Ferrosilicon from Russia

Investigation Nos. 701-TA-715 and 731-TA-1682 (Final)

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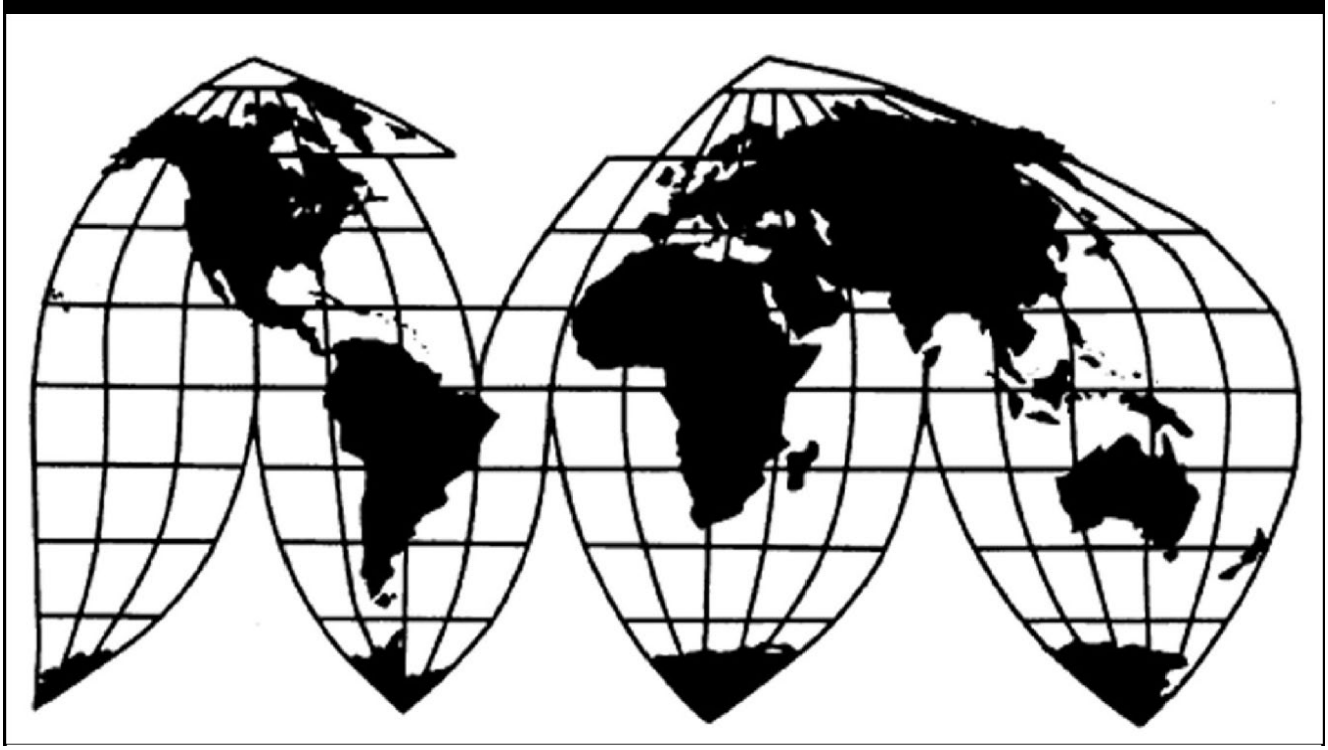

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-715 and 731-TA-1682 (Final)

Ferrosilicon from 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 an industry in the United States is materially injured by reason of imports of ferrosilicon from Russia, provided for in subheadings 7202.21 and 7202.29 of the Harmonized Tariff Schedule of the United States, that have been found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV") and to be subsidized by the government of Russia.[2] [3]

BACKGROUND

The Commission instituted these investigations effective March 28, 2024, following receipt of petitions filed with the Commission and Commerce by CC Metals and Alloy, LLC, Calvert City, Kentucky, and Ferroglobe USA, Inc., Beverly, Ohio.[4] The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of ferrosilicon from Russia were subsidized within the meaning of section 703(b) of the Act (19 U.S.C. 1671b(b)) and sold at LTFV within the meaning of 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of

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[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 76450 and 76454 (September 18, 2024).

[3] The Commission also finds that imports subject to Commerce's affirmative critical circumstances determination are not likely to undermine seriously the remedial effect of the countervailing and antidumping duty orders on ferrosilicon from Russia.

[4] The petition alleged that an industry in the United States is materially injured and threatened with material injury by reason of subsidized and LTFV imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia. The investigations regarding ferrosilicon from Brazil, Kazakhstan, and Malaysia are ongoing.

the Commission's investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on July 9, 2024 (89 FR 56407).[5] The Commission conducted its hearing on September 12, 2024. All persons who requested the opportunity were permitted to participate.

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[5] The Commission subsequently revised its schedule pursuant to Commerce's tolling of deadlines (89 FR 65671, August 12, 2024).

Views of the Commission

Based on the record in the final phase of these investigations, we determine that an industry in the United States is materially injured by reason of imports of ferrosilicon from Russia found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value and subsidized by the government of Russia. We also find that critical circumstances do not exist with respect to imports of ferrosilicon from Russia that are subject to Commerce's final affirmative critical circumstances determinations.

I. Background

A. Schedule of the Investigations

The antidumping and countervailing duty petitions regarding ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia were filed on the same day, March 28, 2024.[1] However, the investigation schedules became staggered when Commerce postponed its preliminary determinations for the antidumping and countervailing duty investigations with respect to Brazil, Kazakhstan, and Malaysia, but not its preliminary determinations for the antidumping and countervailing duty investigations with respect to Russia.[2] This necessitates earlier Commission determinations in the final phase investigations of ferrosilicon from Russia (the "leading investigations") than in the final phase investigations of ferrosilicon from Brazil,

[1] *Ferrosilicon from Russia*, Inv. Nos. 701-TA-715 and 731-TA-1682 (Final), USITC Pub. 5556 (Nov. 2024) ("PR") at I-1; Confidential Report, INV-WW-123 (Oct. 2, 2024) ("CR") at I-1.

[2] *Ferrosilicon from Brazil, Kazakhstan, and Malaysia: Postponement of Preliminary Determinations in the Countervailing Duty Investigations*, 89 Fed. Reg. 46860 (May 30, 2024); *Ferrosilicon from Brazil, Kazakhstan, and Malaysia: Postponement of Preliminary Determinations in the Less-Than-Fair-Value Investigations*, 89 Fed. Reg. 66678 (Aug. 16, 2024); *Ferrosilicon from the Russian Federation: Preliminary Affirmative Countervailing Duty Determination*, 89 Fed. Reg. 53949 (June 28, 2024); *Ferrosilicon from the Russian Federation: Preliminary Affirmative Determination of Sales at Less Than Fair Value*, 89 Fed. Reg. 53953 (June 28, 2024).

Kazakhstan, and Malaysia (the "trailing investigations"). Specifically, under the statute, the Commission must make its final determinations in the leading investigations no later than November 4, 2024,[3] and the Commission must make its final determinations in the trailing investigations before the later of 120 days after Commerce's affirmative preliminary determinations or 45 days after Commerce's final determinations (currently scheduled for January 14, 2025).[4] Pursuant to the relevant statutory provision, the record for the trailing investigations will be the same as in the leading investigations, except that the Commission shall include in the record Commerce's final dumping and subsidy determinations, as well as Commerce's final critical circumstances determinations regarding imports of ferrosilicon from Brazil and Malaysia, and the parties' final comments concerning those determinations.[5]

B. Parties to the Investigations

The petitioners in the subject investigations are Ferroglobe USA, Inc., ("Ferroglobe") and CC Metals and Alloys, LLC, ("CC Metals"), U.S. producers of ferrosilicon.[6] Petitioners submitted

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[3] Commerce made its final affirmative determinations in the leading Russia investigations on September 18, 2024. F*errosilicon from the Russian Federation: Final Affirmative Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances*, 89 Fed. Reg. 76450 (Sept. 18, 2024); *Ferrosilicon from the Russian Federation: Final Affirmative Countervailing Duty Determination and Final Affirmative Determination of Critical Circumstances*, 89 Fed. Reg. 76454 (Sept. 18, 2024).

[4] *See Ferrosilicon from Brazil: Preliminary Affirmative Countervailing Duty Determination, Preliminary Affirmative Critical Circumstances Determination in Part, and Alignment of Final Determination With Final Antidumping Duty Determination*, 89 Fed. Reg. 73371 (Sept. 10, 2024); *Ferrosilicon from the Republic of Kazakhstan: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination*, 89 Fed. Reg. 73369 (Sept. 10, 2024); *Ferrosilicon from Malaysia: Preliminary Affirmative Countervailing Duty Determination, Preliminary Affirmative Critical Circumstances Determination, in Part, and Alignment of Final Determination With Final Antidumping Duty Determination*, 89 Fed. Reg. 73364 (Sept. 10, 2024).

[5] 19 U.S.C. § 1677(7)(G)(iii).

[6] CR/PR at I-1.

joint prehearing and posthearing briefs and final comments, and representatives for both submitted testimony and appeared at the hearing accompanied by counsel.[7]

There are several respondent parties, representing ferrosilicon producers in Brazil, Kazakhstan, and Malaysia, that are actively and jointly participating in these investigations (collectively, "Joint Respondents"). Joint Respondents submitted prehearing and posthearing briefs and final comments, and representatives for some of the Joint Respondents submitted testimony and appeared at the hearing accompanied by counsel.[8] Ferronix, Inc. ("Ferronix"), a U.S. importer of subject merchandise, also actively participated in these investigations by submitting prehearing and posthearing briefs and was represented by counsel at the Commission's hearing.[9]

C. Data Coverage

U.S. industry data are based on the questionnaire responses from two domestic producers, Ferroglobe and CC Metals, that accounted for all domestic production of ferrosilicon in 2023.[10] U.S. import data are based on official Commerce statistics and the questionnaire responses of 15 U.S. importers that, in 2023, accounted for *** percent of subject imports from

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[7] Petitioners' Prehearing Brief, EDIS Doc. 831503 (Sept. 5, 2024) ("Petitioners' Prehearing Br."); Petitioners' Posthearing Brief, EDIS Doc. 832724 (Sept. 19, 2024) ("Petitioners' Posthearing Br."); Petitioners' Final Comments, EDIS Doc. 834410 (Oct. 9, 2024).

[8] Joint Respondents' Prehearing Brief, EDIS Doc. 831529 (Sept. 5, 2024) ("Joint Respondents' Prehearing Br."); Joint Respondents' Posthearing Brief, EDIS Doc. 832715 (Sept. 19, 2024) ("Joint Respondents' Posthearing Br."); Joint Respondents' Final Comments, EDIS Doc. 834457 (Oct. 9, 2024); CR/PR at App. B. Joint Respondents include OM Materials (S) Pte Ltd.; OM Materials Snd Bhd; TNC Kazchrome JSC; YDD Corporation LLP; Associação Brasileira dos Produtores de Ferroligas e de Silício Metálico (ABRAFE); Bozel Brasil S.A.; Cia Ferro Ligas da Bahia – FERBASA; Libra Ligas do Brasil S.A.; Minasligas S.A.; Nova Era Silicon S.A.; and Rima Industrial S.A. Joint Respondents' Prehearing Br. at 1.

[9] Ferronix's Prehearing Br., EDIS Doc. 831534 (Sept. 5, 2024); Ferronix's Posthearing Br., EDIS Doc. 832717 (Sept. 19, 2024).

[10] CR/PR at III-1.

Brazil, *** percent of subject imports from Kazakhstan, *** percent of subject imports from Malaysia, virtually all subject imports from Russia, and *** percent of nonsubject imports.[11] Foreign industry data are based on the questionnaire responses of seven producers in Brazil that accounted for *** percent of U.S. imports of ferrosilicon from Brazil, two producers in Kazakhstan that accounted for *** percent of U.S. imports of ferrosilicon from Kazakhstan, and two producers in Malaysia that accounted for *** percent of U.S. imports of ferrosilicon from Malaysia, in 2023.[12]

As further discussed in section VI.C., apparent U.S. consumption is based on U.S. producers' U.S. shipments of domestically produced ferrosilicon, U.S. shipments of subject imports from Russia as reported in U.S. importers' questionnaire responses, and official Commerce statistics for subject imports from Brazil, Kazakhstan, Malaysia, and nonsubject imports.[13]

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission

[11] CR/PR at IV-1.

[12] CR/PR at VII-3. The Commission did not receive any foreign producer questionnaire responses from producers of ferrosilicon in Russia. *Id*.

[13] CR/PR at I-4 n.8, IV-1 n.4, IV-35 n.17. We have based apparent U.S. consumption on U.S. shipments where questionnaire data coverage permit, as is the case for the domestic industry and for subject imports from Russia, and on U.S imports based on official Commerce statistics where questionnaire data are less complete, as is the cases for other import sources. *Id*. at IV-1. We note that the HTS statistical reporting numbers for ferrosilicon appear to be coterminous with the scope of these investigations. *Id*. at I-11.

first defines the "domestic like product" and the "industry."[14] Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Tariff Act"), defines 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."[15] 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."[16]

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.[17] 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."[18] The Commission then defines the domestic like product in light of the imported articles Commerce has identified.[19] The decision regarding the

[14] 19 U.S.C. § 1677(4)(A).

[15] 19 U.S.C. § 1677(4)(A).

[16] 19 U.S.C. § 1677(10).

[17] 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).

[18] *Cleo Inc. v. United States*, 501 F.3d 1291, 1298 (Fed. Cir. 2007); *see also Hitachi Metals, Ltd. v. United States*, Case No. 19-1289, slip op. at 8-9 (Fed. Circ. Feb. 7, 2020) (the statute requires the Commission to start with Commerce's subject merchandise in reaching its own like product determination).

[19] *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), (Continued...)

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.[20] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[21] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[22]

B. Product Description

Commerce defined the scope of the imported merchandise under investigation as follows:

> {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

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(…Continued)
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).

[20] *See, e.g., Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department 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).

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

[22] *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.").

> 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.[23]

The scope is unchanged from the preliminary phase of these investigations.[24]

Ferrosilicon is composed of iron and silicon, along with small proportions of minor elements, such as aluminum, calcium, carbon, manganese, phosphorus, and sulfur.[25] It is primarily used in the production of steel and cast iron.[26] 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.[27] It is also used as the source of silicon for alloying purposes in the production of certain cast iron and steel alloys, such as silicon electrical steel,[28] and as a reducing agent, particularly in the production of stainless steel.[29]

Ferrosilicon is differentiated by grade and size for commercial purposes.[30] The grades are defined by the percentages, by weight, of silicon and minor elements contained in the

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[23] *Ferrosilicon from the Russian Federation: Final Affirmative Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances*, 89 Fed. Reg. 76450 (Sept. 18, 2024; *Ferrosilicon from the Russian Federation: Final Affirmative Countervailing Duty Determination and Final Affirmative Determination of Critical Circumstances*, 89 Fed. Reg. 76454 (Sept. 18, 2024).

[24] *Ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia*, Inv. Nos. 701-TA-712-715 and 731-TA-1679-1682, USITC Pub. 5506 (May 2024) at 7.

[25] CR/PR at I-13.

[26] CR/PR at I-15.

[27] CR/PR at I-15.

[28] CR/PR at I-15-16.

[29] CR/PR at I-15.

[30] CR/PR at I-13.

product, with the principal characteristic being the percentage of silicon content.[31] Almost all ferrosilicon produced and consumed in the United States is either 75 percent silicon or 50 percent silicon.[32] Regular grades of 75 percent ferrosilicon and 50 percent ferrosilicon contain the indicated percentages of silicon and recognized maximum percentages of minor elements.[33] Compared to the regular grades of ferrosilicon, the other grades (*i.e.*, specialty/high-purity grades) of ferrosilicon contain fewer minor elements.[34] As a result, certain applications require high-purity ferrosilicon, while high-purity grades can be substituted for regular grades in other applications.[35] Ferrosilicon of all grades is primarily sold in lump form, but is also sold in granular form, fines, formed briquettes, and atomized powders.[36] Size affects both the performance and designated use of the ferrosilicon.[37] Large lump ferrosilicon is generally used in steelmaking furnaces due to its ability to penetrate the layer of slag on top of molten metal, whereas smaller lumps are used for alloying due to their rapid dissolution in molten steel.[38] The difficulty of recovering the silicon content from fines makes them less desirable than lumps.[39]

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[31] CR/PR at I-13.
[32] CR/PR at I-13.
[33] CR/PR at I-13.
[34] CR/PR at I-13-14.
[35] CR/PR at I-14.
[36] CR/PR at I-16. Briquettes consist of compressed fines. *Id*.
[37] CR/PR at I-16. Atomized ferrosilicon is used in mining to separate mineral ore and the production of welding rod. *Id*.
[38] CR/PR at I-16.
[39] CR/PR at I-16.

C. Arguments of the Parties

Petitioners argue that the Commission should define a single domestic like product, coextensive with Commerce's scope, as it did in its preliminary determinations.[40] No respondent interested party contests the definition of the domestic like product in the Commission's preliminary determinations.

D. Domestic Like Product Analysis

In the preliminary phase of these investigations, Petitioners argued that ferrosilicon should be treated as a single domestic like product, and no respondent party argued to the contrary.[41] The Commission applied its six traditional domestic like product factors and defined a single domestic like product consisting of all forms and grades of ferrosilicon, coextensive with the scope of the investigations.[42]

In the final phase of these investigations, there is no new information or argument on the record that would warrant the Commission's reconsideration of the definition of the domestic like product from its preliminary determinations.[43] Accordingly, we define a single

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[40] Petitioners' Prehearing Br. at 5-9.

[41] *Preliminary Determinations*, USITC Pub. 5506 at 8.

[42] *Preliminary Determinations*, USITC Pub. 5506 at 10. The Commission found that all domestically produced ferrosilicon within the scope shares the same basic physical characteristics and end uses, with the principal use being the introduction of silicon into steel and cast-iron production, as well as the same production facilities, production processes, and employees, at least through the initial smelting steps. *Id*. at 8-9. It also found that there were some situations in which the different grades of in-scope ferrosilicon could be used interchangeably. *Id*. at 9. Although there appeared to be some differentiation in price among the different grades of in-scope ferrosilicon, the Commission found that all forms and grades of in-scope ferrosilicon were sold primarily to end users, specifically steel producers and iron foundries, and were perceived as a distinct category of products by customers and producers. *Id*. at 9-10.

[43] CR/PR at I-19.

domestic like product consisting of all forms and grades of ferrosilicon, coextensive with the scope of the investigations.

III. 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."[44] 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.

We must determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.[45] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[46]

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[44] 19 U.S.C. § 1677(4)(A).

[45] *See Torrington Co. v. United States*, 790 F. Supp. 1161, 1168 (Ct. Int'l Trade 1992), *aff'd without opinion*, 991 F.2d 809 (Fed. Cir. 1993); *Sandvik AB v. United States*, 721 F. Supp. 1322, 1331-32 (Ct. Int'l Trade 1989), *aff'd mem*., 904 F.2d 46 (Fed. Cir. 1990); *Empire Plow Co. v. United States*, 675 F. Supp. 1348, 1352 (Ct. Int'l Trade 1987).

[46] The primary factors the Commission has examined in deciding whether appropriate circumstances exist to exclude a related party include the following:

(1) the percentage of domestic production attributable to the importing producer;

(2) the reason the U.S. producer has decided to import the product subject to investigation (whether the firm benefits from the LTFV sales or subsidies or whether the firm must import in order to enable it to continue production and compete in the U.S. market);

(3) whether inclusion or exclusion of the related party will skew the data for the rest of the industry;

(Continued...)

Petitioners argue that the Commission should define the domestic industry as all U.S. producers of ferrosilicon, as it did in its preliminary determinations.[47] No respondent interested party contests this definition of the domestic industry in the final phase of the Commission's investigations.

Although no party made any related party arguments, the record indicates that domestic producer *** during the POI.[48] A domestic producer that purchases subject imports but does not itself import subject merchandise or does not share a corporate affiliation with an importer may nonetheless be deemed a related party.[49] In particular, the Commission has concluded that a U.S. producer that purchases subject imports is a related party if it controls large volumes of subject imports, such as where the domestic producer was responsible for a predominant proportion of an importer's purchases and the importer's purchases were substantial.[50]

*** reported purchasing ferrosilicon from ***.[51] The Commission received importer or purchaser questionnaire responses from ***, which show that ***.[52] While *** provided a

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(…Continued)

(4) the ratio of import shipments to U.S. production for the imported product; and

(5) whether the primary interest of the importing producer lies in domestic production or importation. *Changzhou Trina Solar Energy Co. v. USITC*, 100 F. Supp.3d 1314, 1326-31 (Ct. Int'l. Trade 2015); see *also Torrington Co. v. United States*, 790 F. Supp. at 1168.

[47] Petitioners' Prehearing Br. at 9.

[48] CR/PR at III-14 n.11. According to ***. *Id*.

[49] SAA at 858.

[50] *See, e.g., Hardwood Plywood from China*, Inv. Nos. 701-TA-490 and 731-TA-1204 (Final), USITC Pub. 4434 (Nov. 2013) at 8 n.34; *Citric Acid and Certain Citrate Salts from Canada and China*, Inv. Nos. 701-TA-456 and 731-TA-1151-1152, USITC Pub. 4008 (June 2008) at 10 n.75; *Electrolytic Manganese Dioxide from Australia and China*, Inv. Nos. 731-TA-1124-1125 (Final), USITC Pub. 4036 (September 2008) at 6 n.26.

[51] CR/PR at III-14 n.11.

[52] CR/PR at III-14 n.11.

breakout of its ferrosilicon purchases by supplier, it was unable to provide a breakout of its ferrosilicon purchases by source country. Therefore, although *** purchases from *** were clearly subject imports, its records do not allow a calculation of the quantity of its purchases of subject imports from the *** that imported some but not all merchandise from subject sources.[53]

However, if we assume *arguendo* that all of what *** purchased from the *** was subject imports and that each of the *** imported only subject imports, it is apparent that *** did not purchase a predominant share of the U.S. importers' subject imports. *** imported a total of *** short tons contained silicon ("STCS") of ferrosilicon during the POI from all sources.[54] *** purchases of ferrosilicon from *** totaled *** STCS.[55] Therefore, even if all of *** did not control a predominant portion of ***. Likewise, *** imported a total of *** STCS of ferrosilicon during the POI from all sources.[56] *** purchases of ferrosilicon from *** totaled *** STCS of ferrosilicon.[57] Again, even if all of *** imports were from subject sources, it is clear that *** did not control a predominant portion of ***.[58]

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[53] CR/PR at III-14 n.11.

[54] ***.

[55] ***.

[56] ***.

[57] ***.

[58] *** did not submit a U.S. Importers' questionnaire response. Therefore, there is insufficient data on the record to determine whether *** controlled a predominant portion of *** subject imports. In any case, the record indicates that none of these importers were themselves responsible for significant levels of subject imports during the POI. The subject merchandise imported by *** accounted for, respectively, *** percent, *** percent, and *** percent of total subject imports from 2021 to 2023; *** accounted for, respectively, *** percent, *** percent, and *** percent of total subject imports in interim 2024. *Calculated from* CR/PR at Table IV-2 *and*: ***; ***; ***.

With respect to ***, *** purchases from ***, only occurred in *** and totaled *** STCS,[59] equivalent to *** percent of *** imports of subject merchandise and an even smaller share of all subject imports in that year.[60]

In sum, the record therefore indicates that *** did not control a large volume of subject imports during the POI.

Based on the analysis above, we find that *** is not a related party.[61]

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[59] CR/PR at III-14 n.11.

[60] *Calculated from* CR/PR at III-14 n.11, Table IV-2 and ***.

[61] Based on his reading of the statute and its legislative history, Commissioner Kearns believes the Commission has broad authority to find a domestic producer to be a related party. In his view, where a domestic producer purchases subject imports, the Commission inappropriately limits the discretion Congress gave it if it only recognizes a related party where the domestic producer controls an importer, and when it finds that such control requires the purchase of a "predominant share" of that importer's subject merchandise. There are likely situations in which control can be established by the purchase of less than a predominant share, or where predominant purchases of subject imports do not establish control because they account for a small portion of an importer's overall business, for example. Furthermore, the purchase of imported subject merchandise by a domestic producer can mask injury just as the direct importation of subject merchandise can. Commissioner Kearns believes this view is fully consistent with the SAA for the Uruguay Round Agreements Act, which specifies that the Commission should apply "a sufficiently broad definition {of importer} to encompass domestic producers who are not formally importers of record." H. Rep. 316, 103rd Cong., 2nd Sess. Vol. 1 at 857-58.

But rather than engage in a lengthy analysis, based on a less than complete factual record, of whether *** is a related party in these investigations, Commissioner Kearns believes it is better to begin by determining whether exclusion of the firm would be appropriate in the first place, assuming the party were found to be related. Given the statute's directive that the definition of the domestic industry should generally encompass all domestic producers, he believes it would take clear evidence that a firm's inclusion masked injury to warrant use of the related parties provision. In these investigations, he finds that it clearly would not. *** – a petitioner in these investigations – is one of just two domestic producers and accounted for a substantial share (*** percent) of domestic production in 2023. CR/PR at Table III-1. Further, *** total purchases of imports over the POI were just *** short tons. *Calculated from* ***. Even assuming all these purchases were subject imports, which is unlikely for the reasons outlined above, they accounted for only *** percent of the firm's domestic production of *** short tons over the POI. *Calculated from* CR/PR at Table III-5. *** primary interest thus appears to lie in domestic production, and no party has argued that the firm should be excluded from the domestic industry. Commissioner Kearns therefore finds that such volumes of purchases would not be sufficient to mask injury or otherwise support the exclusion of the firm from the domestic industry in these investigations.

In sum, consistent with our definition of the domestic like product, we define a single domestic industry consisting of all U.S. producers of ferrosilicon.

IV. 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.[62]

During March 2023 – February 2024, the 12-month period preceding the filing of the petitions, subject imports from Russia accounted for 28.2 percent of total U.S. imports of ferrosilicon.[63] We find that imports from Russia subject to the antidumping and countervailing duty investigations are not negligible.[64]

V. Cumulation

For purposes of evaluating the volume and effects for a determination 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

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[62] 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)).

[63] CR/PR at Table IV-4.

[64] We note that imports from Brazil, Kazakhstan, and Malaysia subject to antidumping and countervailing duty investigations accounted for, respectively, 17.9 percent, 6.7 percent, and 13.0 percent of total U.S. imports of ferrosilicon during the negligibility period. CR/PR at Table IV-4. We will make findings regarding negligibility in these investigations following Commerce's final determinations.

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.[65]

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.[66] Only a "reasonable overlap" of competition is required.[67]

Petitioners argue that the Commission should cumulatively assess imports from all subject countries since all requirements for cumulation are met.[68] No respondent party contests the cumulation of subject imports for purposes of analyzing present material injury.

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[65] *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).

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

[67] 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, S.A. v. United States*, 678 F. Supp. at 902; *see Goss Graphic Sys., Inc. v. United 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.").

[68] Petitioners' Prehearing Br. at 10-14.

The statutory threshold for cumulation is satisfied in these investigations because Petitioners filed the antidumping and countervailing duty petitions with respect to all four subject countries on the same day, March 28, 2024.[69]

Fungibility. The record indicates that there is a substantial degree of fungibility between and among domestically produced ferrosilicon and imports of ferrosilicon from each subject country. *** responding U.S. producers reported that subject imports from each subject country were "always" interchangeable with each other and domestically produced ferrosilicon.[70] Similarly, most responding purchasers reported that that subject imports from each subject country were "always" or "frequently" interchangeable with each other and domestically produced ferrosilicon.[71] U.S. importers' responses were more mixed, but either a plurality or majority of importers reported that the products were "frequently" interchangeable across each of the five sources.[72] Furthermore, the record shows a substantial overlap in the type of ferrosilicon supplied by the domestic producers and subject sources in 2023, with the majority of U.S. shipments from each source being standard grade ferrosilicon with 75 percent silicon content in bulk or lump form.[73]

[69] CR/PR at I-1. None of the statutory exceptions to cumulation apply. We observe that these investigations involve dumping findings regarding ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia and subsidy findings regarding ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia. Consequently, any decision to cumulate imports from all subject sources in these investigations will involve "cross-cumulating" dumped imports with subsidized imports. We have previously explained why we are continuing our longstanding practice of cross-cumulating. *See Polyethylene Terephthalate (PET) Resin from Canada, China, India, and Oman,* Inv. Nos. 701-TA-531-532 and 731-TA-1270-1273 (Final), USITC Pub. 4604 at 9-11 (April 2016).

[70] CR/PR at Table II-12.

[71] CR/PR at Table II-14.

[72] CR/PR at Table II-13.

[73] CR/PR at Tables IV-11-14.

In response to questions concerning how often differences other than price were significant in sales of ferrosilicon from different sources, all responding domestic producers reported that such differences were "never" significant with respect to comparisons of the domestic like product and subject imports from each subject country and among subject imports from each subject country.[74] Responding U.S. importers generally described such differences as "sometimes" significant between the five sources.[75] Most responding purchasers reported that differences other than price were "always" or "frequently" significant in sales of ferrosilicon from the five sources.[76] However, when asked to compare the domestic like product and subject imports from the four subject countries in the context of 19 purchasing factors, either a majority or plurality of responding purchasers reported the five sources as comparable with each other for most of the factors.[77]

Channels of Distribution. During the POI, the domestic like product and imports from all four subject countries were sold mainly to end-users, *i.e.*, steel producers.[78] Specifically, the majority of the domestic like product was sold to steel producers, with significant quantities also sold to distributors and iron foundries and a small quantity sold to other end users.[79] Similarly, the largest share of subject imports from Brazil was sold to steel producers, with significant quantities also sold to distributors, iron foundries, and other end users.[80] Most subject imports from Kazakhstan were sold to steel producers, with significant but scattered

[74] CR/PR at Table II-15.
[75] CR/PR at Table II-16.
[76] CR/PR at Table II-17.
[77] CR/PR at Table II-11.
[78] CR/PR at Table II-1.
[79] CR/PR at Table II-1.
[80] CR/PR at Table II-1.

quantities also sold to distributors and a very small quantity sold to iron foundries.[81] Most subject imports from Malaysia were also sold to steel producers, with small quantities also sold to distributors and iron foundries.[82] Subject imports from Russia were almost exclusively sold to steel producers, with very minimal quantities also sold to iron foundries.[83] Therefore, we find that there was a reasonable degree of overlap in the channels of distribution for the domestic like product and subject imports, as well as among the subject imports.

Geographic Overlap. U.S. producers reported shipping the domestic like product to all six regions of the contiguous United States.[84] Responding U.S. importers reported shipping subject imports from Brazil and Malaysia to all six regions, subject imports from Kazakhstan to four of the six regions, and subject imports from Russia to five of the six regions.[85] Therefore, we find that there was a reasonable degree of geographic overlap between the domestic like product and subject imports, as well as among the subject imports.

Simultaneous Presence in Market. Domestically produced ferrosilicon and imports from each subject country were present in the U.S. market throughout the POI.[86]

Conclusion. The record indicates that subject imports from Brazil, Kazakhstan, Malaysia, and Russia are fungible with the domestic like product and each other. It shows that imports

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

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

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

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

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

[86] CR/PR at Table IV-16. Subject ferrosilicon from Kazakhstan, Malaysia, and Russia was not imported into the United States in every month of the POI, but subject ferrosilicon from Kazakhstan and Malaysia was imported in every calendar quarter of the POI, and subject ferrosilicon from Russia was imported in 13 of the 14 calendar quarters. *Id*. Moreover, the price data collected by the Commission clearly indicate that there were commercial sales of ferrosilicon from each of the four subject sources in each of the fourteen quarters for which the Commission collected data. *Id*. at Tables V-6-13.

from each subject country and the domestic like product were sold in similar channels of distribution and geographic markets and were simultaneously present in the U.S. market during the POI. In light of the foregoing, and in the absence of any argument to the contrary, we find that there is a reasonable overlap of competition between and among subject imports from Brazil, Kazakhstan, Malaysia, and Russia and the domestic like product. Accordingly, we analyze subject imports from Brazil, Kazakhstan, Malaysia, and Russia on a cumulated basis for our analysis of whether there is material injury by reason of subject imports.

VI. Material Injury by Reason of Subject Imports

Based on the record in the final phase of this investigation, we find that an industry in the United States is materially injured by reason of imports of ferrosilicon from Russia that Commerce has found to be sold in the United States at LTFV and subsidized by the government of Russia.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[87] 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 operations.[88] The statute defines

[87] 19 U.S.C. §§ 1671d(b), 1673d(b).

[88] 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).

"material injury" as "harm which is not inconsequential, immaterial, or unimportant."[89] In assessing whether 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.[90] 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."[91]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[92] 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.[93] 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.[94]

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[89] 19 U.S.C. § 1677(7)(A).

[90] 19 U.S.C. § 1677(7)(C)(iii).

[91] 19 U.S.C. § 1677(7)(C)(iii).

[92] 19 U.S.C. §§ 1671d(b), 1673d(b).

[93] *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'g,* 944 F. Supp. 943, 951 (Ct. Int'l Trade 1996).

[94] 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.
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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 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.[95] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[96] Nor does

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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).

[95] 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.

[96] 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.
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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.[97] It is clear that the existence of injury caused by other factors does not compel a negative determination.[98]

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 imports.”[99] 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

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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.”).

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

[98] *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.”).

[99] *Mittal Steel*, 542 F.3d at 876 &78; *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*.

sources to the subject imports." [100] The Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[101]

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.[102] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[103]

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is material injury by reason of subject imports.

1. Demand Considerations

U.S. demand for ferrosilicon is driven by the demand for downstream steel and iron products, in which ferrosilicon is primarily used as an alloying agent.[104] Overall demand for ferrosilicon is likely to experience only small changes in response to changes in price because there are few viable substitutes for ferrosilicon, and it accounts for a small share of the total

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[100] *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.

[101] *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.").

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

[103] *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.").

[104] CR/PR at II-10; Petitioner's Prehearing Br. at 18; Joint Respondents' Prehearing Br. at 13.

cost of most of its end-use products.[105] The parties agree that demand for downstream steel and iron products reflect overall economic conditions.[106]

According to the Bureau of Labor Statistics, steel and iron production in the United States showed mild initial growth in 2021 followed by decreases in 2022 and the beginning of 2023.[107] After rebounding somewhat in 2023, it fluctuated downward into 2024, resulting in an overall decline of approximately 9 percent from January 2021 to June 2024.[108] A majority of responding purchasers reported that changing demand for their end-use products changed their demand for ferrosilicon, with several stating in particular that a decrease in demand for stainless steel and iron products reduced their demand for ferrosilicon.[109] A plurality of end users reported that demand for the goods they produce using ferrosilicon had either fluctuated down or not changed since January 1, 2021.[110]

The responses of reporting firms regarding demand trends in the U.S. market during the POI varied.[111] *** responding domestic producers reported that U.S. demand for ferrosilicon fluctuated up since January 1, 2021.[112] U.S. importers were split, with five reporting that demand for ferrosilicon fluctuated down, three reporting that demand fluctuated up, and four reporting that it did not change.[113] Half of the responding purchasers (eight) reported that

[105] CR/PR at II-10; Joint Respondents' Prehearing Br. at 14-15.
[106] Petitioner's Prehearing Br. at 18; Joint Respondents' Prehearing Br. at 13.
[107] CR/PR at II-11, Figure II-1.
[108] CR/PR at II-11, Figure II-1.
[109] CR/PR at II-11.
[110] CR/PR at II-11.
[111] CR/PR at Table II-5.
[112] CR/PR at Table II-5.
[113] CR/PR at Table II-5.

demand for ferrosilicon did not change.[114] U.S. importers and purchasers attributed reduced demand for ferrosilicon in the U.S. market to steel production, freight costs, and substitute products replacing ferrosilicon to some extent.[115] Petitioners also reported that the COVID-19 pandemic *** during the 2021 "mating season."[116] Petitioners add that at the time of the 2021 "mating season", market participants anticipated declining demand for 2022 but that demand *** as a result of the recovery from the COVID-19 pandemic.[117] Joint Respondents note that there was an unprecedented increase in consumption in the U.S. market in 2022.[118]

Apparent U.S. consumption of ferrosilicon fluctuated, increasing from *** STCS in 2021 to *** STCS in 2022, and then decreasing to *** STCS in 2023, a level essentially equal to 2021; it was *** percent higher in interim 2024, at *** STCS, than in interim 2023, at *** STCS.[119]

2. Supply Considerations

During the POI, the U.S. market for ferrosilicon was supplied by the domestic industry, subject imports, and nonsubject imports.[120]

The domestic industry grew from the second largest supply source to the U.S. market in 2021 and 2022 to the largest in 2023, as its share of apparent U.S. consumption increased from

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

[115] CR/PR at II-15. Most questionnaire respondents reported that there are no substitutes, while some listed silicomanganese and silicon metal as potential substitutes. *Id*.

[116] Petitioners' Posthearing Br. at A-31. The domestic industry refers to the period in the third and fourth quarters of each calendar year in which they negotiate annual contractual supply agreements for the following calendar year as the "mating season." Hearing Tr. at 16-17 (Hammer), 23 and 75 (Sossonko).

[117] Petitioners' Prehearing Br. at 18-19; Petitioners' Posthearing Br. at A-1.

[118] Joint Respondents' Prehearing Br. at 15.

[119] CR/PR at Tables IV-17, C-1.

[120] CR/PR at Tables IV-17, C-1.

*** percent in 2021 to *** percent in 2022 and *** percent in 2023.[121] However, the industry's share of apparent U.S. consumption was lower in interim 2024, at *** percent, than in interim 2023, at *** percent, which made it the second largest supply source during interim 2024.[122] Available unused capacity, ability to shift production to or from alternative products, and inventories all allow the domestic industry to respond to changes in demand.[123] *** responding U.S. producers reported the ability to produce other products on the equipment that it uses to produce ferrosilicon.[124]

Petitioners acknowledge that the domestic industry does not have the capacity to supply the entire U.S. ferrosilicon market and, therefore, that imports are necessary to satisfy total U.S. demand for ferrosilicon.[125] They assert that they could have increased shipments to the U.S. market by bringing additional furnaces or production on line, but that doing so makes "rational business sense" only if a producer can secure sufficient orders,[126] which was not possible in light of competition from low-priced subject merchandise.[127] The domestic industry's practical ferrosilicon capacity increased from *** STCS in 2021 to *** STCS in 2022, and then decreased to *** STCS in 2023; it was lower in interim 2024, at *** STCS, than in

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[121] CR/PR at Tables IV-17, C-1.

[122] CR/PR at Tables IV-17, C-1.

[123] CR/PR at II-5-6.

[124] CR/PR at Table II-3. Ferroglobe reported producing silicon metal and magnesium ferrosilicon with the same equipment that it uses to produce ferrosilicon. *Id*. at III-10. It reported that its Selma, Alabama, plant, which produced only silicon metal during the POI, could be used to produce ferrosilicon if market conditions improved. *Id*. at III-10 n.8. CC Metals only produces ferrosilicon and does not hold permits to produce any other ferroalloys, ***. *Id*. at III-10 n.9.

[125] Petitioners' Prehearing Br. at 19.

[126] Petitioners' Posthearing Br. at A-76; Hearing Tr. at 61 (Sossonko), 63-64 (Hammer). CC Metals stated that, in such a scenario, it will source ferrosilicon from elsewhere to satisfy small orders. CR/PR at II-9; Hearing Tr. at 61 (Sossonko).

[127] Petitioners' Prehearing Br. at 19.

interim 2023, at *** STCS.[128] The domestic industry's practical capacity utilization for ferrosilicon increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023; it was higher in interim 2024, at *** percent, than in interim 2023, at *** percent.[129]

CC Metals' ferrosilicon operations in Calvert City, Kentucky, were suspended from July 2020 to March 2021, which it attributed to poor market and pricing conditions caused by the COVID-19 pandemic.[130] It brought two of its three furnaces back on line in 2021, and brought its third furnace, which had been idled since April 2019, on line in February 2022 after it completed a $2.5 million modernization of the furnace.[131] CC Metals reported that it idled two of its furnaces in December 2023 because ***.[132] Ferroglobe also reported prolonged shutdowns of its Selma plant, which produced only silicon metal during the POI, but is able to produce ferrosilicon.[133]

Subject imports were the largest supply source to the U.S. market in 2021 and 2022, and was the second largest source in 2023 (when the domestic industry temporarily exceeded subject imports' U.S. market share).[134] Their share of apparent U.S. consumption decreased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023; it was higher in interim 2024, at *** percent, than in interim 2023, at *** percent.[135] The majority of responding purchasers (11 of 19) reported that the availability of subject imports had not

[128] CR/PR at Tables III-5, III-8.
[129] CR/PR at Table III-5.
[130] CR/PR at Table III-3.
[131] CR/PR at Tables III-3-4.
[132] CR/PR at Tables III-3-4.
[133] CR/PR at III-2, III-10 n.8, Table III-3.
[134] CR/PR at Tables IV-17, C-1.
[135] CR/PR at Tables IV-17, C-1.

changed since January 1, 2021.[136] Of the purchasers that did report changes, three reported a reluctance of firms to purchase ferrosilicon from Russia after the outbreak of the Russian invasion of Ukraine and three reported that the availability of subject imports increased.[137]

Nonsubject imports, the smallest source of supply to the U.S. market throughout the POI, increased as a share of apparent U.S. consumption from *** percent in 2021 to *** percent in 2022, which then decreased to *** percent in 2023; it was higher in interim 2024, at *** percent, than in interim 2023, at *** percent.[138] The largest sources of nonsubject imports in 2023 were Canada, Iceland, and Vietnam, accounting for 13.2 percent, 6.6 percent, and 3.2 percent, respectively, of total U.S. imports of ferrosilicon that year.[139] Canada and Iceland were also the first and second largest sources of nonsubject imports in 2021, but China surpassed both in 2022, with Canada the second largest and Iceland the third largest sources of nonsubject imports in that year.[140]

The record indicates that were some instances of domestic supply constraints in 2021 and 2022, but that the domestic industry resolved its supply issues by the start of 2023. Petitioners stated that as a result of reduced demand in the U.S. market during the 2021 mating season and projections of continued low demand going forward, ***.[141] Then, when demand increased after the 2021 mating season, ***.[142] Purchasers were evenly split as to whether the availability of domestically produced ferrosilicon had changed since January 1, 2021, with ten

[136] CR/PR at II-8.
[137] CR/PR at II-8.
[138] CR/PR at Tables IV-17, C-1.
[139] CR/PR at Table IV-3.
[140] CR/PR at IV-7.
[141] Petitioners' Posthearing Br. at A-74-75.
[142] Petitioners' Posthearing Br. at A-74-75.

reporting changes and ten reporting no changes.[143] Three purchasers stated that U.S. producers would not supply them with ferrosilicon when demand was strong in 2021 and 2022,[144] with one of them noting that *** increased availability after this period.[145] Two other responding purchasers also reported that the availability of domestically produced ferrosilicon increased.[146] When asked if they had experienced issues obtaining ferrosilicon between January 1, 2021 and March 28, 2024 (the date of the petition filing), the majority of responding purchasers (16 of 24) reported that they did not, but two reported that Ferroglobe declined to quote prices from 2021 to 2023 and two others reported that U.S. producers were unable to supply a sufficient volume of ferrosilicon in 2021 and 2022, with one of them attributing the issues to the COVID-19 pandemic.[147]

Most market participants reported that they had not experienced issues either supplying or sourcing ferrosilicon since March 28, 2024, and of the market participants that did report such issues, all attributed them to these investigations.[148]

3. Substitutability and Other Conditions

We find that there is a high degree of substitutability between domestically produced ferrosilicon and subject imports.[149] As noted above in section V, *** responding U.S. producers

[143] CR/PR at II-8.

[144] CR/PR at II-8.

[145] CR/PR at II-8.

[146] CR/PR at II-8.

[147] CR/PR at II-9-10. U.S. producer *** stated that in April 2023, it ***. *Id*. at II-9. Ferroglobe also testified that it had never refused to acknowledge a request for material, although it may have rejected some requests as too low-priced. Id. at II-10 n.17, *citing to* Hearing Tr. at 56 (Elazazzy). U.S producer *** that it had refused to supply purchasers when those purchasers had demanded prices matching those of subject imports. *Id*. at II-9.

[148] CR/PR at II-10.

[149] CR/PR at II-16.

reported that subject imports from each subject country were "always" interchangeable with each other and domestically produced ferrosilicon and most responding purchasers reported that they were "always" or "frequently" interchangeable.[150] U.S. importers' responses were more mixed, but for each comparison between ferrosilicon from the United States and a subject country, either a plurality or majority of importers reported that they were "frequently" interchangeable.[151] When asked to compare the five sources based on 19 purchasing factors, majorities of responding purchasers rated them as comparable for most factors.[152]

We also find that price is an important factor in purchasing decisions for ferrosilicon.[153] Responding U.S. purchasers most often cited price as among their top three purchasing factors (19), followed by availability (16) and quality (15).[154] The majority of responding purchasers (14) also reported that they usually purchase the lowest-priced ferrosilicon, with the remaining

[150] CR/PR at Tables II-12, II-14.

[151] CR/PR at Tables II-13.

[152] CR/PR at Table II-11. Joint Respondents contend that subject imports from Russia are distinguishable from domestically produced ferrosilicon due to a difference in the availability of grades offered, and that they are distinguishable from subject imports from Brazil and Malaysia, which are made on the basis of environmentally sustainable practices. Joint Respondents' Prehearing Br. at 18-19. As outlined above in section V, we assess subject imports on a cumulated basis, and Joint Respondents did not contest in their arguments that the criteria for cumulation were satisfied in these investigations. Additionally, majorities of responding purchasers reported that subject imports from Russia were comparable with the domestically produced ferrosilicon for 15 of 19 factors and subject imports from Brazil and Malaysia for 17 of 19 factors. CR/PR at Table II-11. Thus, subject imports from Russia appear to be comparable with domestically produced ferrosilicon and subject imports from Brazil and Malaysia for most factors. With respect to environmentally sustainable practices, although a majority of purchasers reported that subject imports from Brazil were superior to subject imports from Russia for "eco-friendly" or "green" production, imports of ferrosilicon from both subject sources were comparable to domestically produced ferrosilicon on the basis of "eco-friendly" or "green" production. *Id.*

[153] Although price may not have been the sole determinant for firms' purchases of ferrosilicon, as Joint Respondents argued, Joint Respondents' Posthearing Br. at APP-10-12, we find that the record supports finding that price was an important purchasing factor for purchases of ferrosilicon in the U.S. market based on the record evidence outlined above.

[154] CR/PR at Table II-7. Quality was the most frequently cited as the first-most important factor, while price was the most frequently cited second and third-most factor. *Id*.

responding purchasers reporting that they sometimes (eight) or always (two) do.[155] Additionally, 22 of 24 responding purchasers reported that price was a very important purchasing factor, although a slightly greater number of responding purchasers identified availability and reliability of supply as very important purchasing factors (23 each).[156] Both U.S. producers reported that differences other than price were never significant in sales of ferrosilicon.[157] Majorities or pluralities of responding U.S. importers reported that differences other than price were sometimes significant for all country comparisons.[158] Purchasers' responses varied, but most reported that non-price differences were either always or frequently significant.[159] The main non-price difference cited by responding purchasers was the Russian invasion of Ukraine, which led four purchasers to stop purchasing ferrosilicon from Russia.[160]

During the POI, U.S. producers primarily sold ferrosilicon under annual contracts (*** percent), with lesser but substantial quantities sold under long-term contracts (*** percent) and as spot sales (*** percent), and small quantities sold under short-term contracts (*** percent).[161] U.S. importers also primarily sold subject merchandise under annual contracts (70.2 percent), with lesser but substantial quantities sold under short term contracts (20.9 percent), and small quantities sold as spot sales (6.4 percent) and under long-term contracts

[155] CR/PR at II-19.
[156] CR/PR at Table II-8.
[157] CR/PR at Table II-15.
[158] CR/PR at Table II-16.
[159] CR/PR at Table II-17.
[160] CR/PR at II-36.
[161] CR/PR at Table V-5.

(2.5 percent).[162] Short-term and annual contracts fixed price or quantity, or both, and, except for *** annual contracts, did not usually allow for price renegotiation.[163]

The parties agree that contract prices are indexed to industry publications, such as the CRU Monitor ("CRU") and Platts Metals Week ("Platts"), which report prices of 75 percent standard grade ferrosilicon sold in the U.S. spot market.[164] According to both U.S. producers and some importers, contract prices are based on one or both of the published index prices, often with a discount or add-on.[165] Prices under contracts with these clauses therefore adjust throughout the contract term in step with spot prices published in CRU or Platts.[166] According to Petitioners, this mechanism means low-priced sales in the U.S. spot market can cause prices under previously negotiated contracts to decrease.[167] Joint Respondents state that the industry publications use methodologies that prevent outlier prices from skewing the published prices, and that U.S. spot prices are often higher than annual and long-term contract prices, at least for subject imports.[168] When U.S. producers and importers were asked if their contract prices were influenced by published spot prices, U.S. producers reported that *** to *** percent of their contracts were affected and four importers reported that *** to *** percent of their

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[162] CR/PR at Table V-5.

[163] CR/PR at V-10; Joint Respondents' Prehearing Br. at 11.

[164] CR/PR at V-7; Petitioners' Prehearing Br. at 16; Petitioners Posthearing Br. at 11; Joint Respondents' Prehearing Br. at 11. Long-term contracts were sometimes indexed to raw material prices. CR/PR at V-10.

