of underselling from subject countries ranged from 0.1 to 46.0 percent overall (*** to *** percent for Brazil, *** percent for Kazakhstan, *** to *** percent for Malaysia, and *** percent for Russia). In 40 instances (66.7 million pounds), subject import prices were between 0.5 and 109.1 percent above prices for the domestic product (*** to *** percent for Brazil, *** to *** percent for Kazakhstan, *** to *** percent for Malaysia, and *** to *** percent for Russia). Table V-13 shows under and over selling by year. Underselling in terms of the number of instances and in terms of the quantity was greater than overselling only in 2023.

Table V-11
Ferrosilicon: Instances of underselling and overselling and the range and average of margins, by product

Quantity in 1,000 pounds contained silicon; margin in percent

Product	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	9	***	***	***	***
Product 2	Underselling	15	***	***	***	***
Product 3	Underselling	6	***	***	***	***
Product 4	Underselling	8	***	***	***	***
Total, all products	Underselling	38	59,291	15.0	0.1	46.0
Product 1	Overselling	20	***	***	***	***
Product 2	Overselling	12	***	***	***	***
Product 3	Overselling	6	***	***	***	***
Product 4	Overselling	2	***	***	***	***
Total, all products	Overselling	40	66,708	(25.6)	(0.5)	(109.1)

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

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

Table V-12
Ferrosilicon: Instances of underselling and overselling and the range and average of margins, by source

Quantity in 1,000 pounds contained silicon; margin in percent

Source	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Brazil	Underselling	26	***	***	***	***
Kazakhstan	Underselling	1	***	***	***	***
Malaysia	Underselling	10	***	***	***	***
Russia	Underselling	1	***	***	***	***
Total, all subject sources	Underselling	38	59,291	15.0	0.1	46.0
Brazil	Overselling	20	***	***	***	***
Kazakhstan	Overselling	4	***	***	***	***
Malaysia	Overselling	14	***	***	***	***
Russia	Overselling	2	***	***	***	***
Total, all subject sources	Overselling	40	66,708	(25.6)	(0.5)	(109.1)

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

Note: These data include only quarters in which there is a comparison between the U.S. and subject product.

Table V-13
Ferrosilicon: Instances of underselling and overselling and the range and average of margins, by year

Quantity in 1,000 pounds contained silicon; margin in percent

Year	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
2021	Underselling	12	***	***	***	***
2022	Underselling	10	***	***	***	***
2023	Underselling	16	***	***	***	***
All years	Underselling	38	59,291	15.0	0.1	46.0
2021	Overselling	17	***	***	***	***
2022	Overselling	13	***	***	***	***
2023	Overselling	10	***	***	***	***
All years	Overselling	40	66,708	(25.6)	(0.5)	(109.1)

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

Lost sales and lost revenue

The Commission requested that U.S. producers of ferrosilicon report purchasers with which they experienced instances of lost sales or revenue due to competition from subject imports during 2021-23. Both responding U.S. producers reported that they had to either reduce prices or roll back announced price increases, and both firms reported that they had lost sales. Both U.S. producers submitted lost sales and lost revenue allegations and identified 14 firms with which they lost sales or revenue (6 consisting of lost sales allegations and 8 consisting of both types of allegations). All subject countries were named in one or more allegations and allegations spanned 2021 to 2023. ***. ***.

Staff contacted 14 purchasers and received responses from 9 purchasers.[19] Responding purchasers reported purchasing/importing 307,921 short tons of ferrosilicon during 2021-23 (table V-14).

[19] ***.

Table V-14
Ferrosilicon: Purchasers' reported purchases and imports, by firm and source

Quantity in short tons contained silicon, change in shares in percentage points

Purchaser	Domestic quantity	Subject quantity	All other quantity	Change in domestic share	Change in subject country share
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	***	***	***	***	***

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

Note: All other includes all other sources and unknown sources. Change is the percentage point change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.

Of the nine responding purchasers, eight reported that, since 2021, they had purchased subject imports instead of U.S.-produced product (four from Brazil, three from Kazakhstan, three from Malaysia, and four from Russia). Six of these purchasers reported that subject import prices were lower than U.S.-produced product, and two of these purchasers (***) reported that price was a primary reason for the decision to purchase subject imports rather than U.S.-produced product (two each for Brazil, Kazakhstan, and Malaysia). Two purchasers (each) estimated the quantity of ferrosilicon from Brazil (*** short tons contained silicon), Kazakhstan (*** short tons contained silicon), and Malaysia (*** short tons contained silicon) purchased instead of domestic product (tables V-15 and V-16). Six purchasers identified non-price reasons for purchasing imported rather than U.S.-produced product. Reasons other than price for purchasing imports included purity, availability, service, reliability, relationship, trust, and credit.

Table V-15
Ferrosilicon: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in short tons contained silicon

Purchaser	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***

Table continued.

Table V-15 Continued
Ferrosilicon: Purchasers' responses to purchasing subject imports instead of domestic product, by firm

Quantity in short tons contained silicon

Purchaser	Purchased subject imports instead of domestic	Imports priced lower	Choice based on price	Quantity	Explanation
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
All firms	Yes--8; No—1	Yes--6; No--2	Yes--2; No--6	***	NA

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

Table V-16
Ferrosilicon: Purchasers' responses to purchasing subject imports instead of domestic product, by source

Quantity in short tons contained silicon

Source	Count of purchasers reporting subject instead of domestic	Count of purchasers reported that imports were priced lower	Count of purchasers reporting that price was a primary reason for shift	Quantity
Brazil	4	5	2	***
Kazakhstan	3	2	2	***
Malaysia	3	3	2	***
Russia	4	3	---	***
Any subject source	8	6	2	***

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

Of the 8 responding purchasers, 2 reported that U.S. producers had reduced prices in order to compete with lower-priced imports from subject countries Brazil, Malaysia, and Russia (tables V-17 and V-18). The reported price reduction was *** percent for Russia and an unknown amount for Brazil and Malaysia. Three purchasers reported that U.S. producers had not reduced prices to compete with lower-priced subject imports and four answered that they did not know.

Table V-17
Ferrosilicon: Purchasers' responses to U.S. producer price reductions, by firm

Purchaser	Reported producers lowered prices	Estimated percent of U.S. price reduction	Explanation
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***

Table continued.

Table V-17 Continued
Ferrosilicon: Purchasers' responses to U.S. producer price reductions, by firm

Purchaser	Reported producers lowered prices	Estimated percent of U.S. price reduction	Explanation
***	***	***	***
All firms	Yes--2; No—3; Don't know—4	***	NA

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

Table V-18
Ferrosilicon: Purchasers' responses to U.S. producer price reductions, by source

Source	Count of purchasers reporting U.S. producers reduced prices	Average percent of estimated U.S. price reduction	Range of percent of estimated U.S. price reductions
Brazil	1	---	---
Kazakhstan	---	---	---
Malaysia	1	---	---
Russia	1	***	***
Total / average	2	***	***

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

Purchasers were also asked about changes in their purchasing patterns from different countries since January 1, 2021 (table II-19). Four purchasers reported increased purchases of U.S.-produced product. Reasons included increased production of the steel in which they can use *** ferrosilicon, and reshoring purchases, particularly to reduce purchases of Russian material. One purchaser reported it increased purchases from *** after Russia's invasion of Ukraine but limited these purchases because of quality and delivery problems. *** reported reduced purchases from domestic producers during the COVID-19 pandemic in 2020 and 2021, that it "worked very closely with both domestic producers to get them back on-line and providing more stable volumes for 2022, 2023, and 2024," but that it maintained some imports to ensure supply since "the two domestic sources were not sufficiently reliable." One purchaser decreased purchases of U.S.-produced product because it moved to new sources.

Five purchasers reported increased purchases from subject countries other than Russia. Two provided additional context, reporting increased purchases of ferrosilicon produced in Brazil, one because of its superior chemical composition and the other for environmental reasons. Four purchasers reported decreased purchases of product from Russia with two of these firms reporting a strategic move away from Russian product. *** reported that demand decreased with fluctuations because it initially reduced consumption but because of issues with *** it returned to purchasing some Russian material, and *** reported that changes in production practices reduced its ferrosilicon consumption. Three purchasers reported decreased purchases of product from subject countries other than Russia. One of these firms (***) explained that it purchased imports from Kazakhstan and Malaysia in 2021 because of limited domestic supply and purchased ferrosilicon from Brazil because of quality, geography, and logistics.

Table V-19
Ferrosilicon: Count of purchasers' responses regarding changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Steady increase	Fluctuate increase	No change	Fluctuate down	Steady decrease	Did not purchase
United States	2	2	0	1	0	3
Brazil	1	2	1	2	0	2
Kazakhstan	0	1	0	2	1	5
Malaysia	0	2	0	2	0	4
Russia	0	0	1	1	3	3
Nonsubject sources	1	0	2	3	1	3
Sources unknown	0	0	0	0	0	5

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

In responding to the lost sales lost revenue survey, some purchasers provided additional information on purchases and market dynamics. Their answers are reported below.

***.

***.

***.

***.

Part VI: Financial experience of U.S. producers

Background[1]

Two U.S. producers, CC Metals and Ferroglobe, provided usable financial results on their ferrosilicon operations. These firms accounted for all known U.S. production of ferrosilicon in 2023 (and throughout the period for which data were collected). *** provided its financial data on the basis of GAAP, whereas ***'s financial data were reported on the basis of IFRS. Both firms reported their financial data on a calendar-year basis.[2]

Figure VI-1 presents each firm's share of the aggregate ferrosilicon net sales quantity in 2023. The figure shows that Ferroglobe accounted for almost *** of net sales quantity in 2023, and CC Metals accounted for slightly more than ***.

[1] The following abbreviations are used in the tables and/or text of this section: generally accepted accounting principles ("GAAP"), international financial reporting standards ("IFRS"), fiscal year ("FY"), net sales ("NS"), cost of goods sold ("COGS"), selling, general, and administrative expenses ("SG&A expenses"), average unit values ("AUVs"), research and development expenses ("R&D expenses"), and return on assets ("ROA").

[2] The financial results in this section differ from the financial results provided in the petition. During the period between the filing of the petition and submitting its questionnaire response, ***. Email from ***.

***. Email from ***.

Figure VI-1
Ferrosilicon: U.S. producers' share of net sales quantity in 2023, by firm

* * * * * * *

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

Operations on ferrosilicon

Table VI-1 presents aggregated data on U.S. producers' operations in relation to ferrosilicon, while table VI-2 presents corresponding changes in AUVs. Table VI-3 presents selected company-specific financial data.

