Titanium Sponge from Japan and Kazakhstan

Investigation Nos. 701-TA-587 and 731-TA-1385-1386 (Preliminary)

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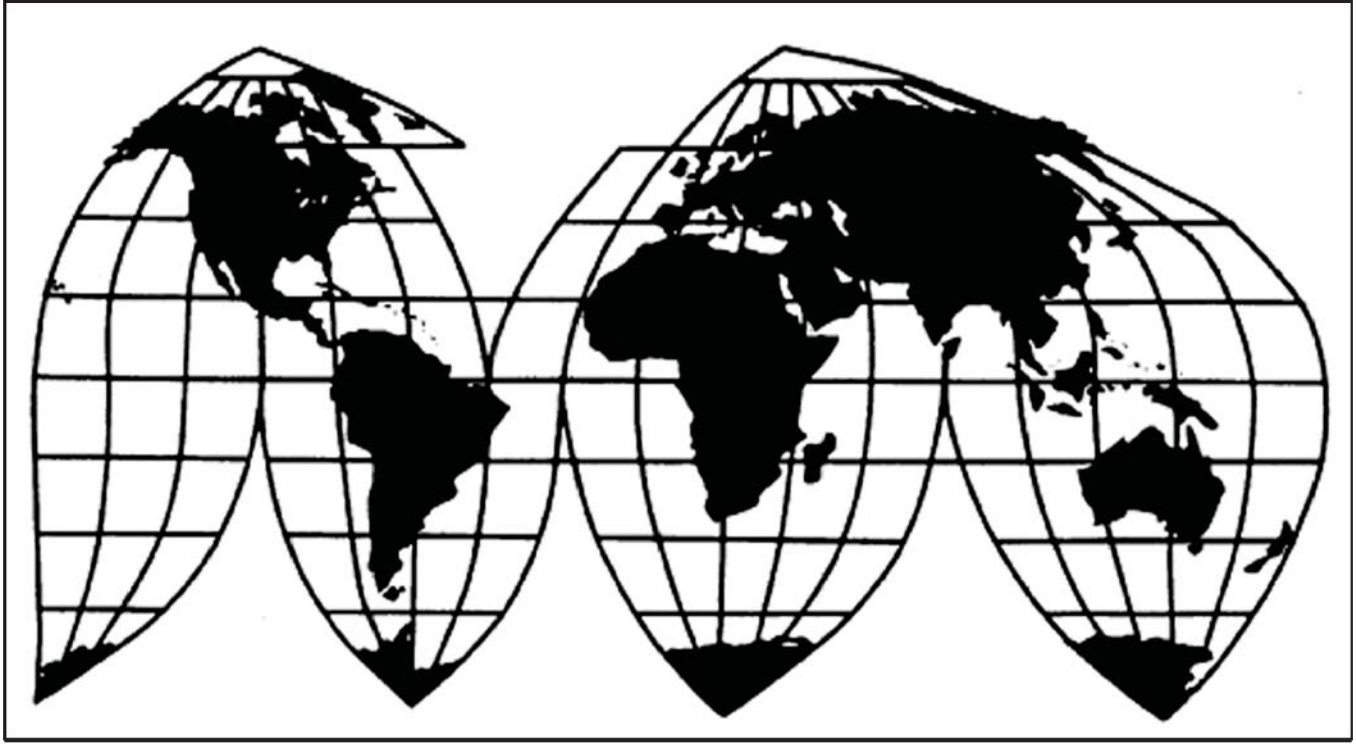
U.S. International Trade Commission



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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-587 and 731-TA-1385-1386 (Preliminary)

Titanium Sponge from Japan and Kazakhstan

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is no reasonable indication that an industry in the United States is materially injured or threatened with material injury, or that the establishment of an industry in the United States is materially retarded, by reason of imports of titanium sponge from Japan and Kazakhstan, provided for in subheading 8108.20.00 of the Harmonized Tariff Schedule of the United States, that are alleged to be sold in the United States at less than fair value ("LTFV") and to be subsidized by the government of Kazakhstan.

BACKGROUND

On August 24, 2017, Titanium Metals Corporation, Exton, PA, filed a petition with the Commission and the U.S. Department of Commerce, alleging that an industry in the United States is materially injured and threatened with material injury by reason of LTFV imports of titanium sponge from Japan and Kazakhstan and subsidized imports of titanium sponge from Kazakhstan. Accordingly, effective August 24, 2017, the Commission, pursuant to sections 703(a) and 733(a) of the Act (19 U.S.C. 1671b(a) and 1673b(a)), instituted countervailing duty investigation No. 701-TA-587 and antidumping duty investigation Nos. 731-TA-1385-1386 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of September 1, 2017 (82 FR 41656). The conference was held in Washington, DC, on September 14, 2017, and all persons who requested the opportunity were permitted to appear in person or by counsel.

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

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is no reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of titanium sponge from Japan and Kazakhstan that are allegedly sold in the United States at less than fair value and imports of the subject merchandise from Kazakhstan that are allegedly subsidized by the Government of Kazakhstan.[1]

I. The Legal Standard for Preliminary Determinations

The legal standard for preliminary antidumping and countervailing duty determinations requires the Commission to determine, based upon the information available at the time of the preliminary determinations, whether there is a reasonable indication that a domestic industry is materially injured or threatened with material injury, or that the establishment of an industry is materially retarded, by reason of the allegedly unfairly traded imports.[2] In applying this standard, the Commission weighs the evidence before it and determines whether "(1) the record as a whole contains clear and convincing evidence that there is no material injury or threat of such injury; and (2) no likelihood exists that contrary evidence will arise in a final investigation."[3]

II. Background

Parties to the Investigation. Titanium Metals Corporation ("TIMET"), a domestic producer of titanium sponge, filed the petitions in these investigations on August 24, 2017. TIMET appeared at the staff conference and submitted a postconference brief.

Several respondent entities participated in these investigations: Allegheny Technologies Incorporated ("ATI"), an importer of subject merchandise as well as a domestic producer during the period of investigation; OSAKA Titanium Technologies Co., Ltd. ("OTC"), a producer and exporter of subject merchandise from Japan; Toho Titanium Co., Ltd. ("Toho"), a producer and exporter of subject merchandise from Japan; Ust-Kamenogorsk Titanium and Magnesium Plant JSC ("UKTMP"), a producer and exporter of subject merchandise from Kazakhstan; The Perryman Company ("Perryman"), an importer of subject merchandise; and RMI Titanium Company Inc. ("RMI"), a subsidiary of Arconic Titanium and Engineering Products ("Arconic"), an importer of subject merchandise. ATI, OTC, UKTMP, Perryman, and RMI all appeared at the

[1] The U.S. industry producing titanium sponge has been established for many years. *See generally Titanium Sponge from Japan, Kazakhstan, Russia, and Ukraine*, Inv. Nos. 751-TA-17-20, USITC Pub. 3119 (Aug. 1998). Whether there is a reasonable indication that the establishment of an industry is materially retarded by reason of subject imports is not an issue in these investigations.

[2] 19 U.S.C. §§ 1671b(a), 1673b(a) (2000); *see also American Lamb Co. v. United States*, 785 F.2d 994, 1001-04 (Fed. Cir. 1986); *Aristech Chem. Corp. v. United States, 2*0 CIT 353, 354-55 (1996).

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

conference and submitted postconference briefs.[4] Toho did not appear at the conference, but submitted a postconference brief.

Data Coverage. U.S. industry data are based on the questionnaire responses of two producers, accounting for all U.S. production of titanium sponge in 2016.[5] U.S. import data are based on the questionnaire responses from eight U.S. importers that accounted for virtually all subject imports from Japan and Kazakhstan in 2016.[6] The Commission received responses to its questionnaires from three foreign producers of subject merchandise: two producers/exporters in Japan, accounting for virtually all production of subject merchandise from Japan in 2016; and one producer/exporter in Kazakhstan, accounting for all or virtually all production of subject merchandise from Kazakhstan in 2016.[7]

III. Domestic Like Product

In determining whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports of the subject merchandise, the Commission first defines the "domestic like product" and the "industry."[8] 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."[9] 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."[10]

The decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and the Commission has applied the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[11] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the

[4] Perryman and Arconic (collectively "U.S. Importers") submitted a postconference brief jointly.
[5] Confidential Report ("CR") at I-5; Public Report ("PR") at I-4.
[6] CR at I-5; PR at I-4.
[7] CR at VII-3, VII-10; PR at VII-3, VII-8.
[8] 19 U.S.C. § 1677(4)(A).
[9] 19 U.S.C. § 1677(4)(A).
[10] 19 U.S.C. § 1677(10).
[11] *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).

facts of a particular investigation.[12] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[13] Although the Commission must accept the determination of the Department of Commerce ("Commerce") as to the scope of the imported merchandise that is subsidized and/or sold at less than fair value,[14] the Commission determines what domestic product is like the imported articles Commerce has identified.[15]

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

> The product covered by these investigations is all forms and grades of titanium sponge, except as specified below. Titanium sponge is unwrought titanium metal that has not been melted. Expressly excluded from the scope of this investigation are:
>
> (1) Loose particles of unwrought titanium metal having a particle size of less than 20 mesh (0.84 mm);
>
> (2) alloyed or unalloyed briquettes of unwrought titanium metal that contain more than 0.2% oxygen on a dry weight basis; and
>
> (3) ultra-high purity titanium sponge. In ultra-high purity titanium sponge, metallic impurities do not exceed any of these amounts:
>
> **WT %**
> Aluminum 0.0005
> Chromium 0.0001
> Cobalt 0.0001
> Copper 0.0002
> Iron 0.0300
> Manganese 0.0010
> Nickel 0.0002

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

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

[14] *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).

[15] *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); *Cleo*, 501 F.3d at 1298 n.1 ("Commerce's {scope} finding does not control the Commission's {like product} determination."); *Torrington*, 747 F. Supp. at 748-52 (affirming the Commission's determination defining six like products in investigations where Commerce found five classes or kinds).

Vanadium 0.0002
Zirconium 0.0005
Carbon 0.0150
Hydrogen 0.0100
Nitrogen 0.0020
Oxygen 0.1000

Titanium sponge is currently classified under subheading 8108.20.0010 of the Harmonized Tariff Schedule of the United States (HTSUS). The HTSUS subheading is provided for convenience and customs purposes; the written description of the scope of this investigation is dispositive.[16]

Titanium sponge is a porous, brittle, unwrought form of titanium, a metal that is highly valued for its physical characteristics, including a high strength-to weight ratio (the highest of any metallic element), resistance to corrosion, and the ability to bond with high-strength polymers. These physical properties make titanium ideal for certain aerospace, military, and industrial applications. Typically, titanium sponge (sometimes mixed with scrap titanium metal) is melted down to make titanium ingots, before being further processed through various manufacturing processes, depending on the intended end use of the final product.[17]

The two major grades of titanium sponge within the scope definition are premium-quality and standard-quality sponge. Premium quality, which is commonly referred to as "rotor grade," is used in rotating engine parts for the aerospace industry. Standard grade can be used in airframes and non-rotating parts of aircraft engines, and in non-aerospace industrial applications such as equipment for desalination, nuclear power plants, chemical processing equipment, medical implants, and other products.[18]

A. Arguments of the Parties

Petitioner's *Argument*. Petitioner argues that the Commission should define a single domestic like product that is coextensive with the scope consisting of titanium sponge. TIMET asserts that ultra-high purity titanium sponge, which is excluded from scope, is distinct from in-scope titanium sponge and should not be included within the domestic like product. TIMET also argues that both premium and standard grades of titanium sponge should be included in the domestic like product.[19]

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[16] *Titanium Sponge From Japan and Kazakhstan: Initiation of Less-Than-Fair Value Investigations,* 82 Fed. Reg. 43939, 43944 (Sept. 20, 2017); *Titanium Sponge From Kazakhstan: Initiation of Countervailing Duty Investigation*, 82 Fed. Reg. 43936, 43939 (Sept. 20, 2017).

[17] CR at I-8; PR at I-7.

[18] CR at I-9 to I-10; II-1; PR at I-7 to I-8; II-1.

[19] Petition at 18-23; TIMET's Postconference Brief at 5-6; Transcript of Conference ("Conference Tr.") at 47-48 (Horgan).

Respondents' Argument. Respondents do not contest petitioner's view that the Commission should define a single domestic like product that is coextensive with the scope.[20]

B. Analysis

Based on the record, we define a single domestic like product consisting of titanium sponge that is coextensive with the scope.

Physical Characteristics and Uses. All grades of titanium sponge consist of unwrought titanium metal that has not been melted or forged. Titanium sponge generally has a titanium metal content in excess of 99.2 percent, with the balance of the sponge made of small amounts of impurities whose maximum contents are specified for each grade. The required chemistries for each grade vary in only limited respects. Titanium sponge (sometimes mixed with scrap titanium metal) is melted down to make titanium ingots, before being further processed into downstream mill products. As previously discussed, the end uses for standard grade titanium sponge include airframes and non-rotating parts of aircraft engines, and non-aerospace industrial applications, while the end uses for premium grade include rotating engine parts for the aerospace industry.[21]

By contrast, ultra-high purity titanium sponge, which is excluded from the scope, has a different chemical composition, is dedicated for use in the semiconductor business, and is not used in producing titanium mill products.[22]

Manufacturing Facilities, Production Processes and Employees. Both U.S. producers of in-scope titanium sponge during the period of investigation (as well as most global producers of titanium sponge) have used the Kroll process to produce titanium sponge.[23] The Kroll process results in a single mass of titanium sponge that will yield multiple grades of titanium sponge. Each producer has used similar raw materials and the same manufacturing process, and common facilities, equipment, and workers to produce all grades of titanium sponge.[24] By contrast, ultra-high purity titanium sponge in the United States produced by Honeywell Electronics Materials ("Honeywell") uses a different production process involving sodium reduction.[25] U.S. producers of in-scope titanium sponge (*i.e.,* TIMET and ATI) have not produced ultra-high purity titanium sponge, and the leading U.S. producer of ultra-high purity titanium sponge (*i.e.,* Honeywell) does not produce in-scope titanium sponge.[26]

Channels of Distribution. During the period of investigation, domestic producers TIMET and ATI produced titanium sponge and captively consumed it to produce downstream titanium

[20] Conference Tr. at 163-64 (Cannon, Okun, Ellis, Thomas, Schaefer); U.S. Importers' Postconference Brief at 5; UKTMP's Postconference Brief at 3 n.8.

[21] CR at I-9 to I-11, II-1; PR at I-7 to I-9, II-1; Conference Tr. at 38-39 (Seiner); Petition at 20.

[22] Petition at 19-20; CR at I-9 n.19; PR at I-7 n.19.

[23] CR at I-13 to I-14; PR at I-10 to I-11 (describing Kroll process); Petition at 20; Conference Tr. at 157 (Thomas, Sando), 159 (Forsythe); Petition at Exh. GEN-20, Declaration of Henry Seiner, at Paragraphs 4, 8.

[24] Petition at 19 and Exh. GEN-20, Declaration of Henry Seiner, at Paragraph 3.

[25] Petition at 6, 19, and Exh. GEN-20, Declaration of Henry Seiner, at Paragraph 5.

[26] Petition at 19-20.

melted and/or mill products.[27] TIMET asserts that ultra-high purity titanium sponge goes through different channels of distribution involving different customers.[28]

Interchangeability. According to TIMET, in-scope titanium sponge is completely interchangeable within the same grade. In addition, different grades of titanium sponge are frequently interchangeable, in that premium grades can readily be substituted for standard grades. While standard grade cannot be used as a substitute for premium grade, standard grades frequently meet the chemical requirements for premium grades.[29] Domestically produced out-of-scope ultra-high purity titanium sponge is not economically suitable for use in producing titanium mill products, and thus is not interchangeable with in-scope titanium sponge.[30]

Producer and Customer Perceptions. According to TIMET, customers perceive that various grades of titanium sponge are frequently interchangeable, and that premium grade can be readily substituted for standard grade.[31]

Price. According to TIMET, the cost of producing titanium sponge does not vary significantly from grade to grade, but premium grade sponge has a higher price due to the additional testing and certifications associated with guaranteeing the quality of the titanium sponge. TIMET states that there are additional costs associated with producing out-of-scope ultra-high purity titanium sponge that make it economically unsuitable for use in production of downstream titanium mill products.[32]

Conclusion. We define a single domestic like product that is coextensive with the scope consisting of titanium sponge of all grades. While there may be some differences in the specific end uses and prices for standard grade and premium grade titanium sponge, and limits on their interchangeability, the record indicates that all grades have the same general physical characteristics, manufacturing processes, and channels of distribution, have some degree of interchangeability, and are generally perceived by producers and customers to be different grades of the same product. By contrast, the limited record indicates that out-of-scope ultra-high purity titanium sponge has different physical characteristics and end uses from in-scope titanium sponge and a different manufacturing process, is generally not interchangeable with in-scope titanium sponge, and is perceived to be a different product by customers and producers. We consequently do not include out-of-scope ultra-high purity titanium sponge within the definition of the domestic like product. Accordingly, we define a single domestic like product encompassing the types of titanium sponge described in the scope definition.

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[27] Petition at 21.

[28] Conference Tr. at 47 (Horgan).

[29] Petition at 20-21 and Exh. GEN-20, Declaration of Henry Seiner, at Paragraph 2; TIMET's Postconference Brief at 5.

[30] Petition at 19-20.

[31] Petition at 22-23.

[32] Petition at 19-20 and Exh. GEN-20, Declaration of Henry Seiner, at Paragraph 5. Although there are minimal pricing data in the record given the very limited quantities of commercial sales of domestically produced titanium sponge, the data available suggest that domestically produced premium grade is priced higher than standard grade. *See* CR/PR at Tables V-3 to V-4.

IV. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[33] 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.[34] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[35]

TIMET and ATI each directly imported subject merchandise during the period of investigation ("POI") of January 2014 through June 2017.[36] Accordingly, each firm is a related party under 19 U.S.C. § 1677(4)(B)(i). TIMET argues that the Commission should define the domestic industry to include all U.S. producers that produced the domestic like product during the POI, namely TIMET and ATI, and that neither it nor ATI should be excluded from the domestic industry as a related party.[37] No respondent party has contested TIMET's proposed definition of the domestic industry or argued that any producer should be excluded from the domestic industry as a related party.[38] We discuss below whether appropriate circumstances exist to exclude either producer from the domestic industry.

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[33] 19 U.S.C. § 1677(4)(A).

[34] *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).

[35] 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;

(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.

[36] CR at III-1; PR at III-1; CR/PR at Table III-9.

[37] TIMET's Postconference Brief at 4-5; Petition at 23-24.

[38] Conference Tr. at 164-65 (Cannon, Okun); U.S. Importers' Postconference Brief at 5 and n.20.

ATI. ATI was the *** U.S. producer of titanium sponge in 2016, accounting for *** percent of domestic production, but it ceased production in December 2016 after its Rowley, Utah plant was idled; this idling process began in August 2016. ATI opposes the petitions.[39] ATI imported *** metric tons of subject merchandise in 2014, *** metric tons in 2015, and *** metric tons in 2016; it imported *** metric tons in January-June ("interim") 2016, and *** metric tons in interim 2017.[40] ATI produced *** metric tons of titanium sponge in 2014, *** metric tons in 2015, and *** metric tons in 2016; it produced *** metric tons in interim 2016 and *** metric tons in interim 2017.[41] The ratio of ATI's imports of subject merchandise to its U.S. production was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016.[42] ATI explained its reason for importing: ***.[43] [44]

We find that appropriate circumstances do not exist to exclude ATI from the domestic industry. ATI ceased domestic production in December 2016 in favor of importation of subject merchandise, and its ratio of imports of subject merchandise to domestic production was high throughout the POI. However, there is no question that ATI was a bona fide domestic producer of titanium sponge before its decision to cease domestic production in 2016, and no party has argued that it should be excluded from the domestic industry. Under the circumstances we find that appropriate circumstances do not exist to exclude ATI from the domestic industry as a related party.

TIMET. TIMET was the *** U.S. producer of titanium sponge in 2016, accounting for *** percent of domestic production. TIMET is the petitioner and supports the petition.[45] TIMET imported *** metric tons of subject merchandise in 2014, *** metric tons in 2015, and *** metric tons in 2016. It imported *** metric tons of subject merchandise in interim 2016 and *** metric tons in interim 2017.[46] TIMET produced *** metric tons of titanium sponge in 2014, *** metric tons in 2015, and *** metric tons in 2016; it produced *** metric tons in interim 2016 and *** metric tons in interim 2017.[47] The ratio of TIMET's imports of subject merchandise to its U.S. production was *** in 2014, *** percent in 2015, and *** percent in

[39] CR/PR at Tables III-1, III-3.

[40] CR/PR at Table III-9. ATI imported *** metric tons of titanium sponge from Japan in 2014, *** metric tons in 2015, and *** metric tons in 2016; it imported *** metric tons from Japan in interim 2016, and *** metric tons in interim 2017. ATI imported *** metric tons of titanium sponge from Kazakhstan in 2014, *** metric tons in 2015, and *** metric tons in 2016; it imported *** metric tons in interim 2017. *Id.*

[41] CR/PR at Table III-9.

[42] CR/PR at Table III-9.

[43] CR at III-9 n.5; PR at III-5 n.5.

[44] ATI's operating margin was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017. Its operating margin was *** the industry average in 2014, 2016, interim 2016, and interim 2017, but *** the industry average in 2015. CR/PR at Table VI-3.

[45] CR/PR at Table III-1

[46] CR/PR at Table III-9. In 2015, TIMET imported *** metric tons from Japan and *** metric tons from Kazakhstan. TIMET's import of subject merchandise in 2016 were ***.

[47] CR/PR at Table III-9.

2016; it was *** percent in interim 2016 and *** in interim 2017.[48] TIMET explained its reason for importing: ***.[49] [50]

We find that appropriate circumstances do not exist to exclude TIMET from the domestic industry. Its importation of subject merchandise was sporadic during the POI, and its ratio of imports of subject merchandise to domestic production at its highest reached only *** percent in 2015, indicating that its interest during the POI was clearly in domestic production and not importation of subject merchandise. Moreover, given TIMET's status as the sole current producer and the *** domestic producer during the POI, exclusion of TIMET would skew the data.

We accordingly define the domestic industry to include TIMET and ATI, the two domestic producers of the domestic like product during the POI.

V. Negligible Imports

Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall generally be deemed negligible.[51]

During the period August 2016 - July 2017, the 12-month period preceding the filing of the petition, subject imports from Japan accounted for *** percent of total U.S. imports of titanium sponge by quantity and subject imports from Kazakhstan accounted for *** percent of total U.S. imports of titanium sponge by quantity.[52] Because subject imports from each subject country were well above the pertinent statutory negligibility thresholds, we find that subject imports from Japan and Kazakhstan are not negligible.

VI. Cumulation

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

[48] CR/PR at Table III-9.

[49] CR at III-10 n.6; PR at III-5 n.6.

[50] TIMET's operating margin was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017. TIMET's operating margin was *** the industry average in 2014, 2016, and interim periods 2016 and 2017, but *** the industry average in 2015. CR/PR at Table VI-3.

[51] 19 U.S.C. §§ 1671b(a), 1673b(a). There are exceptions to this general rule not pertinent here. *See* 19 U.S.C. §§ 1677(24)(A)(i), 1677(24)(B).

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

whether subject imports compete with each other and with the domestic like product, the Commission generally has considered four factors:

(1) the degree of fungibility between subject imports from different countries and between subject imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;

(2) the presence of sales or offers to sell in the same geographic markets of subject imports from different countries and the domestic like product;

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

(4) whether the subject imports are simultaneously present in the market.[53]

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.[54] Only a "reasonable overlap" of competition is required.[55]

We do not consider subject imports from Japan and Kazakhstan on a cumulated basis because we find that the statutory criteria for cumulation are not satisfied, because there is not a reasonable overlap of competition between subject imports from either Japan or Kazakhstan and the domestic like product. The threshold requirement is met because petitioner filed the antidumping and countervailing duty petitions with respect to both countries on the same day, August 24, 2017.[56]

A. Arguments of the Parties

TIMET argues that the Commission should cumulate subject imports from Japan and Kazakhstan. It asserts that subject imports from Japan and Kazakhstan and the domestic like product are fungible, because titanium sponge from domestic and subject sources is

[53] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-80 (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).

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

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

[56] None of the statutory exceptions to cumulation applies.

interchangeable within the same grade.[57] TIMET states that subject imports from Japan and Kazakhstan were present in the United States throughout the POI,[58] and that there is geographic overlap between the domestic like product and subject imports from both sources.[59]

TIMET argues that the domestic like product and subject imports from both sources share common channels of distribution. It states that the two U.S. producers internally consumed all titanium sponge, while the importers of subject merchandise were melters that internally consumed imported titanium sponge. It argues that the difference between the two as to channels of distribution is not significant, since both domestic producers and importers internally consume titanium sponge in the production of downstream merchandise, and Japanese and Kazakh producers compete based on price against titanium sponge that is produced in the United States.[60]

UKTMP, supported by other respondents, argues that the Commission should not cumulate subject imports from Japan with subject imports from Kazakhstan.[61] UKTMP asserts that the statute does not envision cumulation in the circumstances here where domestic producers do not compete against subject imports in the open market in the United States. UKTMP argues that there were no sales or offers to sell the domestic like product and the subject imports in the same geographic markets, given the absence of any commercially significant sales or offers of the domestic like product in any U.S. market.[62] It further asserts that internal consumption of the domestic like product is arguably a different channel of distribution from open market sales.[63] UKTMP also argues that subject imports from Kazakhstan and subject imports from Japan are not broadly fungible, asserting that subject imports from Japan were *** premium grade titanium sponge, but no subject imports from Kazakhstan during the POI were premium grade.[64]

B. Analysis

Fungibility. U.S. producers and U.S. importers were generally *** between those reporting that the domestic like product and subject imports from both subject countries are "always" interchangeable, and those reporting that they are only "sometimes"

[57] TIMET's Postconference Brief at 7; Petition at 26; Conference Tr. at 49-50 (Horgan), 50-51 (Seiner).

[58] TIMET's Postconference Brief at 9; Petition at 27.

[59] TIMET's Postconference Brief at 7-8.

[60] TIMET's Postconference Brief at 8; Petition at 26-28.

[61] Conference Tr. at 139-42 (Thomas), 165 (Cannon; Ellis); UKTMP's Postconference Brief at 5-9; U.S. Importers' Postconference Brief at 6; OTC's Postconference Brief at 6; ATI's Postconference Brief at 22 n.13.

[62] UKTMP's Postconference Brief at 5-7; Conference Tr. at 140-41 (Thomas).

[63] UKTMP's Postconference Brief at 7 n.13; Conference Tr. at 141 (Thomas).

[64] UKTMP's Postconference Brief at 7-8 and n.13; Conference Tr. at 141 (Thomas).

interchangeable.[65] In the comparison of subject imports from Japan and subject imports from Kazakhstan, U.S. producers and U.S. importers were *** between those reporting that imports from both sources are "always" interchangeable with each other and those reporting that they are only "sometimes" interchangeable.[66]

Subject imports from Kazakhstan during the POI were *** standard grade titanium sponge.[67] By contrast, *** subject imports from Japan during the POI were of premium grade, although a *** and increasing percentage of shipments of subject imports from Japan over the POI was of standard grade.[68] While *** domestically produced titanium sponge during the POI was premium grade, at least *** percent of domestic production was standard grade during each year and interim period of the POI.[69] Thus, both the domestic like product and U.S. shipments of subject imports from Japan and Kazakhstan included substantial quantities of standard grade titanium sponge.

While the record indicates some divisions among responding market participants as to the degree of interchangeability between and among subject imports and the domestic like product, and there appear to be some differences between the grades of titanium sponge imported from Kazakhstan and those imported from Japan, the record generally indicates sufficient fungibility to satisfy the reasonable overlap of competition standard.