[165] CR/PR at V-7; Petitioners' Posthearing Br. at A-39-40, A-79-80. *** reported offering multiple types of discounts, while *** and ten U.S. importers indicated that they do not have discount policies. CR/PR at V-11. *** stated that publications such as CRU and Platts, which base their published prices on spot sales, are used by suppliers and purchasers as "benchmarks" in contract negotiations and/or in contract provisions but with an additional negotiated "plus or minus." *Id*. at V-7.

[166] CR/PR at V-7, V-10-11; Petitioners' Posthearing Br. at A-39-40.

[167] Petitioners' Posthearing Br. at A-40.

[168] Joint Respondents' Prehearing Br. at 11-12.

contracts were affected.[169] Seven of the responding U.S. importers reported that their contracts were not influenced by spot prices.[170]

During the POI, the majority of domestically produced ferrosilicon (*** percent) was sold from inventory with lead times averaging *** days, and the remainder was produced to order with lead times averaging *** days.[171] The vast majority of U.S. importers' sales of ferrosilicon (79.0 percent) were from inventory but with longer lead times that averaged 12.5 days, and the remainder was produced to order with lead times averaging 152.4 days.[172] U.S. importer, ***.[173]

The principal raw materials used to produce ferrosilicon are coal, quartz gravel or sand, iron and steel scrap, and wood chips.[174] Both U.S. producers and three U.S. importers reported that raw material prices have increased steadily since January 1, 2021.[175] The remaining responding U.S. importers' responses were mixed, with three reporting that raw material prices fluctuated up, two reporting them as unchanged, and three reporting that they fluctuated down.[176] Of the four responding purchasers that were familiar with raw material costs, one importer stated that raw material costs had increased with inflation, but that such increased

[169] CR/PR at V-10.
[170] CR/PR at V-10.
[171] CR/PR at II-20.
[172] CR/PR at II-20.
[173] ***.
[174] CR/PR at V-1. CC Metals reported using only cast-iron borings because it considered that steel scrap had too many impurities. *Id*. at V-1 n.2. Ferroglobe is an integrated producer of ferrosilicon, as it has both coal and quartz mining operations in the United States. *Id*. at V-1.
[175] CR/PR at V-1. *** reported that raw material costs increased through 2023 and remained at a heightened level in 2024, and *** reported that raw material costs had increased by 200 percent since 2021. *Id*. Two of the responding importers attributed the increased costs to inflation. *Id*.
[176] CR/PR at V-1.

costs had not affected its negotiations for purchasing ferrosilicon.[177] Raw materials accounted for the largest share of the domestic industry's cost of goods sold ("COGS"), increasing from *** percent in 2021 to *** percent in 2022 and *** percent in 2023; it was higher in interim 2024, at *** percent, than in interim 2023, at *** percent.[178]

The parties disagree on the effect of the Russian invasion of Ukraine on the U.S. market. Joint Respondents submit that the negative connotations associated with Russia's invasion of Ukraine, including the U.S. sanctions on Russia, resulted in purchasers reducing or stopping their purchases of ferrosilicon from Russia during the POI.[179] Petitioners state that the Russian invasion of Ukraine did not result in a significant condition of competition in the U.S. market, as subject imports from Russia continued to enter the U.S. market in 2023 and 2024 at *** and one U.S. purchaser reported ***.[180] Of the eight (out of 19) responding purchasers that reported that there had been a change in the availability of subject imports of ferrosilicon since January 1, 2021, three purchasers reported a reluctance of firms to use ferrosilicon from Russia after the outbreak of the Russian invasion of Ukraine.[181] When asked about changes in their purchasing patterns from different countries since January 1, 2021, three purchasers reported shifting purchases from Russian to U.S. producers as a result of the Russian invasion of Ukraine, and some purchasers reported shifting to ferrosilicon from Brazil and Kazakhstan.[182] Of the 12 purchasers that reported purchasing ferrosilicon from Russia during the POI, a majority

[177] CR/PR at V-1-2.
[178] CR/PR at Table VI-1.
[179] Joint Respondents' Prehearing Br. at 15-18; ; Joint Respondents' Posthearing Br. at APP-10-11.
[180] Petitioners' Posthearing Br. at A-26.
[181] CR/PR at II-8.
[182] CR/PR at II-22.

reported that their purchases of the product steadily decreased or fluctuated down (four each), three reported no change in their purchasers, and one reported that its purchasers fluctuated up.[183]

Effective January 1, 2021, legal authorization for duty-free treatment under the Generalized System of Preferences Program expired, and subject imports previously eligible under this program, such as ferrosilicon from Brazil, are now subject to normal trade relations ("NTR") rates of duty.[184]

Effective April 9, 2022, the United States suspended NTR with respect to 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.[185] 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 further increased to 70 percent *ad valorem*, effective April 1, 2023.[186]

[183] CR/PR at Table II-10.
[184] CR/PR at I-11 n.30.
[185] CR/PR at I-11.
[186] CR/PR at I-12. Both U.S. producers and 14 responding U.S. importers reported that the increased tariffs on subject imports had no effect on the importing or purchasing of ferrosilicon from Russia, with the U.S. producers adding that the tariffs had little impact because they did not cover 75 percent silicon content ferrosilicon. *Id*. at II-7. *** reported that ***. *Id*. Most responding purchasers (21 of 23) also reported that the tariffs did not have an impact on their purchases of ferrosilicon. *Id*. The two remaining purchasers reported that they stopped purchasing ferrosilicon from Russia due to the increased duty rates. *Id.*

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."[187]

The volume of subject imports increased from 98,536 STCS in 2021 to 120,762 STCS in 2022, and then decreased to 119,121 STCS in 2023; it was lower in interim 2024, at 51,569 STCS, than in interim 2023, at 76,454 STCS.[188]

Subject imports' share of apparent U.S. consumption decreased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023; it was higher in interim 2024, at *** percent, than in interim 2023, at *** percent.[189]

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[187] 19 U.S.C. § 1677(7)(C)(i).

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

[189] CR/PR at Tables IV-17, C-1. There was a significant increase in the absolute volume of subject imports for domestic consumption over the interim periods, and the gain in subject imports' market share over the interim periods (*** percentage points) was all at the expense of the domestic industry.

As noted in section I.C., these figures reflect questionnaire data on U.S. shipments of subject merchandise from Russia due to the complete coverage of U.S. shipments in the responding importers' questionnaire responses and official Commerce statistics for subject imports from Brazil, Kazakhstan, Malaysia, and nonsubject sources due to the incomplete coverage of shipments from these sources in the responding importers' questionnaire responses. As a result, the apparent U.S. consumption figures reviewed above and contained in Table C-1 were calculated using import data from official Commerce statistics for subject imports from Brazil, Kazakhstan, Malaysia, and nonsubject sources and questionnaire data for U.S. shipments of subject imports from Russia. When U.S. shipment data are used, apparent U.S. consumption figures include subject imports volumes sold from inventories and do not include subject import volumes held in inventories. When official Commerce statistics are used, apparent U.S. consumption figures may include subject import volumes that are held in U.S. importer inventories as well as volumes that become U.S. shipments.

***. ***. Indeed, an industry witness for respondents acknowledged that Ferronix has maintained "large, long-term stocks in the United States as a matter of business for many, many years, for decades." Hearing Tr. at 144 (Fleming). Therefore, official Commerce statistics on imports of subject merchandise from Russia were not the best measure of consumption, especially since the U.S. shipment data from questionnaire responses covered the full volume of those imports. CR/PR at Table IV-1. In contrast, official Commerce statistics are the most accurate measure available for the other import sources because of the lower U.S. shipment coverages of those imports reported in U.S. importer (Continued...)

(…Continued)
questionnaire responses. The inventories of subject imports from the other subject countries are also markedly smaller than those from Russia, whether measured in absolute terms or relative to apparent U.S. consumption, and such inventories exhibited less volatility than the inventory levels of subject imports from Russia. *Id*. at Table VII-14.

Joint Respondents argue that they were deprived of an opportunity to meaningfully comment on the Commission's decision to use questionnaire data for Russian imports to calculate apparent U.S. consumption, as the Commission only adopted this approach in the posthearing staff report. Joint Respondents' Final Comments at 2. We disagree. First, we note that Commissioner Kearns asked respondent interested parties about the Commission's apparent U.S. consumption calculation at the hearing, including the possibility of using U.S. shipment data instead of import data where "inventory is a real issue." Hearing Tr. at 139-140. It was clear at the hearing that U.S. importers' inventories of subject imports from Russia was a "real issue," having been raised by both parties and Commissioners during the hearing. Hearing Tr. at 80-81, 160-163.

In response to Commissioner Kearns' question, the economist for Joint Respondents answered that "a more fulsome answer in terms of the . . . reasonableness of the type of thing that you just proposed would have to wait until post-hearing {briefs}." Hearing Tr. at 141 (Dougan). But in their posthearing brief, Joint Respondents did not directly answer Commissioner Kearns' question. Instead, they stated that the volume and market share data presented in the Prehearing Staff report, based on official Commerce statistics, were reliable and should continue to be used and that inventories of subject imports from Russia have not had an adverse effect on the domestic industry contrary to Petitioner's contentions. Joint Respondents' Posthearing Br. at APP-15-17, APP-20-24. They also argued to the extent the Commission uses alternative data it should use U.S. shipment data from importers' questionnaires adjusted for levels of coverage. *Id*. at APP-17-20. Further, Joint Respondents addressed the question of using questionnaire data to measure subject imports from Russia for purposes of calculating apparent U.S. consumption in their final comments, which the Commission considered along with other record evidence in deciding to rely on questionnaire data for U.S. shipments of subject imports from Russia. Joint Respondents' Final Comments at 3-6. We therefore find no support for Joint Respondents' claim that they were deprived of an opportunity to comment on the Commission's approach to calculating apparent U.S. consumption using questionnaire data on the volume of U.S. shipments of subject merchandise from Russia.

Furthermore, the Commission considered Joint Respondents' comments, but for the reasons discussed above found that U.S. shipments of subject imports from Russia reported in U.S. importers' questionnaire responses were the most reliable data to include for purposes of calculating apparent U.S. consumption. An argument raised by Joint Respondents in their final comments is that the Commission's calculation is unreliable because it shows that apparent U.S. consumption was higher in interim 2024 than in interim 2023, which they allege is contradicted by testimony and other record evidence suggesting that demand was lower in interim 2024 than in interim 2023. *Id*. at 3-6. We find this argument unconvincing. As indicated above in section VII.B.1, the record evidence is mixed as to whether demand increased, decreased, or stayed the same over the course of the POI. Further, Joint Respondents' argument appears to assume that demand and apparent U.S. consumption are the same, which is not the case. Demand refers to consumers' willingness to purchase a product at various price levels, while consumption reflects what was actually purchased and sold in the market. Therefore, even if demand was lower in interim 2024, that would not foreclose the possibility of higher apparent domestic consumption relative to interim 2023.

The ratio of cumulated subject imports to domestic production decreased from *** percent in 2021 to *** percent in 2022, and then increased to *** percent in 2023; it was lower in interim 2024, at *** percent, than in interim 2023, at *** percent.[190]

We find that the volume of cumulated subject imports is significant, in absolute terms and relative to both consumption and production in the United States.

D. Price Effects of the Subject Imports

Section 771(7)(C)(ii) of the Tariff Act provides that, in evaluating the price effects of the 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.[191]

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

The Commission collected quarterly pricing data from U.S. producers and importers for the total quantity and f.o.b. values of eight pricing products shipped to unrelated U.S. customers during January 2021 to June 2024.[192] Two U.S. producers and 10 U.S. importers

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

[191] 19 U.S.C. § 1677(7)(C)(ii).

[192] CR/PR at V-12. The full definitions of the pricing products are as follows:

Product 1.-- Bulk sold under annual or longer-term contracts 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.
(Continued...)

provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[193] Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' commercial U.S. shipments, *** percent of commercial U.S. shipments of subject imports from Brazil, *** percent of commercial U.S. shipments of subject imports from Kazakhstan, *** percent of commercial U.S. shipments of

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(…Continued)

Product 2.-- Bulk sold in contracts under one year or as spot sales 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.-- In Super Sacks sold under annual or long-term contracts 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 4.-- Bulk sold under annual or longer-term contracts 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.

Product 5.-- Bulk sold in contracts under one year or as spot sales 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.

Product 6.-- In Super Sacks sold under annual or longer-term contracts 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; .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.

Product 7.-- Bulk sold in contracts under one year or as spot sales High-purity 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; less than 0.10 percent aluminum; and 0.40 percent or less manganese.

Product 8.-- In Super Sacks sold under annual or longer-term contracts High-purity 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; less than 0.10 percent aluminum; and 0.40 percent or less manganese. *Id*. at V-12-14.

[193] CR/PR at V-14.

subject imports from Malaysia, and 100 percent of commercial U.S. shipments of subject imports from Russia, in 2023.[194]

The pricing data show that subject imports predominantly oversold domestically produced ferrosilicon in 2021 and 2022, but a notable shift in the pricing behavior toward the end of 2022 led to extensive underselling by subject imports in 2023, and near-universal underselling by volume in interim 2024.[195] The instances of underselling decreased from 16 out of 42 comparisons in 2021 to 6 out of 43 comparisons in 2022, and then increased to 20 out of 40 comparisons in 2023; there were 18 instances of underselling out of 23 comparisons during interim 2024.[196] Likewise, the volume of subject imports that undersold the domestic like product decreased from *** pounds contained silicon ("PCS") in 2021 to *** PCS in 2022, and then increased to *** PCS in 2023; it was *** PCS in interim 2024.[197] As a share of the total quantity of shipments in the pricing comparisons, the volume of subject imports that undersold the domestic like product decreased from *** percent 2021 to *** percent in 2022, and then increased to *** percent in 2023; it was *** percent in interim 2024.[198]

We have also considered U.S. purchaser responses regarding lost sales. Eighteen of 24 purchasers reported purchasing subject imports instead of the domestic like product during the

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[194] CR/PR at V-14.

[195] CR/PR at Table V-17.

[196] CR/PR at Table V-17.

[197] CR/PR at Table V-17. The instances of overselling increased from 26 out of 42 comparisons in 2021 to 37 out of 43 comparisons in 2022, and then decreased to 20 out of 40 comparisons in 2023; there were 5 quarters of overselling out of 23 comparisons in interim 2024. *Id*. The volume of subject imports that oversold the domestic like product decreased from *** PCS in 2021 to *** PCS in 2022 and *** PCS in 2023; it was *** PCS in interim 2024. *Id*.

[198] *Calculated from* CR/PR at Table V-17.

POI.[199] Of these 18 purchasers, 14 reported that the subject imports were priced lower than the domestic like product and six reported that they had purchased *** STCS of subject imports in lieu of the domestic like product primarily due to price.[200] This volume of confirmed lost sales since January 1, 2021, was equivalent to approximately *** percent of total reported purchases by responding purchasers, *** percent of purchasers' total subject imports during the POI, and *** percent of apparent U.S. consumption during the full POI.[201]

We have also considered U.S. purchaser reports regarding allegations of lost revenues. Four of 24 purchasers reported that U.S. producers reduced prices to compete with lower-priced subject imports during the POI.[202] The estimated price reductions reported by these four purchasers ranged from *** percent to *** percent, with an average of *** percent.[203]

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[199] CR/PR at Table V-19.

[200] CR/PR at Table V-19. Two responding purchasers provided explanations for their purchases of subject imports instead of domestically produced ferrosilicon. *Id*. *** stated that it purchased subject imports ***. *Id*. *** stated that ***. *Id*. However, both responding purchasers reported that subject imports were priced lower than the domestic like product. *Id*.

[201] *Calculated from* CR/PR at Tables IV-17, V-18-19. Joint Respondents argue that many of the reported lost sales occurred in conditions in which they could not have had any effect of the domestic industry, making the "true" quantity of lost sales *** STCS. Joint Respondents' Prehearing Br. at 32. Specifically, they contend that the ***; and that ***. *Id*. at 32-33. However, these arguments provide no basis to consider that the domestic industry was immune to the effects of lost sales in these instances. In particular, the fact that domestic producers made sales to customers that also purchased from importers says nothing about whether they would have had a greater volume of sales or higher prices in the absence of competition from unfairly traded imports.

[202] CR/PR at Tables V-21-22. Twelve of the responding purchasers reported that they did not know whether U.S. producers reduced their prices to compete with subject imports, while seven reported that U.S. purchasers did not reduce their prices. *Id*.

Joint Respondents argue that two purchaser reports do not constitute evidence of lost revenues. Joint Respondents' Prehearing Br. at 31. They claim that ***. *Id*. However, both purchasers reported purchasing subject imports during the POI and that U.S. producers reduced their prices to compete with lower-priced subject imports. *** Questionnaire Response, EDIS Doc. 828092 (Aug. 1, 2024) at II-3-4; *** Purchaser Questionnaire Response, EDIS Doc. 828085 (Aug. 1, 2024) at II-3-4.

[203] CR/PR at Tables V-21-22.

Based on the high degree of substitutability between domestically produced ferrosilicon and subject imports, the importance of price in purchasing decisions, the extensive underselling in 2023 and the near-universal underselling by volume in interim 2024 by subject imports, and the evidence of lost sales and revenues, we find that underselling by subject imports was significant.[204] [205] The underselling by subject imports then led to a shift in market share of *** percentage points from the domestic industry to subject imports which began in the second half of 2023 and was greatly accelerated in interim 2024.[206]

We have also considered price trends. There are six pricing products for which domestic producers reported shipments at the beginning and end of the POI. Domestic producers' prices for these pricing products generally increased from 2021 into the second and third quarters of 2022 and then decreased through the second quarter of 2024. Prices for five

[204] The AUVs provide further evidence of these declines. The AUV of subject merchandise fell by *** percent from 2022 to 2023 while the AUV of domestically produced ferrosilicon declined by *** percent. CR/PR at Table C-1. Over the interim periods, the AUV of subject merchandise fell by *** percent while the AUV of domestically produced ferrosilicon declined by *** percent. *Id.*

[205] Joint Respondents seek to explain the increased underselling in 2023 as resulting from domestic producer supply constraints in late 2022 that fueled perceptions of a domestic shortage, which combined with an optimistic demand outlook to give domestic producers increased bargaining power, allowing them to obtain higher prices than U.S. importers of subject imports in contracts during the 2022 mating season. Joint Respondents' Posthearing Br. at 10, APP-34-36. While the record indicates that some purchasers experienced supply constraints in 2021 and 2022, it does not suggest a widespread perception of incipient shortages in 2023. CR/PR at II-9-10. Joint Respondents cite evidence that that that some market observers anticipated a domestic shortage in late 2022. Hearing Tr. at 156 (Fleming); Joint Respondents' Posthearing Br. at Exh. 3. We note that these arguments are inconsistent with Respondents' assertions that increases in consumption and prices in 2022 would inevitably decline in 2023. Joint Respondents' Prehearing Br. at 15, 41. We also note that the record indicates that the domestic industry had excess capacity during this period, as its capacity utilization rate was *** percent in 2022, which *** increased to *** percent in 2023. CR/PR at Table C-1. Two declarations submitted by Petitioners reported that ***. Petitioners' Posthearing Br. at A-2-3, Exhs. 6-7. Therefore, Joint Respondents' allegations regarding expectations in 2022 of a domestic supply shortage in 2023 do not explain the increase in underselling in 2023 and interim 2024.

[206] *Calculated from* CR/PR at Table C-1. Subject import market share was *** percent in the second half of 2023 compared to *** percent in first half of 2023 (a *** percentage point gain) and *** percent in interim 2024 compared to *** percent in interim 2023 (a *** percentage point gain). *Id*.

of these pricing products were somewhat higher at the end of the POI than in the first quarter of 2021.[207] Between the first quarter of 2021 and the second quarter of 2024, prices for domestically produced product 1 increased irregularly by *** percent, prices for domestically produced product 2 increased irregularly by *** percent, prices for domestically produced product 3 increased irregularly by *** percent, prices for domestically produced product 4 increased irregularly by *** percent, prices for domestically produced product 6 increased irregularly by *** percent, and prices for domestically produced product 8 decreased irregularly by *** percent.[208] The prices of subject imports followed trends similar to, but more dramatic than, those for the domestically produced products, with significant increases from 2021 to the second quarter of 2022 followed by significant decreases through the first/second quarter of 2024, particularly for pricing products 1, 2, and 3.[209] While domestic prices experienced steeper declines in the latter portion of 2022 and early 2023, these declines occurred during a period in which subject imports primarily oversold the domestic like product.[210] Accordingly,

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[207] CR/PR at Tables V-6-14.

[208] CR/PR at Table V-14. Pricing product 8 accounted for *** percent of the total volume of the eight domestically produced products. *Calculated from id*.

[209] CR/PR at Tables V-6-14. Pricing for subject imports from Brazil covering the full POI was only available in pricing product 2, which increased irregularly by *** percent; pricing product 5, which increased irregularly by *** percent; and pricing product 7, which increased irregularly by *** percent. *Id*. Table V-14. Pricing for subject imports from Kazakhstan covering the full POI was only available in pricing product 1, which increased irregularly by *** percent. *Id*. Pricing for subject imports from Malaysia covering the full POI was only available in pricing product 1, which increased irregularly by *** percent, and pricing product 2, which increased irregularly by *** percent. *Id*. Pricing for subject imports from Russia covering the full POI was only available in pricing product 1, which increased irregularly by *** percent, pricing product 2, which increased irregularly by *** percent, and pricing product 3, which increased irregularly by *** percent. *Id*.

Pricing Products 1 and 2 were two largest pricing products from subject imports, accounting for *** percent and *** percent, respectively, of the total reported volume of subject imports for the eight pricing products. *Calculated from id*. at Table V-14.

[210] CR/PR at Tables V-6-13.

we find that this period of domestic price declines cannot be primarily attributed to subject imports, and thus does not support a finding of price depression in these investigations.[211]

We have also considered whether subject imports prevented price increases for the domestic like product that would otherwise have occurred to a significant degree. As noted above, price declines started in the U.S. market during the third/fourth quarter of 2022, with subject imports showing steep declines and domestically produced ferrosilicon declining to a

[211] Chair Karpel finds that subject imports depressed domestic producer prices to a significant degree. Domestic producer prices declined significantly from the middle of 2022 through the end of the POI. Specifically, from the second quarter of 2022 to the second quarter of 2024 prices for domestically produced product 1 decreased by *** percent, prices for domestically produced product 2 decreased by *** percent, prices for domestically produced product 3 decreased by *** percent, prices for domestically produced product 4 decreased by *** percent, and prices for domestically produced product 6 decreased by *** percent, and prices for domestically produced product 8 decreased by *** percent (from the fourth quarter of 2022 to the second quarter of 2024). *Calculated from* CR/PR at Tables V-6-9, V-11, V-13. These domestic price declines occurred as a significant volume of subject imports – in a market where there is a high degree of substitutability between subject imports and the domestic like product and price is an important purchasing factor – increasingly undersold the domestic like product. Other factors do not account for these price declines.

There was also an increasing gap between domestic prices and costs as prices fell during this period. Between 2022 and 2023, domestic producers' net sales AUV decreased by *** per STCS while unit COGS increased by *** per STCS, forcing a dramatic increase in the industry's COGS-to-net-sales ratio, from *** to *** percent. Over the interim periods, domestic producers' net sales AUV continued to decrease, by *** per STCS, while unit COGS decreased by only *** per STCS, forcing an increase in the COGS to net sales ratio from *** percent. CR/PR at Table C-1. As further discussed below, with the decline in domestic prices and the increase in domestic costs relative to price, the industry's operating margin plummeted from *** percent in 2022 to *** percent in 2023 and declined over the interim periods from *** percent in the first half of 2023 to *** percent in the first half of 2024. *Id*.

Apparent U.S. consumption decreased by *** percent between 2022 and 2023, but was *** percent higher in interim 2024 than in interim 2023. *Id*. Therefore, whether at a time of declining or increasing demand, subject imports increasingly undersold the domestic like product and domestic prices declined, indicating that demand shifts alone were not responsible for the depression of domestic producer prices.

Joint Respondents attribute the price decline to domestic industry and subject import supply shortages in 2022, that prompted an increase in ferrosilicon imports from China to meet the unsupplied demand, which they allege ultimately started the market's price declines. Joint Respondents Posthearing Br. at APP-44-50. Imports of ferrosilicon from China jumped from 189 STCS in 2021 to 24,462 STCS in 2022. CR/PR at Table IV-3. However, ferrosilicon from China retreated from the market in 2023 (totaling just 538 STCS) and interim 2024 (442 STCS). *Id*. As such, even if the 2022 surge in Chinese imports started the decline in prices, that decline continued as China greatly receded from the market and subject imports turned from overselling to underselling the domestic like product.

lesser degree.[212] These price decreases coincided with a decline in apparent U.S. consumption in 2023. Apparent U.S. consumption was higher in interim 2024 than interim 2023, while the domestic industry's costs remained higher than in the earlier part of the POI. The domestic industry's unit COGS increased from $*** per STCS in 2021 to $*** per STCS in 2022 and $*** per STCS in 2023; it was lower in interim 2024, at $*** per STCS, than in interim 2023, at $*** per STCS.[213] In these circumstances, we would expect the industry to realize at least modest price increases, reflective of increased demand and necessary to cover relatively high costs. However, subject import prices continued to fall, accompanied by nearly universal underselling by volume in 2024. Domestic producers' prices did not increase, and they lost market share at the expense of subject imports. We also note that the domestic industry's financial performance deteriorated from 2022 to 2023 and was worse in interim 2024 than in interim 2023, as discussed below in section VI.E.[214] Accordingly, we find that subject imports suppressed prices for the domestic like product, as the domestic industry would have raised prices with increasing consumption in interim 2024 but for the pricing pressure of subject imports.[215]

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[212] CR/PR at Figures V-4-6.

[213] CR/PR at Tables VI-3, C-1. Joint Respondents contend that the domestic industry's increasing COGS-to-net-sales ratio from 2021 to 2023 was *** attributable to ***, since *** COGS-to-net-sales ratio *** during the period. Joint Respondents' Prehearing Br. at 30-31; Joint Respondents' Posthearing Br. at 8. However, both U.S. producers' COGS-to-net-sales ratios were higher in interim 2024 than in interim 2023, with *** COGS-to-net-sales ratio being *** higher in interim 2024, at *** percent, than in interim 2023, at *** percent. CR/PR at Table VI-3.

[214] *See also* CR/PR at Table C-1.

[215] Chair Karpel finds that the facts of this investigation more clearly point to price depression, in view of the declines in domestic producer prices from the latter half of 2022 to the end of the POI. While she acknowledges that a higher level of consumption in the interim (*i.e.,* from January to June 2024) period may suggest circumstances where domestic producers otherwise (*i.e.*, but for subject import pricing) would have increased prices despite declining costs during that period, she finds the (Continued...)

In sum, we find that cumulated subject imports significantly undersold the domestic like product in 2023 and interim 2024, which resulted in the domestic industry losing sales, revenues, and market share to subject imports, and that subject import prices suppressed the domestic like product in interim 2024. We accordingly conclude that subject imports had significant price effects.

E. Impact of the Subject Imports[216]

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[217] 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

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(…Continued)
adverse price effect of subject imports on the domestic industry to have begun earlier than the interim period, including in 2023 as domestic producer prices fell as costs increased.

[216] The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination of sales at less value, Commerce found a dumping margin of 283.27 percent for all imports from Russia. *Ferrosilicon from the Russian Federation: Final Affirmative Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances*, 89 Fed. Reg. 76450 (Sept. 18, 2024). Commerce has not made preliminary antidumping duty determinations with respect to imports of ferrosilicon from Brazil, Kazakhstan, and Malysia, as it postponed these determinations until October 31, 2024. *Ferrosilicon from Brazil, Kazakhstan, and Malaysia: Postponement of Preliminary Determinations in the Less-Than-Fair-Value Investigations*, 89 Fed. Reg. 66678 (Aug. 16, 2024). We take into account in our analysis the fact that Commerce has made final findings that all subject producers in Russia are selling subject imports in the United States at less than fair value. In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant price effects of subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

[217] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

service debts, research and development, 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."[218]

The domestic industry's trade and financial indicators generally improved from 2021 to 2022, after which the domestic industry's financial performance began deteriorating. The industry's financial performance continued to deteriorate in interim 2024, while the domestic industry's market share dropped precipitously.

The domestic industry's production capacity increased from *** STCS in 2021 to *** STCS in 2022, and then declined to *** STCS in 2023; it was lower in interim 2024, at *** STCS, than in interim 2023, at *** STCS.[219] Similarly, the industry's production increased from *** STCS in 2021 to *** STCS in 2022, and then declined to *** STCS in 2023; it was lower in interim 2024, at *** STCS, than in interim 2023, at *** STCS.[220] The domestic industry's capacity utilization increased throughout the POI, from *** percent in 2021 to *** percent in 2022 and *** percent in 2023; it was higher in interim 2024, at *** percent, than in interim 2023, at *** percent.[221]

The industry's number of production-related workers ("PRWs") increased from *** PRWs in 2021 to *** PRWs in 2022 and *** PRWs in 2023; the number of PRWs was lower in interim 2024, at *** PRWs, than in interim 2023, at *** PRWs.[222] Total hours worked increased

[218] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.
[219] CR/PR at Table C-1.
[220] CR/PR at Table C-1.
[221] CR/PR at Table C-1.
[222] CR/PR at Table C-1.

from *** hours in 2021, to *** hours in 2022 and *** hours in 2023; it was lower in interim 2024, at *** hours, than in interim 2023, at *** hours.[223] Wages paid increased from $*** in 2021 to $*** in 2022 and $*** in 2023; they were lower in interim 2024, at $***, than in interim 2023, at $***.[224] Its productivity decreased from *** STCS per 1,000 hours in 2021 to *** STCS per 1,000 hours in 2022 and *** STCS per 1,000 hours in 2023; it was higher in interim 2024, at *** STCS per 1,000 hours, than in interim 2023, at *** units per 1,000 hours.[225]

The domestic industry's volume of U.S. shipments increased from *** STCS in 2021 to *** STCS in 2022 and *** STCS in 2023; it was lower in interim 2024, at *** STCS, than in interim 2023, at *** STCS.[226] The industry's share of apparent U.S. consumption increased from *** percent in 2021 to *** percent in 2022 and *** percent in 2023; it was lower in interim 2024, at *** percent, than in interim 2023, at *** percent.[227]

The domestic industry's inventories increased from *** STCS (equivalent to *** percent of its total shipments) in 2021 to *** STCS (equivalent to *** percent of its total shipments) in 2022, and then decreased to *** STCS (equivalent to *** percent of its total shipments) in 2023; it was higher in interim 2024, at *** STCS (equivalent to *** percent of its (annualized) total shipments), than in interim 2023, at *** units (equivalent to *** percent of its (annualized) total shipments).[228]

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[223] CR/PR at Table C-1.
[224] CR/PR at Table C-1.
[225] CR/PR at Table C-1.
[226] CR/PR at Table C-1.
[227] CR/PR at Table C-1.
[228] CR/PR at Table C-1.

The domestic Industry’s net sales revenue increased from $*** in 2021 to $*** in 2022, and then decreased to $*** in 2023; it was lower in interim 2024, at $***, than in interim 2023, at $***.[229] The industry's gross profits increased from $*** in 2021 to $*** in 2022, and then decreased to $*** in 2023; it was lower in interim 2024, at $***, than in interim 2023, at $***.[230] The industry’s operating income increased from $*** in 2021 to $*** in 2022, and then decreased to $*** in 2023; it was lower in interim 2024, at $***, than in interim 2023, at $***.[231] The industry’s net income followed a similar trend, increasing from *** in 2021 to $*** in 2022, and then decreasing to $*** in 2023; it was lower in interim 2024, at $***, than in interim 2023, at $***.[232] The industry’s operating-income-to-net-sales ratio increased from *** percent in 2021 to *** percent in 2022, and then decreased to *** percent in 2023; it was lower in interim 2024, at *** percent, than in interim 2023, at *** percent.[233] The industry’s net-income-to-net-sales ratio followed a similar trend, increasing from *** percent in 2021 and *** percent in 2022, and then decreasing to *** percent in 2023; it was lower in interim 2024, at *** percent, than in interim 2023, at *** percent.[234]

The domestic industry’s capital expenditures increased from $*** in 2021 to $*** in 2022 and $*** in 2023; they were lower in interim 2024, at $***, than in interim 2023, at $***.[235] The industry’s total net assets increased from $*** in 2021, to $*** in 2022, and to

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[229] CR/PR at Table C-1.
[230] CR/PR at Table C-1.
[231] CR/PR at Table C-1.
[232] CR/PR at Table C-1.
[233] CR/PR at Tables VI-3, C-1.
[234] CR/PR at Tables VI-3, C-1.
[235] CR/PR at Tables VI-6, C-1.

$*** in 2023, while its return on assets increased from *** percent in 2021 to *** percent in 2022, and then decreased to *** percent in 2023.[236]

The significant volume of subject imports undersold the domestic like product to a significant degree in 2023, which brought about a sharp deterioration of the domestic industry's financial performance. This was the period in which CC Metals also reported idling two of its furnaces at the end of 2023 due to the low price of subject imports.[237] As the prices for the significant volume of subject imports continued their decline into 2024 and increasingly undersold the domestic like product, the volume of subject imports underselling the domestic like product became near-universal, resulting in suppressed domestic producer prices and lost market share, which led to further deterioration in the domestic industry's financial performance.[238] Domestic producers suffered a significant loss in shipment volume in interim 2024, with *** percentage points of market share shifting to subject imports.[239] Although the *** percent increase in domestic consumption in interim 2024 compared to interim 2023 would be expected to lead to some increase in domestic producers' U.S. shipments and net sales, low and declining subject import prices that increasingly undersold the domestic like product instead caused a substantial decline in the industry's output and market share, along

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[236] CR/PR at Tables C-1, VI-8-9. The domestic industry reported *** research and development expenses over the POI. *Id*. at Table C-1.

[237] CR/PR at Table III-3.

[238] As noted above, Chair Karpel finds that the facts of this investigation more clearly point to price depression in view of the declines in domestic producer prices from the latter half of 2022 to the end of the POI, and finds that that the adverse price effect of subject imports on the domestic industry began earlier than the interim 2024 period, including in 2023 as domestic producer prices fell as costs increased.

[239] CR/PR at Table C-1.

with a *** percent decline in the AUV of domestic shipments.[240] The domestic industry therefore would have realized a greater volume of sales and increased revenue in the absence of dumped and subsidized subject imports. Accordingly, we find that low-priced subject imports resulted in overall declines to the domestic industry's production, employment, U.S. shipments, net sales, and financial performance.

We have also considered whether there were other factors, including nonsubject imports and decreasing apparent U.S. consumption, 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 find that declining apparent U.S. consumption does not explain the domestic industry's deteriorating performance. Apparent U.S. consumption decreased by *** percentage points from 2022 to 2023 and may explain the declining prices in the market to some degree. However, it does not explain the steep declines in subject import prices relative to the domestic like product and nonsubject imports during the period, which resulted in subject imports moving from majority overselling, by a wide margin, of the domestic like product in 2022 to majority underselling, by a wide margin in 2023. The AUVs provide further evidence of this disparity, with the AUV of subject merchandise falling by *** percent from 2022 to 2023, the AUV of domestically produced ferrosilicon declining by *** percent from 2022 to 2023, and the AUV of nonsubject imports declining by 15.9 percent from 2022 to

[240] CR/PR at Table C-1.

2023.[241] Moreover, if changes in demand fully explained changes in the domestic industry's prices, we would expect the increase in apparent U.S. consumption in interim 2024 as compared to interim 2023 to result in higher prices.[242] The continued decline in prices in interim 2024, coincident with a *** percent increase in subject imports and a greatly increasing incidence of underselling, suggests that low subject import pricing had a material deleterious impact on the condition of the domestic industry at the end of the POI, which, if anything, was exacerbated by declining demand.[243]

We also find that nonsubject imports do not explain the domestic industry's deteriorating performance. The volume of nonsubject imports increased over the course of the POI, but they remained the smallest source of supply to the U.S. market.[244] Although the domestic industry lost *** percentage points of market share to nonsubject imports in interim

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[241] CR/PR at Table C-1. The corresponding changes in value were $*** in 2022 to $*** for subject imports, $*** to $*** for the domestic like product, and $4,711 to $3,961 for nonsubject merchandise.

[242] Chair Karpel does not join this sentence.

[243] Joint Respondents appear to argue that the decline in U.S. market prices between 2022 and 2023 resulted from a market correction that returned abnormally high prices to historic levels. Joint Respondents' Posthearing Br. at 8, APP-43-50; Joint Respondents' Prehearing Br. at 41. They observe that global pricing indexes for ferrosilicon spiked toward the end of 2021 and then fell near the end of 2022 and in 2023, while the CRU published index of U.S. prices were higher for a longer period of time than European and Chinese index prices. Joint Respondents' Posthearing Br. at 8, APP-43-50. Joint Respondents add that the domestic industry achieved "historic windfall profits" due to market conditions in 2022, making a decline in 2023 profits inevitable. Joint Respondents' Prehearing Br. at 41. However, while decreased demand may have contributed to the decline in domestic prices and profits in 2023, as explained above, we find that the increasing incidence of underselling by subject imports for a product for which there is a high degree of substitutability and for which price is an important purchasing factor, also played a material role in those domestic industry declines. Moreover, a so-called "market correction" would not explain why subject import prices dropped to a greater extent than both the domestic like product and nonsubject import prices. CR/PR at Figures V-4-6, Table C-1 (referencing AUVs).

[244] CR/PR at Table C-1. Nonsubject imports increased their share of apparent U.S. consumption from *** percent in 2021 to *** percent in 2022 and *** percent in 2023; and were higher in interim 2024, at *** percent, than in interim 2023, at *** percent

2024, subject imports accounted for a disproportionate *** percentage points of the domestic industry's market share loss.[245] Further, nonsubject import AUVs were greater than both subject import AUVs and domestic industry AUVs in 2023 and interim 2024.[246]

We are unpersuaded by Joint Respondents' argument that because subject import underselling became prevalent only in late 2023, it could not have affected contract negotiations during the 2022 mating season or pricing of shipments in 2023 under the resulting contracts.[247] Subject import prices, including in the spot market, declined sharply in the second half of 2022, as reflected in precipitous drops in prices for U.S. importers' U.S. shipments of the pricing products in the third and fourth quarters of 2022.[248] The subject import prices decreasing at a faster rate than prices for the domestic like product would pull down the

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[245] CR/PR at Table C-1.

[246] CR/PR at Table C-1. Nonsubject import AUVs were $3,961 in 2023 and $3,130 in interim 2024, while subject imports AUVs were $*** in 2023 and $*** in interim 2024 and the domestic industry's were $*** in 2023 and $*** in interim 2024.

Joint Respondents argue that both the domestic industry and subject sources experienced supply shortages in 2022 that prompted purchasers to turn to imports of ferrosilicon from China to meet the unsupplied demand. Joint Respondents' Post hearing Br. at APP-47-48. It may be the case that nonsubject imports from China contributed to the initial price declines in the U.S. market in 2022, when their AUV was lower than the AUV of subject imports. However, that situation reversed in 2023 and in interim 2024, when the AUVs of subject imports were lower than the AUVs of nonsubject imports from China. CR/PR at Tables IV-3, C-1. Also, imports of ferrosilicon from China declined significantly as a share of total imports from 2022 to 2023 and were lower in interim 2024 than in interim 2023, which makes them a poor explanation for the domestic industry's declining performance in those periods. *Id*. at Table IV-3. Joint Respondents also argue that certain other nonsubject imports that had lower AUVs than subject imports were driving the declines in the indexed prices and, therefore, the declines in the domestic industry's financial performance. Joint Respondents' Prehearing Br. at 22-23, 43; Joint Respondents' Post hearing Br. at 13-14, APP-47-48. However, only nonsubject imports from Vietnam had lower AUVs than subject imports in 2023 and interim 2024, but their volume was relatively small. *Compare* CR/PR at Table IV-3 *with id*. at Table C-1. Joint Respondents also suggest that nonsubject imports from Austria, Azerbaijan, Bhutan, Egypt, and Kuwait also had lower subject AUVs than subject imports, the information they cite indicates that the volume of imports from these countries was relatively small and comparisons of their AUVs to those for subject imports showed no consistent pattern. CR/PR at Table IV-3; Joint Respondents' Post hearing Br. at 13-14, Exh.7.

[247] Joint Respondents' Posthearing Br. at APP-34.

[248] CR/PR at Figures V-4-7, V-9.

published price indexes, which would translate directly into lower prices under domestic producers' existing annual and long-term contracts and affect contract negotiations during the 2022 mating season. The continued decline in subject import prices in 2023 resulted in continued declines in the published price indexes, which would cause prices under U.S. producers' annual and long-term contracts to continue declining as well.[249]

We are also unpersuaded by Joint Respondents' argument that the domestic industry's declining performance is entirely attributable to *** rather than subject imports.[250] Joint Respondents claim that *** had divergent performances in 2023, particularly their financial performances.[251] They attribute *** poorer performance to problems unrelated to subject imports, such as ***.[252] However, while ***, both companies saw similar trends in their performance throughout the POI, including substantial declines in their financial performance from 2022 to 2023, which continued declining into interim 2024.[253] There is also little evidence that *** had a meaningful effect on *** sales of ferrosilicon. Although *** reported concerns arising from ***, its purchases of domestically produced ferrosilicon were *** throughout the POI.[254] The only other purchaser to report a reluctance in purchasing from *** was ***, which

[249] CR/PR at Tables V-6, V-8-9, V-11.

[250] Joint Respondents' Prehearing Br. at 41-42, 44-54; Joint Respondents' Posthearing Br. at 14, APP-13-14.

[251] Joint Respondents' Prehearing Br. at 41-42, 44-54; Joint Respondents' Posthearing Br. at 14, APP-13-14.

[252] Joint Respondents' Prehearing Br. at 41-42, 44-54; Joint Respondents' Posthearing Br. at 14, APP-13-14. Joint Respondents reported concerns with the data in CC Metals' U.S. producer questionnaire response. Joint Respondents' Prehearing Br. at 37-40, 47-51. The Commission subsequently verified CC Metals' data, which resulted in revisions to the company's questionnaire response. *See* CC Metals' Verification Report, EDIS Doc. 832188 (Sept. 12, 2024); *see also* CR/PR at VI-1, VI-12 n.10, VI-13 n.13, VI-14 n.16, VI-15 n.18, VI-18 n.23.

[253] CR/PR at Table VI-3.

[254] CR/PR at II-14, Table V-18.

attributed its reduced purchases from *** to problems with ***.[255] Therefore, any declines in the purchases due to *** were relatively small and would not explain its financial decline.

We are also unpersuaded by Joint Respondents' argument that U.S. producers were not able to increase their U.S. shipments or market share beyond the levels they achieved during the POI.[256] Domestic producers' low capacity utilization rates throughout the POI indicate that they had significant excess capacity, and their significant increases in production (*** percent increase) and U.S. shipments (*** percent increase) between 2021 and 2022, further support an ability to increase supply in the U.S. market.[257] As explained above in section VI.B.2, the evidence on the record indicates that supply constraints were relatively infrequent and limited to 2021 and 2022.[258] They accordingly cannot explain declining prices for the domestic like product in 2023 and interim 2024, or the domestic industry's loss of market share in interim 2024.

For the reasons discussed above, we conclude that the cumulated subject imports had a significant impact on the domestic industry.

VII. Critical Circumstances

A. Legal Standards and Party Arguments

In its final antidumping and countervailing duty determinations concerning ferrosilicon from Russia, Commerce found that critical circumstances exist with respect to the Russia-wide entity in the antidumping duty investigation and Russian Ferro Alloys Inc./RFA International LP

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[255] CR/PR at II-17, Table V-19.
[256] Joint Respondents' Prehearing Br. at 8, 24-25.
[257] CR/PR at Table C-1.
[258] CR/PR at II-8-9; Petitioners' Posthearing Br. at A-74-75.

and all other producers and exporters in the countervailing duty investigation.[259] Because we have determined that the domestic industry is materially injured by reason of subject imports from Russia, we must further determine "whether the imports subject to the affirmative {Commerce critical circumstances} determination ... are likely to undermine seriously the remedial effect of the antidumping {and/or countervailing duty} order{s} to be issued."[260]

The SAA indicates that the Commission is to determine "whether, by massively increasing imports prior to the effective date of relief, the importers have seriously undermined the remedial effect of the order" and specifically "whether the surge in imports prior to the suspension of liquidation, rather than the failure to provide retroactive relief, is likely to seriously undermine the remedial effect of the order."[261] The legislative history for the critical circumstances provision indicates that the provision was designed "to deter exporters whose merchandise is subject to an investigation from circumventing the intent of the law by increasing their exports to the United States during the period between initiation of an investigation and a preliminary determination by {Commerce}."[262] An affirmative critical circumstances determination by the Commission, in conjunction with an affirmative determination of material injury by reason of subject imports, would normally result in the

[259] *Ferrosilicon from the Russian Federation: Final Affirmative Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances*, 89 Fed. Reg. 76450 (Sept. 18, 2024); *Ferrosilicon from the Russian Federation: Final Affirmative Countervailing Duty Determination and Final Affirmative Determination of Critical Circumstances*, 89 Fed. Reg. 76454 (Sept. 18, 2024).

[260] 19 U.S.C. §§ 1671d(b)(4)(A)(ii), 1673d(b)(4)(A)(ii).

[261] SAA at 877.

[262] *ICC Industries, Inc. v United States,* 812 F.2d 694, 700 (Fed. Cir. 1987), *quoting* H.R. Rep. No. 96-317 at 63 (1979), *aff'g* 632 F. Supp. 36 (Ct. Int'l Trade 1986). *See* 19 U.S.C. §§ 1671b(e)(2), 1673b(e)(2).

retroactive imposition of duties for those imports subject to the affirmative Commerce critical circumstances determination for a period 90 days prior to the suspension of liquidation.

The statute provides that, in making this determination, the Commission shall consider, among other factors it considers relevant,

> (I) the timing and the volume of the imports,
>
> (II) a rapid increase in inventories of the imports, and
>
> (III) any other circumstances indicating that the remedial effect of the {order} will be seriously undermined.[263]

In considering the timing and volume of subject imports, the Commission's practice is to consider import quantities prior to the filing of the petition with those subsequent to the filing of the petition using monthly statistics on the record regarding those firms for which Commerce has made an affirmative critical circumstances determination.[264]

B. Arguments of the Parties

Petitioners' Arguments. Petitioners argue that there was a significant increase in the volume of subject imports from Russia from the pre-petition period to the post-petition period that exacerbated injury to the domestic industry.[265] They add that the post-petition subject imports from Russia came at a time when the inventory of such imports was ***.[266] Petitioners

[263] 19 U.S.C. §§ 1671d(b)(4)(A)(ii), 1673d(b)(4)(A)(ii).

[264] *See Lined Paper School Supplies from China, India, and Indonesia,* Inv. Nos. 701-TA-442-43, 731-TA-1095-97**,** USITC Pub. 3884 at 46-48 (Sept. 2006); *Carbazole Violet Pigment from China and India,* Inv. Nos. 701-TA-437 and 731-TA-1060-61 (Final), USITC Pub. 3744 at 26 (Dec. 2004); *Certain Frozen Fish Fillets from Vietnam,* Inv. No. 731-TA-1012 (Final), USITC Pub. 3617 at 20-22 (Aug. 2003).

[265] Petitioners' Prehearing Br. at 27-28.

[266] Petitioners Prehearing Br. at 29.

also claim that these imports likely left Russia after the petitions were filed since they entered the United States in *** 2024.[267]

Respondents' Arguments. Ferronix argues that it did not import ferrosilicon from Russia to undermine the remedial effect of the antidumping and countervailing duty orders.[268] It contends that the volume of subject imports from Russia during the post-petition period was relatively low compared to import volumes in the prior periods of the POI, and that its inventories of subject imports from Russia declined throughout 2024.[269] Ferronix also claims that its imports of ferrosilicon from Russia during the post-petition period were initially scheduled to be delivered prior to the filing of the petitions, but that supply issues and shipping delays resulted in a delivery after the filing of the petitions.[270] Finally, it claims that it has ceased sourcing ferrosilicon from Russia, effective February 2024, due to the Government of Russia's nationalization of ChEMK's ferroalloy plant.[271]

C. Analysis

1. Choice of Time Period

We first consider the appropriate period for comparison of pre-petition and post-petition levels of subject imports from Russia. The Commission frequently relies on six-month comparison periods for its critical circumstances analysis. However, it has relied on a shorter

[267] Petitioners Prehearing Br. at 28.
[268] Ferronix's Posthearing Br. at 1, 4-8.
[269] Ferronix's Prehearing Br. at 2-5; Ferronix's Posthearing Br. at 4-7. In addition, Ferronix claims that it has very little ferrosilicon from Russia in foreign trade zones or bonded warehouses. Ferronix's Posthearing Br. at 9, Exh. 5.
[270] Ferronix's Prehearing Br. at 4; Ferronix's Posthearing Br. at 5-6, Exhs. 2-4.
[271] Ferronix's Prehearing Br. at 5-6; Ferronix's Posthearing Br. at 8. Ferronix claims that ChEMK Group stopped accepting orders from Ferronix's distributor, RFA International LP, in March 2024, because the Government of Russia had seized ChEMK's shares and prevented the company from exporting its products to "unfriendly states." Ferronix's Posthearing Br. at 8.

comparison period for both its antidumping and countervailing duty investigations when Commerce's preliminary determination applicable to the imports from the subject country fell within the six-month post-petition period the Commission typically considers.[272] That situation arises here for our critical circumstances analysis of imports from Russia subject to the antidumping and countervailing duty investigations because Commerce's preliminary determinations were issued on June 28, 2024.[273] We have thus determined to compare the volume of subject imports three months prior to the filing of the petition (January-March 2024) with the volume of subject imports three months after the filing of the petition (April-June 2024) in our critical circumstances analysis of imports from Russia subject to the antidumping and countervailing duty investigations.[274] Neither party contested 3-month comparison periods for this analysis.