Table VI-1
Ferrosilicon: U.S. producers' results of operations, by item and period

Quantity in short tons contained silicon ("STCS"); value in 1,000 dollars; ratios in percent

Item	Measure	2021	2022	2023
Total net sales	Quantity	***	***	***
Total net sales	Value	***	***	***
COGS: Raw materials	Value	***	***	***
COGS: Direct labor	Value	***	***	***
COGS: Other factory	Value	***	***	***
COGS: Total	Value	***	***	***
Gross profit or (loss)	Value	***	***	***
SG&A expenses	Value	***	***	***
Operating income or (loss)	Value	***	***	***
Other expense / (income), net	Value	***	***	***
Net income or (loss)	Value	***	***	***
Depreciation/amortization	Value	***	***	***
Cash flow	Value	***	***	***
COGS: Raw materials	Ratio to NS	***	***	***
COGS: Direct labor	Ratio to NS	***	***	***
COGS: Other factory	Ratio to NS	***	***	***
COGS: Total	Ratio to NS	***	***	***
Gross profit	Ratio to NS	***	***	***
SG&A expense	Ratio to NS	***	***	***
Operating income or (loss)	Ratio to NS	***	***	***
Net income or (loss)	Ratio to NS	***	***	***

Table continued.

Table VI-1 Continued
Ferrosilicon: U.S. producers' results of operations, by item and period

Shares in percent; unit values in dollars per STCS; count in number of firms reporting

Item	Measure	2021	2022	2023
COGS: Raw materials	Share of COGS	***	***	***
COGS: Direct labor	Share of COGS	***	***	***
COGS: Other factory	Share of COGS	***	***	***
COGS: Total	Share of COGS	***	***	***
Total net sales	Unit value	***	***	***
COGS: Raw materials	Unit value	***	***	***
COGS: Direct labor	Unit value	***	***	***
COGS: Other factory	Unit value	***	***	***
COGS: Total	Unit value	***	***	***
Gross profit or (loss)	Unit value	***	***	***
SG&A expenses	Unit value	***	***	***
Operating income or (loss)	Unit value	***	***	***
Net income or (loss)	Unit value	***	***	***
Operating losses	Count	***	***	***
Net losses	Count	***	***	***
Data	Count	2	2	2

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table VI-2
Ferrosilicon: Changes in AUVs between comparison periods

Changes in percent

Item	2021-23	2021-22	2022-23
Total net sales	▲***	▲***	▼***
COGS: Raw materials	▲***	▲***	▲***
COGS: Direct labor	▲***	▲***	▲***
COGS: Other factory	▲***	▲***	▼***
COGS: Total	▲***	▲***	▲***

Table continued.

Table VI-2 Continued
Ferrosilicon: Changes in AUVs between comparison periods

Changes in dollars per STCS

Item	2021-23	2021-22	2022-23
Total net sales	▲***	▲***	▼***
COGS: Raw materials	▲***	▲***	▲***
COGS: Direct labor	▲***	▲***	▲***
COGS: Other factory	▲***	▲***	▼***
COGS: Total	▲***	▲***	▲***
Gross profit or (loss)	▼***	▲***	▼***
SG&A expense	▲***	▲***	▼***
Operating income or (loss)	▼***	▲***	▼***
Net income or (loss)	▼***	▲***	▼***

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

Note: Percentages and unit values shown as “0.0” or “0.00” represent values greater than zero, but less than “0.05” or “0.005,” respectively. Zeroes, null values, and undefined calculations are suppressed and shown as “---”. Period changes preceded by a “▲” represent an increase, while period changes preceded by a “▼” represent a decrease.

Table VI-3
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales quantity

Quantity in STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net sales value

Value in 1,000 dollars

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS

Value in 1,000 dollars

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss)

Value in 1,000 dollars

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses

Value in 1,000 dollars

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss)

Value in 1,000 dollars

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss)

Value in 1,000 dollars

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

COGS to net sales ratio

Ratios in percent

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Gross profit or (loss) to net sales ratio

Ratios in percent

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

SG&A expenses to net sales ratio

Ratios in percent

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Operating income or (loss) to net sales ratio

Ratios in percent

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Net income or (loss) to net sales ratio

Ratios in percent

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net sales value

Unit values in dollars per STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit raw material costs

Unit values in dollars per STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit direct labor costs

Unit values in dollars per STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit other factory costs

Unit values in dollars per STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit COGS

Unit values in dollars per STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit gross profit or (loss)

Unit values in dollars per STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit SG&A expenses

Unit values in dollars per STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit operating income or (loss)

Unit values in dollars per STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

Table continued.

Table VI-3 Continued
Ferrosilicon: U.S. producers' sales, costs/expenses, and profitability, by firm and period

Unit net income or (loss)

Unit values in dollars per STCS

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Net sales

The industry's net sales volume increased by *** percent between 2021 and 2023. Net sales revenue increased irregularly from 2021 to 2023 for an overall increase of *** percent.[3] The net sales AUV for ferrosilicon more than *** between 2021 and 2022, increasing from $*** per STCS in 2021 to $*** per STCS in 2022, before decreasing to $*** per STCS in 2023.

As is shown in table VI-3, *** reported an overall increase in their net sales volumes between 2021 and 2023. ***.[4] Both companies reported *** increases in their net sales AUVs from 2021 to 2022 and decreases in 2023, for overall increases between 2021 and 2023. ***.[5]

[3] Net sales revenue increased by *** percent from 2021 to 2022 then decreased by *** percent in 2023.

[4] ***.

[5] In response to questions from Staff regarding whether any factors other than price contributed to the increase in *** net sales AUV between 2021 and 2022 (e.g., product mix changes), ***. Email from ***.

Cost of goods sold and gross profit or loss

Raw material costs represented the second-largest share of total COGS for ferrosilicon in 2021 and the largest share in 2022 and 2023. The industry's raw material costs increased from 2021 to 2023. Raw material AUVs increased from $*** per STCS in 2021 to $*** in 2023.[6] Both U.S. producers experienced an increase in their raw material cost AUVs each year between 2021 and 2023. The firms' raw material cost AUVs were relatively *** in 2021 and 2022, however this changed in 2023 when ***.[7]

Table VI-4 presents raw materials, by type. Coal represented the largest share by far of raw material costs in 2023, followed by quartz gravel or sand, iron or steel scrap, and wood chips.[8] ***.[9]

Table VI-4
Ferrosilicon: U.S. producers' raw material costs in 2023

Value in 1,000 dollars; unit values in dollars per STCS; share of value in percent

Item	Value	Unit value	Share of value
Coal or petroleum coke	***	***	***
Quartz gravel or sand	***	***	***
Iron or steel scrap	***	***	***
Wood chips	***	***	***
Other material inputs	***	***	***
All raw materials	***	***	***

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

[6] Testimony at the staff conference indicated raw material costs, particularly coal, gravel, and wood chips, have been "sky high" since 2021. Conference transcript, p. 85 (Cobb and Sossonko).

[7] *** raw material cost AUVs were higher than *** by *** percent in 2021, *** percent in 2022, and *** percent in 2023.

[8] At the staff conference, company officials for Ferroglobe testified that it is an integrated company with its own quartz mine in Alabama and coal mine in Kentucky. Conference transcript p. 14 (Hammer). In its questionnaire response the company ***. It also reported that these inputs represented *** percent and *** percent of its total COGS in 2023, respectively. ***. Ferroglobe's U.S. producer questionnaire response, sections III-6 and III-7.

[9] U.S. producer questionnaire responses, section III-9c.

Direct labor was the smallest component of total COGS in each year, representing between *** and *** percent during the period examined. Direct labor AUVs increased from $*** per STCS in 2021 to $*** per STCS in 2023. While both companies reported an increase in their direct labor AUVs between 2021 and 2023, ***. As shown in table VI-3, ***. In response to questions from Staff, the company indicated that ***.[10]

Other factory costs accounted for the largest share of COGS in 2021 and the second-largest share in 2022 and 2023. On a per-STCS basis, other factory costs increased from 2021 to 2022 and decreased in 2023, for an overall increase of *** percent between 2021 and 2023. The overall increase in other factory costs per STCS was attributable to ***.[11] *** other factory costs on a per-STCS basis were *** higher than *** and increased from $*** per STCS in 2021 to $*** per STCS in 2023.[12]

[10] Email from ***. Upon further requests for clarification, the company reported that approximately $*** of the company's increase in direct labor costs between 2021 and 2022 was attributable to ***. It also reported that *** of its direct labor costs in 2022 were related to ***. The majority of the remaining *** was related to ***. Email from ***.

[11] ***.

[12] *** reported that the increase in its other factory costs ***. Email from ***. Upon request for further clarification, the company ***. Email from ***.

The industry's total COGS as a ratio to net sales decreased from *** percent in 2021 to *** percent in 2022 and increased to *** percent in 2023. As is shown in table VI-3, both companies reported a decrease in their COGS to net sales ratio from 2021 to 2022 and an increase from 2022 to 2023, but ***. ***.

The industry's gross profit increased from $*** in 2021 to a period-high $*** in 2022 before decreasing to $*** in 2023. Both companies reported *** increases in their gross profits between 2021 and 2022 and decreases in gross profit between 2022 and 2023. However, ***.

SG&A expenses and operating income or loss

The industry's SG&A expenses increased irregularly from 2021 to 2023 (increasing from 2021 to 2022 and decreasing in 2023). SG&A expenses as a ratio to net sales had the opposite directional trends, decreasing from *** percent in 2021 to *** percent in 2022 and then increasing to *** percent in 2023.

The industry's operating income increased from $*** in 2021 to $*** in 2022 and decreased to $*** in 2023.[13] The operating income margin increased from *** percent in 2021 to *** percent in 2022 and decreased to *** percent in 2023.

[13] ***.

All other expenses and net income or loss

Classified below the operating income level are interest expense, other expense, and other income. In table VI-1, these items are aggregated and only the net amount is shown. The ***.

***. The company reported ***.[14] The majority of the company's ***.[15]

Net income was *** than operating income in each period because of the ***. It increased from $*** in 2021 to $*** in 2022 and decreased to $*** in 2023. The net income margin increased from *** percent in 2021 to *** percent in 2022 and decreased to *** percent in 2023.

[14] ***. *** U.S. producer questionnaire response, section III-9a.

[15] ***. *** U.S. producer questionnaire response, sections III-10 and III-11. ***. Email from ***.

Variance analysis

A variance analysis for the operations of U.S. producers of ferrosilicon is presented in table VI-5.[16] The information for this variance analysis is derived from table VI-1. The variance analysis shows that the $*** decrease in operating income between 2021 and 2023 was attributable to an unfavorable operating income cost variance that was larger than the favorable operating income price and volume variances, combined (i.e., the negative effect from the per-unit cost/expense increase was larger than the combined positive effects of the increases in net sales AUVs and sales volume).

Table VI-5
Ferrosilicon: Variance analysis on the operations of U.S. producers between comparison periods

Value in 1,000 dollars

Item	2021-23	2021-22	2022-23
Net sales price variance	***	***	***
Net sales volume variance	***	***	***
Net sales total variance	***	***	***
COGS cost variance	***	***	***
COGS volume variance	***	***	***
COGS total variance	***	***	***
Gross profit variance	***	***	***
SG&A cost variance	***	***	***
SG&A volume variance	***	***	***
SG&A total variance	***	***	***
Operating income price variance	***	***	***
Operating income cost variance	***	***	***
Operating income volume variance	***	***	***
Operating income total variance	***	***	***

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

Note: These data are derived from the data in table VI-1. Unfavorable variances (which are negative) are shown in parentheses, all others are favorable (positive).