Channels of Distribution. The reported sales of U.S. producers and importers of subject merchandise went exclusively to end users, with no reported sales to distributors.[70] However, there were almost no reported sales by U.S. producers. In 2016, most U.S. producers' U.S. shipments (*** percent by quantity) were internally consumed, with a smaller percentage (*** percent by quantity) going to transfers to related firms, and less than *** percent by quantity of U.S. producers' U.S. shipments were commercial shipments.[71] TIMET had a very small volume of commercial sales (*e.g.,* one or two metric tons a year), which occurred when non-commercial end users contacted TIMET to supply "niche" needs for small amounts of titanium

[65] CR/PR at Table II-4. U.S. importers were split with respect to the comparison of the domestic like product and subject imports from Japan, as *** importers reported that they were "always" interchangeable, *** reported that they were "frequently" interchangeable, and *** reported that they were "sometimes" interchangeable. *Id.*

[66] CR/PR at Table II-4. While the *** responding U.S. producers were *** on this point, *** U.S. importers reported that they were "always" interchangeable, while *** reported that they were "sometimes" interchangeable. *Id.*

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

[68] The percentage of shipments of subject imports from Japan by quantity that were of premium grade was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017. The percentage of shipments of subject imports from Japan by quantity that were of standard grade was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017. CR/PR at Table IV-5.

[69] CR/PR at Table III-7.

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

[71] CR at III-6; PR at III-3. ATI reported no commercial sales between 2014 and 2016. CR at II-1, III-6 n.4; PR at III-3 n.4.

sponge.[72] By TIMET's own account, these infrequent commercial spot sales by TIMET did not compete with subject imports.[73]

The largest importers of subject merchandise in 2016 were ***.[74] ATI, Arconic, Perryman, and TIMET consume the titanium sponge they import to produce downstream titanium mill products.[75] Importers reported that in 2016, *** percent of subject imports from Japan and *** percent of subject imports from Kazakhstan were internally consumed.[76] Given the absence of commercial sales by the domestic industry (apart from the small "niche" spot sales by TIMET), there were no commercial sales during the POI by domestic producers TIMET and ATI to any of the other large U.S. firms that consume titanium sponge.

TIMET asserts that it contacted representatives of ATI, Perryman, and Arconic during the POI, and inquired whether these companies would be interested in purchasing titanium sponge from TIMET, but states that none of them expressed any interest, leading TIMET to assert that it has been effectively "locked out"' of the commercial market for titanium sponge in the United States by subject imports.[77] Respondents dispute TIMET's characterization of these contacts, arguing that TIMET's inquiries were not *bona fide* offers to sell, particularly given the prevalence in the market of long-term supply contracts negotiated over a substantial period of time, and doubts about whether TIMET had available titanium sponge to supply.[78] In any event, TIMET states that these contacts did not involve offers to sell titanium sponge at a specific price under specific terms, but rather were general inquiries to determine whether these other firms might be interested in discussing purchasing titanium sponge from TIMET.[79] Thus, although the record may be in dispute as to some aspects of these contacts, it is undisputed that these contacts do not constitute commercial sales or offers to sell titanium sponge by TIMET.

Accordingly, the record indicates that during the POI no domestic producer made any meaningful commercial sales of or offers to sell the domestic like product. Instead, virtually all domestically produced titanium sponge was internally consumed in the production of downstream products or transferred to related firms. By contrast, subject imports from Japan and Kazakhstan were purchased, typically pursuant to contract, by unrelated entities that also internally consumed the titanium sponge in the production of downstream products.[80]

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[72] *See* Conference Tr. at 60, 85-86 (Seiner); CR/PR at Table V-2. TIMET described its commercial sales as *de minimis.* ("It was one or two tons a year for a plant that's making more than 10,000 {tons}, de minimis. … One ton out of more than 10,000 is essentially no sale."). Conference Tr. at 60 (Seiner).

[73] *See* Conference Tr. at 85-86 (Seiner) (TIMET frequently sold these products at premium prices); TIMET's Postconference Brief at 25.

[74] CR/PR at Table IV-1.

[75] Petition at 21 and Exh. GEN-20, Declaration of Henry Seiner, at Paragraph 6; *see* Conference Tr. at 108-11 (Sims), 113, 117 (Halford), 119 (Perryman)

[76] CR at V-10; PR at V-4.

[77] Petition at 38-39; TIMET's Postconference Brief at 38; Conference Tr. at 22-23 (Seiner).

[78] ATI's Postconference Brief at 19-20, U.S. Importers' Postconference Brief at 10; OTC's Postconference Brief at 9; Conference Tr. at 109-10 (Sims), 114-16 (Halford), 121-22 (Perryman).

[79] Conference Tr. at 51, 61 (Seiner).

[80] CR at V-2 to V-3; PR at V-1 to V-2.

Geographic Overlap. The record indicates that *** reported its very small volume of commercial sales in the Midwest, Central Southwest, and Pacific Coast regions. Two importers of subject merchandise from Japan reported sales in the Northeast and Midwest regions. No importer of subject merchandise from Kazakhstan provided data on this issue.[81] As previously discussed, the record indicates that both TIMET and ATI imported subject merchandise that they used in conjunction with their domestically produced titanium sponge in their downstream production operations, which are located in the *** regions.[82]

Simultaneous Presence in Market. Subject imports from Japan were present in the U.S. market in all 42 months of the POI. Subject imports from Kazakhstan were present in the U.S. market for *** of 42 months during the POI: *** months in 2014, *** months in 2015; *** in 2016, and *** months in interim 2017.[83] The domestic like product was present in the U.S. market throughout the POI.[84]

Conclusion. We find that two of the four criteria that the Commission examines in determining whether there is a reasonable overlap of competition – fungibility and simultaneous presence in the market – are satisfied. In addition, the geographic overlap criterion appears to be satisfied by domestic producers' use of both domestically produced titanium sponge and subject imports from Japan and Kazakhstan in their downstream production operations. However, we find that the criterion concerning channels of distribution is not satisfied because during the POI the subject imports were sold to unrelated entities while the domestic like product was not, to any meaningful extent, notwithstanding that both the subject imports and the domestic like product were used in production of downstream titanium mill products. The sales of subject imports to unrelated producers of downstream titanium products and internal transfers of the domestic like product by producers of downstream titanium products do not indicate the presence of common channels of distribution and do not indicate that any actual competition, much less price competition, existed between the domestic producers and subject imports from Japan or Kazakhstan for commercial sales. In other words, because the record indicates the absence of meaningful commercial sales or offers to sell of the domestic like product in the U.S. market, we find that there is a lack of head-to-head competition between subject imports and the domestic like product.

TIMET argues that even if the channels of distribution are not exactly the same, the availability of subject imports in the market may affect a domestic producer's decision whether to make titanium sponge at its U.S. plant or buy it from subject imports, which in its view indicates that there is some degree of competition between subject imports and internally consumed domestic production.[85] While this may be pertinent to the question of fungibility, it does not indicate an overlap in channels of distribution between the domestic like product and subject imports.

[81] CR/PR at Table II-2.
[82] *See* CR at III-6 n.4; PR at III-3 n.4.
[83] CR/PR at Table IV-6.
[84] CR/PR at Table III-4.
[85] TIMET's Postconference Brief at 8; Petition at 26-28.

We note that the statutory standard for cumulation directs us to examine not only whether subject imports from different sources compete with each other in the U.S. market, but also whether subject imports compete with the domestic like product.[86] The record in these investigations indicates a lack of overlap of channels of distribution between the domestic like product and imports from either subject country that indicates the lack of head-to-head competition of imports from either subject source and the domestic like product for commercial sales. We consequently find that there is no reasonable overlap of competition between and among subject imports and the domestic like product, and we do not cumulate subject imports from Japan and Kazakhstan for our analysis of material injury by reason of subject imports. In light of our finding of a lack of reasonable overlap of competition, subject imports from Japan and Kazakhstan are also ineligible for cumulation for our analysis of threat of material injury.[87]

VII. No Reasonable Indication of Material Injury or Threat of Material Injury by Reason of Subject Imports

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[88] 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.[89] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[90] In assessing whether there is a reasonable indication that the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[91] 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."[92]

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[86] 19 U.S.C. § 1677(7)(G)(i).

[87] 19 U.S.C. § 1677(7)(H).

[88] 19 U.S.C. §§ 1671b(a), 1673b(a). The Trade Preferences Extension Act of 2015, Pub. L. 114-27, amended the provisions of the Tariff Act pertaining to Commission determinations of reasonable indication of material injury and threat of material injury by reason of subject imports in certain respects. We have applied these amendments here.

[89] 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 ... {a}nd explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[90] 19 U.S.C. § 1677(7)(A).

[91] 19 U.S.C. § 1677(7)(C)(iii).

[92] 19 U.S.C. § 1677(7)(C)(iii).

Although the statute requires the Commission to determine whether there is a reasonable indication that the domestic industry is "materially injured by reason of" unfairly traded imports,[93] 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.[94] 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.[95]

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.[96] In performing its examination, however, the Commission need not isolate

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[93] 19 U.S.C. §§ 1671b(a), 1673b(a).

[94] *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).

[95] The Federal Circuit, in addressing the causation standard of the statute, has 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 re-affirmed in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), in which 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).

[96] SAA, H.R. Rep. 103-316, vol. I at 851-52 (1994) ("{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.

the injury caused by other factors from injury caused by unfairly traded imports.[97] Nor does the "by reason of" standard require that unfairly traded imports be the "principal" cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.[98] It is clear that the existence of injury caused by other factors does not compel a negative determination.[99]

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" and the Commission "ensure{s} that it is not attributing injury from other sources to the subject imports."[100] Indeed, the Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[101]

The Federal Circuit's decisions in *Gerald Metals*, *Bratsk,* and *Mittal Steel* all involved cases in which the relevant "other factor" was the presence in the market of significant volumes of price-competitive nonsubject imports. The Commission interpreted the Federal

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

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

[99] *See Nippon*, 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.").

[100] *Mittal Steel*, 542 F.3d at 877-78; *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*.

[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.").

Circuit's guidance in *Bratsk* as requiring it to apply a particular additional methodology following its finding of material injury in cases involving commodity products and a significant market presence of price-competitive nonsubject imports.[102] The additional "replacement/benefit" test looked at whether nonsubject imports might have replaced subject imports without any benefit to the U.S. industry. The Commission applied that specific additional test in subsequent cases, including the *Carbon and Certain Alloy Steel Wire Rod from Trinidad and Tobago* determination that underlies the *Mittal Steel* litigation.

Mittal Steel clarifies that the Commission's interpretation of *Bratsk* was too rigid and makes clear that the Federal Circuit does not require the Commission to apply an additional test nor any one specific methodology; instead, the court requires the Commission to have "evidence in the record 'to show that the harm occurred 'by reason of' the LTFV imports,'" and requires that the Commission not attribute injury from nonsubject imports or other factors to subject imports.[103] Accordingly, we do not consider ourselves required to apply the replacement/benefit test that was included in Commission opinions subsequent to *Bratsk*.

The progression of *Gerald Metals*, *Bratsk*, and *Mittal Steel* clarifies that, in cases involving commodity products where price-competitive nonsubject imports are a significant factor in the U.S. market, the Court will require the Commission to give full consideration, with adequate explanation, to non-attribution issues when it performs its causation analysis.[104]

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.[105] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[106]

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[102] *Mittal Steel*, 542 F.3d at 875-79.

[103] *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 875-79 & n.2 (recognizing the Commission's alternative interpretation of *Bratsk* as a reminder to conduct a non-attribution analysis).

[104] To that end, after the Federal Circuit issued its decision in *Bratsk*, the Commission began to present published information or send out information requests in the final phase of investigations to producers in nonsubject countries that accounted for substantial shares of U.S. imports of subject merchandise (if, in fact, there were large nonsubject import suppliers). In order to provide a more complete record for the Commission's causation analysis, these requests typically seek information on capacity, production, and shipments of the product under investigation in the major source countries that export to the United States. The Commission plans to continue utilizing published or requested information in the final phase of investigations in which there are substantial levels of nonsubject imports.

[105] We provide in our respective discussions of volume, price effects, and impact a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

[106] *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.").

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."[107]

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

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
>
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[108]

Section 771(7)(C)(iii) of the Tariff Act provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry." These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debt, research and development, 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."[109]

Section 771(7)(F) of the Tariff Act directs the Commission to determine whether the U.S. industry is threatened with material injury by reason of the subject imports by analyzing 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."[110] The Commission may not make such a determination "on the basis of mere conjecture or supposition," and considers the threat factors "as a whole" in making its determination whether dumped or subsidized imports are imminent and whether material injury by reason of subject imports would occur unless an order is issued.[111] In making our determination, we consider all statutory threat factors that are relevant to these investigations.[112]

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[107] 19 U.S.C. § 1677(7)(C)(i).

[108] 19 U.S.C. § 1677(7)(C)(ii).r

[109] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[110] 19 U.S.C. § 1677(7)(F)(ii).

[111] 19 U.S.C. § 1677(7)(F)(ii).

[112] These factors are as follows:

(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,

(Continued…)

B. Conditions of Competition and the Business Cycle

The following conditions of competition inform our analysis of whether there is a reasonable indication of material injury by reason of subject imports.[113]

1. Demand Conditions

U.S. demand for titanium sponge depends on the demand for U.S.-produced downstream products in the form of ingots, billet, slabs, and titanium mill products. These

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(…Continued)

(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,

(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,

…

(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).

19 U.S.C. § 1677(7)(F)(i). To organize our analysis, we discuss the applicable statutory threat factors using the same volume/price/impact framework that applies to our material injury analysis. Statutory threat factors (I), (II), (III), (V), and (VI) are discussed in the analysis of subject import volume. Statutory threat factor (I) is applicable only in the investigation of titanium sponge from Kazakhstan. Statutory threat factor (IV) is discussed in the analysis of subject import price effects. Statutory factors (VIII) and (IX) are discussed in the analysis of impact. Statutory factor (VII) concerning agricultural products is inapplicable to these investigations.

[113] The captive production provision does not apply in these investigations because the threshold condition is not satisfied. 19 U.S.C. § 1677(7)(C)(iv). While domestic producers "internally transfer significant production of the domestic like product for the production of a downstream article," they do not "sell significant production of the domestic like product in the merchant market." In 2016, most U.S. producers' U.S. shipments (*** percent by quantity) were internally consumed, with a smaller percentage (*** percent by quantity) going to transfers to related firms, but less than *** percent by quantity of U.S. producers' U.S. shipments were commercial shipments to the merchant market. CR at III-6; PR at III-3.

downstream products are used for applications such as electrodes, aerospace engines, airframes, and medical devices.[114]

Responding U.S. producers and importers reported that U.S. demand for titanium sponge either increased or was unchanged since January 1, 2014.[115] However, apparent U.S. consumption declined by *** percent between 2014 and 2016, increasing from *** metric tons in 2014 to *** metric tons in 2015, and then declining to *** metric tons in 2016. It was *** metric tons in interim 2016 and *** metric tons in interim 2017.[116]

U.S. consumption of titanium sponge is relatively concentrated, with three purchasers and two domestic producers accounting for more than *** percent of total U.S. consumption in 2016. The vast majority of U.S. purchases and production of titanium sponge were for internal consumption to produce downstream products, with very little titanium sponge offered for resale.[117]

2. Supply Conditions

There were two U.S. producers during the POI, TIMET and ATI. ATI idled its plant in Rowley, Utah in December 2016 and ceased domestic production of titanium sponge.[118] TIMET is an integrated producer that has the ability to produce its own magnesium and titanium tetrachloride ($TiCl_4$) necessary for the production of titanium sponge. By contrast, ATI had to purchase the necessary magnesium and $TiCl_4$, because it did not have internal sources of these raw materials.[119] The capacity of the domestic industry was below apparent U.S. consumption throughout the POI.[120] Both TIMET and ATI supplemented their domestic production with imports of titanium sponge during the POI.[121] TIMET reported minimal commercial sales during the POI, while ATI reported no commercial sales.[122]

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[114] CR at II-10; PR at II-7.

[115] CR at II-11; PR at II-7; CR/PR at Table II-3; *see* Conference Tr. at 69 (Seiner).

[116] CR/PR at Tables IV-8, C-1.

[117] CR at II-2; PR at II-1. Less than *** percent of U.S. production of titanium sponge and less than two *** of U.S. imports of titanium sponge are resold. CR at II-3; PR at II-2.

[118] CR at III-1 n.1; PR at III-1 n.1.

[119] CR at VI-7; PR at VI-4; Conference Tr. at 78-79 (Seiner), 107 (Sims).

[120] In 2016, the domestic industry's capacity was *** metric tons, while apparent U.S. consumption was *** metric tons. In interim 2017, after ATI ceased domestic production, the domestic industry's capacity was *** metric tons, while apparent U.S. consumption was *** metric tons. CR/PR at Table C-1.

[121] CR at III-9 to III-10; PR at III-5; CR/PR at Table III-9; Petition at 32-33; Conference Tr. at 66-67 (Seiner), 110-11 (Sims).

[122] CR at II-1 to II-2, III-6 and n.4; PR at II-1, III-3 and n.4; Conference Tr. at 60, 85-86 (Seiner). The domestic industry reported commercial sales of *** in 2016, while reporting that *** metric tons were internally consumed, and *** metric tons were shipped to related firms. CR/PR at Table VI-1.

The domestic industry's share of apparent U.S. consumption increased from *** percent in 2014 to *** percent in 2015, and then declined to *** percent in 2016. It was *** percent in interim 2016 and *** percent in interim 2017.[123]

The market share of subject imports from Japan was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017.[124] The market share of subject imports from Kazakhstan was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017.[125] [126]

The market share of nonsubject imports was below that of the domestic industry or subject imports from Japan, but above that of subject imports from Kazakhstan. *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017.[127] The largest sources of nonsubject imports during the 2014 to 2016 period were Russia, Ukraine, and China.[128]

3. Substitutability and Other Conditions

The record indicates that the domestic like product and subject imports from both Japan and Kazakhstan are moderately to highly substitutable.[129] Purchasers responding to the Commission's lost sales/lost revenues survey identified several factors as important to their purchasing decision for titanium sponge, with availability, quality, and terms of supply being the most frequently listed factors, and did not list price as a main purchasing factor. Responding purchasers emphasized the importance of a reliable, diversified, and stable supply of titanium sponge.[130] U.S. importers reported that a majority of their sales were under annual or long-term contracts, sometimes with fixed prices and quantities, with some long-term contracts having a duration of five or ten years.[131]

Titanium sponge is produced in standard and premium grades. The end uses for standard grade titanium sponge include airframes and non-rotating parts of aircraft engines, and non-aerospace industrial applications, while the end uses for premium grade include rotating engine parts for the aerospace industry.[132] Some end users require a lengthy certification process for producers of premium grade titanium sponge to ensure that their

[123] CR/PR at Table IV-9.

[124] CR/PR at Table IV-9.

[125] CR/PR at Table IV-9.

[126] The 2017 general U.S. rate of duty for imports of titanium sponge, which is applicable to imports from both Japan and Kazakhstan, is 15 percent *ad valorem*. CR at I-8 and n.15; PR at I-7 and n.15.

[127] CR/PR at Table IV-9.

[128] CR at II-9; PR at II-6.

[129] CR at II-13 to II-14; PR at II-9.

[130] CR at II-14; PR at II-10.

[131] CR at V-3; PR at V-2; CR/PR at Table V-2; Conference Tr. at 61-62 (Seiner), 108 (Sims), 169-70 (Halford), 170-71 (Forsythe), 171 (Perryman).

[132] CR at I-9 to I-10, II-1; PR at I-7 to I-8, II-1.

product is suitable for particular end uses (*e.g.,* rotating engine parts).[133] Premium grade titanium sponge can be and is used in standard grade applications, but standard grade titanium sponge cannot be used in premium grade applications.[134] For some applications, titanium scrap can be substituted to some degree for titanium sponge.[135]

C. No Reasonable Indication of Material Injury by Reason of Subject Imports from Japan

1. Volume of Subject Imports

The volume of subject imports from Japan increased during the period of investigation. The quantity of subject imports from Japan rose from *** metric tons in 2014 to *** metric tons in 2015 and *** metric tons in 2016; it was *** metric tons in interim 2016 and higher, at *** metric tons, in interim 2017.[136] The market share of subject imports from Japan was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017.[137] Viewed in isolation, the volume and market share and increases in volume and market share of subject imports from Japan could be considered significant. However, we do not perceive that market share shifts in this industry, such as the increase in market penetration of subject market imports from Japan in interim 2017, are indicative of a competitive advantage for the imported product. This is because the domestic like product is not sold commercially; given the lack of head-to-head competition between subject imports and the domestic like product, sales gained by subject imports are not necessarily "lost" by the domestic industry. By the same token, we do not view the percentage of imports in relation to domestic production, which was used virtually exclusively for internal transfers, as a particularly instructive metric. Moreover, as explained below, these volumes of subject imports of Japan did not have significant price effects or impact in light of the conditions of competition. For these reasons, we find that the volume of subject imports from Japan and any increase in that volume, both in absolute terms and relative to domestic consumption and production, are not significant.

2. Price Effects of the Subject Imports

The Commission collected data in these investigations concerning pricing of two titanium sponge products shipped to unrelated customers, as well as import purchase cost data.[138] These data do not provide a basis for making a finding of significant price underselling

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[133] CR at I-9; PR at I-7 to I-8; Conference Tr. at 89-90, 96-98 (Seiner).

[134] CR at I-10; II-1; PR at I-8, II-1.

[135] CR at I-10 to I-11; II-13; PR at I-8 to I-9; II-9; Conference Tr. at 63-64 (Seiner).

[136] CR/PR at Table IV-2. The quantity of U.S. shipments of subject imports from Japan declined from *** metric tons in 2014 to *** metric tons in 2015, and then increased to *** metric tons in 2016. It was *** metric tons in interim 2016 and *** metric tons in interim 2017. CR/PR at Table IV-8.

[137] CR/PR at Table IV-9.

[138] CR at V-4, V-10; PR at V-2 to V-3, V-4.

by subject imports from Japan, given the absence of meaningful commercial sales of the domestic like product.[139] TIMET concedes that, because of the nature of the domestic industry's operations, the Commission cannot make meaningful pricing comparisons between subject imports and the domestic like product for purposes of an underselling analysis.[140] Additionally, no purchasers responding to the Commission's lost sales/lost revenues survey confirmed that the domestic industry lost any sales or revenues as a result of low-priced subject imports from Japan.[141]

In examining whether subject imports from Japan significantly depressed or suppressed the prices of the domestic like product, we have used the facts available in the record. In light of the lack of meaningful commercial sales by the domestic industry, the data available are the industry's reported average unit net sales values ("AUVs").[142] These AUVs primarily reflect internal consumption by domestic producers, but also reflect some transfers to related parties as well as a very small volume of commercial sales.[143] The domestic industry's net sales AUV declined somewhat between 2014 and 2016, and was *** lower in interim 2017 than in interim 2016.[144] The domestic industry's ratio of cost of goods sold ("COGS") to net sales increased

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[139] Commercial sales of the domestic like product to unrelated parties represented less than *** percent of U.S. production in 2016, and *** percent of total subject imports in 2016. CR at V-5 n.6; PR at V-3 n.6.

[140] TIMET's Postconference Brief at 24, 26; Conference Tr. at 99-100 (Horgan). TIMET acknowledges that the prices of its few commercial sales do not provide a meaningful basis for making pricing comparisons, stating that it sometimes charged premium prices in light of the administrative costs of processing sales of small volumes of titanium sponge. TIMET's Postconference Brief at 25; Conference Tr. at 60, 85-86 (Seiner); CR at VI-3 n.10; PR at VI-2 n.10.

[141] CR at V-16 to V-20; PR at V-5 to V-6; CR/PR at Tables V-8 through V-10.

[142] There are available, albeit limited, pricing data for subject imports from Japan, for which commercial sales constituted only a very small proportion of subject import shipments. CR at V-5 n.6, V-10; PR at V-3 n.6, V-4. Reported prices for subject imports of product 1 (premium quality titanium sponge) from Japan declined by *** percent from the first quarter of 2014 through the second quarter of 2017, while reported prices for subject imports of product 2 (standard quality premium sponge) declined by *** percent during this period. CR/PR at Table V-7. The direct import purchase data, which cover a much greater quantity of shipments, *see* CR/PR at Tables V-5 to V-6, indicate that during this period, direct import purchase costs for product 1 from Japan fell by *** percent and those for product 2 fell by *** percent. CR/PR at Table V-7.

[143] By value, *** percent of U.S. producers' net sales in 2016 were internal consumption, *** percent were transfers to related firms, and less than *** percent were commercial sales. CR/PR at Table VI-1.

[144] The domestic industry's net sales AUV fell by *** percent between 2014 and 2016, declining from $*** per metric ton in 2014 to $*** per metric ton in 2015, and $*** per metric ton in 2016. It was $*** per metric ton in interim 2016 and $*** per metric ton in interim 2017. CR/PR at Tables VI-1, C-1. The domestic industry's AUV for internal consumption declined between 2014 and 2016, and was *** lower in interim 2017 than in interim 2016, while its AUV for transfers to related firms declined between 2014 and 2016, but was *** higher in interim 2017 than interim 2016. CR/PR at Table VI-1. The domestic industry's AUV for its small volume of commercial sales increased *** between 2014 and 2016, and was *** higher in interim 2017 than in interim 2016. *Id.*

irregularly between 2014 and 2016 and was *** higher in interim 2017 than in interim 2016.[145] While we have examined the data reported for the domestic industry as a whole, we observe that TIMET experienced adverse developments in its net sales AUVs and its ratio of COGS to net sales between interim 2016 and interim 2017, just as the domestic industry as a whole did, while ATI experienced positive developments in in its net sales AUVs and its ratio of COGS to net sales between these two interim periods.[146] [147]

Because they largely reflect values derived for internally transferred goods, we find that the domestic producers' AUV data for their internal consumption do not reflect values based on competition from suppliers of subject imports from Japan. Instead, TIMET reported that it ***.[148] ATI reported ***.[149]

While the reporting of these values by TIMET and ATI may be acceptable for accounting purposes, these values *** do not reflect prices for titanium sponge based on competition in the U.S. market involving the domestic like product. The record indicates that most sales of titanium sponge by U.S. importers were under long-term or annual contracts, and that these contracts often fix prices and quantities and often do not provide for price renegotiation.[150] TIMET states that it currently has long-term contracts to purchase titanium sponge from ***.[151] Accordingly, ***. The prices paid for *** by other purchasers would obviously depend on the specific terms of the contracts that those purchasers negotiated with ***, which may differ substantially from the terms of the long-term contracts that TIMET negotiated with ***. Thus, the AUV data reported by domestic producers for their internal consumption cannot serve as a

[145] The industry's ratio of COGS to net sales fell from *** percent in 2014 to *** percent in 2015 and then increased to *** percent in 2016. It was *** percent in interim 2016 and *** percent in interim 2017. CR/PR at Table VI-1.

[146] ATI's net sales AUV was higher in interim 2017, at $*** per metric ton, than it was in interim 2016, at $*** per metric ton. CR/PR at Table VI-3. By contrast, TIMET's net sales AUV was lower in interim 2017, at $*** per metric ton, than it was in interim 2016, at $*** per metric ton. *Id.* The ratio of ATI's COGS to net sales was *** percentage points lower in interim 2017, at *** percent, than it was in interim 2016, at *** percent. *Id*. By contrast, the ratio of TIMET's COGS to net sales was *** percentage points higher in interim 2017, at *** percent, than it was in interim 2016, at *** percent. *Id.*

[147] While ATI ceased domestic production of titanium sponge in 2016, it reported ***. ATI's U.S. Producers' Questionnaire at 12, Table II-7. (EDIS Document No. 622812).

[148] CR at VI-4 n.13; PR at VI-2 n.13; Petition Exh. 26; EDIS Document No. 623714 (email responses from *** to Commission staff questions).