Subject imports from Russia subject to Commerce's affirmative critical circumstances determination in the antidumping and countervailing duty investigations increased from zero STCS in the pre-petition period to 4,760 STCS in the post-petition period (which results in an

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[272] *See Carbon and Certain Alloy Steek Wire Rod from Belarus, Russia, and the United Arab Emirates*, Inv. Nos. 731-TA-1349, 1352, and 1357 (Final), USITC Pub. 4752 at 46-47 (Jan. 2018) (regarding subject imports from Russia); *Certain Hot-Rolled Steel Flat Products from Australia, Brazil, Japan, Korea, the Netherlands, Turkey, and the United Kingdom*, Inv. Nos. 701-TA-545-547 and 731-TA-1291-1297 (Final), USITC Pub. 4638 at 49-50 (Sept. 2016) (regarding subject imports from Brazil); *Certain Corrosion-Resistance Steel Products from China, India, Italy, Korea, and Taiwan*, Inv. Nos. 701-TA-534-537 and 731-TA-1274-1278 (Final), USITC Pub. 4620 at 35-40 (July 2016) (regarding subject imports from China, Italy, and Korea); *Carbon and Certain Steel Wire Rod from China*, Inv. Nos. 701-TA-512 and 731-TA-1248 (Final), USITC Pub. 4509 at 25-26 (Jan. 2015).

The Commission is not required to examine the same periods that Commerce examined in performing the critical circumstances analysis. *See Certain Polyester Staple Fiber from China*, Inv. No. 731-TA-1104 (Final), USITC Pub. 3922 at 35 (June 2007); *Steel Concrete Reinforcing Bars from Turkey*, Inv. No. 731-TA-745 (Final), USITC Pub. 3034 at 34 (Apr. 1997).

[273] CR/PR at Table I-1.

[274] Because the petition was filed on March 28, 2024, that month is included in the pre-petition period.

undefined percentage increase).[275] However, the post-petition imports from Russia, which amounted to just one shipment of 4,760 STCS in May 2024, represented just 9.2 percent of total subject imports during the interim 2024 period, and just 3.6 percent of apparent domestic consumption.[276] [277]

End-of-period U.S. inventories of the relevant subject imports from Russia were *** percent lower at the end of the post-petition period, at *** STCS, than at the end of the pre-petition period, at *** STCS, indicating that there was no stockpiling of subject imports after the filing of the petitions.[278] And, while these inventories were *** compared to Ferronix's U.S. shipments of subject merchandise from Russia, they result from ***.[279] The record shows that inventories of subject imports from Russia *** from 2021 to 2022, which coincided with Russia's invasion of Ukraine in February 2022, and then continued increasing through 2023.[280] Accordingly, the *** inventories of subject imports from Russia – which accumulated prior to

[275] CR/PR at Table IV-5.

[276] *Calculated from* CR/PR at Tables IV-2, IV-5, C-1. The volume of imports from Russia subject to Commerce's affirmative critical circumstances determinations – 4,760 STCS – was also far below the level of Russian imports during equivalent calendar year period of the POI, *e.g.*, 27,559 STCS during April-June 2023, and 17,707 STCS in April-June 2022. *Id*. at Table IV-16.

[277] We further consider these import levels in light of the *** inventories of the relevant subject imports from Russia that had been stockpiled prior to the filing of the petitions. In June 2024, U.S. inventories of subject imports from Russia totaled *** STCS, equivalent to more than *** times the U.S. shipments of subject imports from Russia in January-June 2024 and equivalent to *** percent of total apparent U.S. consumption in January-June 2024. *Calculated from* CR/PR at Table C-1. Such large stockpiles may magnify the effects of post-petition import volumes, which would seem unnecessary to supply further the U.S. market. Nonetheless, post-petition imports amounted to only *** percent of these inventories. *Calculated from id*. at Tables IV-5 and C-1. Even in the context of these inventories, we find that post-petition import volumes from Russia were not significant enough to undermine seriously the remedial effect of the order.

[278] CR/PR at Table IV-6.

[279] ***. At the hearing, it was reported that Ferronix has historically carried a high inventory, which is the result of them importing large volumes to reduce logistic costs and attempting to keep material away from the Russian government. Hearing Tr. at 144 (Fleming).

[280] CR/PR at Table C-1.

the petition filing and which declined in the post-petition comparison period – appear to be related to factors other than these petitions. In addition, Ferronix reported that it purchased the post-petition imports in February 2024, prior to the filing of the petitions, but that supply issues and shipping delays resulted in the product being delivered after the filing of the petitions.[281]

In light of the comparatively small volume of Russian product imported in the post-petition period, the decline in the inventories over this period, and the evidence indicating that the imports at issue were in fact intended for entry into the U.S. prior to the filing of the petitions, we find that subject imports from Russia subject to Commerce's affirmative determinations of critical circumstances are not likely to undermine seriously the remedial effects of the antidumping or countervailing duty orders. Consequently, we make negative critical circumstances findings with respect to subject imports from Russia subject to Commerce's affirmative determinations of critical circumstances.

VIII. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of ferrosilicon from Russia found by Commerce to be sold in the United States at LTFV and subsidized by the government of Russia. We also find that critical circumstances do not exist with respect to imports of ferrosilicon from Russia that are subject to Commerce's final affirmative critical circumstances determinations.

[281] Ferronix's Prehearing Br. at 4; Ferronix's Posthearing Br. at 6. The documentation presented by Ferronix appears to support this position. *See* Ferronix's Prehearing Br. at Exhs. 1-3; Ferronix's Posthearing Br. at Exhs. 2-4.

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’s investigations (89 FR 23042, April 3, 2024)
April 17, 2024	Commerce’s notice of initiation of countervailing duty (CVD) and antidumping duty (AD) investigations (89 FR 31133 and 89 FR 31137, April 24, 2024)
May 13, 2024	Commission’s preliminary determinations (89 FR 43435, May 17, 2024)
June 28, 2024	Commerce’s preliminary affirmative CVD and AD determinations regarding imports from Russia (89 FR 53949 and 89 FR 53953, June 28, 2024); scheduling of final phase of Commission investigations (89 FR 56407, July 9, 2024)
August 6, 2024	Commission’s notice of revised schedule pursuant to Commerce’s tolling of deadlines (89 FR 65671, August 12, 2024)
August 28, 2024	Commerce’s preliminary affirmative CVD and AD critical circumstances determinations regarding imports from Russia (89 FR 68860, August 28, 2024)
September 10, 2024	Commerce’s preliminary affirmative CVD determinations regarding imports from Brazil, Kazakhstan, and Malaysia; alignment of final CVD determinations with final AD determinations; and preliminary affirmative critical circumstances determinations regarding imports from Brazil and Malaysia (89 FR 73364, 89 FR 73369, and 89 FR 73371, September 10, 2024)

[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] Appendix B presents the witnesses who appeared at the Commission’s hearing.

Effective date	Action
September 12, 2024	Commission’s hearing
September 18, 2024	Commerce’s final affirmative CVD and AD determinations and critical circumstances determinations regarding imports from Russia (89 FR 76454 and 89 FR 76450, September 18, 2024)
October 17, 2024	Commission’s vote regarding imports from Russia
October 31, 2024	Commerce’s AD preliminary determinations regarding imports from Brazil, Kazakhstan, and Malaysia
November 4, 2024	Commission’s views regarding imports from Russia
January 14, 2025	Scheduled date for Commerce’s final CVD and AD determinations regarding imports from Brazil, Kazakhstan, and Malaysia (unless postponed at a later date)

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 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*

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

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.

Organization of report

Part I of this report presents information on the subject merchandise, subsidy/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.

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

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 *** and ***, while the leading importers of ferrosilicon from Kazakhstan are ***. The leading importers of ferrosilicon from Malaysia are ***, while the leading importer of ferrosilicon from Russia is ***. Leading importers of product from nonsubject countries (primarily Canada and Iceland) include ***. Most U.S. purchasers of ferrosilicon are steel mills, with other purchasers being iron foundries and distributors. Large purchasers include ***.[7]

Apparent U.S. consumption of ferrosilicon totaled approximately *** short tons contained silicon ("short tons" or "STCS") ($***) in 2023.[8] Currently, two firms are known to produce ferrosilicon in the United States. U.S. producers' U.S. shipments of ferrosilicon totaled *** short tons ($***) in 2023 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports/shipments of imports from subject sources totaled *** short tons ($***) in 2023 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject sources totaled 49,990 short tons ($198.0 million) in 2023 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

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

[7] CC Metals and CCMA are not related entities. CCMA is an importer of record, while CC Metals (sometimes referred to as CCMA in the petitions) is a U.S. producer of ferrosilicon and ***. See staff correspondence with ***, August 6, 2024.

[8] Apparent U.S. consumption was calculated based on data submitted in response to Commission questionnaires (U.S. producers' U.S. shipments and U.S. shipments of imports from Russia) and official import statistics (U.S. imports from Brazil, Kazakhstan, Malaysia, and all other sources). See Part IV for a detailed discussion on apparent U.S. consumption methodology.

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 Commerce statistics.

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.[9]

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.[10] Commerce reached a negative determination with respect to Argentina.[11]

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.[12] The Commission reached a negative determination with respect to Egypt.[13]

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

[10] *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.

[11] 58 FR 27534, May 10, 1993.

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

[13] 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. The request alleged that a nationwide ferrosilicon price-fixing conspiracy maintained by major U.S. ferrosilicon producers had been uncovered and successfully prosecuted since the original investigations. 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.[14] 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 CIT affirmed the Commission's negative determination on the fourth remand.[15]

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.[16] On March 11, 2014, Commerce published a negative preliminary determination on ferrosilicon from Russia,[17] and on July 31, 2014, Commerce published a negative final determination on ferrosilicon from Russia.[18] Following Commerce's negative final determination, the Commission terminated its investigation on ferrosilicon from Russia.[19] On July 31, 2014, Commerce published an affirmative final determination on ferrosilicon from Venezuela.[20] 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.[21]

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[14] *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.

[15] *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; and *Elkem Metals Co. v. United States*, 32 CIT 938 (2008) (affirming the ITC's fourth remand determinations), *aff'd without opinion*, 324 Fed. Appx. 923 (Fed. Cir. 2009).

[16] 78 FR 44969, July 25, 2013.

[17] 79 FR 13620, March 11, 2014.

[18] 79 FR 44393, July 31, 2014.

[19] 79 FR 46450, August 8, 2014.

[20] 79 FR 44397, July 31, 2014.

[21] *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 subsidies and sales at LTFV

Subsidies

On June 28, 2024, Commerce published a notice in the Federal Register of its preliminary determination of countervailable subsidies for producers and exporters of ferrosilicon from Russia.[22] On September 17, 2024, Commerce published a notice in the Federal Register of its final determination of countervailable subsidies for producers and exporters of ferrosilicon from Russia.[23]

In addition, Commerce published notices of its preliminary CVD determinations with respect to imports from Brazil, Kazakhstan, and Malaysia on September 2, 2024 and announced the alignment of its final CVD determinations with its final antidumping determinations. Commerce's final CVD determinations with respect to imports from Brazil, Kazakhstan, and Malaysia are scheduled for January 14, 2025, unless postponed.[24]

Table I-2 presents Commerce's findings of subsidization of ferrosilicon in Russia. Tables I-3 through I-5 present Commerce's findings of subsidization of ferrosilicon from Brazil Kazakhstan, and Malaysia, respectively.

[22] 89 FR 53949, June 28, 2024.
[23] 89 FR 76454, September 18, 2024.
[24] 89 FR 73364, 89 FR 73369, and 89 FR 73372, September 10, 2024.

Table I-2
Ferrosilicon: Commerce's subsidy determinations with respect to imports from Russia

Entity	Preliminary countervailable subsidy rate (percent)	Final countervailable subsidy rate (percent)
Russian Ferro Alloys Inc./RFA International LP	748.58	748.58
All others	748.58	748.58

Source: 89 FR 53949, June 28, 2024; and 89 FR 76454, September 18, 2024.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

Note: The subsidy rates are based on adverse facts available.

Table I-3
Ferrosilicon: Commerce's subsidy determinations with respect to imports from Brazil

Entity	Preliminary countervailable subsidy rate (percent)	Final countervailable subsidy rate (percent)
Companhia de Ferro Ligas da Bahia—FERBASA	5.36	Pending
Minasligas S.A.	4.44	Pending
Ligas de Aluminio S.A.	61.73	Pending
All others	5.09	Pending

Source: 89 FR 73371, September 10, 2024.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

Note: The subsidy rate for Ligas de Aluminio S.A. is based on an adverse inference.

Table I-4
Ferrosilicon: Commerce's subsidy determinations with respect to imports from Kazakhstan

Entity	Preliminary countervailable subsidy rate (percent)	Final countervailable subsidy rate (percent)
TELF AG	2.37	Pending
TNC Kazchrome JSC	2.37	Pending
YDD Corporation LLP	14.74	Pending
All others	10.13	Pending

Source: 89 FR 73369, September 10, 2024.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

Note: The rate for TNC Kazchrome JSC also applies to its cross-owned companies: Eurasian Energy Corporation JSC and Shubarkol Komir JSC. Commerce has found the following companies to be cross-owned with YDD Corporation LLP: ASIA FerroAlloys LLP and KazSilicon Metallurgical Combine LLP.

Table I-5
Ferrosilicon: Commerce's subsidy determinations with respect to imports from Malaysia

Entity	Preliminary countervailable subsidy rate (percent)	Final countervailable subsidy rate (percent)
OM Materials (Sarawak) Sdn. Bhd	2.81	Pending
Pertama Ferroalloys Sdn. Bhd	3.48	Pending
All others	3.02	Pending

Source: 89 FR 73364, September 10, 2024.

Note: For further information on programs determined to be countervailable, see Commerce's associated Issues and Decision Memorandum.

Note: Commerce has found the following companies to be cross-owned with OM Materials (Sarawak) Sdn. Bhd: OM Materials & Logistics (M) Sdn. Bhd; OM Materials (Samalaju) Sdn. Bhd; and OM Engineering Tech (M) Sdn. Bhd.

Sales at LTFV

On June 28, 2024, Commerce published a notice in the Federal Register of its preliminary determination of sales at LTFV with respect to imports from Russia.[25] On September 18, 2024, Commerce published a notice in the Federal Register of its final determination of sales at LTFV with respect to imports from Russia.[26]

In addition, Commerce is scheduled to make its preliminary antidumping determinations with respect to allegedly-LTFV imports from Brazil, Kazakhstan, and Malaysia on October 31, 2024 and its final antidumping determinations on January 14, 2025, unless postponed.[27]

Tables I-6 presents Commerce's LTFV margins for imports of ferrosilicon from Russia and tables I-7 to I-9 provide for future determinations.

Table I-6
Ferrosilicon: Commerce's weighted-average LTFV margins with respect to imports from Russia

Entity	Preliminary dumping margin (percent)	Final dumping margin (percent)
Russia-wide entity	283.27	283.27

Source: 89 FR 53953, June 28, 2024; and 89 FR 76450, September 18, 2024.

Note: The dumping margins are based on adverse facts available.

[25] 89 FR 53953, June 28, 2024.
[26] 89 FR 76450, September 18, 2024.
[27] 89 FR 66678, August 16, 2024. On July 22, 2024, Commerce extended the deadline for its preliminary determinations in the antidumping investigations with respect to ferrosilicon from Brazil, Kazakhstan, and Malaysia by seven days (i.e., September 11, 2024). Commerce postponed the deadline for its preliminary determinations by an additional 50 days (i.e., October 31, 2024). Ibid.

Table I-7
Ferrosilicon: Commerce’s weighted-average LTFV margins with respect to imports from Brazil

Entity	Preliminary dumping margin (percent)	Final dumping margin (percent)
Brazil-wide entity (pending)	Pending	Pending

Source: Pending.

Table I-8
Ferrosilicon: Commerce’s weighted-average LTFV margins with respect to imports from Kazakhstan

Entity	Preliminary dumping margin (percent)	Final dumping margin (percent)
Kazakhstan-wide entity (pending)	Pending	Pending

Source: Pending.

Table I-9
Ferrosilicon: Commerce’s weighted-average LTFV margins with respect to imports from Malaysia

Entity	Preliminary dumping margin (percent)	Final dumping margin (percent)
Malaysia-wide entity (pending)	Pending	Pending

Source: Pending.

The subject merchandise

Commerce’s scope

In the current proceeding, Commerce has defined the scope as follows:[28]

> *. . . 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 of 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 investigation if performed in the country of manufacture of the ferrosilicon.*

[28] 89 FR 76454 and 89 FR 76450, September 18, 2024.

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.[29] 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.[30]

Effective April 9, 2022, the United States suspended normal trade relations (NTR) treatment of Russia and Belarus, and products of Russia and Belarus became subject to column 2 duty rates in the HTS. Ferrosilicon produced in Russia and provided for in HTS subheadings 7202.21.10 and 7202.21.50 became 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 ad valorem; and under HTS subheading 7202.29.00, 4.4 cents per kilogram ("¢/kg") on the silicon content.[31]

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[29] USITC, HTSUS (2024) Revision 6, Publication 5530, July 2024, p. 72-9.

[30] 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.

[31] 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).

Effective July 28, 2022, ferrosilicon produced in Russia and provided for in HTS subheadings 7202.21.10 and 7202.29.00 became subject to an increased column 2 duty rate of 35 percent ad valorem.[32] Effective April 1, 2023, such ferrosilicon originating in Russia and provided for in these HTS subheadings is subject to an increased column 2 duty rate of 70 percent ad valorem.[33]

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.[34] As of September 2024, USTR has not excluded any imported products reported under HTS headings 9903.88.67 and 9903.88.68 from these duties on ferrosilicon originating in China.[35]

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

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[32] 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.

[33] 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 6, USITC Publication 5530, July 2024, pp. 99-III-258 – 99-III-259, 99-III-314.

[34] 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 6, Publication 5530, July 2024, pp. 99-III-27, 99-III-28, 99-III-46.

[35] 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 9, Publication 5548, September 2024, pp. 99-III-231 – 99-III-241, 99-III-245 – 99-III-246, 99-III-296.

The product

Description and applications[36]

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 consumed is either 75 percent ferrosilicon (the predominant form produced by the domestic industry) or 50 percent ferrosilicon.[37] According to domestic producer ***, the *** of their production is ***.[38] 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.[39]

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 having more restrictive limits on the content of elements such as aluminum, titanium, and/or

[36] 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.

[37] 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.

[38] ***. Staff fieldwork and interview with CC Metals, July 30, 2024.

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

calcium in the alloy.[40] There are different forms of ferrosilicon available within the broader “regular” and “high-purity” groupings. For example, one domestic producer’s website lists 13 varieties of 75 percent ferrosilicon (including regular; regular, low aluminum; regular, low carbon; high-purity; and high-purity, low titanium) and 10 varieties of 50 percent ferrosilicon.[41] 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.[42]

High purity products are typically used in different applications than regular grade. For example, one domestic producer indicated that it produces “high-purity products used in the production of grain-oriented and non-oriented electrical steel sheet and specialty steels requiring low levels of aluminum, titanium, boron, and other residual elements.” [43] Higher purity products can also substitute for standard grade ferrosilicon.[44] While there is an ASTM standard with chemical requirements for different grades of ferrosilicon, one domestic producer stated that ***.[45]

[40]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.

[41] CC Metals website, “Silicon containing alloys,” https://www.ccmetals.com/products/silica-fume, retrieved August 5, 2024.

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

[43] Ferroglobe webpage, “Ferrosilicon,” https://www.ferroglobe.com/solutions/ferrosilicon/, retrieved April 10, 2024.

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

[45] Staff fieldwork and interview with CC Metals, July 30, 2024.

Brazilian ferrosilicon producers market "green" ferrosilicon that is produced with methods associated with lower carbon emissions than ferrosilicon in other countries (see manufacturing process for details of this process). The Brazilian observed that Brazilian-produced ferrosilicon has a considerably lower carbon footprint than U.S.-produced ferrosilicon and ferrosilicon from other investigated countries.[46] According to the Brazilian respondents, the low-carbon production methods and higher purity levels distinguish ferrosilicon from Brazil from other ferrosilicon products.[47] Petitioners contended that there is currently no premium for green ferrosilicon products in the U.S. marketplace and that customers are not paying extra to acquire such products.[48]

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.[49] Such ferrosilicon products are sometimes called "inoculants."[50]

In terms of applications, ferrosilicon is primarily used in steel and cast-iron production. In 2022, approximately 88 percent of ferrosilicon produced was used in steel production in the United States.[51] Ferrosilicon products are used to make stainless steel, carbon steel, electrical steel, and other steel alloys. [52] 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. In addition, ferrosilicon is sometimes used at steel mills to improve the recovery rate of scrap in basic oxygen furnaces.[53] 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 the overall chromium recovery of the process. Finally, ferrosilicon is used as the source of silicon for alloying purposes in the

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[46] Brazilian respondents' postconference brief, p. 2; Hearing transcript, p. 110 (Parreiras).

[47] Brazilian respondents' postconference brief, p. 10; Hearing transcript, p. 110 (Parreiras).

[48] Conference transcript, p. 94 (Bray).

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

[50] ***. Staff fieldwork and interview with CC Metals, July 30, 2024.

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

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

[53] Hearing transcript, pp. 202-203 (Fleming).

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.[54] 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.[55] Domestic producer *** indicated that ***.[56] Large lumps are generally used in primary steelmaking furnaces because they penetrate the layer of slag on top of the molten metal more readily (figure I-1). 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.[57] Ferrosilicon is considered relatively friable (easily crumbled or pulverized), and excessive handling of lumps or formed pieces will generate unwanted fines.[58]

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[54] 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.

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

[56] Staff fieldwork and interview with CC Metals, July 30, 2024.

[57] 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).

[58] AMG Vanadium, Inc., “Ferroalloys & Alloying Additives Online Handbook – Silicon,” November 23, 2000.

Figure I-1
Ferrosilicon lump

Source: Ferroglobe, "Ferrosilicon," https://www.ferroglobe.com/solutions/ferrosilicon, retrieved August 8, 2024.

Silica fume is a byproduct of the electrometallurgical process of silicon metal and ferrosilicon production.[59] This dust-like material, collected through 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 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.[60] Some domestic ferrosilicon producers ***.[61]

[59] Silica fume is not covered by the scope of these investigations.
[60] 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
[61] Staff fieldwork and interview with CC Metals, July 30, 2024.

Manufacturing processes[62]

In general, all ferrosilicon, 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 contains silicon) in submerged-arc furnaces.[63] These inputs are combined with carbonaceous material such as coal or petroleum coke and a bulking agent such as wood chips.[64] The quality of the raw inputs are important in that certain impurities embedded in raw materials cannot be removed during production.[65] For example, only coal with an ash content below 10 percent and with specific physical and chemical properties is used for production of ferrosilicon.[66] 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.[67] While submerged arc furnace technology and processing is relatively similar across the industry, furnace size can vary among producers.[68]

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[62] 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.

[63] A submerged arc furnace is a type of electric arc furnace that uses electricity to produce heat for melting and chemically reacting materials. The furnace's electrodes are buried deep in the furnace's contents and a reduction reaction occurs near the tips of the electrodes. The submerged arc furnace is the predominant type used in the production of ferroalloys. Satyendra, ISPAT GURU, “Submerged Arc Furnaces,” July 14, 2014, https://www.ispatguru.com/submerged-arc-furnaces/.

[64] Producers in Brazil produce “green” ferrosilicon and contend that it 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 observed that charcoal has lower CO_2 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; Hearing transcript, p. 116, (Oliveira).

[65] According to domestic producer ***. Staff fieldwork and interview with CC Metals, July 30, 2024.

[66] Ferroglobe’s 2023 20-F, p. 46 (as filed).

[67] ***. Staff fieldwork and interview with CC Metals, July 30, 2024.

[68] In the industry, furnace capacity is typically correlated with the amount of electricity consumed by the furnace, in megawatts. According to industry reports, silicon alloys require between 7 and 8

(continued...)

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.[69] To operate efficiently and reduce unit fixed costs, a submerged-arc furnace must run continuously, 24 hours per day.[70]

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 through a taphole 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. Once crushed, the ferrosilicon is typically weighed and bagged in 3,000-pound supersacks before delivery to customers.[71] 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

(…continued)

megawatt hours of electricity to produce one ton of product. Ferroglobe's Beverly, Ohio plant has three ferrosilicon furnaces ranging from 10 to 12 MW and two ferrosilicon/silicon metal 20 MW furnaces. ***. Staff fieldwork and interview with CC Metals, July 30, 2024; Ferroglobe's 2023 20-F, p. 49 (as filed).

[69] 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?," June 16, 2023, https://www.crugroup.com/knowledge-and-insights/insights/2023/what-is-the-role-of-ferrosilicon-on-the-route-to-net-zero/; Hearing transcript, p. 110 (Parreiras).

[70] Conference transcript, pp. 70-73 (Sossonko).

[71] Staff fieldwork and interview with CC Metals, July 30, 2024.

ferrosilicon. Such grades are produced using raw materials containing lower amounts of impurities.[72] 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. [73] 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 ferrosilicon also produce silicon metal.[74] 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.[75] Iron and other elements that may be contained in ferrosilicon tend to remain in a furnace lining and result in impurities intolerable in silicon metal production. These impurities must be removed from the furnace before silico metal production can begin. 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.[76] 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.[77]

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[72] Domestic producer CC Metals 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).

[73] ***. Staff fieldwork and interview with CC Metals, July 30, 2024.

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

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

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

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

Some ferrosilicon producers also make out of scope magnesium ferrosilicon products at the same plants as ferrosilicon.[78] 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. The resulting product is commonly known as ductile iron.[79]

Domestic like product issues

No issues with respect to domestic like product have been raised in these investigations. In the preliminary phase of these investigations, the Commission defined a single domestic like product, coextensive with the scope.[80] In the final phase of these investigations, no party requested data or other information necessary for the analysis of the domestic like product. Petitioners maintained that the domestic like product should be defined as a single domestic like product, coextensive with the scope.[81] No other party commented on the domestic like product definition.

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

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

[80] Ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia, Inv. Nos. 701-TA-712-715 and 731-TA-1679-1682 (Preliminary), USITC Publication 5506, May 2024, p. 10.

[81] Petitioners' prehearing brief, p. 9.

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 (principally 75 percent and 50 percent ferrosilicon) and in a range of forms, from large lumps to granular fines.

Customers typically require their own specifications of ferrosilicon that have reduced levels of certain nonsilicon elements.[2] Brazilian respondents stated 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]

Apparent U.S. consumption of ferrosilicon increased by *** percent from 2021 to 2022 but decreased by *** percent from 2022 to 2023. Apparent U.S. consumption was *** percent higher in January-June 2024 than in January-June 2023.

U.S. producers and importers were asked if there had been any significant changes in the product range, product mix, or marketing of ferrosilicon since January 1, 2021. Both U.S. producers and thirteen importers stated that there had not been.

[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.

U.S. purchasers

The Commission received 24 usable questionnaire responses from firms that had purchased ferrosilicon since January 2021.[4] [5] Sixteen responding purchasers are steel producers, one is an iron foundry, eight are distributors, and one described itself as a trader.[6] Responding U.S. purchasers were located across the United States, including Pennsylvania (five purchasers) and Alabama (four purchasers). Large purchasers of ferrosilicon include steel producers ***. ***. Additionally, ***.

Of the 24 responding purchasers, 18 purchased the domestic ferrosilicon, 17 purchased imports of the subject merchandise from Brazil, 9 purchased imports of the subject merchandise from Kazakhstan, 9 purchased imports of subject merchandise from Malaysia, 11 purchased imports of subject imports from Russia, and 15 purchased imports of ferrosilicon from other sources. In terms of the types of ferrosilicon purchased, all 24 purchasers purchased 75 percent silicon, and 5 also purchased 50 percent silicon. Twenty-one purchased ferrosilicon in lump form, and nine purchased it in fine form. Nineteen purchased regular ferrosilicon, and twelve purchased other grades.

Channels of distribution

U.S. producers and importers sold mainly to steel producers, as shown in table II-1. U.S. producers generally reported a larger share of sales to iron foundries and distributors than did subject importers.

Distributor purchasers, in turn, indicated that they generally sold to steel mills and/or iron foundries. Five purchasers (both distributors and end users) indicated that end users

[4] The following firms provided purchaser questionnaire responses: ***.

[5] Nineteen purchasers indicated they had marketing/pricing knowledge of domestic product, 19 of Brazilian product, 9 of Kazakh product, 10 of Malaysian product, 13 of Russian product, and 13 of ferrosilicon from nonsubject countries. Nonsubject countries included Azerbaijan, Canada, China, Egypt, France, Iceland, India, Norway, Paraguay, South Africa, and Vietnam.

[6] Some purchasers described themselves in more than one category.

sometimes approach distributors' suppliers as well as buying from those distributors. However, six purchasers indicated that they had not experienced this competition.

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

Shares in percent

Source	Channel	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
United States	Distributor	***	***	***	***	***
United States	Iron foundries	***	***	***	***	***
United States	Steel producers	***	***	***	***	***
United States	All other end user	***	***	***	***	***
Brazil	Distributor	***	***	***	***	***
Brazil	Iron foundries	***	***	***	***	***
Brazil	Steel producers	***	***	***	***	***
Brazil	All other end user	***	***	***	***	***
Kazakhstan	Distributor	***	***	***	***	***
Kazakhstan	Iron foundries	***	***	***	***	***
Kazakhstan	Steel producers	***	***	***	***	***
Kazakhstan	All other end user	***	***	***	***	***
Malaysia	Distributor	***	***	***	***	***
Malaysia	Iron foundries	***	***	***	***	***
Malaysia	Steel producers	***	***	***	***	***
Malaysia	All other end user	***	***	***	***	***
Russia	Distributor	***	***	***	***	***
Russia	Iron foundries	***	***	***	***	***
Russia	Steel producers	***	***	***	***	***
Russia	All other end user	***	***	***	***	***
Subject sources	Distributor	***	***	***	***	***
Subject sources	Iron foundries	***	***	***	***	***
Subject sources	Steel producers	***	***	***	***	***
Subject sources	All other end user	***	***	***	***	***
Nonsubject sources	Distributor	***	***	***	***	***
Nonsubject sources	Iron foundries	***	***	***	***	***
Nonsubject sources	Steel producers	***	***	***	***	***
Nonsubject sources	All other end user	***	***	***	***	***
All import sources	Distributor	***	***	***	***	***
All import sources	Iron foundries	***	***	***	***	***
All import sources	Steel producers	***	***	***	***	***
All import sources	All other end user	***	***	***	***	***

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 "---".

Geographic distribution

U.S. producers reported selling ferrosilicon to all regions in the contiguous United States (table II-2), as did most importers of product from Brazil and most importers of product from Malaysia. Importers of Kazakh and Russian product reported selling to most regions, but not

*** 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 19.7 percent within 100 miles of their U.S. point of shipment, 77.3 percent between 101 and 1,000 miles, and 3.0 percent over 1,000 miles.

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

Count in number of firms reporting

Region	U.S. producers	Brazil	Kazakhstan	Malaysia	Russia	Subject sources
Northeast	***	5	***	***	***	9
Midwest	***	7	***	***	***	11
Southeast	***	6	***	***	***	11
Central Southwest	***	3	***	***	***	7
Mountain	***	2	***	***	***	4
Pacific Coast	***	3	***	***	***	3
Other	***	0	***	***	***	0
All regions (except Other)	***	2	***	***	***	2
Reporting firms	2	7	3	3	2	12

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 628,000 short tons (silicon content) of ferrosilicon in 2023, and Russia was the world's second largest ferrosilicon producer after China (table VII-16).[7]

[7] 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 short tons 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: Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Counts equal the number of firms reporting "yes."

Note: Responding U.S. producers accounted for all known U.S. production of ferrosilicon in 2023. Responding foreign producer/exporter firms accounted for nearly *** percent of U.S. imports of ferrosilicon from Brazil during 2023, nearly *** percent of U.S. imports of ferrosilicon from Malaysia, and nearly *** 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.

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,[8] as well as the ability to shift

[8] Parties disagreed over whether reported U.S. capacity utilization was an indicator of U.S. producers’ actual ability to supply. Ferroglobe stated that it could re-open its Alabama plant (closed in 2023 due to market conditions) and add 36,000 tons of capacity to U.S. supply. Hearing transcript, p. 14 (Hammer). However, purchaser CCMA stated that domestic producers had shown constrained availability and had not shown willingness to “meaningfully” increase production and capacity even when demand and prices had reached record levels. It added that some purchasers were concerned over the long-term viability of purchasing from CC Metals given its legal troubles involving allegations of money laundering in both Ukraine and the United States. Hearing transcript, pp. 119-120 (Fleming); Joint Respondents’ (*continued...*)

production to or from alternate products[9] and the existence of some inventories. A factor mitigating responsiveness of supply is limited ability to shift shipments from alternate markets.

Subject imports from Brazil

Based on available information, producers of ferrosilicon from Brazil have the ability to respond to changes in demand with large changes in the quantity of shipments of ferrosilicon to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the existence of large alternative markets,[10] the ability to shift production to or from alternate products, and the existence of some inventories. Responsiveness is constrained by limited available capacity.

Subject imports from Kazakhstan

Based on available information, producers of ferrosilicon from Kazakhstan have the ability to respond to changes in demand with large changes in the quantity of shipments of ferrosilicon to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the existence of large alternative markets, the ability to shift production to or from alternate products, and the existence of large inventories. Responsiveness is somewhat constrained by available capacity.

Subject imports from Malaysia

Based on available information, producers of ferrosilicon from Malaysia have the ability to respond to changes in demand with large changes in the quantity of shipments of ferrosilicon to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the existence of large alternative markets[11] and the existence of some inventories, although there is limited available capacity and limited ability to shift production to or from alternate products.

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prehearing brief, pp. 25-26, and exhibits 2 and 3; and Joint Respondents' posthearing brief, p. APP-13. Petitioners noted that Ukrainian courts had dismissed allegations of money laundering. Petitioners' posthearing brief, p. A-23.

[9] At the hearing, purchaser CCMA stated that Ferroglobe can also produce silicon metal, which experienced record high prices in 2022. Hearing transcript, p. 159 (Fleming). See also Joint Respondents' posthearing brief, p. APP-3.

[10] However, purchaser CCMA stated that Brazilian producers prioritize their home market. Hearing transcript, p. 120 (Fleming).

[11] However, purchaser CCMA stated that Malaysian producers prioritize their home market. Hearing transcript, p. 120 (Fleming).

Subject imports from Russia

Russian producers' demonstrated ability to supply large amounts of ferrosilicon to the U.S. market suggests that producers of ferrosilicon from Russia have the ability to respond to changes in demand with large changes in the quantity of shipments of ferrosilicon to the U.S. market.

U.S. imports of ferrosilicon from Russia (and Belarus) became subject to column 2 duty rates of the HTSUS after April 8, 2022. Certain forms of ferrosilicon from Russia subsequently became subject to higher special column 2 duty rates during 2022-23. U.S. producers and importers were asked to describe the impact of these duties on their imports or purchases of ferrosilicon. Both U.S. producers stated that the duties had not had any impact because most imports of Russian product had been of 75 percent ferrosilicon, which did not have a duty change. Fourteen importers stated the duties had had no impact, although one of these, ***, stated that it stopped sourcing from Russia in February 2022 due to the Russia-Ukraine war. One importer ***, ***, stated that ***.

Purchasers were asked to describe the impact of these changes in duties on their purchases of ferrosilicon. Twenty-one purchasers answered that there was no impact, although one of these, ***, stated that it began moving away from Russian material after the outbreak of the Russia-Ukraine war, and before the change in duty rates. Two purchasers responded that they stopped purchasing Russian material due to the changes in the duty rates. *** stated that it stopped purchasing Russian material in January 2023, and *** stated that its customers had already decided to move away from Russian material before the duty changes.

Additionally, parties disagreed over the effect of the Russian government nationalizing Russian production in early 2024. CCMA described the nationalization as making purchasers highly wary of entering into new contracts "under the control of an entity sanctioned by the U.S. government."[12] On the other hand, petitioners described Russia as opening new ferrosilicon plants. They added that Russian producer CHEMK is appealing its nationalization.[13]

Russian ferrosilicon is subject to antidumping duties and sanctions in the European Union, and antidumping duties in Egypt.[14]

[12] Joint Respondents' Posthearing Brief, exhibit 3, pp. 2-3.
[13] Petitioners' posthearing brief, p. A-66.
[14] Petitioners' posthearing brief, p. A-68.

Imports from nonsubject sources

Nonsubject imports accounted for approximately 29.6 percent of total U.S. imports in 2023. The largest sources of nonsubject imports during January 2021-June 2024 were Canada and Iceland (see tables IV-2 and IV-3). At the hearing, respondents (including purchaser CC Metals) described Chinese material as entering the market in 2022 as high U.S. ferrosilicon prices overcame importer reluctance to import Chinese material due to section 301 duties.[15]

Availability

Ten purchasers stated that there had not been any change in the availability of U.S.-produced ferrosilicon since January 1, 2021. Ten purchasers stated that there had been, citing changes in availability and price. *** stated that when demand was strong in 2021 and 2022, U.S. ferrosilicon producers would not supply them with their requirements. *** stated that the increased availability from *** since then may be because ***. (See "substitute products" below.) Three other purchasers indicated that U.S. producers had experienced availability issues but did not elaborate. *** stated that availability of U.S. producers' supply has increased, and *** stated that domestic prices had increased.

Eleven purchasers stated that there had not been any change in the availability of subject imports of ferrosilicon since January 1, 2021. Eight purchasers stated that there had been, with three of these citing the reluctance of firms to use Russian ferrosilicon since the beginning of the Russia-Ukraine war. Some purchasers reported increased availability of subject imports, including *** and ***, which attributed such increased availability to increased production in Kazakhstan and Malaysia. Purchaser *** attributed the higher availability of subject ferrosilicon to decreased global demand. Purchaser *** stated that freight costs for subject ferrosilicon have increased.

Thirteen purchasers stated that there had not been any change in the availability of nonsubject imports of ferrosilicon. Six purchasers stated that there had been, citing changes including increased imports of ferrosilicon from India (due to decreased imports of Russian product) and Vietnam (due to increased Vietnamese production). Purchaser *** described the availability of nonsubject imports of ferrosilicon as "always good."

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[15] Hearing transcript, pp. 155-156 (Dougan and Fleming) and Joint Respondents' posthearing brief, exhibit 3, p. 1.

Purchaser *** described the availability of U.S., subject, and nonsubject imports as fluctuating during the COVID-19 pandemic when supply and freight was constricted.

Supply constraints

U.S. producers and importers were asked if they had been unable to supply ferrosilicon from January 1, 2021 to March 28, 2024 (the date of the filing of the petition in these investigations). U.S. producer *** stated that in April 2023, it ***. U.S. producer *** stated that it had refused to supply purchasers when those purchasers had demanded prices matching those of subject imports.

At the hearing, CC Metals described its sales strategy as aiming to sell out the production of individual furnaces in its plant. It indicated that once it sells out one furnace, it will not turn another furnace on until there is enough demand to justify doing so. However, it indicated that such small orders can usually be handled by CC Metals obtaining the material elsewhere, such as through swaps, and that it did not think it had failed to supply any purchasers.[16]

Ten importers stated that they had not experienced any supply constraints from January 1, 2021 to March 28, 2024, but three indicated that they had. Importer *** stated that it experienced some difficulties supplying in January-February 2021. The other importers with supply constraints described either their small size in a niche market or shipping constraints as the reason for their supply constraints.

Sixteen purchasers indicated that they had not experienced any problems obtaining ferrosilicon from January 1, 2021 to March 28, 2024. Eight purchasers indicated that they had. *** indicated that Ferroglobe had declined to quote them during 2021-23. *** stated that U.S. producers had been unable to supply sufficient ferrosilicon in 2021 and 2022, with *** attributing the

[16] Hearing transcript, p. 61 (Sossonko). Ferroglobe also indicated it had not had such issues. Hearing transcript, p. 63 (Hammer), and that it agreed with CC Metals' description of how furnace capacity works. Petitioners' posthearing brief, p. A-78. Additionally, Ferroglobe reported that ***. Petitioners' posthearing brief, exhibit 7, p. 4.

constraint to the COVID-19 pandemic.[17] *** stated that it had not experienced supply constraints because it had not purchased from suppliers with which it had supply concerns. *** indicated that some suppliers exited the market or did not bid in 2021 due to supply and shipping issues.

Two U.S. producers and ten importers indicated that they had not experienced any supply constraints since March 28, 2024. Two importers did report such constraints, citing these investigations as the constraint. Twenty-one purchasers indicated that they had not experienced any problems obtaining ferrosilicon since March 28, 2024, although *** added that some suppliers had restricted trial supplies and that there is pressure from domestic producers to commit to volumes due to limited capacity. Three indicated that they had experienced supply constraints after March 28, 2024, also citing these investigations.

New suppliers

Seventeen purchasers indicated that no new suppliers entered the U.S. market since January 1, 2021. Six purchasers indicated that new suppliers had entered, naming Hanwa, MTALX (a distributor), and MECO (a Vietnamese firm). Additionally, *** indicated that no new U.S. distributors had entered the market but added that established traders had begun offering ferrosilicon from new sources such as India.

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

U.S. demand for ferrosilicon depends on the demand for U.S.-produced downstream products, mostly in various steel and iron products. 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,

[17] At the hearing, Ferroglobe stated that it had never refused to acknowledge a request for material, although it may have rejected some requests as too low-priced. Hearing transcript, p. 56 (Elazazzy).

boron, and other residual elements.[18] These electrical steels can have relatively high silicon requirements.[19]

In response to Commission questionnaires, U.S. producers and importers identified steel and iron foundry products as end uses for ferrosilicon. One importer each also identified more specifically stainless steel, high-purity steel and aluminum recycling as end uses. U.S. producers and importers generally estimated that ferrosilicon accounted for 1 to 5 percent of the cost of steel and iron products.[20] Responding purchasers reported end uses include flat-rolled steel, structural steel, tool steel, stainless steel, rebar, merchant steel, and ductile iron pipe. Most responding purchasers also indicated that ferrosilicon accounts for a small share (1-2 percent) of the steel and iron products that it is used to manufacture.

End-user purchasers were asked to describe how demand for their final products incorporating ferrosilicon changed since January 1, 2021. Seven indicated that it had not changed, six indicated that it had fluctuated down, two indicated it had decreased steadily, and four indicated that it had fluctuated up.

Purchasers were also asked whether changes in demand for their end-use products had changed their own demand for ferrosilicon. Thirteen indicated that it had, while six indicated that it had not. Among those describing changes in demand for their end-use products, most described changes in demand for steel or iron as directly affecting their demand for ferrosilicon. Several firms described lower demand for stainless steel or iron products as reducing their demand for ferrosilicon. Two purchasers (***) also indicated that while overall steel demand was down, their ***.

Table II-4 and figure II-1 present data on U.S. production of steel and iron products. Both raw steel and iron and steel product production showed mild initial growth in 2021, which was followed by decreases in 2022 that resulted in a decline of approximately 9 percent from January 2021 to June 2024. At the hearing, both U.S. producer Ferroglobe and U.S. producer CC Metals described steel production as generally following GDP growth, but both firms added that trends in steel production had been lower than expected, especially (for CC Metals) in 2023.[21]

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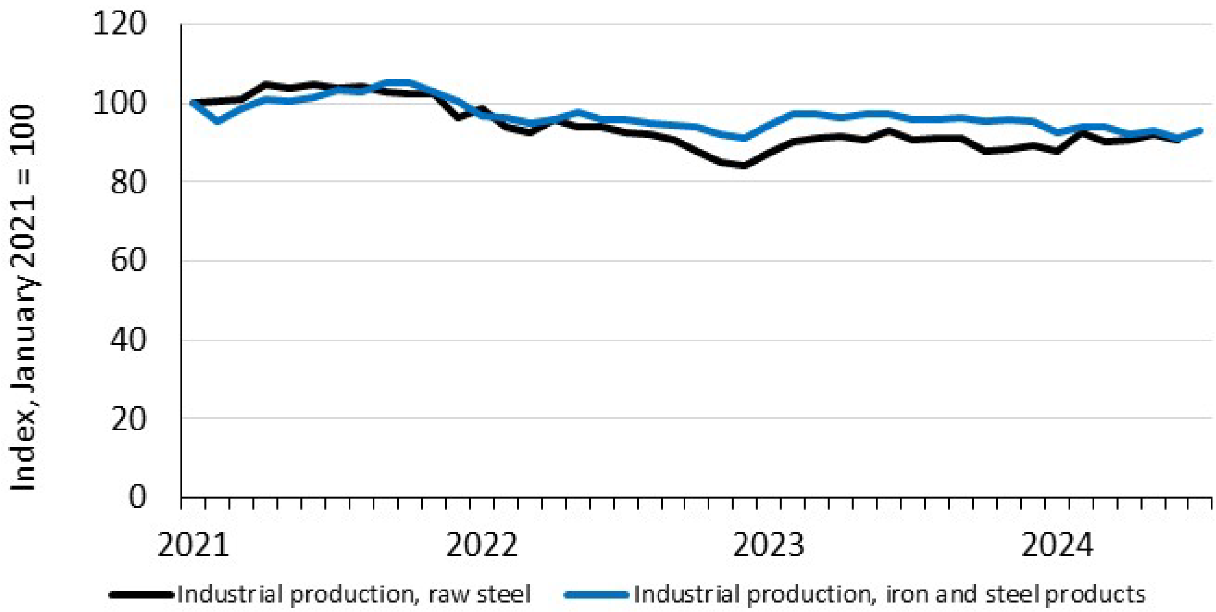
[18] Conference transcript, p. 15 (Hammer).

[19] Petition, p. 8.

[20] Two importers stated that the cost share of silicon in steel products could range as high as 10 percent.

[21] Hearing transcript, pp. 27-29 (Hammer and Sossonko) and 82 (Sossonko).

Figure II-1
U.S. steel production: Industrial production of raw steel and iron and steel products, January 2021-July 2024



Source: Bureau of Labor Statistics via Federal Reserve Bank of St. Louis, IPN3311A2RN, Industrial Production: Manufacturing: Durable Goods: Raw Steel, and IPG3311A2S, Industrial Production: Manufacturing: Durable Goods: Iron and Steel Products, retrieved August 7 and September 11, 2024, and staff calculations.

Table II-4
U.S. steel production: Industrial production of raw steel and iron and steel products, January 2021-June 2024

Index January 2021=100.0; '—' is not available

Year	Month	Raw steel	Iron and steel products
2021	January	100.0	100.0
2021	February	100.7	95.4
2021	March	101.2	98.9
2021	April	104.7	100.9
2021	May	103.8	100.6
2021	June	104.7	101.6
2021	July	103.8	103.2
2021	August	104.1	102.7
2021	September	103.0	105.3
2021	October	102.4	105.1
2021	November	102.5	103.1
2021	December	96.4	100.8
2022	January	98.9	96.9
2022	February	94.0	96.3
2022	March	92.8	94.9
2022	April	95.7	96.1
2022	May	94.1	97.8
2022	June	94.2	96.0
2022	July	92.7	96.0
2022	August	92.3	95.1
2022	September	90.8	94.7
2022	October	88.1	94.0
2022	November	84.9	92.2
2022	December	84.4	91.3
2023	January	87.6	94.3
2023	February	90.4	97.2
2023	March	91.1	97.2
2023	April	91.5	96.5
2023	May	90.7	97.1
2023	June	93.2	97.4
2023	July	90.7	96.1
2023	August	91.0	96.0
2023	September	91.1	96.2
2023	October	87.8	95.3
2023	November	88.3	95.8
2023	December	89.4	95.4
2024	January	88.1	92.6
2024	February	92.7	93.9
2024	March	90.2	94.0
2024	April	90.7	92.2
2024	May	92.0	93.1
2024	June	90.8	91.4
2024	July	--	93.2

Source: Bureau of Labor Statistics via Federal Reserve Bank of St. Louis, IPN3311A2RN, Industrial Production: Manufacturing: Durable Goods: Raw Steel, and IPG3311A2S, Industrial Production: Manufacturing: Durable Goods: Iron and Steel Products, retrieved August 7 and September 11, 2024, and staff calculations.

Business cycles

One of two U.S. producers, 10 of 13 responding importers, and 17 of 22 responding purchasers indicated that the ferrosilicon market was subject to business cycles. Specifically, multiple purchasers and importers described the ferrosilicon market as linked to production of steel and iron, either domestically or internationally. Importer *** stated that each ton of steel produced requires three to five kilograms of ferrosilicon. Purchaser *** added that geopolitical issues also play a role in the ferrosilicon market. Purchaser *** stated that, around the time of the COVID-19 pandemic, global supply and freight constraints caused a large rise in ferrosilicon prices. Importer *** added that electricity costs play a role in business cycles. Importer *** stated that July and December are slower months due to scheduled shutdowns. U.S. producer *** stated that most annual contracts are negotiated in autumn. However, at the hearing, Ferroglobe stated that while contracts are often set during an annual "mating season," ferrosilicon is "not a seasonal product" and instead experiences steady demand throughout the year.[22]

U.S. producers, importers, and purchasers were also asked if the ferrosilicon market is subject to conditions of competition distinctive to ferrosilicon other than the business cycles previously described. Eight importers and sixteen purchasers stated that it was not subject to such conditions, but both U.S. producers, five importers, and seven purchasers stated that it was. U.S. producers described price-based competition for ferrosilicon due to its nature as a commodity product or because of competition from subject imports. Importers noted distinctive conditions such as disruptions due to the COVID-19 pandemic, possible substitution from silicon metal to ferrosilicon, and foreign currency issues. Among purchasers, *** stated that sanctions and tariffs are a distinctive condition of competition. *** indicated that logistics costs from different countries are a distinctive condition. *** identified end user requirements, inventory requirements, and material availability as distinctive conditions. *** stated that for 75 percent ferrosilicon, slight product differences do not impact its purchases. However, it added that for mold sprays and chute inoculants, it purchases based on product performance and not price. *** stated that, as it ***, it has concerns about ***.