[16] The Commission's variance analysis is calculated in three parts: Sales variance, cost of sales variance (COGS variance), and SG&A expense variance. Each part consists of a price variance (in the case of the sales variance) or a cost or expense variance (in the case of the COGS and SG&A expense variance), and a volume variance. The sales or cost/expense variance is calculated as the change in unit price or per-unit cost/expense times the new volume, while the volume variance is calculated as the change in volume times the old unit price or per-unit cost/expense. Summarized at the bottom of the table, the price variance is from sales; the cost/expense variance is the sum of those items from COGS and SG&A variances, respectively, and the volume variance is the sum of the volume components of the net sales, COGS, and SG&A expense variances. The overall volume component of the variance analysis is generally small.

Capital expenditures

Table VI-6 presents capital expenditures, by firm, and table VI-7 presents the firms' narrative explanations of the nature, focus, and significance of their capital expenditures.[17] As shown in the table, ***.

Table VI-6
Ferrosilicon: U.S. producers' capital expenditures, by firm and period

Value in 1,000 dollars

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

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

Table VI-7
Ferrosilicon: U.S. producers' narrative descriptions of their capital expenditures, by firm

Firm	Narrative on capital expenditures
CC Metals	***
Ferroglobe	***

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

[17] ***.

Assets and return on assets

Table VI-8 presents data on the U.S. producers' total assets while table VI-9 presents their operating ROA.[18] Table VI-10 presents U.S. producers' narrative responses explaining their major asset categories and any significant changes in asset levels over time.

The industry's total assets increased *** between 2021 and 2023. This increase was mostly attributable to ***. In its questionnaire response, the company reported that the increase was related to ***. In response to a request for more information from Staff, ***.[19] The industry's ROA increased from 2021 to 2022 but decreased in 2023, for an overall decrease between 2021 and 2023.

Table VI-8
Ferrosilicon: U.S. producers' total net assets, by firm and period

Value in 1,000 dollars

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

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

Table VI-9
Ferrosilicon: U.S. producers' ROA, by firm and period

Ratio in percent

Firm	2021	2022	2023
CC Metals	***	***	***
Ferroglobe	***	***	***
All firms	***	***	***

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

Table VI-10
Ferrosilicon: U.S. producers' narrative descriptions of their total net assets, by firm

Firm	Narrative on assets
CC Metals	***
Ferroglobe	***

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

[18] The operating ROA is calculated as operating income divided by total assets. With respect to a firm's overall operations, the total asset value reflects an aggregation of a number of assets which are generally not product specific. Thus, high-level allocations are generally required in order to report a total asset value on a product-specific basis.

[19] Email from ***.

Capital and investment

The Commission requested U.S. producers of ferrosilicon to describe any actual or potential negative effects of imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, or Russia on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-11 presents the number of firms reporting an impact in each category and table VI-12 provides the U.S. producers' narrative responses.

Table VI-11
Ferrosilicon: Count of firms indicating actual and anticipated negative effects of imports from subject sources on investment, growth, and development since January 1, 2021, by effect

Number of firms reporting

Effect	Category	Count
Cancellation, postponement, or rejection of expansion projects	Investment	***
Denial or rejection of investment proposal	Investment	***
Reduction in the size of capital investments	Investment	***
Return on specific investments negatively impacted	Investment	***
Other investment effects	Investment	***
Any negative effects on investment	Investment	***
Rejection of bank loans	Growth	***
Lowering of credit rating	Growth	***
Problem related to the issue of stocks or bonds	Growth	***
Ability to service debt	Growth	***
Other growth and development effects	Growth	***
Any negative effects on growth and development	Growth	***
Anticipated negative effects of imports	Future	***

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

Table VI-12
Ferrosilicon: U.S. producers' narratives relating to actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2021, by firm and effect

Item	Firm name and narrative on impact of imports
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***
***	***

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

Part VII: Threat considerations and information on nonsubject countries

Section 771(7)(F)(i) of the Act (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 subject merchandise, the Commission shall consider, among other relevant economic factors*[1]*--*
>
> *(I) if a countervailable 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 countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*
>
> *(II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*
>
> *(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*
>
> *(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*
>
> *(V) inventories of the subject merchandise,*

[1] Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that "The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition."

(VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,

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

(VIII) 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 domestic like product, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).[2]

Information on the nature of the alleged subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in Parts IV and V; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in Part VI. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

[2] 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 WTO 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."

Subject countries

The Commission issued foreign producer/exporter questionnaires to 29 firms for which valid contact information was obtained that are believed to produce and/or ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia.[3] Usable responses to the Commission's questionnaire were received from 11 firms in total:

- seven firms in Brazil;
- two firms in Kazakhstan;
- two firms in Malaysia; and
- zero firms in Russia.

These firms' exports to the United States accounted for the following shares of U.S. imports of ferrosilicon by source in 2023:[4]

- Brazil, *** percent;
- Kazakhstan, *** percent;
- Malaysia, *** percent; and
- Russia, 0 percent.

According to estimates requested of the responding subject producers, the production of ferrosilicon reported in questionnaire responses accounted for the following shares of overall production of ferrosilicon by individual subject country in 2023:[5]

- Brazil, *** percent.[6]
- Kazakhstan, *** percent;
- Malaysia, *** percent; and
- Russia, 0 percent.

[3] These firms were identified through a review of information submitted in the petitions and presented in third-party sources.

[4] These shares reflect a comparison of export data reported by firms in response to the Commission's foreign producer/exporter questionnaire with official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed April 15, 2024. Imports are based on the imports for consumption data series.

[5] Firms were asked in the Commission's foreign producer/exporter questionnaire to estimate the share of their country's production of ferrosilicon for which their firm accounted. Since not all firms have perfect knowledge of the industry in their home market, different firms might use different denominators in estimating their firm's share of the total requested.

[6] *** of its share of production of ferrosilicon in Brazil during 2023.

Tables VII-1 (by firm) and VII-2 (by country) present information on the ferrosilicon operations of the responding subject producers/exporters of ferrosilicon during 2023.

Table VII-1
Ferrosilicon: Summary data for subject foreign producers, by firm, 2023

Quantity in short tons contained silicon; share in percent

Producer and (subject foreign industry)	Production (short tons contained silicon)	Share of reported prod-uction (percent)	Exports to the United States (short tons contained silicon)	Share of reported exports to the United States (percent)	Total shipments (short tons contained silicon)	Share of firm's total shipments exported to the United States (percent)
Bozel (Brazil)	***	***	***	***	***	***
Ferbasa (Brazil)	***	***	***	***	***	***
Libra Ligas (Brazil)	***	***	***	***	***	***
Minasligas (Brazil)	***	***	***	***	***	***
Nova Era (Brazil)	***	***	***	***	***	***
Rima (Brazil)	***	***	***	***	***	***
Rotavi (Brazil)	***	***	***	***	***	***
OM Sarawak (Malaysia)	***	***	***	***	***	***
Pertama (Malaysia)	***	***	***	***	***	***
TNC (Kazakhstan)	***	***	***	***	***	***
YDD (Kazakhstan)	***	***	***	***	***	***
All individual producers	585,040	100.0	59,644	100.0	582,190	10.2

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

Table VII-2
Ferrosilicon: Summary data for subject foreign producers, by subject country, 2023

Quantity in short tons contained silicon; share in percent

Subject foreign industry	Production (short tons contained silicon)	Share of reported production (percent)	Exports to the United States (short tons contained silicon)	Share of reported exports to the United States (percent)	Total shipments (short tons contained silicon)	Share of firm's total shipments exported to the United States (percent)
Brazil	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***
Russia	***	***	***	***	***	***
All subject foreign industries	585,040	100.0	59,644	100.0	582,190	10.2

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table VII-3 presents events in the subject countries' industry since January 1, 2021.

Table VII-3
Ferrosilicon: Important industry events in subject countries since January 1, 2021

Item	Country	Event
Qaz Carbon (Asia FerroAlloys LLP) building a new ferroalloys plant	Kazakhstan	In December 2020, Qaz Carbon (now called Asia FerroAlloys LLP) began construction of new ferroalloys and sinter plants as part of the Business Roadmap 2025 initiative in Karaganda. The production capacity of the plants are 57,000 metric tons per year of ferroalloys (including ferrosilicon) and 240,000 metric tons of sinter per year. According to the company, the production will be completely export-oriented and sold to customers in the United States, Europe, Japan, Korea, Turkey and the Commonwealth of Independent States (CIS).
Ekibastuz FerroAlloys LLP building a new ferrosilicon plant	Kazakhstan	In 2021, Ekibastuz FerroAlloys LLP began construction of a new ferrosilicon plant close to Ekibastuz or that was scheduled to begin production in 2023. This facility has the capacity to produce 240,000 metric tons of ferrosilicon per year to meet "global demand," including the North American market. Ekibastuz FerroAlloys LLP planned to sell products to Europe, Southeast Asia, and North and South America. According to a company official the products of the new plant will fully meet all the requirements of the world standard and are 100 % export-oriented. The location was chosen because of its close proximity to sources of raw materials and electricity.
Name change: Qaz Carbon/Asia Ferroalloys LLP	Kazakhstan	On January 18, 2022, Qaz Carbon LLP (Kaz Carbon) "re-registered in accordance with the Law of the Republic of Kazakhstan to change its name from the Limited Liability Partnership "Qaz Carbon" (Kaz Carbon)" to the Limited Liability Partnership "Asia FerroAlloys".
Kazakh government building a new ferrosilicon plant (under development)	Kazakhstan	In December 2023, the Kazakh government announced a new project in the Ekibastuz, Pavlodar Region, that will add 80,000 metric tons per year of ferrosilicon production capacity. The plant is expected to be commissioned in 2025 and will export ferrosilicon to customers in Japan, South Korea, the U.S., Turkey, and Europe.
TB Alloys Kazakh Limited building a new ferrosilicon plant (under development)	Kazakhstan	TB Alloys Kazakh Limited (a joint-venture between Kazakhstan's Fincraft Resources and the Indian holding Monnet Group) is building a new ferroalloys plant that will eventually reach a total ferroalloy production capacity of 100,000 metric tons per year. The ferroalloys that will be made at the plant were not specified, but some reports indicated that it will include ferrosilicon. An opening date was not announced.
News report on new ferrosilicon capacity	Kazakhstan	The Times of Central Asia reported that two new ferrosilicon production plants with a total production capacity of 330,000 metric tons per year will open in 2024. The story did not identify the plants.
Mineral Production International building new ferroalloys	Kazakhstan	Mineral Product International announced plans to build a new ferroalloys plant in Ekibastuz, Pavlodar region. The commissioning of the first stage of production is scheduled for 2026. When completed, the plant will have capacity to produce 160,000 metric tons per year of ferroalloys. The main product manufactured will be ferrosilicon but the plant was expected to produce other ferroalloys, such as ferromanganese and silicomanganese.