[149] CR at VI-4 n.12; PR at VI-2 n.12; EDIS Document No. 623716 (email response from *** to Commission staff questions). TIMET argues that ATI's AUVs for its internal consumption are not reliable and are not based on fair market value. TIMET's Postconference Brief at 25-26. TIMET also contends that its domestic transfer prices for its internal consumption do not provide a useful measure of the impact of subject imports. Petition at 40 and Exh. GEN-26 at 2. Instead, TIMET has argued that the Commission can simply decline to make price effects findings due to the lack of meaningful data. *See* Conference Tr. at 100 (Horgan). TIMET's position cannot be reconciled with the Federal Circuit precedent. *See Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484 (Fed. Cir. 1998).

[150] CR at V-3; PR at V-2; CR/PR at Table V-2; Conference Tr. at 108 (Sims), 169-70 (Halford), 170-71 (Forsythe); 171 (Perryman); U.S. Importers' Postconference Brief at Exhibits 2-5.

[151] Petition at 24 and Exh. GEN-20, Declaration of Henry Seiner, at Paragraph 7.

basis for a finding that subject imports affected the "prices" – here, the AUVs – that they received for their domestically produced titanium sponge products.[152]

Consequently, based on the available data in the record, we do not find that subject imports from Japan significantly undersold the domestic like product, or had the effect of depressing prices of the domestic like product to a significant degree or preventing prices increases that would otherwise have occurred to a significant degree. Accordingly, we do not find that subject imports from Japan caused significant price effects.

3. Impact of the Subject Imports[153]

The domestic industry's performance indicators generally improved between 2014 and 2015 and then declined between 2015 and 2016, generally declining overall between 2014 and 2016. A number of indicators, including those pertaining to output and employment, were *** lower in interim 2017 than in interim 2016.[154]

The domestic industry's capacity remained constant at *** metric tons from 2014 to 2016; it was *** metric tons in interim 2016 and *** metric tons in interim 2017.[155] Production declined by *** percent from 2014 to 2016, increasing from *** metric tons in 2014 to *** metric tons in 2015 and then declining to *** metric tons in 2016; it was *** metric tons in interim 2016 and *** metric tons in interim 2017.[156] Capacity utilization increased from *** percent in 2014 to *** percent in 2015, and then declined to *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017.[157]

Net sales quantity declined by *** percent from 2014 to 2016, increasing from *** metric tons in 2014 to *** metric tons in 2015, and then declining to *** metric tons in 2016; it was *** metric tons in interim 2016 and *** metric tons in interim 2017.[158] U.S. shipments declined by *** percent from 2014 to 2016, increasing from *** metric tons in 2014 to *** metric tons in 2015, and then declining to *** metric tons in 2016; they were *** metric tons in interim 2016 and *** metric tons in interim 2017.[159] The domestic industry's share of apparent U.S. consumption increased from *** percent in 2014 to *** percent in 2015, and then declined to *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim

[152] Moreover, given the nature of the domestic industry's operations, we find that we could not obtain materially different – much less contrary – AUV or pricing information in any final phase investigation.

[153] In its notice initiating the antidumping duty investigation, Commerce reported estimated dumping margins ranging from 69.69 to 95.20 percent for imports of titanium sponge from Japan. *Titanium Sponge From Japan and Kazakhstan: Initiation of Less-Than-Fair Value Investigations*, 82 Fed. Reg. 43939, 43942 (Sept. 20, 2017). For our analysis, we have considered that that all imports of subject merchandise from Japan are alleged to be sold at less than fair value.

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

[155] CR/PR at Tables III-4, C-1.

[156] CR/PR at Tables III-4. C-1.

[157] CR/PR at Tables III-4. C-1.

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

[159] CR/PR at Tables III-6, C-1.

2017.[160] Ending inventories of domestic producers rose by *** percent from 2014 to 2016, increasing from *** metric tons in 2014 to *** metric tons in 2015, and then to *** metric tons in 2016; they were *** metric tons in interim 2016 and *** metric tons in interim 2017.[161]

Employment declined by *** percent from 2014 to 2016, increasing from *** production-related workers (PRWs) in 2014 to *** PRWs in 2015 and then declining to *** PRWs in 2016; it was *** PRWs in interim 2016 and *** PRWs in interim 2017.[162] Hours worked declined by *** percent from 2014 to 2016, increasing from *** hours in 2014 to *** hours in 2015, and then declining to *** hours in 2016; they were *** hours in interim 2016 and *** hours in interim 2017.[163] Wages paid declined by *** percent from 2014 to 2016, increasing from $*** in 2014 to $*** in 2015, and then declining to $*** in 2016; they were $*** in interim 2016 and $*** in interim 2017.[164] Productivity increased by *** percent from 2014 to 2016, increasing (in metric tons per 1,000 hours) from *** in 2014 to *** in 2015 and 2016; it was *** metric tons per hour in interim 2016 and *** in interim 2017.[165]

Consequently, several of the domestic industry's output and employment indicators were *** lower in interim 2017 than in interim 2016, including capacity, production, U.S. shipments, market share, employment, hours worked, and wages paid. Most of these declines appear to be attributable to ATI's cessation of domestic production operations at its Rowley, Utah plant in 2016.[166]

While TIMET argues that ATI's idling of its Rowley plant was due to low-priced subject imports, we find that ATI ceased production at the plant for business reasons essentially unrelated to subject imports. Unlike TIMET, ATI was not an integrated producer of titanium sponge, and had to purchase the necessary magnesium and $TiCl_4$ from suppliers in order to produce titanium sponge because it did not have internal sources of these raw materials.[167] As TIMET acknowledges, a non-integrated titanium sponge producer such as ATI has higher costs than an integrated producer such as TIMET.[168] ATI's costs for magnesium and $TiCl_4$ from its suppliers were increasing in 2016. In addition, ATI's rail transportation costs for $TiCl_4$ ***, and there was an increasing risk, due to environmental concerns about the transportation and handling of toxic inhalants such as $TiCl_4$, that railroads might refuse to deliver it.[169] ATI has long-term fixed-price contracts with aerospace customers to supply downstream titanium mill products, and the increasing costs and insecurity of the raw materials for ATI's titanium sponge

[160] CR/PR at Tables IV-9; C-1.

[161] CR/PR at Tables III-8, C-1.

[162] CR/PR at Tables III-10, C-1.

[163] CR/PR at Tables III-10, C-1.

[164] CR/PR at Tables III-10, C-1.

[165] CR/PR at Tables III-10, C-1.

[166] TIMET's capacity did not change between interim 2016 and interim 2017. Its production and employment were *** lower in interim 2017 than in interim 2016. CR/PR at Tables III-4, C-2.

[167] CR at VI-7; PR at VI-4; Conference Tr. at 107 (Sims).

[168] Conference Tr. at 78-79 (Seiner), 107 (Sims). According to ATI, ***. ATI's Postconference Brief, Exh. 4, Declaration of John Sims at paragraphs 21-22 and attachment 1.

[169] Conference Tr. at 107-08, 146-47 (Sims); ATI's Postconference Brief, Exh. 4, Declaration of John Sims at paragraphs 13-14.

production created risks that could jeopardize its performance under those contracts with its largest downstream customers.[170]

According to ATI, as these costs increased, it conducted an assessment of the Rowley plant and its cost structure over a period of four years before it made the decision in 2016 to idle the plant.[171] ATI considered various options, including fully integrating its production facility at Rowley with a facility to produce $TiCl_4$, but concluded that the costs and *** would preclude such an option from being viable, and it was ***.[172] ATI determined that the cost structure of the Rowley plant was not sustainable and made the decision to idle the plant in August 2016, and chose instead to extend its current long-term supply agreements for imports of titanium sponge from *** producers ***, in order to give it security of supply to meet the needs of its downstream customers for titanium mill products.[173] According to ATI, the pricing in these extensions and expansions of existing long-term supply agreements *** did not change or result in significant price benefits to ATI.[174] Thus, we find that the record indicates that ATI's business decision to idle its Rowley plant was not the result of low-priced subject imports, but rather the cost disadvantages of its non-integrated facility.

We have considered TIMET's argument that ATI's invocation of a *force majeure* clause to suspend its supply contract with U.S. Magnesium (a supplier of magnesium to the Rowley plant) establishes that ATI's decision to idle the facility was based on low-priced subject imports. According to TIMET, this *force majeure* clause permitted ATI to suspend the supply contract based on ATI's ability to obtain titanium sponge for a five-year period at a price more than 15 percent below ATI's variable cost of producing titanium sponge in the Rowley facility, and ATI's invocation of the provision proves that its decision was based on the availability of low-priced subject imports.[175] As previously discussed, the record shows that ATI had a cost disadvantage as a non-integrated producer of titanium sponge, and that its increasing costs of obtaining raw materials for its Rowley facility and the attendant supply risks were threatening to jeopardize its performance as a titanium sponge producer and its ability to serve its customers. Given that legitimate business reasons unrelated to subject imports existed for ATI to cease its domestic production operations – namely increasing costs at its Rowley facility and its inability to convert to an integrated production operation that would allow more effective competition with integrated titanium sponge producers such as TIMET – we cannot agree with TIMET that ATI's invocation of the *force majeure* clause renders these reasons pretextual or not credible.

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[170] Conference Tr. at 107-08, 147-48 (Sims); ATI's Postconference Brief, Exh. 4, Declaration of John Sims at paragraphs 8, 13-15.

[171] Conference Tr. at 148-49, 185 (Sims); ATI's Postconference Brief, Exh. 4, Declaration of John Sims at paragraph 12, and Exh. 11.

[172] Conference Tr. at 180 (Sims); ATI's Postconference Brief, Exh. 4, Declaration of John Sims at paragraphs 15-16, and Exh. 11.

[173] Conference Tr. at 108, 110, 147-48 (Sims); ATI's Postconference Brief, Exh. 4, Declaration of John Sims at paragraphs 19, 24.

[174] Conference Tr. at 108, 110, 148 (Sims); ATI's Postconference Brief, Exh. 4, Declaration of John Sims at paragraphs 19, 24.

[175] Petition at 35 and Exh. GEN-1; TIMET's Postconference Brief at 29.

Indeed, the record indicates that ATI made the decision to idle the facility and invoke the *force majeure* clause after a lengthy process of consideration over several years.[176]

The domestic industry's financial indicators declined between 2014 and 2016 and its financial performance was worse in interim 2017 than in interim 2016. Revenues declined by *** percent from 2014 to 2016, increasing from $*** in 2014 to $*** in 2015, and then falling to $*** in 2016; they were $*** in interim 2016 and $*** in interim 2017.[177] Total COGS declined by *** percent from 2014 to 2016, increasing from $*** in 2014 to $*** in 2015 and then declining to $*** in 2016; COGS were $*** in interim 2016 and $*** in interim 2017.[178] The industry's gross profit declined by *** percent from 2014 to 2016, increasing from $*** in 2014 to $*** in 2015, and then declined to $*** in 2016; it was $*** in interim 2016 and *** of $*** in interim 2017.[179] Operating income declined by *** percent from 2014 to 2016, increasing from $*** in 2014 to $*** in 2015, and then falling to $*** in 2016; it was $*** in interim 2016 and *** of $*** in interim 2017.[180] The industry's operating income margin increased from *** percent in 2014 to *** percent in 2015 and then fell to *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017.[181] Net income increased from $*** in 2014 to $*** in 2015, followed by *** of $*** in 2016; it was $*** in interim 2016, followed by a *** of $*** in interim 2017.[182] Capital expenditures increased by *** percent between 2014 and 2016, declining from $*** in 2014 to $*** in 2015, and then increasing to $*** in 2016; they were $*** in interim 2016 and $*** in interim 2017.[183]

We find that the decline in the domestic industry's financial performance during the POI was not a result of subject imports from Japan. To the extent the declines in financial performance were due to declines in output, we have found that ATI's cessation of production was not due to subject imports from Japan.[184] Moreover, TIMET, which did not engage in meaningful commercial sales of titanium sponge during the POI, could not have lost any such sales to the subject imports. To the extent the declines in financial performance were due to price declines, we found above that subject imports from Japan did not have any significant price effects.

TIMET argues that it faces a "make or buy" decision at its Henderson, Nevada plant as a result of low-priced subject imports similar to the decision it asserts that ATI faced at its Rowley

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[176] The record compiled in these preliminary phase investigations concerning ATI's idling of the Rowley plant is detailed. We find that we would be unlikely to obtain contrary information on this issue in any final phase investigations.

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

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

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

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

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

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

[183] CR/PR at Table VI-4. The domestic industry incurred research and development ("R&D") expenses of $*** in 2014, $*** in 2015, and $*** in 2016. R&D expenses were $*** in interim 2016 and $*** in interim 2017. CR/PR at Table VI-4.

[184] Almost all of the domestic industry's *** in 2016 was due to ATI's asset impairment writedown of its Rowley plant. CR at VI-9; PR at VI-5; CR/PR at Table VI-3.

plant.[185] TIMET cites an internal white paper it prepared in 2016 in which it analyzed options with respect to ***, and considered as one option ***.[186] We note that, ***, among the most relevant considerations for whether to produce titanium sponge domestically or choose to buy it from imported sources for the purpose of producing downstream titanium mill products are the requirements for production of downstream titanium mill products and the requirements of customers for those downstream products.[187] Thus, TIMET's argument about its possible "make or buy" decision is based largely on the structure of its downstream production of titanium mill products and the requirements of its customers for those downstream products. But our analysis of the impact of subject imports is limited by law to their impact on the operations of the domestic industry producing the domestic like product, and the difficulties of domestic industries producing other products are beyond the purview of these investigations.[188]

In view of the foregoing, we find no reasonable indication that subject imports from Japan are having a significant impact on the domestic industry. Accordingly, we find that there is no reasonable indication that the domestic industry is materially injured by reason of imports of titanium sponge from Japan that are allegedly sold in the United States at less than fair value.

D. No Reasonable Indication of Threat of Material Injury by Reason of Subject Imports from Japan

The production capacity of the titanium sponge industry in Japan increased *** during the POI, but is not projected to increase in 2017 or 2018.[189] The reported capacity utilization rate was *** percent in 2014, but increased by *** percentage points to *** percent in 2016. Capacity utilization remained above *** percent in interim 2017, and is projected to be above *** percent in both 2017 and 2018.[190] Given the increase in the industry's production and capacity utilization rate over the POI, the level of unused capacity of the industry in Japan declined over the POI.[191] The titanium sponge industry in Japan is fairly export oriented,

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[185] Petition at 43-45; TIMET's Postconference Brief at 29-30; Conference Tr. at 13 (Horgan).

[186] Petition at 45 and Exh. GEN-21; TIMET's Postconference Brief at 34.

[187] *See* Petition Exh. GEN-21 at 6-7 (***); *see* Conference Tr. at 83 (Seiner).

[188] *See* 19 U.S.C. § 1677(7)(B)(i)(III) (impact analysis focuses on "domestic producers of domestic like products . . . .").

[189] Reported production capacity in Japan was *** metric tons in 2014, and *** metric tons in 2015 and 2016; it was *** metric tons in interim 2016 and interim 2017. It is projected to be *** metric tons in 2017 and 2018. CR/PR at Table VII-3.

[190] The capacity utilization rate in Japan was *** percent in 2014, *** percent in 2015, *** percent in 2016; it was *** percent in interim 2016, and *** percent in interim 2017. It is projected to be *** percent in 2017 and *** percent in 2018. CR/PR at Table VII-3.

[191] Reported production of titanium sponge in Japan increased from *** metric tons in 2014 to *** metric tons in 2015 and *** metric tons in 2016; it was *** metric tons in interim 2016 and *** metric tons in interim 2017. It is projected to be *** metric tons in 2017 and *** metric tons in 2018. CR/PR at Table VII-3. Unused capacity declined from *** metric tons in 2014 to *** metric tons in 2015 (Continued…)

although its home market shipments were larger than its export shipments throughout the POI.[192] The United States was by far the largest export market for the industry in Japan during the POI.[193]

Inventories of titanium sponge held by subject producers in Japan declined from 2014 to 2015, but then increased in 2016, and reached a period high at the end of interim 2017.[194] U.S. importers' inventories of subject merchandise from Japan increased from 2014 to 2016, but were lower in interim 2017 than in interim 2016.[195]

(…Continued)
and *** metric tons in 2016; it was *** metric tons in interim 2016 and *** metric tons interim 2017. It is projected to be *** metric tons in 2017 and *** metric tons in 2018. *Id.*

[192] Total export shipments accounted for *** percent of total shipments by the industry in Japan in 2014, *** percent in 2015 and *** percent in 2016; they were *** percent in interim 2016, and *** percent in interim 2017. They are projected to account for *** percent of shipments in 2017 and *** percent of shipments in 2018. CR/PR at Table VII-3. Home market shipments accounted for *** percent of total shipments by the industry in Japan in 2014, *** percent in 2015, *** percent in 2016; they were *** percent in interim 2016 and *** percent in interim 2017. They are projected to account for *** percent of shipments in 2017 and *** percent in 2018. *Id.*

[193] Exports to the United States accounted for *** percent of total shipments by the industry in Japan in 2014, *** percent in 2015, and *** percent in 2016. They were *** percent in interim 2016 and *** percent in interim 2017. They are projected to account for *** percent of shipments in 2017 and *** percent in 2018. CR/PR at Table VII-3. Exports to all other markets accounted for *** percent of total shipments by the industry in Japan in 2014, *** percent in 2015, and *** percent in 2016. They were *** percent in interim 2016 and *** percent in interim 2017. They are projected to account for *** percent of shipments in 2017 and *** percent in 2018. *Id.*

[194] End-of-period inventories of subject producers in Japan were *** metric tons in 2014, *** metric tons in 2015, and *** metric tons in 2016. They were *** metric tons in interim 2016 and *** metric tons in interim 2017. They are projected to be *** metric tons in 2017 and *** metric tons in 2018. CR/PR at Table VII-3. The industry in Japan had inventories equivalent to *** percent of production in 2014, *** percent in 2015, *** percent in 2016, *** percent in interim 2016, and *** percent in interim 2017. Its projected inventories are equivalent to *** percent of production in 2017 and *** percent in 2018. *Id.*

[195] U.S. importers' inventories of subject merchandise from Japan were *** metric tons in 2014, *** metric tons in 2015, *** metric tons in 2016; they were *** metric tons in interim 2016 and *** metric tons in interim 2017. CR/PR at Table VII-11. The ratio of U.S. importers' inventories of subject merchandise from Japan to U.S. shipments of imports from Japan was *** percent in 2014, *** percent in 2015, and *** percent in 2016. It was *** percent in interim 2016 and *** percent in interim 2017. *Id.*

Information available on the record indicates that product shifting is not an issue. The two subject Japanese producers reported that they *** switch production from titanium sponge to other products. CR at II-7; PR at II-5.

The record indicates that there are no antidumping or countervailing duty orders or investigations concerning titanium sponge from Japan in any other markets. CR at VII-17; PR at VII-12.

As previously discussed, the volume of subject imports from Japan increased by *** percent between 2014 and 2016, and was higher in interim 2017 than in interim 2016.[196] The market share of subject imports from Japan increased over the 2014 to 2016 period and was *** higher in interim 2017 than in interim 2016.[197] The volume of subject imports from Japan is accordingly likely to increase in the imminent future, but we do not think this will have adverse effects on the domestic industry's output or TIMET's continuing production operations during this period, given the lack of head-to-head competition between subject imports from Japan and the domestic like product. TIMET has asserted that it is considering substituting subject imports for domestic production of titanium sponge,[198] but the record contains no information that such substitution is likely to occur in the imminent future.

We found above that subject imports from Japan are not currently having significant price effects. In light of the lack of head-to-head competition between the domestic like product and the subject imports, there is not likely to be significant underselling in the imminent future, even should subject import volume from Japan increase, for the same reason it did not occur during the period of investigation. By the same token, the absence of any significant relationship between subject imports and the domestic industry's AUVs observed during the period of investigation will likely persist. Accordingly, we find that imports of subject merchandise from Japan are unlikely to enter at prices that are likely to have a significant depressing or suppressing effect on domestic prices, or are likely to increase demand for such imports.

We also find that subject imports from Japan are not likely to have an actual or potential negative effect on the domestic industry's existing development and production efforts. The domestic industry reported *** capital expenditures over the POI, the *** of which were reported by TIMET. Even after ATI ceased production in 2016, the domestic industry's capital expenditures were *** higher in interim 2017 than in interim 2016.[199] TIMET asserts that its decision as to a capital investment to *** at its Henderson, Nevada facility will be adversely affected by low-priced subject imports.[200] However, given the absence of head-to-head competition between subject imports from Japan and the domestic like product, and the fact that the record does not contain any information that TIMET intends to replace its domestic titanium sponge production with imports in the imminent future, we do not believe that subject imports from Japan will have a negative effect on the domestic industry's ability to make this capital investment. Finally, there is no evidence of any other demonstrable adverse

[196] The volume of subject imports from Japan increased from *** metric tons in 2014 to *** metric tons in 2015, and *** metric tons in 2016; it was *** metric tons in interim 2016 and *** metric tons in interim 2017.CR/PR at Table IV-2.

[197] The market share of subject imports from Japan was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017. CR/PR at Table IV-9.

[198] *See* Conference Tr. at 45-46 (Seiner), 104-105 (Horgan).

[199] Capital expenditures increased by *** percent between 2014 and 2016, declining from $*** in 2014 to $*** in 2015, and then increasing to $*** in 2016; they were $*** in interim 2016 and $*** in interim 2017. CR/PR at Table VI-4.

[200] TIMET's Postconference Brief at 34-35; CR/PR at Table VI-7.

trends that indicate the probability that subject imports from Japan will likely materially injure the domestic industry.

In view of the foregoing, we find that there is no reasonable indication that an industry in the United States is threatened with material injury by reason of subject imports from Japan that are allegedly sold in the United States at less than fair value.

E. No Reasonable Indication of Material Injury By Reason of Subject Imports from Kazakhstan

1. Volume of Subject Imports

The volume of subject imports from Kazakhstan declined by *** percent between 2014 and 2016, but was *** higher in interim 2017 than in interim 2016. The quantity of subject imports from Kazakhstan increased from *** metric tons in 2014 to *** metric tons in 2015, and then declined to *** metric tons in 2016. It was *** metric tons in interim 2016 and *** metric tons in interim 2017.[201] The market share of subject imports from Kazakhstan was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017.[202] The volume of subject imports from Kazakhstan fluctuated sharply from calendar year to calendar year, peaking in 2015. The *** volume of subject imports from Kazakhstan in 2016 serves to exaggerate the magnitude of the rise in import volumes between interim 2016 and interim 2017. Subject imports from Kazakhstan had a *** share of the U.S. market during the POI. Thus we find that the volume of subject imports from Kazakhstan and any increase in that volume were not significant in absolute terms.

We also find that neither the volume nor the increase in volume in subject imports from Kazakhstan is significant relative to production or consumption in the United States. Market shares and market share shifts are of limited significance in the U.S. titanium sponge market given the absence of head-to-head competition between subject imports and the domestic like product. In light of this, sales garnered by subject imports are not necessarily "lost" to the domestic industry. By the same token, because essentially all domestic production is internally transferred or captively consumed, the percentage of imports relative to domestic production is not a particularly instructive metric.

Consequently, in light of the lack of direct competition between the domestic like product and subject imports from Kazakhstan, we find that the volume of subject imports from Kazakhstan, both in absolute terms and relative to domestic consumption and production, is not significant, notwithstanding the *** level of subject import volume and market penetration in interim 2017. Moreover, as explained below, these volumes of subject imports of Kazakhstan did not have significant price effects or impact in light of the conditions of competition.

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[201] CR/PR at Table IV-2. The quantity of U.S. shipments of subject imports from Kazakhstan declined from *** metric tons in 2014 to *** metric tons in 2015 and then to *** metric tons in 2016. It was *** metric tons in interim 2016 and *** metric tons in interim 2017. CR/PR at Table IV-8.

[202] CR/PR at Table IV-9 (derived from data for U.S. shipments of subject imports).

2. Price Effects of the Subject Imports

The Commission collected data in these investigations concerning pricing of two titanium sponge products shipped to unrelated customers, as well as import purchase cost data.[203] These data do not provide a basis for making a finding of significant price underselling by subject imports from Kazakhstan, given the absence of meaningful commercial sales of the domestic like product.[204] TIMET concedes that, because of the nature of the domestic industry's operations, the Commission cannot make meaningful pricing comparisons between subject imports and the domestic like product for purposes of an underselling analysis.[205] Additionally, no purchasers responding to the Commission's lost sales/lost revenues survey confirmed that the domestic industry lost any sales or revenues as a result of low-priced subject imports from Kazakhstan.[206]

In examining whether subject imports from Kazakhstan significantly depressed or suppressed the prices of the domestic like product, we have used the facts available in the record. In light of the lack of meaningful commercial sales by the domestic industry, the data available are the industry's reported net sales AUVs.[207] These AUVs primarily reflect internal consumption by domestic producers, but also reflect some transfers to related parties as well as a very small volume of commercial sales.[208] The domestic industry's net sales AUV declined somewhat between 2014 and 2016, and was *** lower in interim 2017 than in interim 2016.[209]

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[203] CR at V-4, V-10; PR at V-2 to V-3, V-4.

[204] Commercial sales of the domestic like product to unrelated parties represented less than *** percent of U.S. production in 2016, and *** percent of total subject imports in 2016. CR at V-5 n.6; PR at V-3 n.6.

[205] TIMET's Postconference Brief at 24, 26; Conference Tr. at 99-100 (Horgan). TIMET acknowledges that the prices of its few commercial sales do not provide a meaningful basis for making pricing comparisons, stating that it sometimes charged premium prices in light of the administrative costs of processing sales of small volumes of titanium sponge. TIMET's Postconference Brief at 25; Conference Tr. at 60, 85-86 (Seiner); CR at VI-3 n.10; PR at VI-2 n.10.

[206] CR at V-16 to V-20; PR at V-5 to V-6; CR/PR at Tables V-8 through V-10.

[207] The only pricing data available for subject imports from Kazakhstan are direct import purchase data for product 2 (standard quality premium sponge). These data indicate that direct purchase costs for product 2 from Kazakhstan declined by *** percent from the first quarter of 2014 to the second quarter of 2017. CR/PR at Table V-7.

[208] By value, *** percent of U.S. producers' net sales in 2016 were internal consumption, *** percent were transfers to related firms, and less than *** percent were commercial sales. CR/PR at Table VI-1.

[209] The domestic industry's net sales AUV fell by *** percent between 2014 and 2016, declining from $*** per metric ton in 2014 to $*** per metric ton in 2015, and $*** per metric ton in 2016. It was $*** per metric ton in interim 2016 and $*** per metric ton in interim 2017. CR/PR at Tables VI-1, C-1. The domestic industry's AUV for internal consumption declined between 2014 and 2016, and was *** lower in interim 2017 than in interim 2016, while its AUV for transfers to related firms declined between 2014 and 2016, but was *** higher in interim 2017 than interim 2016. CR/PR at Table VI-1. The domestic industry's AUV for its small volume of commercial sales increased *** between 2014 and 2016, and was *** higher in interim 2017 than in interim 2016. *Id.*

The domestic industry's ratio of COGS to net sales increased irregularly between 2014 and 2016 and was *** higher in interim 2017 than in interim 2016.[210] While we have examined the data reported for the domestic industry as a whole, we observe that TIMET experienced adverse developments in its net sales AUVs and its ratio of COGS to net sales between interim 2016 and interim 2017, just as the domestic industry as a whole did, while ATI experienced positive developments in in its net sales AUVs and its ratio of COGS to net sales between these two interim periods.[211]

Because they largely reflect values derived for internally transferred goods, we find that the domestic producers' AUV data for their internal consumption do not reflect values based on competition from suppliers of subject imports from Kazakhstan. Instead, TIMET reported that it ***.[212] ATI reported ***.[213] While the reporting of these values by TIMET and ATI may be acceptable for accounting purposes, these values *** do not reflect prices for titanium sponge based on competition in the U.S. market involving the domestic like product, for the reasons stated in section VII.C.2 above. Thus, the available data do not provide a basis for a finding that subject imports from Kazakhstan affected the "prices" – here, the AUVs – that domestic producers reported for their domestically produced titanium sponge products.[214]

Consequently, based on the available data in the record, we do not find that subject imports from Kazakhstan significantly undersold the domestic like product, or had the effect of depressing prices of the domestic like product to a significant degree or preventing prices increases that would otherwise have occurred to a significant degree. Accordingly, we do not find that subject imports from Kazakhstan caused significant price effects.