[22] Hearing transcript, p. 63 (Hammer).

Demand trends

Firms reported a wide variety of trends in U.S. demand for ferrosilicon since January 1, 2021 (table II-5). In additional explanatory comments, U.S. producer *** described demand for its ferrosilicon as fluctuating due to a steady increase in imports. Among importers, four connected ferrosilicon demand to steel production, and another (***) stated that consumption has risen since the end of the COVID-19 pandemic. Importer *** stated that macroeconomic factors such as customer demand and freight costs had driven demand lower. Regarding foreign markets, *** described fluctuating consumption due to purchasers building inventories after the beginning of the Russia-Ukraine war, although underlying demand has not changed. *** described the "energy crisis" as hurting production.

Among purchasers, most who provided an explanation attributed demand changes to changes in demand from steel and metal producers. *** also stated that macroeconomic changes and freight costs affected demand, and *** indicated that substitute products had replaced ferrosilicon to some extent.

Table II-5
Ferrosilicon: Count of firms' responses regarding overall domestic and foreign demand, by firm type

Count in number of firms reporting

Market	Firm type	Steadily Increase	Fluctuate Up	No change	Fluctuate Down	Steadily Decrease
Domestic demand	U.S. producers	***	***	***	***	***
Domestic demand	Importers	1	3	4	5	0
Domestic demand	Purchasers	3	1	8	4	0
Foreign demand	U.S. producers	***	***	***	***	***
Foreign demand	Importers	0	0	5	5	0
Foreign demand	Purchasers	1	1	5	2	0

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

Substitute products

Substitutes for ferrosilicon are highly limited. Two U.S. producers, 10 importers, and 17 purchasers reported that there were no substitutes. Seven[23] purchasers and four importers reported substitutes, with six purchasers and three importers reporting silicon carbide as a potential substitute. However, some of the purchasers added that silica carbide was a

[23] One of these purchasers indicated that there were no substitutes and then also indicated that silica carbide could be a very limited substitute.

substitute for ferrosilicon only as a fuel to be burnt off when producing steel, not in ferrosilicon's use as an alloying agent. One purchaser and two importers named silicon metal (more expensive than ferrosilicon), and one purchaser named silicomanganese as potential substitutes.

Five purchasers indicated that changes in the prices of substitutes had not affected the price of ferrosilicon. Three purchasers indicated that changes in the prices of substitutes had. Purchaser *** stated that the government of China keeps prices of silicon carbide below that of ferrosilicon.[24] Purchaser *** stated that it can purchase ferrosilicon when the price of silicon carbide is too high. Purchaser *** stated it switches between ferrosilicon and silicomanganese as the prices of each product vary. Importer *** stated that the prices of ferrosilicon and silicomanganese rose during the COVID-19 pandemic and the onset of the Russia-Ukraine war, but the prices of ferrosilicon rose more and have stayed higher.

Substitutability issues

This section assesses the degree to which U.S.-produced ferrosilicon and imports of ferrosilicon from subject countries can be substituted for one another by examining the importance of certain purchasing factors and the comparability of ferrosilicon from domestic and imported sources based on those factors. 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.[25] Purchasers and importers noted that substitutability may be limited by availability and reliability issues, differences in purity, whether production is "eco-friendly" or "green," the different levels of various secondary elements in the ferrosilicon, and the lack of subject imports of 50 percent ferrosilicon and "other grades."[26] Additionally, some purchasers are currently reluctant to

[24] In response to a question on demand trends, ***.

[25] The degree of substitution between domestic and imported ferrosilicon depends upon the extent of product differentiation between the domestic and imported products and reflects how easily purchasers can switch from domestically produced ferrosilicon to the ferrosilicon imported from subject countries (or vice versa) when prices change. The degree of substitution may include such factors as quality differences (e.g., grade standards, defect rates, etc.), and differences in sales conditions (e.g., lead times between order and delivery dates, reliability of supply, product services, etc.).

[26] At the hearing, Brazilian producers described Brazilian production as "green," and purchaser CC Metals described both Brazilian and Malaysian producers as "green." Hearing transcript, pp. 108-110 (Parreiras) and 121 (Fleming). As discussed in greater detail in Part IV, the high-purity forms of ferrosilicon represent a relatively small portion of ferrosilicon consumed in the U.S. market.

purchase Russian product. Nonetheless, most market participants described product from all sources as mostly interchangeable, with products from most countries always or usually meeting minimum quality specifications, and comparable in most purchasing factors. At the hearing, U.S. producer CC Metals described steel companies as willing to shift purchases of ferrosilicon from one supplier to another in response to even small changes in price.[27]

Factors affecting purchasing decisions

Purchaser decisions based on source

As shown in table II-6, most purchasers and their customers sometimes or never make purchasing decisions based on the producer or country of origin. *** indicated that their steel customers do not make purchasing decisions based on the source of the ferrosilicon used. Of the purchasers that reported that they at least sometimes make decisions based on the manufacturer, firms cited their experience with suppliers in terms of reliability, service, price, quality, and consistency. Two purchasers (***) described reluctance to purchase from U.S. producer ***, with ***. Additionally, purchasers *** indicated that either they and/or their customers no longer wish to purchase from Russia. Other purchasers indicated that some grades of ferrosilicon are only available from certain producers but did not elaborate.

When asked specifically about purchasing from specific countries, multiple purchasers (including ***) indicated that they do not purchase from Russia. Other reasons cited for preferring one country over another included price, logistics, areas of high risk or conflict, and import duties. Four purchasers added that their customers do not want product from Russia. One of those four, ***, also stated that some customers do not want product from China.

[27] Hearing transcript, pp. 29-31 (Sossonko and Bay).

Table II-6
Ferrosilicon: Count of purchasers' responses regarding frequency of purchasing decisions based on producer and country of origin

Count in number of firms reporting

Firm making decision	Decision based on	Always	Usually	Sometimes	Never
Purchaser	Producer	2	2	9	11
Customer	Producer	0	0	6	14
Purchaser	Country	2	2	13	7
Customer	Country	0	1	7	11

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

Purchasers were asked if they or their customers ever prefer to order ferrosilicon produced in a specific country or countries over other possible country sources of supply. Thirteen responded that they and their customers do not, but eleven responded that either they or their customers did. Seven of those latter purchasers indicated that they preferred purchases from U.S. suppliers because of lower costs and shorter supply chains, or because U.S. (along with European Union) product is less likely to be on sanction lists. Three purchasers did not purchase from Russia and/or China.

Twenty purchasers stated that there were no grades/types/sizes of ferrosilicon that were only available from certain country sources. Three purchasers stated that there were. *** stated that *** is available from *** but not the United States. *** stated that *** ferrosilicon is only available from ***, but not from U.S. and Russian producers. *** stated that high-purity ferrosilicon is not available from ***.

Importance of purchasing domestic product

Twenty-two of 24 purchasers reported that most or all of their purchases did not require purchasing U.S.-produced product. One purchaser (***) reported that all its domestic purchases was required by their customers, and *** reported *** to purchase entirely domestic product.

Most important purchase factors

The most often cited top three factors firms consider in their purchasing decisions for ferrosilicon were price (19 firms), availability (16 firms), and quality (15 firms), as shown in table II-7. Quality was the most frequently cited first-most important factor (cited by 11 firms); price was the most frequently reported second-most important factor (9 firms); and price was also the most frequently reported third-most important factor (6 firms).

Table II-7
Ferrosilicon: Count of ranking of factors used in purchasing decisions as reported by purchasers, by factor

Count in number of firms reporting

Factor	First	Second	Third	Total
Quality	11	2	2	15
Price	4	9	6	19
Availability/security of supply	4	8	4	16
Reliability/past performance	2	3	3	8
Relationship with supplier	1	1	0	2
Delivery	1	1	0	2
Product origin	1	0	0	1
Contract terms/credit/service	0	0	5	5
All other factors	0	0	1	1

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

Note: Other factors include sustainability, brand, logistics, size, and packaging. In additional comments, ***.

Fourteen purchasers reported that they usually purchase the lowest-priced ferrosilicon available, eight indicated that they sometimes do, and two stated that they always do.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 19 factors in their purchasing decisions (table II-8). The factors rated as very important by a majority of responding purchasers were availability (23 purchasers), reliability of supply (23 purchasers), price (22 purchasers), product consistency (22 purchasers), quality meeting industry standards (22 purchasers), delivery time (21 purchasers), grade (19 purchasers), and delivery terms (15 purchasers). The majority of purchasers reported that availability of grades other than regular ferrosilicon was not an important factor in their purchase decisions.

Table II-8
Ferrosilicon: Count of purchasers' responses regarding importance of purchase factors, by factor

Count in number of firms reporting

Factor	Very important	Somewhat important	Not important
Availability	23	1	0
Available under contracts	9	10	5
Availability of grades other than regular ferrosilicon	2	9	13
Delivery terms	15	9	0
Delivery time	21	3	0
Discounts offered	9	9	6
"Eco-friendly" or "green" production	6	12	6
Grade	19	5	0
Minimum quantity requirements	5	11	7
Packaging	7	13	3
Payment terms	8	14	2
Price	22	2	0
Product consistency	22	2	0
Product range	0	15	9
Quality meets industry standards	22	2	0
Quality exceeds industry standards	8	9	7
Reliability of supply	23	1	0
Technical support/service	6	10	8
U.S. transportation costs	7	10	6

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

Lead times

Ferrosilicon is both produced-to-order and sold from inventory, but it is sold from inventory somewhat more often. U.S. producers reported that *** percent of their commercial shipments came from inventory, with lead times averaging *** days. The remaining *** percent of their commercial shipments were produced to order, with lead times averaging *** days. U.S. importers reported that 79.0 percent of their commercial shipments came from U.S. inventories, with lead times averaging 12.5 days. The remaining 21.0 percent of their commercial shipments were produced to order, with lead times averaging 152.4 days.

Supplier certification

Seventeen responding purchasers require their suppliers to become certified or qualified to sell ferrosilicon to their firm. Eight of those purchasers reported that the time to qualify a new supplier was between 15 to 90 days. Three purchasers reported qualification times of 14 days or fewer, *** reported a period of 30 to 120 days, and *** reported a period of 60 to 180 days. Purchasers described qualification procedures as including meeting certifications (including ISO certifications), availability, quality, delivery, and testing trial loads. Six purchasers indicated that they did not require their suppliers to become certified or qualified.[28]

Twenty-two purchasers reported that no domestic or foreign supplier had failed in its attempt to qualify ferrosilicon or had lost its approved status since 2021. Two purchasers (***) indicated that they did not purchase Russian material, with *** indicating that it has not done so since the beginning of the Russia-Ukraine war.

Minimum quality specifications

As can be seen from table II-9, most responding purchasers reported that domestically produced and imported product always or usually met minimum quality specifications.

Table II-9
Ferrosilicon: Count of purchasers' responses regarding suppliers' ability to meet minimum quality specifications, by source

Count in number of firms reporting

Source of purchases	Always	Usually	Sometimes	Rarely or never	Don't Know
United States	15	4	0	1	3
Brazil	13	4	0	0	6
Kazakhstan	5	3	1	0	13
Malaysia	6	5	0	0	12
Russia	9	2	1	0	11
Nonsubject sources	8	3	1	0	4

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

Note: Purchasers were asked how often domestically produced or imported ferrosilicon meets minimum quality specifications for their own or their customers' uses. Nonsubject countries included Argentina, Azerbaijan, Canada, Egypt, France, Iceland, India, Norway, and Vietnam.

Responding purchasers reported factors that determined quality included appearance, chemistry (such as aluminum, carbon, and/or silicon content), meeting ASTM standards, packaging, product performance, and sizing.

Changes in purchasing patterns

Sixteen purchasers indicated that they had changed suppliers since January 1, 2021, while eight indicated that they had not. Purchasers changing suppliers described doing so for

[28] One of these (***) described a qualification process similar to firms that did have a qualification process.

numerous reasons, including ceasing Russian supply after the Russia-Ukraine war, normal conduct of business for distributors, and/or issues of availability, pricing, delivery, and service.

Purchasers were also asked about changes in their purchasing patterns from different countries since January 1, 2021 (table II-10). Three purchasers reported increased purchases of U.S.-produced product because they shifted from purchasing Russian ferrosilicon after the outbreak of the Russia-Ukraine war. *** reported buying less U.S. product because of price. *** indicated that Ferroglobe had decreased its supply. *** stated that demand for steel made with high purity ferrosilicon had fluctuated up, leading to a similar trend in its purchases of U.S. ferrosilicon. *** described trying to increase purchases of domestic product but encountering problems with availability, service, and/or delivery. *** indicated that it had fluctuating purchases from domestic producers depending on reliability and availability.

Purchasers also reported changes in purchasing patterns from Brazil for a variety of reasons, including availability, pricing (both competitive and not competitive), lead times, customer requests for eco-friendly material, replacing Russian material, qualifying new suppliers, logistics, freight costs, and needing high-purity product (from Brazil). Purchasers had fewer comments on changed patterns of purchasing Kazakh material, mostly citing replacing Russian material and making one-time purchases. Regarding purchases of Malaysian product, purchasers described changing purchasing patterns due to competitive price and lead times, as well as supplementing "limited domestic supply." As noted elsewhere in Part II, numerous purchasers described reduced purchases from Russia due to the outbreak of the Russia-Ukraine war. Purchasers also described increased purchases of nonsubject imports from Azerbaijan, Iceland, and Norway in response to increased demand, competitive prices, or a need to diversify supply chains.

Table II-10
Ferrosilicon: Count of purchasers' responses regarding changes in purchase patterns from U.S., subject, and nonsubject countries

Count in number of firms reporting

Source of purchases	Did not purchase	Steadily increased	Fluctuated up	No change	Fluctuated down	Steadily decreased
United States	2	3	4	5	5	0
Brazil	1	4	2	5	6	1
Kazakhstan	9	0	3	3	2	1
Malaysia	8	2	3	3	3	0
Russia	8	0	1	3	4	4
Nonsubject sources	4	2	5	1	5	1
Sources unknown	6	1	1	5	1	1

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

Interchangeability of various types of ferrosilicon

U.S. producers, importers, and purchasers were asked how frequently 50 percent and 75 percent ferrosilicon are interchangeable. *** while 75 percent ferrosilicon could sometimes be used in applications that normally used 50 percent ferrosilicon (or other blends), 50 percent ferrosilicon could not be used in applications that used 75 percent ferrosilicon.

Seventeen purchasers and five importers stated that 50 percent and 75 percent ferrosilicon were never interchangeable, five purchasers and four importers stated that they were sometimes interchangeable, and one purchaser stated they were usually interchangeable. Importer *** stated that the hazardous materials nature of 50 percent ferrosilicon makes it never interchangeable with 75 percent ferrosilicon. Importer *** stated that while the products might be technically interchangeable, its customers do not want to interchange them. Importer *** stated that when ferrosilicon is used as an inoculant, whether it is 50 percent or 75 percent does not matter. Purchasers describing some interchangeability noted that using 50 percent ferrosilicon would require using greater volume of ferrosilicon in order to obtain the same amount of silicon.

Comparing standard and specialty (i.e., high purity) ferrosilicon, market participants generally described limited interchangeability. U.S. producer *** stated that high purity ferrosilicon can always replace standard grade (or any other higher purity level), but for applications where a specific purity level is called for, standard cannot replace that product unless it meets that specification. U.S. producer *** described the products as always interchangeable. Eleven purchasers and three importers stated that they were never interchangeable, 12 purchasers and five importers stated that they were sometimes interchangeable, and 2 purchasers stated they were always interchangeable. Additional comments by importers and purchasers indicated that specialty ferrosilicon is more expensive than standard ferrosilicon, and therefore unlikely to be used in applications that can use standard ferrosilicon. Additionally, it is difficult or impossible to use standard ferrosilicon in applications that require specialty ferrosilicon. Purchaser *** stated that its mills using *** cannot use standard ferrosilicon.

Purchasers were also asked if there is any difficulty shifting purchases of the same product between different producers in the same country. Seventeen purchasers stated that there were not. Two purchasers stated that there were, citing issues of quality and residual chemicals.

U.S. producers, importers, and purchasers were asked if the environmental impact of ferrosilicon production methods, including eco-friendly or “green” production methods, influence their firm's production, importation, or purchasing decisions (respectively). Two U.S. producers, 5 importers, and 12 purchasers stated that environmental impact did not affect their production/importation/purchasing decisions. However, 8 importers and 12 purchasers stated that it did, citing either their own firm's or their customers' preference for environmentally sustainable business practices. Importer *** stated that Brazil has the "greenest FeSi in the world" because it uses "renewable" charcoal with energy from hydroelectric, wind, and solar. Importer *** described Malaysian production as "green," elaborating that it is based on hydroelectric power. Importer *** stated that while "green" production is not irrelevant, customers are usually more focused on price.

Purchase factor comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing ferrosilicon produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 19 factors (tables II-11) for which they were asked to rate the importance.

Majorities (or sometimes pluralities) of purchasers reported that U.S., subject, and nonsubject ferrosilicon were comparable for most factors. However, majorities or pluralities of purchasers indicated that U.S. product was superior to Brazilian product in delivery time; U.S. product was superior to Kazakh product in six factors (delivery terms, delivery time, "eco-friendly" or "green" production, reliability of supply, technical support/service,[29] and U.S. transportation costs); U.S. product was superior to Malaysian product in four factors (availability of grades other than regular ferrosilicon, delivery terms,[30] delivery time, and U.S. transportation costs); and U.S. product was superior to Russian product in terms of availability of grades other than regular ferrosilicon and delivery time.

[29] For "eco-friendly," reliability of supply, and technical support, equal numbers of purchasers described U.S. product as superior and comparable to Kazakh product.

[30] For availability of grades other than regular ferrosilicon and delivery terms, equal numbers of purchasers described U.S. product as superior and comparable to Malaysian product.

Table II-11
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. v. Brazil	3	10	3
Available under contracts	U.S. v. Brazil	2	11	2
Availability of grades other than regular ferrosilicon	U.S. v. Brazil	1	14	1
Delivery terms	U.S. v. Brazil	5	10	1
Delivery time	U.S. v. Brazil	10	5	1
Discounts offered	U.S. v. Brazil	2	11	1
"Eco-friendly" or "green" production	U.S. v. Brazil	1	8	3
Grade	U.S. v. Brazil	2	14	0
Minimum quantity requirements	U.S. v. Brazil	1	13	1
Packaging	U.S. v. Brazil	1	15	0
Payment terms	U.S. v. Brazil	2	13	1
Price	U.S. v. Brazil	0	12	4
Product consistency	U.S. v. Brazil	2	14	0
Product range	U.S. v. Brazil	2	12	2
Quality meets industry standards	U.S. v. Brazil	0	16	0
Quality exceeds industry standards	U.S. v. Brazil	1	13	0
Reliability of supply	U.S. v. Brazil	3	12	1
Technical support/service	U.S. v. Brazil	4	10	0
U.S. transportation costs	U.S. v. Brazil	7	9	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. v. Kazakhstan	3	5	0
Available under contracts	U.S. v. Kazakhstan	1	7	0
Availability of grades other than regular ferrosilicon	U.S. v. Kazakhstan	3	5	1
Delivery terms	U.S. v. Kazakhstan	5	3	0
Delivery time	U.S. v. Kazakhstan	6	2	0
Discounts offered	U.S. v. Kazakhstan	2	5	1
"Eco-friendly" or "green" production	U.S. v. Kazakhstan	3	3	0
Grade	U.S. v. Kazakhstan	2	6	0
Minimum quantity requirements	U.S. v. Kazakhstan	1	6	0
Packaging	U.S. v. Kazakhstan	2	7	0
Payment terms	U.S. v. Kazakhstan	2	5	1
Price	U.S. v. Kazakhstan	0	5	3
Product consistency	U.S. v. Kazakhstan	2	7	0
Product range	U.S. v. Kazakhstan	3	5	0
Quality meets industry standards	U.S. v. Kazakhstan	1	8	0
Quality exceeds industry standards	U.S. v. Kazakhstan	1	7	0
Reliability of supply	U.S. v. Kazakhstan	4	4	0
Technical support/service	U.S. v. Kazakhstan	4	4	0
U.S. transportation costs	U.S. v. Kazakhstan	6	3	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. v. Malaysia	3	6	1
Available under contracts	U.S. v. Malaysia	1	8	0
Availability of grades other than regular ferrosilicon	U.S. v. Malaysia	5	5	0
Delivery terms	U.S. v. Malaysia	5	5	0
Delivery time	U.S. v. Malaysia	7	3	0
Discounts offered	U.S. v. Malaysia	2	7	0
"Eco-friendly" or "green" production	U.S. v. Malaysia	0	7	0
Grade	U.S. v. Malaysia	2	7	0
Minimum quantity requirements	U.S. v. Malaysia	1	8	0
Packaging	U.S. v. Malaysia	2	8	0
Payment terms	U.S. v. Malaysia	2	8	0
Price	U.S. v. Malaysia	0	8	2
Product consistency	U.S. v. Malaysia	2	8	0
Product range	U.S. v. Malaysia	4	6	0
Quality meets industry standards	U.S. v. Malaysia	0	10	0
Quality exceeds industry standards	U.S. v. Malaysia	1	8	0
Reliability of supply	U.S. v. Malaysia	3	7	0
Technical support/service	U.S. v. Malaysia	3	6	0
U.S. transportation costs	U.S. v. Malaysia	6	4	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. v. Russia	3	5	5
Available under contracts	U.S. v. Russia	3	8	2
Availability of grades other than regular ferrosilicon	U.S. v. Russia	9	3	1
Delivery terms	U.S. v. Russia	5	8	0
Delivery time	U.S. v. Russia	7	6	0
Discounts offered	U.S. v. Russia	2	7	4
"Eco-friendly" or "green" production	U.S. v. Russia	4	6	0
Grade	U.S. v. Russia	5	8	0
Minimum quantity requirements	U.S. v. Russia	2	10	1
Packaging	U.S. v. Russia	3	10	0
Payment terms	U.S. v. Russia	2	8	2
Price	U.S. v. Russia	1	7	4
Product consistency	U.S. v. Russia	2	11	0
Product range	U.S. v. Russia	5	6	2
Quality meets industry standards	U.S. v. Russia	1	12	0
Quality exceeds industry standards	U.S. v. Russia	3	10	0
Reliability of supply	U.S. v. Russia	4	9	0
Technical support/service	U.S. v. Russia	5	8	0
U.S. transportation costs	U.S. v. Russia	5	8	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	U.S. v. Nonsubject	2	11	1
Available under contracts	U.S. v. Nonsubject	2	10	1
Availability of grades other than regular ferrosilicon	U.S. v. Nonsubject	2	12	0
Delivery terms	U.S. v. Nonsubject	5	8	1
Delivery time	U.S. v. Nonsubject	7	6	1
Discounts offered	U.S. v. Nonsubject	0	10	1
"Eco-friendly" or "green" production	U.S. v. Nonsubject	0	9	0
Grade	U.S. v. Nonsubject	0	11	0
Minimum quantity requirements	U.S. v. Nonsubject	1	12	0
Packaging	U.S. v. Nonsubject	2	12	0
Payment terms	U.S. v. Nonsubject	1	11	1
Price	U.S. v. Nonsubject	0	10	3
Product consistency	U.S. v. Nonsubject	2	12	0
Product range	U.S. v. Nonsubject	2	12	0
Quality meets industry standards	U.S. v. Nonsubject	0	14	0
Quality exceeds industry standards	U.S. v. Nonsubject	0	12	0
Reliability of supply	U.S. v. Nonsubject	4	10	0
Technical support/service	U.S. v. Nonsubject	4	8	0
U.S. transportation costs	U.S. v. Nonsubject	3	11	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Brazil v. Kazakhstan	3	6	0
Available under contracts	Brazil v. Kazakhstan	1	8	0
Availability of grades other than regular ferrosilicon	Brazil v. Kazakhstan	4	5	0
Delivery terms	Brazil v. Kazakhstan	1	8	0
Delivery time	Brazil v. Kazakhstan	3	6	0
Discounts offered	Brazil v. Kazakhstan	1	6	1
"Eco-friendly" or "green" production	Brazil v. Kazakhstan	3	5	0
Grade	Brazil v. Kazakhstan	3	6	0
Minimum quantity requirements	Brazil v. Kazakhstan	1	8	0
Packaging	Brazil v. Kazakhstan	2	7	0
Payment terms	Brazil v. Kazakhstan	0	9	0
Price	Brazil v. Kazakhstan	2	7	0
Product consistency	Brazil v. Kazakhstan	2	7	0
Product range	Brazil v. Kazakhstan	2	7	0
Quality meets industry standards	Brazil v. Kazakhstan	1	7	0
Quality exceeds industry standards	Brazil v. Kazakhstan	1	8	0
Reliability of supply	Brazil v. Kazakhstan	4	5	0
Technical support/service	Brazil v. Kazakhstan	1	6	1
U.S. transportation costs	Brazil v. Kazakhstan	1	8	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Brazil v. Malaysia	1	7	2
Available under contracts	Brazil v. Malaysia	1	8	0
Availability of grades other than regular ferrosilicon	Brazil v. Malaysia	4	6	0
Delivery terms	Brazil v. Malaysia	1	9	0
Delivery time	Brazil v. Malaysia	3	7	0
Discounts offered	Brazil v. Malaysia	0	8	1
"Eco-friendly" or "green" production	Brazil v. Malaysia	0	5	1
Grade	Brazil v. Malaysia	2	7	0
Minimum quantity requirements	Brazil v. Malaysia	1	9	0
Packaging	Brazil v. Malaysia	2	8	0
Payment terms	Brazil v. Malaysia	0	9	0
Price	Brazil v. Malaysia	0	10	0
Product consistency	Brazil v. Malaysia	2	8	0
Product range	Brazil v. Malaysia	4	6	0
Quality meets industry standards	Brazil v. Malaysia	2	8	0
Quality exceeds industry standards	Brazil v. Malaysia	1	8	0
Reliability of supply	Brazil v. Malaysia	2	7	1
Technical support/service	Brazil v. Malaysia	1	7	0
U.S. transportation costs	Brazil v. Malaysia	1	9	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Brazil v. Russia	2	7	2
Available under contracts	Brazil v. Russia	1	9	1
Availability of grades other than regular ferrosilicon	Brazil v. Russia	6	5	0
Delivery terms	Brazil v. Russia	2	6	1
Delivery time	Brazil v. Russia	2	7	1
Discounts offered	Brazil v. Russia	2	7	1
"Eco-friendly" or "green" production	Brazil v. Russia	6	3	0
Grade	Brazil v. Russia	3	8	0
Minimum quantity requirements	Brazil v. Russia	2	8	0
Packaging	Brazil v. Russia	2	9	0
Payment terms	Brazil v. Russia	2	8	0
Price	Brazil v. Russia	3	5	2
Product consistency	Brazil v. Russia	2	9	0
Product range	Brazil v. Russia	5	6	0
Quality meets industry standards	Brazil v. Russia	2	9	0
Quality exceeds industry standards	Brazil v. Russia	2	9	0
Reliability of supply	Brazil v. Russia	3	8	0
Technical support/service	Brazil v. Russia	1	9	0
U.S. transportation costs	Brazil v. Russia	1	9	1

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Brazil v. Nonsubject	3	11	0
Available under contracts	Brazil v. Nonsubject	1	12	0
Availability of grades other than regular ferrosilicon	Brazil v. Nonsubject	3	11	0
Delivery terms	Brazil v. Nonsubject	0	14	0
Delivery time	Brazil v. Nonsubject	1	13	0
Discounts offered	Brazil v. Nonsubject	1	12	0
"Eco-friendly" or "green" production	Brazil v. Nonsubject	4	6	1
Grade	Brazil v. Nonsubject	2	11	0
Minimum quantity requirements	Brazil v. Nonsubject	0	13	0
Packaging	Brazil v. Nonsubject	2	12	0
Payment terms	Brazil v. Nonsubject	0	14	0
Price	Brazil v. Nonsubject	2	12	0
Product consistency	Brazil v. Nonsubject	3	11	0
Product range	Brazil v. Nonsubject	2	12	0
Quality meets industry standards	Brazil v. Nonsubject	1	13	0
Quality exceeds industry standards	Brazil v. Nonsubject	1	12	0
Reliability of supply	Brazil v. Nonsubject	4	10	0
Technical support/service	Brazil v. Nonsubject	1	9	1
U.S. transportation costs	Brazil v. Nonsubject	0	14	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Kazakhstan v. Malaysia	0	4	3
Available under contracts	Kazakhstan v. Malaysia	0	6	1
Availability of grades other than regular ferrosilicon	Kazakhstan v. Malaysia	0	5	2
Delivery terms	Kazakhstan v. Malaysia	0	6	0
Delivery time	Kazakhstan v. Malaysia	0	7	0
Discounts offered	Kazakhstan v. Malaysia	0	6	0
"Eco-friendly" or "green" production	Kazakhstan v. Malaysia	0	3	2
Grade	Kazakhstan v. Malaysia	0	6	1
Minimum quantity requirements	Kazakhstan v. Malaysia	0	5	1
Packaging	Kazakhstan v. Malaysia	0	6	1
Payment terms	Kazakhstan v. Malaysia	0	6	1
Price	Kazakhstan v. Malaysia	0	6	1
Product consistency	Kazakhstan v. Malaysia	0	7	0
Product range	Kazakhstan v. Malaysia	0	6	1
Quality meets industry standards	Kazakhstan v. Malaysia	0	6	1
Quality exceeds industry standards	Kazakhstan v. Malaysia	0	6	1
Reliability of supply	Kazakhstan v. Malaysia	0	6	1
Technical support/service	Kazakhstan v. Malaysia	0	6	0
U.S. transportation costs	Kazakhstan v. Malaysia	0	7	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Kazakhstan v. Russia	1	3	3
Available under contracts	Kazakhstan v. Russia	1	4	2
Availability of grades other than regular ferrosilicon	Kazakhstan v. Russia	2	5	0
Delivery terms	Kazakhstan v. Russia	2	4	1
Delivery time	Kazakhstan v. Russia	1	5	1
Discounts offered	Kazakhstan v. Russia	2	3	1
"Eco-friendly" or "green" production	Kazakhstan v. Russia	1	3	1
Grade	Kazakhstan v. Russia	1	5	1
Minimum quantity requirements	Kazakhstan v. Russia	1	4	1
Packaging	Kazakhstan v. Russia	1	4	2
Payment terms	Kazakhstan v. Russia	1	5	1
Price	Kazakhstan v. Russia	3	3	1
Product consistency	Kazakhstan v. Russia	1	5	1
Product range	Kazakhstan v. Russia	2	4	1
Quality meets industry standards	Kazakhstan v. Russia	1	5	1
Quality exceeds industry standards	Kazakhstan v. Russia	1	5	1
Reliability of supply	Kazakhstan v. Russia	2	4	1
Technical support/service	Kazakhstan v. Russia	2	3	1
U.S. transportation costs	Kazakhstan v. Russia	1	6	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Kazakhstan v. Nonsubject	0	6	1
Available under contracts	Kazakhstan v. Nonsubject	0	7	0
Availability of grades other than regular ferrosilicon	Kazakhstan v. Nonsubject	0	7	0
Delivery terms	Kazakhstan v. Nonsubject	1	6	0
Delivery time	Kazakhstan v. Nonsubject	0	6	1
Discounts offered	Kazakhstan v. Nonsubject	0	7	0
"Eco-friendly" or "green" production	Kazakhstan v. Nonsubject	0	4	1
Grade	Kazakhstan v. Nonsubject	0	6	0
Minimum quantity requirements	Kazakhstan v. Nonsubject	0	6	0
Packaging	Kazakhstan v. Nonsubject	0	7	0
Payment terms	Kazakhstan v. Nonsubject	0	7	0
Price	Kazakhstan v. Nonsubject	0	7	0
Product consistency	Kazakhstan v. Nonsubject	0	7	0
Product range	Kazakhstan v. Nonsubject	0	7	0
Quality meets industry standards	Kazakhstan v. Nonsubject	0	7	0
Quality exceeds industry standards	Kazakhstan v. Nonsubject	0	7	0
Reliability of supply	Kazakhstan v. Nonsubject	0	7	0
Technical support/service	Kazakhstan v. Nonsubject	0	7	0
U.S. transportation costs	Kazakhstan v. Nonsubject	0	7	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Malaysia v. Russia	1	4	3
Available under contracts	Malaysia v. Russia	1	5	2
Availability of grades other than regular ferrosilicon	Malaysia v. Russia	2	5	1
Delivery terms	Malaysia v. Russia	1	6	0
Delivery time	Malaysia v. Russia	1	6	0
Discounts offered	Malaysia v. Russia	1	4	1
"Eco-friendly" or "green" production	Malaysia v. Russia	2	3	0
Grade	Malaysia v. Russia	1	6	0
Minimum quantity requirements	Malaysia v. Russia	1	5	0
Packaging	Malaysia v. Russia	1	6	1
Payment terms	Malaysia v. Russia	1	6	0
Price	Malaysia v. Russia	2	4	1
Product consistency	Malaysia v. Russia	1	6	1
Product range	Malaysia v. Russia	2	5	0
Quality meets industry standards	Malaysia v. Russia	1	7	0
Quality exceeds industry standards	Malaysia v. Russia	1	6	0
Reliability of supply	Malaysia v. Russia	1	6	0
Technical support/service	Malaysia v. Russia	1	5	0
U.S. transportation costs	Malaysia v. Russia	1	6	1

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Malaysia v. Nonsubject	1	8	0
Available under contracts	Malaysia v. Nonsubject	0	8	0
Availability of grades other than regular ferrosilicon	Malaysia v. Nonsubject	0	8	1
Delivery terms	Malaysia v. Nonsubject	0	9	0
Delivery time	Malaysia v. Nonsubject	0	9	0
Discounts offered	Malaysia v. Nonsubject	0	7	0
"Eco-friendly" or "green" production	Malaysia v. Nonsubject	0	5	0
Grade	Malaysia v. Nonsubject	0	7	1
Minimum quantity requirements	Malaysia v. Nonsubject	0	8	0
Packaging	Malaysia v. Nonsubject	0	9	0
Payment terms	Malaysia v. Nonsubject	0	9	0
Price	Malaysia v. Nonsubject	1	8	0
Product consistency	Malaysia v. Nonsubject	0	9	0
Product range	Malaysia v. Nonsubject	0	8	1
Quality meets industry standards	Malaysia v. Nonsubject	0	9	0
Quality exceeds industry standards	Malaysia v. Nonsubject	0	8	0
Reliability of supply	Malaysia v. Nonsubject	0	9	0
Technical support/service	Malaysia v. Nonsubject	0	8	0
U.S. transportation costs	Malaysia v. Nonsubject	0	9	0

Table continued.

Table II-11 Continued
Ferrosilicon: Count of purchasers' responses comparing U.S.-produced and imported product, by factor and country pair

Factor	Country pair	Superior	Comparable	Inferior
Availability	Russia v. Nonsubject	3	5	1
Available under contracts	Russia v. Nonsubject	2	6	1
Availability of grades other than regular ferrosilicon	Russia v. Nonsubject	0	5	4
Delivery terms	Russia v. Nonsubject	2	6	1
Delivery time	Russia v. Nonsubject	2	5	2
Discounts offered	Russia v. Nonsubject	1	6	2
"Eco-friendly" or "green" production	Russia v. Nonsubject	0	5	2
Grade	Russia v. Nonsubject	1	5	2
Minimum quantity requirements	Russia v. Nonsubject	0	7	1
Packaging	Russia v. Nonsubject	1	7	1
Payment terms	Russia v. Nonsubject	1	7	1
Price	Russia v. Nonsubject	1	5	3
Product consistency	Russia v. Nonsubject	1	7	1
Product range	Russia v. Nonsubject	0	5	4
Quality meets industry standards	Russia v. Nonsubject	1	7	1
Quality exceeds industry standards	Russia v. Nonsubject	1	7	1
Reliability of supply	Russia v. Nonsubject	2	5	2
Technical support/service	Russia v. Nonsubject	0	7	2
U.S. transportation costs	Russia v. Nonsubject	0	8	1

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

Note: With respect to cost/price factors, a rating of superior means that cost/price for the first source in the country pair is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

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 Brazil, Kazakhstan, Malaysia, and Russia, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in tables II-12 to II-14, U.S. producers and purchasers generally described products from different countries as always or frequently interchangeable. Importers had more mixed responses, but pluralities or majorities of importers described products from different countries as frequently interchangeable.

Table II-12
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
United States vs. Brazil	***	***	***	***
United States vs. Kazakhstan	***	***	***	***
United States vs. Malaysia	***	***	***	***
United States vs. Russia	***	***	***	***
Brazil vs. Kazakhstan	***	***	***	***
Brazil vs. Malaysia	***	***	***	***
Brazil vs. Russia	***	***	***	***
Kazakhstan vs. Malaysia	***	***	***	***
Kazakhstan vs. Russia	***	***	***	***
Malaysia vs. Russia	***	***	***	***
United States vs. Other	***	***	***	***
Brazil vs. Other	***	***	***	***
Kazakhstan vs. Other	***	***	***	***
Malaysia vs. Other	***	***	***	***
Russia vs. Other	***	***	***	***

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

Table II-13
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
United States vs. Brazil	4	4	3	0
United States vs. Kazakhstan	3	3	1	0
United States vs. Malaysia	2	3	2	1
United States vs. Russia	2	4	1	0
Brazil vs. Kazakhstan	1	3	3	0
Brazil vs. Malaysia	1	3	2	1
Brazil vs. Russia	1	4	2	0
Kazakhstan vs. Malaysia	1	3	1	1
Kazakhstan vs. Russia	1	3	2	0
Malaysia vs. Russia	1	3	2	0
United States vs. Other	2	3	1	0
Brazil vs. Other	2	3	2	0
Kazakhstan vs. Other	1	3	1	0
Malaysia vs. Other	1	3	1	0
Russia vs. Other	1	3	1	0

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

Table II-14
Ferrosilicon: Count of purchasers reporting the interchangeability between product produced in the United States and in other countries, by country pair

Country pair	Always	Frequently	Sometimes	Never
United States vs. Brazil	9	6	1	0
United States vs. Kazakhstan	4	5	1	0
United States vs. Malaysia	6	4	3	0
United States vs. Russia	7	5	2	0
Brazil vs. Kazakhstan	4	6	1	0
Brazil vs. Malaysia	5	6	2	0
Brazil vs. Russia	5	6	1	0
Kazakhstan vs. Malaysia	4	5	1	0
Kazakhstan vs. Russia	5	4	1	0
Malaysia vs. Russia	4	5	2	0
United States vs. Other	5	6	3	0
Brazil vs. Other	6	6	3	0
Kazakhstan vs. Other	3	5	2	0
Malaysia vs. Other	4	5	3	0
Russia vs. Other	4	6	3	0

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

In additional comments, importer *** stated that some Brazilian producers can manufacture certain grades of high purity ferrosilicon that U.S. producers cannot. Among purchasers, *** stated that Malaysia, Russia, and nonsubject countries do not offer the *** it uses but added that the 75 percent ferrosilicon offered by those countries would be interchangeable. *** stated that most ferrosilicon is interchangeable except in the cases of customers' unique grades. *** stated that 50 and 75 percent ferrosilicon is always interchangeable among sources. *** stated that it can only source low aluminum ferrosilicon from the United States. *** stated that Kazakhstan, Malaysia, and Russia do not supply high purity ferrosilicon, and so are not interchangeable with product from Brazil.

In addition, U.S. producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales or purchases of ferrosilicon from the United States, subject, or nonsubject countries. As seen in tables II-15 to II-17, U.S. producers described differences other than price as never significant, importers generally described such differences as sometimes significant, and purchasers described such differences as always or frequently significant.

Table II-15
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
United States vs. Brazil	***	***	***	***
United States vs. Kazakhstan	***	***	***	***
United States vs. Malaysia	***	***	***	***
United States vs. Russia	***	***	***	***
Brazil vs. Kazakhstan	***	***	***	***
Brazil vs. Malaysia	***	***	***	***
Brazil vs. Russia	***	***	***	***
Kazakhstan vs. Malaysia	***	***	***	***
Kazakhstan vs. Russia	***	***	***	***
Malaysia vs. Russia	***	***	***	***
United States vs. Other	***	***	***	***
Brazil vs. Other	***	***	***	***
Kazakhstan vs. Other	***	***	***	***
Malaysia vs. Other	***	***	***	***
Russia vs. Other	***	***	***	***

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

Table II-16
Ferrosilicon: Count of importers 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
United States vs. Brazil	3	1	6	1
United States vs. Kazakhstan	2	1	4	0
United States vs. Malaysia	2	1	4	1
United States vs. Russia	2	1	4	0
Brazil vs. Kazakhstan	1	2	4	0
Brazil vs. Malaysia	1	2	4	0
Brazil vs. Russia	2	1	4	0
Kazakhstan vs. Malaysia	1	1	4	0
Kazakhstan vs. Russia	2	0	3	1
Malaysia vs. Russia	2	0	4	0
United States vs. Other	1	1	4	0
Brazil vs. Other	1	2	4	0
Kazakhstan vs. Other	1	1	3	0
Malaysia vs. Other	1	1	3	0
Russia vs. Other	1	1	3	0

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

Table II-17
Ferrosilicon: Count of purchasers 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
United States vs. Brazil	5	5	3	3
United States vs. Kazakhstan	4	4	2	1
United States vs. Malaysia	5	3	4	1
United States vs. Russia	8	4	2	1
Brazil vs. Kazakhstan	2	6	2	1
Brazil vs. Malaysia	3	5	4	1
Brazil vs. Russia	5	5	1	1
Kazakhstan vs. Malaysia	2	5	2	1
Kazakhstan vs. Russia	4	5	1	1
Malaysia vs. Russia	5	3	2	1
United States vs. Other	6	4	3	2
Brazil vs. Other	7	4	3	2
Kazakhstan vs. Other	4	4	1	1
Malaysia vs. Other	5	3	3	1
Russia vs. Other	6	3	2	1

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

In additional comments, importer *** stated that U.S. producers have an advantage over foreign producers because of availability, transportation network, and technical support. Importer *** stated that it does not source Russian product and that it considers chemistry, logistics, and reliability when comparing product from different sources. Importer *** described ferrosilicon as a commodity product, adding that price, reliability of supply, and reliability of chemistry are key factors. Importer *** stated that quality and eco-friendly production are important factors.

Four purchasers *** stated that, since the start of the Russia-Ukraine war, they no longer purchase Russian material. *** indicated that price is the most important factor, although some purchasers (including ***) also cited quality, transportation, supplier reliability, and availability as other important factors. *** reported placing “substantial weight” on factors other than price when purchasing ferrosilicon. *** elaborated that the high-purity ferrosilicon it purchases is not available from U.S. producers. *** described purchasing from U.S. producers, even though U.S. product is not the lowest price, because of their proximity and because U.S. suppliers support *** for urgent orders. *** stated that it can only purchase low aluminum ferrosilicon from U.S. suppliers.

Elasticity estimates

This section discusses elasticity estimates; parties were encouraged to comment on these estimates in their prehearing and/or posthearing briefs. None did so.

U.S. supply elasticity

The domestic supply elasticity for ferrosilicon measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of ferrosilicon. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced ferrosilicon. Analysis of these factors above indicates that the U.S. industry has the ability to greatly increase or decrease shipments to the U.S. market; an estimate in the range of 6 to 10 is suggested.

U.S. demand elasticity

The U.S. demand elasticity for ferrosilicon measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of ferrosilicon. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the ferrosilicon in the production of any downstream products. Based on the available information, the aggregate demand for ferrosilicon is likely to be very inelastic; a range of -0.25 to -0.5 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[31] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, eco-friendliness) and conditions of sale (e.g., availability, sales terms/discounts/promotions). Based on available information, the elasticity of substitution between U.S.-produced ferrosilicon and imported ferrosilicon is likely to be in the range of 4 to 7. While purchasers and importers did report some issues with the availability of specialty products (e.g., particular grades, eco-friendliness, etc.) from different sources compared to U.S. production, in general, these specialty products are a small share of the overall market (with the possible exception of eco-friendly ferrosilicon). Additionally, some U.S. purchasers described a current reluctance to purchase Russian product as an important purchasing factor.

[31] The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and the domestic like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject products (or vice versa) when prices change.

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 two firms 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 petitions. Two firms provided usable data on their operations. Table III-1 lists U.S. producers of ferrosilicon, their production locations, positions on the petitions, and shares of total production.

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

Share in percent

Firm	Position on petitions	Production location(s)	Share of production
CC Metals	Petitioner	Calvert City, KY	***
Ferroglobe	Petitioner	Beverly, OH Bridgeport, AL	***
All firms	Various	Various	100.0

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.

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

Reporting firm	Relationship type and related firm
***	***
***	***
***	***
***	***
***	***
***	***

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

As indicated in table III-2, no U.S. producers are related to foreign producers of the subject merchandise or U.S. importers of the subject merchandise. In addition, as discussed in more detail below, no U.S. producers directly import the subject merchandise. However, as discussed in greater detail below, ***.[1]

Table III-3 presents events in the U.S. industry since January 1, 2021. While there were no new entrants, these events include investment, plant restarts and idling, and a new labor agreement. Additional information regarding Ferroglobe's Selma, Alabama, plant is included. However, while it has the capability to do so, at no time since January 1, 2021, has that facility produced ferrosilicon.

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, approximately 77% of CCMA's workforce. The facility reopened in March 2021.
New labor agreement	CC Metals	In September 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.

[1] ***'s U.S. producer questionnaire, II-13; and staff correspondence with ***, August 9, 2024.

Item	Firm	Event
Plant restart (silicon metal)	Ferroglobe	In September 2021, Ferroglobe announced it 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 22,000 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 36,000 metric tons of ferrosilicon yearly.
Capital investment	CC Metals	In February 2022, it was reported that CC Metals completed a $2.5 million investment in production equipment at its ferrosilicon plant in Calvert City, KY. The investment was used to modernize one of its three furnaces that had been idle since April 2019 and, reportedly, created 37 new jobs at the plant.
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 (or, up to 36,000 metric tons of ferrosilicon).
Penalty for emissions	Ferroglobe	In July 2023, Globe Metallurgical, Inc. (a subsidiary of Ferroglobe) agreed to a consent decree requiring it to pay a $2.6 million civil penalty, implement an estimated $6.5 million in new and improved air pollution emissions controls, and limit the sulfur content of inputs used in its metal production process to settle alleged violations of the Clean Air Act (CAA) at its ferroalloy production facility in Beverly, Ohio. Emissions of air pollutants, such as the sulfur dioxide and particulate matter emitted from Globe's operations, may have caused adverse environmental and health impacts according to the complaint. The settlement requires Globe to take substantial steps to reduce emissions of air pollutants from industrial furnaces at its Beverly, Ohio facility. In addition to paying a penalty, Globe will be required to utilize coal and other materials with a specified reduced-sulfur content to limit the generation of sulfur dioxide emissions. Globe will also take steps to reduce emissions of particulate matter, including construction of an additional pollution control baghouse, and implementation of physical improvements to equipment and changes to operational practices to reduce emissions of particulate matter. Globe also agreed to conduct extensive testing and implement enhanced monitoring of air pollutants to ensure ongoing compliance.
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."

Item	Firm	Event
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 September 2024, those two furnaces were still idle, and the plant was 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). The Lane Report, "Manufacturer CCMA completes $2.5 million investment in Kentucky," February 4, 2022, https://www.lanereport.com/152126/2022/02/manufacturer-ccma-completes-2-5-million-investment-in-kentucky/. U.S. EPA, "Globe Metallurgical to Pay $2.6 Million Fine, Implement Extensive Emissions Controls and Limit Sulfur Inputs to Reduce Pollution from Industrial Furnaces in Ohio, July 25, 2023, https://www.epa.gov/newsreleases/globe-metallurgical-pay-26-million-fine-implement-extensive-emissions-controls-and. 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). Staff fieldwork and interview with CC Metals, July 30, 2024; and Hearing transcript, p.25 (Sossonko).

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 January 1, 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 and figure III-1 present U.S. producers' production, capacity, and capacity utilization of ferrosilicon. Ferrosilicon capacity and production increased from 2021 to 2023, by *** percent and *** percent, respectively, but were lower in January-June 2024 than in January-June 2023, by *** percent and *** percent, respectively. Capacity utilization increased by *** percentage points from 2021 to 2023, from *** percent to *** percent, and was *** higher in January-June 2024 than in January-June 2023.

The *** percent increase in capacity from 2021 to 2022 reflected actions by ***.[2] The *** percent decrease in capacity from 2022 to 2023 and the lower capacity in January-June 2024 than in January-June 2023 is primarily due to ***.

[2] Staff correspondence with ***, August 9, 2024.

As mentioned previously, ***.[3]

Other than downtime for scheduled and unplanned maintenance, production facilities are highly capital intensive and designed to produce ferrosilicon most efficiently in continuous operation 24 hours per day, seven days per week.[4]

Table III-5
Ferrosilicon: U.S. producers' output, by firm and period

Practical capacity

Capacity in short tons contained silicon

Firm	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
CC Metals	***	***	***	***	***
Ferroglobe	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table III-5 Continued
Ferrosilicon: U.S. producers' output, by firm and period

Production

Production in short tons contained silicon

Firm	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
CC Metals	***	***	***	***	***
Ferroglobe	***	***	***	***	***
All firms	***	***	***	***	***

Table continued.

