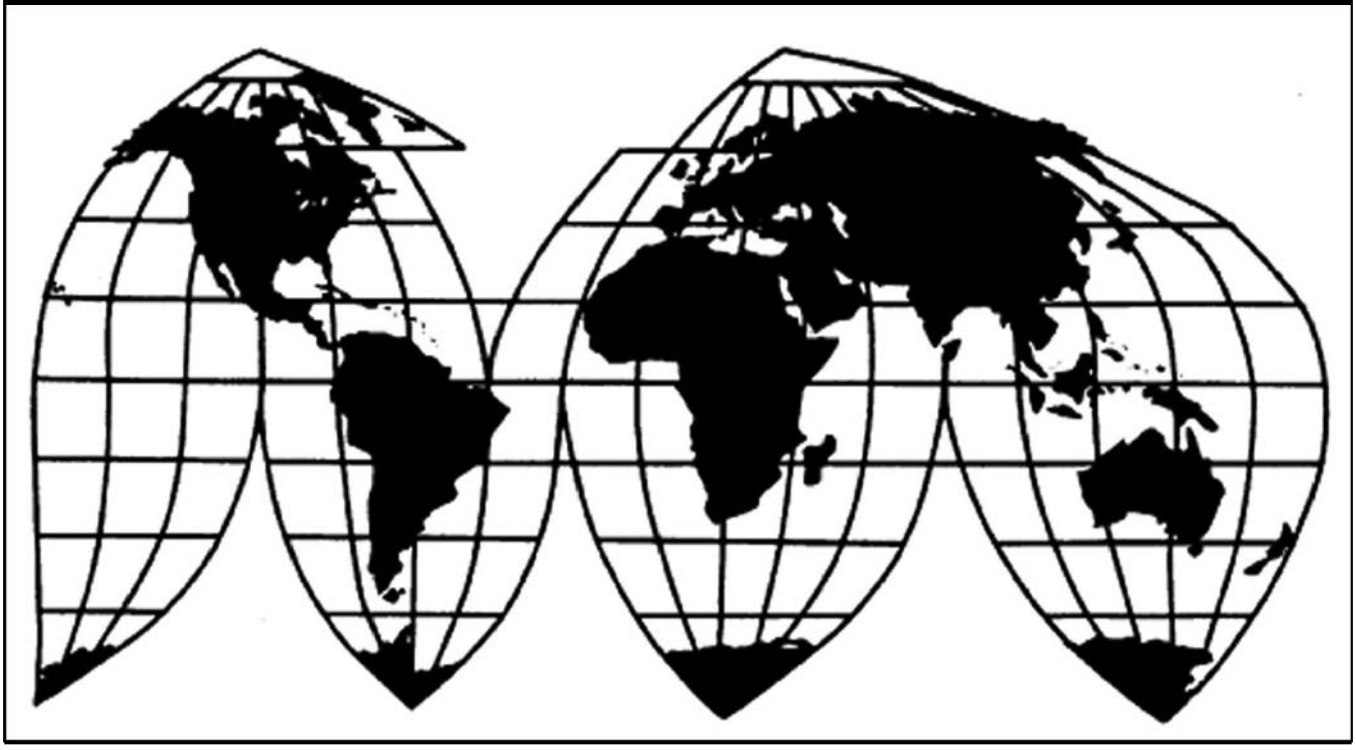
Forged Steel Fittings from China, Italy, and Taiwan

Investigation Nos. 701-TA-589 and 731-TA-1394-1396 (Preliminary)

Publication 4743 **November 2017**

U.S. International Trade Commission



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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-589 and 731-TA-1394-1396 (Preliminary)

Forged Steel Fittings from China, Italy, and Taiwan

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of forged steel fittings from China, Italy, and Taiwan, provided for in subheadings 7307.99.10, 7307.99.30, and 7307.99.50 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 China.

COMMENCEMENT OF FINAL PHASE INVESTIGATIONS

Pursuant to section 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling, which will be published in the *Federal Register* as provided in section 207.21 of the Commission's rules, upon notice from the Department of Commerce ("Commerce") of affirmative preliminary determinations in the investigations under sections 703(b) or 733(b) of the Act, or, if the preliminary determinations are negative, upon notice of affirmative final determinations in those investigations under sections 705(a) or 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Industrial users and, if the merchandise under investigation is sold at the retail level, representative consumer organizations have the right to appear as parties in Commission antidumping and countervailing duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations.

BACKGROUND

On October 5, 2017, Bonney Forge Corporation, Mount Union, Pennsylvania and the United Steel, Paper, and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union, Pittsburgh, Pennsylvania filed petitions with the Commission and Commerce, alleging that an industry in the United States is materially injured or threatened

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

with material injury by reason of LTFV and subsidized imports of forged steel fittings from China and LTFV imports of forged steel fittings from Italy and Taiwan. Accordingly, effective October 5, 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-589 and antidumping duty investigation Nos. 731-TA-1394-1396 (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 October 12, 2017 (82 FR 47578). The conference was held in Washington, DC, on October 26, 2017, and all persons who requested the opportunity were permitted to appear in person or by counsel.

Views of the Commission

Based on the record in the preliminary phase of these investigations, we determine that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of forged steel fittings ("FSF") from China, Italy, and Taiwan that are allegedly sold in the United States at less than fair value and imports of FSF that are allegedly subsidized by the government of China.

I. The Legal Standard for Preliminary Determinations

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

II. Background

Party to the Investigations. Petitioners in these investigations are the Bonney Forge Corporation ("Bonney Forge"), a U.S. producer of FSF, and the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial, and Service Workers International Union, which represents U.S. workers engaged in the production of FSF (jointly "Petitioners"). Petitioners appeared at the conference accompanied by counsel and submitted postconference briefs. No other parties participated in the conference or filed briefs.

Data Coverage. U.S. industry data are based on the questionnaire responses of four producers, believed to account for the large majority of U.S. production of FSF.[3] U.S. import data are based on data submitted in response to the Commission's importer questionnaires.[4]

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

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

[3] Confidential Report, Memorandum INV-PP-145 (Nov. 13, 2017) ("CR") at III-1, Public Report ("PR") at III-1.

[4] CR/PR at IV-2 and CR/PR at Table IV-1. The Commission received questionnaire responses from 22 importers, representing 26.3 percent of imports from subject countries in 2016 under the (Continued…)

The Commission received useable responses to its questionnaires from nine foreign producers of subject merchandise: three producers/exporters in China, accounting for approximately *** percent of U.S. imports of subject merchandise from China in 2016;[5] three producers/exporters in Italy, accounting for approximately *** percent of U.S. imports of subject merchandise from Italy in 2016;[6] and three producers/exporters in Taiwan, accounting for approximately *** percent of U.S. imports of subject merchandise from Taiwan 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

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(…Continued)
pertinent Harmonized Tariff Schedule ("HTS") reporting statistical reporting numbers. CR/PR at IV-1. Subject import data are based on questionnaire responses because the pertinent HTS reporting numbers contain substantial quantities of out-of-scope merchandise. *See* CR at I-4 n.6 and IV-8, PR at I-3 n.6. and IV-6.

[5] CR at VII-3, PR at VII-2 to VII-3.

[6] CR at VII-8 to VII-9, PR at VII-7 to VII-8.

[7] CR at VII-13 to VII-14, PR at VII-12 to VII-13.

[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 Commerce's determination 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:

> carbon and alloy forged steel fittings, whether unfinished (commonly known as blanks or rough forgings) or finished. Such fittings are made in a variety of shapes including, but not limited to, elbows, tees, crosses, laterals, couplings, reducers, caps, plugs, bushings and unions. Forged steel fittings are covered regardless of end finish, whether threaded, socket-weld or other end connections.
>
> While these fittings are generally manufactured to specifications ASME B16.11, MSS SP–79, and MSS SP–83, ASTM A105, ASTM A350 and ASTM A182, the scope is not limited to fittings made to these specifications.
>
> The term forged is an industry term used to describe a class of products included in applicable standards, and does not reference an exclusive manufacturing process. Forged steel fittings are not manufactured from casting. Pursuant to the applicable standards, fittings may also be machined from bar stock or machined from seamless pipe and tube.
>
> All types of fittings are included in the scope regardless of nominal pipe size (which may or may not be expressed in inches of nominal pipe size), pressure

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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).

rating (usually, but not necessarily expressed in pounds of pressure, *e.g.,* 2,000 or 2M; 3,000 or 3M; 6,000 or 6M; 9,000 or 9M), wall thickness, and whether or not heat treated.

Excluded from this scope are all fittings entirely made of stainless steel. Also excluded are flanges, butt weld fittings, and nipples.[16]

FSF are used in piping systems in the end-use markets of oil and gas, and in chemical plants, petrochemical plants, power plants, and industrial piping systems that require distribution of liquids and gases under high pressure or of gases and liquids that are corrosive in nature. Fittings connect high pressure pipes that are used in such systems and the fittings must also be able to withstand such high pressures.[17] FSF are typically produced from steel made to ASTM A105 or similar standards. They are connected to pipe (or couplings) either by being threaded or by welding. The maximum size of a steel fitting is generally four inches.[18] Socket weld fittings are recommended for connections that require strength and duration. These types of forged fittings have a socket where the connecting pipe has to be sealed and welded (with a fillet-type seal weld) for installation. They are available in sizes up to 4 inches and in pressure ratings from class 3000 to 6000 and 9000.[19]

Threaded fittings are common for pipeworks such as water distribution, fire protection and cooling systems (low pressure applications, or installations that are not subject to vibration, elongation, and bending forces). Threaded fittings are not used when the temperature of the fluid is subject to consistent variations, as sudden temperature changes would crack the threaded connection between the fitting and the pipe. Threaded fittings are available in sizes up to 4 inches and in pressure ratings from class 2000 to 3000 and 6000. [20]

A. Arguments of the Parties

Petitioners argue that the Commission should find a single domestic like product, coextensive with the scope of Commerce's investigations.[21] They claim that FSF constitute a single domestic like product that does not encompass other products such as butt-weld pipe fittings or carbon steel flanges. They argue that these other products have different uses and physical characteristics, are not interchangeable with FSF, and are manufactured in distinct facilities by different producers and workers than those that produce FSF.[22]

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[16] *Forged Steel Fittings From the People's Republic of China, Italy, and Taiwan: Initiation of Less-Than-Fair-Value Investigations*, 82 Fed. Reg. 50614, 50619 (November 1, 2017) ("*Commerce AD Initiation*") and *Forged Steel Fittings From the People's Republic of China: Initiation of Countervailing Duty Investigation*, 82 Fed. Reg. 50623, 50626 (November 1, 2017).

[17] CR at I-9, PR at I-7.

[18] CR at I-12, PR at I-9; Conference Transcript at 64-66 (Leone).

[19] CR at I-9, PR at I-7.

[20] CR at I-11, PR at I-8.

[21] Petitioners Postconference Brief at 2-6.

[22] Petitioners Postconference Brief at 6.

B. Analysis and Conclusion

Based on the record, we define a single domestic like product consisting of FSF coextensive with the scope of Commerce's investigations.