Item	Country	Event
plant		
OM Holdings converts idle ferrosilicon furnaces	Malaysia	During the second quarter of 2022, OM Holdings converted two of four idled ferrosilicon furnaces to manganese alloy production at its smelter complex in Samalaju, Sarawak. As of April 2024, OM Holding's website indicates that the plant consists of 8 main "workshops", with two furnaces in each. Out of the 16 furnaces,10 are allocated for the production of ferrosilicon, and 6 for the production of manganese alloys. The plant has a total ferrosilicon production capacity of 200k-210k metric ton per year and capacity to produce 250,000-300,000 metric tons of manganese alloys per year.
Pertama building new ferrosilicon capacity	Malaysia	In December 2023, Pertama, which had existing installed production capacity of 60k metric tons of ferrosilicon per year, was adding two new electric furnaces to boost ferrosilicon production. This additional capacity will increase Pertama's total ferrosilicon production capacity to 100k metric tons per year when it comes online in 2025. Pertama's plant uses electricity generated from hydropower, so the carbon emissions from production are practically zero, according to the company.
Bratsk expanding ferrosilicon capacity	Russia	Bratsk Ferroalloys plant produced 81,300 metric tons of ferrosilicon in 2021. However, the plant, which has the total capacity to produce 87,300 metric tons of ferrosilicon per year, is currently upgrading its facilities to increase capacity by 30 percent. As a result, the facility will have a total ferrosilicon production capacity of approximately 113,490 metric tons per year once completed. A completion date for the upgrade was not known.
Nationalization of ferroalloy plants	Russia	In February 2024, it was reported that the Russian Federal Property Agency, acting on behalf of the Russian Federation, became the owner of 100 percent of the capital of JSC Chelyabinsk Electrometallurgical Plant (ChEMK), the flagship enterprise of ChEMK Industrial Group, which is a major ferroalloy producer, according to the Unified State Register of Legal Entities. Metals publications reported that earlier in February, Russia's prosecutor general was reported to have filed a lawsuit with the Sverdlovsk region court of arbitration to nationalize the Serov Ferroalloy plant, the ChEMK plant, and the Kuznetsk ferroalloy plant. According to news reports that cited court documents, prosecutors had claimed that the three plants had been illegally privatized. As of February 26, the court had ruled in favor of prosecutors in the lawsuit, which was held in a closed format, and all three plants (JSC Chelyabinsk Electrometallurgical Plant, JSC Serov Ferroalloys and JSC Kuznetsk Ferroalloys) had been ordered to be transferred to state ownership. The Serov plant produces ferrochrome and ferrosilicon and the Kuznetsk plant produces ferrosilicon. As of April 2024, it was unclear how this development would impact production and sales of ferroalloys produced at these plants.

Table continued

Table VII-3—continued
Ferrosilicon: Important industry events in subject countries since January 1, 2021

Sources: Petition, Vol. I, pp. 40-44; Kazchrome, "Aktobe Ferroalloys Plant," https://www.kazchrome.com/en/business-overview/divisions/aktobe/, retrieved April 2, 2024; Kazchrome, "Aksu Ferroalloys Plant," https://www.kazchrome.com/en/business-overview/divisions/aksu/, retrieved April 2, 2024; The Astana Times, "Ferroalloy production plant opens in Karaganda," July 26, 2019, https://astanatimes.com/2019/07/ferroalloy-production-plant-opens-in-karaganda/, retrieved April 2, 2024; Kazakh Invest, "LLP: YDD Corporation," https://invest.gov.kz/about-kazakhstan/success-story/6577/, retrieved April 2, 2024; The Astana Times, "Ferroalloy and Sinter Plants to be Built in Karaganda Region," December 29, 2020, https://astanatimes.com/2020/12/ferroalloy-and-sinter-plants-to-be-built-in-karaganda-region/, retrieved April 4, 2024; GMK Center, "Kazakhstan plans to build a new ferroalloy plant," December 26, 2023, https://gmk.center/en/news/kazakhstan-plans-to-build-a-new-ferroalloy-plant/, retrieved April 2, 2024; WesternSlopeNow.com, December 13, 2022, "Monnet Group and Kenes Rakishev together will build a new plant in Kazakhstan," https://www.westernslopenow.com/business/press-releases/ein-presswire/606114761/monnet-group-and-kenes-rakishev-together-will-build-a-new-plant-in-kazakhstan/ ; Development Bank of Kazakhstan, "Construction of a New Ferroalloy Plant Has Started in Ekibastuz, December 8, 2021, https://kdb.kz/en/pc/news/press-releases/12372/, retrieved April 2, 2024;The Astana Times, "Kazakhstan Unveils $245 Million Ferroalloy Plant in Pavlodar Region," December 1, 2023, https://astanatimes.com/2023/12/kazakhstan-unveils-245-million-ferroalloy-plant-in-pavlodar-region/, retrieved April 2, 2024; Asia FerrAlloys news release, "Company alteration of description," January 18, 2022, https://asiaferroalloys.com/en/company-alteration-of-description/; Ferro-Alloys.com, "Kazakhstan, India Jointly Build New Ferroalloy Plant," https://www.ferro-alloys.com/en/News/Details/317271#, retrieved April 2, 2024; Mineral Production International webpage, "About project," https://www.mpi.com.kz/en/#about, retrieved April 4, 2024; OM Holdings, "OM Holdings Limited's Sarawak ferroalloys operations record higher production volume for q2," July 27, 2022, https://www.omholdingsltd.com/wp-content/uploads/2022/07/2022.07.27-ASX-OMH-Media-Release-Higher-Q2-2022-Ferroalloys-Production.pdf, retrieved April 4, 2024; OM Holdings *website, Samalaju Smelting Complex,* https://www.omholdingsltd.com/our-business/samalaju-smelting-complex/, retrieved April 4, 2024; GMK Center, "Pertama Ferroalloys will increase the production capacity of ferrosilicon by 1.7 times," December 26, 2023, https://gmk.center/en/news/pertama-ferroalloys-will-increase-the-production-capacity-of-ferrosilicon-by-1-7-times/, retrieved April 4, 2024; Michel webpage, "Bratsk Ferroalloy Plant," https://mechel.com/sector/steel/bratskiy-zavod-ferrosplavov/, retrieved April 4, 2024; Michel PAO 2021 Form 20-F, p. 107 (as filed); S&P Global Commodity Insights, "Russia's prosecutor general claims 1990s privatization of ferroalloy plants was illegitimate,' February 14, 2024, https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/metals/021424-russias-prosecutor-general-claims-1990s-privatization-of-ferroalloy-plants-was-illegitimate; Interfax, "Russian Federation becomes owner of the ChEMK Industrial Group," March 14, 2024 https://interfax.com/newsroom/top-stories/100417/; Project Blue, "Major Russian ferroalloy plants nationalized," March 12, 2024, https://projectblue.com/blue/news-analysis/798/major-russian-ferroalloy-plants-nationalised

Changes in operations

Subject producers were asked to report any change in the character of their operations or organization relating to the production of ferrosilicon since January 1, 2021. Four of the responding subject producers indicated in their questionnaires that they had experienced such changes. Table VII-4 presents the changes identified by these subject producers.

Table VII-4
Ferrosilicon: Reported changes in operations in subject foreign industries since January 1, 2021, by firm

Item	Firm name (subject foreign industry) and accompanying narrative response regarding changes in operations
Prolonged shutdowns	***
Production curtailments	***
Production curtailments	***
Expansions	***

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

Operations on ferrosilicon

Table VII-5 presents data on subject country producers' installed capacity, practical overall capacity, and practical ferrosilicon capacity and production on the same equipment. Between 2021 and 2023, installed overall, installed practical, and practical paper plates capacity increased. Following a similar trend, practical overall, installed overall, and practical ferrosilicon production all increased from 2021 to 2023.[7]

[7] ***. *** foreign producer questionnaire response, section II-3a.

Table VII-5
Ferrosilicon: Subject country producers' installed and practical capacity and production on the same equipment as in-scope production, by period

Quantity in short tons contained silicon

Item	Measure	2021	2022	2023
Installed overall	Capacity	988,888	967,823	1,052,645
Installed overall	Production	727,190	779,773	811,726
Installed overall	Utilization	73.5	80.6	77.1
Practical overall	Capacity	857,522	844,220	912,010
Practical overall	Production	727,190	779,773	811,726
Practical overall	Utilization	84.8	92.4	89.0
Practical ferrosilicon	Capacity	657,873	626,814	660,038
Practical ferrosilicon	Production	538,857	572,648	585,040
Practical ferrosilicon	Utilization	81.9	91.4	88.6

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

Table VII-6 presents the subject countries producers' reported capacity constraints since January 1, 2021. The most commonly reported capacity constraint were other constraints on capacity (reported by six firms), while five firms reported fuel and energy (all five that reported fuel and energy as capacity constraints were *** ferrosilicon producers), as capacity constraints.

Table VII-6
Ferrosilicon: Producers in subject foreign industries reported capacity constraints since January 1, 2021.

Item	Firm name (subject foreign industry) and narrative response on constraints to practical overall capacity
Production bottlenecks	***
Existing labor force	***
Fuel or energy	***
Fuel or energy	***
Fuel or energy	***
Fuel or energy	***
Fuel or energy	***
Other constraints	***
Other constraints	***
Other constraints	***
Other constraints	***
Other constraints	***
Other constraints	***

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

Table VII-7 presents information on the ferrosilicon operations of the responding producers/exporters in the subject countries. Between 2021 and 2023, subject producers' combined capacity and production of ferrosilicon fluctuated but increased ***. Subject producers' capacity utilization fluctuated but increased by (6.7 percentage points) from 2021 to 2023. Exports to the United States and to all other markets both increased from 2021 to 2023, while home market shipments decreased and end-of-period inventories increased.

Subject producers' exports to the United States, which accounted for approximately 10.0 percent from 2021 to 2023, as a share of total shipments, increased overall and were projected to be higher during 2024 and 2025. The leading exporter of ferrosilicon from the subject countries to the United States was ***.

Exports to all other markets (other than the United States) accounted for the vast majority as a share of subject producers' total shipments of ferrosilicon from 2021 to 2023. Subject producers' exports accounted for the vast majority as a share of their total shipments, while home market shipments were approximately one quarter as a share of total shipments from 2021 to 2023.

Projections for subject producers in 2024 and 2025 include projected increases in capacity, production, exports to the United States, and exports to all other markets.

Table VII-7
Ferrosilicon: Data on subject foreign industries, by item and period

Quantity in short tons contained silicon; ratio and share in percent

Item	2021	2022	2023	Projection 2024	Projection 2025
Capacity	657,873	626,814	660,038	697,349	653,928
Production	538,857	572,648	585,040	652,698	604,246
End-of-period inventories	80,964	99,955	97,806	89,438	77,353
Internal consumption	27,577	21,367	16,270	19,357	19,348
Commercial home market shipments	109,264	90,214	95,623	107,702	95,469
Home market shipments	136,841	111,581	111,893	127,059	114,817
Exports to the United States	44,991	56,168	59,644	69,431	64,794
Exports to all other markets	355,218	384,774	410,653	470,497	433,449
Export shipments	400,209	440,942	470,297	539,928	498,243
Total shipments	537,050	552,523	582,190	666,987	613,060

Table continued

Table VII-7--continued
Ferrosilicon: Data on subject foreign industries, by item and period

Shares and ratios in percent.