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[210] The industry's ratio of COGS to net sales fell from *** percent in 2014 to *** percent in 2015 and then increased to *** percent in 2016. It was *** percent in interim 2016 and *** percent in interim 2017. CR/PR at Table VI-1.

[211] ATI's net sales AUV was higher in interim 2017 ($*** per metric ton) than it was in interim 2016 ($*** per metric ton). CR/PR at Table VI-3. By contrast, TIMET's net sales AUV was lower in interim 2017 ($*** per metric ton) than it was in interim 2016 ($*** per metric ton). *Id.* The ratio of ATI's COGS to net sales was *** percentage points lower in interim 2017, at *** percent, than it was in interim 2016, at *** percent. *Id.* By contrast, the ratio of TIMET's COGS to net sales was *** percentage points higher in interim 2017, at *** percent, than it was in interim 2016, at *** percent. *Id.*

[212] CR at VI-4 n.13; PR at VI-2 n.13; Petition Exh. 26; EDIS Document No. 623714 (email responses from *** to Commission staff questions).

[213] CR at VI-4 n.12; PR at VI-2 n.12; EDIS Document No. 623716 (email response from *** to Commission staff questions). TIMET argues that ATI's AUVs for its internal consumption are not reliable and are not based on fair market value. TIMET's Postconference Brief at 25-26. TIMET also contends that its domestic transfer prices for its internal consumption do not provide a useful measure of the impact of subject imports. Petition at 40 and Exh. GEN-26 at 2. Instead, TIMET has argued that the Commission can simply decline to make price effects findings due to the lack of meaningful data. *See* Conference Tr. at 100 (Horgan). TIMET's position cannot be reconciled with the Federal Circuit precedent. *See Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484 (Fed. Cir. 1998).

[214] Moreover, given the nature of the domestic industry's operations, we do not believe that we could obtain materially different – much less contrary – AUV or pricing information in any final phase investigations.

3. Impact of the Subject Imports[215]

We incorporate by reference the discussion in section VII.C.3 above concerning the condition of the domestic industry during the POI. As that discussion indicates, a number of the domestic industry's output and employment indicators declined from 2014 to 2016 and were *** lower in interim 2017 than in interim 2016, including capacity, production, U.S. shipments, market share, employment, hours worked, and wages paid. As we indicated above, most of these declines between the interim periods appear to be attributable to ATI's cessation of domestic production operations at its Rowley, Utah plant in 2016. Our finding above that ATI's cessation of domestic production was a business decision due to the cost disadvantages of a non-integrated facility, and was not a result of low-priced subject imports, is equally applicable to subject imports from Kazakhstan as it was to subject imports from Japan.

We also described above declines in the domestic industry's financial performance that occurred during the POI. We find that these were not a result of subject imports from Kazakhstan. To the extent the declines in financial performance were due to declines in output, we have found that ATI's cessation of production was not due to subject imports from Kazakhstan. Moreover, TIMET, which did not engage in meaningful commercial sales of titanium sponge during the POI, could not have lost any such sales to the subject imports. To the extent the declines in financial performance were due to price declines, we found above that subject imports from Kazakhstan did not have any significant price effects.[216]

In view of the foregoing, we do not find that subject imports from Kazakhstan are having a significant impact on the domestic industry. Accordingly, we find that there is no reasonable indication that the domestic industry is materially injured by reason of imports of titanium sponge from Kazakhstan that are allegedly sold in the United States at less than fair value and subsidized by the government of Kazakhstan.

F. No Reasonable Indication of Threat of Material Injury by Reason of Subject Imports from Kazakhstan

The production capacity of the titanium sponge industry in Kazakhstan was constant during the POI, and is not projected to increase in 2017 or 2018.[217] The industry's production and capacity utilization rate increased irregularly between 2014 and 2016, while the level of

[215] In its notice initiating the antidumping duty investigation, Commerce reported an estimated dumping margin of 42.22 percent for imports of titanium sponge from Kazakhstan. *Titanium Sponge From Japan and Kazakhstan: Initiation of Less-Than-Fair Value Investigations*, 82 Fed. Reg. 43939, 43942 (Sept. 20, 2017). For our analysis, we have considered that that all imports of subject merchandise from Kazakhstan are alleged to be sold at less than fair value.

[216] We also incorporate our discussion above concerning the lack of pertinence to our statutory inquiry of TIMET's "make or buy" argument.

[217] Reported production capacity in Kazakhstan was *** metric tons in 2014, 2015, and 2016; it was *** metric tons in interim 2016 and interim 2017. It is projected to be *** metric tons in 2017 and 2018. CR/PR at Table VII-8.

unused capacity in Kazakhstan declined.[218] The titanium sponge industry in Kazakhstan is fairly export oriented, although its export orientation declined *** in 2016, and its home market shipments were larger than its export shipments throughout the POI.[219] The United States was one of the largest export markets for the industry in Kazakhstan during the POI.[220] The titanium sponge industry in Kazakhstan reported *** end-of-period inventories throughout the POI.[221] U.S. importers' inventories of subject merchandise from Kazakhstan increased irregularly from 2014 to 2016, and were *** in interim 2016 and interim 2017.[222]

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[218] Reported production of titanium sponge in Kazakhstan increased from *** metric tons in 2014 to *** metric tons in 2015, and then declined to *** metric tons in 2016; it was *** metric tons in interim 2016 and *** metric tons in interim 2017. It is projected to be *** metric tons in 2017 and 2018. CR/PR at Table VII-8. The capacity utilization rate in Kazakhstan was *** percent in 2014, *** percent in 2015, *** percent in 2016, *** percent in interim 2016, and *** percent in interim 2017. It is projected to be *** percent in 2017 and 2018. *Id*. Unused capacity declined from *** metric tons in 2014 to *** metric tons in 2015, and then increased to *** metric tons in 2016; it was *** metric tons in interim 2016 and *** metric tons interim 2017. It is projected to be *** metric tons in 2017 and 2018. *Id.*

[219] Total export shipments accounted for *** percent of total shipments by the industry in Kazakhstan in 2014, *** percent in 2015 and *** percent in 2016; they were *** percent in interim 2016, and *** percent in interim 2017. They are projected to account for *** percent of shipments in 2017 and 2018. CR/PR at Table VII-8. Home market shipments accounted for *** percent of total shipments by the industry in Kazakhstan in 2014, *** percent in 2015, *** percent in 2016; they were *** percent in interim 2016 and *** percent in interim 2017. They are projected to account for *** percent of shipments in 2017 and 2018. *Id.*

[220] Exports to the United States accounted for *** percent of total shipments by the industry in Kazakhstan in 2014, *** percent in 2015, and *** percent in 2016. They were *** percent in interim 2016 and *** percent in interim 2017. CR/PR at Table VII-8. They are projected to account for *** percent of shipments in 2017 and 2018. Exports to all other markets accounted for *** percent of total shipments by the industry in Kazakhstan in 2014, *** percent in 2015, and *** percent in 2016. They were *** percent in interim 2016 and *** percent in interim 2017. They are projected to account for *** percent of shipments in 2017 and 2018. *Id.*

[221] CR/PR at Table VII-8.

[222] U.S. importers' inventories of subject merchandise from Kazakhstan were *** metric tons in 2014, *** metric tons in 2015, *** metric tons in 2016; they were *** metric tons in interim 2016 and *** metric tons in interim 2017. CR/PR at Table VII-11. The ratio of U.S. importers' inventories of subject merchandise from Kazakhstan to U.S. shipments of subject imports from Kazakhstan was *** percent in 2014, *** percent in 2015, and *** percent in 2016. It was *** percent in interim 2016 and *** percent in interim 2017. *Id.*

Information available on the record indicates that product shifting is not an issue. The one responding subject Kazakh producer reported that it *** switch production from titanium sponge to other products. CR at II-8; PR at II-6.

The record indicates that there are no antidumping or countervailing duty orders or investigations concerning titanium sponge from Kazakhstan in any other markets. CR at VII-17; PR at VII-12.

We have also considered the nature of the alleged subsidies in the countervailing duty investigation on subject imports from Kazakhstan in our threat analysis. 19 U.S.C. § 1677(7)(F)(i)(I). (Continued…)

As previously discussed, the volume of subject imports from Kazakhstan fluctuated during the POI, declining by *** percent between 2014 and 2016, but was *** higher in interim 2017 than in interim 2016.[223] The market share of subject imports from Kazakhstan similarly fluctuated over the POI, declining between 2014 and 2016, but was higher in interim 2017 than in interim 2016.[224] The sharp fluctuations in subject import volume during the POI make likely subject import volumes from Kazakhstan difficult to project. Even assuming *arguendo* that the greater volume and market penetration of subject imports during interim 2017 make additional increases in subject import volume from Kazakhstan likely in the imminent future, such increased imports are unlikely to have adverse effects on the domestic industry's output or TIMET's continuing production operations, given the lack of head-to-head competition between subject imports from Kazakhstan and the domestic like product. TIMET has asserted that it is considering substituting subject imports for domestic production of titanium sponge,[225] but the record contains no information that such substitution is likely to occur in the imminent future, or that it would be prompted to use imports from Kazakhstan as the substitute.

We found above that subject imports from Kazakhstan are not currently having significant price effects. In light of the lack of head-to-head competition between the domestic like product and the subject imports, there is not likely to be significant underselling in the imminent future, even should subject import volume from Kazakhstan increase, for the same reason it did not occur during the period of investigation. By the same token, the absence of any significant relationship between subject imports and the domestic industry's AUVs observed during the period of investigation will likely persist. Accordingly, we find that imports of subject merchandise from Kazakhstan are unlikely to enter at prices that are likely to have a significant depressing or suppressing effect on domestic prices, or are likely to increase demand for such imports.

We also find that subject imports from Kazakhstan are not likely to have an actual or potential negative effect on the domestic industry's existing development and production efforts. The domestic industry reported *** capital expenditures over the POI, the *** of which were reported by TIMET. Even after ATI ceased production in 2016, the domestic

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(…Continued)
Commerce initiated its countervailing duty investigation based on the following alleged subsidy programs in Kazakhstan: (1) Preferential Government Loan—State Program of Industrial Innovative Development; (2) Preferential Duty Waiver on Titanium Oxides; and (3) Discounted Electricity Tariffs. September 13, 2017 Department of Commerce Enforcement and Compliance Office of AD/CVD Operations Countervailing Duty Investigation Initiation Checklist at 7-9 (EDIS Document No. 624004).

[223] The volume of subject imports from Kazakhstan increased from *** metric tons in 2014 to *** metric tons in 2015, and then declined to *** metric tons in 2016. It was *** metric tons in interim 2016 and *** metric tons in interim 2017. CR/PR at Table IV-2.

[224] The market share of subject imports from Kazakhstan was *** percent in 2014, *** percent in 2015, and *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017. CR/PR at Table IV-9.

[225] *See* Conference Tr. at 45-46 (Seiner), 104-105 (Horgan).

industry's capital expenditures were *** higher in interim 2017 than in interim 2016.[226] TIMET asserts that its decision as to a capital investment to *** at its Henderson, Nevada facility will be adversely affected by low-priced subject imports.[227] However, given the absence of head-to-head competition between subject imports from Kazakhstan and the domestic like product, and the fact that the record does not contain any information that TIMET intends to replace its domestic titanium sponge production with imports in the imminent future, we do not believe that subject imports from Kazakhstan will have a negative effect on the domestic industry's ability to make this capital investment. Finally, there is no evidence of any other demonstrable adverse trends that indicate the probability that subject imports from Kazakhstan will likely materially injure the domestic industry.

In view of the foregoing, we find that there is no reasonable indication that an industry in the United States is threatened with material injury by reason of subject imports from Kazakhstan that are allegedly sold at less than fair value and subsidized by the government of Kazakhstan.

VIII. Conclusion

For the reasons stated above, we determine that there is no reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of subject imports of titanium sponge from Japan and Kazakhstan that are allegedly sold in the United States at less than fair value, and subject imports from Kazakhstan that are allegedly subsidized by the Government of Kazakhstan.[228]

[226] Capital expenditures increased by *** percent between 2014 and 2016, declining from $*** in 2014 to $*** in 2015, and then increasing to $*** in 2016; they were $*** in interim 2016 and $*** in interim 2017. CR/PR at Table VI-4.

[227] TIMET's Postconference Brief at 34-35; CR/PR at Table VI-7.

[228] Although we determined that the statutory requirements for cumulation were not satisfied, we would have reached the same result under a cumulated analysis. We acknowledged that the volume of imports for each subject country increased at the end of the POI. Measuring such volume on a cumulated basis would have magnified both subject import volume and the increase in that volume, as well as any likely increases in the imminent future. However, it would not have changed our conclusions concerning the lack of effects caused by current or likely subject import volumes. Our conclusions that the record provides no data to support a finding that there was or will likely be significant underselling by the subject imports or that the subject imports have or are likely to have significant price-depressing or price–suppressing effects pertain to the nature of the data in the record concerning domestic industry pricing and are equally applicable to a cumulated analysis of subject imports. By the same token, our findings concerning the lack of any current or likely causal link between the subject imports and the domestic industry's condition would be equally applicable to a cumulated analysis of subject imports.

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 Titanium Metals Corporation ("TIMET"), Exton, Pennsylvania on August 24, 2017, alleging that an industry in the United States is materially injured and threatened with material injury by reason of less-than-fair-value ("LTFV") imports of titanium sponge[1] from Japan and Kazakhstan and subsidized imports from Kazakhstan. The following tabulation provides information relating to the background of these investigations.[2] [3]

Effective date	Action
August 24, 2017	Petition filed with Commerce and the Commission; institution of Commission investigation (82 FR 41656, September 1, 2017)
September 13, 2017	Commerce's notice of initiation of antidumping investigations (82 FR 43939, September 20, 2017)
September 13, 2017	Commerce's notice of initiation of countervailing duty investigation (82 FR 43936, September 20, 2017)
September 14, 2017	Commission's conference
October 6, 2017	Commission's vote
October 10, 2017	Commission's determination
October 17, 2017	Commission's views

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

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

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

STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

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 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*

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

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, alleged 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.

MARKET SUMMARY

Titanium sponge is the basic form of titanium metal that results from the chemical reduction of titanium-bearing ores and slag,[6] and is typically processed further for eventual use in rotating engine parts for the aerospace industry (for premium grade sponge) or for non-aerospace industrial applications (for standard grade sponge). TIMET is currently the only U.S. producer of titanium sponge, while leading producers of titanium sponge outside the United States include Osaka Titanium Technologies Co., Ltd. ("OTC") and Toho Titanium Company, Ltd. ("Toho") of Japan, and Ust-Kamenogorsk Titanium and Magnesium Plant JSC ("UKTMP") of Kazakhstan. The leading U.S. importers of titanium sponge from Japan in 2016 were ***, ***[7], and ***, while the sole importer of titanium sponge from Kazakhstan in 2016 was ***. Leading importers of titanium sponge from nonsubject countries (primarily Russia) include ***. *** was the only firm to report purchases of titanium sponge.

[5] Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.
[6] Petition, p. 10.
[7] ***.

Apparent U.S. consumption of titanium sponge totaled approximately *** metric tons ("MT") ($***) in 2016. U.S. producers' U.S. shipments of titanium sponge totaled *** MT ($***) in 2016, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. shipments of imports from subject sources totaled 15,436 MT ($173.1 million) in 2016 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. shipments of imports from nonsubject sources totaled *** MT ($***) in 2016 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.[8]

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 U.S. production of titanium sponge during 2016.[9] U.S. import data are based on the questionnaire responses of eight firms that accounted for virtually all imports of titanium sponge from Japan and Kazakhstan in 2016, based on proprietary Customs records.

PREVIOUS AND RELATED INVESTIGATIONS

In 1968, the Department of the Treasury issued an antidumping duty finding on titanium sponge from the U.S.S.R. after the Commission determined that the U.S. industry was being injured by reason of less than fair value imports of titanium sponge from the U.S.S.R. In 1984, Commerce published an antidumping duty order on titanium sponge from Japan following the Commission's determination that an industry in the United States was threatened with material injury by reason of less than fair value imports of titanium sponge from Japan.

In 1998, the Commission instituted changed circumstances reviews and subsequently determined that revocation of the antidumping duty orders covering imports of titanium sponge from Japan, Kazakhstan, Russia and Ukraine[10] was not likely to lead to continuation or recurrence of material injury to the U.S. industry. As a result of the determination by the Commission, Commerce revoked the antidumping duty orders on titanium sponge from the

[8] U.S. producers and U.S. importers reported almost no U.S. commercial shipments, therefore, in this report discussion of U.S. shipments refers primarily to total U.S. shipments (inclusive of U.S. commercial shipments, internal consumption, and transfers to related firms).

[9] TIMET is the only U.S. producer currently producing titanium sponge. ATI ceased production of titanium sponge in 2016.

[10] In 1992, Commerce changed the original antidumping order against the U.S.S.R. to 15 separate antidumping duty orders covering the independent states formed from the dissolution of the Soviet Union. Commerce subsequently revoked all of those orders prior to 1998 except the orders on imports from Kazakhstan, Russia, and Ukraine.

former Soviet states, Kazakhstan, Russia and Ukraine, and the antidumping duty order on titanium sponge from Japan, effective August 13, 1998.[11]

NATURE AND EXTENT OF ALLEGED SUBSIDIES AND SALES AT LTFV

Alleged subsidies

On September 20, 2017, Commerce published a notice in the *Federal Register* of the initiation of its countervailing duty investigation on titanium sponge from Kazakhstan.[12] Commerce identified the following government programs in Kazakhstan for which it intends to conduct investigations:

- Preferential Government Loan—State Program of Industrial Innovative Development (SPIID)
- Preferential Duty Waiver On Titanium Oxides
- Discounted Electricity Tariffs

Alleged sales at LTFV

On September 20, 2017, Commerce published a notice in the Federal Register of the initiation of its antidumping duty investigations on titanium sponge from Japan and Kazakhstan.[13] Commerce has initiated antidumping duty investigations based on estimated dumping margins of 69.69 percent to 95.20 percent for titanium sponge from Japan and 42.22 percent for titanium sponge from Kazakhstan.

[11] See Petition, p. 8, and *Titanium Sponge From Japan, Kazakhstan, Russia, and Ukraine, Inv. Nos. 751-TA-17-20*, USITC Pub. 3119, p. 3.

[12] *Titanium Sponge From Kazakhstan: Initiation of Countervailing Duty Investigation*, 82 FR 43936, September 20, 2017.

[13] *Titanium Sponge From Japan and Kazakhstan: Initiation of Less-Than-Fair-Value Investigations*, 82 FR 43939, September 20, 2017.

THE SUBJECT MERCHANDISE

Commerce's scope[14]

Commerce has defined the scope of these investigations as follows:

> *The product covered by these investigations is all forms and grades of titanium sponge, except as specified below. Titanium sponge is unwrought titanium metal that has not been melted. Expressly excluded from the scope of this investigation are:*
> *(1) Loose particles of unwrought titanium metal having a particle size of less than 20 mesh (0.84 mm);*
> *(2) alloyed or unalloyed briquettes of unwrought titanium metal that contain more than 0.2% oxygen on a dry weight basis; and*
> *(3) ultra-high purity titanium sponge. In ultra-high purity titanium sponge, metallic impurities do not exceed any of these amounts:*

	WT %
Aluminum	0.0005
Chromium	0.0001
Cobalt	0.0001
Copper	0.0002
Iron	0.0300
Manganese	0.0010
Nickel	0.0002
Vanadium	0.0002
Zirconium	0.0005
Carbon	0.0150
Hydrogen	0.0100
Nitrogen	0.0020
Oxygen	0.1000

[14] *Titanium Sponge From Kazakhstan: Initiation of Countervailing Duty Investigation*, 82 FR 43936, September 20, 2017; *Titanium Sponge From Japan and Kazakhstan: Initiation of Less-Than-Fair-Value Investigations*, 82 FR 43939, September 20, 2017.

Tariff treatment

Based upon the scope set forth by the Department of Commerce, information available to the Commission indicates that the merchandise subject to these investigations are imported under statistical reporting number 8108.20.0010 of the Harmonized Tariff Schedule of the United States ("HTS"). The 2017 general rate of duty is 15 percent *ad valorem* for HTS subheading 8108.20.00.[15] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

THE PRODUCT

Description and applications

Titanium sponge is a porous, brittle, unwrought[16] form of titanium, a metal that is highly valued for its physical characteristics, including a high strength-to weight ratio (the highest of any metallic element), resistance to corrosion, and the ability to bond with high-strength polymers. These physical properties make titanium ideal for certain aerospace, military, and industrial applications.[17] Typically, titanium sponge (sometimes mixed with scrap titanium metal) is melted down to make titanium ingots, before being further processed through various manufacturing processes, depending on the intended end use of the final product. Titanium sponge is produced to meet ASTM International Standard B299-13,[18] and depending upon the grade of sponge, may also meet other industry standard specifications.

The two major grades of titanium sponge subject to these investigations are premium-quality and standard-quality sponge.[19] Premium quality, which is commonly referred to as "rotor grade," is used in rotating engine parts for the aerospace industry. Manufacturers of

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[15] Although Kazakhstan is eligible for the Generalized System of Preferences (GSP) Program, imports of titanium sponge from Kazakhstan entering under HTS 8108.20.0010 are not eligible for duty-free treatment, as the benefit under HTS 8108.20.00 is reserved for designated least-developed beneficiary countries. USITC, HTSUS (2017) — Revision 1, July 1, 2017, p. 81-5 and General Note p. 13.

[16] Unwrought titanium comes in the form of ingots, briquettes, sponge, powder, and other semi-manufactured forms of titanium metal that are used in the production of titanium mill products, and is classified under HS subheading 8108.20.

[17] Metal Supermarkets, "The Strongest Metals," October 22, 2015, https://www.metalsupermarkets.com/the-strongest-metals/, (accessed September 18, 2017).

[18] ASTM B299-13 covers virgin titanium metal melting stock, and is commonly designated as titanium sponge due to its sponge-like and porous texture. For more information, see: ASTM International, "ASTM B299-13 Standard Specification for Titanium Sponge," https://www.astm.org/Standards/B299.htm.

[19] Ultra-high purity titanium sponge is excluded from the scope of this investigation. Unlike premium and standard-quality titanium sponge, ultra-high purity sponge is produced using a sodium reduction process. Ultra-high purity has a different chemical composition from the subject product (see Commerce's scope), and different end uses (it is typically used in semiconductors).

rotating engine parts and aircraft engines such as Pratt & Whitney, General Electric (GE), Rolls Royce, and Safran; as well as the Original Equipment Manufacturers (OEMs) that assemble aircraft, (e.g. Airbus and Boeing), require that premium-quality titanium sponge producers complete a certification process to demonstrate they have sufficiently strict quality control systems in place to ensure that their product is free of dangerous technical flaws. According to the petitioner, it can take as long as seven years for a titanium sponge producer to receive this certification to produce premium-quality titanium sponge used in rotating engine parts.[20] In addition to having this certification, premium may also differ from standard-quality titanium sponge by having lower quantities of trace elements that make up its chemical composition.[21]

Standard grade can be used in airframes and non-rotating parts of aircraft engines, and in non-aerospace industrial applications such as equipment for desalination,[22] nuclear power plants,[23] chemical processing equipment,[24] medical implants, and others products.[25] Although premium and standard-quality titanium sponge are designated for different end uses, the petitioner indicated that both grades share similar production costs, product sold as standard-grade titanium sponge often meets the chemical requirements established for premium-grade, and premium-grade can serve as a substitute for standard grade.[26] One respondent also noted that downstream manufacturers may choose to use premium-quality titanium sponge in standard grade applications, but this would depend on the availability of the material to the manufacturer.[27]

Depending on the intended end use of a downstream titanium mill product, titanium sponge can be alloyed with other metals such as aluminum, molybdenum, tin, vanadium, and zirconium. [28] It can also be blended with titanium scrap metal before being melted in a vacuum arc furnace. Due to the presence of higher levels of oxygen in titanium scrap metal, a melter cannot fully rely on scrap as a substitute for titanium sponge, and must therefore blend it with sponge to lower the oxygen content. The ratio of scrap to sponge used during the melting

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[20] Conference transcript, p. 89-90 (Seiner). According to the petitioner, each major purchaser may have its own certification process that can vary in terms of quantity of sponge produced, testing of the product, and inspection procedures.

[21] Conference transcript, p. 154-155 (Halford).

[22] International Titanium Association, "Titanium Industrial Business Opportunities in Global Desalination," http://www.titanium.org/default.asp?page=TTIndustryQ120132, (accessed September 15, 2017).

[23] The Fabricator, "Titanium Trends," March 9, 2009, http://www.thefabricator.com/article/tubepipefabrication/titanium-trends, (accessed September 15, 2017).

[24] Conference transcript, p. 172-173 (Forsythe).

[25] Titanium Industries, "Latest News," http://titanium.com/the-most-fascinating-titanium-uses/, (accessed September 15, 2017).

[26] Petition, p. 21.

[27] Conference transcript, p. 178 (Forsythe).

[28] The following manufacturing steps apply to nonsubject products for which titanium sponge serves as an input.

process depends on a variety of factors, including end-user specifications, the availability of scrap, and the price of scrap relative to titanium sponge.[29] Prior to the melting process, titanium sponge and scrap metal are compacted using a press, and are then joined together by an arc melting in a vacuum or in an inert gas (usually argon) into an electrode. This electrode is then melted down, and the molten titanium metal is cooled in a crucible and solidifies to produce a first-melt ingot. Ingots are typically melted one or two more times to rid the metal of any contaminants and obtain the level of quality specified by the end user.[30]

Figure I-1
Titanium sponge: Various forms

Images of titanium sponge in its various forms, clockwise (from top left): Compacted in a cylindrical shape (120 grams), crushed, large mass after production.

Sources: Chemical Elements: A Virtual Museum, "22 Ti Titanium," http://images-of-elements.com/titanium.php, (accessed September 15, 2017); Toho Titanium Co., "Titanium Metals – Titanium Sponge," https://www.toho-titanium.co.jp/en/products/sponge.html, (accessed September 15, 2017); Japan Metal Bulletin, "Osaka Titanium Technologies Seeks Stable Sponge Material Procurement," September 2, 2011, http://www.japanmetalbulletin.com/?p=17804, (accessed September 15, 2017).

[29] Conference transcript, p. 92 (Seiner).

[30] OTC, "Titanium ingot," http://www.osaka-ti.co.jp/e/e_product/titan/ingot.html, (accessed September 18, 2017).

Manufacturing processes

Raw materials

The production of titanium sponge starts with titanium concentrates such as rutile and ilmenite. Most ilmenite and rutile used in the production of titanium sponge in the United States is imported from other countries. Two companies, Chemours[31] and Southern Ionics Minerals[32] operate mines near Starke, Florida and Nahunta, Georgia; however, production at these mines has declined in recent years. Major global producers of ilmenite include South Africa, China, and Australia, while Australia and Sierra Leone are major producers of rutile.[33] Rutile can be used as feedstock in its natural form, however ilmenite requires further processing in order to remove iron and obtain a level of a compound known as titanium dioxide (TiO_2) of at least 85 percent.[34] Titanium sponge can also be produced using synthetic rutile, which is a chemically modified form of ilmenite,[35] and titanium slag, which is an upgraded byproduct derived from ilmenite.[36]

The Kroll process

Globally, most titanium sponge producers use the Kroll process to produce premium and standard quality titanium sponge (figure I-2). The first step of the Kroll process is known as chlorination. During this step, raw materials such as ilmenite, rutile, synthetic rutile, and titanium slag, all containing titanium dioxide, are combined with chlorine gas (Cl_2) and coke to produce a chemical compound known as titanium tetrachloride ($TiCl_4$).[37] The titanium tetrachloride is then reduced in a steel reactor with magnesium, by heating the mixture to approximately 2,012 degrees Fahrenheit through a vacuum distillation process. This process produces a large mass of titanium sponge (composed of multiple grades of sponge) and

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[31] Chemours, "About Our Plant," https://www.chemours.com/Florida_Mine/en_US/about.html, (accessed September 12, 2017).