Table III-5 Continued
Ferrosilicon: U.S. producers' output, by firm and period

Capacity utilization

Capacity utilization ratio in percent

Firm	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
CC Metals	***	***	***	***	***
Ferroglobe	***	***	***	***	***
All firms	***	***	***	***	***

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

Table continued.

[3] Staff fieldwork and interview with CC Metals, July 30, 2024.

[4] Conference transcript, pp. 72-74 (Sossonko).

Table III-5 Continued
Ferrosilicon: U.S. producers' output, by firm and period

Share of production

Share of production in percent

Firm	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
CC Metals	***	***	***	***	***
Ferroglobe	***	***	***	***	***
All firms	100.0	100.0	100.0	100.0	100.0

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

Figure III-1
Ferrosilicon: U.S. producers' capacity, production, and capacity utilization, by period

* * * * * * *

Tables III-6 and III-7 present U.S. producers' production by silicon content and grade. U.S. producers reported production of both 75 and 50 percent ferrosilicon. The vast majority of U.S. producers' production consisted of ferrosilicon containing 75 percent silicon (more than *** percent of production in each period). The majority of U.S. producers' production consisted of standard grade ferrosilicon (more than *** percent in each period), followed by high-purity grade.[5]

Table III-6
Ferrosilicon: U.S. producers' production, by silicon content and period

Quantity in short tons contained silicon; share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	***	***	***	***	***
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	***	***	***	***	***
75 percent silicon	Share	***	***	***	***	***
50 percent silicon	Share	***	***	***	***	***
Other silicon content	Share	***	***	***	***	***
All silicon contents	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 III-7
Ferrosilicon: U.S. producers' production, by grade and period

Quantity in short tons contained silicon; share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	***	***	***	***	***
High-purity grade	Quantity	***	***	***	***	***
All other grades	Quantity	***	***	***	***	***
All grades	Quantity	***	***	***	***	***
Standard grade	Share	***	***	***	***	***
High-purity grade	Share	***	***	***	***	***
All other grades	Share	***	***	***	***	***
All grades	Share	100.0	100.0	100.0	100.0	100.0

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

[5] According to petitioners, most customers in the U.S. do not use ferrosilicon containing 50 percent silicon. Conference transcript, p. 65 (Sossonko). See also staff fieldwork and interview with CC Metals, July 30, 2024.

Installed and practical capacity[6]

Table III-8 presents U.S. producers' installed and practical capacity.[7] Installed capacity *** in all periods, while practical overall capacity and practical ferrosilicon capacity fluctuated, but increased by *** percent and *** percent, respectively, during 2021-23 and were lower in January-June 2024 than in January-June 2023.

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[6] The Commission requested producers to report installed and practical capacity as follows:

"Installed overall capacity" – The level of production that your establishment(s) could have attained, assuming your firm's optimal product mix, and based solely on existing capital investments, i.e., machinery and equipment that is in place and ready to operate. This capacity measure does not take into account other constraints to production such as existing workforce constraints, availability of raw materials, or downtime for maintenance, repair, and clean-up. This capacity measure is sometimes referred to as "nameplate" or "theoretical" capacity.

"Practical overall capacity" – The level of production that your establishment(s) could reasonably have expected to attain, taking into account your firm's actual product mix over the period. This capacity measure is based on not only existing capital investments, i.e., machinery and equipment that is in place and ready to operate; but also non-capital investment constraints, such as (1) normal operating conditions, including normal downtime for maintenance, repair, and cleanup; (2) your firm's existing in place and readily available labor force; (3) availability of material inputs; and (4) any other constraints that may have limited your firm's ability to produce the reported products. Importantly, this capacity measure is the maximum "practical" production your firm could have achieved without hiring new personnel or expanding the number of shifts operated in the period.

"Practical ferrosilicon capacity" – The level of production of ferrosilicon that your establishment(s) could reasonably have expected to attain. The same assumptions apply to this capacity measure as for practical overall capacity, but only includes the portion of practical overall capacity allocated to the production of ferrosilicon based on the actual product mix experienced over the period.

[7] U.S. producers reported that practical capacity is primarily driven by required downtime for maintenance. Conference transcript, pp. 72-74 (Sossonko); and *** U.S. producer questionnaire, II-3. CC Metals reported ***. Ferroglobe reported that ***. CC Metals and Ferroglobe's U.S. producer questionnaire, II-3c; and staff correspondence with ***, August 21, 2024.

Table III-8
Ferrosilicon: U.S. producers' installed and practical capacity, by period

Capacity in short tons contained silicon

Item	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Installed overall capacity	***	***	***	***	***
Practical overall capacity	***	***	***	***	***
Practical ferrosilicon capacity	***	***	***	***	***

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

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.[8] CC Metals did not produce any other products on the same equipment as its ferrosilicon production.[9]

Overall production on the same equipment as ferrosilicon production decreased by *** percent during 2021-23 and was *** percent lower in January-June 2024 than in January-June 2023. Out-of-scope production as a share of overall production decreased by *** percentage points between 2021 and 2023, from *** percent to *** percent and was *** percentage points higher in January-June 2024 than in January-June 2023. *** accounted for approximately *** of all out-of-scope production on the same equipment in each period, while *** accounted for the remaining ***.

[8] Conference transcript, p. 104 (Hammer). Ferroglobe asserts that ***. Ferroglobe further reported that switching production from silicon metal to ferrosilicon is easier compared to the reverse and would take one week and small capital investments. Switching from ferrosilicon to silicon metal is more difficult as it requires a change in technology and flushing out all impurities and would take approximately one month. In addition, Ferroglobe reported that it idled its Selma, Alabama plant in the fourth quarter of 2023. This plant has 36,000 short tons of capacity and, prior to its idling, was dedicated to the production of out-of-scope silicon metal but has the capability to switch to ferrosilicon production. Ferroglobe stated that "if market conditions improved for ferrosilicon, we'd be able to start up the Selma plant." *** U.S. producer questionnaire, II-4a; and conference transcript, pp. 33-35 (Hammer).

[9] CC Metals only produces ferrosilicon and does not hold permits to produce any other ferroalloys, ***. Consistent with Ferroglobe's assertion, ***. *** U.S. producer questionnaire, II-4a; conference transcript, pp. 53-54 (Sossonko); and staff fieldwork and interview with CC Metals, July 30, 2024.

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

Quantity in short tons; share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
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	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 "---".

Constraints on capacity

Table III-10 presents U.S. producers' reported narratives regarding practical overall capacity constraints. *** U.S. producers reported capacity constraints since January 1, 2021.

Table III-10
Ferrosilicon: U.S. producers' reported practical overall capacity constraints since January 1, 2021

Item	Firm name and narrative response
Existing labor force	***
Other constraints	***
Other constraints	***

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

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

Table III-11 presents U.S. producers' U.S. shipments, export shipments, and total shipments. U.S. producers' U.S. shipments by quantity increased in 2022 and 2023, increasing overall from 2021 to 2023 by *** percent, but were *** percent lower in January-June 2024 than in January-June 2023. Average unit values per short ton *** from 2021 to 2022, then decreased by *** percent from 2022 to 2023, increasing overall from 2021 to 2023 by *** percent. Average unit values per short ton of contained silicon were *** percent lower in January-June 2024 than in January-June 2023. U.S. producers attribute the high average unit value in 2022 to supply chain issues in the U.S. market caused by the COVID-19 pandemic.[10] U.S. shipments accounted for nearly all total shipments in each period. ***.

[10] Conference transcript, pp. 52-53 (Cook, Gordon, and Hammer); and staff correspondence with ***, August 5 and August 6, 2024, respectively.

Table III-11
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 STCS; shares in percent

Item	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
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	100.0	100.0	100.0	100.0	100.0
U.S. shipments	Share of value	***	***	***	***	***
Export shipments	Share of value	***	***	***	***	***
Total shipments	Share of value	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 "---".

U.S. producers' inventories

Table III-12 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' ending inventories increased by *** percent between 2021 and 2023, and were *** percent higher in January-June 2024 than in January-June 2023. During 2021-23, the ratio of inventories to production increased by *** percentage points and was *** percentage points higher in January-June 2024 than in January-June 2023. The ratios of inventories to U.S. shipments and total shipments also increased between 2021 and 2023, by *** percentage points, and were *** percentage points higher in January-June 2024 than in January-June 2023.

Table III-12
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	Jan-Jun 2023	Jan-Jun 2024
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.

U.S. producers' imports from subject sources

U.S. producers reported no imports of ferrosilicon from subject sources during the period for which data were collected.

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

*** reported purchases of imports during the period for which data were collected, ***. Based on available information, staff believes that ***.[11] *** purchases of imports from *** and the reasons for its purchases are presented in tables III-13 and III-14.

[11] ***, see staff correspondence with ***, August 9, 2024. In addition, ***.

Table III-13
Ferrosilicon: * purchases of imports from *** sources, by period**

Quantity in short tons contained silicon; ratio in percent

Item	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Purchases of imports from ***	***	***	***	***	***
Production	***	***	***	***	***
Ratio of purchases from *** to production	***	***	***	***	***

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

Table III-14
Ferrosilicon: * reasons for purchasing**

Firm	Narrative response on reasons for purchasing
***	***

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

U.S. employment, wages, and productivity

Table III-15 shows U.S. producers' employment-related data. All employment-related indicators, except productivity, increased overall during 2021-23. However, all employment-related indicators, except hourly wages and productivity, were lower in January-June 2024 than in January-June 2023. The number of production and related workers ("PRWs") increased by *** percent from 2021 to 2023 but were *** percent lower in January-June 2024 than in January-June 2023.[12] The lower number of PRWs in January-June 2024 is primarily due to CC Metals' reported layoff of 45 employees after shutting down two of its three furnaces in late 2023; the furnaces are still shut down as of September 2024.[13]

[12] *** U.S. producers reported a higher number of PRWs in 2022 and 2023 than in 2021. ***. ***. *** U.S. producer questionnaire, II-11.

[13] Conference transcript, p. 36 (Sossonko and Cobb); staff correspondence with ***, August 6, 2024; staff fieldwork and interview with CC Metals, July 30, 2024; and hearing transcript, p. 25 (Sossonko).

Total hours worked and wages paid increased during 2021-23, by *** percent and *** percent, respectively, but were lower in January-June 2024 than in January-June 2023, by *** percent and *** percent, respectively. Productivity decreased by *** percent during 2021-23, while unit labor costs increased by *** percent. Productivity was *** percent higher in January-June 2024 than in January-June 2023, while unit labor costs were *** lower.

Table III-15
Ferrosilicon: U.S. producers' employment related information, by item and period

Item	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
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.

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 ferrosilicon, as well as to all U.S. producers of ferrosilicon.[1] Usable questionnaire responses were received from 15 companies, representing the following shares of total U.S. imports for consumption 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:[2] [3]

- Brazil: *** percent
- Kazakhstan: *** percent
- Malaysia: *** percent
- Russia: Virtually all[4]
- Subject sources: *** percent
- Nonsubject sources: *** percent
- All import sources: 73.4 percent

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

[2] 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.

[3] U.S. importers *** did not submit a questionnaire response in the final phase of the investigations. Staff correspondence with ***, August 13, 2024; and staff correspondence with ***, August 15, 2024. During the preliminary phase of the investigations, ***.

[4] The 2023 coverage figure for imports from Russia is derived from ***. ***. Staff correspondence with ***, September 17, 2024. For additional information, refer to footnote 6.

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 reported U.S. imports, in 2023.

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

Share in percent

Firm	Headquarters	Brazil	Kazakh-stan	Malaysia	Russia	Subject sources	Non-subject sources	All import sources
Asia Minerals	Pittsburgh, PA	***	***	***	***	***	***	***
CCMA	Getzville, NY	***	***	***	***	***	***	***
Dakota	Webster, SD	***	***	***	***	***	***	***
DJJ	Cincinnati, OH	***	***	***	***	***	***	***
Elkem	Moon Township, PA	***	***	***	***	***	***	***
Ferronix	Mishawaka, IN	***	***	***	***	***	***	***
Greenwich	Greenwich, CT	***	***	***	***	***	***	***
Hanwa	Fort Lee, NJ	***	***	***	***	***	***	***
Hickman	Cincinnati, OH	***	***	***	***	***	***	***
International Metal	Medina, OH	***	***	***	***	***	***	***
LS Alloys	Windhof, Luxembourg	***	***	***	***	***	***	***
Outokumpu	Calvert, AL	***	***	***	***	***	***	***
Polymet	Birmingham, AL	***	***	***	***	***	***	***
ProFound Alloys	Canonsburg, PA	***	***	***	***	***	***	***
USMFG	South Haven, MI	***	***	***	***	***	***	***
All firms	Various	100.0	100.0	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 “---“.

U.S. imports

Table IV-2 and figure IV-1 present data for U.S. imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, Russia, and all other sources. During 2021-23, subject imports increased by 22.6 percent from 2021 to 2022 then decreased by 1.4 percent from 2022 to 2023, increasing overall by 20.9 percent. Similarly, imports from nonsubject sources increased by 81.9 percent from 2021 to 2022 then decreased by 30.8 percent from 2022 to 2023, increasing overall by 25.9 percent.

Imports from each subject source increased overall during 2021-23. Imports from Brazil and Malaysia were higher in January-June 2024 than in January-June 2023 while imports from Kazakhstan and Russia were lower during the same period. Subject imports as a share of total U.S. imports decreased by 8.7 percentage points from 2021 to 2022, then increased by 7.9 percentage points from 2022 to 2023, decreasing overall by 0.8 percentage points between 2021 and 2023. Subject imports as a share of total U.S. imports was 13.3 percentage points lower in January-June 2024 than in January-June 2023.[5] [6]

Average unit values ("AUVs") from subject sources peaked in 2022 and decreased overall between 2021 and 2023, by 12.3 percent. AUVs from nonsubject sources also peaked in 2022, but increased overall during the same period, by 38.2 percent. Subject and nonsubject AUVs were lower in January-June 2024 than in January-June 2023, by 37.0 percent and 27.8 percent, respectively. Subject AUVs were generally higher than nonsubject AUVs in 2021 and 2022, but lower in 2023 and both January-June periods.

[5] Russia was the largest source of subject imports between 2021 and 2023, accounting for 35.4 to 40.3 percent of total U.S. imports. Russia's share of total U.S. imports decreased by 4.8 percentage points between 2021 and 2023 and was 37.8 percentage points lower in January-June 2024 than in January-June 2023 (which included the largest single monthly volume of imports of ferrosilicon from Russia in April 2023, totaling 27,559 STCS). The lower imports in January-June 2024 compared to the same period in 2023 is primarily due to Ferronix, which ceased its imports from Russia after its Russian supplier ChEMK gave notice in February 2024 that it would no longer accept orders. Ferronix prehearing brief, p. 3.

[6] General imports are presented in appendix D. Total general imports were approximately 5 to 8 percent higher than total imports for consumption (table IV-2) between 2021 and 2023. Total general imports were also higher than total imports for consumption during January-June 2023 and January-June 2024, by 10 percent and 1 percent, respectively. This is primarily due to imports from Russia.

*** reported that a portion of their ferrosilicon imports entered bonded warehouses and/or FTZs. ***. *** U.S. importer questionnaire, II-13.

***. Staff correspondence with ***, September 19, 2024. See also *** U.S. importer questionnaire, I-8; and staff correspondence with ***, September 17, 2024.

The ratio of subject imports to U.S. production decreased by *** percentage points between 2021 and 2023, from *** percent to *** percent and was *** percentage points lower in January-June 2024 than in January-June 2023 (*** percent compared to *** percent).

Table IV-2
Ferrosilicon: 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	Jan-Jun 2023	Jan-Jun 2024
Brazil	Quantity	18,049	24,886	27,729	14,980	21,844
Kazakhstan	Quantity	11,046	5,020	12,304	8,461	4,587
Malaysia	Quantity	13,797	16,496	19,192	9,380	20,379
Russia	Quantity	55,643	74,361	59,896	43,633	4,760
Subject	Quantity	98,536	120,762	119,121	76,454	51,569
Nonsubject sources	Quantity	39,707	72,218	49,990	23,638	30,115
All import sources	Quantity	138,243	192,981	169,111	100,092	81,685
Brazil	Value	34,838	82,201	64,349	38,083	39,940
Kazakhstan	Value	27,159	31,426	34,164	23,619	10,285
Malaysia	Value	40,653	77,783	45,644	25,078	35,031
Russia	Value	199,839	393,356	176,684	144,265	12,906
Subject	Value	302,490	584,766	320,841	231,045	98,162
Nonsubject sources	Value	113,837	340,237	198,030	102,434	94,247
All import sources	Value	416,327	925,004	518,871	333,479	192,409
Brazil	Unit value	1,930	3,303	2,321	2,542	1,828
Kazakhstan	Unit value	2,459	6,260	2,777	2,791	2,242
Malaysia	Unit value	2,946	4,715	2,378	2,674	1,719
Russia	Unit value	3,591	5,290	2,950	3,306	2,711
Subject	Unit value	3,070	4,842	2,693	3,022	1,903
Nonsubject sources	Unit value	2,867	4,711	3,961	4,333	3,130
All import sources	Unit value	3,012	4,793	3,068	3,332	2,356

Table continued.

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

Share and ratio in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Brazil	Share of quantity	13.1	12.9	16.4	15.0	26.7
Kazakhstan	Share of quantity	8.0	2.6	7.3	8.5	5.6
Malaysia	Share of quantity	10.0	8.5	11.3	9.4	24.9
Russia	Share of quantity	40.3	38.5	35.4	43.6	5.8
Subject	Share of quantity	71.3	62.6	70.4	76.4	63.1
Nonsubject sources	Share of quantity	28.7	37.4	29.6	23.6	36.9
All import sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
Brazil	Share of value	8.4	8.9	12.4	11.4	20.8
Kazakhstan	Share of value	6.5	3.4	6.6	7.1	5.3
Malaysia	Share of value	9.8	8.4	8.8	7.5	18.2
Russia	Share of value	48.0	42.5	34.1	43.3	6.7
Subject	Share of value	72.7	63.2	61.8	69.3	51.0
Nonsubject sources	Share of value	27.3	36.8	38.2	30.7	49.0
All import sources	Share of value	100.0	100.0	100.0	100.0	100.0
Brazil	Ratio	***	***	***	***	***
Kazakhstan	Ratio	***	***	***	***	***
Malaysia	Ratio	***	***	***	***	***
Russia	Ratio	***	***	***	***	***
Subject	Ratio	***	***	***	***	***
Nonsubject sources	Ratio	***	***	***	***	***
All import sources	Ratio	***	***	***	***	***

Table continued.

Table IV-2 Continued
Ferrosilicon: U.S. imports, by source and comparison period

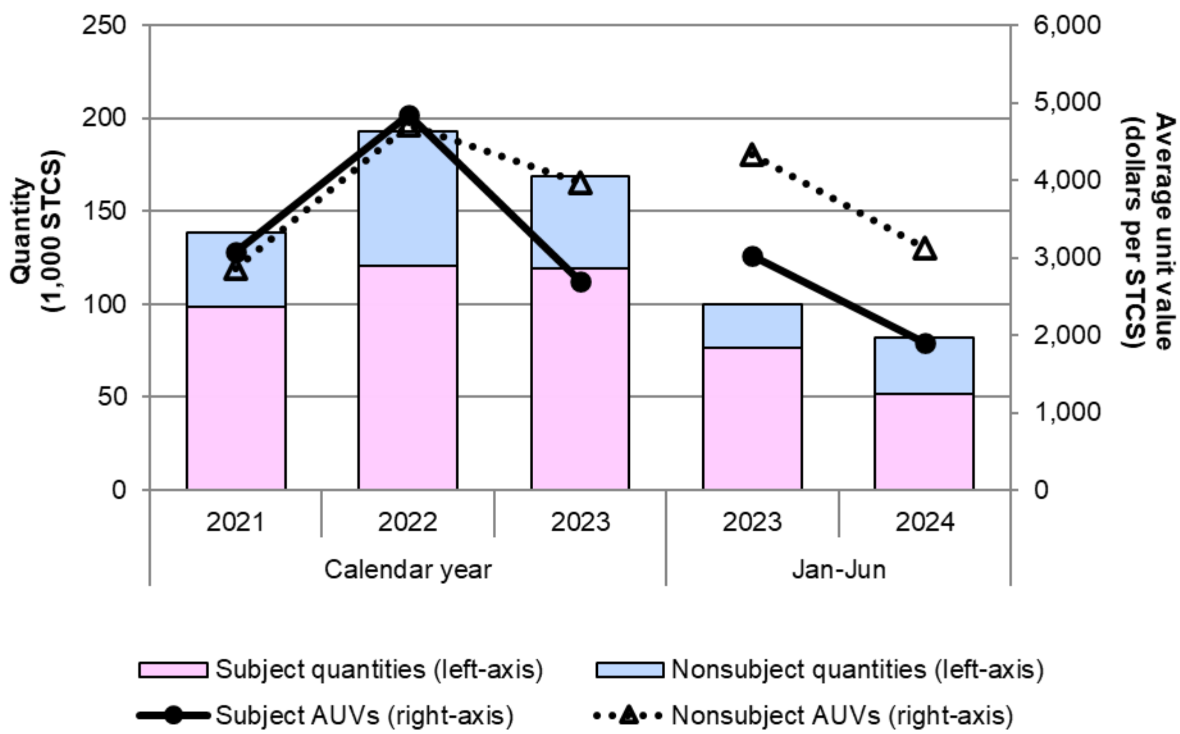
Change in percent

Source	Measure	2021-2023	2021-2022	2022-2023	Jan-Jun 2023-2024
Brazil	% Δ Quantity	▲53.6	▲37.9	▲11.4	▲45.8
Kazakhstan	% Δ Quantity	▲11.4	▼(54.6)	▲145.1	▼(45.8)
Malaysia	% Δ Quantity	▲39.1	▲19.6	▲16.3	▲117.3
Russia	% Δ Quantity	▲7.6	▲33.6	▼(19.5)	▼(89.1)
Subject	% Δ Quantity	▲20.9	▲22.6	▼(1.4)	▼(32.5)
Nonsubject sources	% Δ Quantity	▲25.9	▲81.9	▼(30.8)	▲27.4
All import sources	% Δ Quantity	▲22.3	▲39.6	▼(12.4)	▼(18.4)
Brazil	% Δ Value	▲84.7	▲136.0	▼(21.7)	▲4.9
Kazakhstan	% Δ Value	▲25.8	▲15.7	▲8.7	▼(56.5)
Malaysia	% Δ Value	▲12.3	▲91.3	▼(41.3)	▲39.7
Russia	% Δ Value	▼(11.6)	▲96.8	▼(55.1)	▼(91.1)
Subject	% Δ Value	▲6.1	▲93.3	▼(45.1)	▼(57.5)
Nonsubject sources	% Δ Value	▲74.0	▲198.9	▼(41.8)	▼(8.0)
All import sources	% Δ Value	▲24.6	▲122.2	▼(43.9)	▼(42.3)
Brazil	% Δ Unit value	▲20.2	▲71.1	▼(29.7)	▼(28.1)
Kazakhstan	% Δ Unit value	▲12.9	▲154.6	▼(55.6)	▼(19.7)
Malaysia	% Δ Unit value	▼(19.3)	▲60.0	▼(49.6)	▼(35.7)
Russia	% Δ Unit value	▼(17.9)	▲47.3	▼(44.2)	▼(18.0)
Subject	% Δ Unit value	▼(12.3)	▲57.7	▼(44.4)	▼(37.0)
Nonsubject sources	% Δ Unit value	▲38.2	▲64.3	▼(15.9)	▼(27.8)
All import sources	% Δ Unit value	▲1.9	▲59.2	▼(36.0)	▼(29.3)

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 September 16, 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 “---“. 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 September 16, 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. The largest sources of nonsubject imports in 2023 were Canada, Iceland, and Vietnam, accounting for 13.2, 6.6, and 3.2 percent of total U.S. imports respectively. Canada was the largest nonsubject source of ferrosilicon imports during 2021 and 2023 and the second largest in 2022, while China was the largest in 2022, based on quantity. Iceland was the second largest source of nonsubject imports of ferrosilicon in 2021 and 2023.[7]

[7] *** 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
Ferrosilicon: U.S. imports from nonsubject sources, by source and period

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

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Canada	Quantity	18,705	22,406	22,375	12,463	12,304
Iceland	Quantity	5,562	7,374	11,208	4,040	5,691
Vietnam	Quantity	---	62	5,345	2,287	5,667
India	Quantity	1,062	3,566	3,192	1,375	1,054
Paraguay	Quantity	1,720	1,285	2,986	1,284	1,077
Thailand	Quantity	25	726	926	397	294
France	Quantity	1,545	1,565	781	341	446
South Africa	Quantity	2,003	2,218	750	278	479
China	Quantity	189	24,462	538	59	442
Norway	Quantity	5,409	5,477	81	13	42
All other nonsubject sources	Quantity	3,487	3,077	1,809	1,102	2,619
Nonsubject sources	Quantity	39,707	72,218	49,990	23,638	30,115
Canada	Value	58,461	125,688	115,024	65,344	52,769
Iceland	Value	15,012	37,302	30,923	12,791	12,016
Vietnam	Value	---	185	10,421	4,766	10,589
India	Value	3,306	19,274	11,542	4,991	3,465
Paraguay	Value	3,069	5,294	8,512	3,989	2,278
Thailand	Value	103	4,414	3,546	1,116	1,991
France	Value	5,761	8,646	4,324	1,997	2,235
South Africa	Value	4,990	10,308	4,404	2,511	1,259
China	Value	874	86,273	1,330	206	936
Norway	Value	12,024	31,764	381	63	234
All other nonsubject sources	Value	10,237	11,089	7,624	4,661	6,476
Nonsubject sources	Value	113,837	340,237	198,030	102,434	94,247
Canada	Unit value	3,126	5,610	5,141	5,243	4,289
Iceland	Unit value	2,699	5,058	2,759	3,166	2,111
Vietnam	Unit value	---	2,985	1,950	2,084	1,868
India	Unit value	3,112	5,404	3,616	3,629	3,287
Paraguay	Unit value	1,784	4,119	2,850	3,107	2,115
Thailand	Unit value	4,156	6,079	3,830	2,808	6,777
France	Unit value	3,728	5,525	5,533	5,866	5,011
South Africa	Unit value	2,492	4,648	5,876	9,048	2,630
China	Unit value	4,627	3,527	2,471	3,476	2,120
Norway	Unit value	2,223	5,799	4,724	4,965	5,513
All other nonsubject sources	Unit value	2,936	3,603	4,214	4,230	2,473
Nonsubject sources	Unit value	2,867	4,711	3,961	4,333	3,130

Table continued.

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

Share in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Canada	Share of quantity	13.5	11.6	13.2	12.5	15.1
Iceland	Share of quantity	4.0	3.8	6.6	4.0	7.0
Vietnam	Share of quantity	---	0.0	3.2	2.3	6.9
India	Share of quantity	0.8	1.8	1.9	1.4	1.3
Paraguay	Share of quantity	1.2	0.7	1.8	1.3	1.3
Thailand	Share of quantity	0.0	0.4	0.5	0.4	0.4
France	Share of quantity	1.1	0.8	0.5	0.3	0.5
South Africa	Share of quantity	1.4	1.1	0.4	0.3	0.6
China	Share of quantity	0.1	12.7	0.3	0.1	0.5
Norway	Share of quantity	3.9	2.8	0.0	0.0	0.1
All other nonsubject sources	Share of quantity	2.5	1.6	1.1	1.1	3.2
Nonsubject sources	Share of quantity	28.7	37.4	29.6	23.6	36.9
Canada	Share of value	14.0	13.6	22.2	19.6	27.4
Iceland	Share of value	3.6	4.0	6.0	3.8	6.2
Vietnam	Share of value	---	0.0	2.0	1.4	5.5
India	Share of value	0.8	2.1	2.2	1.5	1.8
Paraguay	Share of value	0.7	0.6	1.6	1.2	1.2
Thailand	Share of value	0.0	0.5	0.7	0.3	1.0
France	Share of value	1.4	0.9	0.8	0.6	1.2
South Africa	Share of value	1.2	1.1	0.8	0.8	0.7
China	Share of value	0.2	9.3	0.3	0.1	0.5
Norway	Share of value	2.9	3.4	0.1	0.0	0.1
All other nonsubject sources	Share of value	2.5	1.2	1.5	1.4	3.4
Nonsubject sources	Share of value	27.3	36.8	38.2	30.7	49.0

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 September 16, 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.[8] 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 such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[9] Table IV-4 presents the individual shares of total imports by source, during March 2023 through February 2024.

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

Quantity in short tons contained silicon; share in percent

Source of imports	Quantity	Share of quantity
Brazil	27,850	17.9
Kazakhstan	10,469	6.7
Malaysia	20,273	13.0
Russia	43,821	28.2
Nonsubject sources	53,042	34.1
All import sources	155,455	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 September 16, 2024. Imports are based on the imports for consumption data series.

[8] 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)).

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

Critical circumstances[10]

On September 18, 2024, Commerce issued its final determinations in its CVD and AD investigations that "critical circumstances" exist with regard to imports from Russia of ferrosilicon.[11] In addition, on September 10, 2024, Commerce issued preliminary critical circumstances determinations in the context of its CVD investigations with regard to certain imports from Brazil and Malaysia.[12] For Brazil, Commerce preliminarily determined that critical circumstances exist with respect to imports of ferrosilicon from Companhia de Ferro Ligas da Bahia—FERBASA (Ferbasa), Minasligas S.A. (Minasligas), and Ligas de Aluminio S.A. (LIASA), but do not exist with respect to all other exporters or producers.[13] For Malaysia, Commerce preliminarily determined that critical circumstances exist with respect to imports of ferrosilicon from Pertama Ferroalloys Sdn. Bhd (Pertama), but do not exist with respect to OM Materials (Sarawak) Sdn. Bhd (OM Materials) and all other exporters or producers.[14]

In these investigations, if both Commerce and the Commission make affirmative final critical circumstances determinations, certain subject imports may be subject to duties retroactive by 90 days from the effective date of Commerce's preliminary affirmative AD and CVD determinations, or June 28, 2024 with respect to imports from Russia and September 10, 2024 with respect to imports from Brazil and Malaysia. Tables IV-5 through IV-10 and figures IV-2 through IV-4 present monthly U.S. imports and U.S. importers' U.S. inventories of imports from Russia, followed by Brazil and Malaysia, that were subject to Commerce's affirmative critical circumstances determinations.

[10] When petitioners file timely allegations of critical circumstances, Commerce examines whether there is a reasonable basis to believe or suspect that (1) either there is a history of dumping and material injury by reason of dumped imports in the United States or elsewhere of the subject merchandise, or the person by whom, or for whose account, the merchandise was imported knew or should have known that the exporter was selling the subject merchandise at LTFV and that there was likely to be material injury by reason of such sales; and (2) there have been massive imports of the subject merchandise over a relatively short period.

[11] 89 FR 68860, August 28, 2024.

[12] 89 FR 73364 and 89 FR 73371, September 10, 2024.

[13] 89 FR 73371, September 10, 2024.

[14] 89 FR 73364, September 10, 2024.

Table IV-5
Ferrosilicon: U.S. imports from Russia subject to Commerce's affirmative final critical circumstances determination in the AD and CVD investigations, by month

Quantity in short tons contained silicon

Month	Relation to petition	Quantity
October 2023	Before	---
November 2023	Before	16,117
December 2023	Before	---
January 2024	Before	---
February 2024	Before	---
March 2024	Before	---
April 2024	After	---
May 2024	After	4,760
June 2024	After	---
July 2024	After	---

Table continued.

Table IV-5 Continued
Ferrosilicon: U.S. imports from Russia subject to Commerce's affirmative final critical circumstances determination in the AD and CVD investigations, by month

Quantity in short tons contained silicon; difference in percent

Comparison pre-post petition period	Cumulative before period quantity	Cumulative after period quantity	Difference in percent
1 month	---	---	---
2 months	---	4,760	---
3 months	---	4,760	---
4 months	---	4,760	---

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 September 16, 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 "---". The Commerce final affirmative AD and CVD critical circumstances determinations applies to all producers from Russia.

Figure IV-2
Ferrosilicon: U.S. imports from Russia subject to Commerce’s affirmative final critical circumstances determination in the AD and CVD investigations, by month

*   *   *   *   *   *   *

Table IV-6
Ferrosilicon: U.S. importers' U.S. inventories of imports from Russia subject to final affirmative Commerce critical circumstances determination in the AD and CVD investigations, by date

Quantity in short tons contained silicon; index in percent

Inventories on or around	Quantity	Index
December 31, 2023	***	***
March 31, 2024	***	100.0
June 30, 2024	***	***

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

Note: Index based on end-of-period inventories on March 31, 2024 equal to 100.0 percent. The Commerce final affirmative AD and CVD critical circumstances determinations applies to all producers from Russia.

Table IV-7
Ferrosilicon: U.S. imports from Brazil subject to Commerce's affirmative preliminary critical circumstances determination in the CVD investigation, by month

Quantity in short tons contained silicon

Month	Relation to petition	Quantity
October 2023	Before	***
November 2023	Before	***
December 2023	Before	***
January 2024	Before	***
February 2024	Before	***
March 2024	Before	***
April 2024	After	***
May 2024	After	***
June 2024	After	***
July 2024	After	***

Table continued.

Table IV-7 Continued
Ferrosilicon: U.S. imports from Brazil subject to Commerce's affirmative preliminary critical circumstances determination in the CVD investigation, by month

Quantity in short tons contained silicon; difference in percent

Comparison pre-post petition period	Cumulative before period quantity	Cumulative after period quantity	Difference in percent
1 month	***	***	***
2 months	***	***	***
3 months	***	***	***
4 months	***	***	***

Source: Compiled from Proprietary, Census-edited Customs records 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 September 16, 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 "---". The Commerce preliminary affirmative CVD critical circumstances determination applies to Brazilian producers Ferbasa, Minasligas, and Liasa.

Figure IV-3
Ferrosilicon: U.S. imports from Brazil subject to preliminary affirmative Commerce critical circumstances determination in the CVD investigation, by month

* * * * * * *

Table IV-8
Ferrosilicon: U.S. importers' U.S. inventories of imports from Brazil subject to preliminary affirmative Commerce critical circumstances determination in the CVD investigation, by date

Quantity in short tons contained silicon; index in percent

Inventories on or around	Quantity	Index
November 30, 2023	***	***
December 31, 2023	***	***
March 31, 2024	***	100.0
April 30, 2024	***	***
May 31, 2024	***	***
June 30, 2024	***	***
July 31, 2024	***	***

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

Note: Index based on end-of-period inventories on March 31, 2024, equal to 100.0 percent. The Commerce preliminary affirmative CVD critical circumstances determination applies to Brazilian producers Ferbasa, Minasligas, and Liasa.

Note: U.S. importer *** did not respond to the Commission’s supplemental questionnaire. Staff correspondence with ***, September 20, 2024. Staff estimated the firm’s monthly inventories of imports from the subject suppliers based on information the firm provided in its original questionnaire response and proprietary Customs records.

Table IV-9
Ferrosilicon: U.S. imports from Malaysia subject to Commerce's affirmative preliminary critical circumstances determination in the CVD investigation, by month

Quantity in short tons contained silicon

Month	Relation to petition	Quantity
October 2023	Before	***
November 2023	Before	***
December 2023	Before	***
January 2024	Before	***
February 2024	Before	***
March 2024	Before	***
April 2024	After	***
May 2024	After	***
June 2024	After	***
July 2024	After	***

Table continued.

Table IV-9 Continued
Ferrosilicon: U.S. imports from Malaysia subject to Commerce's affirmative preliminary critical circumstances determination in the CVD investigation, by month

Quantity in short tons contained silicon; difference in percent

Comparison pre-post petition period	Cumulative before period quantity	Cumulative after period quantity	Difference in percent
1 month	***	***	***
2 months	***	***	***
3 months	***	***	***
4 months	***	***	***

Source: Compiled from Proprietary, Census-edited Customs records 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 September 16, 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 "---". The Commerce preliminary affirmative CVD critical circumstances determination applies to Malaysian producer Pertama.

Figure IV-4
Ferrosilicon: U.S. imports from Malaysia subject to preliminary affirmative Commerce critical circumstances determination in the CVD investigation, by month

* * * * * * *

Table IV-10
Ferrosilicon: U.S. importers' U.S. inventories of imports from Malaysia subject to preliminary affirmative Commerce critical circumstances determination in the CVD investigation, by date

Quantity in short tons contained silicon; Index in percent

Inventories on or around	Quantity	Index
November 30, 2023	***	***
December 31, 2023	***	***
March 31, 2024	***	100.0
April 30, 2024	***	***
May 31, 2024	***	***
June 30, 2024	***	***
July 31, 2024	***	***

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

Note: Index based on end-of-period inventories on March 31, 2024, equal to 100.0 percent. The Commerce preliminary affirmative CVD critical circumstances determination applies to Malaysian producer Pertama.

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.

Fungibility

Tables IV-11 through IV-14 and figures IV-5 through IV-8 present U.S. producers' and U.S. importers' 2023 U.S. shipments by form, silicon content, grade, and detailed grade category.[15] The majority of U.S. producers' U.S. shipments and U.S. importers' U.S. shipments from subject sources consisted of standard grade ferrosilicon with 75 percent silicon content in bulk/lump form.[16]

[15] The "high level grade" categories are (1) standard grades, (2) high purity grades, and (3) other grades. "Detailed grade" definitions are as follows:

(1) **Regular ferrosilicon**: a ferrosilicon product that contains over 0.50 but not over 1.50 percent aluminum, excluding all of the other grades (definitions 2 through 6) of ferrosilicon.

(2) **Low aluminum**: a ferrosilicon product that contains over 0.10 but not over 0.50 percent aluminum.

(3) **High-purity, not low titanium**: a ferrosilicon product that contains not over 0.10 percent aluminum and over 0.04 percent titanium.

(4) **High-purity, low titanium**: a ferrosilicon product that contains not over 0.10 percent aluminum and 0.04 percent or less titanium.

(5) **Foundry**: a ferrosilicon product containing a minimum of 0.50 percent calcium and 0.75 percent or more but not more than 1.50 percent of aluminum.

(6) **Inoculant/Supplemental Element**: a ferrosilicon product containing a controlled amount of one or more minor elements not typically present in other ferrosilicon products (such as barium, lanthanum, cerium, zirconium, or rare earth materials) for the purpose of adding them to steel or foundry iron using ferrosilicon as the carrier.

(7) **Other**: an in-scope ferrosilicon product that does not conform to definitions (1) through (6) above.

[16] Granular ferrosilicon, however, accounted for a *** share of shipments by U.S. producers, which accounted for *** of granular ferrosilicon shipments in the U.S. market. *** reported imports in the "other" category from *** and identified these products as "ferrosilicon based foundry inoculants." Staff correspondence with ***, September 13, 2024.

Table IV-11
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and product form, 2023

Quantity in short tons contained silicon

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

Table continued.

Table IV-11 Continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and product form, 2023

Share across in percent

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

Table continued.

Table IV-11 Continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and product form, 2023

Share down in percent

Source	Lump or bulk	Granular, fines, or powder	All forms
U.S. producers	***	***	***
Brazil	***	***	***
Kazakhstan	***	***	***
Malaysia	***	***	***
Russia	***	***	***
Subject sources	***	***	***
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-5
Ferrosilicon: U.S. import quantities and average unit values, by source and period

* * * * * * *

Table IV-12
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 silicon contents
U.S. producers	***	***	***	***
Brazil	***	***	***	***
Kazakhstan	***	***	***	***
Malaysia	***	***	***	***
Russia	***	***	***	***
Subject sources	***	***	***	***
Nonsubject sources	***	***	***	***
All import sources	***	***	***	***
All sources	***	***	***	***

Table continued.

Table IV-12 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 contents
U.S. producers	***	***	***	100.0
Brazil	***	***	***	100.0
Kazakhstan	***	***	***	100.0
Malaysia	***	***	***	100.0
Russia	***	***	***	100.0
Subject sources	***	***	***	100.0
Nonsubject sources	***	***	***	100.0
All import sources	***	***	***	100.0
All sources	***	***	***	100.0

Table continued.

Table IV-12 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 contents
U.S. producers	***	***	***	***
Brazil	***	***	***	***
Kazakhstan	***	***	***	***
Malaysia	***	***	***	***
Russia	***	***	***	***
Subject sources	***	***	***	***
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-6
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and silicon content, 2023

* * * * * * *

Table IV-13
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and high level grade category, 2023

Quantity in short tons contained silicon

Source	Standard	High purity	Other	All grades
U.S. producers	***	***	***	***
Brazil	***	***	***	***
Kazakhstan	***	***	***	***
Malaysia	***	***	***	***
Russia	***	***	***	***
Subject sources	***	***	***	***
Nonsubject sources	***	***	***	***
All import sources	***	***	***	***
All sources	***	***	***	***

Table continued.

Table IV-13 Continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and high level grade category, 2023

Share across in percent

Source	Standard	High purity	Other	All grades
U.S. producers	***	***	***	100.0
Brazil	***	***	***	100.0
Kazakhstan	***	***	***	100.0
Malaysia	***	***	***	100.0
Russia	***	***	***	100.0
Subject sources	***	***	***	100.0
Nonsubject sources	***	***	***	100.0
All import sources	***	***	***	100.0
All sources	***	***	***	100.0

Table continued.

Table IV-13 Continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and high level grade category, 2023

Share down in percent

Source	Standard	High purity	Other	All grades
U.S. producers	***	***	***	***
Brazil	***	***	***	***
Kazakhstan	***	***	***	***
Malaysia	***	***	***	***
Russia	***	***	***	***
Subject sources	***	***	***	***
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-7
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and high level grade category, 2023

* * * * * * *

Table IV-14
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and detailed grade category, 2023

Quantity in short tons contained silicon

Source	Standard: regular	Standard: low aluminum	High-purity: not low titanium	High-purity: low titanium	Other: foundry	Other: inoculant	All other grades	All grades
U.S. producers	***	***	***	***	***	***	***	***
Brazil	***	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***
All sources	***	***	***	***	***	***	***	***

Table continued.

Table IV-14 Continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and detailed grade category, 2023

Share across in percent

Source	Standard: regular	Standard: low aluminum	High-purity: not low titanium	High-purity: low titanium	Other: foundry	Other: inoculant	All other grades	All grades
U.S. producers	***	***	***	***	***	***	***	***
Brazil	***	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***
All sources	***	***	***	***	***	***	***	***

Table continued.

Table IV-14 Continued
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and detailed grade category, 2023

Share down in percent

Source	Standard: regular	Standard: low aluminum	High-purity: not low titanium	High-purity: low titanium	Other: foundry	Other: inoculant	All other grades	All grades
U.S. producers	***	***	***	***	***	***	***	***
Brazil	***	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***
All sources	100.0	100.0	100.0	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 “---“.

Figure IV-8
Ferrosilicon: U.S. producers' and U.S. importers' U.S. shipments, by source and detailed grade category, 2023

* * * * * * *

Geographical markets

Ferrosilicon produced in the United States are shipped nationwide (see Part II for more information on geographic markets). Table IV-15 presents U.S. imports of ferrosilicon, by source and border of entry in 2023, based on official Commerce statistics. In 2023, the 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, accounting for 71.6 and 27.1 percent of total U.S. imports, respectively. The majority of imports of ferrosilicon from nonsubject sources (53.0 percent) entered through the Eastern border of entry, followed by the Northern border of entry (42.1 percent). 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 border of entry.

Table IV-15
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	1,059	19,192
Russia	---	---	59,896	---	59,896
Subject sources	32,284	245	85,292	1,300	119,121
Nonsubject sources	26,473	21,038	1,387	1,093	49,990
All import sources	58,757	21,283	86,678	2,393	169,111

Table continued.

Table IV-15 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	45.4	0.8	48.3	5.5	100.0
Russia	---	---	100.0	---	100.0
Subject sources	27.1	0.2	71.6	1.1	100.0
Nonsubject sources	53.0	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-15 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	6.8	16.4
Kazakhstan	3.1	---	12.0	3.3	7.3
Malaysia	14.8	0.7	10.7	44.3	11.3
Russia	---	---	69.1	---	35.4
Subject sources	54.9	1.2	98.4	54.3	70.4
Nonsubject sources	45.1	98.8	1.6	45.7	29.6
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 September 16, 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 “---“.

Presence in the market

Table IV-16 and figures IV-9 and IV-10 present monthly official U.S. import statistics of ferrosilicon for subject and nonsubject sources between January 2021 and July 2024. Imports of ferrosilicon from Brazil were present during all 43 months, while imports from Kazakhstan were present in 30 of 43 months. Imports from Malaysia were present in 39 of 43 months, and imports from Russia were present in 22 of 43 months.

Table IV-16
Ferrosilicon: U.S. imports, by month and source

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	1,839	364	5,315	19,542
2022	September	1,836	---	---	---
2022	October	2,671	943	9	---
2022	November	3,233	275	158	---
2022	December	1,256	---	165	17,416

Table continued.

Table IV-16 Continued
Ferrosilicon: Quantity of U.S. imports, by month and source

Quantity in short tons contained silicon

Year	Month	Brazil	Kazakhstan	Malaysia	Russia
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	918	---
2023	August	1,894	82	737	145
2023	September	1,377	41	1,512	---
2023	October	3,668	1,879	2,683	---
2023	November	1,466	661	636	16,117
2023	December	1,415	---	3,325	---
2024	January	4,447	110	2,600	---
2024	February	2,196	593	2,587	---
2024	March	2,980	1,755	3,976	---
2024	April	3,161	554	3,502	---
2024	May	4,280	1,574	862	4,760
2024	June	4,779	---	6,851	---
2024	July	1,031	1,078	378	---

Table continued.

Table IV-16 Continued
Ferrosilicon: Quantity of U.S. imports, by month and source

Quantity in short tons contained silicon

Year	Month	Subject sources	Nonsubject sources	All import sources
2021	January	3,609	2,897	6,505
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	3,361	6,655
2021	June	18,144	2,915	21,060
2021	July	1,399	2,500	3,900
2021	August	2,230	4,171	6,401
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	3,201	4,632
2022	March	13,640	5,475	19,114
2022	April	6,924	4,122	11,047
2022	May	1,686	9,080	10,765
2022	June	19,805	11,804	31,609
2022	July	8,757	6,487	15,244
2022	August	27,061	8,491	35,552
2022	September	1,836	5,926	7,762
2022	October	3,623	4,497	8,120
2022	November	3,666	4,955	8,620
2022	December	18,837	4,328	23,165

Table continued.

Table IV-16 Continued
Ferrosilicon: Quantity of U.S. imports, by month and source

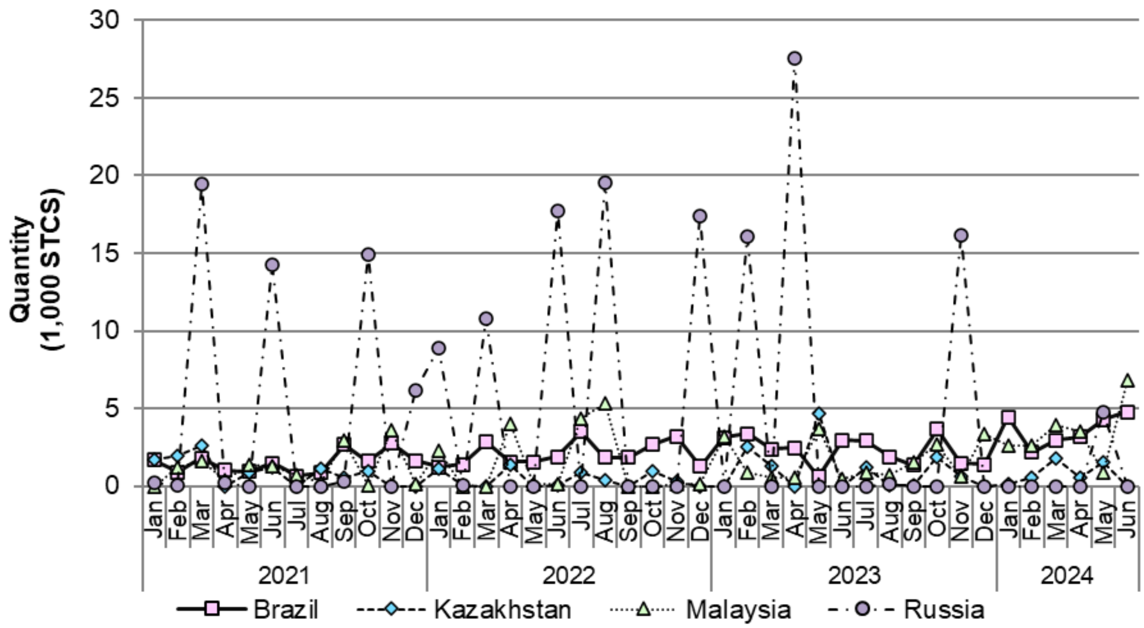
Quantity in short tons contained silicon

Year	Month	Subject sources	Nonsubject sources	All import sources
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	3,586	12,550
2023	June	3,434	3,866	7,301
2023	July	5,028	3,610	8,638
2023	August	2,859	5,555	8,413
2023	September	2,930	3,844	6,774
2023	October	8,230	4,611	12,841
2023	November	18,881	3,785	22,666
2023	December	4,740	4,947	9,687
2024	January	7,158	3,997	11,155
2024	February	5,377	5,497	10,874
2024	March	8,711	4,281	12,993
2024	April	7,217	4,549	11,766
2024	May	11,477	6,632	18,109
2024	June	11,630	5,159	16,789
2024	July	2,488	10,632	13,119

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 September 16, 2024. Imports are based on the imports for consumption data series.