Item	2021	2022	2023	Projection 2024	Projection 2025
Capacity utilization ratio	81.9	91.4	88.6	93.6	92.4
Inventory ratio to production	15.0	17.5	16.7	13.7	12.8
Inventory ratio to total shipments	15.1	18.1	16.8	13.4	12.6
Internal consumption share	5.1	3.9	2.8	2.9	3.2
Commercial home market shipments share	20.3	16.3	16.4	16.1	15.6
Home market shipments share	25.5	20.2	19.2	19.0	18.7
Exports to the United States share	8.4	10.2	10.2	10.4	10.6
Exports to all other markets share	66.1	69.6	70.5	70.5	70.7
Export shipments share	74.5	79.8	80.8	81.0	81.3
Total shipments share	100.0	100.0	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Table VII-8 presents information on the ferrosilicon operations of the responding producers/exporters by subject country.

From 2021 to 2023, Brazilian producers' capacity and production fluctuated but increased overall. Capacity utilization for the Brazilian producers decreased *** from 2021 to 2023, by *** percentage points, while its share of overall subject country production decreased by *** percentage points. Brazilian producers' capacity and production are projected to be higher in 2024 and 2025 than 2023 levels.

From 2021 to 2023, Kazakh producers' capacity and production increased overall, respectively. Capacity utilization fluctuated but increased by *** percentage points from 2021 to 2023, while its share of overall subject country production increased by *** percentage points. Kazakh producers' capacity and production are projected to be higher in 2024 than 2023 levels but are expected to be slightly lower in 2025.

From 2021 to 2023, Malaysian producers' capacity decreased but production increased during the same period. Capacity utilization for the Malaysian producers increased from 2021 to 2023, by *** percentage points, while its share of overall subject country production fluctuated ***. Malaysian producers' capacity and production are projected to be higher in 2024 than 2023 levels but are expected to be slightly lower in 2025.

Table VII-8
Ferrosilicon: Subject producers' output, by source and period

Practical capacity

Capacity in short tons contained silicon

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
All subject foreign industries	657,873	626,814	660,038	697,349	653,928

Table continued

Table VII-8--continued
Ferrosilicon: Subject producers' output, by source and period

Production

Production in short tons contained silicon

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
All subject foreign industries	538,857	572,648	585,040	652,698	604,246

Table continued

Table VII-8--continued
Ferrosilicon: Subject producers' output, by source and period

Capacity utilization

Ratios in percent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
All subject foreign industries	81.9	91.4	88.6	93.6	92.4

Table continued

Table VII-8--continued
Ferrosilicon: Subject producers' output, by source and period

Share of production

Shares in percent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
All subject foreign industries	100.0	100.0	100.0	100.0	100.0

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Alternative products

As shown in table VII-9, responding firms in the subject countries produced other products on the same equipment and machinery used to produce ferrosilicon. Ferrosilicon production accounted for the ***. Four responding producers/exporters reported the production of other products such as magnesium ferrosilicon and other products from 2021 to 2023. ***. *** accounted for the majority of the subject country producers' out-of-scope production during 2023.

Table VII-9
Ferrosilicon: Producers' in subject foreign industries overall production on the same equipment as in-scope production, by type and period

Quantity in short tons contained silicon; ratio and share in percent

Product type	Measure	2021	2022	2023
Ferrosilicon, contained silicon	Quantity	538,857	572,648	585,040
Ferrosilicon, weight of other elements	Quantity	***	***	***
Ferrosilicon, gross weight	Quantity	***	***	***
Silicon metal	Quantity	***	***	***
Magnesium ferrosilicon	Quantity	***	***	***
Other products	Quantity	***	***	***
All out-of-scope products	Quantity	***	***	***
All products	Quantity	727,190	779,773	811,726
Ferrosilicon, contained silicon	Share	74.1	73.4	72.1
Ferrosilicon, weight of other elements	Share	***	***	***
Ferrosilicon, gross weight	Share	***	***	***
Silicon metal	Share	***	***	***
Magnesium ferrosilicon	Share	***	***	***
Other products	Share	***	***	***
All out-of-scope products	Share	***	***	***
All products	Share	100.0	100.0	100.0

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

Subject foreign industries (combined) exports

Table VII-10 presents information on the subject foreign industries' exports for the responding producers/exporters. Subject foreign industries (combined) exports to the United States increased from 2021 to 2023, and are projected to be higher during 2024 but lower during 2025. Subject foreign industries (combined) exports to the United States as a share of exports, accounted for *** from 2021 to 2023. Subject foreign industries (combined) exports to all destinations increased from 2021 to 2023, and are projected to be higher during 2024 and 2025 than 2023 levels.

Table VII-10
Ferrosilicon: Subject foreign industries' exports, exports to the United States, by subject foreign industry and period

Quantity in short tons contained silicon

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
All subject foreign industries	44,991	56,168	59,644	69,431	64,794

Table continued

Table VII-10--continued
Ferrosilicon: Subject foreign industries' exports, share of total shipments exported to the United States, by subject foreign industry and period

Shares in percent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
All subject foreign industries	8.4	10.2	10.2	10.4	10.6

Table continued

Table VII-10--continued
Ferrosilicon: Total exports, by subject foreign industry and period

Quantity in short tons contained silicon

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
All subject foreign industries	537,050	552,523	582,190	666,987	613,060

Table continued

Table VII-10--continued
Ferrosilicon: Total exports, by subject foreign industry and period

Ratios in percent

Subject foreign industry	2021	2022	2023	Projection 2024	Projection 2025
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
All subject foreign industries	74.5	79.8	80.8	81.0	81.3

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

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Exports

Table VII-11 presents global exports from the subject exporters, from 2021 to 2023. Collectively, exports from combined subject countries exports of ferrosilicon to the United States increased from 2021 to 2023, while the combined subject countries exports to all other destinations fluctuated but decreased slightly from 2021 to 2023. The largest increases of exports of ferrosilicon from the subject countries during 2021-22 were from Brazil and Russia.

Table VII-11
Ferrosilicon: Global exports from subject exporters; exports to the United States, by exporter and period

Quantity in short tons contained silicon

Exporter	Measure	2021	2022	2023
Brazil	Quantity	23,906	31,149	36,047
Kazakhstan	Quantity	13,580	9,745	12,156
Malaysia	Quantity	20,014	27,605	21,914
Russia	Quantity	86,957	115,686	91,410
Subject exporters	Quantity	144,457	184,185	161,527

Table continued.

Table VII-11--continued
Ferrosilicon: Global exports from subject exporters; exports to all destination markets, by exporter and period

Exporter	Measure	2021	2022	2023
Brazil	Quantity	163,157	168,844	193,727
Kazakhstan	Quantity	112,836	135,174	149,160
Malaysia	Quantity	168,827	217,168	195,363
Russia	Quantity	463,247	327,091	336,367
Subject exporters	Quantity	908,067	848,277	874,617

Table continued

Table VII-11--continued
Ferrosilicon: Global exports from subject exporters; share of exports exported to the United States, by exporter and period

Exporter	Measure	2021	2022	2023
Brazil	Share	14.7	18.4	18.6
Kazakhstan	Share	12.0	7.2	8.1
Malaysia	Share	11.9	12.7	11.2
Russia	Share	18.8	35.4	27.2
Subject exporters	Share	15.9	21.7	18.5

Source: Official exports statistics and official global imports statistics from Russia (constructed exports) under HS subheadings 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed April 15, 2024.

Note: Shares represent the shares of value exported to the United States out of all destination markets. Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

U.S. inventories of imported merchandise

Table VII-12 presents data on U.S. importers' reported inventories of ferrosilicon from 2021 to 2023. U.S. importers' inventories of imports from subject sources increased by *** percent from 2021 to 2023. U.S. importers' inventories of imports from nonsubject sources increased *** from 2021 to 2023. U.S. importers' inventories of imports from Kazakhstan *** from 2021 to 2023, which attributed to the overall increase in end-of-period inventories by subject importers. [8]

[8] ***.

Table VII-12
Ferrosilicon: U.S. importers' inventories and their ratio to select items, by source and period

Quantity in short tons contained silicon; ratio in percent

Measure	Source	2021	2022	2023
Inventories quantity	Brazil	***	***	***
Ratio to imports	Brazil	***	***	***
Ratio to U.S. shipments of imports	Brazil	***	***	***
Ratio to total shipmemts of imports	Brazil	***	***	***
Inventories quantity	Kazakhstan	***	***	***
Ratio to imports	Kazakhstan	***	***	***
Ratio to U.S. shipments of imports	Kazakhstan	***	***	***
Ratio to total shipmemts of imports	Kazakhstan	***	***	***
Inventories quantity	Malaysia	***	***	***
Ratio to imports	Malaysia	***	***	***
Ratio to U.S. shipments of imports	Malaysia	***	***	***
Ratio to total shipmemts of imports	Malaysia	***	***	***
Inventories quantity	Russia	***	***	***
Ratio to imports	Russia	***	***	***
Ratio to U.S. shipments of imports	Russia	***	***	***
Ratio to total shipmemts of imports	Russia	***	***	***
Inventories quantity	Subject	***	***	***
Ratio to imports	Subject	***	***	***
Ratio to U.S. shipments of imports	Subject	***	***	***
Ratio to total shipmemts of imports	Subject	***	***	***
Inventories quantity	Nonsubject	***	***	***
Ratio to imports	Nonsubject	***	***	***
Ratio to U.S. shipments of imports	Nonsubject	***	***	***
Ratio to total shipmemts of imports	Nonsubject	***	***	***
Inventories quantity	All	***	***	***
Ratio to imports	All	***	***	***
Ratio to U.S. shipments of imports	All	***	***	***
Ratio to total shipmemts of imports	All	***	***	***

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

U.S. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of ferrosilicon after December 31, 2023. Their reported data is presented in table VII-13. Subject sources accounted for the majority of U.S. importers' arranged imports of ferrosilicon. The leading individual sources of U.S. importers' total arranged imports was Kazakhstan, which accounted for *** of the arranged imports of ferrosilicon from subject sources.

Table VII-13
Ferrosilicon: U.S. importers' arranged imports, by source and period

Quantity in short tons contained silicon

Source	Jan-Mar 2024	Apr-Jun 2024	Jul-Sep 2024	Oct-Dec 2024	Total
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Third-country trade actions

Based on available information, ferrosilicon products from subject countries have not been subject to countervailing duties or safeguard actions in other countries. The following countries have imposed antidumping duties and/or sanctions on imports of tin mill products from subject countries.

Egypt

On May 4, 2021, Egypt implemented antidumping duties on imports of ferrosilicon from Russia. The antidumping duties of 10.5 percent apply to ferrosilicon products imported under HS subheadings 7202.21 and 7202.29.[9]

European Union

On June 30, 2020, the European Union extended antidumping duties on imports of ferrosilicon from Russia and China for another five years. The antidumping duties apply to ferrosilicon imported under HS subheadings 7202.21.00, 7202.29.10, and 7202. 29.90. The duties for ferrosilicon originating in Russia ranged from 17.8–22.7 percent.[10]

On December 18, 2023, the European Union adopted a 12th package of sanctions against Russia. The focus of this package was to "impose additional import and export bans on Russia, combat sanctions circumvention and close loopholes." Goods falling under HS subheading 7202, which covers ferroalloys including subject ferrosilicon products, are included

[9] World Trade Organization, Semi-Annual Report under Article 16.4 of the Agreement: Egypt, G/ADP/N/357/EGY, September 16, 2021. The subject products are alloys of iron (ferrosilicon).