[32] Southern Ionic Minerals, "Our Facilities," http://www.southernionicsminerals.com/facilities/, (accessed September 12, 2017).

[33] Bedinger, George. U.S. Geological Survey, Mineral Commodity Summaries, "Titanium Mineral Concentrations," January 2017, https://minerals.usgs.gov/minerals/pubs/commodity/titanium/mcs-2017-titan.pdf, (accessed September 12, 2017).

[34] How Products are Made, "Titanium: The Manufacturing Process," http://www.madehow.com/Volume-7/Titanium.html, (accessed September 18, 2017).

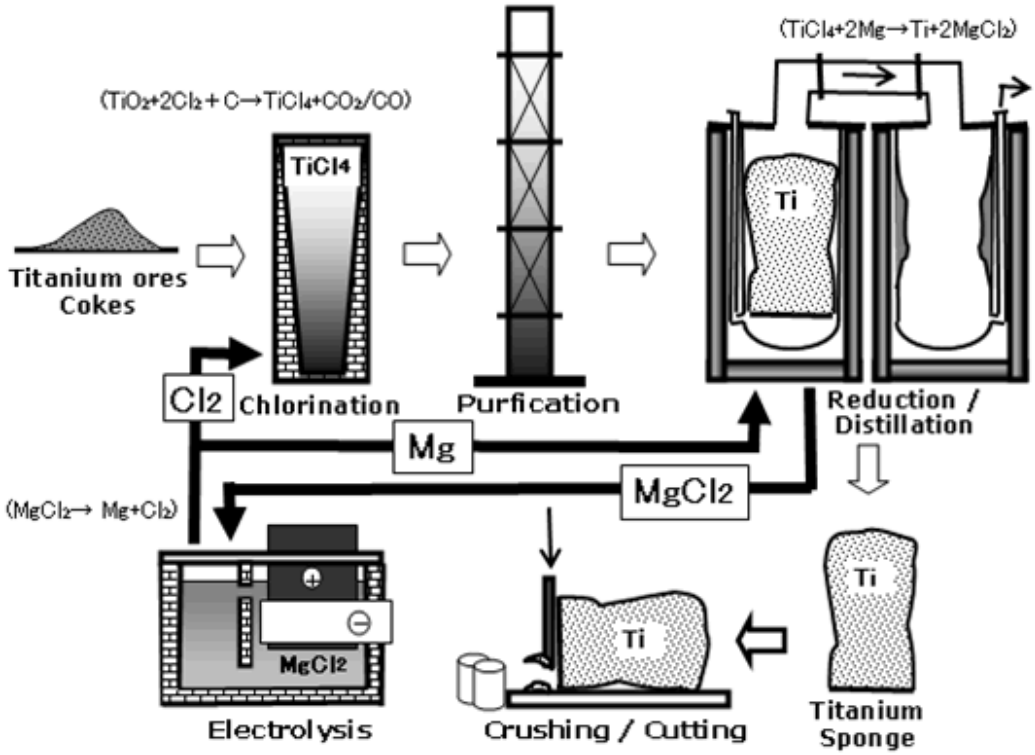
[35] Iluka, "Synthetic Rutile," https://www.iluka.com/docs/3.3-operations/synthetic-rutile.pdf, (accessed September 12, 2017).

[36] Tronox, "Titanium slag," http://www.tronox.com/products/titanium-slag/, (accessed September 13, 2017).

[37] Titanium tetrachloride (TiCl4) is commonly referred to as "tickle" in the titanium sponge industry.

magnesium chloride as a byproduct. Some titanium sponge producers have the capability to recover the magnesium and chlorine and reuse these materials.[38]

Figure I-2
Titanium sponge: The Kroll process



Source: Titanium Exposed, "Titanium industries – one metal, a thousand possibilities," http://www.titaniumexposed.com/titanium-industries.html, (accessed September 7, 2017).

Chlorine and magnesium recovery

During the recovery process, producers reduce magnesium chloride into magnesium and chlorine through an electrolytic decomposition process. However, even with this byproduct recovery capability, a small amount of raw chlorine and magnesium is needed to supplement the recovered byproduct.[39] During the POI, ATI's titanium sponge facility in Rowley, Utah was one of the only major production facilities in the world that did not have integrated chlorine and magnesium recovery capabilities.[40]

[38] How Products are Made, "Titanium: The Manufacturing Process."
[39] Conference transcript, p. 90-91 (Seiner); p. 157 (Thomas); p. 157 (Sando).
[40] Conference transcript, p. 157 (Sims).

Crushing, screening, and sorting

Prior to storage and transport, the titanium sponge is crushed into smaller particles that are sorted, screened, and tested. It is during this process that premium and standard-quality sponge are graded. Steel drums are used to store titanium sponge and transport it to customers. Producers infuse these steel drums with argon gas to prevent the titanium sponge from reacting with oxygen to preserve the quality of the sponge and to prevent a potentially explosive reaction.[41] [42]

DOMESTIC LIKE PRODUCT ISSUES

No issues with respect to domestic like product have been raised in these investigations. Petitioner proposes a single domestic like product, co-extensive with the scope of the investigations.[43] Respondents do not contest Petitioner's proposed like product definition for the purposes of the preliminary phase of these investigations.[44]

[41] Petition, Vol. 1, p. 11.

[42] This is the last step in the production process for subject titanium sponge. Titanium sponge is used as an input in the production of downstream titanium mill products, in addition to other materials such as titanium scrap metal and alloying metals.

[43] Petitioner's postconference brief, p. 5.

[44] Conference transcript, p. 163-164.

PART II: CONDITIONS OF COMPETITION IN THE U.S. MARKET

U.S. MARKET CHARACTERISTICS

Titanium sponge is the primary input in the manufacturing of titanium mill products, such as titanium ingots, billets, sheets or plates. Titanium sponge may be produced in either a standard quality grade or a premium quality grade, both of which have different end uses and are differentiated by the amount of trace elements they contain.[1] The titanium sponge is finished to the customer's specified grade and trace elements, and is sold throughout the United States.

Premium quality grades of titanium sponge are used to produce premium titanium ingots and other mill products, while standard quality grades of titanium sponge are used in the production of standard titanium ingots and other mill products. Standard and premium quality titanium sponge is used in a variety of applications, such as commercial and military aircraft, satellites, naval vessels, power plants, automotive products, biomedical devices, jewelry, bicycles, etc., with the grade, in some cases, depending on the end use. For example, both grades of titanium sponge are used in airframe and engine applications, but only premium quality titanium sponge can be used in rotating engine parts, while standard quality titanium sponge can be applied to airframes and the static, non-rotating parts of engines.

The domestic industry is highly concentrated, with two U.S. producers, ATI and TIMET, accounting for 100 percent of U.S. production of titanium sponge during the period of investigation. ATI did not report any commercial shipments during 2014-2016 as all of its production of titanium sponge was internally consumed. TIMET also internally consumes the vast majority of its titanium production, with *** percent of TIMET's sponge production transferred to its affiliated melting plants in the United States, and the balance exported to TIMET's overseas affiliates.[2]

Foreign production and U.S. consumption of the subject product are also relatively concentrated. Three import sources account for more than *** percent of U.S. imports of subject titanium sponge. In terms of consumption, three purchasers and two domestic producers accounted for more than *** percent of total consumption in 2016; very little titanium sponge is for resale as the majority of purchases and production are for internal consumption.

Overall, apparent U.S. consumption of titanium sponge, by quantity, was ***percent lower in 2016 than in 2014 and *** percent lower than in 2015. Apparent U.S. consumption of titanium sponge fluctuated during 2014-2016, increasing from *** metric tons in 2014 to *** metric tons in 2015 before decreasing to *** metric tons in 2016.

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[1] Trace elements include nitrogen, carbon, sodium, magnesium, chloride, iron, silicon, hydrogen, water, oxygen, chromium, nickel, and others.

[2] Petition, Vol. I, p. 40.

CHANNELS OF DISTRIBUTION

U.S. producers and importers sold of subject merchandise ***, as shown in table II-1.

Table II-1
Titanium sponge: U.S. producers' and importers' U.S. commercial shipments, by sources and channels of distribution, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

GEOGRAPHIC DISTRIBUTION

Less than *** percent of U.S. production and less than *** percent of U.S. imports of titanium sponge is resold; the majority of production and imports are internally consumed by producers and importers. *** reported selling titanium sponge to the Midwest, Central Southwest, and Pacific Coast, while importers of subject merchandise from Japan reported selling to the Northeast and Midwest (table II-2). For U.S. producers, *** percent of sales were sold between 101 and 1,000 miles of the U.S. point of shipment and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. point of shipment and *** percent between 101 and 1,000 miles.

Table II-2
Titanium sponge: Geographic market areas in the United States served by U.S. producers and importers

Region	U.S. producers	Subject U.S. importers
		Japan
Northeast	---	2
Midwest	***	2
Southeast	---	---
Central Southwest	***	---
Mountain	---	---
Pacific Coast	***	---
Other[1]	---	---
All regions (except Other)	---	---
Reporting firms	***	2

[1] All other U.S. markets, including AK, HI, PR, and VI.
Note--No importers of titanium sponge from Kazakhstan provided data to this question.

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

SUPPLY AND DEMAND CONSIDERATIONS

U.S. supply

Domestic production

Based on available information, U.S. producers of titanium sponge have the ability to respond to changes in demand with small-to-moderate changes in the quantity of shipments of U.S.-produced titanium sponge to the U.S. market. Factors limiting responsiveness of supply include limited availability of unused capacity and inventories, limited ability to shift shipments from alternate markets, and limited ability to shift production from alternate products.

Industry capacity

Domestic capacity utilization increased from *** percent in 2014 to *** percent in 2015 before falling to *** percent in 2016. The increase in capacity utilization from 2014 to 2015 was driven primarily by an increase in production as both domestic producers increased production in 2015. A decrease in production was the primary factor for the decrease of capacity utilization from 2015 to 2016 as both domestic producers reduced production. Capacity utilization in January-June 2016 was *** percent and *** percent in January-June 2017. The primary reason for this difference is ATI's idling of production at the end of 2016; production of domestic titanium sponge was *** metric tons in January-June 2016 and *** metric tons in January-June 2017. This relatively moderate level of capacity utilization suggests that U.S. producers may have moderate ability to increase production of titanium sponge in response to an increase in prices.

Alternative markets

U.S. producers' exports, as a percentage of total shipments, decreased from *** percent in 2014 to *** percent in 2016, indicating that U.S. producers may have a limited ability to shift shipments between the U.S. market and other markets in response to price changes.[3] U.S. producers reported the *** as their principal export markets. U.S. producers reported limited foreign sales and distribution networks as barriers to exporting. U.S producers also stated that demand for titanium sponge is driven by the aerospace industry, which makes the United States, France, and Great Britain primary markets for U.S. produced titanium sponge.

[3] U.S. producers' exports, as a share of total shipments, were *** percent in January-June 2016 and *** percent in January-June 2017. TIMET represented *** percent of all export shipments during January 2014 – June 2017. These shipments were to its foreign affiliates in the United Kingdom and France.

Inventory levels

U.S. producers' inventories increased from 2014 to 2016. Relative to total shipments, U.S. producers' inventory levels increased from *** percent in 2014 to *** percent in 2016. These inventory levels suggest that U.S. producers may have some ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

*** responding U.S. producer stated that it could switch production from titanium sponge to other products. U.S. producer TIMET reported that the equipment is built for the sole purpose of producing titanium sponge and has "no other practical use."

Subject imports from Japan

Based on available information, producers of titanium sponge from Japan have the ability to respond to changes in demand with moderate changes in the quantity of shipments of titanium sponge to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and inventories and the ability to shift shipments from inventories.

Industry capacity

Japan's capacity utilization increased from *** percent in 2014 to *** percent in 2016. The increase is primarily attributed to an increase in production, as overall production capacity remained steady during the period of investigation.[4] This relative high level of capacity utilization suggests that Japan producers have limited ability to increase production of titanium sponge in response to an increase in prices.

Alternative markets

Japanese shipments to markets other than the United States, as a percentage of total shipments, increased from *** percent in 2014 to *** percent in 2016. Shipments to domestic markets fell from *** percent in 2014 to *** percent in 2016. Japanese non-U.S.-market shipments indicate that producers may have some ability to shift shipments between domestic or other markets and the U.S. market in response to price changes.

[4] Overall production capacity for Japan remained unchanged from 2015 to 2016 at *** metric tons; production of titanium sponge increased from *** metric tons in 2015 to *** metric tons in 2016.

Inventory levels

Japanese inventories of titanium sponge increased from *** metric tons in 2014 to *** metric tons in 2016. Relative to total shipments, inventory levels increased from *** percent in 2014 to *** percent in 2016. These inventory levels suggest that responding foreign firms may have substantial ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

Responding foreign producers from Japan – *** and *** – stated that they *** switch production from titanium sponge to other products, but did not elaborate.

Subject imports from Kazakhstan

Based on available information, producers of titanium sponge from Kazakhstan have the ability to respond to changes in demand with moderate changes in the quantity of shipments of titanium sponge to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the availability of unused capacity. Factors mitigating responsiveness of supply include limited availability of inventories, limited ability to shift shipments from alternate markets or inventories, and limited ability to shift production to or from alternate products.

Industry capacity

Kazakhstan's capacity utilization increased from *** percent in 2014 to *** percent in 2016. This relatively low level of capacity utilization suggests that Kazakhstan producers may have substantial ability to increase production of titanium sponge in response to an increase in prices.

Alternative markets

Kazakhstan's shipments to domestic markets, as a percentage of total shipments, increased from *** percent in 2014 to *** in 2016, and shipments to export markets other than the United States, as a percentage of total shipments, decreased from *** percent in 2014 to *** percent in 2016. Kazakhstan's exports indicate that producers may have limited ability to shift shipments between other markets and the U.S. market in response to price changes.

Inventory levels

Relative to total shipments, inventory levels remain unchanged at *** percent from 2014 to 2016. These inventory levels suggest that responding foreign firms may have limited ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

The responding foreign producer stated it *** switch production from titanium sponge to other products, but did not elaborate.

Nonsubject imports

Nonsubject imports represented less than *** percent of total imports in 2016. The largest sources of nonsubject imports during 2014-2016 were Russia, Ukraine, and China. Combined, these countries accounted for *** percent of nonsubject imports in 2016.[5]

Supply constraints

No responding U.S. producers or importers reported any supply constraints since January 1, 2014. One of the main purchasing factors reported by importers and purchasers was the availability and reliability of supply. *** noted it must have a consistent and reliable supply of titanium to support its customers' long-term agreements. *** reported that it negotiated long-term titanium sponge supply agreements during 2014-2016 to match the length of the agreements with its customers. Purchasers and importers also noted that long-term agreements are negotiated 6-12 months in advance of a contract terminating to guarantee reliability and availability of supply. *** also reported that suppliers on its approved suppliers list are also audited on a scheduled basis to ensure compliance with its specifications. In testimony Allegheny Technologies Incorporated (ATI), a producer and purchaser of titanium sponge, cited the long-term supply commitments at globally competitive prices as a way to secure its ability to fulfill its contracts with downstream customers.[6] ATI reported that its decision to expand its sourcing of subject imports was made because there were no other U.S. sourcing options and insufficient volume to meet its downstream customers' needs.[7]

U.S. demand

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

[5] Official U.S. import statistics collected by the U.S. Census Bureau.
[6] Conference transcript, p.110 (Sims).
[7] Ibid.

End uses and cost share

U.S. demand for titanium sponge depends on the demand for U.S.-produced downstream products. Reported end uses include ingot, slab, electrodes, aerospace engines, airframes, medical devices, billet and bloom, and titanium mill products. Titanium sponge accounts for a moderate share of the cost of the end-use products in which it is used. Reported cost shares for some end uses were:

- 13 to 35 percent of ingot
- 30 percent of slab
- 30 percent of electrodes
- 17 to 25 percent for titanium mill products.

Business cycles

Both U.S. producers and three of eight importers indicated that the market was subject to business cycles or distinctive conditions of competition. *** reports that titanium sponge markets fluctuate with industrial and aerospace markets. Importer *** reported, "As our suppliers' and sub-tier suppliers' costs are in local currencies and the U.S. dollar is our transactional currency, foreign exchange is a variable component of the cost of titanium sponge. Changes in freight costs are another variable component of titanium sponge costs." *** U.S. producers and the majority of importers reported that there have been no changes to conditions of competition or business cycles for titanium sponge since 2014.

Demand trends

Most firms reported an increase in U.S. demand for titanium sponge since January 1, 2014 (table II-3).

Table II-3
Titanium sponge: Firms' responses regarding U.S. demand and demand outside the United States

Item	Increase	No change	Decrease	Fluctuate
Demand in the United States				
U.S. producers	***	***	***	***
Importers	4	3	---	---
Demand outside the United States				
U.S. producers	***	***	***	***
Importers	2	2	1	---

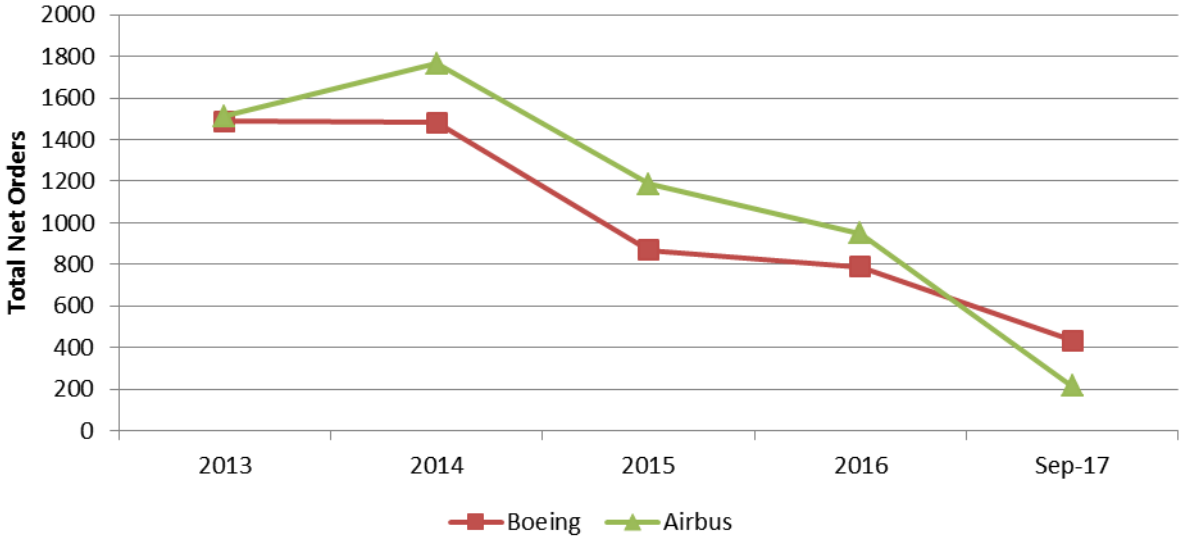
Source: Compiled from data submitted in response to Commission questionnaires.

TIMET reported a "clear" increase in demand since 2014, and an increase in imports of standard quality titanium sponge from Japan.[8] ATI pointed to growing demand for downstream

[8] Conference transcript, p. 69 (Seiner).

titanium mill products by the aerospace industry affecting the demand for titanium sponge,[9] along with changes in demand in the chemical processing, desalination, and industrial markets, also known as "commercially pure titanium markets".[10] As noted in Part V, long-term contracts for sales of titanium sponge and downstream products can extend for 5 to 10 years. According to estimates calculated by Deloitte, annual commercial aircraft production is anticipated to "increase by 29.3 percent over the next decade" despite decreases in orders since 2013 (figures II-1 and II-2).[11]

Figure II-1
History for large commercial aircraft orders, 2013 to September 2017



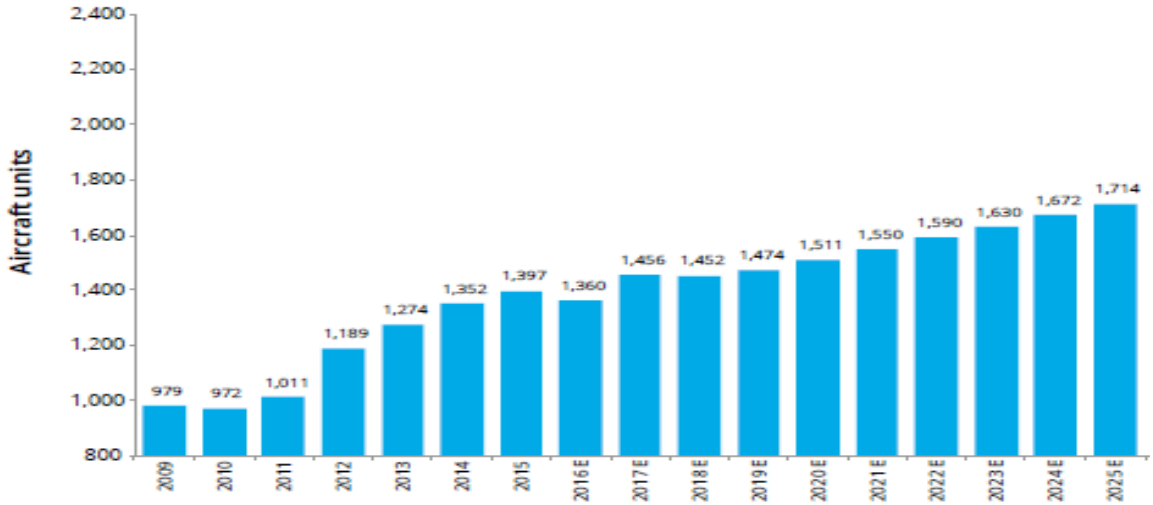
Source: The Boeing Company, "Order and deliveries," accessed in September, 2017 http://www.boeing.com/commercial/#/orders-deliveries; Airbus Group, "Orders and deliveries," accessed in September, 2017, http://www.aircraft.airbus.com/market/orders-deliveries/.

[9] Conference transcript, p. 111 (Sims).

[10] Conference transcript, pp. 172-173 (Forsythe).

[11] Deloitte analysis of the following data: The Boeing Company, "Order and deliveries," accessed in November, 2016 http://active.boeing.com/commercial/orders/index.cfm; Airbus Group, "Orders and deliveries," accessed in November, 2016, http://www.airbus.com/company/market/orders-deliveries/; UBS, US Aerospace and Defense Playbook, 14 October 2016; and Credit Suisse, Global Aerospace and Defense, 27 May 2016.

Figure II-2
Aircraft production, 2009 to 2025 (forecast)



Source: Deloitte, *2017 Global Aerospace and Defense Section Outlook: Growth Prospects Remain Upbeat*, accessed September 2017.

Substitute products

Substitutes for titanium sponge include titanium scrap. U.S. producer, TIMET, stated that when producing titanium ingot, alloying additions like aluminum and vanadium are added to the sponge, or a firm can use scrap that already has aluminum and vanadium in it. However, TIMET reported that it cannot produce titanium ingot exclusively out of the scrap due to its higher oxygen content.[12] Half of responding importers (four of eight) reported that there were no substitutes for titanium sponge.

SUBSTITUTABILITY ISSUES

The degree of substitution between domestic and imported titanium sponge depends upon such factors as relative prices, quality (e.g., grade standards, defect rates, etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, reliability of supply, product services, etc.). Based on available data, staff believes that there is moderate-to-high degree of substitutability between domestically produced titanium sponge and titanium sponge imported from subject sources.

Lead times

Titanium sponge is primarily sold from inventory. U.S. producers reported that *** percent of their commercial shipments were from inventory, with lead times averaging *** days. U.S. importers reported that *** percent of their commercial shipments were from

[12] Conference transcript, pp. 63-64 (Seiner).

foreign inventory, with lead times averaging 90 days. The remaining *** percent of their commercial shipments were produced to order, with lead times averaging *** days.

Factors affecting purchasing decisions

Purchasers responding to lost sales lost revenue allegations were asked to identify the main purchasing factors their firm considered in their purchasing decisions for titanium sponge. The most often cited top three factors firms considered in their purchasing decisions for titanium sponge were availability (3 firms), quality (2 firms), and terms of supply (2 firms). Purchasers cited a reliable and stable supply as an important purchasing factor due to the nature of downstream consumers of titanium products, such as the commercial aerospace sector, for which titanium mill producers must be able to supply on a long-term contractual basis, with terms often exceeding five years. Purchasers also reported that a diversified and reliable supply of titanium sponge is often a requirement of their customers.

Comparison of U.S.-produced and imported titanium sponge

In order to determine whether U.S.-produced titanium sponge can generally be used in the same applications as imports from Japan and Kazakhstan, U.S. producers and importers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-4, U.S. producers and most importers stated that titanium sponge from the United States and subject countries is “always” or “sometimes” interchangeable. U.S. producers and most importers reported that titanium sponge from nonsubject countries is “sometimes” interchangeable with domestic and subject country titanium sponge.

Table II-4
Titanium sponge: Interchangeability between titanium sponge produced in the United States and in other countries, by country pair

* * * * * * *

In addition, producers and importers were asked to assess how often differences other than price were significant in sales of titanium sponge from the United States, subject, or nonsubject countries. As seen in table II-5, U.S. producers *** differences other than price *** being significant in sales of titanium sponge, while most U.S. importers stated factors other than price are “never” significant in sales.

Table II-5
Titanium sponge: Significance of differences other than price between titanium sponge produced in the United States and in other countries, by country pair

* * * * * * *

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 U.S. production of titanium sponge during 2016.

U.S. PRODUCERS

The Commission issued a U.S. producer questionnaire to two firms based on information contained in the petition. Both firms provided usable data on their productive operations. Staff believes that these responses represent all U.S. production of titanium sponge in 2016.[1] As discussed in greater detail below, both U.S. producers directly import the subject merchandise.

Table III-1 lists U.S. producers of titanium sponge, their production locations, positions on the petition, and shares of total production.

Table III-1
Titanium sponge: U.S. producers, their position on the petition, location of production, and share of reported production, 2016

Firm	Position on petition	Production location(s)	Share of production (percent)
TIMET	Support	Henderson, NV	***
ATI	Oppose	Rowley, UT	***
Total			***

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

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

[1] TIMET is currently the only U.S. producer of titanium sponge. Conference transcript, p. 28 (Seiner). ATI operated a titanium sponge production facility in Rowley, Utah until 2016. The idling process for this facility began in August 2016, and was completed in December 2016. ATI 2016 Annual Report, retrieved from http://ir.atimetals.com/~/media/Files/A/ATIMetals-IR/annual-reports/ati2016ar.pdf, September 13, 2017, p. F-7.

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

* * * * * * *

Table III-3 presents U.S. producers' reported changes in operations since January 1, 2014.

Table III-3
Titanium sponge: U.S. producers' reported changes in operations, since January 1, 2014

* * * * * * *

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Table III-4 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. Capacity remained steady from 2014 to 2016, but was *** lower in January-June 2017 than in January-June 2016 following the closure of ATI's titanium sponge production facility in Rowley, UT. Production rose *** percent from 2014 to 2015, and then declined *** percent from 2015 to 2016, for an overall *** percent decline in production from 2014 to 2016. Production was *** percent lower in January-June 2017 than in January-June 2016, again due to the closure of ATI's Rowley, UT facility. Average capacity utilization rose *** percentage points from 2014 to 2015, and then declined *** percentage points from 2015 to 2016, for an overall decrease of *** percentage points from 2014 to 2016. Capacity utilization was *** percentage points lower in January-June 2017 than in January-June 2016. Both firms cited *** as the main constraint on production.[2]

[2] TIMET reports "***" as a constraint, while ATI reports that the "***". See U.S. producer questionnaire responses of TIMET and ATI, question II-3d.