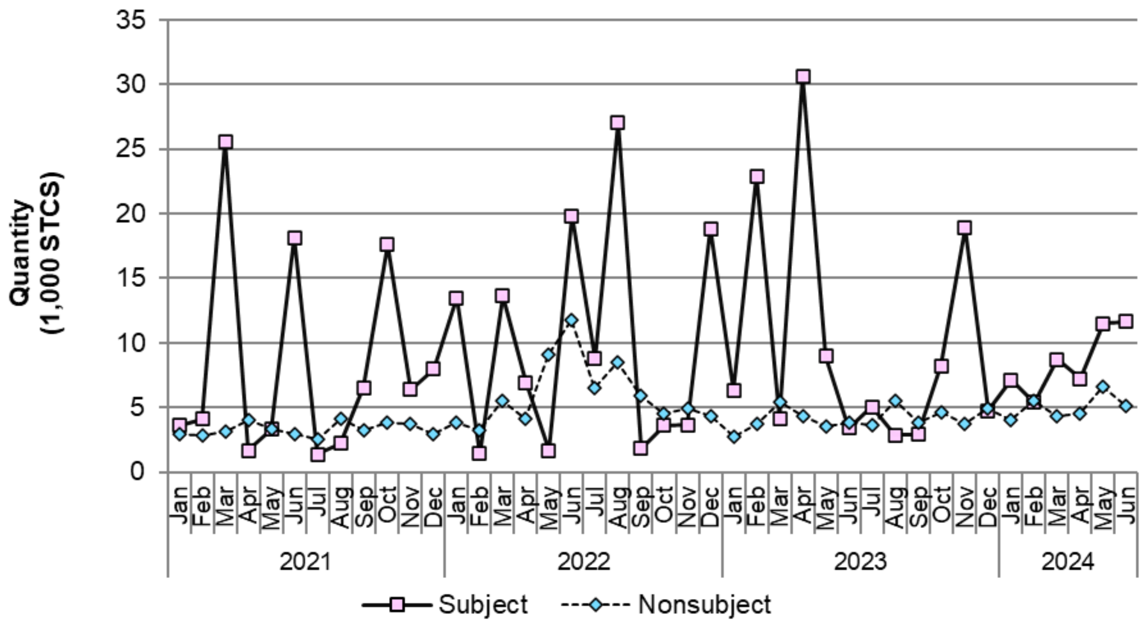
Note: Zeroes, null values, and undefined calculations are suppressed and shown as “---“.

Figure IV-9
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 September 16, 2024. Imports are based on the imports for consumption data series.

Figure IV-10
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 September 16, 2024. Imports are based on the imports for consumption data series.

Apparent U.S. consumption and market shares[17]

Quantity

Table IV-17 and figure IV-11 present data on apparent U.S. consumption and U.S. market shares by quantity for ferrosilicon. The quantity of apparent U.S. consumption fluctuated and decreased slightly between 2021 and 2023, increasing by *** percent from 2021 to 2022 then decreasing by *** percent from 2022 to 2023, but was *** percent lower in January-June 2024 than in January-June 2023. U.S. producers' market share increased by *** percentage points from 2021 to 2022 then increased by *** percentage points from 2022 to 2023, increasing overall by *** percentage points during 2021-23, but was *** percentage points lower in January-June 2024 than in January-June 2023.

Subject import market share declined by *** percentage points, from *** percent in 2021 to *** percent in 2023, but was *** percentage points higher in January-June 2024 than in January-June 2023.[18] Nonsubject import market share increased by *** percent from 2021 to 2023, and was *** percentage points higher in January-June 2024 than in January-June 2023.

[17] Apparent U.S. consumption in this report is calculated using data submitted in response to Commission questionnaires (U.S. producers' U.S. shipments and U.S. importers' U.S. shipments from Russia) and official Commerce statistics (U.S. imports from Brazil, Kazakhstan, and Malaysia). *** from Russia, reported high inventory levels in each period. See Part VII. Because Russia is the largest source of subject imports and questionnaire coverage with respect to imports from Russia is 100 percent, U.S. importers' U.S. shipments from Russia, rather than U.S. imports, is used for the calculation of apparent U.S. consumption.

[18] Specifically, the market share of subject imports from Brazil, Kazakhstan, and Malaysia increased from 2021 to 2023, while the market share of subject imports from Russia decreased during the same period. The market share of subject imports from Brazil, Malaysia, and Russia were higher in January-June 2024 than in January-June 2023, while the market share of subject imports from Kazakhstan was lower in the same comparison period.

Table IV-17
Ferrosilicon: Apparent U.S. consumption and market shares based on quantity, by source and period

Quantity in short tons contained silicon; share in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
U.S. producers	Quantity	***	***	***	***	***
Brazil	Quantity	18,049	24,886	27,729	14,980	21,844
Kazakhstan	Quantity	11,046	5,020	12,304	8,461	4,587
Malaysia	Quantity	13,797	16,496	19,192	9,380	20,379
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	39,707	72,218	49,990	23,638	30,115
All import sources	Quantity	***	***	***	***	***
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	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and 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 September 16, 2024. Imports are based on the imports for consumption data series with the exception of imports from Russia. Imports from Russia are based on questionnaire data.

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-11
Ferrosilicon: Apparent U.S. consumption based on quantity, by source and period

* * * * * * *

Value

Table IV-18 and figure IV-12 present data on apparent U.S. consumption and U.S. market shares by value for ferrosilicon. The value of apparent U.S. consumption *** from 2021 to 2022 then declined by *** percent from 2022 to 2023, increasing overall by *** percent from 2021 to 2023, but was *** percent lower in January-June 2024 than in January-June 2023. U.S. producers’ market share increased by *** percentage points between 2021 and 2023 but was *** percentage points lower in January-June 2024 than in January-June 2023.

Subject import market share declined by *** percentage points from 2021 to 2023, but was *** percentage points higher in January-June 2024 than in January-June 2023.[19] Nonsubject import market share increased by *** percentage points from 2021 to 2023, and was *** percentage points higher in January-June 2024 than in January-June 2023.

Table IV-18
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	Jan-Jun 2023	Jan-Jun 2024
U.S. producers	Value	***	***	***	***	***
Brazil	Value	34,838	82,201	64,349	38,083	39,940
Kazakhstan	Value	27,159	31,426	34,164	23,619	10,285
Malaysia	Value	40,653	77,783	45,644	25,078	35,031
Russia	Value	***	***	***	***	***
Subject sources	Value	***	***	***	***	***
Nonsubject sources	Value	113,837	340,237	198,030	102,434	94,247
All import sources	Value	***	***	***	***	***
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	100.0	100.0

Source: Compiled from data submitted in response to Commission questionnaires and 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 September 16, 2024. Imports are based on the imports for consumption data series with the exception of imports from Russia. Imports from Russia are based on questionnaire data. Value data reflect landed duty-paid values.

[19] Specifically, the market share of subject imports from Brazil, Kazakhstan, and Malaysia increased from 2021 to 2023, while the market share of subject imports from Russia decreased during the same period. The market share of subject imports from Brazil, Malaysia, and Russia were higher in January-June 2024 than in January-June 2023, while the market share of subject imports from Kazakhstan was lower in the same comparison period.

Figure IV-12
Ferrosilicon: Apparent U.S. consumption based on value, by source and period

* * * * * * *

Part V: Pricing data

Factors affecting prices

Raw material costs

Raw materials as a share of cost of goods sold increased from *** percent in 2021 to *** percent in 2023 and was *** percent in January-June 2024. Coal, quartz gravel or sand, iron and steel scrap, and wood chips are the principal raw materials used to produce ferrosilicon. U.S. producer Ferroglobe is an integrated producer of ferrosilicon, producing coal and quartz in the United States.[1]

The Producer Price Index (PPI) for coal increased by 67.2 percent between January 2021 and July 2022. It was somewhat steady thereafter, and was 53.1 percent above its January 2021 level in June 2024. The PPI for sand and gravel increased steadily to 31.7 percent above its January 2021 level in June 2024. The PPI for iron and steel scrap increased by 31.1 percent from January 2021 to April 2022, before declining nearly 40 percent through June 2024 (figure V-1 and table V-1). Overall, the PPI for iron and steel scrap decreased by 20.5 percent from January 2021 to June 2024.[2] The PPI for all three commoditites increased modestly from June 2024 to August 2024.

U.S. producers and importers were asked how ferrosilicon raw material costs had changed since January 1, 2021. Two U.S. producers and three importers stated that such costs had steadily increased. Three importers described such costs as increasing with fluctuations, two described such costs as unchanged, and three described such costs as decreasing with fluctuations. U.S. producer *** described raw material costs as increasing through 2023 and remaining high in 2024. U.S. producer *** described raw materials costs as increasing 200 percent since 2021. Two importers offered an explanation for cost trends, attributing cost increases to inflation. Importer *** stated that it had passed on lower costs in its own sales prices.

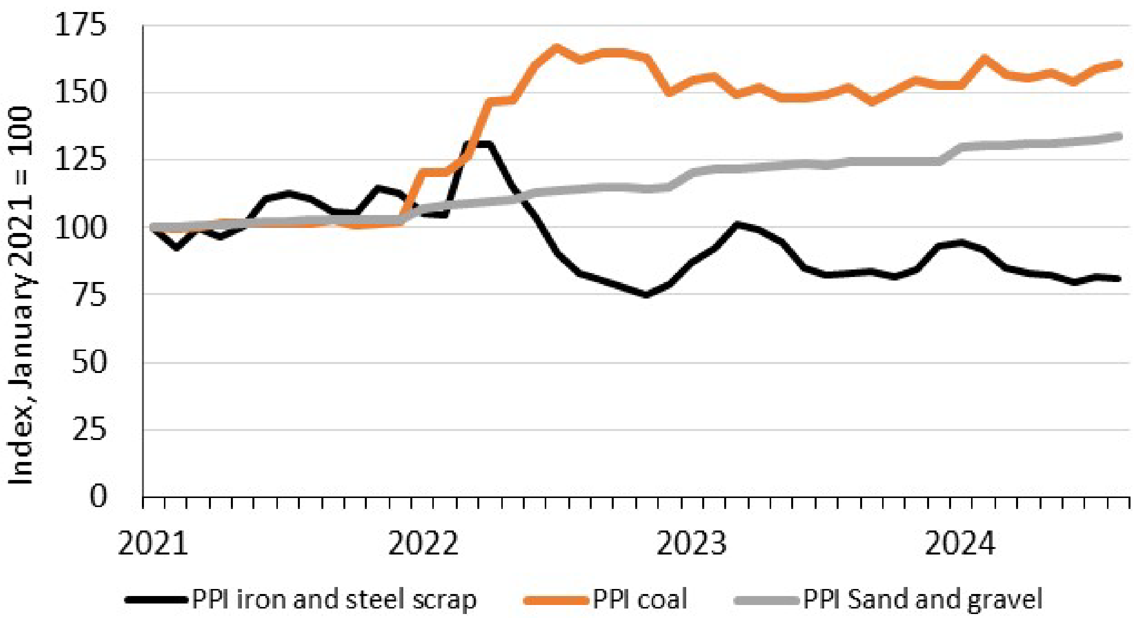
Twenty purchasers indicated that they were not familiar with the costs of raw materials used to produce ferrosilicon. Four stated that they were. One of those, ***, stated

[1] Hearing transcript, p. 14 (Hammer).

[2] U.S. producer CC Metals stated that it only used cast iron borings, as general steel scrap had too many impurities. It described the costs of cast iron borings as increasing from *** dollars per ton before the COVID-19 pandemic to *** dollars per ton in 2022. It added that such costs are now *** dollars per ton. Petitioners' posthearing brief, p. A-37 and exhibits 23 and 24.

that while it was aware that raw material costs (such as coal) had risen with general inflationary conditions, those increased costs had not affected its negotiations to purchase ferrosilicon.

Figure V-1
Raw materials: Producer Price Indices (PPIs) for coal, sand and gravel, and iron and steel scrap, monthly, January 2021-August 2024



Source: Bureau of Labor Statistics via Federal Reserve Bank of St. Louis, WPU1012, Producer Price Index by Commodity: Metals and Metal Products: Iron and Steel Scrap, Index, Monthly, Not Seasonally Adjusted, retrieved September 17, 2024; WPU051, Producer Price Index by Commodity: Fuels and Related Products and Power: Coal, Index, Monthly, Not Seasonally Adjusted, retrieved September 16, 2024; WPU1321, Producer Price Index by Commodity: Nonmetallic Mineral Products: Construction Sand, Gravel, and Crushed Stone, Index, Monthly, Not Seasonally Adjusted, retrieved September 17, 2024; and staff calculations.

Table V-1
Raw materials: Producer Price Indices (PPIs) for coal, sand and gravel, and iron and steel scrap, monthly, January 2021-August 2024

Index January 2021 = 100.0

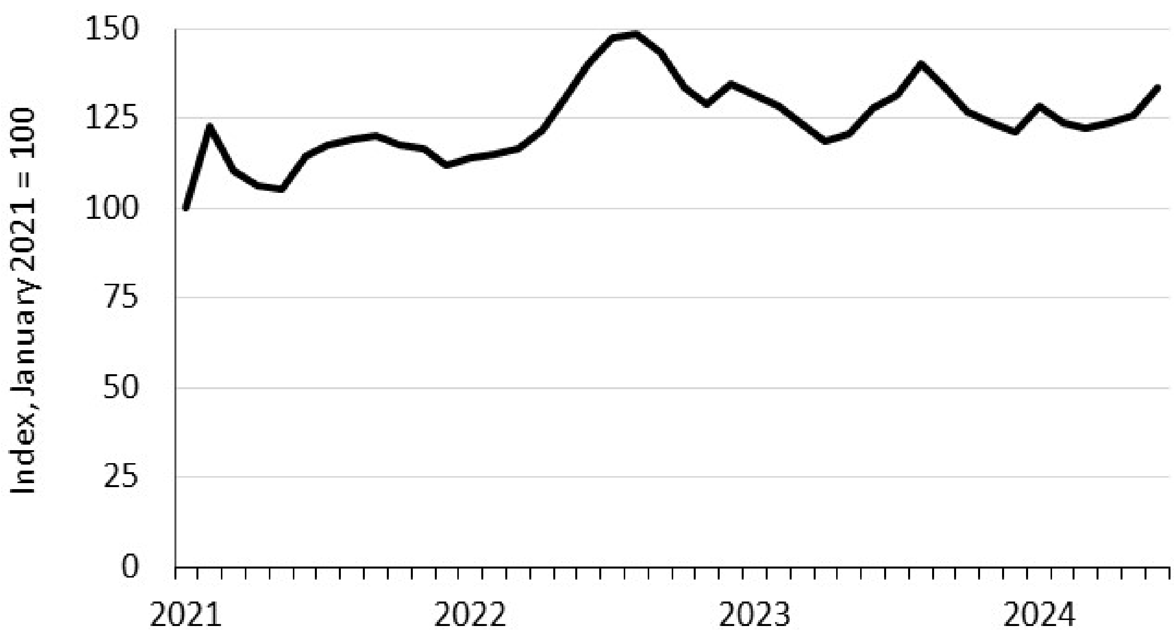
Year	Month	PPI Coal	PPI Sand	PPI Steel scrap
2021	January	100.0	100.0	100.0
2021	February	99.8	100.5	92.3
2021	March	100.2	101.0	99.8
2021	April	101.8	100.9	96.4
2021	May	101.6	101.9	100.5
2021	June	101.8	102.2	110.7
2021	July	101.8	102.5	112.9
2021	August	101.4	102.6	110.9
2021	September	103.0	102.7	106.0
2021	October	101.0	102.6	105.5
2021	November	101.6	103.0	114.8
2021	December	102.6	102.7	112.7
2022	January	120.7	106.9	105.2
2022	February	120.3	108.1	104.9
2022	March	126.8	108.9	131.0
2022	April	146.5	109.7	131.1
2022	May	147.5	110.5	115.4
2022	June	160.0	113.2	103.7
2022	July	167.2	114.0	90.6
2022	August	162.6	114.7	83.4
2022	September	164.7	114.9	80.5
2022	October	165.2	114.9	77.8
2022	November	162.6	114.7	75.2
2022	December	150.4	115.1	79.0
2023	January	154.6	120.7	87.0
2023	February	155.9	121.9	92.5
2023	March	149.7	122.0	101.4
2023	April	152.3	122.2	99.3
2023	May	147.8	122.9	94.2
2023	June	148.0	123.5	85.0
2023	July	149.6	123.0	82.3
2023	August	151.9	124.3	83.0
2023	September	146.8	124.4	83.5
2023	October	150.7	124.4	81.6
2023	November	154.8	124.5	84.7
2023	December	152.5	124.8	92.9
2024	January	153.1	130.0	94.6
2024	February	162.6	130.3	92.1
2024	March	156.6	130.7	84.9
2024	April	155.5	131.2	83.0
2024	May	157.2	131.5	82.6
2024	June	153.9	131.7	79.5
2024	July	159.2	132.6	81.5
2024	August	161.2	133.9	81.4

Source: Bureau of Labor Statistics via Federal Reserve Bank of St. Louis, WPU1012, PPI: Iron and Steel Scrap, retrieved September 17, 2024; WPU051, PPI: Coal, retrieved September 16, 2024; WPU1321, PPI: Construction Sand, Gravel, and Crushed Stone, retrieved September 17, 2024; and staff calculations.

Energy costs

Producing ferrosilicon is also an energy intensive process.[3] Importer *** stated that 60 percent of the cost of ferrosilicon is energy. Electricity prices increased by 48.4 percent from January 2021 to August 2022 before decreasing (with fluctuations) 10.0 percent through June 2024. Overall, electricity prices increased 33.5 percent from January 2021 to June 2024.

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



Source: U.S. Energy Information Administration, http://www.eia.doe.gov, accessed on August 2 and September 11, 2024.

[3] Petition, p. 24.

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

Index January 2021 = 100.0

Year	Month	Price of industrial energy
2021	January	100.0
2021	February	122.6
2021	March	110.4
2021	April	106.0
2021	May	105.2
2021	June	114.2
2021	July	117.4
2021	August	119.3
2021	September	120.4
2021	October	117.7
2021	November	116.6
2021	December	111.7
2022	January	113.8
2022	February	115.2
2022	March	116.6
2022	April	121.8
2022	May	130.5
2022	June	140.0
2022	July	147.3
2022	August	148.4
2022	September	143.4
2022	October	133.7
2022	November	128.8
2022	December	134.5
2023	January	131.6
2023	February	128.2
2023	March	123.3
2023	April	118.7
2023	May	120.6
2023	June	127.8
2023	July	131.6
2023	August	140.3
2023	September	133.5
2023	October	126.7
2023	November	123.6
2023	December	121.2
2024	January	128.2
2024	February	123.6
2024	March	122.3
2024	April	123.7
2024	May	125.8
2024	June	133.5

Source: U.S. Energy Information Administration, http://www.eia.doe.gov, accessed on August 2 and September 11, 2024.

Transportation costs to the U.S. market

Transportation costs for ferrosilicon shipped from subject countries to the United States averaged 4.5 percent of customs value for Brazil, 7.1 percent for Kazakhstan, 7.4 percent for Malaysia, and 2.2 percent for Russia during 2023. These estimates were derived from official import data and represent the transportation and other charges on imports.[4]

U.S. inland transportation costs

*** and 11 importers reported that they typically arrange transportation to their customers, while 2 importers stated that their customers arrange transportation. Twelve importers reported shipping from their point of storage. U.S. producers reported that their U.S. inland transportation costs ranged from *** to *** percent of the cost of ferrosilicon while most importers reported costs of *** to *** percent.

Pricing practices

Pricing methods

U.S. ferrosilicon prices are often set in the autumn, during what is sometimes referred to as the "mating season."[5] U.S. producers and importers reported setting prices mostly using transaction-by-transaction negotiations and contracts (table V-3).

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

Method	U.S. producers	Importers
Transaction-by-transaction	***	10
Contract	***	9
Set price list	***	0
Other	***	1
Responding firms	***	13

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.

[4] 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 numbers 7202.21.1000, 7202.21.5000, 7202.21.7500, 7202.21.9000, 7202.29.0010, and 7202.29.0050, accessed July 15, 2024. Imports are based on the imports for consumption data series.

[5] Hearing transcript, p. 17 (Hammer). Ferroglobe added that these negotiations lock in prices for shipments in the following year.

Additionally, both *** described using ferrosilicon prices from publications such as CRU and Platt's, which base their published prices on sales of 75 grade standard ferrosilicon in the spot market.[6] Petitioners described market participants as using these published ferrosilicon prices as "benchmarks" for negotiations, but with an additional negotiated "plus or minus."[7] Importer CCMA stated that discounts off of indexes change year to year based on perceived supply and demand for ferrosilicon.[8] Ferroglobe stated that contracts will generally be indexed to published ferrosilicon prices, with volumes set (albeit with some flexibility) so that ferrosilicon producers can ensure furnace capacity to meet the contracts.[9]

Figure V-3 and table V-4 present CRU prices of ferrosilicon, specifically, ***.[10]

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[6] Hearing transcript, p. 44 (Sossonko) and Petitioners' prehearing brief, p. 16.

[7] Hearing transcript, pp. 22 (Sossonko) and 49 (Bay). CC Metals stated that lower-priced subject imports in the spot market can lower index prices and thus lower the price of ferrosilicon under contract. Hearing transcript, p. 45 (Sossonko), and Petitioners' prehearing brief, p. 16. Economist for respondents stated that there is no evidence that subject imports change spot prices and thus lower the prices of ferrosilicon under contract. Hearing transcript, p. 193 (Dougan).

[8] Hearing transcript, p. 151 (Fleming).

[9] Hearing transcript, p. 42 (Hammer). Both CC Metals and Ferroglobe also indicated that their contracts are not indexed to raw material costs. Hearing transcript, p. 46 (Hammer and Sossonko).

[10] Petitioners' posthearing brief, p. A-72. In their posthearing brief, Joint Respondents also provided CRU data. Joint Respondents' posthearing brief, exhibit 5. These data are in different units than, but have the nearly exact same trend as, the data in figure V-3. Joint respondents compared U.S. ferrosilicon prices from CRU to Chinese and European ferrosilicon prices, stating that such U.S. prices followed similar trends in 2021 and 2023, but were higher than Chinese and European prices in 2022. Joint Respondents' posthearing brief, pp. APP-46-47.

Figure V-3
Ferrosilicon: CRU prices of ferrosilicon, monthly, January 2021-June 2024

*   *   *   *   *   *   *

Table V-4
Ferrosilicon: CRU prices of ferrosilicon, monthly, January 2021-June 2024

Dollars per pound

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

Source: Petitioners' posthearing brief, exhibit 4.

U.S. producers and importers reported selling the majority of their ferrosilicon under annual contracts. For subject importers, larger shares (than for U.S. producers) were sold under short-term contracts (table V-5).[11]

Table V-5
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	***	2.5
Annual contracts	***	70.2
Short-term contracts	***	20.9
Spot sales	***	6.4
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.

Regarding short-term contracts, U.S. producer *** indicated that its short-term contracts were typically for *** days, while importers reported short-term contracts of 43 to 100 days. Importers and U.S. producer *** generally described short-term contracts as not allowing price renegotiation, fixing price and quantity, and not indexed to raw material indexes.

Annual contracts generally did not allow price renegotiation (except for those of ***). Such contracts could fix price, quantity, or both, and usually were not indexed to raw material indexes.[12]

Long-term contracts were for *** years for U.S. producers but *** for importer ***. Such contracts generally did not allow price renegotiation and were sometimes indexed to raw material costs.

U.S. producers and importers were also asked if their contract prices were influenced by publicly available spot prices. Seven importers responded that they were not influenced by such prices. Two U.S. producers and four importers indicated that they were, for *** to *** percent (for U.S. producers) and *** to *** percent (for importers) of their contracts. These firms also indicated that such contracts adjusted automatically to reflect publicly available

[11] At the hearing, purchaser CCMA stated that importer Ferronix (which imports Russian product) does not participate in the spot market for ferrosilicon in order to avoid the impact of any trade policy actions. Hearing transcript, p. 144 (Fleming).

[12] The minority of firms reporting the use of raw material indexes reported such indexes were from Platt's, CRU, or AMM.

prices. U.S. producer *** stated that publications such as Platt's and CRU publish spot ferrosilicon prices that suppliers and purchasers use in contract negotiations and/or in contract provisions (as confirmed in some importers' responses as well). Such provisions, as reported by both U.S. producers and some importers, are usually based on the published price less a negotiated discount.

Among purchasers, seven reported that they purchase product annually, four reported monthly, four reported weekly, three reported quarterly, and two reported daily. Other firms used semi-annual, multi-year, or "as needed" purchasing frequencies. Twenty-two responding purchasers reported that their purchasing frequency had not changed since 2021. Two purchasers did report a change, with one reporting moving from annual to semi-annual purchases and the other reporting more direct purchases from suppliers ***.

Fifteen purchasers contacted between 2 to 10 suppliers before making a purchase, with four other purchasers having a smaller range and five having a larger range.

Twenty purchasers indicated that their purchases of ferrosilicon typically involve negotiations with their suppliers, while four indicated that their purchases did not. Those negotiations cover availability, chemistry, form, freight, pricing, supply reliability, and/or terms. Four purchasers (***) indicated sending out requests for quotes specifying factors needed. *** indicated that, in the first round of negotiations, it eliminated bids based on non-price factors, before considering price in a second round. *** indicated that it negotiates price based on a discount tied to ***. Five purchasers indicated that they share competing bids (although not always the name of the competing supplier) during negotiations while another five indicated that they do not share competing bids.

Sales terms and discounts

*** and nine importers typically quote prices on a delivered basis, while five importers typically quoted prices on an f.o.b. basis. *** stated that they offer multiple types of discounts depending on the customer. *** and ten importers indicated that they do not have a discount policy. *** stated that its discounts depend on the market situation, and *** stated that it sets prices with reference to a price list.

Price leadership

Six purchasers indicated that at least one supplying firm was a price leader in the ferrosilicon market. Four purchasers reported that Ferroglobe was a price leader, two reported that CC Metals (as Universal Alloys) was, two reported that Ferronix was, and one reported that Elkem was. Purchasers describing price leaders generally indicated that leaders led through their large share of the overall market. For example, *** stated that U.S. producer CC Metal's large customer base allows it to lead prices. *** stated that Ferronix, a supplier of Russian product, leads prices with large supplies of low-priced material. Six purchasers stated that they were not aware of any price leader with purchaser *** stating that ferrosilicon prices are set in international markets, not the U.S. market. *** stated that prices are based on indexes.

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 January 2021-June 2024.[13]

***Product 1*.—Bulk sold under annual or longer-term contracts** 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.

Regular grade 75 percent ferrosilicon does not include any form of high purity ferrosilicon (ferrosilicon containing substantially lower amounts of impurities than the maximum levels specified for regular grade ferrosilicon), magnesium ferrosilicon, or other ferrosilicon-based specialty/proprietary grades.

***Product 2*.—Bulk sold in contracts under one year or as spot sales** 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

[13] Commission staff drafted questionnaires adding contract length to the pricing products used in the preliminary phase. In comments on questionnaires, petitioners requested that the pricing products be the same as in the preliminary phase. Brazilian and Malaysian/Khazakstani respondents requested a total of an additional four pricing products to capture additional contract length/purity combinations, resulting in the eight products used.

percent or less phosphorus; more than 0.50 percent, but not more than 1.50 percent aluminum; and 0.40 percent or less manganese.

Regular grade 75 percent ferrosilicon does not include any form of high purity ferrosilicon (ferrosilicon containing substantially lower amounts of impurities than the maximum levels specified for regular grade ferrosilicon), magnesium ferrosilicon, or other ferrosilicon-based specialty/proprietary grades.

***Product 3*.—In Super Sacks sold under annual or long-term contracts** 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.

Regular grade 75 percent ferrosilicon does not include any form of high purity ferrosilicon (ferrosilicon containing substantially lower amounts of impurities than the maximum levels specified for regular grade ferrosilicon), magnesium ferrosilicon, or other ferrosilicon-based specialty/proprietary grades.

***Product 4*.—Bulk sold under annual or longer-term contracts** 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.

Low aluminum 75 percent ferrosilicon does not include any other form of high purity ferrosilicon, regular grade ferrosilicon, magnesium ferrosilicon, or other ferrosilicon-based specialty/proprietary grades.

***Product 5*.—Bulk sold in contracts under one year or as spot sales** 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.

Low aluminum 75 percent ferrosilicon does not include any other form of high purity ferrosilicon, regular grade ferrosilicon, magnesium ferrosilicon, or other ferrosilicon based specialty/proprietary grades.

***Product 6*.—In Super Sacks sold under annual or longer-term contracts** 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; .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.

Low aluminum 75 percent ferrosilicon does not include any other form of high purity ferrosilicon, regular grade ferrosilicon, magnesium ferrosilicon, or other ferrosilicon based specialty/proprietary grades.

***Product 7*.—Bulk sold in contracts under one year or as spot sales** High-purity 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; less than 0.10 percent aluminum; and 0.40 percent or less manganese.

***Product 8*.—In Super Sacks sold under annual or longer-term contracts** High-purity 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; less than 0.10 percent aluminum; and 0.40 percent or less manganese.

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.[14] Pricing data reported by these firms accounted for the large majority, individually and collectively, of firms' commercial shipments from each country. Specifically, pricing data represented approximately *** percent of U.S. producers' U.S. commercial shipments of ferrosilicon, *** percent of U.S. commercial shipments of subject imports from Brazil, *** percent of U.S. commercial shipments from Kazakhstan, *** percent of U.S. commercial shipments Malaysia, and 100.0 percent of U.S. commercial shipments from Russia in 2023.[15]

Price data for products 1-8 are presented in tables V-6 to V-13 and figures V-4 to V-11.

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[14] 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.

[15] Pricing coverage is based on U.S. commercial shipments reported in questionnaires.

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 pounds contained silicon, margin in percent.

Period	U.S. price	U.S. quantity	Brazil price	Brazil quantity	Brazil margin	Kazakh-stan price	Kazakh-stan quantity	Kazakh-stan 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	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***

Period	Malaysia price	Malaysia quantity	Malaysia margin	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	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***

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

Note: Product 1: Bulk sold under annual or longer-term contracts. 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-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 sold under annual or longer-term contracts. 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-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 pounds contained silicon, margin in percent.

Period	U.S. price	U.S. quantity	Brazil price	Brazil quantity	Brazil margin	Kazakh-stan price	Kazakh-stan quantity	Kazakh-stan 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	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***

Period	Malaysia price	Malaysia quantity	Malaysia margin	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	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***

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

Note: Product 2: Bulk sold in contracts under one year or as spot sales. 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: Bulk sold in contracts under one year or as spot sales. 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 pounds contained silicon, margin in percent.

Period	U.S. price	U.S. 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	***	***	***	***	***	***	***	***
2024 Q1	***	***	***	***	***	***	***	***
2024 Q2	***	***	***	***	***	***	***	***

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	***	***	***
2024 Q1	***	***	***
2024 Q2	***	***	***

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

Note: Product 3: In Super Sacks sold under annual or long-term contracts. 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: In Super Sacks sold under annual or long-term contracts. 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-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 pounds contained silicon, margin in percent.

Period	U.S. price	U.S. 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	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***

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

Note: Product 4: Bulk sold under annual or longer-term contracts. 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: Bulk sold under annual or longer-term contracts. 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.

Table V-10
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 5 and margins of underselling/(overselling), by source and quarter

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

Period	U.S. price	U.S. 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	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***

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

Note: Product 5: Bulk sold in contracts under one year or as spot sales. 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-8
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 5, by source and quarter

Price of product 5

* * * * * * *

Volume of product 5

* * * * * * *

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

Note: Product 5: Bulk sold in contracts under one year or as spot sales. 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.

Table V-11
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 6 and margins of underselling/(overselling), by source and quarter

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

Period	U.S. price	U.S. 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	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***

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

Note: Product 6: In Super Sacks sold under annual or longer-term contracts. 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-9
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 6, by source and quarter

Price of product 6

* * * * * * *

Volume of product 6

* * * * * * *

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

Note: Product 6: In Super Sacks sold under annual or longer-term contracts. 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.

Table V-12
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 7 and margins of underselling/(overselling), by source and quarter

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

Period	U.S. price	U.S. 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	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***

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

Note: Product 7: Bulk sold in contracts under one year or as spot sales. High-purity 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; less than 0.10 percent aluminum; and 0.40 percent or less manganese.

Figure V-10
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 7, by source and quarter

Price of product 7

* * * * * * *

Volume of product 7

* * * * * * *

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

Note: Product 7: Bulk sold in contracts under one year or as spot sales. High-purity 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; less than 0.10 percent aluminum; and 0.40 percent or less manganese.

Table V-13
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 8 and margins of underselling/(overselling), by source and quarter

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

Period	U.S. price	U.S. 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	***	***	***	***	***
2024 Q1	***	***	***	***	***
2024 Q2	***	***	***	***	***

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

Note: Product 8: In Super Sacks sold under annual or longer-term contracts. High-purity 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; less than 0.10 percent aluminum; and 0.40 percent or less manganese.

Figure V-11
Ferrosilicon: Weighted-average f.o.b. prices and quantities of domestic and imported product 8, by source and quarter

Price of product 8

*   *   *   *   *   *   *

Volume of product 8

*   *   *   *   *   *   *

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

Note: Product 8: In Super Sacks sold under annual or longer-term contracts. High-purity 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; less than 0.10 percent aluminum; and 0.40 percent or less manganese.

Price trends

In general, prices increased during January 2021-June 2024. Table V-14 summarizes the price trends, by country and by product. As shown in the table, during January 2021-June 2024, domestic prices increased for seven of the eight pricing products, with pricing product *** being the only one to decline, at *** percent, but it involved ***. Import price increases ranged from 16.3 to 121.0 percent. Most firms reporting pricing data showed a price increase for most products in late 2021 and/or 2022, followed by decreasing prices, resulting in an overall increase from January 2021 to June 2024.

Table V-14
Ferrosilicon: Summary of price data, by product and source, January 2021-June 2024

Quantity in 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	***	***	***	***	***	***	***

Table continued on next page.

Table V-14 Continued
Ferrosilicon: Summary of price data, by product and source, January 2021-June 2024

Quantity in 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 5	United States	***	***	***	***	***	***	***
Product 5	Brazil	***	***	***	***	***	***	***
Product 5	Kazakhstan	***	***	***	***	***	***	***
Product 5	Malaysia	***	***	***	***	***	***	***
Product 5	Russia	***	***	***	***	***	***	***
Product 6	United States	***	***	***	***	***	***	***
Product 6	Brazil	***	***	***	***	***	***	***
Product 6	Kazakhstan	***	***	***	***	***	***	***
Product 6	Malaysia	***	***	***	***	***	***	***
Product 6	Russia	***	***	***	***	***	***	***
Product 7	United States	***	***	***	***	***	***	***
Product 7	Brazil	***	***	***	***	***	***	***
Product 7	Kazakhstan	***	***	***	***	***	***	***
Product 7	Malaysia	***	***	***	***	***	***	***
Product 7	Russia	***	***	***	***	***	***	***
Product 8	United States	***	***	***	***	***	***	***
Product 8	Brazil	***	***	***	***	***	***	***
Product 8	Kazakhstan	***	***	***	***	***	***	***
Product 8	Malaysia	***	***	***	***	***	***	***
Product 8	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 second quarter 2024.

Price comparisons

As shown in tables V-15 to V-16, prices for product imported from subject countries were below those for U.S.-produced product in 60 of 148 instances (133.1 million pounds contained silicon); margins of underselling ranged from 0.0 to 63.8 percent. In the remaining 88 instances (320.0 million pounds contained silicon), prices for product from subject countries were between 0.2 and 139.4 percent above prices for the domestic product. As shown in table V-15, the majority of overselling volume occurred in prices of product from ***.

Table V-15
Ferrosilicon: Instances of underselling and overselling and the range and average of margins, by product

Quantity in pounds contained silicon; margin in percent

Product	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Product 1	Underselling	20	***	***	***	***
Product 2	Underselling	9	***	***	***	***
Product 3	Underselling	18	***	***	***	***
Product 4	Underselling	3	***	***	***	***
Product 5	Underselling	3	***	***	***	***
Product 6	Underselling	5	***	***	***	***
Product 7	Underselling	2	***	***	***	***
Product 8	Underselling	---	---	---	---	---
Total, all products	Underselling	60	133,122,369	18.1	0.0	63.8
Product 1	Overselling	28	***	***	***	***
Product 2	Overselling	32	***	***	***	***
Product 3	Overselling	19	***	***	***	***
Product 4	Overselling	1	***	***	***	***
Product 5	Overselling	2	***	***	***	***
Product 6	Overselling	3	***	***	***	***
Product 7	Overselling	3	***	***	***	***
Product 8	Overselling	---	---	---	---	---
Total, all products	Overselling	88	319,988,364	(38.2)	(0.2)	(139.4)

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-16
Ferrosilicon: Instances of underselling and overselling and the range and average of margins, by source

Quantity in pounds contained silicon; margin in percent

Source	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
Brazil	Underselling	30	***	***	***	***
Kazakhstan	Underselling	4	***	***	***	***
Malaysia	Underselling	14	***	***	***	***
Russia	Underselling	12	***	***	***	***
Total, all subject sources	Underselling	60	133,122,369	18.1	0.0	63.8
Brazil	Overselling	26	***	***	***	***
Kazakhstan	Overselling	10	***	***	***	***
Malaysia	Overselling	23	***	***	***	***
Russia	Overselling	29	***	***	***	***
Total, all subject sources	Overselling	88	319,988,364	(38.2)	(0.2)	(139.4)

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-17 shows instances and quantities of underselling and overselling margins by year. As shown in the table, overselling by quantity predominated in 2021 and 2022, but underselling by quantity predominated in 2023 and the first six months of 2024. The quantity of ferrosilicon in which subject imports undersold U.S. product was *** pounds contained silicon in 2021, *** pounds contained silicon in 2022, *** pounds contained silicon in 2023, and *** pounds contained silicon in the first six months of 2024. The number of instances of overselling was more than the number of instances of underselling in 2021 and 2022 and the same in 2023. The number of instances of underselling was more than the number of instances of overselling in January-June 2024.

Table V-17
Ferrosilicon: Instances of underselling and overselling and the range and average of margins, by year

Quantity in pounds contained silicon; margin in percent

Year	Type	Number of quarters	Quantity	Average margin	Min margin	Max margin
2021	Underselling	16	***	***	***	***
2022	Underselling	6	***	***	***	***
2023	Underselling	20	***	***	***	***
January-June 2024	Underselling	18	***	***	***	***
Total, all periods	Underselling	60	133,122,369	18.1	0.0	63.8
2021	Overselling	26	***	***	***	***
2022	Overselling	37	***	***	***	***
2023	Overselling	20	***	***	***	***
January-June 2024	Overselling	5	***	***	***	***
Total, all periods	Overselling	88	319,988,364	(38.2)	(0.2)	(139.4)

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.

Lost sales and lost revenue

In the preliminary phase of these investigations, 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 imports of ferrosilicon from Brazil, Kazakhstan, Malaysia, and/or Russia during January 2021-December 2023. Both U.S. producers submitted lost sales and lost revenue allegations. The two responding U.S. producers identified 14 firms with which they lost sales or revenue (6 consisting of lost sales allegations and 8 consisting of both types of allegations).

In the final phase of these investigations, *** reported that *** had to either reduce prices or roll back announced price increases, and *** reported losing sales.

Staff contacted approximately 50 purchasers and received responses from 24 purchasers.[16] Responding purchasers reported purchasing 718,291 short tons contained silicon of ferrosilicon during January 2021-June 2024 (table V-18).

[16] Two purchasers submitted lost sales lost revenue survey responses in the preliminary phase but did not submit purchaser questionnaire responses in the final phase.

Table V-18
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 2021 and 2023. Zeroes, null values, and undefined calculations are suppressed and shown as "---".

Of the 24 responding purchasers, 18 reported that, since 2021, they had purchased imported ferrosilicon from subject countries instead of U.S.-produced product (table V-19), specifically 12 for product imported from Brazil, 5 for product imported from Kazakhstan, 7 for product imported from Malaysia, and 7 for product imported from Russia (table V-20). Fourteen of these purchasers reported that subject import prices were lower than U.S.-produced product, and six of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Those six purchasers estimated the quantity of ferrosilicon from subject countries purchased instead of domestic product; quantities ranged from 4,500 to 12,510 short tons contained silicon. Purchasers identified quality, availability, relationships, service, reliability, and payment terms as non-price reasons for purchasing imported rather than U.S.-produced product.

Of the 24 responding purchasers, four reported that U.S. producers had reduced prices in order to compete with lower-priced imports from subject countries; seven reported U.S. producers had not reduced prices to compete; and 12 reported that they did not know (tables V-21 and V-22). The reported estimated price reduction ranged from 2.0 to 15.0 percent.

Table V-19
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-19 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
***	***	***- see note at end of table V-19.	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***

Table continued.

Table V-19 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
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***

Table continued.

Table V-19 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--18; No--5	Yes--14; No--2	Yes--6; No--11	***	NA

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

Note: ***.

Table V-20
Ferrosilicon: Purchasers' responses to purchasing subject imports instead of domestic product, by source

Count in number of firms reporting; quantity in short tons contained silicon

Source	Purchasers reporting subject instead of domestic	Purchasers reported that imports were priced lower	Purchasers reporting that price was a primary reason for shift	Quantity
Brazil	15	12	5	36,083
Kazakhstan	6	5	3	5,839
Malaysia	9	7	3	8,665
Russia	9	7	3	632
Any subject source	18	14	6	51,219

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

Note: In additional comments, purchaser ***

Table V-21
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 on the next page.

Table V-21 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
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***

Table continued on the next page.

Table V-21 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--4; No--7	***	NA

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

Table V-22
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	3	8.9	***
Kazakhstan	1	15.0	***
Malaysia	2	15.0	***
Russia	2	8.5	***
Total / average	4	6.6	***

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

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 during 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.

Staff verified the results of CC Metals with its corporate records and all adjustments were incorporated into this report. CC Metals' U.S. producer questionnaire response was revised as follows: ***. These revisions are discussed in more detail in the relevant section.[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 that year, and CC Metals accounted for slightly more than ***.

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.

[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] Staff verification report, CC Metals, September 12, 2024.

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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	***	***	***	***	***

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

Note: 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	Jan-Jun 2023-24
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	Jan-Jun 2023-24
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: 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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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	Jan-Jun 2023	Jan-Jun 2024
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 quantity increased by *** percent between 2021 and 2023 but was *** percent lower in January-June 2024 than in January-June 2023. In terms of value, net sales increased by *** percent from 2021 to 2022 and then decreased by *** percent in 2023, for an overall increase of *** percent from 2021 to 2023. In January-June 2024 it was *** percent lower than it was in January-June 2023. The net sales AUV for ferrosilicon *** between 2021 and 2022, increasing from $*** per STCS to $*** per STCS, before decreasing to $*** per STCS in 2023. It was also lower in January-June 2024, at $*** per STCS, than in January-June 2023, at $***.

As is shown in table VI-3, both companies reported an increase in their net sales quantities overall from 2021 to 2023 and lower net sales quantities in January-June 2024 than in January-June 2023.[3] Both companies reported *** increases in their net sales AUVs from 2021 to 2022, *** decreases in 2023, and lower net sales AUVs in January-June 2024 when compared with January-June 2023. ***.[4] [5]

---

[3] ***.

[4] The firms' net sales AUVs differed by *** percent, *** percent, *** percent, *** percent, and *** percent in 2021, 2022, 2023, January-June 2023, and January-June 2024, respectively.

[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, ***. Email from ***.

Cost of goods sold and gross profit or loss

Raw material costs represented the largest share of total COGS for ferrosilicon throughout the period for which data were collected. The companies' aggregate raw material costs increased from 2021 to 2023 but were lower in January-June 2024 than January-June 2023. Raw material cost AUVs increased from $*** per STCS in 2021 to $*** per STCS in 2023 and were higher in January-June 2024, at $*** per STCS, than in January-June 2023, at $*** per STCS.[6] Both U.S. producers experienced increases in their raw material cost AUVs each year from 2021 to 2023 and had higher raw material cost AUVs in January-June 2024 than in January-June 2023.

Table VI-4 presents raw materials, by type. Coal represented *** the largest share of raw material costs in 2023, followed by quartz gravel or sand, iron or steel scrap, and wood chips.[7] CC Metals and Ferroglobe reported that *** and *** percent of their raw material costs, respectively, were "other material inputs." ***.[8]

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	***	***	100.0

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] 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 ***. 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.

[8] U.S. producer questionnaire responses, section III-9c; Email from ***. ***. Email from ***.

Direct labor was the smallest component of total COGS in each year from 2021 to 2023 and in both interim periods. Direct labor AUVs increased from $*** per STCS in 2021 to $*** per STCS in 2023 and were higher in January-June 2024, at $*** per STCS, than in January-June 2023, at $*** per STCS. While both companies reported an overall increase in their direct labor AUVs from 2021 to 2023 and higher direct labor AUVs in January-June 2024 than in January-June 2023, ***. In response to questions from staff, the company reported that ***.[9]

Other factory costs (including ***) accounted for the second-largest share of total COGS throughout the period for which data were collected.[10] Other factory cost AUVs increased irregularly from 2021 to 2023 but were lower in January-June 2024 than in January-June 2023. The overall increase in other factory cost AUVs from 2021 to 2023 was *** attributable to ***, ***

[9] Email from ***. Upon request for more information, the company reported that approximately $*** of the increase in its direct labor costs from 2021 to 2022 was attributable to ***. It reported that $*** of its direct labor costs in 2022 were related to ***. Most of the remaining *** was related to ***. Email from ***. ***. Email from ***.

[10] ***. Staff verification report, CC Metals, September 12, 2024, p. 7 n.7. ***. *** U.S. producer questionnaire response, section III-10.

.[11] *** other factory costs were *** higher than *** and increased by *** percent between 2021 and 2023 (increasing from $ per STCS in 2021 to $*** per STCS in 2023).[12]

During verification, Staff noted ***.[13] The ***.[14]

[11] Between the comparable interim periods Ferroglobe's other factory cost AUVs increased, while CC Metals' decreased.

[12] *** reported that the increase in its other factory costs between 2021 and 2023 reflected ***. Email from ***; *** U.S. producer questionnaire response, section ***.

The company ***. Email from ***. ***.

[13] Staff verification report, CC Metals, September 12, 2024, p. 7 n.8. ***. Ibid.

[14] To show the effect of the ***.

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. It was *** percent in January-June 2023 and *** percent in January-June 2024. As 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, however ***.[15] *** reported higher COGS to net sales ratios in January-June 2024 than in January-June 2023.

The aggregate gross profit increased from $*** in 2021 to a period-high $*** in 2022, before decreasing to $*** in 2023. It was $*** in January-June 2023 and $*** in January-June 2024. Both companies reported *** increases in their gross profits between 2021 and 2022 and decreases in gross profit between 2022 and 2023. However, ***. *** reported lower gross profits *** in January-June 2024 compared with January-June 2023.

SG&A expenses and operating income or loss

The industry's SG&A expenses increased from 2021 to 2023 and were higher in January-June 2024 than in January-June 2023.[16] The fluctuations in net sales values resulted in the SG&A expense ratio decreasing from *** percent in 2021 to *** percent in 2022 and increasing to *** percent in 2023. It was higher in January-June 2024, at *** percent, than in January-June 2023, at *** percent.

The industry's operating income increased from $*** in 2021 to $*** in 2022 and decreased to $*** in 2023. It was $*** in January-June 2023 and *** $*** in January-June 2024.[17] The operating income margin increased from *** percent in 2021 to *** percent in 2022, decreased to *** percent in 2023, and was lower in January-June 2024 (*** percent) than in January-June 2023 (*** percent).

[15] ***.

[16] ***. Staff verification report, CC Metals, September 12, 2024, p. 7 n.7.

[17] ***.

All other expenses and net income or loss

Classified below the operating income level are interest expense, other expenses, and other income. In table VI-1 these items are aggregated and only the net amount is shown.[18] The ***.

*** recorded any expenses or income below operating income. The company reported ***.[19] The majority of the company's ***.[20]

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. It was lower in January-June 2024, at *** $***, than in January-June 2023, at $***. The net income margin increased from *** percent in 2021 to *** percent in 2022 and decreased to *** percent in 2023. It was lower in January-June 2024, at *** percent, than in January-June 2023, at *** percent.

[18] ***. Staff verification report, CC Metals, September 12, 2024, p. 8.
[19] ***. *** U.S. producer questionnaire response, section III-9a.
[20] ***. *** U.S. producer questionnaire response, sections III-10 and III-11. ***. Email from ***.

Variance analysis

A variance analysis for the U.S. producers' ferrosilicon operations is presented in table VI-5.[21] 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., cost/expense AUVs increased more than net sales AUVs, and the positive effect from an increase in net sales volume did not overcome the difference). The variance analysis also shows that the $*** decrease in operating income between the interim periods was mainly the result of a negative price variance but was also impacted by negative cost and volume variances (i.e., net sales AUVs decreased, cost/expense AUVs increased, and net sales volume decreased, but the decrease in the net sales AUVs had the largest impact on operating income between January-June 2023 and January-June 2024).

[21] The Commission's variance analysis is calculated in three parts: 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/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.

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	Jan-Jun 2023-24
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 (negative) are shown in parentheses, all others are favorable (positive).

Capital expenditures and research and development expenses

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. ***. 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	Jan-Jun 2023	Jan-Jun 2024
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.

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.[22] [23] Table VI-10 presents U.S. producers' narrative responses explaining their major asset categories and any significant changes in asset levels over time.

[22] 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.

[23] ***. Staff verification report, CC Metals, September 12, 2024, p. 9.

The industry's total assets increased *** between 2021 and 2023. This increase is mostly attributable to ***. In its questionnaire response, the company reported that the increase was related to ***. In response to a request for more information, ***.[24] 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.