[10] Official Journal of the European Union, Commission Implementing Regulation (EU) 2020/909 of June 30, 2020. https://eur-lex.europa.eu/eli/reg_impl/2020/909/oj.

in article 3i of the sanctions, which "prohibits the purchase, import, or transfer, directly or indirectly" into the EU of specified goods if they originate in Russia. For ferroalloys, the legislation states that the relevant prohibitions do not apply until December 20, 2024 for any contracts that were executed or concluded before December 19, 2023.[11]

Information on nonsubject countries

Global production

In 2022 and 2023, the leading producers of ferrosilicon, in descending order by quantity, were China, Russia, Norway, Brazil, and Kazakhstan. In 2023, China accounted for about 69.2 percent of total ferrosilicon production (table VII-14).

Table VII-14
Ferrosilicon: Global production, by country and by period

Quantity in short tons; silicon content

Country	Measure	2022	2023
China	Quantity	4,156,000	3,968,000
Russia	Quantity	631,000	628,000
Norway	Quantity	215,000	220,000
Brazil	Quantity	208,000	209,000
Kazakhstan	Quantity	106,000	132,000
Bhutan	Quantity	83,000	88,000
Iceland	Quantity	87,000	88,000
Malaysia	Quantity	100,000	88,000
India	Quantity	65,000	66,000
Poland	Quantity	52,000	55,000
Spain	Quantity	51,000	55,000
Canada	Quantity	22,000	22,000
France	Quantity	28,000	22,000
Ukraine	Quantity	31,000	2,000
Other countries	Quantity	159,000	110,000
World total (rounded)	Quantity	5,997,000	5,732,000

Source: U.S. Geological Survey, Mineral Commodity Summaries 2024, "Silicon," Jan. 31, 2024, p. 161.

Note: Excludes U.S. ferrosilicon production. Production data are estimated.

[11] European Commission, "EU adopts 12th package of sanctions against Russia for its continued illegal war against Ukraine," December 18, 2023, https://ec.europa.eu/commission/presscorner/detail/en/ip_23_6566, retrieved April 4, 2024; Official Journal of the European Union, Council Regulation (EU) 2023/2828 of 18 December 2023 Amending Regulation (EU) No 833/2014 Concerning Restrictive Measures in View of Russia's Actions Destabilising the Situation in Ukraine, December 18, 2023, https://eur-lex.europa.eu/eli/reg/2023/2878/oj, pp. 6, 213

According to GTA, the leading global exporters of ferrosilicon, by quantity, were China (17.9 percent), Russia (13.4 percent), Norway (9.8 percent), Netherlands (8.6 percent) and Malaysia (7.8 percent), in 2022 (table VII-15). While China was the leading exporter during 2021–23, its share of total exports decreased by about 2.3 percentage points during that period. The four subject countries together accounted for 34.9 percent of all exports of ferrosilicon in 2023 and their share of total exports increased by 4.4 percentage points from 2021 to 2023. During that period, the share of ferrosilicon exported from nonsubject countries declined to 51.0 percent from 59.6 percent.

Table VII-15
Ferrosilicon: Global exports, by destination market and period

Quantity in short tons contained silicon; Value in 1,000 dollars

Exporting country	Measure	2021	2022	2023
United States	Quantity	18,580	28,570	11,865
Brazil	Quantity	163,157	168,844	193,727
Kazakhstan	Quantity	112,836	135,174	149,160
Malaysia	Quantity	168,827	217,168	195,363
Russia	Quantity	463,247	327,091	336,367
Subject exporters	Quantity	908,067	848,277	874,617
China	Quantity	602,646	744,182	448,230
Norway	Quantity	274,775	282,118	245,819
Netherlands	Quantity	232,161	230,806	214,698
Iceland	Quantity	116,582	111,894	106,932
Germany	Quantity	78,439	85,610	72,832
Poland	Quantity	97,183	73,060	64,386
France	Quantity	72,736	63,041	62,908
All other exporters	Quantity	579,294	491,800	403,892
Nonsubject exporters	Quantity	2,053,816	2,082,511	1,619,697
All reporting exporters	Quantity	2,980,463	2,959,357	2,506,179
United States	Value	31,022	39,574	20,661
Brazil	Value	240,693	415,390	373,811
Kazakhstan	Value	165,962	277,895	191,751
Malaysia	Value	248,055	409,976	248,938
Russia	Value	846,360	864,560	529,449
Subject exporters	Value	1,501,070	1,967,821	1,343,949
China	Value	883,248	1,261,487	593,081
Norway	Value	447,217	792,665	484,917
Netherlands	Value	386,618	611,391	432,340
Iceland	Value	188,188	343,030	214,188
Germany	Value	120,270	208,001	133,137
Poland	Value	172,538	201,824	100,337
France	Value	113,712	141,254	107,384
All other exporters	Value	916,017	1,127,228	716,158
Nonsubject exporters	Value	3,227,808	4,686,880	2,781,542
All reporting exporters	Value	4,759,900	6,694,275	4,146,152

Table continued.

Table VII-15--Continued
Ferrosilicon: Global exports, by destination market and period

Unit values in dollars per STCS; Shares in percent

Exporting country	Measure	2021	2022	2023
United States	Unit value	1,670	1,385	1,741
Brazil	Unit value	1,475	2,460	1,930
Kazakhstan	Unit value	1,471	2,056	1,286
Malaysia	Unit value	1,469	1,888	1,274
Russia	Unit value	1,827	2,643	1,574
Subject exporters	Unit value	1,653	2,320	1,537
China	Unit value	1,466	1,695	1,323
Norway	Unit value	1,628	2,810	1,973
Netherlands	Unit value	1,665	2,649	2,014
Iceland	Unit value	1,614	3,066	2,003
Germany	Unit value	1,533	2,430	1,828
Poland	Unit value	1,775	2,762	1,558
France	Unit value	1,563	2,241	1,707
All other exporters	Unit value	1,581	2,292	1,773
Nonsubject exporters	Unit value	1,572	2,251	1,717
All reporting exporters	Unit value	1,597	2,262	1,654
United States	Share of quantity	0.6	1.0	0.5
Brazil	Share of quantity	5.5	5.7	7.7
Kazakhstan	Share of quantity	3.8	4.6	6.0
Malaysia	Share of quantity	5.7	7.3	7.8
Russia	Share of quantity	15.5	11.1	13.4
Subject exporters	Share of quantity	30.5	28.7	34.9
China	Share of quantity	20.2	25.1	17.9
Norway	Share of quantity	9.2	9.5	9.8
Netherlands	Share of quantity	7.8	7.8	8.6
Iceland	Share of quantity	3.9	3.8	4.3
Germany	Share of quantity	2.6	2.9	2.9
Poland	Share of quantity	3.3	2.5	2.6
France	Share of quantity	2.4	2.1	2.5
All other exporters	Share of quantity	19.4	16.6	16.1
Nonsubject exporters	Share of quantity	68.9	70.4	64.6
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics and official global imports statistics from Russia (constructed exports) under HS subheadings 7202.21 and 7202.29 as reported by various national statistical authorities in the Global Trade Atlas Suite database, accessed April 15, 2024.

Note: United States is shown at the top followed by the countries under investigation, all remaining top exporting countries in descending order by 2023 data.

APPENDIX A

FEDERAL REGISTER NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, Federal Register notices issued by the Commission and Commerce during the current proceeding.

Citation	Title	Link
89 FR 23042, April 3, 2024	*Ferrosilicon From Brazil, Kazakhstan, Malaysia, and Russia; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.govinfo.gov/content/pkg/FR-2024-04-03/pdf/2024-07067.pdf
89 FR 31133, April 24, 2024	*Ferrosilicon From Brazil, Kazakhstan, Malaysia, and the Russian Federation: Initiation of Countervailing Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2024-04-24/pdf/2024-08675.pdf
89 FR 31137, April 24, 2024	*Ferrosilicon From Brazil, Kazakhstan, Malaysia, and the Russian Federation: Initiation of Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2024-04-24/pdf/2024-08674.pdf

APPENDIX B

LIST OF STAFF CONFERENCE WITNESSES

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

Those listed below appeared in the United States International Trade Commission's Preliminary Conference:

Subject: Ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia

Inv. Nos.: 701-TA-712-715 and 731-TA-1679-1682 (Preliminary)

Date and Time: April 18, 2024 - 9:30 a.m.

Sessions were held in connection with these preliminary phase investigations in the Main Hearing Room (Room 101), 500 E Street, SW., Washington, DC.

OPENING REMARKS:

In Support of Imposition (**Adam H. Gordon**, The Bristol Group PLLC)
In Opposition to Imposition (**Warren Payne**, Mayer Brown LLP)

In Support of the Imposition of the Antidumping and Countervailing Duty Orders:

The Bristol Group PLLC
Washington, DC
on behalf of

Ferroglobe USA, Inc.
CC Metals and Alloys, LLC ("CCMA")

John Hammer, North American Commercial Director for Silicon Metal, Ferrosilicon, and Manganese Alloys, Ferroglobe USA, Inc.

Delia Elazazzy, Manager Marketing Services, Ferroglobe USA, Inc.

Taylor Cook, Account Manager - North America, Ferroglobe USA, Inc.