Table III-4
Titanium sponge: U.S. producers' capacity, production, and capacity utilization, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Figure III-1
Titanium sponge: U.S. producers' capacity, production, and capacity utilization, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Alternative products

As shown in table III-5, *** percent of the product produced during 2016 by U.S. producers was in-scope product. *** reported producing other products, primarily ***.[3]

Table III-5
Titanium sponge: U.S. producers' overall capacity and production on the same equipment as subject production, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. PRODUCERS' U.S. SHIPMENTS AND EXPORTS

Table III-6 presents U.S. producers' U.S. shipments, export shipments, and total shipments. The majority of U.S. shipments were made up of internal consumption in 2016, accounting for *** percent of U.S. shipments by quantity and *** percent of U.S. shipments by value. Transfers to related firms constituted *** percent of U.S. shipments by quantity and *** percent of U.S. shipments by value in 2016.[4] U.S. commercial shipments totaled *** MT in 2016, or less than *** percent of U.S. shipments by quantity and less than *** percent of U.S. shipments by value. U.S. shipments made up *** percent of total shipments by U.S. producers in 2016, while export shipments made up *** percent of total shipments in 2016.

U.S. shipments by quantity declined *** percent from 2014 to 2016, and were *** percent lower by quantity in January-June 2017 than in January-June 2016. U.S. shipments by value declined *** percent from 2014 to 2016, and were *** percent lower by value in January-June 2017 than in January-June 2016. Export shipments decreased *** percent by quantity and *** percent by value from 2014 to 2016. TIMET ***.

---

[3] TIMET ***, however it reported that ***. ***, email to USITC auditor, September 18, 2017.

[4] TIMET reported ***. ***, email to USITC auditor, September 18, 2017.
ATI ***. ***, email to USITC auditor, September 18, 2017.

Table III-6
Titanium sponge: U.S. producers' U.S. shipments, export shipments, and total shipments, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. shipments by grade

Table III-7 presents U.S. producers' U.S. shipments of titanium sponge by grade. Most U.S. producers' U.S. shipments of titanium sponge in 2016 were premium grade. As a share of total quantity, U.S. shipments of this grade decreased by *** percentage points from 2014 to 2016, while U.S. shipments of standard grade titanium sponge increased by *** percentage points over the same period.

Table III-7
Titanium sponge: U.S. producers' U.S. shipments by type and source, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. PRODUCERS' INVENTORIES

Table III-8 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments**.** U.S. producers' inventories increased *** percent from 2014 to 2016, and were *** percent lower in January-June 2017 than in January-June 2016. As a ratio to U.S. production, inventories increased *** percentage points from 2014 to 2016, and as a ratio to U.S. shipments, inventories increased over the same period by *** percentage points.

Table III-8
Titanium sponge: U.S. producers' inventories, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. PRODUCERS' IMPORTS AND PURCHASES

U.S. producers' imports and purchases of titanium sponge are presented in table III-9. ATI's total imports of titanium sponge increased *** percent from 2014 to 2016, increasing as a ratio to its U.S. production by *** percentage points.[5] TIMET's total imports of titanium sponge decreased *** percent from 2014 to 2016, decreasing as a ratio to its U.S. production by *** percentage points.[6]

Table III-9
Titanium sponge: U.S. producers' direct imports, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-10 shows U.S. producers' employment-related data. From 2014 to 2016, total PRWs declined *** percent, with ***. Total hours worked declined *** percent and total wages paid declined *** percent from 2014 to 2016. Hours worked per PRW increased by *** percent from 2014 to 2016 and hourly wages rose *** percent over the same period. The decline in most employment data in January-June 2017 compared to January-June 2016 reflects ATI's closure of its Rowley, UT plant.

Table III-10
Titanium sponge: U.S. producers' employment related data, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

[5] ATI reported that its reason for importing was: "***." ATI's importer questionnaire response, question II-4.

[6] TIMET reported that its reason for importing was: "***." TIMET's importer questionnaire response, question II-4.

PART IV: U.S. IMPORTS, APPARENT U.S. CONSUMPTION, AND MARKET SHARES

U.S. IMPORTERS

The Commission issued importer questionnaires to 10 firms believed to be importers of subject titanium sponge, as well as to all U.S. producers of titanium sponge.[1] Usable questionnaire responses were received from eight companies,[2] representing *** percent of U.S. imports from Japan in 2016, and *** U.S. imports from Kazakhstan in 2016, under HTS subheading 8108.20.0010. Table IV-1 lists all responding U.S. importers of titanium sponge from Japan, Kazakhstan, and other sources, as well as their locations, and their shares of U.S. imports, in 2016.

Table IV-1
Titanium sponge: U.S. importers, their headquarters, and share of total imports by source, 2016

Firm	Headquarters	Share of imports by source (percent)				
		Japan	Kazakhstan	Subject sources	Nonsubject sources	All import sources
ATI	Pittsburgh, PA	***	***	***	***	***
Global Titanium	Detroit, MI	***	***	***	***	***
NF and M	Monaca, PA	***	***	***	***	***
Perryman	Houston, PA	***	***	***	***	***
RMI	Niles, OH	***	***	***	***	***
Sumitomo	Rosemont, IL	***	***	***	***	***
TIMET	Exton, PA	***	***	***	***	***
Toho	Houston, TX	***	***	***	***	***
Total		***	***	***	***	***

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

U.S. IMPORTS

Table IV-2 presents data for U.S. imports of titanium sponge from subject countries and all other sources. Imports of titanium sponge from subject countries increased 20.3 percent by quantity from 2014 to 2016, and were 40.6 percent higher in January-June 2017 than in January-June 2016. Imports from nonsubject sources decreased *** percent by quantity from

[1] The Commission issued questionnaires to those firms identified in the petition, along with firms that, based on a review of data provided by U.S. Customs and Border Protection ("Customs"), may have accounted for more than one percent of total imports under HTS subheading 8108.20.0010 in 2016.

[2] *** provided certification that it has not imported titanium sponge into the United States since January 1, 2014.

2014 to 2016, and were *** percent higher in January-June 2017 than in January-June 2016. According to submitted questionnaire responses, sources of nonsubject imports included ***.

Table IV-2
Titanium sponge: U.S. imports, by source, 2014-16, January to June 2016, and January to June 2017

Item	Calendar year			January to June	
	2014	2015	2016	2016	2017
	Quantity (metric tons)				
U.S. imports from.--Japan	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Subject sources	13,193	16,998	15,868	7,341	10,321
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
U.S. imports from.--Japan	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Subject sources	175,255	199,906	166,938	75,374	107,257
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Unit value (dollars per metric ton)				
U.S. imports from.--Japan	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Subject sources	13,284	11,761	10,520	10,268	10,392
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

* * * * * * *

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

Figure IV-1
Titanium sponge: U.S. import volumes and prices, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. IMPORTERS' SUBJECT U.S. SHIPMENTS AND EXPORTS

Table IV-3 presents subject U.S. importers' U.S. shipments, export shipments, and total shipments. Internal consumption constituted *** percent of total U.S. shipments by quantity in 2016, a *** percentage point increase from 2014. Commercial U.S. shipments accounted for *** percent of total U.S. shipments in 2016, a *** percentage point decrease from 2014.

Table IV-3

Titanium sponge: Subject U.S. importers' U.S. shipments, export shipments, and total shipments, 2014-16, January to June 2016, and January to June 2017

Item	Calendar year			January to June	
	2014	2015	2016	2016	2017
	Quantity (metric tons)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
U.S. shipments	15,812	13,800	15,436	7,377	12,420
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Value (1,000 dollars)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
U.S. shipments	217,841	171,024	173,099	81,801	133,267
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***
	Unit value (dollars per metric ton)				
Commercial U.S. shipments	***	***	***	***	***
Internal consumption	***	***	***	***	***
Transfers to related firms	***	***	***	***	***
U.S. shipments	13,777	12,393	11,214	11,089	10,730
Export shipments	***	***	***	***	***
Total shipments	***	***	***	***	***

* * * * * * *

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

NEGLIGIBILITY

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[3] Negligible imports are generally defined in the Tariff Act of 1930, 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.[4] As shown in table IV-4, Imports from Japan accounted for *** percent of total imports of titanium sponge by quantity from August 2016 to July 2017, while imports from Kazakhstan accounted for *** percent of total imports of titanium sponge by quantity from August 2016 to July 2017.

Table IV-4
Titanium sponge: U.S. imports in the twelve month period preceding the filing of the petition, August 2016 through July 2017

* * * * * * *

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

Table IV-5 and figure IV-2 present U.S. importers' U.S. shipments of titanium sponge by grade for 2014 to 2016, as well as January-June 2016 and January-June 2017. U.S. importers'

[3] 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)).

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

shipments of titanium sponge imported from Japan in 2016 were *** premium grade titanium sponge. Shipments of premium grade titanium sponge from Japan constituted a *** percent share compared to a *** percent share for standard grade. The share of U.S. shipments of premium grade titanium sponge from Japan was *** percentage points lower in 2016 than in 2014.

U.S. importers' shipments of titanium sponge imported from Kazakhstan in 2016 were *** standard grade titanium sponge. Reported U.S. shipments of premium grade titanium sponge from Kazakhstan in 2014 constituted a *** percent share of all U.S. shipments. In every other year or interim period of the POI, reported U.S. shipments of titanium sponge imported from Kazakhstan were *** standard grade titanium sponge.

Table IV-5
Titanium sponge: U.S. importers' U.S. shipments by grade, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Figure IV-2
Titanium sponge: U.S. imports, by source and type, January 2014 through June 2017 aggregated

* * * * * * *

Presence in the market

Table IV-6 and figure IV-3 present monthly imports of titanium sponge for January 2014 through June 2017. Subject imports from Japan were present in all 42 months. Subject imports from Kazakhstan were present in *** months. Imports from nonsubject sources were present in 39 months.

Table IV-6
Titanium sponge: U.S. imports, by source and month of entry, January 2014 to June 2017

Month of entry	Japan subject	Kazakhstan subject	Subject sources	Nonsubject sources	Total U.S. imports
	Quantity (metric tons)				
2014.--					
January	1,258	***	***	441	***
February	1,199	***	***	---	***
March	920	***	***	205	***
April	571	***	***	219	***
May	651	***	***	174	***
June	1,093	***	***	385	***
July	615	***	***	196	***
August	1,976	***	***	343	***
September	810	***	***	521	***
October	1,994	***	***	427	***
November	1,397	***	***	396	***
December	838	***	***	435	***
2015.--					
January	761	***	***	471	***
February	867	***	***	260	***
March	1,356	***	***	793	***
April	2,041	***	***	356	***
May	1,739	***	***	124	***
June	1,334	***	***	54	***
July	1,774	***	***	26	***
August	949	***	***	149	***
September	1,165	***	***	113	***
October	1,320	***	***	212	***
November	1,327	***	***	28	***
December	855	***	***	27	***

Table continued on next page.

Table IV-6--Continued.
Titanium sponge: U.S. imports, by source and month of entry, 2014-16, January to June 2016, and January to June 2017

Month of entry	Japan subject	Kazakhstan subject	Subject sources	Nonsubject sources	Total U.S. imports
	Quantity (metric tons)				
2016.--					
January	873	***	***	54	***
February	1,196	***	***	27	***
March	1,325	***	***	51	***
April	1,300	***	***	---	***
May	1,306	***	***	45	***
June	988	***	***	21	***
July	1,609	***	***	1	***
August	1,247	***	***	63	***
September	1,632	***	***	---	***
October	1,339	***	***	10	***
November	1,774	***	***	14	***
December	1,260	***	***	14	***
2017.--					
January	1,256	***	***	14	***
February	1,186	***	***	441	***
March	2,231	***	***	102	***
April	1,136	***	***	240	***
May	1,824	***	***	99	***
June	879	***	***	158	***

Source: Official U.S. import statistics and proprietary Customs records using HTS statistical reporting number 8108.20.0010, accessed September 20, 2017 and September 29, 2017.

Figure IV-3
Titanium sponge: U.S. imports, by source and month of entry, January 2014 to June 2017

* * * * * * *

Geographical markets

Table IV-7 presents U.S. imports of titanium sponge by border of entry in 2016. Most subject imports came in through *** points of entry, followed by *** and *** points of entry. *** nonsubject imports were imported through *** points of entry.

Table IV-7
Titanium sponge: U.S. imports, by source and border of entry, January 2014 through June 2017

Source	East	North	South	West	Total
	Quantity (metric tons)				
Japan	19,668	22,477	---	11,024	53,169
Kazakhstan	***	***	***	***	***
Subject sources	***	***	***	***	***
Ukraine	4,204	---	---	---	4,204
China	2,419	49	---	20	2,488
Russia	542	383	---	---	926
Switzerland	50	---	---	---	50
Korea	2	30	---	---	32
United Kingdom	4	---	---	---	4
Canada	1	0	0	---	1
Germany	0	---	---	0	0
Taiwan	---	---	0	---	0
Sweden	---	0	---	---	0
Nonsubject sources	7,223	462	0	21	7,706
All import sources	***	***	***	***	***

Note.--Shares and ratios shown as "0" represent values greater than zero, but less than "0.05" percent.

Source: Official U.S. import statistics and proprietary Customs records using HTS statistical reporting number 8108.20.0010, accessed September 20, 2017 and September 29, 2017.

APPARENT U.S. CONSUMPTION

Table IV-8 and figure IV-4 present data on apparent U.S. consumption for titanium sponge from 2014 to 2016, and for interim periods in 2016 and 2017.

Table IV-8
Titanium sponge: Apparent U.S. consumption, 2014-16, January to June 2016, and January to June 2017

Item	Calendar year			January to June	
	2014	2015	2016	2016	2017
	Quantity (metric tons)				
U.S. producers' total U.S. shipments	***	***	***	***	***
U.S. importers' total U.S. shipments from.--					
Japan	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Subject sources	15,812	13,800	15,436	7,377	12,420
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' total U.S. shipments	***	***	***	***	***
U.S. importers'total U.S. shipments from.--					
Japan	***	***	***	***	***
Kazakhstan	***	***	***	***	***
Subject sources	217,841	171,024	173,099	81,801	133,267
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***

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

Figure IV-4
Titanium sponge: Apparent U.S. consumption, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. MARKET SHARES

U.S. market share data are presented in table IV-9.

Table IV-9
Titanium sponge: Market share, 2014-16, January to June 2016, and January to June 2017

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PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

The primary raw material inputs for titanium sponge are titanium ore ilmenite and titanium ore rutile. Raw material costs represented *** percent and *** percent of the costs of goods sold for U.S. producers of titanium sponge in 2014 and 2016, respectively, and declined to *** percent in interim 2017 from *** percent in 2016. As seen in figure V-1, the cost of ilmenite declined by *** percent between January 2014 and February 2017, and increased *** percent between February 2017 and September 2017. The cost of rutile declined *** percent from January 2014 to September 2017. The cost of ilmenite declined by *** percent from January 2014 to June 2017, and the cost of rutile declined by *** percent during the same period.

Figure V-1
Raw materials: Titanium ore ilmenite ("ilmenite") and titanium ore rutile ("rutile"), dollars per ton, monthly, January 2014-September 2017

* * * * * * *

U.S. inland transportation costs

The sole responding U.S. producer, ***, reported that purchasers typically arrange transportation of titanium sponge, while importers reported typically arrange transportation of titanium sponge to their customers. *** reported U.S. inland transportation costs of *** percent, while most importers reported costs of *** to *** percent.

PRICING PRACTICES

Pricing methods

U.S. producers reported using *** sales, while importers reported using transaction-by-transaction negotiations, contracts, and other methods (table V-1).

Table V-1
Titanium sponge: U.S. producers' and importers' reported price setting methods, by number of responding firms[1]

* * * * * * *

*** reported that all of its commercial sales of titanium sponge were sold ***, while importers reported selling a large majority, *** percent, under long-term or annual contracts, with about *** under long-term contracts. They reported that long-term contacts can last anywhere from five to up to ten years.[1] As shown in table V-2, U.S. producers and importers reported their 2016 U.S. commercial shipments of titanium sponge by type of sale.

Table V-2
Titanium sponge: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2016

* * * * * * *

U.S. importers reported that annual and long-term contracts do not provide price renegotiation and fix prices and quantities. Purchasers provided a general description of their firms' method of purchase for titanium sponge. ATEP stated that it purchases "the entirety of {its} sponge requirements via long-term contracts executed following a formalized bid process".[2] Perryman stated that it only purchases titanium sponge through long-term contracts from approved suppliers.[3]

Sales terms and discounts

U.S. producer *** typically quotes prices on an f.o.b. basis, and U.S. importers typically quote prices on a delivered basis. The majority of U.S. producers and importers do not offer discounts. U.S. producer *** reported sales terms of net 30 days, and U.S. importers reported sales terms of net 30 days and net 60 days.

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 titanium sponge products shipped to unrelated U.S. customers during January 2014 to June 2017.

Product 1.-- Premium Quality Titanium Sponge that has been certified for use in critical rotating aero-engine end-use applications and does not contain more than, by percentage of weight, any of the following:

Al: 0.03; C: 0.02; Cl: 0.120; Fe: 0.080; H2O: 0.020; Mg: 0.060; N: 0.015; O: 0.08; Si: 0.04; Sn: 0.286; Ni: 0.03; H: 0.020; Cr: 0.030.

[1] Conference transcript, p. 127 (Kerwin).
[2] Conference transcript, p. 114 (Halford).
[3] Conference transcript, p. 119 (Perryman).

Product 2.-- Standard Quality Titanium Sponge that has not been certified for use in critical aero-engine end-use applications and/or contains more than, by percentage of weight, any of the following:

Al: 0.03; C: 0.02; Cl: 0.120; Fe: 0.080; H2O: 0.020; Mg: 0.060; N: 0.015; O: 0.08; Si: 0.04; Sn: 0.286; Ni: 0.03; H: 0.020; Cr: 0.030.

One U.S. producer and two importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[4] Pricing data reported by these firms accounted for approximately *** percent[5] of U.S. producers' commercial shipments of product and *** percent of U.S. shipments of subject imports from Japan in 2016.[6]

Price data for products 1-2 are presented in tables V-3 to V-4 and figures V-2 to V-3.

Table V-3
Titanium sponge: Weighted-average f.o.b. prices and quantities of domestic and imported product 1 and margins of underselling/(overselling), by quarters, January 2014- June 2017

* * * * * * *

Table V-4
Titanium sponge: Weighted-average f.o.b. prices and quantities of domestic and imported product 2 and margins of underselling/(overselling), by quarters, January 2014- June 2017

* * * * * * *

Figure V-2
Titanium sponge: Weighted-average prices and quantities of domestic and imported product 1, by quarters, January 2014- June 2017

* * * * * * *

Figure V-3
Titanium sponge: Weighted-average prices and quantities of domestic and imported product 2, by quarters, January 2014- June 2017

* * * * * * *

[4] 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.

[5] U.S. producer *** reported sales of *** of product 1 and 2 in its questionnaire, and reported *** of commercial shipments in its trade data submission.

[6] No importers reported commercial sales for imports from Kazakhstan. Commercial sales to unrelated parties represented less than *** percent of U.S. production and *** percent of total subject imports during 2016.

Import purchase cost data

Five importers provided usable import purchase cost data for their internal use of products 1 and 2 imported from Japan and Kazakhstan, although not all firms reported purchase cost data for all quarters. The amount of product internally consumed, as a share of total imports, represented approximately *** percent of total imports from Japan in 2016 and *** percent of imports from Kazakhstan. Import purchase cost data is presented in tables V-5 to V-6 and figures V-4 to V-5.

In addition to the import purchase cost data, firms that imported titanium sponge for their internal use estimated that logistical and supply chain costs (including ocean freight, duties, brokerage fees, harbor maintenance fees, and U.S. inland transportation costs) accounted for 1 to 5 percent of the landed duty-paid value. They also estimated that insurance costs ranged from less than 1 percent to about 2 percent, and that warehousing costs were up to 4 percent. All five importers reported that they do not compare their costs to those of other importers and U.S. producers.

In general, firms cited the limited availability of U.S.-produced titanium sponge as the main factor for purchasing imported titanium sponge for their own use. Other benefits of directly importing included the ability to approve foreign suppliers and ensure consistent product quality. *** firms provided estimates for margins saved by directly importing titanium sponge for their own use.

Table V-5
Titanium sponge: Weighted-average f.o.b. prices and quantities of domestic and landed duty paid costs of imported product 1, by quarter, January 2014-June 2017

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Table V-6
Titanium sponge: Weighted-average f.o.b. prices and quantities of domestic and landed duty paid costs of imported product 2, by quarter, January 2014-June 2017

* * * * * * *

Figure V-4
Titanium sponge: Weighted-average f.o.b. prices or landed duty-paid values and quantities of domestic and imported product 1, by quarters, January 2014- June 2017

* * * * * * *

Figure V-5
Titanium sponge: Weighted-average f.o.b. prices or landed duty-paid values and quantities of domestic and imported product 2, by quarters, January 2014- June 2017

* * * * * * *

Price trends

In general, prices decreased during January 2014 to June 2017. Table V-7 summarizes the price trends, by country and by product. As shown in the table, U.S.-produced product 1 prices increased by *** percent and priced for product 2 decreased by *** percent during January 2014 to June 2017, while import price decreases ranged from *** percent. Import purchase cost decreases ranged from *** percent during the period.

Table V-7
Titanium sponge: Summary of weighted-average f.o.b. prices for products 1-2 from the United States and each subject country

* * * * * * *

Price comparisons

As shown in table V-8, prices for titanium sponge imported from Japan[7] were below those for U.S.-produced product in *** instances ***; margins of underselling ranged from *** percent. Prices for product 1 imported from Japan were below those for U.S.-produced product 1 in ***; margins of underselling ranged from *** percent. Prices for product 2 from Japan were below those for U.S.-produced product 2 in ***. Prices for product 2 from Japan were between *** percent above prices for the domestic product.

Table V-8
Titanium sponge: Instances of underselling/overselling and the range and average of margins, by product, January 2014- June 2017

* * * * * * *

LOST SALES AND LOST REVENUE

The Commission requested that U.S. producers of titanium sponge report purchasers where they experienced instances of lost sales or revenue due to competition from imports of titanium sponge from Japan and Kazakhstan during 2014-2016. One U.S. producer, ***, submitted lost sales and lost revenue allegations, identifying three firms where it lost sales. The other responding U.S. producer, ***, did not report lost sales or revenue allegations. ***.

Staff contacted three purchasers and received responses from three purchasers. Responding purchases reported purchasing and importing *** kilograms of subject titanium sponge during 2014-2016 (table V-9).

During 2016, responding purchasers purchased *** percent from U.S. producers; purchased and/or imported *** percent of product from Japan, *** percent of product from Kazakhstan, and *** percent of product from nonsubject countries. Of the responding

[7] The Commission did not receive commercial pricing data from Kazakhstan.

purchasers, all three respondents reported not purchasing any domestic product during 2014-2016.

Purchasers were asked a series of questions regarding their sourcing decisions for titanium sponge. Of the three responding purchasers, two reported that, since 2014, they had either purchased imported titanium sponge or simply imported the product from Japan and Kazakhstan instead of U.S.-produced product. Only one of these purchasers reported data on subject import prices relative to U.S.-produced product prices. This firm reported that subject import prices were not lower than U.S.-produced product. Two of three purchasers reported that price was not a primary reason for purchasing imported product over U.S.-produced titanium sponge. All three respondents cited availability and reliability of supply as a major purchasing factor. Purchasers also noted that they did not receive formal offers of sale from domestic producers during 2014–2016.

Of the three responding purchasers, two reported that U.S. producers had not reduced prices in order to compete with lower-priced imports from subject countries (one reported that it did not know).

Table V-9
Titanium sponge: Purchasers' responses to purchasing and importing patterns

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Table V-10
Titanium sponge: Purchasers' responses to purchasing subject imports instead of domestic product

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Table V-11
Titanium sponge: Purchasers' responses to U.S. producer price reductions

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In responding to the lost sales lost revenue survey, some purchasers provided additional information on purchases and market dynamics. One of the three purchasers, ***, reported that the titanium sponge producers in the United States (TIMET) and Russia (VSMPO) are vertically integrated titanium melters that are not valid suppliers of titanium sponge on the open market. *** also reported that during 2014-2016, TIMET never brought any sponge to the open market for sale and never attempted to make a formal sales offer to it. *** also noted that TIMET is not an approved source for its titanium sponge purchases. TIMET would need to go through an approval process of 6 months to 3 years before its titanium sponge can be utilized by ***. Another purchaser, ***, noted that it did not offer any data on pricing because it never received formal commercial offers from any domestic producers.

PART VI: FINANCIAL EXPERIENCE OF U.S. PRODUCERS

BACKGROUND

This section of the report presents the financial data of ATI and TIMET, accounting for all known U.S. production of in-scope titanium sponge in 2016.[1] [2] Nearly all titanium sponge production in the United States is captively consumed as internal consumption or transfers to related firms.[3]

ATI, a public company, is a global manufacturer of technically advanced materials and complex components with 2016 sales of over $3 billion to aerospace & defense, OCTG, medical, automotive, and other industrial markets. It operates in two business segments: High Performance Materials and Components ("HPMC") and Flat Rolled Products. ATI's titanium sponge operations are part of the HPMC segment, which includes the production of titanium sponge at Rowley, Utah and the downstream production, conversion, and distribution of "a wide range of high performance materials."[4] In 2016, 75 percent of the HPMC segment sales were to the aerospace & defense market, "led by products for commercial aerospace jet engines."[5] ATI announced the indefinite idling of its Rowley, Utah titanium sponge production in August 2016 and completed the idling process in December 2016, resulting in $471 million of long-lived asset impairment charges.[6]

TIMET is a "fully integrated titanium component manufacturer" and part of the Forged Products segment of Precision Castparts Corp. ("PCC"), a public company. PCC operates three business segments: Investment Cast Products, Forged Products, and Airframe Products. The Forged Products segment of PCC includes the production of titanium and nickel-based alloys, revert management, re-melting, and seamless pipe at 92 manufacturing and administrative

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[1] Honeywell Electronic Materials ("Honeywell"), Salt Lake City, Utah, produces out-of-scope ultra-high purity crystalline titanium sponge used in the manufacturing of semiconductors using a sodium reduction process. Petition, p. 6.

[2] Financial results were reported on the basis of generally accepted accounting principles (GAAP). Both producers' fiscal years end on December 31 and reported all financial data in calendar years. Prior to Berkshire Hathaway's acquisition of PCC in February 2016, TIMET's fiscal year ended on March 31.

[3] TIMET ***.

[4] ATI's HPMC segment produces, converts, and distributes a wide range of high performance materials including: titanium and titanium-based alloys, nickel- and cobalt-based alloys and super-alloys, zirconium and related alloys including hafnium and niobium, advanced powder alloys and other specialty materials, in long product forms such as ingot, billet, bar, rod, wire, shapes and rectangles, and seamless tubes, plus precision forgings and castings, components and machined parts at over 20 locations in the United States and a number of locations worldwide. ATI 2016 Annual Report, retrieved from http://ir.atimetals.com/~/media/Files/A/ATIMetals-IR/annual-reports/ati2016ar.pdf, September 13, 2017, p. F-3 and F-14.

[5] Ibid., pp. 1 and F-3.

[6] Ibid., p. F-19.

locations in the United States and 27 additional locations worldwide.[7] PCC reported net sales of $2.8 billion in the Forged Products segment, with approximately 40 percent of PCC's sales in 2016.[8] On January 29, 2016, Berkshire Hathaway acquired TIMET's parent company, PCC, for $37.2 billion.[9]

OPERATIONS ON TITANIUM SPONGE

Table VI-1 presents aggregated data on U.S. producers' operations in relation to titanium sponge over the period examined; table VI-2 presents the change in average unit values for the data presented in table VI-1 between yearly periods; and table VI-3 presents selected company-specific financial data. One producer, TIMET, reported a very limited amount of open market sales that accounted for a less than *** percent of its total net sales.[10] Because of the very limited number of open market transactions, changes in volumes, values, and unit values (from year to year) for commercial sales many not be indicative of actual trends.