[24] 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.

Note: Staff notes that ***. *** U.S. producer questionnaire, sections I-5 and II-16.

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 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 30 firms for which valid contact information was obtained that are believed to produce ferrosilicon in and/or export ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia.[3] The Commission received usable responses to its questionnaire from 10 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]

[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 August 13, 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.

- Brazil, *** percent.[6] [7]
- Kazakhstan, *** percent;[8] [9]
- Malaysia, *** percent;[10] and
- Russia, 0 percent.

---

[6] *** of its share of production of ferrosilicon in Brazil during 2023. The shares of ferrosilicon production provided by six of the responding seven Brazilian producers were calculated through a ferrosilicon trade association, the Associação Brasileira dos Produtores de Ferroligas e Silício Metálico ("ABRAFE"), by gathering production data from Brazilian ferrosilicon producers. ABRAFE also gathered U.S. export data from Brazilian ferrosilicon producers. Email correspondence with ***, August 6, 2024.

[7] According to its website, Minasligas S.A. ("Minasligas") produces 120,000 tons of ferrosilicon (75 percent grade) or 80,000 tons of silicon metal annually. https://www.minasligas.com.br/portal/en/the-company/, accessed August 14, 2024. According to its website and investor relations public presentation for 2024, Cia de Ferro Ligas da Bahia – Ferbasa ("Ferbasa") of Brazil had 70,000 tons of capacity to produce high-purity ferrosilicon in 2024. Additionally, it had produced 53,570 tons of high-purity ferrosilicon on 60,000 tons of production capacity (dedicated to the production of high-purity ferrosilicon) during 2023. Ferbasa's also produced regular ferrosilicon along with other silicon alloys. https://www.ferbasa.com.br/en/disclosures-and-results/presentations/; pp. 70-71, accessed August 19, 2024.

[8] According to its website, YDD Corporation, LLP, ("YDD") one of the ferrosilicon producers in Kazakhstan produces 240,000 tons of ferrosilicon per year on four furnaces. Additionally, it exports to over 50 countries. https://yddcorp.kz/about. Accessed August 14, 2024. According to its website, TNC Kazchrome JSC's ("TNC Kazchrome") Asku Ferroalloys plant produces more than one million tons of ferroalloys annually (which includes production of ferrosilicon, chromium, siliceous and manganese alloys) most of which is exported. https://www.kazchrome.com/en/business-overview/divisions/aksu/, accessed August 14, 2024.

[9] YDD indicated that *** foreign producer/exporter questionnaire. YDD had exports to the United States, while ***. YDD further indicated that ***. ***. YDD foreign producer questionnaire response, section I-3 and email correspondence with ***, August 9, 2024.

[10] According to its website, OM Materials (Sarawak) Sdn Bhd ("OM Materials") Samalaju Smelting Complex has an annual ferrosilicon production capacity of 120,000 to 126,000 metric tons. https://www.omholdingsltd.com/our-business/samalaju-smelting-complex/. Accessed August 14, 2024.

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 quantity	Share of reported production	Exports to the United States quantity	Share of reported exports to the United States	Total shipments quantity	Share of firm's total shipments exported to the United States
Bozel (Brazil)	***	***	***	***	***	***
Ferbasa (Brazil)	***	***	***	***	***	***
Libra Ligas (Brazil)	***	***	***	***	***	***
Minasligas (Brazil)	***	***	***	***	***	***
Nova Era (Brazil)	***	***	***	***	***	***
Rima (Brazil)	***	***	***	***	***	***
Rotavi (Brazil)	***	***	***	***	***	***
Kazchrome (Kazakhstan)	***	***	***	***	***	***
YDD (Kazakhstan)	***	***	***	***	***	***
OM Materials (Malaysia)	***	***	***	***	***	***
Pertama (Malaysia)	***	***	***	***	***	***
All individual producers	589,247	100.0	57,968	100.0	580,879	10.0

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-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 quantity	Share of reported production	Exports to the United States quantity	Share of reported exports to the United States	Total shipments quantity	Share of firm's total shipments exported to the United States
Brazil	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***
Russia	***	***	***	***	***	***
All subject foreign industries	589,247	100.0	57,968	100.0	580,879	10.0

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-3 presents events in the ferrosilicon industries of Brazil, Kazakhstan, Malaysia, and Russia since January 1, 2021.

Table VII-3
Ferrosilicon: Important industry events in subject countries since January 1, 2021

Item	Country	Event
RIMA entering new joint-venture	Brazil	In July 2024, RIMA and SIMPAC Inc., a South Korean ferroalloy producer, entered into a joint venture to produce high-purity ferrosilicon. SIMPAC and RIMA will each invest $10 million to acquire 50 percent stakes in the joint venture, named Silbraco, with a plan to produce at least 2,204 short tons of low-carbon, high-purity ferrosilicon per month. Details about the joint venture's plan were not available as of August 2024.
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 the city of Karaganda in the Qaraghandy Region. 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 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 from 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 are 100 percent 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 United States, Turkey, and Europe.
TB Alloys Kazakh Limited building a new ferrosilicon plant (under development)	Kazakhstan	In December 2023, TB Alloys Kazakh Limited (a joint-venture between Kazakhstan's Fincraft Resources and the Indian holding Monnet Group) announced that they are 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 plant	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.
OM Holdings plant to convert ferrosilicon furnaces	Malaysia	OM Holdings operated a ferroalloys smelter in Samalaju, Sarawak that initially consisted of eight workshops with a total of 16 furnaces, of which 10 furnaces were allocated to produce ferrosilicon and 6 were allocated to produce manganese alloys. The Plant had a designed total ferrosilicon production capacity of 200,000 to 210,000 metric tons per year and capacity to produce 250,000 to 300,000 metric tons per year per of manganese alloys. In 2020, six of the ten furnaces produced ferrosilicon and four were idle. Of the four idled ferrosilicon furnaces, two were idled for the purposes of conversion to produce manganese alloys, with the other two furnaces placed on care and maintenance. Subsequently, in 2021, the company decided to convert the two furnaces that were placed on care and maintenance to silicon metal production.
OM Holdings converts idle ferrosilicon furnaces	Malaysia	During the 2nd qtr. of 2022, OM Holdings completed the conversion of 2 of 4 idled ferrosilicon furnaces to manganese alloy production at its smelter complex in Samalaju, Sarawak. As of Dec. 2023, OM Holding was operating 8 furnaces producing ferrosilicon (including the two furnaces that were allocated to produce silicon metal in the future) and 7 furnaces were producing manganese alloys.
Pertama building new ferrosilicon capacity	Malaysia	In December 2023, Pertama, which had existing installed production capacity of 60,000 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 100,000 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. However, the company indicated that ***.
OM Holdings status of furnaces and maintenance	Malaysia	As of June 2024, OM Holdings operated 16 furnaces at its ferroalloys plant in Samalaju, Sarawak with 6 furnaces allocated to producing ferrosilicon (not including one silicon metal furnace that was temporarily converted to ferrosilicon production), 8 producing manganese alloys, and 2 units allocated to producing silicon metal. The company had completed major maintenance work on 14 out of 16 furnaces at the plant and was planning to perform maintenance on the remaining two ferrosilicon furnaces in 2025. As of June 2024, the plant had a total ferrosilicon production capacity of 120,000–126,000 metric tons per year, silicon metal production capacity of 21,000–24,500 metric tons per year, and capacity to produce 333k-400k metric tons of manganese alloys per year.
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.

Item	Country	Event
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 July 2024, it was unclear how this development would impact production and sales of ferroalloys produced at these plants.

Source: 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, Annual Report 2020, April 22, 2021, https://www.omholdingsltd.com/wp-content/uploads/2021/04/OM-AR2020-Low-res.pdf, p. 10. OM Holdings, Annual Report 2021, April 28, 2022, https://www.omholdingsltd.com/wp-content/uploads/2022/04/OMH-Full-Set-wo-Cover-page.pdf, p. 14. 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; Staff correspondence with ***, September 24, 2024. OM Holdings Limited, December 2023 Quarterly Production and Market Update, January, 2024, https://www.omholdingsltd.com/wp-content/uploads/2024/01/2024.01.29-ASX-OMH-31-Dec-2023-Quarterly-Market-Update.pdf.

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
Prolonged shutdowns	***
Prolonged shutdowns	***
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 and practical overall capacity increased, while practical ferrosilicon capacity decreased. All three capacity types were higher during the January-June 2024 period compared to the January-June 2023 period. Installed overall, practical overall, and practical ferrosilicon production all increased from 2021 to 2023, and were higher during the January-June 2024 period compared to the January-June 2023 period.[11]

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 (STCS); utilization in percent

Item	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Installed overall	Capacity	1,027,469	989,869	1,091,225	538,520	549,609
Installed overall	Production	771,447	799,809	839,448	415,478	463,822
Installed overall	Utilization	75.1	80.8	76.9	77.2	84.4
Practical overall	Capacity	897,287	870,012	952,784	465,573	511,220
Practical overall	Production	771,447	799,809	839,448	415,478	463,822
Practical overall	Utilization	86.0	91.9	88.1	89.2	90.7
Practical Ferrosilicon	Capacity	659,152	627,787	657,821	316,450	365,517
Practical Ferrosilicon	Production	540,166	574,358	589,247	284,459	329,610
Practical Ferrosilicon	Utilization	81.9	91.5	89.6	89.9	90.2

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 five firms), while five firms reported fuel and energy (all five that reported fuel and energy as capacity constraints were Brazilian ferrosilicon producers), as capacity constraints.

[11] ***. *** foreign producer questionnaire response, section II-3a.

Table VII-6
Ferrosilicon: Reported capacity constraints by producers in subject foreign industries since January 1, 2021

Item	Firm name (subject foreign industry) and narrative response
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 decreased while production of ferrosilicon increased. Ferrosilicon capacity and ferrosilicon production were both higher during January-June 2024 than during January-June 2023. Subject producers' capacity utilization fluctuated but increased (by 7.6 percentage points) from 2021 to 2023 and was slightly higher during January-June 2024 than during January-June 2023. Exports to the United States and to all other markets both increased from 2021 to 2023 and were both higher during January-June 2024 than during January-June 2023. Home market shipments decreased during 2021 and 2023 but were slightly higher during January-June 2024 than during January-June 2023.

Subject producers' exports to the United States, which accounted for 10.0 percent of total shipments in 2023, increased overall and were 6.8 percentage points higher during January-June 2024 than during January-June 2023. The leading exporter of ferrosilicon from the subject countries to the United States was *** followed by ***.

Exports to all other markets (other than the United States) accounted for the majority as a share of subject producers' total shipments of ferrosilicon from 2021 to 2023 and during the January-June 2023 and January-June 2024 periods. Subject producers' exports accounted for the majority as a share of their total shipments, while home market shipments decreased as a share of total shipments to approximately 20 percent in 2022 and 2023.

Projections for subject producers in 2024 include projected increases in capacity, production, exports to the United States, and exports to all other markets, but were projected to be lower in 2025 than during 2024.

Table VII-7
Ferrosilicon: Data on subject foreign industries, by item and period

Quantity in short tons contained silicon

Item	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Capacity	659,152	627,787	657,821	316,450	365,517	719,721	695,836
Production	540,166	574,358	589,247	284,459	329,610	658,567	612,758
End-of-period inventories	80,671	96,642	96,650	89,537	96,059	77,719	67,582
Internal consumption	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Home market shipments	137,918	113,374	117,534	55,559	55,969	134,990	123,929
Exports to the United States	45,241	56,168	57,968	25,142	52,032	72,966	46,739
Exports to all other markets	355,142	384,819	405,377	205,492	226,569	468,760	451,037
Export shipments	400,383	440,987	463,345	230,634	278,601	541,726	497,776
Total shipments	538,301	554,361	580,879	286,193	334,570	676,716	621,705

Table continued.

Table VII-7 Continued
Ferrosilicon: Data on subject foreign industries, by item and period

Share and ratio in percent

Item	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Capacity utilization ratio	81.9	91.5	89.6	89.9	90.2	91.5	88.1
Inventory ratio to production	14.9	16.8	16.4	15.7	14.6	11.8	11.0
Inventory ratio to total shipments	15.0	17.4	16.6	15.6	14.4	11.5	10.9
Internal consumption share	***	***	***	***	***	***	***
Commercial home market shipments share	***	***	***	***	***	***	***
Home market shipments share	25.6	20.5	20.2	19.4	16.7	19.9	19.9
Exports to the United States share	8.4	10.1	10.0	8.8	15.6	10.8	7.5
Exports to all other markets share	66.0	69.4	69.8	71.8	67.7	69.3	72.5
Export shipments share	74.4	79.5	79.8	80.6	83.3	80.1	80.1
Total shipments share	100.0	100.0	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 subject foreign industries production, by silicon content (75 percent, 50 percent, or other silicon content) and by period. Subject foreign industries production of 75 percent silicon content accounted for the vast majority of production by the subject foreign industries. Two firms ***[12] produced most of the other silicon content ferrosilicon during this period, which accounted for *** percent of production of ferrosilicon in 2023. The other silicon content produced by these firms included ***.

Table VII-8
Ferrosilicon: Subject foreign industries' production, by silicon content and period

Quantity in short tons contained silicon; share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	507,773	521,822	546,745	266,379	292,527
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	540,166	574,358	589,247	284,459	329,610
75 percent silicon	Share	***	***	***	***	***
50 percent silicon	Share	***	***	***	***	***
Other silicon content	Share	***	***	***	***	***
All silicon contents	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-9 presents information on the subject foreign industries production, by grade (standard, high-purity, or all other grades) by period. Subject foreign industries production of standard grade silicon content ferrosilicon accounted for the majority of production by the subject foreign industries. The *** production of the high-purity ferrosilicon,[13] which accounted for approximately one quarter of production of ferrosilicon during this period. The other grades of ferrosilicon produced by the subject foreign industries accounted for approximately 10.0 percent of ferrosilicon production during this period.

[12] *** foreign producer questionnaire response, section II-9.

[13] *** foreign producer questionnaire response, section II-9. *** accounted for approximately *** of total high-purity ferrosilicon production during 2023. Ibid.

Table VII-9
Ferrosilicon: Subject foreign industries' production, by grade and period

Quantity in short tons contained silicon; share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	369,651	390,733	390,934	185,384	231,253
High-purity grade	Quantity	125,419	125,736	149,468	72,649	76,488
All other grades	Quantity	45,096	57,889	48,845	26,426	21,869
All grades	Quantity	540,166	574,358	589,247	284,459	329,610
Standard grade	Share	68.4	68.0	66.3	65.2	70.2
High-purity grade	Share	23.2	21.9	25.4	25.5	23.2
All other grades	Share	8.3	10.1	8.3	9.3	6.6
All grades	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-10 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, and both were higher during January-June 2024 than during January-June 2023. Capacity utilization for the Brazilian producers decreased from 2021 to 2023 by *** percentage points and was *** percentage point higher during January-June 2024 than during January-June 2023. Brazilian producers' share of overall subject country production decreased by *** percentage points from 2021 to 2023.

From 2021 to 2023, Kazakh producers' capacity and production increased overall, respectively, and capacity was higher during January-June 2024 than during January-June 2023. Capacity utilization fluctuated but increased by *** percentage points from 2021 to 2023 but was lower during January-June 2024 than during January-June 2023. Kazakh producers' capacity and production levels are projected to be higher in 2024 and 2025 than 2023 levels.

From 2021 to 2023, Malaysian producers' capacity decreased but production increased, and were both higher in January-June 2024 than during January-June 2023. Capacity utilization for the Malaysian producers increased from 2021 to 2023, by *** percentage points, and was higher in January-June 2024 than during January-June 2023. Malaysian producers' capacity and production are projected to be higher in 2024 than 2023 levels but are expected to be lower in 2025.

Table VII-10
Ferrosilicon: Subject producers' output, by source and period

Practical capacity

Capacity in short tons contained silicon

Subject foreign industry	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Brazil	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***
All subject foreign industries	659,152	627,787	657,821	316,450	365,517	719,721	695,836

Table continued

Table VII-10 Continued
Ferrosilicon: Subject producers' output, by source and period

Production

Production in short tons contained silicon

Subject foreign industry	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Brazil	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***
All subject foreign industries	540,166	574,358	589,247	284,459	329,610	658,567	612,758

Table continued

Table VII-10 Continued
Ferrosilicon: Subject producers' output, by source and period

Capacity utilization

Ratio in percent

Subject foreign industry	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Brazil	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***
All subject foreign industries	81.9	91.5	89.6	89.9	90.2	91.5	88.1

Table continued

Table VII-10 Continued
Ferrosilicon: Subject producers' share of production, by source and period

Share of production

Share in percent

Subject foreign industry	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Brazil	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***
All subject foreign industries	100.0	100.0	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 "---".

Subject foreign industries (combined) exports

Table VII-11 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 were higher during January-June 2024 than during January-June 2023. Subject foreign industries (combined) exports are projected to be higher during 2024 but lower during 2025. Subject foreign industries (combined) exports to the United States as a share of total exports, accounted for approximately 10.0 percent from 2021 to 2023 and were higher in January-June 2024 than in January-June 2023 (15.6 percent compared to 8.8 percent). Subject foreign industries (combined) exports to all destinations increased from 2021 to 2023,[14] and were higher during January-June 2024 than during January-June 2023. Subject foreign industries (combined) exports to all other markets are projected to be higher during 2024 and 2025 than 2023 levels.

[14] Brazilian producer *** indicated that it had largely ceased exports to the United States during 2023, and that its sales of *** ferrosilicon were being exported to the growing Asian market. In 2023, Rima indicated that its ferrosilicon sales were *** percent to the *** continent. Email correspondence with ***, August 7, 2024.

Brazilian producer *** indicated that its exports of ferrosilicon to all other markets were destined for *** during 2023. ***. Email correspondence with ***, August 6, 2024.

Brazilian producers *** exports of ferrosilicon to all other markets during 2023 were mostly to *** (*** indicated that *** percent of its ferrosilicon exports were destined for ***). ***. Email correspondence with ***, August 7 and 9, 2024.

*** indicated that the plurality of its exports of ferrosilicon to all other markets during 2023 were to *** (***), while the United States accounted for approximately *** of its exports of ferrosilicon during 2023. Email correspondence with ***, August 12, 2024.

*** indicated that approximately *** of its exports *** of ferrosilicon during 2023 were to the *** (predominantly to ***). Email correspondence with ***, August 8, 2024.

*** indicated that approximately *** percent of its exports to all other markets (***) were destined for the *** during 2023. Email correspondence with ***, August 9, 2024.

Table VII-11
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	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Brazil	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***
All subject foreign industries	45,241	56,168	57,968	25,142	52,032	72,966	46,739

Table continued

Table VII-11 Continued
Ferrosilicon: Subject foreign industries' exports, share of total shipments exported to the United States, by subject foreign industry and period

Share in percent

Subject foreign industry	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Brazil	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***
All subject foreign industries	8.4	10.1	10.0	8.8	15.6	10.8	7.5

Table continued

Table VII-11 Continued
Ferrosilicon: Total exports, by subject foreign industry and period

Quantity in short tons contained silicon

Subject foreign industry	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Brazil	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***
All subject foreign industries	538,301	554,361	580,879	286,193	334,570	676,716	621,705

Table continued

Table VII-11 Continued
Ferrosilicon: Total exports, by subject foreign industry and period

Ratios in percent

Subject foreign industry	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024	Projected 2024	Projected 2025
Brazil	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***
Malaysia	***	***	***	***	***	***	***
Russia	***	***	***	***	***	***	***
All subject foreign industries	74.4	79.5	79.8	80.6	83.3	80.1	80.1

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-12, responding firms in the subject countries produced other products on the same equipment and machinery used to produce ferrosilicon. Ferrosilicon production accounted for the majority of subject producers’ overall production from 2021 to 2023, and during January-June 2023 and January-June 2024 (over 75 percent on a gross weight basis in each period).

Six responding producers/exporters reported the production of other products, including silicon metal, magnesium ferrosilicon, and other products. “Other products,” which include calcium silicon, calcium silicon barium, ferrochrome silicon, silicon metal slag, and foundry products, accounted for the majority of out-of-scope production in each period.

Table VII-12
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; shares in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Ferrosilicon, contained silicon	Quantity	540,166	574,358	589,247	284,459	329,610
Ferrosilicon, weight of other elements	Quantity	47,747	57,257	62,063	31,705	31,458
Ferrosilicon, gross weight	Quantity	587,913	631,615	651,310	316,164	361,068
Silicon metal	Quantity	***	***	***	***	***
Magnesium ferrosilicon	Quantity	***	***	***	***	***
Other products	Quantity	***	***	***	***	***
All out-of-scope products	Quantity	183,534	168,194	188,138	99,314	102,754
All products	Quantity	771,447	799,809	839,448	415,478	463,822
Ferrosilicon, contained silicon	Share	70.0	71.8	70.2	68.5	71.1
Ferrosilicon, weight of other elements	Share	6.2	7.2	7.4	7.6	6.8
Ferrosilicon, gross weight	Share	76.2	79.0	77.6	76.1	77.8
Silicon metal	Share	***	***	***	***	***
Magnesium ferrosilicon	Share	***	***	***	***	***
Other products	Share	***	***	***	***	***
All out-of-scope products	Share	23.8	21.0	22.4	23.9	22.2
All products	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 "---".

Exports

Table VII-13 presents global exports of ferrosilicon by country, destination market, and period based on Global Trade Atlas data along with data reported official import statistics as reported by various national statistical authorities for Russia. The vast majority of the subject producers/exporters ferrosilicon exports were to countries other than the United States.

Table VII-13
Ferrosilicon: Global exports by subject producers/exporters, by exporter, destination market and period

Quantity in short tons; shares is the share of global exports that are exported to the United States

Exporter	Destination	Measure	2021	2022	2023
Brazil	United States	Quantity	23,906	31,149	36,047
Kazakhstan	United States	Quantity	13,580	9,745	12,156
Malaysia	United States	Quantity	20,014	27,605	21,914
Russia	United States	Quantity	86,957	115,686	91,410
Subject exporters	United States	Quantity	144,458	184,185	161,528
Brazil	World	Quantity	163,157	168,844	193,727
Kazakhstan	World	Quantity	112,836	135,174	149,160
Malaysia	World	Quantity	168,827	217,168	195,363
Russia	World	Quantity	463,278	327,089	336,447
Subject exporters	World	Quantity	908,098	848,276	874,697
Brazil	United States	Share	14.7	18.4	18.6
Kazakhstan	United States	Share	12.0	7.2	8.1
Malaysia	United States	Share	11.9	12.7	11.2
Russia	United States	Share	18.8	35.4	27.2
Subject exporters	United States	Share	15.9	21.7	18.5

Source: Official exports statistics under HS subheadings 7202.21 and 7202.29 as reported by various national statistical authorities and official import statistics as reported by various national statistical authorities for Russia in the Global Trade Atlas Suite database, accessed July 17, 2024. Russia exports are calculated from mirror imports from all other reporters.

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-14 presents data on U.S. importers’ reported inventories of ferrosilicon from 2021 to 2023, January-June 2023, and January-June 2024. U.S. importers’ inventories of imports from subject sources increased by *** percent from 2021 to 2023 but were lower by *** percent in January-June 2024 than during January-June 2023. U.S. importers’ inventories of imports from nonsubject sources increased by *** percent from 2021 to 2023 but were lower by *** percent in January-June 2024 than during January-June 2023. U.S. importers’ inventories of imports from Russia *** from 2021 to 2023, which attributed to the overall increase in end-of-period inventories by subject importers. [15]

[15] ***.

Table VII-14
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	Jan-Jun 2023	Jan-Jun 2024
Inventories quantity	Brazil	***	***	***	***	***
Ratio to imports	Brazil	***	***	***	***	***
Ratio to U.S. shipments of imports	Brazil	***	***	***	***	***
Ratio to total shipments of imports	Brazil	***	***	***	***	***
Inventories quantity	Kazakhstan	***	***	***	***	***
Ratio to imports	Kazakhstan	***	***	***	***	***
Ratio to U.S. shipments of imports	Kazakhstan	***	***	***	***	***
Ratio to total shipments of imports	Kazakhstan	***	***	***	***	***
Inventories quantity	Malaysia	***	***	***	***	***
Ratio to imports	Malaysia	***	***	***	***	***
Ratio to U.S. shipments of imports	Malaysia	***	***	***	***	***
Ratio to total shipments of imports	Malaysia	***	***	***	***	***
Inventories quantity	Russia	***	***	***	***	***
Ratio to imports	Russia	***	***	***	***	***
Ratio to U.S. shipments of imports	Russia	***	***	***	***	***
Ratio to total shipments of imports	Russia	***	***	***	***	***
Inventories quantity	Subject	***	***	***	***	***
Ratio to imports	Subject	***	***	***	***	***
Ratio to U.S. shipments of imports	Subject	***	***	***	***	***
Ratio to total shipments of imports	Subject	***	***	***	***	***
Inventories quantity	Nonsubject	***	***	***	***	***
Ratio to imports	Nonsubject	***	***	***	***	***
Ratio to U.S. shipments of imports	Nonsubject	***	***	***	***	***
Ratio to total shipments of imports	Nonsubject	***	***	***	***	***
Inventories quantity	All	***	***	***	***	***
Ratio to imports	All	***	***	***	***	***
Ratio to U.S. shipments of imports	All	***	***	***	***	***
Ratio to total shipments of imports	All	***	***	***	***	***

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. importers' outstanding orders

The Commission requested importers to indicate whether they imported or arranged for the importation of ferrosilicon after June 30, 2024. Their reported data is presented in table VII-15. 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 Brazil, which accounted for *** of the arranged imports of ferrosilicon from all sources. There are *** arranged imports of ferrosilicon from Russia.

Table VII-15
Ferrosilicon: U.S. importers' arranged imports, by source and period

Quantity in short tons contained silicon

Source	Jul-Sep 2024	Oct-Dec 2023	Jan-Mar 2025	Apr-Jun 2025	Total
Brazil	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Malaysia	***	***	***	***	***
Russia	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	15,346	3,077	***	***	***

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 ferrosilicon 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.[16]

[16] 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).

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.[17]

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 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.[18]

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 approximately 69.2 percent of total ferrosilicon production (table VII-16).

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[17] 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.

[18] 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

Table VII-16
Ferrosilicon: Global production, by country and by period

Quantity in short tons contained silicon; share in percent

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
China	Share	69.3	69.2
Russia	Share	10.5	11.0
Norway	Share	3.6	3.8
Brazil	Share	3.5	3.6
Kazakhstan	Share	1.8	2.3
Bhutan	Share	1.4	1.5
Iceland	Share	1.5	1.5
Malaysia	Share	1.7	1.5
India	Share	1.1	1.2
Poland	Share	0.9	1.0
Spain	Share	0.9	1.0
Canada	Share	0.4	0.4
France	Share	0.5	0.4
Ukraine	Share	0.5	0.0
Other countries	Share	2.7	1.9
World total (rounded)	Share	100.0	100.0

Source: U.S. Geological Survey, Mineral Commodity Summaries 2024, “Silicon,” January 31, 2024, p. 161.

Note: Excludes U.S. ferrosilicon production. Production data are estimated. 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 “---“.

Global exports

According to GTA trade data, the leading global exporters of ferrosilicon, by quantity, were China (17.8 percent), Russia (13.4 percent), Norway (9.8 percent), Netherlands (8.5 percent), Malaysia (7.8 percent), Brazil (7.7 percent), and Kazakhstan (5.9 percent) in 2023 (table VII-17). China was the leading exporter during 2021–23, during which time its share of total exports decreased by about 2.3 percentage points. All of the subject countries were among the top seven global exporters in 2023. The four subject countries together accounted for 34.8 percent of all exports of ferrosilicon in 2023 and their share of total exports increased by 4.5 percentage points from 2021 to 2023. During that period, the share of ferrosilicon exported from nonsubject countries declined to 64.7 percent from 69.0 percent. The collective AUV for exports from the subject producers was higher than the collective AUV for collective nonsubject countries in 2021 and in 2022, but lower in 2023.

Table VII-17
Ferrosilicon: Global exports, by country of origin and period

Quantity in short tons; value in 1,000 dollars

Exporting country	Measure	2021	2022	2023
United States	Quantity	18,580	28,805	11,594
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	463,278	327,089	336,447
Subject exporters	Quantity	908,098	848,276	874,697
China	Quantity	602,646	744,182	448,230
Norway	Quantity	274,775	281,871	247,047
Netherlands	Quantity	232,161	230,806	214,598
Iceland	Quantity	116,582	111,894	107,569
Germany	Quantity	78,439	85,610	73,815
Poland	Quantity	97,183	73,060	64,386
France	Quantity	72,736	63,041	62,908
All other exporters	Quantity	926,678	877,081	886,291
Nonsubject exporters	Quantity	2,066,533	2,084,333	1,626,123
All reporting exporters	Quantity	2,993,210	2,961,413	2,512,414
United States	Value	31,022	39,643	20,295
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	846,397	864,156	529,639
Subject exporters	Value	1,501,107	1,967,418	1,344,138
China	Value	883,248	1,261,487	593,081
Norway	Value	447,217	791,850	488,378
Netherlands	Value	386,618	611,391	432,254
Iceland	Value	188,188	343,030	214,585
Germany	Value	120,270	208,001	134,660
Poland	Value	172,538	201,824	100,337
France	Value	113,712	141,254	107,384
All other exporters	Value	1,532,129	2,007,060	1,364,433
Nonsubject exporters	Value	3,228,466	4,687,300	2,791,772
All reporting exporters	Value	4,760,595	6,694,360	4,156,204

Table continued.

Table VII-17 Continued
Ferrosilicon: Global exports, by country of origin and period

Unit value in dollars per short ton; share in percent

Exporting country	Measure	2021	2022	2023
United States	Unit value	1,670	1,376	1,750
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	2,642	1,574
Subject exporters	Unit value	1,653	2,319	1,537
China	Unit value	1,466	1,695	1,323
Norway	Unit value	1,628	2,809	1,977
Netherlands	Unit value	1,665	2,649	2,014
Iceland	Unit value	1,614	3,066	1,995
Germany	Unit value	1,533	2,430	1,824
Poland	Unit value	1,775	2,762	1,558
France	Unit value	1,563	2,241	1,707
All other exporters	Unit value	1,653	2,288	1,539
Nonsubject exporters	Unit value	1,562	2,249	1,717
All reporting exporters	Unit value	1,590	2,261	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	5.9
Malaysia	Share of quantity	5.6	7.3	7.8
Russia	Share of quantity	15.5	11.0	13.4
Subject exporters	Share of quantity	30.3	28.6	34.8
China	Share of quantity	20.1	25.1	17.8
Norway	Share of quantity	9.2	9.5	9.8
Netherlands	Share of quantity	7.8	7.8	8.5
Iceland	Share of quantity	3.9	3.8	4.3
Germany	Share of quantity	2.6	2.9	2.9
Poland	Share of quantity	3.2	2.5	2.6
France	Share of quantity	2.4	2.1	2.5
All other exporters	Share of quantity	31.0	29.6	35.3
Nonsubject exporters	Share of quantity	69.0	70.4	64.7
All reporting exporters	Share of quantity	100.0	100.0	100.0

Source: Official exports statistics under HS subheadings 7202.21 and 7202.29 as reported by various national statistical authorities and official import statistics as reported by various national statistical authorities for Russia in the Global Trade Atlas Suite database, accessed July 17, 2024. Russia exports are calculated from mirror imports from all other reporters.

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 “---“. United States is shown at the top followed by the countries under investigation, all remaining top exporting countries in descending order of 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
89 FR 43435, May 17, 2024	*Ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia; Determinations*	https://www.govinfo.gov/content/pkg/FR-2024-05-17/pdf/2024-10827.pdf
89 FR 46860, May 30, 2024	*Ferrosilicon From Brazil, Kazakhstan, and Malaysia: Postponement of Preliminary Determinations in the Countervailing Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2024-05-30/pdf/2024-11908.pdf
89 FR 53949, June 28, 2024	*Ferrosilicon From the Russian Federation: Preliminary Affirmative Countervailing Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2024-06-28/pdf/2024-14197.pdf
89 FR 53953, June 28, 2024	*Ferrosilicon From the Russian Federation: Preliminary Affirmative Determination of Sales at Less Than Fair Value*	https://www.govinfo.gov/content/pkg/FR-2024-06-28/pdf/2024-14198.pdf
89 FR 56407, July 9, 2024	*Ferrosilicon From Brazil, Kazakhstan, Malaysia, and Russia; Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations*	https://www.govinfo.gov/content/pkg/FR-2024-07-09/pdf/2024-15058.pdf
89 FR 65671, August 12, 2024	*Ferrosilicon From Brazil, Kazakhstan, Malaysia, and Russia; Revised Schedule for the Subject Investigations*	https://www.govinfo.gov/content/pkg/FR-2024-08-12/pdf/2024-17817.pdf
89 FR 66678, August 16, 2024	*Ferrosilicon From Brazil, Kazakhstan, and Malaysia: Postponement of Preliminary Determinations in the Less-Than-Fair-Value Investigations*	https://www.govinfo.gov/content/pkg/FR-2024-08-16/pdf/2024-18384.pdf
89 FR 68860, August 28, 2024	*Ferrosilicon From the Russian Federation: Preliminary Affirmative Critical Circumstances Determinations*	https://www.govinfo.gov/content/pkg/FR-2024-08-28/pdf/2024-19393.pdf

Citation	Title	Link
89 FR 73364, September 10, 2024	*Ferrosilicon From Malaysia: Preliminary Affirmative Countervailing Duty Determination, Preliminary Affirmative Critical Circumstances Determination, in Part, and Alignment of Final Determination With Final Antidumping Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2024-09-10/pdf/2024-20364.pdf
89 FR 73369, September 10, 2024	*Ferrosilicon From the Republic of Kazakhstan: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2024-09-10/pdf/2024-20365.pdf
89 FR 73371, September 10, 2024	*Ferrosilicon From Brazil: Preliminary Affirmative Countervailing Duty Determination, Preliminary Affirmative Critical Circumstances Determination in Part, and Alignment of Final Determination With Final Antidumping Duty Determination*	https://www.govinfo.gov/content/pkg/FR-2024-09-10/pdf/2024-20363.pdf
89 FR 76454, September 18, 2024	*Ferrosilicon From the Russian Federation: Final Affirmative Countervailing Duty Determination and Final Affirmative Determination of Critical Circumstances*	https://www.govinfo.gov/content/pkg/FR-2024-09-18/pdf/2024-21181.pdf
89 FR 76450, September 18, 2024	*Ferrosilicon From the Russian Federation: Final Affirmative Determination of Sales at Less Than Fair Value and Final Affirmative Determination of Critical Circumstances*	https://www.govinfo.gov/content/pkg/FR-2024-09-18/pdf/2024-21175.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

Those listed below appeared in the United States International Trade Commission's hearing:

Subject: Ferrosilicon from Brazil, Kazakhstan, Malaysia, and Russia

Inv. Nos.: 701-TA-712-715 and 731-TA-1679-1682 (Final)

Date and Time: September 12, 2024 9:30 a.m.

Sessions were held in connection with these 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 (**Yujin McNamara**, Akin Gump Strauss Hauer & Feld LLP)

In Support of the Imposition of the
Antidumping and Countervailing Duty Orders:

The Bristol Group PLLC
Washington, DC
on behalf of

CC Metals and Alloys, LLC ("CC Metals")
Ferroglobe USA, Inc. ("Ferroglobe")

John Hammer, North American Vice President of Sales, Ferroglobe

Eli David, Commercial Director Foundry Products North America, Ferroglobe

Delia Elazazzy, Manager Marketing Services, Ferroglobe

Taylor Cook, Account Manager - North America, Ferroglobe

Phil Frerking, Account Manager - Foundry, Ferroglobe

Menachem Sossonko, Vice President and Treasurer, CC Metals

In Support of the Imposition of the
<u>Antidumping and Countervailing Duty Orders (continued):</u>

Chris Cobb, Plant Manager, CC Metals

Adam H. Gordon)
Jennifer M. Smith-Veluz) – OF COUNSEL
Benjamin J. Bay)

In Opposition to the Imposition of the
<u>Antidumping and Countervailing Duty Orders:</u>

Akin Gump Strauss Hauer & Feld LLP
Washington, DC
<u>on behalf of</u>

Cia Ferro Ligas da Bahia – FERBASA
Minasligas S.A.
Bozel Brasil S.A.
Rima Industrial S.A.
Nova Era Silicon S.A.
Libra Ligas do Brasil S.A.
(collectively “Brazilian Respondents”)

Bruno Parreiras, Associação Brasileira dos Produtores de Ferroligas e Silício Metálico (ABRAFE)

Felipe Zica, Minasligas S.A.

Marco Oliveira, Cia Ferro Ligas da Bahia – FERBASA

Samuel Fleming, CCMA, LLC

Marc Demaleingreau, LS Alloys Trading Sàrl

James P. Dougan, Partner, ION Economics, LLC

Yujin K. McNamara)
) – OF COUNSEL
Sydney L. Stringer)

In Opposition to the Imposition of the
<u>Antidumping and Countervailing Duty Orders (continued):</u>

Baker & McKenzie LLP
Washington, DC
<u>on behalf of</u>

TNC Kazchrome JSC ("Kazchrome")
OM Materials (Sarawak) Sdn Bhd
OM Materials (S) Pte Ltd
(collectively "OM Materials")

Christine M. Streatfeild) – OF COUNSEL

Mayer Brown LLP
Washington, DC
<u>on behalf of</u>

Ferronix, Inc. (“Ferronix”)

Sydney Mintzer) – OF COUNSEL

Mayer Brown LLP
Washington, DC
<u>on behalf of</u>

YDD Corporation LLP (“YDD”)

Matthew McConkey) – OF COUNSEL

<u>REBUTTAL/CLOSING REMARKS:</u>

In Support of Imposition (**Benjamin J. Bay**, The Bristol Group PLLC)
In Opposition to Imposition (**Christine M. Streatfeild**, Baker & McKenzie 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 (STCS); 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			Jan-Jun		Comparison years			Jan-Jun
	2021	2022	2023	2023	2024	2021-23	2021-22	2022-23	2023-24
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 (or U.S. shipments of imports for Russia) from (fn2):									
Brazil:									
Quantity	18,049	24,886	27,729	14,980	21,844	▲53.6	▲37.9	▲11.4	▲45.8
Value	34,838	82,201	64,349	38,083	39,940	▲84.7	▲136.0	▼(21.7)	▲4.9
Unit value	$1,930	$3,303	$2,321	$2,542	$1,828	▲20.2	▲71.1	▼(29.7)	▼(28.1)
Ending inventory quantity	***	***	***	***	***	▼***	▲***	▼***	▲***
Kazakhstan:									
Quantity	11,046	5,020	12,304	8,461	4,587	▲11.4	▼(54.6)	▲145.1	▼(45.8)
Value	27,159	31,426	34,164	23,619	10,285	▲25.8	▲15.7	▲8.7	▼(56.5)
Unit value	$2,459	$6,260	$2,777	$2,791	$2,242	▲12.9	▲154.6	▼(55.6)	▼(19.7)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Malaysia:									
Quantity	13,797	16,496	19,192	9,380	20,379	▲39.1	▲19.6	▲16.3	▲117.3
Value	40,653	77,783	45,644	25,078	35,031	▲12.3	▲91.3	▼(41.3)	▲39.7
Unit value	$2,946	$4,715	$2,378	$2,674	$1,719	▼(19.3)	▲60.0	▼(49.6)	▼(35.7)
Ending inventory quantity	***	***	***	***	***	▼***	▲***	▼***	▲***
Russia (fn2):									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▲***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Subject sources:									
Quantity	***	***	***	***	***	▼***	▼***	▼***	▲***
Value	***	***	***	***	***	▼***	▲***	▼***	▲***
Unit value	***	***	***	***	***	▼***	▲***	▼***	▼***
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Nonsubject sources:									
Quantity	39,707	72,218	49,990	23,638	30,115	▲25.9	▲81.9	▼(30.8)	▲27.4
Value	113,837	340,237	198,030	102,434	94,247	▲74.0	▲198.9	▼(41.8)	▼(8.0)
Unit value	$2,867	$4,711	$3,961	$4,333	$3,130	▲38.2	▲64.3	▼(15.9)	▼(27.8)
Ending inventory quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
All import sources:									
Quantity	***	***	***	***	***	▼***	▲***	▼***	▲***
Value	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
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 (STCS); 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			Jan-Jun		Comparison years			Jan-Jun
	2021	2022	2023	2023	2024	2021-23	2021-22	2022-23	2023-24
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	***	***	***	***	***	▲***	▲***	▲***	▼***
Net sales:									
Quantity	***	***	***	***	***	▲***	▲***	▲***	▼***
Value	***	***	***	***	***	▲***	▲***	▼***	▼***
Unit value	***	***	***	***	***	▲***	▲***	▼***	▼***
Cost of goods sold (COGS)	***	***	***	***	***	▲***	▲***	▲***	▼***
Gross profit or (loss) (fn3)	***	***	***	***	***	▼***	▲***	▼***	▼***
SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▲***
Operating income or (loss) (fn3)	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss) (fn3)	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit COGS	***	***	***	***	***	▲***	▲***	▲***	▼***
Unit SG&A expenses	***	***	***	***	***	▲***	▲***	▲***	▲***
Unit operating income or (loss) (fn3)	***	***	***	***	***	▼***	▲***	▼***	▼***
Unit net income or (loss) (fn3)	***	***	***	***	***	▼***	▲***	▼***	▼***
COGS/sales (fn1)	***	***	***	***	***	▲***	▼***	▲***	▲***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Net income or (loss)/sales (fn1)	***	***	***	***	***	▼***	▲***	▼***	▼***
Capital expenditures	***	***	***	***	***	▲***	▲***	▲***	▼***
Research and development expenses	***	***	***	***	***	***	***	***	***
Total assets	***	***	***	***	***	▲***	▲***	▲***	***

Source: Compiled from 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 September 16, 2024. 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.--All sources except Russia show U.S. imports data based on official import statistics. while data for Russia reflects U.S. shipments of imports reported in response to Commission questionnaires. Official import statistics are based on the imports for consumption data series, import statistics value data reflect landed duty-paid values.
fn3.--Percent changes are calculated only when both comparison values represent profits. The directional change in profitability is provided when one or both comparison values represent a loss.

APPENDIX D

ADDITIONAL U.S IMPORT STATISTICS

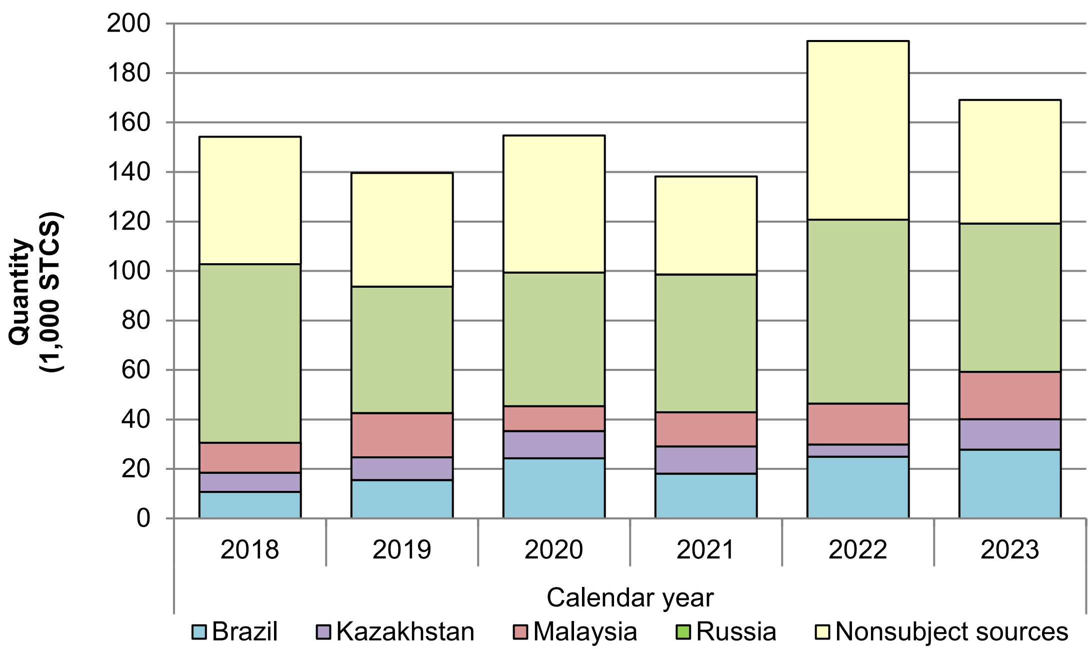
Table D-1
Ferrosilicon: U.S. imports for consumption, by source and period

Quantity in short tons contained silicon (STCS)

Source	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	19,192
Russia	72,213	51,062	54,065	55,643	74,361	59,896
Subject sources	102,790	93,641	99,419	98,536	120,762	119,121
Nonsubject sources	51,494	45,962	55,386	39,707	72,218	49,990
All imports	154,284	139,604	154,805	138,243	192,981	169,111

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 September 16, 2024. Imports are based on the imports for consumption data series.

Figure D-1
Ferrosilicon: U.S. imports for consumption, 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 September 16, 2024. Imports are based on the imports for consumption data series.

Table D-2
Ferrosilicon: U.S. general imports, by source and period

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

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Brazil	Quantity	18,049	25,051	27,729	15,062	21,866
Kazakhstan	Quantity	11,046	5,020	11,735	8,461	4,587
Malaysia	Quantity	13,797	16,496	19,192	9,380	20,379
Russia	Quantity	66,082	88,078	69,765	53,502	5,664
Subject sources	Quantity	108,975	134,645	128,421	86,406	52,495
Nonsubject sources	Quantity	39,707	72,198	49,990	23,638	30,135
All import sources	Quantity	148,682	206,843	178,412	110,044	82,630
Brazil	Value	34,846	82,379	64,309	38,193	39,989
Kazakhstan	Value	27,159	31,426	31,716	23,619	10,285
Malaysia	Value	40,653	77,783	45,644	25,078	35,031
Russia	Value	238,917	491,731	216,522	184,103	14,403
Subject sources	Value	341,576	683,319	358,191	270,993	99,708
Nonsubject sources	Value	113,848	340,176	198,030	102,434	94,324
All import sources	Value	455,425	1,023,496	556,222	373,427	194,032
Brazil	Unit value	1,931	3,288	2,319	2,536	1,829
Kazakhstan	Unit value	2,459	6,260	2,703	2,791	2,242
Malaysia	Unit value	2,946	4,715	2,378	2,674	1,719
Russia	Unit value	3,615	5,583	3,104	3,441	2,543
Subject sources	Unit value	3,134	5,075	2,789	3,136	1,899
Nonsubject sources	Unit value	2,867	4,712	3,961	4,333	3,130
All import sources	Unit value	3,063	4,948	3,118	3,393	2,348

Table continued.

Table D-2 Continued
Ferrosilicon: U.S. general imports, by source and period

Share in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Brazil	Share of quantity	12.1	12.1	15.5	13.7	26.5
Kazakhstan	Share of quantity	7.4	2.4	6.6	7.7	5.6
Malaysia	Share of quantity	9.3	8.0	10.8	8.5	24.7
Russia	Share of quantity	44.4	42.6	39.1	48.6	6.9
Subject sources	Share of quantity	73.3	65.1	72.0	78.5	63.5
Nonsubject sources	Share of quantity	26.7	34.9	28.0	21.5	36.5
All import sources	Share of quantity	100.0	100.0	100.0	100.0	100.0
Brazil	Share of value	7.7	8.0	11.6	10.2	20.6
Kazakhstan	Share of value	6.0	3.1	5.7	6.3	5.3
Malaysia	Share of value	8.9	7.6	8.2	6.7	18.1
Russia	Share of value	52.5	48.0	38.9	49.3	7.4
Subject sources	Share of value	75.0	66.8	64.4	72.6	51.4
Nonsubject sources	Share of value	25.0	33.2	35.6	27.4	48.6
All import sources	Share of value	100.0	100.0	100.0	100.0	100.0

Table continued.

Table D-2 Continued
Ferrosilicon: U.S. general imports, by source and comparison period

Change in percent

Source	Measure	2021-2023	2021-2022	2022-2023	Jan-Jun 2023-2024
Brazil	% Δ Quantity	▲53.6	▲38.8	▲10.7	▲45.2
Kazakhstan	% Δ Quantity	▲6.2	▼(54.6)	▲133.8	▼(45.8)
Malaysia	% Δ Quantity	▲39.1	▲19.6	▲16.3	▲117.3
Russia	% Δ Quantity	▲5.6	▲33.3	▼(20.8)	▼(89.4)
Subject	% Δ Quantity	▲17.8	▲23.6	▼(4.6)	▼(39.2)
Nonsubject sources	% Δ Quantity	▲25.9	▲81.8	▼(30.8)	▲27.5
All import sources	% Δ Quantity	▲20.0	▲39.1	▼(13.7)	▼(24.9)
Brazil	% Δ Value	▲84.6	▲136.4	▼(21.9)	▲4.7
Kazakhstan	% Δ Value	▲16.8	▲15.7	▲0.9	▼(56.5)
Malaysia	% Δ Value	▲12.3	▲91.3	▼(41.3)	▲39.7
Russia	% Δ Value	▼(9.4)	▲105.8	▼(56.0)	▼(92.2)
Subject	% Δ Value	▲4.9	▲100.0	▼(47.6)	▼(63.2)
Nonsubject sources	% Δ Value	▲73.9	▲198.8	▼(41.8)	▼(7.9)
All import sources	% Δ Value	▲22.1	▲124.7	▼(45.7)	▼(48.0)
Brazil	% Δ Unit value	▲20.1	▲70.3	▼(29.5)	▼(27.9)
Kazakhstan	% Δ Unit value	▲9.9	▲154.6	▼(56.8)	▼(19.7)
Malaysia	% Δ Unit value	▼(19.3)	▲60.0	▼(49.6)	▼(35.7)
Russia	% Δ Unit value	▼(14.2)	▲54.4	▼(44.4)	▼(26.1)
Subject	% Δ Unit value	▼(11.0)	▲61.9	▼(45.0)	▼(39.4)
Nonsubject sources	% Δ Unit value	▲38.2	▲64.3	▼(15.9)	▼(27.8)
All import sources	% Δ Unit value	▲1.8	▲61.5	▼(37.0)	▼(30.8)

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 August 8, 2024. Imports are based on the general imports data series. Value data reflect customs value plus international insurance and freight costs.