Menachem Sossonko, Vice President and Treasurer, CC Metals and Alloys, LLC

Chris Cobb, Plant Manager, CC Metals and Alloys, LLC

Adam H. Gordon)
Jennifer M. Smith-Veluz) – OF COUNSEL
Benjamin J. Bay)

In Opposition to the Imposition of the
Antidumping and Countervailing Duty Orders:

Mayer Brown LLP
Washington, DC
on behalf of

YDD Corporation LLP

Warren Payne)
) – OF COUNSEL
Shelby Colson)

REBUTTAL/CLOSING REMARKS:

In Support of Imposition (**Adam H. Gordon**, The Bristol Group PLLC)
In Opposition to Imposition (**Warren Payne,** Mayer Brown LLP)

APPENDIX C

SUMMARY DATA

Table C-1
Ferrosilicon: Summary data concerning the U.S. market, by item and period
Quantity=short tons contained silicon; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per STCS; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. consumption quantity:						
Amount	***	***	***	▲***	▲***	▼***
Producers' share (fn1)	***	***	***	▲***	▼***	▲***
Importers' share (fn1):						
Brazil	***	***	***	▲***	▲***	▲***
Kazakhstan	***	***	***	▼***	▼***	▲***
Malaysia	***	***	***	▲***	▼***	▲***
Russia	***	***	***	▼***	▼***	▼***
Subject sources	***	***	***	▼***	▼***	▲***
Nonsubject sources	***	***	***	▲***	▲***	▼***
All import sources	***	***	***	▼***	▲***	▼***
U.S. consumption value:						
Amount	***	***	***	▲***	▲***	▼***
Producers' share (fn1)	***	***	***	▲***	▲***	▲***
Importers' share (fn1):						
Brazil	***	***	***	▲***	▲***	▲***
Kazakhstan	***	***	***	▼***	▼***	▲***
Malaysia	***	***	***	▼***	▼***	▲***
Russia	***	***	***	▼***	▼***	▼***
Subject sources	***	***	***	▼***	▼***	▼***
Nonsubject sources	***	***	***	▲***	▲***	▲***
All import sources	***	***	***	▼***	▼***	▼***
U.S. imports from:						
Brazil:						
Quantity	18,049	24,886	27,729	▲53.6	▲37.9	▲11.4
Value	34,838	82,201	64,349	▲84.7	▲136.0	▼(21.7)
Unit value	$1,930	$3,303	$2,321	▲20.2	▲71.1	▼(29.7)
Ending inventory quantity	***	***	***	▼***	▲***	▼***
Kazakhstan:						
Quantity	11,046	5,020	12,304	▲11.4	▼(54.6)	▲145.1
Value	27,159	31,426	34,164	▲25.8	▲15.7	▲8.7
Unit value	$2,459	$6,260	$2,777	▲12.9	▲154.6	▼(55.6)
Ending inventory quantity	***	***	***	▲***	▲***	▲***
Malaysia:						
Quantity	13,797	16,496	19,113	▲38.5	▲19.6	▲15.9
Value	40,653	77,783	45,530	▲12.0	▲91.3	▼(41.5)
Unit value	$2,946	$4,715	$2,382	▼(19.2)	▲60.0	▼(49.5)
Ending inventory quantity	***	***	***	▲***	▲***	▼***
Russia:						
Quantity	55,643	74,361	59,896	▲7.6	▲33.6	▼(19.5)
Value	199,839	393,806	176,601	▼(11.6)	▲97.1	▼(55.2)
Unit value	$3,591	$5,296	$2,948	▼(17.9)	▲47.5	▼(44.3)
Ending inventory quantity	***	***	***	▼***	▼***	***

Table continued.

Table C-1 Continued
Ferrosilicon: Summary data concerning the U.S. market, by item and period

Quantity=short tons contained silicon; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per STCS; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. imports from: Continued						
Subject sources:						
Quantity	98,536	120,762	119,042	▲20.8	▲22.6	▼(1.4)
Value	302,490	585,217	320,643	▲6.0	▲93.5	▼(45.2)
Unit value	$3,070	$4,846	$2,694	▼(12.3)	▲57.9	▼(44.4)
Ending inventory quantity	***	***	***	▲***	▲***	▲***
Nonsubject sources:						
Quantity	39,707	72,218	49,928	▲25.7	▲81.9	▼(30.9)
Value	113,837	340,126	197,706	▲73.7	▲198.8	▼(41.9)
Unit value	$2,867	$4,710	$3,960	▲38.1	▲64.3	▼(15.9)
Ending inventory quantity	***	***	***	▲***	▲***	▲***
All import sources:						
Quantity	138,243	192,981	168,971	▲22.2	▲39.6	▼(12.4)
Value	416,327	925,343	518,349	▲24.5	▲122.3	▼(44.0)
Unit value	$3,012	$4,795	$3,068	▲1.9	▲59.2	▼(36.0)
Ending inventory quantity	11,203	16,260	18,980	▲69.4	▲45.1	▲16.7
U.S. producers':						
Practical capacity quantity	***	***	***	▲***	▲***	▼***
Production quantity	***	***	***	▲***	▲***	▲***
Capacity utilization (fn1)	***	***	***	▲***	▲***	▲***
U.S. shipments:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▲***	▼***
Unit value	***	***	***	▲***	▲***	▼***
Export shipments:						
Quantity	***	***	***	▲***	▼***	▲***
Value	***	***	***	▲***	▼***	▲***
Unit value	***	***	***	▼***	▼***	▲***
Ending inventory quantity	***	***	***	▲***	▲***	▲***
Inventories/total shipments (fn1)	***	***	***	▲***	▲***	▼***
Production workers	***	***	***	▲***	▲***	▲***
Hours worked (1,000s)	***	***	***	▲***	▲***	▲***
Wages paid ($1,000)	***	***	***	▲***	▲***	▲***
Hourly wages (dollars per hour)	***	***	***	▲***	▲***	▼***
Productivity (STCS per 1,000 hours)	***	***	***	▼***	▼***	▼***
Unit labor costs	***	***	***	▲***	▲***	▲***

Table continued.

Table C-1 Continued
Ferrosilicon: Summary data concerning the U.S. market, by item and period
Quantity=short tons contained silicon; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per STCS; Period changes=percent--exceptions noted

Item	Reported data			Period changes		
	Calendar year			Comparison years		
	2021	2022	2023	2021-23	2021-22	2022-23
U.S. producers': Continued						
Net sales:						
Quantity	***	***	***	▲***	▲***	▲***
Value	***	***	***	▲***	▲***	▼***
Unit value	***	***	***	▲***	▲***	▼***
Cost of goods sold (COGS)	***	***	***	▲***	▲***	▲***
Gross profit or (loss) (fn2)	***	***	***	▼***	▲***	▼***
SG&A expenses	***	***	***	▲***	▲***	▼***
Operating income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
Net income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
Unit COGS	***	***	***	▲***	▲***	▲***
Unit SG&A expenses	***	***	***	▲***	▲***	▼***
Unit operating income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
Unit net income or (loss) (fn2)	***	***	***	▼***	▲***	▼***
COGS/sales (fn1)	***	***	***	▲***	▼***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	▼***	▲***	▼***
Net income or (loss)/sales (fn1)	***	***	***	▼***	▲***	▼***
Capital expenditures	***	***	***	▲***	▲***	▲***
Research and development expenses	***	***	***	***	***	***
Total assets	***	***	***	▲***	▲***	▲***

Source: Data submitted in response to questionnaires of the Commission and from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values. 508-compliant tables containing these data are contained in parts III, IV, VI, and VII of this report.

Note.--Shares and ratios shown as "0.0" percent represent non-zero values less than "0.05" percent (if positive) and greater than "(0.05)" percent (if negative). Zeroes, null values, and undefined calculations are suppressed and shown as "---". Period changes preceded by a "▲" represent an increase, while period changes preceded by a "▼" represent a decrease.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Percent changes only calculated when both comparison values represent profits; The directional change in profitability provided when one or both comparison values represent a loss.

APPENDIX D

HISTORIC U.S IMPORTS, BY SOURCE AND PERIOD

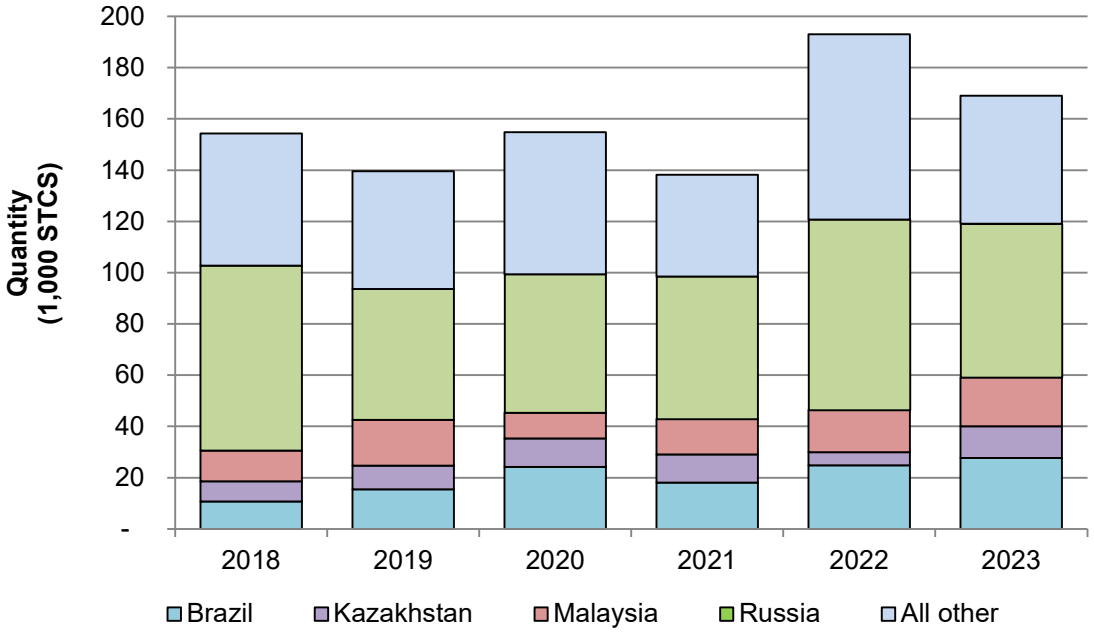
Table D-1
Ferrosilicon: Historic U.S. imports, by source and period

Quantity in short tons contained silicon

Source (Major Import Sources)	2018	2019	2020	2021	2022	2023
Brazil	10,773	15,515	24,253	18,049	24,886	27,729
Kazakhstan	7,754	9,139	11,106	11,046	5,020	12,304
Malaysia	12,050	17,925	9,995	13,797	16,496	19,113
Russia	72,213	51,062	54,065	55,643	74,361	59,896
Subject	102,790	93,641	99,419	98,536	120,762	119,042
All other	51,494	45,962	55,386	39,707	72,218	49,928
All imports	154,284	139,604	154,805	138,243	192,981	168,971

Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series.

Figure D-1
Ferrosilicon: Historic U.S. imports, by source and period



Source: Compiled from official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

APPENDIX E

QUARTERLY U.S. IMPORTS BY SOURCE

Tables E-1 presents U.S. imports based on official U.S. import statistics (all primary HTS statistical reporting numbers), including quarterly data since January 2021. Table E-2 presents U.S. imports based on official import statistics--under HTS statistical reporting number 7202.21.5000 (56 to 80 percent contained silicon and less than 3 percent calcium) since January 2021.