Physical Characteristics and Uses. FSF are connection components for pipes used primarily in the oil and gas industry, but also in chemical plants, petrochemical plants, power plants, and industrial piping systems. The material used to produce FSF is carbon and alloy hot-rolled steel bar.[23] FSF are typically produced according to American Society for Testing Materials ("ASTM"), Manufacturers Standardization Society ("MSS"), or similar standards. They are connected to pipe (or couplings) either by being threaded or by welding. The maximum size of a steel fitting is generally four inches.[24]

Manufacturing Facilities, Production Processes, and Employees. The process of manufacturing FSF normally begins with impression-die forging, also called closed-die forging, where a hammer is raised and then dropped onto a heated steel work piece to form it according to the shape of a die. FSF may also be produced by the open die forging process where the dies used to form the fitting do not completely enclose the workpiece. The forging process produces steel pieces that are stronger than an equivalent cast or machined part. The forging process involves significant capital expenditure for machinery, tooling, facilities, and skilled personnel.[25]

After the rough forgings are complete, they are then "finished." In the finishing process, the rough forging is machined (which may include turning, boring, milling, drilling, grinding, polishing, and welding) before being assembled into a complete FSF. A range of coatings and treatments may also be applied to protect the performance properties of particular products.[26]

Due to the high required performance standards, all finished steel forgings are labeled and documented to ensure their traceability back to the base raw material. The fittings are subjected to rigorous quality and functionality tests before being washed, labeled, packed, and shipped for delivery. "Integrated producers" perform both the forging and the finishing operations; "finishers" acquire the rough forgings and perform the machining and other finishing operations such as turning, boring, milling, drilling, grinding, polishing and welding.[27]

Petitioner Bonney Forge testified that the equipment it uses to produce FSF cannot be used to make butt-weld fittings or flanges. It also stated that there are no overlaps between producers of butt-weld fittings and flanges and producers of FSF in the United States.[28]

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[23] CR/PR at II-1.
[24] CR at I-11, PR at I-8; Conference Transcript at 64-66 (Leone).
[25] CR at I-12, PR at I-8.
[26] CR at I-15, PR at I-11.
[27] CR at I-15 to I-17, PR at I-11 to I-12.
[28] Conference Transcript at 30-31 (Schagrin) and 31 (Leone).

Channels of Distribution. FSF are sold almost exclusively to distributors. A small proportion of FSF are sold to finishers and end users.[29]

Interchangeability. The interchangeability between FSF and other types of pipe fittings is limited due to the particular ASTM or MSS specifications that are required of a particular fitting.[30] In some cases where FSF could theoretically be used instead of other kinds of fittings, such as butt-weld fittings or flanges, the higher cost of a FSF makes that use impractical.[31]

Producer and Customer Perceptions. The record indicates that domestic producer Bonney Forge and its customers perceive FSF to be a unique product. Petitioners testified that FSF are unique compared to other products.[32]

Price. FSF are generally priced higher than other types of pipe connectors, such as butt-weld pipe fittings and flanges.[33]

Conclusion. Based on the record in these preliminary phase investigations and because no party has argued to the contrary, we define one domestic like product consisting of FSF coextensive with the scope of the investigations.

IV. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[34] 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.

There are two domestic industry issues in these investigations. The first concerns whether FSF finishers are engaged in domestic production. The second concerns 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 as a related party.

Petitioners request that the Commission determine there is one domestic industry including firms that further manufacture "rough" steel forgings into forged steel fittings. They assert that finishing constitutes sufficient production-related activity to be considered domestic production.[35] Petitioners argue that the Commission should find that appropriate

[29] CR/PR at Table II-1.
[30] Conference Transcript at 45-46 (O'Connell).
[31] Conference Transcript at 46 (O'Connell) and 47 (Schagrin).
[32] Conference Transcript at 27 (Almer), 29 (Leone), 46 (O'Connell), and 76 (Schagrin).
[33] Conference Transcript at 46 (O'Connell) and 47 (Shagrin).
[34] 19 U.S.C. § 1677(4)(A).
[35] Conference Transcript at 72-73 (Schagrin).

circumstances exist to exclude one domestic finisher, ***, from the domestic industry as a related party.[36]

A. Sufficient Production-Related Activities

These investigations raise the issue of whether the further manufacture of blanks or rough forgings ("finishing" operations such as turning, boring, milling, drilling, grinding, polishing, and welding) is sufficient to be considered domestic production. Anvil is a "finisher" that produces in the United States forged steel fittings principally from purchased unfinished rough forgings.[37] In deciding whether a firm qualifies as a domestic producer of the domestic like product, the Commission generally analyzes the overall nature of a firm's U.S. production-related activities, although production-related activity at minimum levels could be insufficient to constitute domestic production.[38]

The record in the preliminary phase of these investigations indicates that further manufacturing rough steel forgings into finished forged steel fittings qualifies as domestic production. Specifically, Anvil's total net assets in 2016, at $***, were not insignificant but were substantially lower than those of the integrated producers.[39] Anvil also had appreciable, although decreasing, capital investments during the period of investigation.[40] The number of Anvil's production-related workers ranged between *** and *** over the period of investigation.[41] Anvil reports that its employees must possess skills and expertise to operate the equipment and implement the complex processes necessary to produce finished fittings.[42] The value added by Anvil's operations in finishing rough forgings ranged from *** to *** percent during the period of investigation, commensurate with the value added for finishing operations experienced by the integrated producers.[43] Finally, Anvil produced finished forged steel fittings primarily from ***.[44] In light of the substantial value added and the lack of

[36] Petition, vol. I at 2-3; Petitioners Postconference Brief at 1-7.

[37] CR/PR at Table III-1; *see also* *** Domestic Producer Questionnaire Response, EDIS Doc. 627095.

[38] The Commission generally considers six factors: (1) source and extent of the firm's capital investment; (2) technical expertise involved in U.S. production activities; (3) value added to the product in the United States; (4) employment levels; (5) quantity and type of parts sourced in the United States; and (6) any other costs and activities in the United States directly leading to production of the like product. No single factor is determinative and the Commission may consider any other factors it deems relevant in light of the specific facts of any investigation. *Crystalline Silica Photovoltaic Cells and Modules from China*, Inv. Nos. 701-TA-481 and 731-TA-1190 (Final), USITC Pub. 4360 at 12-13 (Nov. 2012).

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

[40] CR/PR at Table VI-6.

[41] CR at III-14, PR at III-12, and CR/PR at Tables III-15 and III-16.

[42] *** Domestic Producer Questionnaire Response, EDIS Doc. 627095 at II-3g and II-3h.

[43] CR at VI-12, PR at VI-3, and CR/PR at Table VI-4. Value added by finishing operation for the integrated domestic producers ranged from *** percent to *** percent over the period of investigation. CR at VI-13, PR at VI-3, and CR/PR at Table VI-5.

[44] CR at VI-10 and n.8, PR at VI-2 and n.8.

contrary argument in the record, we include finishers within the definition of the domestic industry.[45]

B. Related Parties

We next address whether appropriate circumstances exist to exclude any domestic producer from the domestic industry pursuant to the related party provision. Section 771(4)(B) of the Tariff Act allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of the subject merchandise, or which themselves are importers.[46] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[47] The record indicates that Anvil meets the statutory definition of a related party because it imported *** during the period of investigation.[48]

Anvil's imports of subject merchandise exceeded its domestic production during ***. The ratio of its subject imports to domestic production was *** percent in 2014, *** percent in 2015, *** percent in 2016, *** percent in January-June ("interim") 2016, and *** percent in interim 2017.[49] During the period of investigation, the firm primarily ***.[50] There is no information in the record indicating that Anvil was unable to obtain *** or why it chose to

[45] The record does not indicate the existence of any domestic finisher other than Anvil. Based on the record of the preliminary phase of these investigations, there is a limited volume of domestically produced rough forgings that are commercially available. In any final phase of these investigations, we intend to explore further the commercial market for domestically produced unfinished rough forgings and their availability for domestic finishing operations. We also intend to explore further to what extent U.S. finishers benefit from their use of rough forgings from subject sources.

[46] 19 U.S.C. § 1677(4)(B). *See Torrington Co. v. United States*, 790 F. Supp. 1161, 1168 (Ct. Int'l Trade 1992), *aff'd mem*., 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)

[47] 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 less than fair value 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*, 790 F. Supp. at 1168.

[48] Anvil Importer Questionnaire Response, EDIS Doc. 626547.

[49] CR/PR at Table III-8.

[50] CR at III-13, PR at III-10 to III-11. The firm's imports *** during the period of investigation. *See* CR/PR at Table III-8. Its ratio of subject imports ***. Its imports of ***, while considerably less than its imports of ***, were not trivial. The ratio of *** subject imports ***. *Id*.

import ***.[51] Anvil stated that it ***.[52] Anvil ***.[53] On balance, given that the record does not indicate that the firm's principal interest is in domestic production, we find that appropriate circumstances exist to exclude Anvil from the domestic industry as a related party.

Consequently, we define the domestic industry as all U.S. producers of the domestic like product except Anvil.[54]

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 shall be deemed negligible if they account for less than three percent (or four percent in the case of a developing country in a countervailing duty investigation) 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.[55]

The statute further provides that subject imports from a single country which comprise less than 3 percent of such total imports of the product may not be considered negligible if there are several countries subject to investigation with negligible imports and the sum of such imports from all those countries collectively accounts for more than 7 percent of the volume of all such merchandise imported into the United States.[56] In the case of countervailing duty investigations involving developing countries (as designated by the United States Trade Representative, the statute indicates that the negligibility limits are 4 percent and 9 percent, rather than 3 percent and 7 percent.[57]

Negligibility is not an issue in these investigations. Specifically, data from the Commission's questionnaires indicate that from October 2016 to September 2017, the 12-month period preceding the filing of the petitions, subject imports from China accounted for *** percent of total imports of forged steel fittings by quantity, subject imports from Italy accounted for *** percent, and subject imports from Taiwan accounted for *** percent.[58] We consequently find that imports from each of the subject countries are not negligible.

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[51] Staff Notes, Telephone Interview with ***, October 25, 2017, EDIS Doc. 628812 (reporting "***.").

[52] Anvil Importer Questionnaire Response, EDIS Doc. 626547 at II-4.

[53] CR/PR at Table III-1; Anvil Domestic Producer Questionnaire Response, EDIS Doc. 627095 at I-3. Its operating income ratio was *** than the average for the three integrated producers throughout the period of investigation. CR/PR at Table VI-3.

[54] The domestic industry consequently includes integrated producers Bonney Forge, Capitol Manufacturing Company ("Capitol"), and Pennsylvania Machine Works ("PMW"). CR at I-16 to I-17, PR at I-11 to I-12, and CR/PR at VI-1 n.1.

[55] 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B); *see also* 15 C.F.R. § 2013.1 (developing countries for purposes of 19 U.S.C. § 1677(36)).

[56] 19 U.S.C. § 1677(24)(A)(ii).

[57] 19 U.S.C. § 1677(24)(B).

[58] CR at IV-6, PR at IV-4 to IV-5, and CR/PR at Table IV-3.

VI. Cumulation

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

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

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

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

(4) whether the subject imports are simultaneously present in the market.[59]

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.[60] Only a "reasonable overlap" of competition is required.[61]

A. Arguments of the Parties

Petitioners' Argument. Petitioners argue that the Commission should cumulatively assess imports from China, Italy, and Taiwan.[62] With respect to fungibility, Petitioners claim

[59] *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).

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

[61] 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*, 718 F. Supp. at 52 ("Completely overlapping markets are not required.").

[62] Petitioners Postconference Brief at 8-11.

that FSF used in the United States are typically manufactured to precise specifications.[63] They claim that, given the extreme conditions under which FSF typically operate, and the potential for failure, injury, and liability attached, it is essential that all fittings meet these or equivalent customer-specific specifications.[64]

With respect to channels of distribution, Petitioners claim that U.S. producers most often sell to distributors, and that most importers of subject merchandise from all three subject countries are distributors.[65] With respect to geographic overlap, the Petitioners claim that both domestically produced FSF and the subject imports are present nationwide.[66] Petitioners further assert that imports from all three subject countries have been present in the U.S. market in every single month of the period of investigation.[67]

B. Analysis

We consider subject imports from China, Italy, and Taiwan on a cumulated basis because the statutory criteria for cumulation are satisfied. Petitioners filed the petitions on imports from all three subject countries on the same day, October 5, 2017.[68] Additionally, as discussed below, the record also supports finding a reasonable overlap of competition among FSF produced in China, Italy, Taiwan, and the United States.

Fungibility. Three responding domestic producers and the majority of importers reported that imports from the three subject countries are "always" or "frequently" interchangeable with each other and the domestic like product.[69] Most of the domestic like product and imports from each of the three subject countries are finished forged steel fittings.[70]

Channels of Distribution. Domestic producers sold FSF *** to distributors, while importers sold primarily to distributors.[71] In 2016, *** of the domestic producers' U.S. shipments of FSF, as well as *** subject imports from Taiwan, were sold to distributors. A

[63] Petitioners Postconference Brief at 9 (specifications are ASME B16.11, MSS SP-79, and MSS SP-83, ASTM A105, ASTM A350, and ASTM A182); *see also* Petition, Vol. I at 4, 12.