***.[11] Because of concerns regarding the representativeness of actual commercial sales as a surrogate for fair market value, fair market values for domestically-produced titanium sponge were not based on the very limited amount of open market sales from 2014 to June 2017 and the method used to value net sales varied between the two producers. ATI ***.[12] TIMET's ***.[13]

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[7] PCC's Forged Products segment manufactures "high-performance, nickel-based alloys used to produce forged components for aerospace and non-aerospace applications in such markets as oil and gas, chemical processing and pollution control." The products in the Forged Products segment include: fan discs, compressor discs, turbine discs, seals, spacers, shafts, hubs and cases, landing gear beams, bulkheads, wing structures, engine mounts, struts and tail flaps, and housings for commercial and military aircraft engines and industrial gas turbine power plants; mechanical and structural tubular products from steel and nickel alloys for domestic and international energy markets; and forged components for propulsion systems on nuclear submarines and aircraft carriers, forgings for pumps, valves and structural applications for naval defense applications. PCC's titanium products are used to manufacture components for the commercial and military aerospace, power generation, energy, and industrial end markets. Commercial aerospace represented the largest market for PCC's titanium alloys, with new generations of fuel-efficient aircraft, such as the Boeing 787 and Aribus A350, "increasing the content of titanium in airframe and engine applications." PCC 2016 10-KT Transition Report (as filed), pp. 3-6, 13, 17, and 57.

[8] Ibid., p. 17.

[9] Ibid., p. 61.

[10] TIMET ***. TIMET explained that ***. ***, email to USITC auditor, September 18, 2017.

[11] When asked for a reliable industry accepted fair market value methodology, ***. ATI responded: ***. ***, email to USITC auditor, September 18, 2017.

[12] ATI's ***. ***. ***, email to USITC auditor, September 18, 2017.

[13] Petition, GEN-26 to GEN-29. TIMET additionally noted: ***. ***, September 18, 2017. ***. ***, September 25, 2017.

In addition, ATI's internal consumption ***.[14] ATI ***. TIMET's internal consumption reflected ***.[15] TIMET classified ***.[16] Total net sales (composed of ***), *** by quantity and *** percent by value from 2014 to 2016. Total net sales quantity was higher in January-June 2017 than in January-June 2016 while total net sales values were lower.[17]

Although both ATI and TIMET use the Kroll process during the vacuum distillation stage to make titanium sponge, only TIMET is a fully integrated producer of titanium sponge. TIMET's Henderson plant is a "closed loop" facility that produces titanium sponge from reducing the titanium concentrates such as ilmenite, rutile, or titanium slag by reaction with chlorine gas and coke to form impure titanium tetrachloride ($TiCl_4$), commonly known as "tickle".[18] Tickle is then combined with magnesium using the Kroll process to form titanium sponge and magnesium chloride ($MgCl_2$). TIMET then recovers the magnesium for use for the feedstock of its titanium sponge production.[19] Unlike TIMET, ATI is not an integrated producer and must source all of its tickle and magnesium used in its Kroll process and cannot recover or recycle the magnesium chloride[20] or the titanium scrap at the end of the production process.[21]

ATI testified at the conference that tickle and magnesium prices increased, with transportation costs for tickle increasing *** percent. ATI reported that the raw material cost increases resulted in *** percent increase in the cost of titanium production.[22] ATI reported that it did evaluate whether to invest in a fully integrated chlorination facility to reduce its raw material costs for sourcing tickle, but concluded that the capital cost of this facility *** was

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[14] ATI ***.

[15] ***, email to USITC auditor, September 18, 2017.

[16] Ibid.

[17] ATI idled its plant in December 2016, ***.

[18] ATI purchased tickle under a long-term agreement with DuPont. Conference transcript, p. 79 (Seiner).

[19] TIMET testified that it is the largest magnesium producer in the United States but recycles all of its magnesium chloride into magnesium for titanium sponge production. Ibid., p. 91 (Seiner).

[20] ATI used another firm, U.S. Magnesium, to recycle the magnesium chloride. Ibid., p. 79 (Seiner).

[21] ATI reported ***. ATI U.S. producer questionnaire, II-3a and ***, email to USITC auditor, September 18, 2017. Revert is the recycled or scrap titanium that results from making sponge. Titanium scrap can be used for some portion of the downstream ingot production. TIMET testified at the conference that neither PQ or SQ titanium ingot can be made exclusively from revert/scrap because of the high oxygen content presence in the revert/scrap. Titanium sponge must be used to "sweet that scrap." Conference transcript, pp. 63-64, 92 (Seiner).

TIMET ***. ***, email to USITC auditor, September 18, 2017.

[22] The price of tickle had increased from ***. ATI stated that ***. ATI's postconference brief, p. 41 and exh. 4. ATI also reported additional transportation cost concerns regarding the availability of the raw material feedstock (tickle and magnesium). At the conference, ATI testified that tickle had to be "transported by rail across the United States before it could be processed into sponge at the Rowley facility. The cost of tickle supply and transportation were also increasing due to environmental concerns about the transportation and handling of toxic inhalants. There was also a risk that the railroads would not transport tickle at all." Conference transcript, p. 107 (Sims).

"prohibitive."[23] TIMET did not incur these costs for tickle since it makes its own tickle from upstream titanium concentrates. TIMET also makes most of its own magnesium and chlorine from recovered magnesium chloride.[24]

As a result of each producer sourcing different raw materials in the production of sponge, ATI reported *** raw material costs than TIMET. ATI must purchase tickle and magnesium as raw materials whereas TIMET manufactured its own tickle from purchases of rutile, ilmenite ore, or titanium slag and generated its own magnesium from recovered magnesium chloride. On a per-unit basis, ATI's raw material costs were approximately *** higher than those of TIMET, primarily due to the non-integrated process at ATI's Rowley facility.[25] Aggregated for both producers, raw materials, direct labor, other factory costs, and total COGS all *** from 2014 to 2016; raw materials and other factory costs were *** while direct labor was *** in January-June 2017 than in January-June 2016.

*** reported selling expenses. General and administrative expenses *** percent from 2014 to 2016 and were *** in January-June 2017 than in January-June 2016.[26] ATI continued to report *** for its idled plant, testifying that it still has a maintenance crew on site "maintaining critical pieces of equipment in the event of some global supply shortage of sponge...{it} can start up as kind of an emergency supply capability."[27]

ATI stated that one of the factors that negatively impacted the operating profit of its HPMC segment in 2015 and 2016 was the "strategic decision to use ATI-produced titanium sponge rather than lower cost titanium scrap to manufacture certain titanium products."[28] ATI explained its decision to idle the Rowley titanium sponge production in its 2016 annual report:

> "Over the last several years, significant global capacity has been added to produce titanium sponge, which is a key raw material used to produce ATI's

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[23] ATI's postconference brief, p. 42.

[24] TIMET reported that ***. ***, email to USITC auditor, September 18, 2017. TIMET purchases a "little bit" of chlorine and magnesium to "make up for traces that are lost in the closed loop process." Conference transcript, p. 78 (Seiner). TIMET explained that it purchases chlorine via pipeline from another producer in Nevada and most of the magnesium from U.S. Magnesium. Ibid., p. 78 (Seiner).

[25] TIMET testified that "sponge manufacturers try to make premium quality every time, but if when they have more PQ than what their customers need, they sell them the same sponge at a lower price, just marketed as SQ." TIMET testified that it costs the same to produce premium or standard quality titanium sponge and uses the same equipment and workers. Each production run results in an 18,000-pound batch of sponge, which is then sorted into quality types. The quality of sponge is certified by the end user throughout the production process. PQ is generally used for rotor applications such as jet engines and non-rotating parts in high stress applications such as landing gear. SQ can be used in most applications except rotor type. Ibid., pp. 39, 64-65 (Seiner).

[26] ATI's *** while TIMET's ***. ATI and TIMET producer questionnaires, III-4.

[27] ATI reported that the cost to restart the Rowley plant would be ***. These costs would include ***. The restart process would take six to nine months and the sponge produced would need to be recertified as standard or premium quality. Conference transcript, p. 176 (Sims) and ATI's postconference brief, exh. 4, no. 17.

[28] ATI 2016 Annual Report, retrieved from http://ir.atimetals.com/~/media/Files/A/ATIMetals-IR/annual-reports/ati2016ar.pdf, September 13, 2017, p. F-24 to F-25, and F-28.

titanium products. In addition, demand for industrial-grade titanium products from global markets continues to be weak. As a result of these factors, titanium sponge, including aerospace quality sponge, can now be purchased from qualified global producers under long-term supply agreements at prices lower than the production costs at ATI's titanium sponge facility in Rowley, UT.[29]

Restructuring our HPMC segment titanium operations to improve cost competitiveness, including the indefinite idling of the Rowley, UT titanium sponge production facility, which resulted in $514 million of restructuring charges, including $11 million of titanium sponge inventory revaluation classified in cost of sales in the consolidated statement of operations. We entered into long-term, cost competitive supply agreements with several leading global producers of premium-grade and standard-grade titanium sponge, with the lower cost titanium sponge purchased under these agreements replacing the titanium sponge produced at the Rowley facility. We recognized a $471 million asset impairment charge for the Rowley facility idling, along with $43 million primarily for related closure costs for Rowley."[30]

The operating income margin *** from *** percent of total net sales in 2014 to *** percent in 2015 and then declined to *** percent in 2016. Net income margin *** from *** percent of total net sales in 2014 to *** percent in 2015 and was *** percent in 2016 (primarily due to the asset impairment write-down of ATI's Rowley plant).[31] Both operating and net income margins were lower in January-June 2017 than in January-June 2017. ***.

Table VI-1
Titanium sponge: Results of operations of U.S. producers, 2014-16, January to June 2016, and January to June 2017

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Table VI-2
Titanium sponge: Changes in AUVs, between fiscal years and between partial year periods

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Table VI-3
Titanium sponge: Select results of operations of U.S. producers, by company, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

[29] Ibid., p. F-7.
[30] Ibid., pp. F-19-20.
[31] ATI reported ***.

CAPITAL EXPENDITURES AND RESEARCH AND DEVELOPMENT EXPENSES

Table VI-4 presents capital expenditures and research and development ("R&D") expenses by firm. TIMET accounted for the *** capital expenditures throughout the period examined, with total capital expenditures *** from 2014 to 2016 and *** in January-June 2017 than in January-June 2016. TIMET reported ***. ATI's reported ***. At the conference, ATI testified that it had to incur additional capital expenses related to "processing-related changes" in order to achieve PQ certification in 2015.[32] ATI idled its titanium sponge production in December 2016 and did ***.

Table VI-4
Titanium sponge: Capital expenditures and research and development expenses for U.S. producers, by firm, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

ASSETS AND RETURN ON ASSETS

Table VI-5 presents data on the U.S. producers' total assets and their return on assets ("ROA").[33] ROA is calculated as the ratio of operating income (or loss) to total assets. The aggregated trend for assets and ROA should be used with caution due to the indefinite idling of the Rowley plant in December 2016 and the aforementioned atypical aspects of reported revenue and costs (see page VI-9). For TIMET, total net assets *** from 2014 to 2016, but return on assets ***, *** from 2014 to 2015, but *** to a negative ROA from 2015 to 2016.

Table VI-5
Titanium sponge: U.S. producers' total assets and return on assets 2014-16

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CAPITAL AND INVESTMENT

The Commission requested U.S. producers of titanium sponge to describe any actual or potential negative effects of imports of titanium sponge from Japan and Kazakhstan on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-6 tabulates the responses of ATI and TIMET and table VI-7 presents the detailed narrative responses regarding actual and anticipated negative effects of subject imports. TIMET explained that its ***.[34]

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[32] Conference transcript, p. 177 (Sims).

[33] The return on assets 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 may have been required in order to report a total asset value for titanium sponge.

[34] ***, email to USITC auditor, September 18, 2017.

Table VI-6

Titanium sponge: Actual and anticipated negative effects of imports on investment and growth and development

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Table VI-7

Titanium sponge: Narratives relating to actual and anticipated negative effects of imports on investment and growth and development, since January 1, 2014

* * * * * * *

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,*

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[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 titanium sponge-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other titanium sponges,

(VII) in any investigation under this title which involves imports of both a raw agricultural titanium sponge (within the meaning of paragraph (4)(E)(iv)) and any titanium sponge processed from such raw agricultural titanium sponge, the likelihood that there will be increased imports, by reason of titanium sponge 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 titanium sponge or the processed agricultural titanium sponge (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 titanium sponge, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).[2]

Information on the nature of the alleged subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V*; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "titanium sponge-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."

THE INDUSTRY IN JAPAN

The Commission issued foreign producers' or exporters' questionnaires to two firms believed to produce and/or export titanium sponge from Japan.[3] Usable responses to the Commission's questionnaire were received from two firms: Toho Titanium Co., Ltd. ("Toho") and Osaka Titanium Technologies Co., Ltd ("OTC"). These firms' exports to the United States accounted for *** U.S. imports of titanium sponge from Japan in 2016. According to estimates requested of the responding producers in Japan, the production of titanium sponge in Japan reported in this part accounts for virtually all of the country's overall production. Table VII- 1 presents information on the titanium sponge operations of the responding producers and exporters in Japan.

Table VII-1
Titanium Sponge: Summary data for producers in Japan, 2016

Firm	Production (metric tons)	Share of reported production (percent)	Exports to the United States (metric tons)	Share of reported exports to the United States (percent)	Total shipments (metric tons)	Share of firm's total shipments exported to the United States (percent)
Toho	***	***	***	***	***	***
OTC	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

OTC is the second largest producer of titanium products (including sponge) in the world after Russia's VSMPO-AVISMA. As of March 31, 2016, OTC employed 746 permanent workers at its facilities in Amagasaki and Kishiwada, in addition to a sales office in Tokyo.[4] OTC produces high-quality or premium-grade titanium sponge and titanium ingots for a variety of end uses, in addition to titanium powder. Titanium sponge produced by OTC is used primarily in the production of components for aircraft engines.[5]

Toho produces titanium sponge, in addition to ingot, high-purity titanium, and powder, among other titanium products. In FY 2016, Toho employed 883 workers at five manufacturing facilities throughout Japan.[6] Toho uses electron beam (EB) melting and vacuum consumable arc

[3] These firms were identified through a review of information submitted in the petition.
[4] Osaka Titanium Technologies, "Outline," http://www.osaka-ti.co.jp/e/e_company/index.html, (accessed August 31, 2017).
[5] Osaka Titanium Technologies, "Products," http://www.osaka-ti.co.jp/e/e_product/index.html, (accessed August 31, 2017).
[6] Toho Titanium, "Corporate Profile," https://www.toho-titanium.co.jp/en/company/profile.html, (accessed August 31, 2017).

remelting (VAR) furnaces to melt titanium sponge and produce titanium ingots.[7] In January 2014, Toho agreed to establish a joint venture in Yanbu, Saudi Arabia with Saudi Arabia's National Industrialization Company (Tasnee) and the National Titanium Dioxide Company Ltd. (Cristal), to produce titanium sponge. The joint venture is expected to operate at a production capacity of 15,600 MT per annum and benefit from Toho's advanced sponge production technology and Saudi Arabia's low electric-power rates.[8]

Changes in operations

As presented in table VII-2 producers in Japan reported several operational and organizational changes since January 1, 2014.

Table VII-2
Titanium Sponge: Japan's producers' reported changes in operations, since January 1, 2013

* * * * * * *

Operations on titanium sponge

Table VII-3 presents information on the titanium sponge operations of the responding producers and exporters in Japan. Capacity increased from 2014 to 2015, which is attributed to ***. Production increased from 2014 to 2016 but was lower in January to July, 2017 than in January to July, 2016. Capacity utilization increased from *** percent in 2014 to *** percent in 2016, but was lower in January to June 2017 than in January to June 2016. Home market shipments, exports to the United States, and exports to the other markets increased from 2014 to 2016. Inventory levels also rose. In 2016, *** percent of total shipments were internally consumed and *** percent were commercial shipments.

*** reported production of alternative products on the same equipment used to produce titanium sponge.

[7] Toho Titanium, "Titanium Business," https://www.toho-titanium.co.jp/en/business/timetal.html, (accessed August 31, 2017).

[8] S&P Global Platts, "Japan's Toho Titanium, Saudi Arabian firms create sponge titanium joint venture," January 22, 2014, https://www.platts.com/latest-news/metals/tokyo/japans-toho-titanium-saudi-arabian-firms-create-27851949, (accessed September 11, 2017).

Table VII-3
Titanium sponge: Data on industry in Japan, 2014-16, January to June 2016, and January to June 2017 and projection calendar years 2017 and 2018

* * * * * * *

Exports

According to the International Titanium Association ("ITA"), the leading export markets for titanium sponge from Japan include the United States and the European Union (table VII-4). From 2014 to 2015, Japan's exports of titanium sponge increased by 28.1 percent, but then declined 7.0 percent from 2015 to 2016. The United States was the largest export market for titanium sponge from Japan during the POI, and accounted for 87.0 percent of Japan's exports during 2016. Exports to the United States increased by 30.7 percent during 2014-16. Japan's exports to its second largest export market, the European Union, increased by 90.8 percent from 2014 to 2015, but declined 65.8 percent from 2015 to 2016.

Table VII-4
Titanium sponge: Exports from Japan by destination market and quantity (metric tons), 2014-16

Destination market	Calendar year		
	2014	2015	2016
United States	12,768	15,105	16,685
European Union	2,556	4,878	1,668
All other	775	636	818
Total	16,099	20,619	19,171

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

Source: ITA, Statistical Review 2012-16, http://www.titanium.org/.

According to GTA, the leading export markets for unwrought titanium from Japan are the United States, the United Kingdom and Taiwan (table VII-5). During 2016, the United States was the top export market for titanium sponge from Japan, accounting for 86.4 percent, followed by the United Kingdom, accounting for 5.1 percent. Although data in Table VII-5 include products that are beyond the scope of this investigation, titanium sponge is believed to account for a significant share of the data reported.

Table VII-5
Unwrought titanium: Japan exports by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Quantity (metric tons)		
Japan exports to the United States	12,771	15,109	16,688
Japan exports to other major destination markets.--			
United Kingdom	2,156	4,145	981
Taiwan	460	422	510
Germany	380	497	279
Netherlands	83	245	277
South Korea	280	223	255
Spain	135	120	225
China	59	45	67
Ireland	3	2	8
All other destination markets	3	11	19
Total Japan exports	16,329	20,818	19,310
	Value (1,000 dollars)		
Japan exports to the United States	141,550	153,102	146,164
Japan exports to other major destination markets.--			
United Kingdom	25,142	41,837	11,066
Taiwan	2,643	2,520	2,212
Germany	4,070	5,475	2,433
Netherlands	880	2,456	1,431
South Korea	4,452	3,233	3,299
Spain	832	725	1,081
China	4,813	3,791	5,460
Ireland	552	444	1,732
All other destination markets	432	562	941
Total Japan exports	185,365	214,145	175,818

Table continued on next page.

Table VII-5--Continued
Titanium sponge: Japan exports by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Unit value (dollars per metric ton)		
Japan exports to the United States	11,084	10,133	8,759
Japan exports to other major destination markets.--			
United Kingdom	11,661	10,094	11,277
Taiwan	5,741	5,968	4,337
Germany	10,721	11,019	8,717
Netherlands	10,667	10,026	5,174
South Korea	15,887	14,512	12,949
Spain	6,161	6,035	4,797
China	82,084	84,851	81,362
Ireland	220,933	221,756	210,817
All other destination markets	130,767	52,363	48,879
Total Japan exports	11,352	10,287	9,105
	Share of quantity (percent)		
Japan exports to the United States	78.2	72.6	86.4
Japan exports to other major destination markets.--			
United Kingdom	13.2	19.9	5.1
Taiwan	2.8	2.0	2.6
Germany	2.3	2.4	1.4
Netherlands	0.5	1.2	1.4
South Korea	1.7	1.1	1.3
Spain	0.8	0.6	1.2
China	0.4	0.2	0.3
Ireland	0.0	0.0	0.0
All other destination markets	0.0	0.1	0.1
Total Japan exports	100.0	100.0	100.0

Note.-- Data extracted using HS subheading 8108.20 which includes out-of-scope data.

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Official exports statistics under HS subheading 8108.20 as reported by Japan Ministry of Finance in the IHS/GTA database, accessed September 15, 2017.

THE INDUSTRY IN KAZAKHSTAN

The Commission issued foreign producers' or exporters' questionnaires to one firm believed to produce and/or export titanium sponge from Kazakhstan.[9] A usable response to the Commission's questionnaire was received from one firm, Ust-Kamenogorsk Titanium and Magnesium Plant JSC ("UKTMP"). This firm's exports to the United States accounted for all of U.S. imports of titanium sponge from Kazakhstan over the period being examined. According to estimates requested of the responding producer in Kazakhstan, the production of titanium sponge in Kazakhstan reported in this small part of the report accounts for virtually all of the country's production in 2016. Table VII-6 presents information on the titanium sponge operations of the responding producer and exporter in Kazakhstan.

Table VII-6
Titanium sponge: Summary data on firms in Kazakhstan, 2016

Firm	Production (metric tons)	Share of reported production (percent)	Exports to the United States (metric tons)	Share of reported exports to the United States (percent)	Total shipments (metric tons)	Share of firm's total shipments exported to the United States (percent)
UKTMP	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

UKTMP is a fully integrated titanium producer and the sole producer of titanium sponge in Kazakhstan. UKTMP is believed to account for 14 percent of global titanium sponge production at its facility in Ust-Kamenogorsk, Kazakhstan.[10] UKTMP is one of the only known global producers of titanium sponge that has integrated upstream operations where the company mines its own titanium concentrates.[11] UKTMP also has a joint venture with the Korean steel producer POSCO that produces titanium slabs at UKTMP's operations in Kazakhstan.[12] UKTMP has another joint venture with French metals manufacturer Aubert & Duval (ERAMET Group) in France[13] that produces forged titanium products.[14]

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[9] These firms were identified through a review of information submitted in the petition.

[10] UKAD, "Partners," http://www.ukadforge.com/about-us/partners/, (accessed August 31, 2017).

[11] Conference transcript, p. 94 (Seiner) and Conference transcript, p. 188 (Thomas).

[12] France-Mateallurgie, "New titanium factory to be built in Kazakhstan," October 19, 2011, http://www.france-metallurgie.com/new-titanium-factory-to-be-built-in-kazakhstan-us/, (accessed September 18, 2017).

[13] Conference transcript, p.143 (Thomas).

[14] UKAD, "Home," http://www.ukadforge.com/, (accessed August 31, 2017).

Changes in operations

Table VII-7 presents UKTMP's reported operational changes since January 1, 2014.

Table VII-7
Titanium Sponge: Kazakh producers' reported changes in operations, since January 1, 2013

* * * * * * *

Operations on Titanium Sponge

Table VII-8 presents information on the titanium sponge operations of the responding producer and exporter in Kazakhstan. UKTMP did not report production of alternative products on the same equipment used to produce titanium sponge.

Table VII-8
Titanium sponge: Data on industry in Kazakhstan, 2014-16, January to June 2016, and January to June 2017 and projection calendar years 2017 and 2018

* * * * * * *

Exports

According to the ITA, Kazakhstan's exports of titanium sponge increased by 41.3 percent from 2014 and 2015 by quantity, but then declined by 39.9 percent from 2015 to 2016 (see table VII-9).

Table VII-9
Titanium sponge: Exports from Kazakhstan, Russia, and Ukraine, by quantity (metric tons), 2014-16

Item	Calendar year		
	2014	2015	2016
Kazakhstan	2,895	4,092	2,460
Russia	5,545	6,476	7,567
Ukraine	8,887	6,324	4,929
Total	17,327	16,892	14,956

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

Source: ITA, Statistical Review 2012-16, http://www.titanium.org/.

According to GTA, the leading export markets for unwrought titanium from Kazakhstan are Belgium, South Korea, and the United States (table VII-10). These countries accounted for 45.3 percent, 32.7 percent, and 11.6 percent of unwrought titanium exports by quantity from Kazakhstan, respectively, in 2016. Although data in Table VII-10 include products that are outside the scope of these investigations, titanium sponge is believed to account for a significant share of the data reported.

Table VII-10

Unwrought titanium: Exports from Kazakhstan by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Quantity (metric tons)		
Kazakhstan exports to the United States	1,125	2,190	900
Kazakhstan exports to other major destination markets.--			
Belgium	---	---	3,515
South Korea	960	712	2,540
Netherlands	4,275	4,450	645
India	390	15	150
Japan	---	300	14
France	---	22	---
United Kingdom	---	600	---
All other destination markets	---	---	---
Total Kazakhstan exports	6,750	8,289	7,764
	Value (1,000 dollars)		
Kazakhstan exports to the United States	10,058	17,270	6,104
Kazakhstan exports to other major destination markets.--			
Belgium	---	---	60,301
South Korea	5,731	4,287	19,126
Netherlands	69,114	73,369	2,274
India	4,551	78	1,065
Japan	---	2,340	125
France	---	381	---
United Kingdom	---	4,680	---
All other destination markets	---	---	---
Total Kazakhstan exports	89,454	102,405	88,996

Table continued on next page.

Table VII-10--Continued.

Unwrought titanium: Exports from Kazakhstan by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Unit value (dollars per metric ton)		
Kazakhstan exports to the United States	8,940	7,886	6,783
Kazakhstan exports to other major destination markets.--			
Belgium	---	---	17,156
South Korea	5,970	6,022	7,530
Netherlands	16,168	16,486	3,526
India	11,670	5,200	7,100
Japan	---	7,800	8,900
France	---	17,546	---
United Kingdom	---	7,800	---
All other destination markets	---	---	---
Total Kazakhstan exports	13,253	12,354	11,463
	Share of quantity (percent)		
Kazakhstan exports to the United States	16.7	26.4	11.6
Kazakhstan exports to other major destination markets.--			
Belgium	---	---	45.3
South Korea	14.2	8.6	32.7
Netherlands	63.3	53.7	8.3
India	5.8	0.2	1.9
Japan	---	3.6	0.2
France	---	0.3	---
United Kingdom	---	7.2	---
All other destination markets	---	---	---
Total Kazakhstan exports	100.0	100.0	100.0

Note.-- Data extracted using HS subheading 810820 which includes out-of-scope data.

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Official exports statistics under HS subheading 8108.20 as reported by Customs Control Committee of the Ministry of Finance in the IHS/GTA database, accessed September 15, 2017.

U.S. INVENTORIES OF IMPORTED MERCHANDISE

Table VII-11 presents data on U.S. importers' reported inventories of titanium sponge.

Table VII-11
Titanium sponge: U.S. importers' end-of-period inventories of imports by source, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. IMPORTERS' OUTSTANDING ORDERS

The Commission requested importers to indicate whether they imported or arranged for the importation of titanium sponge from Japan or Kazakhstan after January 2016.These data are presented in Table VII-12.

Table VII-12
Titanium sponge: Arranged imports, July 2017 through June 2018

* * * * * * *

ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

Based on available information, titanium sponges from Japan and Kazakhstan have not been subject to other antidumping or countervailing duty investigations outside the United States.[15]

[15] Conference transcript, p. 45 (Seiner); p. 185-186 (Forsythe, Halford, Sando, Perryman, Thomas).

INFORMATION ON NONSUBJECT COUNTRIES

Global exports

Table VII-13 presents global exports of titanium sponge during 2014-16. According to ITA statistics, Japan, Russia, and Ukraine are the world's three largest exporters of titanium sponge, while other notable sources include Kazakhstan and China. Total exports from these major producers increased by 5.0 percent from 2014 to 2015, then declined by 12.6 percent from 2015 to 2016. Tables VII-13 and VII-14 present trade data that include product that is out of scope, and may include countries that are not major exporters of titanium sponge, but are exporters of other forms of unwrought titanium.

Table VII-13
Titanium sponge: Global exports, by quantity, 2014-16

Country	2014	2015	2016
	Quantity (metric tons)		
Japan	16,099	20,619	19,171
Russia	5,545	6,476	7,567
Ukraine	8,887	6,324	4,929
Kazakhstan	2,895	4,092	2,460
China	5,691	3,550	1,760
Total	39,117	41,061	35,887

Note.--Excludes data that is not available.