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.

APPENDIX E

U.S. PRODUCERS' AND U.S. IMPORTERS' U.S. SHIPMENTS BY TYPE

Table E-1
Ferrosilicon: U.S. producers' U.S. shipments, by silicon content and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	***	***	***	***	***
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	***	***	***	***	***
75 percent silicon	Value	***	***	***	***	***
50 percent silicon	Value	***	***	***	***	***
Other silicon content	Value	***	***	***	***	***
All silicon contents	Value	***	***	***	***	***
75 percent silicon	Unit value	***	***	***	***	***
50 percent silicon	Unit value	***	***	***	***	***
Other silicon content	Unit value	***	***	***	***	***
All silicon contents	Unit value	***	***	***	***	***
75 percent silicon	Share of quantity	***	***	***	***	***
50 percent silicon	Share of quantity	***	***	***	***	***
Other silicon content	Share of quantity	***	***	***	***	***
All silicon contents	Share of quantity	100.0	100.0	100.0	100.0	100.0
75 percent silicon	Share of value	***	***	***	***	***
50 percent silicon	Share of value	***	***	***	***	***
Other silicon content	Share of value	***	***	***	***	***
All silicon contents	Share of value	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 E-2
Ferrosilicon: U.S. importers' U.S. shipments from Brazil, by silicon content and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	***	***	***	***	***
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	***	***	***	***	***
75 percent silicon	Value	***	***	***	***	***
50 percent silicon	Value	***	***	***	***	***
Other silicon content	Value	***	***	***	***	***
All silicon contents	Value	***	***	***	***	***
75 percent silicon	Unit value	***	***	***	***	***
50 percent silicon	Unit value	***	***	***	***	***
Other silicon content	Unit value	***	***	***	***	***
All silicon contents	Unit value	***	***	***	***	***
75 percent silicon	Share of quantity	***	***	***	***	***
50 percent silicon	Share of quantity	***	***	***	***	***
Other silicon content	Share of quantity	***	***	***	***	***
All silicon contents	Share of quantity	100.0	100.0	100.0	100.0	100.0
75 percent silicon	Share of value	***	***	***	***	***
50 percent silicon	Share of value	***	***	***	***	***
Other silicon content	Share of value	***	***	***	***	***
All silicon contents	Share of value	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 E-3
Ferrosilicon: U.S. importers' U.S. shipments from Kazakhstan, by silicon content and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	***	***	***	***	***
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	***	***	***	***	***
75 percent silicon	Value	***	***	***	***	***
50 percent silicon	Value	***	***	***	***	***
Other silicon content	Value	***	***	***	***	***
All silicon contents	Value	***	***	***	***	***
75 percent silicon	Unit value	***	***	***	***	***
50 percent silicon	Unit value	***	***	***	***	***
Other silicon content	Unit value	***	***	***	***	***
All silicon contents	Unit value	***	***	***	***	***
75 percent silicon	Share of quantity	***	***	***	***	***
50 percent silicon	Share of quantity	***	***	***	***	***
Other silicon content	Share of quantity	***	***	***	***	***
All silicon contents	Share of quantity	100.0	100.0	100.0	100.0	100.0
75 percent silicon	Share of value	***	***	***	***	***
50 percent silicon	Share of value	***	***	***	***	***
Other silicon content	Share of value	***	***	***	***	***
All silicon contents	Share of value	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 E-4
Ferrosilicon: U.S. importers' U.S. shipments from Malaysia, by silicon content and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	***	***	***	***	***
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	***	***	***	***	***
75 percent silicon	Value	***	***	***	***	***
50 percent silicon	Value	***	***	***	***	***
Other silicon content	Value	***	***	***	***	***
All silicon contents	Value	***	***	***	***	***
75 percent silicon	Unit value	***	***	***	***	***
50 percent silicon	Unit value	***	***	***	***	***
Other silicon content	Unit value	***	***	***	***	***
All silicon contents	Unit value	***	***	***	***	***
75 percent silicon	Share of quantity	***	***	***	***	***
50 percent silicon	Share of quantity	***	***	***	***	***
Other silicon content	Share of quantity	***	***	***	***	***
All silicon contents	Share of quantity	100.0	100.0	100.0	100.0	100.0
75 percent silicon	Share of value	***	***	***	***	***
50 percent silicon	Share of value	***	***	***	***	***
Other silicon content	Share of value	***	***	***	***	***
All silicon contents	Share of value	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 E-5
Ferrosilicon: U.S. importers' U.S. shipments from Russia, by silicon content and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	***	***	***	***	***
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	***	***	***	***	***
75 percent silicon	Value	***	***	***	***	***
50 percent silicon	Value	***	***	***	***	***
Other silicon content	Value	***	***	***	***	***
All silicon contents	Value	***	***	***	***	***
75 percent silicon	Unit value	***	***	***	***	***
50 percent silicon	Unit value	***	***	***	***	***
Other silicon content	Unit value	***	***	***	***	***
All silicon contents	Unit value	***	***	***	***	***
75 percent silicon	Share of quantity	***	***	***	***	***
50 percent silicon	Share of quantity	***	***	***	***	***
Other silicon content	Share of quantity	***	***	***	***	***
All silicon contents	Share of quantity	100.0	100.0	100.0	100.0	100.0
75 percent silicon	Share of value	***	***	***	***	***
50 percent silicon	Share of value	***	***	***	***	***
Other silicon content	Share of value	***	***	***	***	***
All silicon contents	Share of value	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 E-6
Ferrosilicon: U.S. importers' U.S. shipments from subject sources, by silicon content and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	***	***	***	***	***
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	***	***	***	***	***
75 percent silicon	Value	***	***	***	***	***
50 percent silicon	Value	***	***	***	***	***
Other silicon content	Value	***	***	***	***	***
All silicon contents	Value	***	***	***	***	***
75 percent silicon	Unit value	***	***	***	***	***
50 percent silicon	Unit value	***	***	***	***	***
Other silicon content	Unit value	***	***	***	***	***
All silicon contents	Unit value	***	***	***	***	***
75 percent silicon	Share of quantity	***	***	***	***	***
50 percent silicon	Share of quantity	***	***	***	***	***
Other silicon content	Share of quantity	***	***	***	***	***
All silicon contents	Share of quantity	100.0	100.0	100.0	100.0	100.0
75 percent silicon	Share of value	***	***	***	***	***
50 percent silicon	Share of value	***	***	***	***	***
Other silicon content	Share of value	***	***	***	***	***
All silicon contents	Share of value	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 E-7
Ferrosilicon: U.S. importers' U.S. shipments from nonsubject sources, by silicon content and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	***	***	***	***	***
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	***	***	***	***	***
75 percent silicon	Value	***	***	***	***	***
50 percent silicon	Value	***	***	***	***	***
Other silicon content	Value	***	***	***	***	***
All silicon contents	Value	***	***	***	***	***
75 percent silicon	Unit value	***	***	***	***	***
50 percent silicon	Unit value	***	***	***	***	***
Other silicon content	Unit value	***	***	***	***	***
All silicon contents	Unit value	***	***	***	***	***
75 percent silicon	Share of quantity	***	***	***	***	***
50 percent silicon	Share of quantity	***	***	***	***	***
Other silicon content	Share of quantity	***	***	***	***	***
All silicon contents	Share of quantity	100.0	100.0	100.0	100.0	100.0
75 percent silicon	Share of value	***	***	***	***	***
50 percent silicon	Share of value	***	***	***	***	***
Other silicon content	Share of value	***	***	***	***	***
All silicon contents	Share of value	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 E-8
Ferrosilicon: U.S. importers' U.S. shipments from all import sources, by silicon content and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
75 percent silicon	Quantity	***	***	***	***	***
50 percent silicon	Quantity	***	***	***	***	***
Other silicon content	Quantity	***	***	***	***	***
All silicon contents	Quantity	***	***	***	***	***
75 percent silicon	Value	***	***	***	***	***
50 percent silicon	Value	***	***	***	***	***
Other silicon content	Value	***	***	***	***	***
All silicon contents	Value	***	***	***	***	***
75 percent silicon	Unit value	***	***	***	***	***
50 percent silicon	Unit value	***	***	***	***	***
Other silicon content	Unit value	***	***	***	***	***
All silicon contents	Unit value	***	***	***	***	***
75 percent silicon	Share of quantity	***	***	***	***	***
50 percent silicon	Share of quantity	***	***	***	***	***
Other silicon content	Share of quantity	***	***	***	***	***
All silicon contents	Share of quantity	100.0	100.0	100.0	100.0	100.0
75 percent silicon	Share of value	***	***	***	***	***
50 percent silicon	Share of value	***	***	***	***	***
Other silicon content	Share of value	***	***	***	***	***
All silicon contents	Share of value	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 E-9
Ferrosilicon: U.S. producers' and importers' U.S. shipments of 75 percent silicon content ferrosilicon, by source and period

Quantity in short tons contained silicon (STCS); Share in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
U.S. producers	Quantity	***	***	***	***	***
Brazil	Quantity	***	***	***	***	***
Kazakhstan	Quantity	***	***	***	***	***
Malaysia	Quantity	***	***	***	***	***
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
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	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 E-1
Ferrosilicon: Market share of 75 percent silicon content ferrosilicon, by source and period

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Table E-10
Ferrosilicon: U.S. producers' and importers' U.S. shipments of 50 percent silicon content ferrosilicon, by source and period

Quantity in short tons contained silicon (STCS); Share in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
U.S. producers	Quantity	***	***	***	***	***
Brazil	Quantity	***	***	***	***	***
Kazakhstan	Quantity	***	***	***	***	***
Malaysia	Quantity	***	***	***	***	***
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
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	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 E-2
Ferrosilicon: Market share of 50 percent silicon content ferrosilicon, by source and period

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Table E-11
Ferrosilicon: U.S. producers' and importers' U.S. shipments of other silicon content ferrosilicon, by source and period

Quantity in short tons contained silicon (STCS); Share in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
U.S. producers	Quantity	***	***	***	***	***
Brazil	Quantity	***	***	***	***	***
Kazakhstan	Quantity	***	***	***	***	***
Malaysia	Quantity	***	***	***	***	***
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
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	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 E-3
Ferrosilicon: Market share of other silicon content ferrosilicon, by source and period

*   *   *   *   *   *   *

Table E-12
Ferrosilicon: U.S. producers' U.S. shipments, by grade and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	***	***	***	***	***
High-purity grade	Quantity	***	***	***	***	***
Other grades	Quantity	***	***	***	***	***
All grades	Quantity	***	***	***	***	***
Standard grade	Value	***	***	***	***	***
High-purity grade	Value	***	***	***	***	***
Other grades	Value	***	***	***	***	***
All grades	Value	***	***	***	***	***
Standard grade	Unit value	***	***	***	***	***
High-purity grade	Unit value	***	***	***	***	***
Other grades	Unit value	***	***	***	***	***
All grades	Unit value	***	***	***	***	***
Standard grade	Share of quantity	***	***	***	***	***
High-purity grade	Share of quantity	***	***	***	***	***
Other grades	Share of quantity	***	***	***	***	***
All grades	Share of quantity	100.0	100.0	100.0	100.0	100.0
Standard grade	Share of value	***	***	***	***	***
High-purity grade	Share of value	***	***	***	***	***
Other grades	Share of value	***	***	***	***	***
All grades	Share of value	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 E-13
Ferrosilicon: U.S. importers' U.S. shipments from Brazil, by grade and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	***	***	***	***	***
High-purity grade	Quantity	***	***	***	***	***
Other grades	Quantity	***	***	***	***	***
All grades	Quantity	***	***	***	***	***
Standard grade	Value	***	***	***	***	***
High-purity grade	Value	***	***	***	***	***
Other grades	Value	***	***	***	***	***
All grades	Value	***	***	***	***	***
Standard grade	Unit value	***	***	***	***	***
High-purity grade	Unit value	***	***	***	***	***
Other grades	Unit value	***	***	***	***	***
All grades	Unit value	***	***	***	***	***
Standard grade	Share of quantity	***	***	***	***	***
High-purity grade	Share of quantity	***	***	***	***	***
Other grades	Share of quantity	***	***	***	***	***
All grades	Share of quantity	100.0	100.0	100.0	100.0	100.0
Standard grade	Share of value	***	***	***	***	***
High-purity grade	Share of value	***	***	***	***	***
Other grades	Share of value	***	***	***	***	***
All grades	Share of value	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 E-14
Ferrosilicon: U.S. importers' U.S. shipments from Kazakhstan, by grade and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	***	***	***	***	***
High-purity grade	Quantity	***	***	***	***	***
Other grades	Quantity	***	***	***	***	***
All grades	Quantity	***	***	***	***	***
Standard grade	Value	***	***	***	***	***
High-purity grade	Value	***	***	***	***	***
Other grades	Value	***	***	***	***	***
All grades	Value	***	***	***	***	***
Standard grade	Unit value	***	***	***	***	***
High-purity grade	Unit value	***	***	***	***	***
Other grades	Unit value	***	***	***	***	***
All grades	Unit value	***	***	***	***	***
Standard grade	Share of quantity	***	***	***	***	***
High-purity grade	Share of quantity	***	***	***	***	***
Other grades	Share of quantity	***	***	***	***	***
All grades	Share of quantity	100.0	100.0	100.0	100.0	100.0
Standard grade	Share of value	***	***	***	***	***
High-purity grade	Share of value	***	***	***	***	***
Other grades	Share of value	***	***	***	***	***
All grades	Share of value	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 E-15
Ferrosilicon: U.S. importers' U.S. shipments from Malaysia, by grade and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	***	***	***	***	***
High-purity grade	Quantity	***	***	***	***	***
Other grades	Quantity	***	***	***	***	***
All grades	Quantity	***	***	***	***	***
Standard grade	Value	***	***	***	***	***
High-purity grade	Value	***	***	***	***	***
Other grades	Value	***	***	***	***	***
All grades	Value	***	***	***	***	***
Standard grade	Unit value	***	***	***	***	***
High-purity grade	Unit value	***	***	***	***	***
Other grades	Unit value	***	***	***	***	***
All grades	Unit value	***	***	***	***	***
Standard grade	Share of quantity	***	***	***	***	***
High-purity grade	Share of quantity	***	***	***	***	***
Other grades	Share of quantity	***	***	***	***	***
All grades	Share of quantity	100.0	100.0	100.0	100.0	100.0
Standard grade	Share of value	***	***	***	***	***
High-purity grade	Share of value	***	***	***	***	***
Other grades	Share of value	***	***	***	***	***
All grades	Share of value	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 E-16
Ferrosilicon: U.S. importers' U.S. shipments from Russia, by grade and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	***	***	***	***	***
High-purity grade	Quantity	***	***	***	***	***
Other grades	Quantity	***	***	***	***	***
All grades	Quantity	***	***	***	***	***
Standard grade	Value	***	***	***	***	***
High-purity grade	Value	***	***	***	***	***
Other grades	Value	***	***	***	***	***
All grades	Value	***	***	***	***	***
Standard grade	Unit value	***	***	***	***	***
High-purity grade	Unit value	***	***	***	***	***
Other grades	Unit value	***	***	***	***	***
All grades	Unit value	***	***	***	***	***
Standard grade	Share of quantity	***	***	***	***	***
High-purity grade	Share of quantity	***	***	***	***	***
Other grades	Share of quantity	***	***	***	***	***
All grades	Share of quantity	100.0	100.0	100.0	100.0	100.0
Standard grade	Share of value	***	***	***	***	***
High-purity grade	Share of value	***	***	***	***	***
Other grades	Share of value	***	***	***	***	***
All grades	Share of value	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 E-17
Ferrosilicon: U.S. importers' U.S. shipments from subject sources, by grade and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	***	***	***	***	***
High-purity grade	Quantity	***	***	***	***	***
Other grades	Quantity	***	***	***	***	***
All grades	Quantity	***	***	***	***	***
Standard grade	Value	***	***	***	***	***
High-purity grade	Value	***	***	***	***	***
Other grades	Value	***	***	***	***	***
All grades	Value	***	***	***	***	***
Standard grade	Unit value	***	***	***	***	***
High-purity grade	Unit value	***	***	***	***	***
Other grades	Unit value	***	***	***	***	***
All grades	Unit value	***	***	***	***	***
Standard grade	Share of quantity	***	***	***	***	***
High-purity grade	Share of quantity	***	***	***	***	***
Other grades	Share of quantity	***	***	***	***	***
All grades	Share of quantity	100.0	100.0	100.0	100.0	100.0
Standard grade	Share of value	***	***	***	***	***
High-purity grade	Share of value	***	***	***	***	***
Other grades	Share of value	***	***	***	***	***
All grades	Share of value	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 E-18
Ferrosilicon: U.S. importers' U.S. shipments from nonsubject sources, by grade and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	***	***	***	***	***
High-purity grade	Quantity	***	***	***	***	***
Other grades	Quantity	***	***	***	***	***
All grades	Quantity	***	***	***	***	***
Standard grade	Value	***	***	***	***	***
High-purity grade	Value	***	***	***	***	***
Other grades	Value	***	***	***	***	***
All grades	Value	***	***	***	***	***
Standard grade	Unit value	***	***	***	***	***
High-purity grade	Unit value	***	***	***	***	***
Other grades	Unit value	***	***	***	***	***
All grades	Unit value	***	***	***	***	***
Standard grade	Share of quantity	***	***	***	***	***
High-purity grade	Share of quantity	***	***	***	***	***
Other grades	Share of quantity	***	***	***	***	***
All grades	Share of quantity	100.0	100.0	100.0	100.0	100.0
Standard grade	Share of value	***	***	***	***	***
High-purity grade	Share of value	***	***	***	***	***
Other grades	Share of value	***	***	***	***	***
All grades	Share of value	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 E-19
Ferrosilicon: U.S. importers' U.S. shipments from all import sources, by grade and period

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS; Share in percent

Product type	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
Standard grade	Quantity	***	***	***	***	***
High-purity grade	Quantity	***	***	***	***	***
Other grades	Quantity	***	***	***	***	***
All grades	Quantity	***	***	***	***	***
Standard grade	Value	***	***	***	***	***
High-purity grade	Value	***	***	***	***	***
Other grades	Value	***	***	***	***	***
All grades	Value	***	***	***	***	***
Standard grade	Unit value	***	***	***	***	***
High-purity grade	Unit value	***	***	***	***	***
Other grades	Unit value	***	***	***	***	***
All grades	Unit value	***	***	***	***	***
Standard grade	Share of quantity	***	***	***	***	***
High-purity grade	Share of quantity	***	***	***	***	***
Other grades	Share of quantity	***	***	***	***	***
All grades	Share of quantity	100.0	100.0	100.0	100.0	100.0
Standard grade	Share of value	***	***	***	***	***
High-purity grade	Share of value	***	***	***	***	***
Other grades	Share of value	***	***	***	***	***
All grades	Share of value	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 E-20
Ferrosilicon: U.S. producers' and importers' U.S. shipments of standard grade ferrosilicon, by source and period

Quantity in short tons contained silicon (STCS); Share in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
U.S. producers	Quantity	***	***	***	***	***
Brazil	Quantity	***	***	***	***	***
Kazakhstan	Quantity	***	***	***	***	***
Malaysia	Quantity	***	***	***	***	***
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
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	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 E-4
Ferrosilicon: Market share of standard grade ferrosilicon, by source and period

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Table E-21
Ferrosilicon: U.S. producers' and importers' U.S. shipments of high-purity grade ferrosilicon, by source and period

Quantity in short tons contained silicon (STCS); Share in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
U.S. producers	Quantity	***	***	***	***	***
Brazil	Quantity	***	***	***	***	***
Kazakhstan	Quantity	***	***	***	***	***
Malaysia	Quantity	***	***	***	***	***
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
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	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 E-5
Ferrosilicon: Market share of high-purity grade ferrosilicon, by source and period

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Table E-22
Ferrosilicon: U.S. producers' and importers' U.S. shipments of other grade ferrosilicon, by source and period

Quantity in short tons contained silicon (STCS); Share in percent

Source	Measure	2021	2022	2023	Jan-Jun 2023	Jan-Jun 2024
U.S. producers	Quantity	***	***	***	***	***
Brazil	Quantity	***	***	***	***	***
Kazakhstan	Quantity	***	***	***	***	***
Malaysia	Quantity	***	***	***	***	***
Russia	Quantity	***	***	***	***	***
Subject sources	Quantity	***	***	***	***	***
Nonsubject sources	Quantity	***	***	***	***	***
All import sources	Quantity	***	***	***	***	***
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	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 E-6
Ferrosilicon: Market share of other grade ferrosilicon, by source and period

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Table E-23
Ferrosilicon: U.S. producers' U.S. shipments in 2023, by detailed grade and form

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Quantity	***	***	***
Standard	Low aluminum	Quantity	***	***	***
Standard	All standard	Quantity	***	***	***
High-purity	Not low aluminum	Quantity	***	***	***
High-purity	Low titanium	Quantity	***	***	***
High-purity	All high-purity	Quantity	***	***	***
Other	Foundry	Quantity	***	***	***
Other	Inoculant	Quantity	***	***	***
Other	Other detailed grades	Quantity	***	***	***
Other	All other grades	Quantity	***	***	***
All grades	All detailed grades	Quantity	***	***	***
Standard	Regular	Value	***	***	***
Standard	Low aluminum	Value	***	***	***
Standard	All standard	Value	***	***	***
High-purity	Not low aluminum	Value	***	***	***
High-purity	Low titanium	Value	***	***	***
High-purity	All high-purity	Value	***	***	***
Other	Foundry	Value	***	***	***
Other	Inoculant	Value	***	***	***
Other	Other detailed grades	Value	***	***	***
Other	All other grades	Value	***	***	***
All grades	All detailed grades	Value	***	***	***
Standard	Regular	Unit value	***	***	***
Standard	Low aluminum	Unit value	***	***	***
Standard	All standard	Unit value	***	***	***
High-purity	Not low aluminum	Unit value	***	***	***
High-purity	Low titanium	Unit value	***	***	***
High-purity	All high-purity	Unit value	***	***	***
Other	Foundry	Unit value	***	***	***
Other	Inoculant	Unit value	***	***	***
Other	Other detailed grades	Unit value	***	***	***
Other	All other grades	Unit value	***	***	***
All grades	All detailed grades	Unit value	***	***	***

Table continued.

Table E-23 Continued
Ferrosilicon: U.S. producers' U.S. shipments in 2023, by detailed grade and form

Share of quantity in percent

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Share down	***	***	***
Standard	Low aluminum	Share down	***	***	***
Standard	All standard	Share down	***	***	***
High-purity	Not low aluminum	Share down	***	***	***
High-purity	Low titanium	Share down	***	***	***
High-purity	All high-purity	Share down	***	***	***
Other	Foundry	Share down	***	***	***
Other	Inoculant	Share down	***	***	***
Other	Other detailed grades	Share down	***	***	***
Other	All other grades	Share down	***	***	***
All grades	All detailed grades	Share down	100.0	100.0	100.0
Standard	Regular	Share across	***	***	100.0
Standard	Low aluminum	Share across	***	***	100.0
Standard	All standard	Share across	***	***	100.0
High-purity	Not low aluminum	Share across	***	***	100.0
High-purity	Low titanium	Share across	***	***	100.0
High-purity	All high-purity	Share across	***	***	100.0
Other	Foundry	Share across	***	***	100.0
Other	Inoculant	Share across	***	***	100.0
Other	Other detailed grades	Share across	***	***	---
Other	All other grades	Share across	***	***	100.0
All grades	All detailed grades	Share across	***	***	100.0
Standard	Regular	Share down and across	***	***	***
Standard	Low aluminum	Share down and across	***	***	***
Standard	All standard	Share down and across	***	***	***
High-purity	Not low aluminum	Share down and across	***	***	***
High-purity	Low titanium	Share down and across	***	***	***
High-purity	All high-purity	Share down and across	***	***	***
Other	Foundry	Share down and across	***	***	***
Other	Inoculant	Share down and across	***	***	***
Other	Other detailed grades	Share down and across	***	***	***
Other	All other grades	Share down and across	***	***	***
All grades	All detailed grades	Share down and across	***	***	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 E-24
Ferrosilicon: U.S. importers' U.S. shipments from Brazil in 2023, by detailed grade and form

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Quantity	***	***	***
Standard	Low aluminum	Quantity	***	***	***
Standard	All standard	Quantity	***	***	***
High-purity	Not low aluminum	Quantity	***	***	***
High-purity	Low titanium	Quantity	***	***	***
High-purity	All high-purity	Quantity	***	***	***
Other	Foundry	Quantity	***	***	***
Other	Inoculant	Quantity	***	***	***
Other	Other detailed grades	Quantity	***	***	***
Other	All other grades	Quantity	***	***	***
All grades	All detailed grades	Quantity	***	***	***
Standard	Regular	Value	***	***	***
Standard	Low aluminum	Value	***	***	***
Standard	All standard	Value	***	***	***
High-purity	Not low aluminum	Value	***	***	***
High-purity	Low titanium	Value	***	***	***
High-purity	All high-purity	Value	***	***	***
Other	Foundry	Value	***	***	***
Other	Inoculant	Value	***	***	***
Other	Other detailed grades	Value	***	***	***
Other	All other grades	Value	***	***	***
All grades	All detailed grades	Value	***	***	***
Standard	Regular	Unit value	***	***	***
Standard	Low aluminum	Unit value	***	***	***
Standard	All standard	Unit value	***	***	***
High-purity	Not low aluminum	Unit value	***	***	***
High-purity	Low titanium	Unit value	***	***	***
High-purity	All high-purity	Unit value	***	***	***
Other	Foundry	Unit value	***	***	***
Other	Inoculant	Unit value	***	***	***
Other	Other detailed grades	Unit value	***	***	***
Other	All other grades	Unit value	***	***	***
All grades	All detailed grades	Unit value	***	***	***

Table continued.

Table E-24 Continued
Ferrosilicon: U.S. importers' U.S. shipments from Brazil in 2023, by detailed grade and form

Share of quantity in percent

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Share down	***	***	***
Standard	Low aluminum	Share down	***	***	***
Standard	All standard	Share down	***	***	***
High-purity	Not low aluminum	Share down	***	***	***
High-purity	Low titanium	Share down	***	***	***
High-purity	All high-purity	Share down	***	***	***
Other	Foundry	Share down	***	***	***
Other	Inoculant	Share down	***	***	***
Other	Other detailed grades	Share down	***	***	***
Other	All other grades	Share down	***	***	***
All grades	All detailed grades	Share down	100.0	100.0	100.0
Standard	Regular	Share across	***	***	100.0
Standard	Low aluminum	Share across	***	***	100.0
Standard	All standard	Share across	***	***	100.0
High-purity	Not low aluminum	Share across	***	***	100.0
High-purity	Low titanium	Share across	***	***	---
High-purity	All high-purity	Share across	***	***	100.0
Other	Foundry	Share across	***	***	---
Other	Inoculant	Share across	***	***	100.0
Other	Other detailed grades	Share across	***	***	---
Other	All other grades	Share across	***	***	100.0
All grades	All detailed grades	Share across	***	***	100.0
Standard	Regular	Share down and across	***	***	***
Standard	Low aluminum	Share down and across	***	***	***
Standard	All standard	Share down and across	***	***	***
High-purity	Not low aluminum	Share down and across	***	***	***
High-purity	Low titanium	Share down and across	***	***	***
High-purity	All high-purity	Share down and across	***	***	***
Other	Foundry	Share down and across	***	***	***
Other	Inoculant	Share down and across	***	***	***
Other	Other detailed grades	Share down and across	***	***	***
Other	All other grades	Share down and across	***	***	***
All grades	All detailed grades	Share down and across	***	***	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 E-25
Ferrosilicon: U.S. importers' U.S. shipments from Kazakhstan in 2023, by detailed grade and form

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Quantity	***	***	***
Standard	Low aluminum	Quantity	***	***	***
Standard	All standard	Quantity	***	***	***
High-purity	Not low aluminum	Quantity	***	***	***
High-purity	Low titanium	Quantity	***	***	***
High-purity	All high-purity	Quantity	***	***	***
Other	Foundry	Quantity	***	***	***
Other	Inoculant	Quantity	***	***	***
Other	Other detailed grades	Quantity	***	***	***
Other	All other grades	Quantity	***	***	***
All grades	All detailed grades	Quantity	***	***	***
Standard	Regular	Value	***	***	***
Standard	Low aluminum	Value	***	***	***
Standard	All standard	Value	***	***	***
High-purity	Not low aluminum	Value	***	***	***
High-purity	Low titanium	Value	***	***	***
High-purity	All high-purity	Value	***	***	***
Other	Foundry	Value	***	***	***
Other	Inoculant	Value	***	***	***
Other	Other detailed grades	Value	***	***	***
Other	All other grades	Value	***	***	***
All grades	All detailed grades	Value	***	***	***
Standard	Regular	Unit value	***	***	***
Standard	Low aluminum	Unit value	***	***	***
Standard	All standard	Unit value	***	***	***
High-purity	Not low aluminum	Unit value	***	***	***
High-purity	Low titanium	Unit value	***	***	***
High-purity	All high-purity	Unit value	***	***	***
Other	Foundry	Unit value	***	***	***
Other	Inoculant	Unit value	***	***	***
Other	Other detailed grades	Unit value	***	***	***
Other	All other grades	Unit value	***	***	***
All grades	All detailed grades	Unit value	***	***	***

Table continued.

Table E-25 Continued
Ferrosilicon: U.S. importers' U.S. shipments from Kazakhstan in 2023, by detailed grade and form

Share of quantity in percent

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Share down	***	***	***
Standard	Low aluminum	Share down	***	***	***
Standard	All standard	Share down	***	***	***
High-purity	Not low aluminum	Share down	***	***	***
High-purity	Low titanium	Share down	***	***	***
High-purity	All high-purity	Share down	***	***	***
Other	Foundry	Share down	***	***	***
Other	Inoculant	Share down	***	***	***
Other	Other detailed grades	Share down	***	***	***
Other	All other grades	Share down	***	***	***
All grades	All detailed grades	Share down	100.0	---	100.0
Standard	Regular	Share across	***	***	100.0
Standard	Low aluminum	Share across	***	***	---
Standard	All standard	Share across	***	***	100.0
High-purity	Not low aluminum	Share across	***	***	---
High-purity	Low titanium	Share across	***	***	---
High-purity	All high-purity	Share across	***	***	---
Other	Foundry	Share across	***	***	---
Other	Inoculant	Share across	***	***	---
Other	Other detailed grades	Share across	***	***	---
Other	All other grades	Share across	***	***	---
All grades	All detailed grades	Share across	***	***	100.0
Standard	Regular	Share down and across	***	***	***
Standard	Low aluminum	Share down and across	***	***	***
Standard	All standard	Share down and across	***	***	***
High-purity	Not low aluminum	Share down and across	***	***	***
High-purity	Low titanium	Share down and across	***	***	***
High-purity	All high-purity	Share down and across	***	***	***
Other	Foundry	Share down and across	***	***	***
Other	Inoculant	Share down and across	***	***	***
Other	Other detailed grades	Share down and across	***	***	***
Other	All other grades	Share down and across	***	***	***
All grades	All detailed grades	Share down and across	***	***	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 E-26
Ferrosilicon: U.S. importers' U.S. shipments from Malaysia in 2023, by detailed grade and form

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Quantity	***	***	***
Standard	Low aluminum	Quantity	***	***	***
Standard	All standard	Quantity	***	***	***
High-purity	Not low aluminum	Quantity	***	***	***
High-purity	Low titanium	Quantity	***	***	***
High-purity	All high-purity	Quantity	***	***	***
Other	Foundry	Quantity	***	***	***
Other	Inoculant	Quantity	***	***	***
Other	Other detailed grades	Quantity	***	***	***
Other	All other grades	Quantity	***	***	***
All grades	All detailed grades	Quantity	***	***	***
Standard	Regular	Value	***	***	***
Standard	Low aluminum	Value	***	***	***
Standard	All standard	Value	***	***	***
High-purity	Not low aluminum	Value	***	***	***
High-purity	Low titanium	Value	***	***	***
High-purity	All high-purity	Value	***	***	***
Other	Foundry	Value	***	***	***
Other	Inoculant	Value	***	***	***
Other	Other detailed grades	Value	***	***	***
Other	All other grades	Value	***	***	***
All grades	All detailed grades	Value	***	***	***
Standard	Regular	Unit value	***	***	***
Standard	Low aluminum	Unit value	***	***	***
Standard	All standard	Unit value	***	***	***
High-purity	Not low aluminum	Unit value	***	***	***
High-purity	Low titanium	Unit value	***	***	***
High-purity	All high-purity	Unit value	***	***	***
Other	Foundry	Unit value	***	***	***
Other	Inoculant	Unit value	***	***	***
Other	Other detailed grades	Unit value	***	***	***
Other	All other grades	Unit value	***	***	***
All grades	All detailed grades	Unit value	***	***	***

Table continued.

Table E-26 Continued
Ferrosilicon: U.S. importers' U.S. shipments from Malaysia in 2023, by detailed grade and form

Share of quantity in percent

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Share down	***	***	***
Standard	Low aluminum	Share down	***	***	***
Standard	All standard	Share down	***	***	***
High-purity	Not low aluminum	Share down	***	***	***
High-purity	Low titanium	Share down	***	***	***
High-purity	All high-purity	Share down	***	***	***
Other	Foundry	Share down	***	***	***
Other	Inoculant	Share down	***	***	***
Other	Other detailed grades	Share down	***	***	***
Other	All other grades	Share down	***	***	***
All grades	All detailed grades	Share down	100.0	100.0	100.0
Standard	Regular	Share across	***	***	100.0
Standard	Low aluminum	Share across	***	***	---
Standard	All standard	Share across	***	***	100.0
High-purity	Not low aluminum	Share across	***	***	---
High-purity	Low titanium	Share across	***	***	---
High-purity	All high-purity	Share across	***	***	---
Other	Foundry	Share across	***	***	100.0
Other	Inoculant	Share across	***	***	---
Other	Other detailed grades	Share across	***	***	---
Other	All other grades	Share across	***	***	100.0
All grades	All detailed grades	Share across	***	***	100.0
Standard	Regular	Share down and across	***	***	***
Standard	Low aluminum	Share down and across	***	***	***
Standard	All standard	Share down and across	***	***	***
High-purity	Not low aluminum	Share down and across	***	***	***
High-purity	Low titanium	Share down and across	***	***	***
High-purity	All high-purity	Share down and across	***	***	***
Other	Foundry	Share down and across	***	***	***
Other	Inoculant	Share down and across	***	***	***
Other	Other detailed grades	Share down and across	***	***	***
Other	All other grades	Share down and across	***	***	***
All grades	All detailed grades	Share down and across	***	***	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 E-27
Ferrosilicon: U.S. importers' U.S. shipments from Russia in 2023, by detailed grade and form

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS;

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Quantity	***	***	***
Standard	Low aluminum	Quantity	***	***	***
Standard	All standard	Quantity	***	***	***
High-purity	Not low aluminum	Quantity	***	***	***
High-purity	Low titanium	Quantity	***	***	***
High-purity	All high-purity	Quantity	***	***	***
Other	Foundry	Quantity	***	***	***
Other	Inoculant	Quantity	***	***	***
Other	Other detailed grades	Quantity	***	***	***
Other	All other grades	Quantity	***	***	***
All grades	All detailed grades	Quantity	***	***	***
Standard	Regular	Value	***	***	***
Standard	Low aluminum	Value	***	***	***
Standard	All standard	Value	***	***	***
High-purity	Not low aluminum	Value	***	***	***
High-purity	Low titanium	Value	***	***	***
High-purity	All high-purity	Value	***	***	***
Other	Foundry	Value	***	***	***
Other	Inoculant	Value	***	***	***
Other	Other detailed grades	Value	***	***	***
Other	All other grades	Value	***	***	***
All grades	All detailed grades	Value	***	***	***
Standard	Regular	Unit value	***	***	***
Standard	Low aluminum	Unit value	***	***	***
Standard	All standard	Unit value	***	***	***
High-purity	Not low aluminum	Unit value	***	***	***
High-purity	Low titanium	Unit value	***	***	***
High-purity	All high-purity	Unit value	***	***	***
Other	Foundry	Unit value	***	***	***
Other	Inoculant	Unit value	***	***	***
Other	Other detailed grades	Unit value	***	***	***
Other	All other grades	Unit value	***	***	***
All grades	All detailed grades	Unit value	***	***	***

Table continued.

Table E-27 Continued
Ferrosilicon: U.S. importers' U.S. shipments from Russia in 2023, by detailed grade and form

Share of quantity in percent

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Share down	***	***	***
Standard	Low aluminum	Share down	***	***	***
Standard	All standard	Share down	***	***	***
High-purity	Not low aluminum	Share down	***	***	***
High-purity	Low titanium	Share down	***	***	***
High-purity	All high-purity	Share down	***	***	***
Other	Foundry	Share down	***	***	***
Other	Inoculant	Share down	***	***	***
Other	Other detailed grades	Share down	***	***	***
Other	All other grades	Share down	***	***	***
All grades	All detailed grades	Share down	100.0	---	100.0
Standard	Regular	Share across	***	***	100.0
Standard	Low aluminum	Share across	***	***	---
Standard	All standard	Share across	***	***	100.0
High-purity	Not low aluminum	Share across	***	***	---
High-purity	Low titanium	Share across	***	***	---
High-purity	All high-purity	Share across	***	***	---
Other	Foundry	Share across	***	***	---
Other	Inoculant	Share across	***	***	---
Other	Other detailed grades	Share across	***	***	---
Other	All other grades	Share across	***	***	---
All grades	All detailed grades	Share across	***	***	100.0
Standard	Regular	Share down and across	***	***	***
Standard	Low aluminum	Share down and across	***	***	***
Standard	All standard	Share down and across	***	***	***
High-purity	Not low aluminum	Share down and across	***	***	***
High-purity	Low titanium	Share down and across	***	***	***
High-purity	All high-purity	Share down and across	***	***	***
Other	Foundry	Share down and across	***	***	***
Other	Inoculant	Share down and across	***	***	***
Other	Other detailed grades	Share down and across	***	***	***
Other	All other grades	Share down and across	***	***	***
All grades	All detailed grades	Share down and across	***	***	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 E-28
Ferrosilicon: U.S. importers' U.S. shipments from subject sources in 2023, by detailed grade and form

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Quantity	***	***	***
Standard	Low aluminum	Quantity	***	***	***
Standard	All standard	Quantity	***	***	***
High-purity	Not low aluminum	Quantity	***	***	***
High-purity	Low titanium	Quantity	***	***	***
High-purity	All high-purity	Quantity	***	***	***
Other	Foundry	Quantity	***	***	***
Other	Inoculant	Quantity	***	***	***
Other	Other detailed grades	Quantity	***	***	***
Other	All other grades	Quantity	***	***	***
All grades	All detailed grades	Quantity	***	***	***
Standard	Regular	Value	***	***	***
Standard	Low aluminum	Value	***	***	***
Standard	All standard	Value	***	***	***
High-purity	Not low aluminum	Value	***	***	***
High-purity	Low titanium	Value	***	***	***
High-purity	All high-purity	Value	***	***	***
Other	Foundry	Value	***	***	***
Other	Inoculant	Value	***	***	***
Other	Other detailed grades	Value	***	***	***
Other	All other grades	Value	***	***	***
All grades	All detailed grades	Value	***	***	***
Standard	Regular	Unit value	***	***	***
Standard	Low aluminum	Unit value	***	***	***
Standard	All standard	Unit value	***	***	***
High-purity	Not low aluminum	Unit value	***	***	***
High-purity	Low titanium	Unit value	***	***	***
High-purity	All high-purity	Unit value	***	***	***
Other	Foundry	Unit value	***	***	***
Other	Inoculant	Unit value	***	***	***
Other	Other detailed grades	Unit value	***	***	***
Other	All other grades	Unit value	***	***	***
All grades	All detailed grades	Unit value	***	***	***

Table continued.

Table E-28 Continued
Ferrosilicon: U.S. importers' U.S. shipments from subject sources in 2023, by detailed grade and form

Share of quantity in percent

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Share down	***	***	***
Standard	Low aluminum	Share down	***	***	***
Standard	All standard	Share down	***	***	***
High-purity	Not low aluminum	Share down	***	***	***
High-purity	Low titanium	Share down	***	***	***
High-purity	All high-purity	Share down	***	***	***
Other	Foundry	Share down	***	***	***
Other	Inoculant	Share down	***	***	***
Other	Other detailed grades	Share down	***	***	***
Other	All other grades	Share down	***	***	***
All grades	All detailed grades	Share down	100.0	100.0	100.0
Standard	Regular	Share across	***	***	100.0
Standard	Low aluminum	Share across	***	***	100.0
Standard	All standard	Share across	***	***	100.0
High-purity	Not low aluminum	Share across	***	***	100.0
High-purity	Low titanium	Share across	***	***	---
High-purity	All high-purity	Share across	***	***	100.0
Other	Foundry	Share across	***	***	100.0
Other	Inoculant	Share across	***	***	100.0
Other	Other detailed grades	Share across	***	***	---
Other	All other grades	Share across	***	***	100.0
All grades	All detailed grades	Share across	***	***	100.0
Standard	Regular	Share down and across	***	***	***
Standard	Low aluminum	Share down and across	***	***	***
Standard	All standard	Share down and across	***	***	***
High-purity	Not low aluminum	Share down and across	***	***	***
High-purity	Low titanium	Share down and across	***	***	***
High-purity	All high-purity	Share down and across	***	***	***
Other	Foundry	Share down and across	***	***	***
Other	Inoculant	Share down and across	***	***	***
Other	Other detailed grades	Share down and across	***	***	***
Other	All other grades	Share down and across	***	***	***
All grades	All detailed grades	Share down and across	***	***	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 E-29
Ferrosilicon: U.S. importers' U.S. shipments from nonsubject sources in 2023, by detailed grade and form

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Quantity	***	***	***
Standard	Low aluminum	Quantity	***	***	***
Standard	All standard	Quantity	***	***	***
High-purity	Not low aluminum	Quantity	***	***	***
High-purity	Low titanium	Quantity	***	***	***
High-purity	All high-purity	Quantity	***	***	***
Other	Foundry	Quantity	***	***	***
Other	Inoculant	Quantity	***	***	***
Other	Other detailed grades	Quantity	***	***	***
Other	All other grades	Quantity	***	***	***
All grades	All detailed grades	Quantity	***	***	***
Standard	Regular	Value	***	***	***
Standard	Low aluminum	Value	***	***	***
Standard	All standard	Value	***	***	***
High-purity	Not low aluminum	Value	***	***	***
High-purity	Low titanium	Value	***	***	***
High-purity	All high-purity	Value	***	***	***
Other	Foundry	Value	***	***	***
Other	Inoculant	Value	***	***	***
Other	Other detailed grades	Value	***	***	***
Other	All other grades	Value	***	***	***
All grades	All detailed grades	Value	***	***	***
Standard	Regular	Unit value	***	***	***
Standard	Low aluminum	Unit value	***	***	***
Standard	All standard	Unit value	***	***	***
High-purity	Not low aluminum	Unit value	***	***	***
High-purity	Low titanium	Unit value	***	***	***
High-purity	All high-purity	Unit value	***	***	***
Other	Foundry	Unit value	***	***	***
Other	Inoculant	Unit value	***	***	***
Other	Other detailed grades	Unit value	***	***	***
Other	All other grades	Unit value	***	***	***
All grades	All detailed grades	Unit value	***	***	***

Table continued.

Table E-29 Continued
Ferrosilicon: U.S. importers' U.S. shipments from nonsubject sources in 2023, by detailed grade and form

Share of quantity in percent

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Share down	***	***	***
Standard	Low aluminum	Share down	***	***	***
Standard	All standard	Share down	***	***	***
High-purity	Not low aluminum	Share down	***	***	***
High-purity	Low titanium	Share down	***	***	***
High-purity	All high-purity	Share down	***	***	***
Other	Foundry	Share down	***	***	***
Other	Inoculant	Share down	***	***	***
Other	Other detailed grades	Share down	***	***	***
Other	All other grades	Share down	***	***	***
All grades	All detailed grades	Share down	100.0	100.0	100.0
Standard	Regular	Share across	***	***	100.0
Standard	Low aluminum	Share across	***	***	---
Standard	All standard	Share across	***	***	100.0
High-purity	Not low aluminum	Share across	***	***	---
High-purity	Low titanium	Share across	***	***	---
High-purity	All high-purity	Share across	***	***	---
Other	Foundry	Share across	***	***	100.0
Other	Inoculant	Share across	***	***	---
Other	Other detailed grades	Share across	***	***	100.0
Other	All other grades	Share across	***	***	100.0
All grades	All detailed grades	Share across	***	***	100.0
Standard	Regular	Share down and across	***	***	***
Standard	Low aluminum	Share down and across	***	***	***
Standard	All standard	Share down and across	***	***	***
High-purity	Not low aluminum	Share down and across	***	***	***
High-purity	Low titanium	Share down and across	***	***	***
High-purity	All high-purity	Share down and across	***	***	***
Other	Foundry	Share down and across	***	***	***
Other	Inoculant	Share down and across	***	***	***
Other	Other detailed grades	Share down and across	***	***	***
Other	All other grades	Share down and across	***	***	***
All grades	All detailed grades	Share down and across	***	***	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 E-30
Ferrosilicon: U.S. importers' U.S. shipments from all import sources in 2023, by detailed grade and form

Quantity in short tons contained silicon (STCS); Value in 1,000 dollars; Unit value in dollars per STCS

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Quantity	***	***	***
Standard	Low aluminum	Quantity	***	***	***
Standard	All standard	Quantity	***	***	***
High-purity	Not low aluminum	Quantity	***	***	***
High-purity	Low titanium	Quantity	***	***	***
High-purity	All high-purity	Quantity	***	***	***
Other	Foundry	Quantity	***	***	***
Other	Inoculant	Quantity	***	***	***
Other	Other detailed grades	Quantity	***	***	***
Other	All other grades	Quantity	***	***	***
All grades	All detailed grades	Quantity	***	***	***
Standard	Regular	Value	***	***	***
Standard	Low aluminum	Value	***	***	***
Standard	All standard	Value	***	***	***
High-purity	Not low aluminum	Value	***	***	***
High-purity	Low titanium	Value	***	***	***
High-purity	All high-purity	Value	***	***	***
Other	Foundry	Value	***	***	***
Other	Inoculant	Value	***	***	***
Other	Other detailed grades	Value	***	***	***
Other	All other grades	Value	***	***	***
All grades	All detailed grades	Value	***	***	***
Standard	Regular	Unit value	***	***	***
Standard	Low aluminum	Unit value	***	***	***
Standard	All standard	Unit value	***	***	***
High-purity	Not low aluminum	Unit value	***	***	***
High-purity	Low titanium	Unit value	***	***	***
High-purity	All high-purity	Unit value	***	***	***
Other	Foundry	Unit value	***	***	***
Other	Inoculant	Unit value	***	***	***
Other	Other detailed grades	Unit value	***	***	***
Other	All other grades	Unit value	***	***	***
All grades	All detailed grades	Unit value	***	***	***

Table continued.

Table E-30 Continued
Ferrosilicon: U.S. importers' U.S. shipments from all import sources in 2023, by detailed grade and form

Share of quantity in percent

High-level grade	Detailed Grade	Measure	Lump or bulk	Granular, fines, or powder	All forms
Standard	Regular	Share down	***	***	***
Standard	Low aluminum	Share down	***	***	***
Standard	All standard	Share down	***	***	***
High-purity	Not low aluminum	Share down	***	***	***
High-purity	Low titanium	Share down	***	***	***
High-purity	All high-purity	Share down	***	***	***
Other	Foundry	Share down	***	***	***
Other	Inoculant	Share down	***	***	***
Other	Other detailed grades	Share down	***	***	***
Other	All other grades	Share down	***	***	***
All grades	All detailed grades	Share down	100.0	100.0	100.0
Standard	Regular	Share across	***	***	100.0
Standard	Low aluminum	Share across	***	***	100.0
Standard	All standard	Share across	***	***	100.0
High-purity	Not low aluminum	Share across	***	***	100.0
High-purity	Low titanium	Share across	***	***	---
High-purity	All high-purity	Share across	***	***	100.0
Other	Foundry	Share across	***	***	100.0
Other	Inoculant	Share across	***	***	100.0
Other	Other detailed grades	Share across	***	***	100.0
Other	All other grades	Share across	***	***	100.0
All grades	All detailed grades	Share across	***	***	100.0
Standard	Regular	Share down and across	***	***	***
Standard	Low aluminum	Share down and across	***	***	***
Standard	All standard	Share down and across	***	***	***
High-purity	Not low aluminum	Share down and across	***	***	***
High-purity	Low titanium	Share down and across	***	***	***
High-purity	All high-purity	Share down and across	***	***	***
Other	Foundry	Share down and across	***	***	***
Other	Inoculant	Share down and across	***	***	***
Other	Other detailed grades	Share down and across	***	***	***
Other	All other grades	Share down and across	***	***	***
All grades	All detailed grades	Share down and across	***	***	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 “---“.