[64] Petitioners Postconference Brief at 9.

[65] Petitioners Postconference Brief at 10-11; Petition at Exhibit I-5.

[66] Petitioners Postconference Brief at 10.

[67] Petitioners Postconference Brief at 11 and Exhibit 2.

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

[69] CR/PR at Table II-4. One domestic producer responded to the question only with respect to the interchangeability between forged steel fittings produced in the United States and those produced in Taiwan. This producer reported that forged steel fittings produced in the United States and those produced in Taiwan are "always" interchangeable. *Id*.

[70] CR/PR at Tables III-9 and IV-4.

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

majority of shipments of imports from China (*** percent) and Italy (*** percent) were sold to distributors.[72]

Geographic Overlap. Domestically produced FSF and imports from each of the subject countries are sold throughout the contiguous United States.[73]

Simultaneous Presence in Market. Import data show that the domestic like product and subject imports from all subject countries have been present throughout the period of investigation.[74]

Conclusion. The record supports finding that subject imports from each subject country are fungible with the domestic like product and each other, that subject imports from each subject country and the domestic like product are sold in similar channels of distribution and in similar geographic markets, and have been simultaneously present in the U.S. market. In light of the foregoing, we find that there is a reasonable overlap of competition between the domestic like product and imports from China, Italy, and Taiwan, and among imports from each subject country. We consequently cumulate subject imports from China, Italy, and Taiwan for our analysis of reasonable indication of material injury by reason of subject imports.

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

A. Legal Standard

In the preliminary phase of antidumping and countervailing duty investigations, the Commission determines whether there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[75] 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.[76] The statute defines "material injury" as "harm which is not inconsequential,

[72] CR/PR at Table II-1. In 2016, *** percent of shipments of imports from China and *** percent of shipments of imports from Italy were sold to finishers; *** percent of shipments of imports from China were sold to end users. *Id*.

[73] CR/PR at Tables II-2 and IV-5.

[74] CR at IV-8 to IV-9, PR at IV-6 to IV-7, and Table IV-5.

[75] 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.

[76] 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).

immaterial, or unimportant."[77] 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.[78] 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."[79]

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,[80] 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.[81] 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.[82]

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

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[77] 19 U.S.C. § 1677(7)(A).

[78] 19 U.S.C. § 1677(7)(C)(iii).

[79] 19 U.S.C. § 1677(7)(C)(iii).

[80] 19 U.S.C. §§ 1671b(a), 1673b(a).

[81] *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).

[82] 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).

[83] 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 (Continued…)

the injury caused by other factors from injury caused by unfairly traded imports.[84] 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.[85] It is clear that the existence of injury caused by other factors does not compel a negative determination.[86]

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."[87] Indeed, the Federal Circuit has examined and affirmed various

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(…Continued)
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*, 542 F.3d at 877.

[84] SAA at 851-52 ("{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports."); *Taiwan Semiconductor* , 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.").

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

[86] *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.").

[87] *Mittal*, 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*, 792 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

Commission methodologies and has disavowed "rigid adherence to a specific formula."[88]

The Federal Circuit's decisions in *Gerald Metals*, *Bratsk,* and *Mittal* 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 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.[89] 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* litigation.

Mittal 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.[90] 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* 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.[91]

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

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

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

[90] *Mittal*, 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).

[91] 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.

evidence standard.[92] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[93]

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.

1. Demand Conditions

FSF are connection components for pipes used primarily in the oil and gas industry, and in chemical, petrochemical, and power plants.[94] Consequently, demand for FSF depends on demand for piping systems in these industries.[95] Three producers and seven of 20 importers reported that overall demand for FSF has decreased since January 2014 while one U.S. producer and most importers reported that demand has fluctuated or not changed.[96]

Apparent U.S. consumption of FSF decreased by *** percent from 2014 to 2016, falling from *** short tons in 2014 to *** short tons in 2015, and to *** short tons in 2016.[97] Apparent U.S. consumption was *** short tons in interim 2016 and higher, at *** short tons, in interim 2017.[98]

2. Supply Conditions

The domestic industry and imports from subject and nonsubject sources supplied the U.S. market during the period of investigation.[99]

The domestic industry – the three integrated producers of FSF -- was the largest supplier of FSF to the U.S. market during the period of investigation. The integrated producers' share of apparent U.S. consumption by quantity decreased from *** percent in 2014 to *** percent in 2015 and *** percent in 2016, and was *** percent in interim 2016 and *** percent in interim 2017.[100]

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[92] 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.

[93] *Mittal*, 542 F.3d at 873; *Nippon*, 458 F.3d at 1350, *citing U.S. Steel*, 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.").

[94] CR/PR at II-1.

[95] CR at II-10, PR at II-7.

[96] CR at II-11, PR at II-7, and CR/PR at Table II-3.

[97] CR/PR at Tables IV-7 and C-2. *Id*.

[98] CR/PR at Table C-2.

[99] CR/PR at Table IV-7.

[100] CR/PR at Table IV-7.

Capacity of the integrated producers was fairly constant during the period of investigation increasing slightly from *** short tons in 2014 to *** short tons in 2016; it was *** short tons in interim 2016 and *** short tons in interim 2017.[101]

Cumulated subject imports were the next largest source of supply to the U.S. market after the domestic industry. Cumulated subject imports' share of apparent U.S. consumption in increased *** percentage points from 2014 to 2016, from *** percent in 2014 to *** percent in 2015, and to *** percent in 2016; it was *** percent in interim 2016 and higher, at *** percent, in interim 2017.[102]

Nonsubject imports were a small source of supply to the U.S. market throughout the period of investigation. They rose from *** percent of apparent U.S. consumption in 2014 to *** percent in 2015 and 2016, were *** percent in interim 2016 and lower, at *** percent, in interim 2017.[103] The largest sources of nonsubject imports were Korea, Mexico, and India.[104]

3. Substitutability and Other Conditions

We find there is a high degree of substitutability between subject imports and the domestic like product.[105] As previously stated, all responding domestic producers and the majority of responding importers reported that imports from the subject countries are "always" or "frequently" interchangeable with the domestic like product.[106]

We also find that price is an important consideration for purchasers of FSF. Most U.S. producers reported that differences other than price were "never" important in purchasing decisions.[107] Although there is some perception among importers that factors other than price have some importance in purchasing decisions, a majority of importers reported that such factors are "sometimes" or "never" important in all comparisons between imports from a particular subject source and the domestic like product.[108]

We consequently find that subject imports and the domestically produced product are highly substitutable and that price plays an important role in purchasing decisions.

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[101] Calculated from CR/PR at Tables III-4 and III-5. The production capacity of the finisher that we have excluded from the domestic industry was *** short tons from 2014 to 2016, *** short tons in interim 2016, and *** short tons in interim 2017. CR/PR at Table III-5.

[102] CR/PR at Table IV-2. Cumulated subject imports' share of apparent U.S. consumption was *** percent in interim 2016 and *** percent in interim 2017. *Id.*

[103] CR/PR at Table IV-2. Nonsubject imports' share of apparent U.S. consumption was *** percent in interim 2016 and *** percent in interim 2017. *Id.*

[104] CR at II-9, PR at II-6.

[105] CR at II-12, PR at II-8; Conference Transcript at 54 (Leone)

[106] CR/PR at Table II-4. CR at Table II-4. As noted earlier, one domestic producer responded to the question only with respect to the interchangeability between forged steel fittings produced in the United States and those produced in Taiwan. This producer reported that forged steel fittings produced in the United States and those produced in Taiwan are "always" interchangeable. *Id*.

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

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

C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[109]

Cumulated subject imports had a sizable presence in the U.S. market during the period of investigation. Cumulated subject import volume decreased from 10,929 short tons in 2014 to 9,826 short tons in 2015 and to 7,141 short tons in 2016, but was higher in interim 2017, when it was 5,698 short tons, than in interim 2016, when it was 2,728 short tons.[110]

The rate of decline in cumulated subject import volume from 2014 to 2016 was less than that of apparent U.S. consumption, while cumulated subject imports rose at a faster rate between the interim periods than demand. Consequently, cumulated subject imports increased their share of apparent U.S. consumption throughout the period of investigation. This share rose from *** percent in 2014 to *** percent in 2015 and to *** percent in 2016, and it was higher in interim 2017, when it was *** percent, than in interim 2016, when it was *** percent.[111] The market share gain by cumulated subject imports occurred while nonsubject imports' market share was relatively flat.[112] Consequently, the gain in cumulated subject import market share occurred largely at the expense of the domestic industry, whose share of apparent U.S. consumption fell from *** percent in 2014 to *** percent in 2015 and to *** percent in 2016, and was lower in interim 2017, when it was *** percent, than in interim 2016, when it was *** percent.[113]

The ratio of cumulated subject imports to domestic production also rose from 2014 to 2016 and was higher in interim 2017 than in interim 2016. It increased from *** percent in 2014 to *** percent in 2015, before decreasing to *** percent in 2016; it was *** percent in interim 2016 and *** percent in interim 2017.[114]

In light of the foregoing, we find that subject import volume was significant in absolute terms and relative to consumption and production. Additionally, the increase in volume of subject imports relative to consumption and production was significant throughout the period of investigation. The increase in subject import volume on an absolute basis in interim 2017 was also significant.

D. Price Effects of the Subject Imports

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

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[109] 19 U.S.C. § 1677(7)(C)(i).

[110] CR/PR at Tables IV-2.

[111] CR/PR at Tables IV-7 and C-2.

[112] CR/PR at Tables IV-7 and C-2. The market share held by nonsubject imports increased from *** percent in 2014 to *** percent in 2015 and 2016. It was from *** percent in interim 2016 and *** percent in interim 2017. *Id.*

[113] CR/PR at Table IV-7 and C-2.

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

(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.[115]

As stated above, the current record indicates a high degree of substitutability among subject imports and the domestic like product and that price is an important consideration in purchasing decisions.

In the preliminary phase of these investigations, the Commission requested that U.S. producers and importers provide quarterly weighted-average sales price data for four FSF products shipped to unrelated U.S. customers between January 2014 and June 2017.[116] Four U.S. producers and 22 importers submitted usable pricing data on sales of the requested products,[117] although not all firms reported pricing for all products for all quarters.[118]

The pricing data show that cumulated subject imports undersold the domestic like product in 106 of 152 price comparisons (involving 2.3 million short tons of subject imports) at underselling margins that ranged from 0.2 percent to 69.2 percent (average underselling margin of 21.4 percent) and oversold the domestic industry's price in the remaining 46 price comparisons (involving 899,378 short tons of subject imports) by 0.2 to 46.0 percent (average overselling margin of 13.7 percent).[119] We find this pervasive underselling to be significant in light of the importance of price in purchasing decisions.

We also examined changes in prices for the domestic like product and subject imports. Prices for the four domestically produced pricing products declined between *** percent and *** percent from the first quarter of 2014 to the second quarter of 2017.[120] Prices for subject imports from Italy ranged from a decrease of *** percent to an increase of *** percent, and prices for subject imports from Taiwan decreased from *** percent to *** percent during this period.[121] Although prices for the domestic like product and subject imports generally declined over the period of investigation, these appear to be a function of the sharp declines in demand,

[115] 19 U.S.C. § 1677(7)(C)(ii).

[116] CR at V-4, PR at V-3. The pricing products are: (1) ASME B16.11, ¼" 3000 (threaded); (2) ASME B16.11, 1" 2000 90 Elbow (threaded); (3) ASME B16.11, ¾" Union (threaded); and (4) ASME B16.11, 2" Coupling (threaded). *Id*.

[117] CR at V-5, PR at V-3.

[118] CR at V-5, PR at V-3. The pricing data accounted for approximately 6.8 percent of the domestic industry's U.S. shipments, 10.2 percent of subject imports from China, 3.9 percent of subject imports from both Italy and Taiwan in 2016. CR at V-5 and n.4, PR at V-3 and n.4.

[119] CR at V-19, PR at V-5, and CR/PR at Table V-8.

[120] CR at V-18, PR at V-5; CR/PR at Table V-7.