Source: ITA, Statistical Review 2012-16, http://www.titanium.org/.

Table VII-14 presents global exports of unwrought titanium during 2014-16. HS subheading 8108.20 includes unwrought forms of titanium that are excluded from the scope of these investigations, however titanium sponge is believed to account for a significant share of the product recorded under this subheading.

Table VII-14

Unwrought titanium: Global exports by exporter, 2014-16

Exporter	Calendar year		
	2014	2015	2016
	Quantity (metric tons)		
United States	9,780	9,044	10,201
Japan	16,329	20,818	19,310
Kazakhstan	6,750	8,289	7,764
All other major reporting exporters.-- Malaysia	10,796	28,324	22,020
Russia	9,298	8,045	8,550
Ukraine	8,002	6,349	4,929
Germany	2,122	3,323	3,361
Netherlands	2,928	2,484	2,090
China	6,231	3,917	2,051
Canada	472	650	1,370
United Kingdom	1,324	1,556	1,346
Italy	642	807	874
France	395	403	497
All other exporters	733	811	805
Total global exports	75,802	94,820	85,168
	Value (1,000 dollars)		
United States	177,191	155,839	180,861
Japan	185,365	214,145	175,818
Kazakhstan	89,454	102,405	88,996
All other major reporting exporters.-- Malaysia	20,916	37,325	42,288
Russia	79,328	55,082	45,303
Ukraine	63,440	42,513	26,132
Germany	29,977	32,388	32,439
Netherlands	23,135	15,828	10,581
China	44,227	27,221	12,376
Canada	9,346	11,479	22,092
United Kingdom	24,221	23,340	17,507
Italy	9,602	10,118	11,052
France	5,714	4,763	6,737
All other exporters	12,619	12,050	13,854
Total global exports	774,536	744,498	686,036

Table continued on next page.

Table VII-14--Continued.

Unwrought titanium: Global exports by exporter, 2014-16

Exporter	Calendar year		
	2014	2015	2016
	Unit value (dollars per metric ton)		
United States	18,118	17,232	17,730
Japan	11,352	10,287	9,105
Kazakhstan	13,253	12,354	11,463
All other major reporting exporters.-- Malaysia	1,937	1,318	1,920
Russia	8,532	6,847	5,298
Ukraine	7,928	6,696	5,302
Germany	14,124	9,747	9,652
Netherlands	7,902	6,371	5,061
China	7,098	6,949	6,033
Canada	19,802	17,659	16,129
United Kingdom	18,297	15,000	13,007
Italy	14,953	12,536	12,648
France	14,452	11,824	13,563
All other exporters	17,217	14,859	17,220
Total global exports	10,218	7,852	8,055
	Share of quantity (percent)		
United States	12.9	9.5	12.0
Japan	21.5	22.0	22.7
Kazakhstan	8.9	8.7	9.1
All other major reporting exporters.-- Malaysia	14.2	29.9	25.9
Russia	12.3	8.5	10.0
Ukraine	10.6	6.7	5.8
Germany	2.8	3.5	3.9
Netherlands	3.9	2.6	2.5
China	8.2	4.1	2.4
Canada	0.6	0.7	1.6
United Kingdom	1.7	1.6	1.6
Italy	0.8	0.9	1.0
France	0.5	0.4	0.6
All other exporters	1.0	0.9	0.9
Total global exports	100.0	100.0	100.0

Note.-- Data extracted using HS subheading 810820 which includes out-of-scope data.

Source: Official exports statistics under HS subheading 8108.20 as reported by various national statistical authorities in the IHS/GTA database, accessed September 15, 2017.

The Industry in China

In 2012, there were 14 producers of titanium sponge identified in China, with the five leading producers (Zunyi Titanium, Tanshan Tianhe Titanium, Shuangrui Wanji Titanium, Pangang Group, and Jinchuan Group) reportedly accounting for 54 percent of China's titanium sponge production capacity.[16] In 2013, Zunyi Titanium was estimated to be the largest titanium sponge producer in China with an annual operational capacity of 34,000 metric tons and was the only known producer to recover and reuse its own magnesium. The company supplies titanium sponge to various industrial end users throughout China, including the country's emerging aerospace industry.[17]

***.[18] According to counsel for the petitioner, China was once a principal market for Japan's exports of standard-quality titanium sponge, however in recent years China has become self-sufficient.[19] The petitioner also stated that Chinese producers are not known to have quality-control systems in place that are mandated for the production of premium-quality titanium sponge used in rotating engine parts for the aerospace industry.[20] One respondent indicated that to its knowledge, the majority of titanium sponge produced in China is consumed by mill product producers and other downstream consumers in China, and that "relatively little is exported."[21]

Table VII-15 presents data on China's exports of titanium sponge from 2014 to 2016. Its exports of titanium sponge declined by 69.1 percent during 2014-16 (see table VII-15). During 2016, South Korea, Germany, and Sweden were the three largest export destinations for China's exports of titanium sponge, accounting for 62.3 percent, 9.7 percent, and 7.5 percent of China's exports, respectively.

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[16] Dewhurst, Philip. Roskill Consulting Group Ltd. "Titanium Sponge Supply: Past, Present, and Future." Presentation at TITANIUM 2013, Las Vegas, Nevada, October, 2013. Slide 21.

[17] Quan, Benson. Wellmet International Inc. "Titanium Sponge Production in China." Presentation at TITANIUM 2014, Chicago, Illinois, September 2014. Slides 2, 5.

[18] ***.

[19] Conference transcript, 36 (Horgan).

[20] Conference transcript, 68 (Seiner).

[21] Conference transcript, 113-114 (Halford).

Table VII-15

Titanium sponge: Exports from China by destination market and quantity (metric tons), 2014-16

Destination market	Calendar year		
	2014	2015	2016
South Korea	2,148	1,222	1,096
Germany	60	341	171
Sweden	160	144	132
Spain	415	440	100
Japan	257	393	69
United States	1,620	635	0
All other	1,031	375	192
Total	5,691	3,550	1,760

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

Source: ITA, Statistical Review 2012-16, http://www.titanium.org/.

Table VII-16 presents data on China's exports of unwrought sponge by destination markets. Although data in Table VII-16 include products that are beyond the scope of these investigations, titanium sponge is believed to account for a significant share of the data reported.

Table VII-16

Unwrought titanium: China exports by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Quantity (metric tons)		
United States	1,720	760	100
Japan	325	399	117
Kazakhstan	---	2	---
All other major reporting exporters.-- Korea	2,213	1,234	1,102
Germany	301	360	208
Sweden	160	144	132
Spain	415	440	100
Hong Kong	0	76	81
United Kingdom	162	67	62
Netherlands	228	27	44
Taiwan	393	201	42
Italy	16	17	26
Belgium	270	58	10
All other exporters	27	132	27
Total global exports	6,231	3,917	2,051
	Value (1,000 dollars)		
United States	13,590	6,644	1,879
Japan	2,761	3,139	964
Kazakhstan	---	0	---
All other major reporting exporters.-- Korea	13,174	6,378	4,352
Germany	2,315	2,329	1,511
Sweden	1,296	1,038	866
Spain	2,163	2,491	469
Hong Kong	0	798	275
United Kingdom	2,370	875	668
Netherlands	1,633	267	275
Taiwan	2,340	1,297	213
Italy	161	163	275
Belgium	1,997	727	242
All other exporters	427	1,073	386
Total global exports	44,227	27,221	12,376

Table continued on next page.

Table VII-16--Continued.

Unwrought titanium: China exports by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Unit value (dollars per metric ton)		
United States	7,899	8,737	18,766
Japan	8,497	7,875	8,244
Kazakhstan	---	190	---
All other major reporting exporters.-- Korea	5,953	5,169	3,948
Germany	7,692	6,474	7,259
Sweden	8,102	7,208	6,563
Spain	5,213	5,662	4,694
Hong Kong	32,333	10,536	3,393
United Kingdom	14,620	13,041	10,729
Netherlands	7,161	9,873	6,295
Taiwan	5,947	6,448	5,073
Italy	9,856	9,597	10,517
Belgium	7,393	12,528	23,469
All other exporters	15,898	8,119	14,512
Total global exports	7,098	6,949	6,033
	Share of quantity (percent)		
United States	27.6	19.4	4.9
Japan	5.2	10.2	5.7
Kazakhstan	---	0.1	---
All other major reporting exporters.-- Korea	35.5	31.5	53.7
Germany	4.8	9.2	10.1
Sweden	2.6	3.7	6.4
Spain	6.7	11.2	4.9
Hong Kong	0.0	1.9	3.9
United Kingdom	2.6	1.7	3.0
Netherlands	3.7	0.7	2.1
Taiwan	6.3	5.1	2.1
Italy	0.3	0.4	1.3
Belgium	4.3	1.5	0.5
All other exporters	0.4	3.4	1.3
Total global exports	100.0	100.0	100.0

Note.-- Data extracted using HS subheading 810820 which includes out-of-scope data.

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Official exports statistics under HS subheading 8108.20 as reported by China Customs in the IHS/GTA database, accessed September 28, 2017.

The Industry in Russia

VSMPO-AVISMA is Russia's and the world's largest manufacturer of titanium products and has integrated operations ranging from raw-material processing to finished machined products. VSMPO is certified to produce a variety of titanium-based aerospace products by companies such as Airbus, Boeing, Pratt & Whitney, Rolls-Royce, and Snecma, among others.[22] VSMPO operates a joint venture with ATI called Uniti LLC that produces industrial titanium products for chemical and petroleum processing, desalination, power generation, and other industrial end uses. This joint venture does not produce titanium sponge or titanium products for the commercial aerospace, military, or medical industries.[23]

Russia's exports of unwrought titanium during the POI are presented in table VII-17. During 2014 to 2016, Russia's exports decreased by 8.0 percent. Although data in Table VII-17 include products that are beyond the scope of these investigations, titanium sponge is believed to account for a significant share of the data reported. In 2016, the Netherlands, Estonia, and Germany were the three largest export markets for Russia's exports of unwrought titanium, accounting for 35.4 percent, 35.3 percent, and 10.9 percent of Russia's exports in 2016, respectively. The United States was also a major export destination for exports of unwrought titanium products from Russia, accounting for 10.6 percent of exports in 2016.

[22] VSMPO – AVISMA, "DB Certificate," http://www.vsmpo.ru/en/pages/Organizacyi, (accessed September 18, 2017).

[23] VSMPO – AVISMA, "UNITI," http://www.vsmpo.ru/en/pages/UNITI, (accessed September 18, 2017).

Table VII-17
Unwrought titanium: Russia exports by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Quantity (metric tons)		
United States	2,478	1,687	904
Japan	414	0	270
Kazakhstan	6	9	5
All other major reporting exporters.-- Netherlands	2,841	2,198	3,028
Estonia	1,780	3,287	3,019
Germany	609	610	930
Italy	131	113	156
Romania	28	---	90
France	137	72	77
Spain	---	18	40
Sweden	---	---	18
Brazil	---	---	12
Belarus	2	1	1
All other exporters	871	50	0
Total global exports	9,298	8,045	8,550
	Value (1,000 dollars)		
United States	37,396	25,484	15,829
Japan	3,356	3	1,502
Kazakhstan	94	155	38
All other major reporting exporters.-- Netherlands	14,412	9,107	9,126
Estonia	7,476	12,716	8,252
Germany	5,562	4,670	6,126
Italy	1,226	906	1,958
Romania	465	---	503
France	2,284	1,133	1,245
Spain	---	96	196
Sweden	---	---	125
Brazil	---	---	199
Belarus	36	26	24
All other exporters	7,022	786	183
Total global exports	79,328	55,082	45,303

Table continued on next page.

Table VII-17--Continued.
Unwrought titanium: Russia exports by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Unit value (dollars per metric ton)		
United States	15,090	15,109	17,514
Japan	8,107	11,280	5,561
Kazakhstan	15,976	16,557	7,516
All other major reporting exporters.-- Netherlands	5,073	4,144	3,014
Estonia	4,199	3,869	2,733
Germany	9,127	7,652	6,586
Italy	9,389	7,990	12,549
Romania	16,705	---	5,591
France	16,640	15,782	16,156
Spain	---	5,333	4,894
Sweden	---	---	6,921
Brazil	---	---	16,070
Belarus	22,395	21,774	28,239
All other exporters	8,059	15,777	---
Total global exports	8,532	6,847	5,298
	Share of quantity (percent)		
United States	26.7	21.0	10.6
Japan	4.5	0.0	3.2
Kazakhstan	0.1	0.1	0.1
All other major reporting exporters.-- Netherlands	30.6	27.3	35.4
Estonia	19.1	40.9	35.3
Germany	6.6	7.6	10.9
Italy	1.4	1.4	1.8
Romania	0.3	---	1.1
France	1.5	0.9	0.9
Spain	---	0.2	0.5
Sweden	---	---	0.2
Brazil	---	---	0.1
Belarus	0.0	0.0	0.0
All other exporters	9.4	0.6	0.0
Total global exports	100.0	100.0	100.0

Note.-- Data extracted using HS subheading 810820 which includes out-of-scope data.

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Official exports statistics under HS subheading 8108.20 as reported by Customs Committee of Russia in the IHS/GTA database, accessed September 28, 2017.

The Industry in Ukraine

State-owned Zaporozhye Titanium and Magnesium Combine (ZTMC) is the sole producer of titanium sponge in Ukraine. According to its website, ZTMC operates on a quality management system in accordance with International Organization for Standardization's ISO 9001 standard.[24] ZTMC produces titanium sponge, slag, titanium tetrachloride, ingots, and various mill products.[25] In September 2016, the Government of Ukraine announced that it would privatize ZTMC and seek buyers for 51 percent of its stake in the company.[26] ZTMC has received certification to supply titanium sponge to Baoji Titanium Industry Co. Ltd (Baoti), the largest producer of aerospace products in China.[27] The petitioner stated that Ukraine does not have the quality control systems in place to supply premium-quality titanium sponge and that the sponge produced in Ukraine is inferior and cannot be used for applications in the United States.[28]

Data on Ukraine's exports of unwrought titanium during the POI are presented in table VII-18. During 2014-16, Ukraine's exports decreased by 38.4 percent. Although data in Table VII-18 include products that are beyond the scope of these investigations, titanium sponge is believed to account for a significant share of the data reported. China, Germany, and the Netherlands were the largest export destinations for unwrought titanium from Ukraine and accounted for 49.1 percent, 8.4 percent, and 7.5 percent of Ukraine's exports in 2016, respectively. Ukraine's exports to China increased more than its exports to any other country during the POI, which could be attributed to ZTMC receiving certification to sell titanium sponge to China's Baoti.

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[24] ZTMC, "Certificates" http://ztmc.zp.ua/en/quality/certificates, (accessed September 15, 2017).

[25] ZTMC, "Products: Titanium Sponge," http://ztmc.zp.ua/en/products/titanium-sponge, (accessed September 15, 2017).

[26] Bloomberg, "Company Overview of RE Zaporozhye Titanium & Magnesium Combine," September 15, 2017, https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapid=49161736.

[27] Adelis Trade, "ZTMC received the right to supply titanium sponge to the largest Chinese manufacturer of aerospace products – the Baoji Company," September 29, 2017), http://adelistrade.eu/2016/09/29/ztmc-received-the-right-to-supply-titanium-sponge-to-the-largest-chinese-manufacturer-of-aerospace-products-the-baoji-company/, (accessed September 18, 2017).

[28] Conference transcript, p. 68 (Seiner) and p. 194 (Horgan).

Table VII-18
Unwrought titanium: Exports from Ukraine by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Quantity (metric tons)		
United States	1,656	720	234
Japan	720	980	227
Kazakhstan	---	---	---
All other major reporting exporters.-- China	10	300	2,419
Germany	950	606	412
Netherlands	707	450	370
Italy	179	416	347
France	247	217	246
Romania	25	136	199
Russia	1,829	195	128
Spain	153	230	110
India	60	50	100
Korea	150	710	62
All other exporters	1,315	1,339	74
Total global exports	8,002	6,349	4,929
	Value (1,000 dollars)		
United States	13,204	5,556	1,337
Japan	5,634	6,423	1,294
Kazakhstan	---	---	---
All other major reporting exporters.-- China	80	1,757	12,261
Germany	7,604	3,669	2,188
Netherlands	4,931	2,782	1,993
Italy	1,529	2,894	2,155
France	1,734	1,366	1,332
Romania	209	1,007	1,199
Russia	16,095	1,334	719
Spain	1,012	1,407	534
India	400	319	478
Korea	1,265	4,260	368
All other exporters	9,742	9,739	275
Total global exports	63,440	42,513	26,132

Table continued on next page.

Table VII-18--Continued.
Unwrought titanium: Exports from Ukraine by destination market, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Unit value (dollars per metric ton)		
United States	7,974	7,717	5,713
Japan	7,825	6,554	5,712
Kazakhstan	---	---	---
All other major reporting exporters.-- China	8,000	5,855	5,068
Germany	8,004	6,055	5,311
Netherlands	6,971	6,184	5,387
Italy	8,542	6,955	6,207
France	7,020	6,296	5,416
Romania	8,390	7,428	6,018
Russia	8,802	6,836	5,594
Spain	6,596	6,116	4,844
India	6,673	6,370	4,785
Korea	8,432	5,999	5,927
All other exporters	7,406	7,272	3,701
Total global exports	7,928	6,696	5,302
	Share of quantity (percent)		
United States	20.7	11.3	4.7
Japan	9.0	15.4	4.6
Kazakhstan	---	---	---
All other major reporting exporters.-- China	0.1	4.7	49.1
Germany	11.9	9.5	8.4
Netherlands	8.8	7.1	7.5
Italy	2.2	6.6	7.0
France	3.1	3.4	5.0
Romania	0.3	2.1	4.0
Russia	22.9	3.1	2.6
Spain	1.9	3.6	2.2
India	0.7	0.8	2.0
Korea	1.9	11.2	1.3
All other exporters	16.4	21.1	1.5
Total global exports	100.0	100.0	100.0

Note.-- Data extracted using HS subheading 810820 which includes out-of-scope data.

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent.

Source: Official exports statistics under HS subheading 8108.20 as reported by State Customs Committee of the Ukraine in the IHS/GTA database, accessed September 28, 2017.

Global production capacity

Table VII-19 presents global titanium sponge production capacity by country. During 2012-16, U.S. titanium sponge production capacity remained stable while global capacity increased 3.9 percent between 2012 and 2013, and then declined 10.1 percent from 2013-16. Japan's production capacity declined 5.2 percent between 2012 and 2014, and remained stable during 2014-16. Kazakhstan's and Russia's production capacity also remained stable during 2012-16, while Ukraine's production capacity increased by 16.5 percent during 2012-15, and then remained stable from 2015 to 2016. During 2012-16, production capacity was higher in China than in any other country. However, after increasing by 8.9 percent during 2012-14, China's titanium sponge production capacity declined by 21.4 percent during 2014-16.

Table VII-19
Titanium sponge: Global production capacity, by quantity (metric tons), 2012-16

Item	Calendar year				
	2012	2013	2014	2015	2016
United States	24,000	24,000	24,000	24,000	24,000
Japan	68,800	68,800	65,200	65,200	65,200
China	128,500	140,000	140,000	118,000	110,000
India	0	500	500	500	500
Kazakhstan	26,000	26,000	26,000	26,000	26,000
Russia	46,500	46,500	46,500	46,500	46,500
Ukraine	10,300	10,300	10,300	12,000	12,000
Rest of world total	211,300	223,300	223,300	203,000	195,000
World total	304,100	316,100	312,500	292,200	284,200

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

Source: ITA, Statistical Review 2012-16, http://www.titanium.org/.

Global production

Table VII-20 presents titanium sponge production for Japan, Russia, Kazakhstan, and Ukraine. Of the four countries for which public data are available, Japan is the only one whose industry recorded an increase in titanium sponge production over the POI, by 76.6 percent. Production in Russia increased by 0.9 percent from 2014 to 2015, and then declined by 5.3 percent from 2015 to 2016. Ukraine's titanium sponge production increased by 6.7 percent from 2014 to 2015, and then declined by 35.2 percent from 2015 to 2016. Kazakhstan's production decreased by 14.4 percent during 2014 to 2016 period.

Table VII-20

Titanium sponge: Production data for Japan, Russia, Kazakhstan, and Ukraine, by quantity (metric tons), 2014-16

Country	Calendar year		
	2014	2015	2016
Japan	30,919	41,885	54,594
Russia	40,697	41,070	38,910
Kazakhstan	9,000	8,700	7,700
Ukraine	7,215	7,700	4,990

Note.— Production data for China and the United States are not available.

Source: ITA, Statistical Review 2012-16, http://www.titanium.org/.

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
82 FR 41656, September 1, 2017	*Titanium Sponge From Japan and Kazakhstan; Institution of Antidumping and Countervailing Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.gpo.gov/fdsys/pkg/FR-2017-09-01/pdf/2017-18608.pdf
82 FR 43936, September 20, 2017	*Titanium Sponge From Kazakhstan: Initiation of Countervailing Duty Investigation*	https://www.gpo.gov/fdsys/pkg/FR-2017-09-20/pdf/2017-20029.pdf
82 FR 43939, September 20, 2017	*Titanium Sponge From Japan and Kazakhstan: Initiation of Less-Than-Fair-Value Investigations*	https://www.gpo.gov/fdsys/pkg/FR-2017-09-20/pdf/2017-20028.pdf

APPENDIX B

CALENDAR OF THE PUBLIC STAFF CONFERENCE

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

Those listed below appeared as witnesses at the United States International Trade Commission's preliminary conference:

Subject: Titanium Sponge from Japan and Kazakhstan

Inv. Nos.: 701-TA-587 and 731-TA-1385-1386 (Preliminary)

Date and Time: September 14, 2017 - 9:30 a.m.

Sessions were held in connection with these preliminary phase investigations in the Main Hearing Room (Room 101), 500 E Street, S.W., Washington, DC.

OPENING REMARKS:

Petitioners (**J. Kevin Horgan**, DeKieffer & Horgan, PLLC)
Respondents (**Kathleen Cannon**, Kelley Drye & Warren LLP)

In Support of the Imposition of
Antidumping and Countervailing Duty Orders:

DeKieffer & Horgan, PLLC
Washington, DC
on behalf of

Titanium Metals Corporation ("TIMET")

Henry Seiner, Titanium Metals Corporation, Vice President of Business Strategy, TIMET

Roy Houseman, Legislative Representative, United Steel Workers

J. Kevin Horgan)
) – OF COUNSEL
Alexandra H. Salzman)

In Opposition to the Imposition of
Antidumping and Countervailing Duty Orders:

Kelley Drye & Warren LLP
Washington, DC
on behalf of

Allegheny Technologies Incorporated

John Sims, Executive Vice President, High Performance & Components, Allegheny Technologies Incorporated

Brad Forsythe, Vice President, Supply Chain, Allegheny Technologies Incorporated

Michael Kerwin, Director, Georgetown Economic Services

Kathleen Cannon)
) – OF COUNSEL
Laurence Lasoff)

Sidley Austin LLP
Washington, DC
on behalf of

OSAKA Titanium technologies Co., Ltd. ("OTC")

Masayuki Tsuji, Executive Officer, OSAKA Titanium technologies Co., Ltd.

Kiyoaki Sando, Sales and Marketing Department, OSAKA Titanium technologies Co., Ltd.

Shinya Kuriyama, Assistant Manager, High Performance Materials Team, Specialty Steel Flat Rolled Products Business Department, Sumitomo Corporation Global Metals Co., Ltd.

Akira Kudo, Product Manager, Light Metals and Specialty Steel Sheet Unit, Steel and Non-Ferrous Metal Group, Sumitomo Corporation of Americas

Richard L.A. Weiner)
Neil R. Ellis) – OF COUNSEL
Brenda A. Jacobs)

In Opposition to the Imposition of
Antidumping and Countervailing Duty Orders (continued):

Adduci Mastriani & Schaumberg LLP
Washington, DC
on behalf of

The Perryman Company

Frank Perryman, President *and* Chief Executive Officer,
The Perryman Company

Irvin Brown, Director of Commercial Operations,
The Perryman Company

Deanna Tanner Okun)
) – OF COUNSEL
Elizabeth Regard)

Squires Patton Boggs (US) LLP
Washington, DC
on behalf of

Ust-Kamenogorsk Titanium and
Magnesium Plant JSC ("UKTMP")

Ritchie T. Thomas)
) – OF COUNSEL
Iain R. McPhie)

Crowell & Moring LLP
Washington, DC
on behalf of

RMI Titanium Company Inc.

Jeremy Halford, President, RMI Titanium Company Inc.

Alexander H. Schaefer) – OF COUNSEL

REBUTTAL/CLOSING REMARKS:

Petitioner (**J. Kevin Horgan**, DeKieffer & Horgan, PLLC)
Respondents (**Deanna Tanner Okun**, Adduci Mastriani & Schaumberg LLP)

-END-

APPENDIX C

SUMMARY DATA

All producers

Table C-1
Titanium sponge: Summary data concerning the U.S. market, 2014-16, January to June 2016, and January to June 2017
(Quantity=metric tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per metric ton; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2014	2015	2016	2016	2017	2014-16	2014-15	2015-16	2016-17
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Japan	***	***	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Japan	***	***	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. importers' U.S. shipments of imports from:									
Japan:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Kazakhstan:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subject sources:									
Quantity	15,812	13,800	15,436	7,377	12,420	(2.4)	(12.7)	11.9	68.4
Value	217,841	171,024	173,099	81,801	133,267	(20.5)	(21.5)	1.2	62.9
Unit value	$13,777	$12,393	$11,214	$11,089	$10,730	(18.6)	(10.0)	(9.5)	(3.2)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Nonsubject sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
U.S. producers':									
Average 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)	***	***	***	***	***	***	***	***	***
Productivity (metric tons per 1,000 hours)	***	***	***	***	***	***	***	***	***
Unit labor costs (dollars per metric ton)	***	***	***	***	***	***	***	***	***
Net sales:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***	***
Net income or (loss)	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	***	***	***	***	***	***	***	***	***
Unit net income or (loss)	***	***	***	***	***	***	***	***	***
COGS/sales (fn1)	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***
Net income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.

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

Related party exclusion

Table C-2

Titanium sponge: Summary data concerning the U.S. market excluding one U.S. producer *, 2014-16, January to June 2016, and January to June 2017**

(Quantity=metric tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per metric ton; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2014	2015	2016	2016	2017	2014-16	2014-15	2015-16	2016-17
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1):									
Included firms	***	***	***	***	***	***	***	***	***
Excluded firms	***	***	***	***	***	***	***	***	***
All U.S. producers	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Japan	***	***	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1):									
Included firms	***	***	***	***	***	***	***	***	***
Excluded firms	***	***	***	***	***	***	***	***	***
All U.S. producers	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Japan	***	***	***	***	***	***	***	***	***
Kazakhstan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. importers' U.S. shipments of imports from:									
Japan:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Kazakhstan:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subject sources:									
Quantity	15,812	13,800	15,436	7,377	12,420	(2.4)	(12.7)	11.9	68.4
Value	217,841	171,024	173,099	81,801	133,267	(20.5)	(21.5)	1.2	62.9
Unit value	$13,777	$12,393	$11,214	$11,089	$10,730	(18.6)	(10.0)	(9.5)	(3.2)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Nonsubject sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Included U.S. producers':									
Average 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)	***	***	***	***	***	***	***	***	***
Productivity (metric tons per 1,000 hours)	***	***	***	***	***	***	***	***	***
Unit labor costs (dollars per metric ton)	***	***	***	***	***	***	***	***	***
Net sales:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***	***
Net income or (loss)	***	***	***	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***	***	***	***
Unit COGS	***	***	***	***	***	***	***	***	***
Unit SG&A expenses	***	***	***	***	***	***	***	***	***
Unit operating income or (loss)	***	***	***	***	***	***	***	***	***
Unit net income or (loss)	***	***	***	***	***	***	***	***	***
COGS/sales (fn1)	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***
Net income or (loss)/sales (fn1)	***	***	***	***	***	***	***	***	***

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--Undefined.

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