Table E-1
Ferrosilicon: U.S. imports under all primary HTS statistical reporting numbers, by source and quarter

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Brazil quantity	Brazil value	Brazil unit value	Kazakhstan quantity	Kazakhstan value	Kazakhstan unit value
2021 Q1	4,385	6,272	1,430	6,308	12,550	1,989
2021 Q2	3,461	5,566	1,608	2,112	5,313	2,516
2021 Q3	4,177	8,579	2,054	1,644	5,382	3,274
2021 Q4	6,027	14,421	2,393	982	3,915	3,985
2022 Q1	5,488	18,828	3,431	1,113	7,258	6,520
2022 Q2	5,038	18,279	3,628	1,460	9,680	6,631
2022 Q3	7,199	26,161	3,634	1,230	7,156	5,818
2022 Q4	7,161	18,934	2,644	1,217	7,332	6,024
2023 Q1	8,903	23,519	2,642	3,815	10,911	2,860
2023 Q2	6,077	14,564	2,397	4,646	12,708	2,735
2023 Q3	6,201	13,241	2,135	1,302	3,832	2,942
2023 Q4	6,548	13,025	1,989	2,540	6,712	2,642

Table continued

Table E-1--continued
Ferrosilicon: U.S. imports under all primary HTS statistical reporting numbers, by source and quarter

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Malaysia quantity	Malaysia value	Malaysia unit value	Russia quantity	Russia value	Russia unit value
2021 Q1	2,896	4,206	1,453	19,709	38,584	1,958
2021 Q2	3,104	5,515	1,777	14,452	34,606	2,395
2021 Q3	3,997	8,680	2,172	351	942	2,685
2021 Q4	3,801	22,252	5,855	21,132	125,708	5,949
2022 Q1	2,271	6,453	2,841	19,695	122,822	6,236
2022 Q2	4,210	23,362	5,550	17,707	103,005	5,817
2022 Q3	9,683	46,863	4,840	19,542	115,770	5,924
2022 Q4	332	1,105	3,327	17,416	52,209	2,998
2023 Q1	4,627	13,106	2,833	16,074	54,023	3,361
2023 Q2	4,753	12,064	2,538	27,559	90,159	3,272
2023 Q3	3,089	6,742	2,183	145	493	3,394
2023 Q4	6,645	13,619	2,050	16,117	31,926	1,981

Table continued

Table E-1--continued
Ferrosilicon: U.S. imports under all primary HTS statistical reporting numbers, by source and quarter

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Subject quantity	Subject value	Subject unit value	Canada quantity	Canada value	Canada unit value
2021 Q1	33,297	61,611	1,850	4,597	14,015	3,049
2021 Q2	23,129	51,000	2,205	4,765	14,890	3,125
2021 Q3	10,168	23,583	2,319	4,221	13,276	3,145
2021 Q4	31,942	166,296	5,206	5,121	16,280	3,179
2022 Q1	28,567	155,361	5,438	5,241	27,221	5,194
2022 Q2	28,415	154,325	5,431	5,938	34,887	5,875
2022 Q3	37,654	195,950	5,204	6,029	33,779	5,602
2022 Q4	26,126	79,580	3,046	5,197	29,801	5,734
2023 Q1	33,419	101,558	3,039	5,902	32,830	5,563
2023 Q2	43,035	129,495	3,009	6,561	32,515	4,956
2023 Q3	10,738	24,308	2,264	4,965	25,909	5,219
2023 Q4	31,851	65,282	2,050	4,947	23,770	4,805

Table continued

Table E-1--continued
Ferrosilicon: U.S. imports under all primary HTS statistical reporting numbers, by source and quarter

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Iceland quantity	Iceland value	Iceland unit value	All other sources quantity	All other sources value	All other sources unit value
2021 Q1	1,294	2,096	1,620	3,002	6,663	2,219
2021 Q2	2,099	4,725	2,251	3,482	9,376	2,693
2021 Q3	1,340	4,111	3,067	4,365	11,386	2,608
2021 Q4	830	4,081	4,918	4,591	12,939	2,819
2022 Q1	2,098	9,779	4,661	5,190	19,800	3,815
2022 Q2	909	5,209	5,731	18,159	72,300	3,982
2022 Q3	2,053	11,484	5,594	12,822	55,511	4,329
2022 Q4	2,315	10,830	4,679	6,267	29,525	4,711
2023 Q1	2,643	8,566	3,241	3,280	11,627	3,545
2023 Q2	1,397	4,225	3,024	3,794	12,347	3,255
2023 Q3	4,344	11,170	2,571	3,700	12,229	3,305
2023 Q4	2,823	6,963	2,466	5,572	15,555	2,792

Table continued

Table E-1--continued
Ferrosilicon: **U.S. imports under all primary HTS statistical reporting numbers, by source and quarter**

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Nonsubject sources quantity	Nonsubject sources value	Nonsubject sources unit value	All import sources quantity	All import sources value	All import sources unit value
2021 Q1	8,893	22,773	2,561	42,190	84,384	2,000
2021 Q2	10,346	28,991	2,802	33,474	79,990	2,390
2021 Q3	9,927	28,773	2,899	20,095	52,356	2,605
2021 Q4	10,541	33,301	3,159	42,484	199,597	4,698
2022 Q1	12,529	56,801	4,534	41,097	212,162	5,163
2022 Q2	25,006	112,396	4,495	53,421	266,721	4,993
2022 Q3	20,904	100,774	4,821	58,559	296,724	5,067
2022 Q4	13,779	70,155	5,091	39,905	149,735	3,752
2023 Q1	11,825	53,023	4,484	45,243	154,581	3,417
2023 Q2	11,752	49,087	4,177	54,787	178,582	3,260
2023 Q3	13,009	49,307	3,790	23,747	73,615	3,100
2023 Q4	13,343	46,288	3,469	45,194	111,570	2,469

Source: Official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed on April 18, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values.

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “---“.

Table E-2
Ferrosilicon: U.S. imports under HTS statistical reporting number 7202.21.5000 (56 to 80 percent contained silicon and less than 3 percent calcium), by source and quarter

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Brazil quantity	Brazil value	Brazil unit value	Kazakhstan quantity	Kazakhstan value	Kazakhstan unit value
2021 Q1	4,178	5,741	1,374	6,308	12,550	1,989
2021 Q2	3,390	5,327	1,571	2,112	5,313	2,516
2021 Q3	4,097	8,308	2,028	1,644	5,382	3,274
2021 Q4	5,809	13,530	2,329	982	3,915	3,985
2022 Q1	4,888	15,400	3,150	1,113	7,258	6,520
2022 Q2	4,161	14,752	3,545	1,460	9,680	6,631
2022 Q3	6,680	23,444	3,510	1,230	7,156	5,818
2022 Q4	6,554	15,752	2,404	1,217	7,332	6,024
2023 Q1	8,282	20,908	2,525	2,410	8,130	3,373
2023 Q2	5,857	13,756	2,349	4,646	12,708	2,735
2023 Q3	5,670	11,998	2,116	1,302	3,832	2,942
2023 Q4	6,124	11,453	1,870	1,879	5,683	3,024

Table continued

Table E-2--continued
Ferrosilicon: U.S. imports under HTS statistical reporting number 7202.21.5000 (56 to 80 percent contained silicon and less than 3 percent calcium), by source and quarter

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Malaysia quantity	Malaysia value	Malaysia unit value	Russia quantity	Russia value	Russia unit value
2021 Q1	2,896	4,206	1,453	19,682	38,488	1,955
2021 Q2	3,104	5,515	1,777	14,419	34,468	2,390
2021 Q3	3,997	8,680	2,172	320	805	2,517
2021 Q4	3,801	22,252	5,855	21,053	125,327	5,953
2022 Q1	2,271	6,453	2,841	19,646	122,595	6,240
2022 Q2	4,210	23,362	5,550	17,707	103,005	5,817
2022 Q3	9,683	46,863	4,840	19,542	115,770	5,924
2022 Q4	332	1,105	3,327	17,416	52,209	2,998
2023 Q1	4,627	13,106	2,833	16,074	54,023	3,361
2023 Q2	4,753	12,064	2,538	27,559	90,159	3,272
2023 Q3	3,089	6,742	2,183	145	493	3,394
2023 Q4	6,645	13,619	2,050	16,117	31,926	1,981

Table continued

Table E-2--continued
Ferrosilicon: U.S. imports under HTS statistical reporting number 7202.21.5000 (56 to 80 percent contained silicon and less than 3 percent calcium), by source and quarter

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Subject quantity	Subject value	Subject unit value	Canada quantity	Canada value	Canada unit value
2021 Q1	33,064	60,985	1,844	2,487	6,645	2,672
2021 Q2	23,025	50,623	2,199	2,479	6,635	2,677
2021 Q3	10,058	23,174	2,304	2,299	6,385	2,777
2021 Q4	31,645	165,024	5,215	2,754	7,547	2,740
2022 Q1	27,919	151,706	5,434	2,648	12,048	4,551
2022 Q2	27,538	150,799	5,476	2,569	13,098	5,098
2022 Q3	37,135	193,233	5,204	2,443	12,955	5,303
2022 Q4	25,519	76,398	2,994	1,957	9,826	5,021
2023 Q1	31,393	96,166	3,063	3,114	14,280	4,586
2023 Q2	42,815	128,687	3,006	3,591	15,224	4,240
2023 Q3	10,206	23,065	2,260	2,595	11,555	4,452
2023 Q4	30,765	62,681	2,037	2,864	11,139	3,889

Table continued

Table E-2--continued
Ferrosilicon: U.S. imports under HTS statistical reporting number 7202.21.5000 (56 to 80 percent contained silicon and less than 3 percent calcium), by source and quarter

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Iceland quantity	Iceland value	Iceland unit value	All other sources quantity	All other sources value	All other sources unit value
2021 Q1	1,294	2,096	1,620	2,722	5,701	2,094
2021 Q2	2,099	4,725	2,251	3,006	7,379	2,454
2021 Q3	1,340	4,111	3,067	4,037	9,925	2,459
2021 Q4	830	4,081	4,918	4,298	11,591	2,697
2022 Q1	2,098	9,779	4,661	4,433	15,690	3,539
2022 Q2	909	5,209	5,731	15,720	58,543	3,724
2022 Q3	2,053	11,484	5,594	8,691	34,704	3,993
2022 Q4	2,315	10,830	4,679	5,036	23,003	4,567
2023 Q1	2,643	8,566	3,241	2,720	9,125	3,355
2023 Q2	1,397	4,225	3,024	3,270	9,838	3,009
2023 Q3	4,344	11,170	2,571	2,620	7,642	2,917
2023 Q4	2,823	6,963	2,466	4,688	11,751	2,507

Table continued

Table E-2--continued
Ferrosilicon: U.S. imports under HTS statistical reporting number 7202.21.5000 (56 to 80 percent contained silicon and less than 3 percent calcium), by source and quarter

Quantity in short tons contained silicon; Value in 1,000 dollars; Unit value in dollars per STCS

Period	Nonsubject sources quantity	Nonsubject sources value	Nonsubject sources unit value	All import sources quantity	All import sources value	All import sources unit value
2021 Q1	6,503	14,442	2,221	39,567	75,427	1,906
2021 Q2	7,584	18,739	2,471	30,609	69,362	2,266
2021 Q3	7,676	20,421	2,660	17,733	43,595	2,458
2021 Q4	7,882	23,220	2,946	39,528	188,243	4,762
2022 Q1	9,179	37,518	4,087	37,098	189,224	5,101
2022 Q2	19,198	76,849	4,003	46,736	227,648	4,871
2022 Q3	13,187	59,143	4,485	50,322	252,376	5,015
2022 Q4	9,308	43,658	4,690	34,827	120,056	3,447
2023 Q1	8,477	31,971	3,771	39,870	128,138	3,214
2023 Q2	8,257	29,287	3,547	51,072	157,974	3,093
2023 Q3	9,560	30,367	3,177	19,765	53,432	2,703
2023 Q4	10,375	29,854	2,877	41,140	92,535	2,249

Source: Official U.S. import statistics of the U.S. Department of Commerce Census Bureau using HTS statistical reporting number 7202.21.5000, accessed on April 18, 2024. Imports are based on the imports for consumption data series. Value data reflect landed duty-paid values..

Note: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Zeroes, null values, and undefined calculations are suppressed and shown as “---“.