[121] CR at V-18, PR at V-5; CR/PR at Table V-7. Pricing data for subject imports from China are not available for the entire period of investigation; prices of three imported products from China declined and one increased during the period for which data were reported. CR/PR at Tables V-3 to V-6.

particularly between 2014 and 2016. We consequently do not find that cumulated subject imports depressed prices of the domestic like product to a significant degree.[122]

We also considered whether cumulated subject imports prevented increases in prices of the domestic like product that otherwise would have occurred to a significant degree. As discussed above, apparent U.S. consumption decreased from 2014 to 2016.[123] Because price increases were unlikely in light of declining apparent consumption, we do not find that cumulated subject imports prevented price increases that otherwise would have occurred to a significant degree.[124]

Because of the underselling, the importance of price in purchasing decisions, and the high degree of substitutability between subject imports and the domestically produced product, the low-priced cumulated subject imports gained market share almost entirely at the expense of the domestic industry in a declining market. Therefore, on the basis of the record in the preliminary phase of these investigations, we find that there was significant underselling of the domestic like product by cumulated subject imports. This significant underselling had an adverse impact on the domestic industry, as described below.

A. Impact of the Subject Imports[125]

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."[126]

As discussed above, domestic industry's market share declined from *** percent in 2014 to *** percent in 2015 and *** percent in 2016, and showed further erosion in interim 2017, when it was *** percent, which was *** percentage points below the interim 2016 level.[127] The domestic industry's capacity increased slightly over the period of review.[128] By

[122] In these preliminary investigations, Petitioners did not submit any lost sales or lost revenues allegations. CR at V-19, PR at V-5.

[123] CR/PR at Table IV-9, Table VI-1.

[124] We observe that, between interim 2016 and interim 2017, when apparent consumption improved, so did the domestic industry's ratio of cost of goods sold ("COGS") to sales. CR/PR at Table VI-3.

[125] Commerce initiated investigations based on estimated dumping margins of 142.72 percent for imports from China, 18.66 to 80.20 percent for imports from Italy, and 116.17 percent for imports from Taiwan. *Commerce AD Initiations*, 82 Fed. Reg. at 50617.

[126] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[127] CR/PR at Table IV-7.

contrast, production,[129] capacity utilization,[130] and U.S. shipments[131] all declined from 2014 to 2016, although they were higher in interim 2017 than interim 2016. From 2014 to 2016, the domestic industry's production and shipments decreased more than the decline in demand.[132] The domestic industry's ratio of end-of-period inventories to total shipments increased from 2014 to 2016 and was lower in interim 2017 than interim 2016.[133]

Employment-related indicators for the domestic industry generally showed declines from 2014 to 2016, although most improved somewhat in interim 2017. The number of production-related workers ("PRWs"), total hours worked, wages paid, and productivity declined overall during the period of investigation, although hourly wages and unit labor costs increased.[134]

The domestic industry's financial indicators also generally declined from 2014 to 2016, with some improvement in interim 2017. Revenues,[135] gross profit,[136] operating income,[137]

(…Continued)

[128] The domestic industry's capacity was *** short tons in 2014, *** short tons in 2015, *** short tons in 2016, and was *** short tons in interim 2016 and *** short tons in interim 2017. CR/PR at Table III-4.

[129] The domestic industry's production decreased from *** short tons in 2014 to *** short tons in 2015 and *** short tons in 2016, and was *** short tons in interim 2016 and *** short tons in interim 2017. CR/PR at Table III-4.

[130] The domestic industry's capacity utilization was *** percent in 2014, *** percent in 2015, and *** percent in 2016, *** percent in interim 2016, and *** percent in interim 2017. CR/PR at Table III-4.

[131] The domestic industry's total U.S. shipments were *** short tons in 2014, *** short tons in 2015, *** short tons in 2016, *** short tons in interim 2016, and *** short tons in interim 2017. CR/PR at Table III-8.

[132] See CR/PR at Table C-2.

[133] The ratio of end-of-period inventories to total shipments was *** percent in 2014, *** percent in 2015, *** percent in 2016, *** percent in interim 2016, and *** percent in interim 2017. CR/PR at Table III-12.

[134] The domestic industry's PRWs decreased from *** in 2014 to *** in 2015, and to *** in 2016, and were *** in interim 2016 and *** in interim 2017. Total hours worked decreased from *** in 2014 to *** in 2015, and to *** in 2016. They were *** in interim 2016 and *** in interim 2017. Wages paid decreased from $*** in 2014 to $*** in 2015, and to $*** in 2016, and were $*** in interim 2016 and $*** in interim 2017. Hourly wages increased from $*** in 2014 to $*** in 2015, and to $*** in 2016, and were $*** in interim 2016 and $*** in interim 2017. Productivity in short tons per 1,000 hours decreased from *** in 2014 to *** in 2015, and to *** in 2016, and was *** short tons in interim 2016 and *** short tons in interim 2017. Unit labor costs per short ton increased from $*** in 2014 to $*** in 2015, and to $*** in 2016, and were $*** in interim 2016 and $*** in interim 2017. CR/PR at Table III-15.

[135] The domestic industry's net sales revenues decreased from $*** in 2014 to $*** in 2015, and to $*** in 2016, and were $*** in interim 2016 and $*** in interim 2017. CR/PR at Table VI-3.

[136] The domestic industry's gross profit declined from $*** in 2014 to $*** in 2015, and to $*** in 2016, and was $*** in interim 2016 and $*** in interim 2017. CR/PR at Table VI-3.

[137] The domestic industry's operating income decreased from $*** in 2014 to $*** in 2015, and to $*** in 2016, and was $*** in interim 2016 and $*** in interim 2017. CR/PR at Table VI-3.

operating income ratio,[138] and net income[139] all declined from 2014 to 2016, although each indicator showed improvement between the interim periods. Domestic producers' capital expenditures declined from 2014 to 2016, and were higher in interim 2017 than in interim 2016.[140] One domestic producer (***) also reported negative effects on investment and on growth and development due to subject imports.[141]

As discussed above, significant volumes of low-priced cumulated subject imports that were highly substitutable with the domestic like product significantly undersold the domestic like product. They increased market share at the expense of the domestic industry, both when demand declined from 2014 and 2016, and when it improved in interim 2017. Consequently, the domestic industry lost sales and revenues that it otherwise would have obtained throughout the period of investigation. This exacerbated the domestic industry's difficulties between 2014 and 2016, when its output, employment, and financial performance all declined.

We have considered whether there are other factors that may have had an impact on the domestic industry during the period of investigation to ensure that we are not attributing injury from such other factor to subject imports. Nonsubject imports maintained a relatively steady but consistently small share of the market over the period of investigation.[142] Consequently, nonsubject imports cannot explain the magnitude of the domestic industry's decline in market share over the period. Moreover, although declining demand contributed to the domestic industry's declines in output and revenues during the 2014 to 2016 period, it cannot explain the declines in market share that we have attributed to the subject imports.

We therefore conclude, for purposes of these preliminary determinations, that the cumulated subject imports have had a significant impact on the domestic industry.

IX. Conclusion

For the foregoing reasons, we conclude that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of FSF from China, Italy, and Taiwan that are allegedly sold at less than fair value and by reason of imports of FSF that are allegedly subsidized by the government of China.

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[138] The ratio of operating income to net sales was *** percent in 2014, *** percent in 2015, and *** percent in 2016, and was *** percent in interim 2016 and *** percent in interim 2017. CR/PR at Table VI-3.

[139] The domestic industry's net income decreased from $*** in 2014 to $*** in 2015, and to $*** in 2016, and was $*** in interim 2016 and $*** in interim 2017. CR/PR at Table VI-3.

[140] Capital expenditures for the domestic industry declined from $*** in 2014 and 2015 to $*** in 2016, and were $*** in interim 2016 and $*** in interim 2017. CR/PR at Table VI-6. *** reported research and development expenses during the period of investigation; they decreased from $*** in 2014 to $*** in 2015, and to $*** in 2016, and were $*** in interim 2016 and higher, at $***, in interim 2017. *Id*.

[141] CR/PR at Table VI-8.

[142] CR/PR at Table C-2. Nonsubject imports' share of apparent U.S. consumption increased from *** percent in 2014 to *** percent in 2015 and 2016, and was *** percent in interim 2016 and *** percent in interim 2017. *Id.*

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 Bonney Forge Corporation ("Bonney"), Mount Union, Pennsylvania, and the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union ("USW"), Pittsburgh, Pennsylvania, on October 5, 2017, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized imports of forged steel fittings ("FSF") from China and less-than-fair-value ("LTFV") imports of FSF[1] from China, Italy, and Taiwan. The following tabulation provides information relating to the background of these investigations.[2] [3]

Effective date	Action
October 5, 2017	Petition filed with Commerce and the Commission; institution of Commission investigation (82 FR 47578, October 12, 2017)
October 26, 2017	Commission's conference
November 1, 2017	Commerce's notice of initiation (82 FR 50614, November 1, 2017 and 82 FR 50623, November 1, 2017)
November 17, 2017	Commission's vote
November 20, 2017	Commission's determination
November 28, 2017	Commission's views

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*

[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.

determination regarding whether there is material injury by reason of imports.

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

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

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

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

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

Organization of report

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

MARKET SUMMARY

FSF generally is used in piping systems for oil and gas, in chemical plants, petrochemical plants, power plants, and industrial piping systems that require distribution of liquids and gases under high pressure or of gases and liquids that are corrosive in nature. The leading U.S. producers of FSF are Bonney, Pennsylvania Machine Works ("PMW"), Anvil International ("Anvil"), and Capitol Manufacturing Company ("Capitol"), while leading responding producers of FSF outside the United States include Both-Well (Taizhou) Steel Fittings Co. ("Both-Well Taizhou") of China; M.E.G.A. S.p.A. ("MEGA") and I.M.L. Industria Meccanica Ligure S.p.A. ("IML") of Italy; and Both-Well Steel Fittings Co. ("Both-Well"), of Taiwan. Leading responding U.S. importers of FSF from China include ***, while importers of FSF from Italy include ***, and importers of FSF from Taiwan include ***. Importers of product from nonsubject countries (primarily Mexico, India, Korea, and Canada) include ***.[6] U.S. purchasers of FSF are distribution firms. Distributors that purchase subject FSF include national pipe, valve, and fitting distributors, regional distributors, and independent distributors. Additionally, there are master distributors serving independent distributors while the national and regional distributors purchase directly from producers.[7]

According to questionnaire data, apparent U.S. consumption of FSF totaled approximately *** in 2016. Currently, four firms are known to forge and/or finish FSF in the United States. U.S. producers' U.S. shipments of FSF totaled *** in 2016, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from subject sources totaled 8,127 short tons ($41 million) in 2016 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. imports from nonsubject

[6] FSF are imported under multiple HTS statistical reporting numbers that include *** importers and *** foreign producers/ exporters from subject countries. Beyond responding firms, petitioners provided 13 additional potential producers from China, four additional potential producers from Italy, and one additional potential producers from Taiwan as well as three additional potential importers of FSF from China, five additional potential importers of FSF from Italy, and seven additional potential importers of FSF from Taiwan. Proprietary Customs data and Petition, exh. I-3 and I-5.

[7] Conference transcript, p. 21 (O'Connell).

sources totaled *** in 2016 and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value.

SUMMARY DATA AND DATA SOURCES

A summary of data collected in these investigations is presented in appendix C. Except as noted, U.S. industry data are based on questionnaire responses of four firms that accounted for the large majority of U.S. production of FSF during 2016. U.S. imports are based on questionnaire data from 22 firms that accounted for roughly 23.6 percent of U.S. imports from subject countries. Foreign industry data are based on questionnaire responses from ten firms that accounted for a reported *** percent of exports from China, *** percent of exports from Italy, and *** percent of exports from Taiwan.

PREVIOUS AND RELATED INVESTIGATIONS

FSF has not been the subject of any prior countervailing and/or antidumping duty investigations in the United States.

NATURE AND EXTENT OF ALLEGED SUBSIDIES AND SALES AT LTFV

Alleged subsidies

On November 1, 2017, Commerce published a notice in the *Federal Register* of the initiation of its countervailing duty investigation on FSF from China.[8] Commerce identified the following government programs in China:

- Policy loans to the forged steel fittings industry
- Export loans
- Treasury bond loans
- Preferential lending to forged steel fittings producers and exporters classified as "Honorable Enterprises"
- Loans and interest subsidies provided pursuant to the Northeast Revitalization Program
- Income tax programs under the Government of China's 2008 corporate income tax law
    - Preferential income tax reductions for high and new technology enterprises ("HTNEs")
    - Preferential deduction of research and development ("R&D") expenses for HNTEs
- Other countervailable income tax programs

[8] *Forged Steel Fittings From the People's Republic of China: Initiation of Countervailing Duty Investigation*, 82 FR 50623, November 1, 2017.

    - Income tax credits for domestically owned companies purchasing domestically produced equipment
    - Preferential income tax policy for enterprises in the Northeast region
    - Reduction in or exemption from fixed assets investment orientation regulatory tax
    - Income tax benefits for domestically owned enterprises engaging in R&D
- VAT and tariff exemptions for purchasers of fixed assets under the foreign trade development fund
- Import tariff and VAT exemptions for foreign invested enterprises ("FIEs") and certain domestic enterprises using imported equipment in encouraged industries
- Provision of land for less than adequate remuneration ("LTAR")
- Provision of special bar quality ("SBQ") for LTAR
- Provision of electricity for LTAR
- State key technology project fund
- Foreign trade development fund grants
- Export assistance grants
- Export interest subsidies
- Grants for energy conservation and emission reduction
- Grants for retirement of capacity
- Grants for relocating production facilities

Alleged sales at LTFV

On November 1, 2017, Commerce published a notice in the *Federal Register* of the initiation of its antidumping duty investigations on product from China, Italy, and Taiwan.[9] Commerce has initiated antidumping duty investigations based on estimated dumping margins of 142.72 percent for FSF from China, 18.66 to 80.20 percent for FSF from Italy, and 116.17 percent for FSF from Taiwan.

THE SUBJECT MERCHANDISE

Commerce's scope

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

The merchandise covered by this investigation is carbon and alloy forged steel fittings, whether unfinished (commonly known as blanks or rough forgings) or finished. Such fittings are made in a variety of shapes including, but not limited to, elbows, tees, crosses, laterals, couplings, reducers, caps, plugs, bushings and

[9] *Forged Steel Fittings From the People's Republic of China, Italy, and Taiwan: Initiation of Less-Than-Fair-Value Investigations*, 82 FR 50614, November 1, 2017.

unions. Forged steel fittings are covered regardless of end finish, whether threaded, socket-weld or other end connections.

While these fittings are generally manufactured to specifications ASME B16.11, MSS SP-79, and MSS SP-83, ASTM A105, ASTM A350 and ASTM A182, the scope is not limited to fittings made to these specifications.

The term forged is an industry term used to describe a class of products included in applicable standards, and does not reference an exclusive manufacturing process. Forged steel fittings are not manufactured from casting. Pursuant to the applicable standards, fittings may also be machined from bar stock or machined from seamless pipe and tube.

All types of fittings are included in the scope regardless of nominal pipe size (which may or may not be expressed in inches of nominal pipe size), pressure rating (usually, but not necessarily expressed in pounds of pressure, e.g., 2,000 or 2M; 3,000 or 3M; 6,000 or 6M; 9,000 or 9M), wall thickness, and whether or not heat treated.

Excluded from this scope are all fittings entirely made of stainless steel. Also excluded are flanges, butt weld fittings, and nipples

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 the following provisions of the Harmonized Tariff Schedule of the United States ("HTS"): 7307.99.10, 7307.99.30, and 7307.99.50 (statistical reporting numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060.[10] The 2017 general rate of duty is 3.7 percent *ad valorem* for HTS subheading 7307.99.100, 3.2 percent *ad valorem* for HTS subheading 7307.99.30 and 4.3 percent *ad valorem* for HTS subheadings 7307.99.50. Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

[10] Commerce's scope further states that subject carbon and alloy forged steel fittings also may be entered under HTSUS provisions 7307.92.3010, 7307.92.3030, 7307.92.9000, and 7326.19.0010.

THE PRODUCT

Description and applications[11]

FSF are used in piping systems in the end markets of oil and gas, and in chemical plants, petrochemical plants, power plants and industrial piping systems that require distribution of liquids and gases under high pressure or of gases and liquids that are corrosive in nature. Fittings connect the pipes that are made to withstand the higher pressures used in such systems, and the fittings must also be able to withstand such pressures.

Forged steel fittings are typically produced from steel made to ASTM A105 or similar standards. They are connected to pipe (or couplings) either by being threaded, or by welding (figure I-1). Socket weld fittings are recommended for connections that require strength and duration. These types of forged fittings have a socket where the connecting pipe has to be sealed and welded (with a fillet-type seal weld) for installation. They are available in sizes up to 4 inches and in pressure ratings from class 3000 to 6000 and 9000. Typical applications of socket weld fittings are:

- Steam
- Explosive fluids / gas
- Acids and toxic fluids
- Long service / durable installations

Figure I-1
Socket weld, butt weld, and threaded fittings

Socket weld elbow fitting **Butt weld elbow fitting** **Threaded elbow fitting**

Note.—Socket weld and threaded fittings are within the product scope of these investigations. The butt weld fitting is included for comparison purposes with the socket weld fitting. The socket weld fitting requires only a fillet weld, whereas butt weld fittings imply more extensive welding of the butt weld ends. Butt weld pipe fittings are outside the product scope of these investigations.

Source: Tianjin Profound Multinational Trade Co., Ltd. ("TPMCSTEEL"), "What are the differences between Socket weld and Butt weld?" http://www.tpmcsteel.com/quality/butt-weld-socket-weld/, retrieved November 1, 2017.

[11] Unless otherwise noted, information in this section is from the Petition, pp. 5-7.

Threaded fittings are common for pipeworks such as water distribution, fire protection and cooling systems (low pressure applications, or installations that are not subject to vibration, elongation and bending forces). Threaded fittings should be avoided when the temperature of the fluid is subject to consistent variations, as sudden temperature changes would crack the threaded connection between the fitting and the pipe. Threaded fittings are available in sizes up to 4 inches and in pressure ratings from class 2000 to 3000 and 6000.

The main types of FSF are (figure I-2):

- 45, 90 degrees elbows
- equal and reducing tees
- laterals
- street elbows

Figure I-2
Main types of FSF

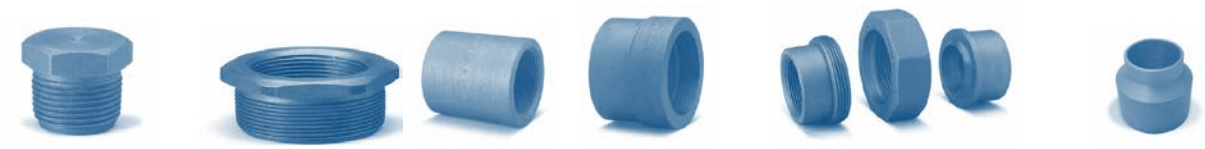
Elbow **Tee** **Lateral** **Street elbow**

Source: Bonney, product catalog, *Forged Steel Fittings & Unions,* p. 4.
http://www.bonneyforge.com/products.php?pg=fittings .

Other forged products belong to the family of forged fittings are (figure I-3):

- Plugs: round/square / hex head shaped
- Bushings: flush/ hexagonal
- Couplings: half/full
- Reducers and reducer inserts
- Unions: male/female, female/female, lug nut, rockwood type
- Welding bosses

Figure I-3
Examples of other FSF



Plug **Bushing** **Coupling** **Reducer** **Union** **Boss**

Source: Bonney, product catalog, *Forged Steel Fittings & Unions,* pp. 4, 16, 18
http://www.bonneyforge.com/products.php?pg=fittings, retrieved November 1, 2017.

The maximum size FSF is generally four inches. Although FSF is made in larger sizes, it is generally uneconomical to use FSF larger than four inches; fittings other than FSF are generally used instead. Also, larger FSF are usually made in a different forging process, open die forging, than FSF up to four inches which is generally made using a closed die process.[12]

Manufacturing processes[13]

Forging operations

The FSF manufacturing process normally begins with impression-die forging, also called closed-die forging, where a hammer is raised and then "dropped" onto a heated steel work piece to form it according to the shape of a die (figure I-4). In closed-die forging, a piece of hot steel bar is placed in a die resembling a mold, and then a hammer die is dropped onto the steel piece, causing the metal to flow and fill the die shape. These metal-forming dies must be precisely machined and carefully heat-treated to correctly form the steel piece, as well as to withstand the tremendous force involved. Forging dies are usually made of machine cut and polished, high-alloy steel. Forging requires capital expenditures for machinery, tooling, facilities and personnel. The machinery throughout the process is highly specialized, and facilities must be equipped with appropriate capabilities to melt and move steel, as well as have the ability to absorb the shock and vibration generated by the force. The forging process has been improved in recent years through increased automation, which includes induction heating, partial mechanical positioning and manipulation, and the direct heat treatment of parts after forging. In heat treatment the steel is heated and cooled at temperatures and durations which impart desired characteristics to the product. Normalizing is a type of heat treatment that imparts additional toughness to the fitting. Normalized FSF are used in colder climates, for example, in Canada.[14]

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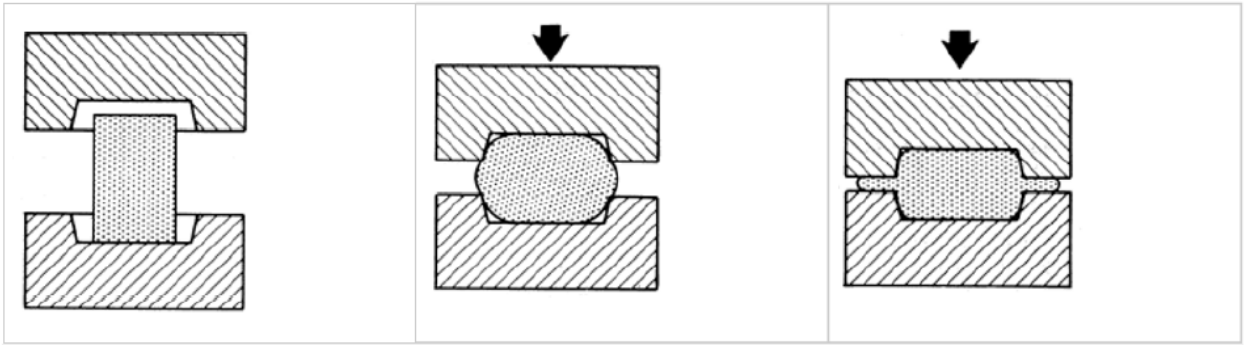
[12] Conference transcript, pp. 64-65 (Leone). Bonney does make forgings larger than four inches, using the open die forging process, at its Houston location for subsea manifolds. Conference transcript, pp. 65-66 (Leone). A subsea manifold is a large metal piece of equipment, made up of pipes and valves and designed to transfer oil/gas from wellheads into a pipeline. *See* the "Manufacturing Processes" section for a description of forging processes.

[13] Unless otherwise noted, information in this section is from the Petition, p. 8.

[14] Conference transcript, p. 55 (Almer). An importer reported that its imported FSF meet specification A105N and are different from FSF made to specification A105. ***'s importer questionnaire response, section III-22. A105N is not an official ASTM specification but appears to be an industry designation for normalized FSF meeting the ASTM A105 specification. The ASTM A105 specification includes both fittings which are not heat-treated as well as heat treated fittings, depending on the intended FSF application.

Figure I-4
Closed-die forging process



Heated workpiece is placed between two dies | Pressure is applied to the workpiece | Workpiece metal flows into and fills die cavity

Source of diagram: Forging Industry Association, "Impression Die Forging Process Operations," https://www.forging.org/impression-die-forging-process-operations, retrieved November 1, 2017.

FSF are also produced by the open die forging process. There are similarities between closed-die forging and open-die forging in that pressure is applied to a workpiece placed between two dies but the dies in the open-die process do not completely enclose the workpiece; generally, the sides of the workpiece are unenclosed (figure I-5). An advantage of the open-die forging process is that the size of the forging is limited, at least in theory, only by the maximum possible size of a workpiece.[15]

Figure I-5
Open-die forging process

Heated workpiece is placed between two dies | Pressure is applied to the workpiece | Height of workpiece decreases and its width increases

Note.—***. Staff telephone interview with ***.

Source: Forging Industry Association, "Open Die Forging Process,", https://www.forging.org/open-die-forging-process, retrieved November 1, 2017, descriptive text added by USITC staff

[15] Forging Industry Association, "Types of Forging Processes," https://www.forging.org/types-of-forging-processes , retrieved November 1, 2017.

The forging process produces steel pieces that are stronger than an equivalent cast or machined part. As the metal is shaped during the forging process, its internal grain forms to follow the general shape of the part. As a result, the grain is continuous throughout the part, giving rise to a steel product with improved strength characteristics. Forgings generally have approximately 20 percent higher strength-to-weight ratio compared to cast or machined parts of the same material.

Finishing operations

After receipt of the rough forgings, a machining and assembly shop uses a complete line of metal removal equipment including turning, boring, milling, drilling, grinding, polishing and welding to complete the manufacture of FSF and valves. (figure I-6). A range of coatings and treatments may be applied to protect the performance properties of the products. Certain products are assembled and adjusted by teams of trained personnel. All parts are fully labeled and documented to ensure their traceability, all the way back to the base raw material. The parts are subjected to rigorous quality and functionality tests before being washed, labeled, packed and shipped for delivery.

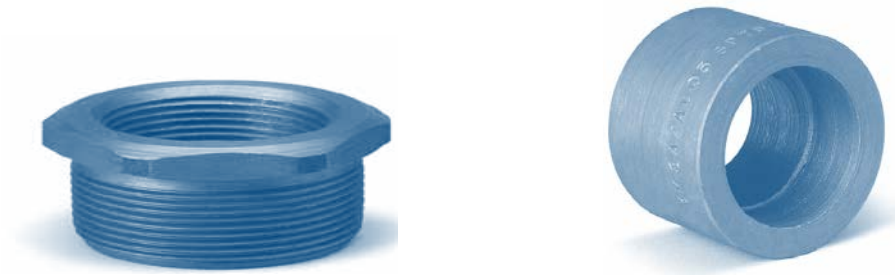
Figure I-6
FSF: Rough (unfinished) and finished

Note.--The FSF on the left is finished and the fitting on the right is unfinished.

Source: Staff photograph of FSF samples supplied by Bonney.

Most FSF are forged but there are certain products, within the product scope of these investigations, which are not forged, i.e., fittings which do not have a bend in their shape.[16] These fittings are machined directly from a bar or a seamless pipe. For example, a hex bushing (figure I-7) can be made directly from bar, "where you can just turn it, drill it, stamp it, build the hex head on it."[17] For certain cylindrical fittings, (certain couplings, for example), the fitting can be produced by cutting and finishing a seamless pipe (figure I-7).[18]

Figure I-7
Types of fittings machined directly from bar or seamless pipe



Hex bushing Coupling

Source: Bonney, product catalog, *Forged Steel Fittings & Unions*, pp. 14, 16, http://www.bonneyforge.com/products.php?pg=fittings .

Producers that perform both the forging and the machining and finishing operations are integrated producers. There are other producers, "finishers" or "converters," who acquire the rough forgings and only perform the machining and finishing operations. Of the responding producers, integrated producers include Bonney, PMW and Capitol; finishers include Anvil.[19]

DOMESTIC LIKE PRODUCT ISSUES

No issues with respect to domestic like product have been raised in these investigations. The petitioner proposes a single domestic like product corresponding to the scope.

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[16] "The vast majority" of Bonney's FSF are forged. Conference transcript, p. 17 (Almer).

[17] Conference transcript, p. 29 (Almer).

[18] Conference transcript, p. 64 (Almer). "We do use some seamless pipe for our 3 and 4-inch couplings and half couplings only. It's a very small volume, portion of our requirement." Conference transcript, p. 63 (Almer).

[19] Bonney, "Full Manufacturing Capabilities," http://www.bonneyforge.com/about.php?pg=capabilities, retrieved November 1, 2017. Producer questionnaire responses, section I-7.

INTERMEDIATE PRODUCTS

The following information is based on sales of unfinished FSF by U.S. producers; however the volume of such sales is extremely limited. In 2016, domestically produced unfinished FSF were limited to *** short tons ***.

Uses

According to producer questionnaires, unfinished FSF are dedicated to the production of finished FSF. According to Bonney, unfinished FSF are a ***.[20] Anvil describes unfinished FSF as their *** for production.[21]

Markets

The vast majority of unfinished FSF are consumed internally by integrated producers with sales of unfinished FSF making up only *** percent of all U.S. shipments. U.S. producers operating finishing-only operations import unfinished FSF with the intention of machining these fittings into finished FSF.

Characteristics and functions

According to producer questionnaires, unfinished FSF maintain the basic shape of finished FSF. PMW described unfinished FSF as ***.[22] Petitioners identified no metallurgic differences between unfinished FSF and finished FSF whether finished from a rough FSF or steel bar.[23]

Value

As described further in Part VI of this report, the value added when converting an unfinished FSF into a finished FSF ranges from *** percent to *** percent for finishing-only operations converting imported rough forgings. The value added for integrated producers ranges from *** percent to *** percent. Table I-1 presents U.S. producers' U.S. shipment unit values for finished and unfinished FSF (see tables III-9 and III-10). The average unit values for unfinished FSF were typically half those for finished FSF.

[20] Bonney's U.S. producers' questionnaire response, II-3f(i).
[21] Anvil's U.S. producers' questionnaire response, II-3f(i).
[22] PMW's U.S. producers' questionnaire response, II-3f(i).
[23] Conference transcript, p. 27 (Almer).

Table I-1

FSF: U.S. producers' U.S. shipments, by type, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Transformation process

As described in the manufacturing processes section of this part, the transformation process involves the drilling, turning, boring, milling, grinding, polishing, and welding of rough forgings. A range of coatings and treatments may then be applied.[24] U.S. producers provided the information regarding the complexity of the finishing process in table I-2.

Table I-2

FSF: U.S. producers' subjective assessments of the finishing complexity

Source	Complexity rating				
	Low 1	2	3	4	High 5
	Number of firms (count)				
U.S. producers	0	0	1	2	1

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

[24] Petition, p. 8.

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

U.S. MARKET CHARACTERISTICS

FSF are connection components for pipes used primarily in the oil and gas industry, and in chemical, petrochemical, and power plants.[1] The material used to produce FSF is mostly carbon and alloy hot-rolled steel bar, but a small share of FSF are produced from seamless pipe. FSF sold in the United States are typically produced according to Manufacturers Standardization Society (MSS) and American Society for Testing Materials (ASTM) specifications, as well as American Society of Mechanical Engineers (ASME) design standards.

The United States market for FSF is supplied by domestic producers and importers. Subject imports from China represented *** percent of total U.S. imports of FSF in 2016, down from *** percent in 2014. Subject imports from Italy represented *** percent in 2016, an increase from *** percent in 2014, and subject imports from Taiwan represented *** percent in 2016, a decrease from the 2014 level of *** percent. Nonsubject sources accounted for *** percent of all imports in 2016, a slight decrease from *** percent in 2014. Apparent U.S. consumption of FSF decreased by *** percent by value during 2014-16, but was *** percent higher in January-June 2017 than in January-June 2016.

CHANNELS OF DISTRIBUTION

U.S. producers and importers sold mainly to distributors, as shown in table II-1.[2] A notable exception is China, which produced both finished FSF and unfinished blanks to sell to finishers in the United States. However, U.S. importers' share of shipments of FSF from China to finishers declined from *** percent of all shipments in 2014 to *** percent in 2016.

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

* * * * * * *

GEOGRAPHIC DISTRIBUTION

U.S. producers and importers of FSF from China, Italy, and Taiwan reported selling FSF to all regions in the contiguous United States (table II-2). For U.S. producers, *** percent of sales were made within 100 miles of their production facility, *** percent were made between 101 and 1,000 miles, and *** percent were made over 1,000 miles. Subject importers sold *** percent of their FSF within 100 miles of their U.S. point of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

[1] Petitioners' postconference brief, p. 2.
[2] See also Petitioners' postconference brief, p. 10.

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

Region	U.S. producers	China U.S. importers	Italy U.S. importers	Taiwan U.S. importers	Subject U.S. importers
Northeast	4	3	4	8	13
Midwest	4	5	5	9	15
Southeast	4	2	5	8	13
Central Southwest	4	5	6	10	17
Mountain	4	3	4	10	13
Pacific Coast	4	1	5	8	12
Other[1]	4	1	3	5	8
All regions (except Other)	4	1	4	8	11
Reporting firms	4	8	7	10	20

[1] All other U.S. markets, including AK, HI, PR, and VI.

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 FSF have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced FSF to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and an increase in inventory levels in 2014-16.

Industry capacity

Domestic capacity utilization for integrated producers decreased from *** percent in 2014 to *** percent in 2016. Capacity utilization was *** percent in January-June 2016 and *** percent in January-June 2017. This relatively low level of capacity utilization suggests that U.S. producers may have substantial ability to increase production of FSF in response to an increase in prices.

Domestic capacity utilization for finishers decreased from *** percent in 2014 to *** percent in 2017. Capacity utilization was *** percent in January-June 2016 and *** percent in January-June 2017.

Alternative markets

U.S. producers' exports, as a percentage of total shipments, decreased from *** percent to *** percent during 2014-16, and were *** percent in the first half of 2017, compared with *** percent in the first six months of 2016, indicating that U.S. producers may have limited ability to shift shipments between the U.S. market and other markets in response to price changes.

Inventory levels

U.S. integrated producers' inventories relative to total shipments, increased from *** percent in 2014 to *** percent in 2016. Inventories were *** percent of total shipments in January-June 2016, but were *** percent in January-June 2017. 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

All four responding U.S. producers stated that they could not switch production from FSF to other products.[3] Producers reported that they can produce custom order FSF on the same equipment as the standard FSF.

Subject imports from China[4]

Based on available information, producers of FSF from China have the ability to respond to changes in demand with large changes in the quantity of shipments of FSF to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity and shifting from alternative markets.

Industry capacity

Capacity utilization in China decreased from *** percent in 2014 to *** percent in 2016. This relatively low level of capacity utilization suggests that Chinese producers may have a moderate ability to increase production of FSF in response to an increase in prices.

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[3] Conference transcript, p. 26 (Almer).

[4] For data on the number of responding foreign firms and their share of U.S. imports from China, please refer to Part I, "Summary Data and Data Sources."

Alternative markets

Shipments from China to markets other than the United States, as a percentage of total shipments, increased between 2014 and 2016. Shipments to domestic markets remained relatively unchanged, fluctuating between *** percent in 2014 and *** percent in 2016, and shipments to export markets other than the United States rose from *** percent to *** percent of total shipments. Shipments to domestic markets were *** percent in January-June 2017, compared to *** percent in the same period of 2016, shipments to export markets other than the United States were *** percent, down from *** percent in the first half of 2017 and 2016, respectively. Exports from China indicate that producers may have a substantial ability to shift shipments between domestic or other markets and the U.S. market in response to price changes.

Inventory levels

Inventories of producers from China slightly increased. Relative to total shipments, inventory levels increased from *** percent in 2014 to *** percent in 2016. In January-June 2016 the inventory levels were *** percent, but were *** percent in January-June 2017. 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

One of three responding producers from China stated that they could not switch production from FSF to other products. The remaining two producers from China stated that they could switch production to forged fittings made from stainless steel and nickel alloys other machined components.

Subject imports from Italy[5]

Based on available information, producers of FSF from Italy have the ability to respond to changes in demand with moderate changes in the quantity of shipments of FSF to the U.S. market. The main contributing factor to this degree of responsiveness of supply is the availability of unused capacity.

Industry capacity

Capacity utilization in Italy decreased from *** percent in 2014 to *** percent in 2016. This low level of capacity utilization suggests that producers in Italy may have a substantial ability to increase production of FSF in response to an increase in prices.

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[5] For data on the number of responding foreign firms and their share of U.S. imports from Italy, please refer to Part I, "Summary Data and Data Sources."

Alternative markets

Shipments from Italy to markets other than the United States, as a percentage of total shipments, decreased. Shipments to domestic markets rose from *** percent in 2014 to *** percent in 2016, while shipments to export markets other than the United States declined from *** percent to *** percent. In January-June 2017 shipments to domestic markets were *** percent, compared to *** percent in January-June 2016. Shipments to export markets other than the United States were *** percent in January-June 2017, compared to *** percent in January-June 2016. These data indicate that producers in Italy may have a moderate ability to shift shipments between domestic or other markets and the U.S. market in response to price changes.

Inventory levels

Inventories of producers from Italy increased relative to total shipments from *** percent in 2014 to *** percent in 2016. In January-June 2017 inventory levels relative to total shipments were *** percent, whereas in January-June 2016, these levels were *** percent. These inventory levels suggest that responding foreign firms may have some ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

Two of four responding producers from Italy stated that they could not switch production from FSF to other products. The remaining two producers from Italy have reported that they can switch their production, one to other products such as gears, yokes, bowls, and hubs, the other one only to forged fittings made from carbon and alloy steels.

Subject imports from Taiwan[6]

Based on available information, producers of FSF from Taiwan have the ability to respond to changes in demand with small changes in the quantity of shipments of FSF to the U.S. market. Factors mitigating responsiveness of supply include limited availability of unused capacity and low level of inventories.

[6] For data on the number of responding foreign firms and their share of U.S. imports from Taiwan, please refer to Part I, "Summary Data and Data Sources."

Industry capacity

Capacity utilization in Taiwan remained almost unchanged fluctuating around *** percent in 2014 to *** percent 2016. This relatively high level of capacity utilization suggests that producers in Taiwan may have limited ability to increase production of FSF in response to an increase in prices.

Alternative markets

Shipments from Taiwan to markets other than the United States, as a percentage of total shipments, increased between 2014 and 2016. Shipments to domestic markets rose from *** percent in 2014 to *** percent in 2016, and shipments to export markets other than the United States rose from *** percent in 2014 to *** percent in 2016. Shipments to domestic markets were *** percent in January-June 2017, compared to *** percent in January-June 2016. Shipments to markets other than the United States were *** percent in January-June 2017, compared with *** percent in January-June 2016. Exports from Taiwan 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.

Inventory levels

Inventories of responding firms from Taiwan increased relative to total shipments from *** percent in 2014 to *** percent in 2016. In January-June 2017, these inventory levels were *** percent. In contrast, in January-June 2016, they were *** percent. 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

One of three responding producers from Taiwan stated that they could not switch production from FSF to other products. One of the remaining two producers has stated that they can switch production to stainless FSF only.

Nonsubject imports

The majority of nonsubject imports of FSF are imported from Korea, Mexico, and India, although they account for a small share of the U.S. market. Nonsubject imports of FSF accounted for *** percent of total U.S. imports in 2014, and a lower *** percent in 2016. In January-June 2017, nonsubject imports accounted for *** percent of total U.S. imports of FSF, lower than the January-June 2016 level of *** percent.

Supply constraints

Importers have not reported any significant supply constraints from any of the subject or nonsubject sources.

U.S. demand

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

End uses and cost share

U.S. demand for FSF depends on the demand for piping systems used in the oil and gas industry, as well as the chemical and petrochemical industries. FSF account for a small cost share of those piping systems. Reported cost shares for some end uses were as low as 5 percent.

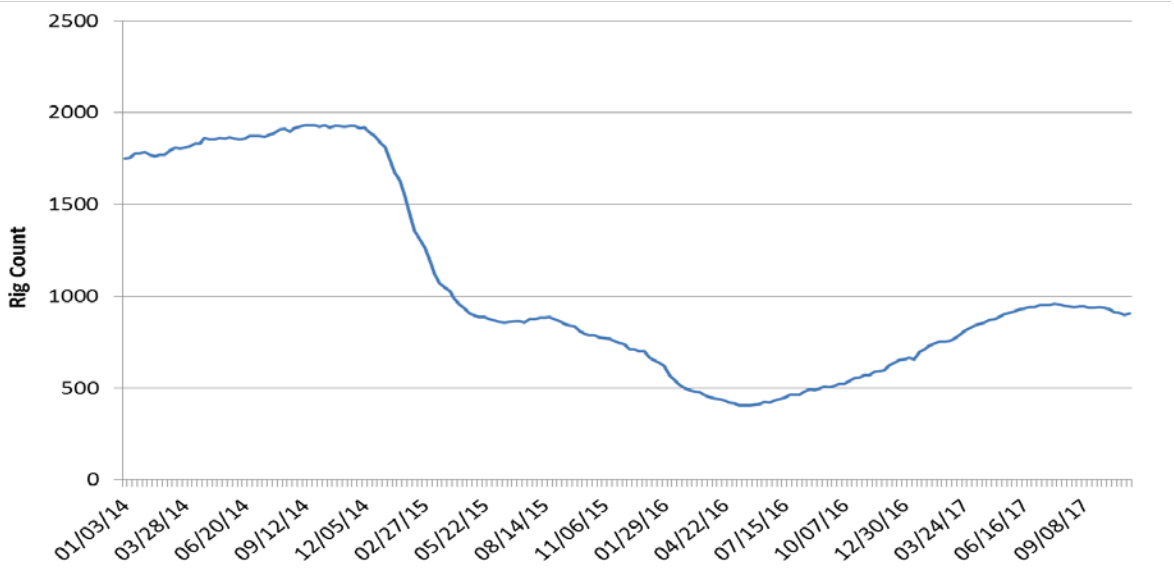
Business cycles

Two of four U.S. producers and six of 22 importers indicated that the market was subject to business cycles or conditions of competition unique to the FSF market. Specifically, the demand for FSF is affected by the demand for oil and gas products, and therefore affected by swings in prices of oil and gas.

Figure II-1 shows the average number of rotary oil rigs in the United States from 2014 into 2017. In 2014, there were 1,862 rigs in operation, in 2016 there were only 510 rigs.

Figure II-1

Baker Hughes Rotary Rig Count: Weekly average number of rotary oil rigs in United States, 2014-17



Note. – According to EIA, West Texas Intermediate oil prices increased from 31.68 to 49.82 dollars per barrel between January 2016 and September 2017, while Henry Hub natural gas prices increased from 2.28 to 2.98 dollars per million btu between January 2016 and September 2017. See https://www.eia.gov/petroleum/data.php and https://www.eia.gov/naturalgas/data.php

Source: Baker Hughes North America rotary rig count data

Demand trends

Seven of 20 U.S. importers and three of four U.S. producers reported a decrease in U.S. demand for FSF since January 1, 2014 (table II-3). Five of 20 U.S. importers and one of three U.S. producers have reported fluctuations in demand for FSF in the U.S. One U.S. producers and four U.S. importers have stated that demand for FSF outside the United States has decreased. Three importers have reported that foreign demand has increased or has not changed, and two importers have stated that the demand outside the U.S. has been fluctuating.

Table II-3
FSF: 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	---	---	3	1
Importers	3	5	7	5
Demand outside the United States				
U.S. producers	---	---	1	---
Importers	3	3	4	2

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

Substitute products

The Petitioners claim there are no close substitutes to FSF.[7]

SUBSTITUTABILITY ISSUES

The degree of substitution between domestic and imported FSF 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 high degree of substitutability between domestically produced FSF and FSF imported from subject sources. Petitioners argue that FSF are a commodity-like product that is highly substitutable and therefore price sensitive.[8]

Lead times

FSF are primarily sold from inventory. U.S. producers reported that *** percent of their commercial shipments came from inventories, with lead times averaging *** days. The remaining *** percent of their commercial shipments were produced-to-order, with lead times averaging *** days. Importers reported that *** percent of their commercial shipments were produced-to-order, with lead times averaging *** days. The remaining *** percent of their

[7] Conference transcript, p. 32 (Schagrin).
[8] Conference transcript, pp. 33 (Schagrin) and 54 (Leone).

commercial shipments came from U.S. inventories, with lead times averaging *** days, and *** percent came from foreign inventories, with lead times averaging *** days.

Comparison of U.S.-produced and imported FSF

In order to determine whether U.S.-produced FSF can generally be used in the same applications as imports from China, Italy, and Taiwan, 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, producers and most importers reported FSF as either "always" or "frequently" interchangeable.

In addition, producers and importers were asked to assess how often differences other than price were significant in sales of FSF from the United States, subject, or nonsubject countries. As seen in table II-5, U.S. producers have reported that differences other than price were never significant, with a notable exception of one producer reporting a difference other than price as sometimes significant when comparing U.S. products to those from Taiwan. Importers have mostly reported that the difference in factors other than price is never or sometimes significant, though roughly a third of reporting importers have stated that factors other than price are always or frequently significant in determining the source of the FSF.

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

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting			
	A	F	S	N	A	F	S	N
U.S. vs. subject countries:								
U.S. vs. China	3	---	---	---	6	4	1	1
U.S. vs. Italy	3	---	---	---	3	5	2	---
U.S. vs. Taiwan	4	---	---	---	5	3	3	1
Subject countries comparisons:								
China vs. Italy	3	---	---	---	3	2	2	1
China vs. Taiwan	3	---	---	---	3	2	---	1
Italy vs. Taiwan	3	---	---	---	3	1	3	1
Nonsubject countries comparisons:								
U.S. vs. nonsubject	2	---	---	---	2	2	2	---
China vs. nonsubject	2	---	---	---	2	2	1	---
Italy vs. nonsubject	2	---	---	---	2	1	3	---
Taiwan vs. nonsubject	2	---	---	---	2	1	1	---

Note.—A=Always, F=Frequently, S=Sometimes, N=Never.

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

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

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting			
	A	F	S	N	A	F	S	N
U.S. vs. subject countries:								
U.S. vs. China	---	---	---	3	2	2	4	3
U.S. vs. Italy	---	---	---	3	2	2	3	3
U.S. vs. Taiwan	---	---	1	3	1	3	6	2
Subject countries comparisons:								
China vs. Italy	---	---	---	3	3	---	3	1
China vs. Taiwan	---	---	---	3	---	1	2	2
Italy vs. Taiwan	---	---	---	3	3	1	3	1
Nonsubject countries comparisons:								
U.S. vs. nonsubject	---	---	---	2	---	1	1	3
China vs. nonsubject	---	---	---	2	---	---	1	3
Italy vs. nonsubject	---	---	---	2	1	---	1	2
Taiwan vs. nonsubject	---	---	---	2	---	---	1	2

Note.--A = Always, F = Frequently, S = Sometimes, N = Never.

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

PART III: U.S. PRODUCERS' PRODUCTION, SHIPMENTS, AND EMPLOYMENT

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the subsidies and dumping margins was presented in *Part I* of this report and information on the volume and pricing of imports of the subject merchandise is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire responses of four firms that accounted for the large majority of U.S. production of FSF during 2016.

U.S. PRODUCERS

The Commission issued questionnaires to 13 firms based on information contained in the petition, proprietary Customs data, and approved manufacturers lists. Four firms provided usable data on their productive operations. Staff believes that these responses represent the large majority of U.S. production of FSF.[1]

Table III-1 lists U.S. producers of FSF, their production locations, positions on the petition, and shares of total production. As shown below, three responding firms are fully integrated producers while one finishes purchased blank forged fittings.

Table III-1
FSF: U.S. producers, their positions on the petition, production locations, and shares of reported production, 2016

Firm	Position on petition	Production location(s)	Share of integrated production (percent)	Share of finisher only production (percent)
Anvil	***	Longview, TX Houston, TX Houston, TX	***	***
Bonney	Support	Mount Union, PA Houston, TX	***	***
Capitol	***	Crowley, LA Allentown, PA Catasauqua, PA	***	***
PMW	***	Aston, PA Houston, TX Swedesboro, NJ	***	***
Total			***	***

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

[1] Staff received usable responses from all four producers identified in the petition. Three additional firms responded that they do not produce FSF nor have they from since 2014.

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

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

* * * * * * *

No U.S. producers are related to foreign producers of the subject merchandise and no U.S. producers are related to U.S. importers of the subject merchandise. However, as discussed in greater detail below, Anvil directly imports FSF from ***. Several U.S. producers reported changes in operations since January 1, 2014, presented in table III-3.

Table III-3
FSF: 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 integrated U.S. producers' production, capacity, and capacity utilization. Production capacity of the three integrated capacity increased incrementally as *** increased production capability by *** short tons. Average capacity utilization, however, declined sharply from 2014-16, falling by *** percentage points. This decrease was driven mostly by greatly reduced production levels at the *** who saw capacity utilization drop by *** and *** percentage points respectively.[2] However, average capacity utilization during the interim period of January to June 2017 was *** percentage points higher than the same period in 2016. *** integrated producers experienced higher capacity utilization in interim 2017 compared with interim 2016, consistent with the modest recovery of oil and gas prices, as described in Part II of this report.

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

* * * * * * *

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

* * * * * * *

[2] Following a production low in 2015, *** experienced a moderate production recovery, with capacity utilization increasing by *** percentage points.

Table III-5 and figure III-2 present non-integrated finishing by Anvil. While capacity remained constant from 2014-16, the volume of FSF finished by Anvil declined by *** short tons. Finishing volume was *** short tons higher in January to June 2017 than January to June 2016.

Table III-5
FSF: Anvil's non-integrated finishing, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Figure III-2
FSF: Anvil's non-integrated finishing, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Alternative products

As shown in tables III-6 and III-7, FSF accounted for *** percent of the product forged during 2016 by U.S. producers and *** percent of the product finished during 2016. During 2014-16, there was an absolute decrease in total production of both forgings and finished product. Additionally, the ratio of FSF production declined relative to the forging and finishing of other products.[3] While there was a higher level of forging production during January to June 2017, the ratio of FSF to other products was lower. Finishing operations experienced higher levels of FSF production in January to June 2017, both absolutely and relative to other products, than in January to June 2016.

Table III-6
FSF: U.S. producers' overall plant capacity and production on the same equipment as subject production using forging machinery, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Table III-7
FSF: U.S. producers' operations on the same equipment as subject production using finishing machinery, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

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

Table III-8 presents integrated U.S. producers' U.S. shipments, export shipments, and total shipments. Total shipments declined from 2014-16, with U.S. shipments declining at

[3] In questionnaire responses, U.S. producers identified *** as products manufactured on the same equipment as FSF.

roughly the same rate as export shipments, but were higher in January to June 2017 than in January to June 2016. U.S. shipments accounted for a substantial majority of total shipments in each full and partial year. Table III-9 presents integrated U.S. producers' U.S. shipments by type. As shown below, virtually all U.S. shipments from integrated producers are finished, with unfinished fittings representing just *** percent of all U.S. shipments by quantity in 2014, 2015, and 2016 respectively.

Table III-8
FSF: Integrated U.S. producers' U.S. shipments, exports shipments, and total shipments, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Table III-9
FSF: Integrated U.S. producers' U.S. shipments, by type, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Table III-10 presents finisher Anvil's U.S. shipments, export shipments, and total shipments. Anvil experienced *** total shipments during 2014-16 with a *** in interim 2017. *** shipments by Anvil were within the U.S. market.

Table III-10
FSF: Anvil's U.S. shipments, exports shipments, and total shipments, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Table III-11 presents consolidated U.S. producers' U.S. shipments, export shipments, and total shipments. Because ***, although the incremental value of such shipments is included.[4] The incremental value to imported rough FSF in 2016 was equivalent to *** percent of the value of integrated FSF production and accounted for *** percent of the value of all U.S. shipments in 2014, 2015, and 2016 respectively. The incremental value by finishing imported blank FSF was *** higher in January to June 2017 than January to June 2016.

Table III-11
FSF: Consolidated U.S. producers' U.S. shipments, exports shipments, and total shipments, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

[4] Incremental value is calculated as the difference of the value of Anvil's finished FSF and the value of Anvil's imported blank FSF.

U.S. PRODUCERS' INVENTORIES

Table III-12 presents integrated U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments. Table III-13 presents Anvil's end-of-period inventories. For both integrated and finishing only operations, end-of-period inventories declined from 2014-16. However, during that period the ratio of inventories to U.S. production, U.S. shipments, and total shipments increased. Integrated operations saw inventories reach approximately *** of production, shipments, and total shipments by 2016. For finishing operations, the ratio of inventories increased to more than *** percent of U.S. production and more than *** percent of U.S. and total shipments.

Table III-12
FSF: Integrated U.S. producers' inventories, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Table III-13
FSF: Non-integrated U.S. producer's 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 FSF are presented in table III-14. While integrated producers did not report purchasing or importing subject merchandise, Anvil reported importing FSF from ***. Anvil's FSF operations since 2014 have consisted *** of finishing rough fittings which it *** and distributing finished FSF which it ***.

Table III-14
FSF: U.S. producers' direct imports, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-15 shows integrated U.S. producers' employment-related data, table III-16 shows non-integrated finishing employment-related data, and table III-17 shows all U.S. producers' employment related data.

Table III-15
FSF: Integrated U.S. producers' employment related data, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Table III-16
FSF: Anvil's employment related data, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Table III-17
FSF: U.S. producers' employment related data for all producers, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

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

U.S. IMPORTERS

The Commission issued importer questionnaires to 106 firms believed to be importers of FSF or related products, as well as to all U.S. producers of FSF.[1] Usable questionnaire responses were received from 22 companies, representing 26.3 percent of U.S. imports from subject countries in 2016 under HTS statistical reporting numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060. Table IV-1 lists all responding U.S. importers of FSF from China, Italy, Taiwan and other sources, their locations, and their shares of U.S. imports, in 2016.

[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 statistical reporting numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060 in 2016.

Table IV-1
FSF: U.S. importers by source, 2016

Firm	Headquarters	Share of imports by source (percent)					
		China	India	Taiwan	Subject sources	Nonsubject sources	All import sources
American Piping	Chesterfield, MO	***	***	***	***	***	***
Anvil	Exeter, NH	***	***	***	***	***	***
Bell	Gainesville, TX	***	***	***	***	***	***
DNow	Houston, TX	***	***	***	***	***	***
Global Stainless	Houston, TX	***	***	***	***	***	***
ITEX	Houston, TX	***	***	***	***	***	***
Matco-Norca	Brewster, NY	***	***	***	***	***	***
MEGA	Scanzorosciate, IT	***	***	***	***	***	***
Merit Brass	Cleveland, OH	***	***	***	***	***	***
Midland	Kansas City, MO	***	***	***	***	***	***
ProPulse	Peosta, IA	***	***	***	***	***	***
Rapid Cool	Blacksburg, VA	***	***	***	***	***	***
Reditek	Pompano Beach, FL	***	***	***	***	***	***
Samwon	Schaumburg, IL	***	***	***	***	***	***
SenSource	Cincinnati, OH	***	***	***	***	***	***
Silbo	Montvale, NJ	***	***	***	***	***	***
Smith Cooper	Commerce, CA	***	***	***	***	***	***
Southwest	Pearland, TX	***	***	***	***	***	***
Texas Pipe	Houston, TX	***	***	***	***	***	***
Titus	Dallas, TX	***	***	***	***	***	***
Triangle Metals	Bixby, OK	***	***	***	***	***	***
WWF	Vernon Hills, IL	***	***	***	***	***	***
Total		***	***	***	***	***	***

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

U.S. IMPORTS

Table IV-2 and figure IV-1 present data for U.S. imports of FSF from China, Italy, Taiwan, and all other sources. According to data provided by responding firms, U.S. imports generally declined from 2014 to 2016. However, imports from Italy increased from *** short tons in 2014 in *** short tons in 2016, peaking at *** short tons in 2015. This *** percent increase in imports from Italy was offset by declines in imports from China and Taiwan from 2014 to 2016. Subject imports from China fell from *** short tons to *** short tons and subject imports from Taiwan fell from *** short tons to ***, a drop of *** percent and *** percent respectively. Subject imports in January to June 2017 were *** percent higher than during the same period of 2016.

Average unit values for subject imports in aggregate increased modestly from 2014-16. In contrast, the average unit values for subject imports in aggregate were modestly lower in January to June 2017 than in January to June 2016. The average unit values for the limited volumes of imports from nonsubject countries exhibited similar directional movement, but were markedly higher and more volatile.

Subject import quantities are equivalent to *** percent of total U.S. production for 2016, increasing from *** percent of total U.S. production in 2014. The ratio of imports to integrated U.S. production from each subject country also increased from 2014 to 2016, and increased from January to June 2016 to January to June 2017. Nonsubject imports remained relatively constant, increasing from *** percent of U.S. production in 2014 to *** percent of U.S. production in 2016.

Table IV-2
FSF: 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 (short tons)				
U.S. imports from.--					
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	10,929	9,826	7,141	2,728	5,698
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
U.S. imports from.--					
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	40,876	37,809	28,272	10,738	21,847
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Unit value (dollars per short ton)				
U.S. imports from.--					
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	3,740	3,848	3,959	3,936	3,834
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of quantity (percent)				
U.S. imports from.--					
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	100.0	100.0	100.0	100.0	100.0

Table continued on next page.

Table IV-2 -- Continued
FSF: 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
	Share of value (percent)				
U.S. imports from.--					
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	100.0	100.0	100.0	100.0	100.0
	Ratio to integrated U.S. production				
U.S. imports from.--					
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Ratio to total U.S. production				
U.S. imports from.--					
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	***
All other sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Figure IV-1
FSF: U.S. import quantities and average unit values, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

NEGLIGIBILITY

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[2] 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

[2] 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)).

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.[3] As shown in table IV-3, imports from China accounted for *** percent of total imports of FSF by quantity from October 2016 to September 2017. Imports from Italy accounted for *** percent of total imports of FSF by quantity from October 2016 to September 2017. Imports from Taiwan accounted for *** percent of total imports of FSF by quantity from October 2016 to September 2017.

Table IV-3
FSF: U.S. imports in the twelve month period preceding the filing of the petition

Item	October 2016 to September 2017	
	Questionnaire data	
	Quantity (short tons)	Share of quantity (percent)
China	***	***
Italy	***	***
Taiwan	***	***
Subject sources	11,621	***
Nonsubject sources	***	***
All import sources	***	100.0

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

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

Subject FSF may be unfinished (forged or semi-finished) or finished. As shown in table IV-4, in 2016, the majority (*** percent) of FSF in the market were finished FSF. The vast majority of unfinished FSF in the market were ***. Unfinished FSF from *** accounted for *** percent of all imports of unfinished FSF and *** percent of all unfinished FSF.

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

Table IV-4
FSF: U.S. producers' U.S. shipments and U.S. importers' U.S. imports, by type and source, 2016

* * * * * * *

Geographical markets

As shown in Table IV-5, imports of merchandise in the broad HTS statistical reporting numbers containing FSF entered the U.S. through all borders of entry, with the majority of subject imports entering through the South (Houston-Galveston, Texas) followed by the North (Chicago, Illinois). Other major ports of entry include Los Angeles, California; Cleveland, Ohio; and New York, New York.

Table IV-5
FSF: U.S. imports by source and border of entry, 2016

Item	East	North	South	West	Total
	Quantity (short tons)				
China	12,215	18,382	19,224	10,245	60,066
Italy	1,157	1,497	7,518	38	10,211
Taiwan	1,089	2,413	1,239	1,281	6,022
Subject sources	14,461	22,292	27,981	11,564	76,299
Nonsubject sources	15,337	10,525	65,736	3,658	95,255
All import sources	29,798	32,817	93,717	15,222	171,554
	Share across (percent)				
China	20.3	30.6	32.0	17.1	100.0
Italy	1.9	14.7	73.6	0.4	100.0
Taiwan	1.8	40.1	20.6	21.3	100.0
Subject sources	24.1	29.2	36.7	15.2	100.0
Nonsubject sources	25.5	11.0	69.0	3.8	100.0
All import sources	49.6	19.1	54.6	8.9	100.0
	Share down (percent)				
China	41.0	56.0	20.5	67.3	35.0
Italy	3.9	4.6	8.0	0.2	6.0
Taiwan	3.7	7.4	1.3	8.4	3.5
Subject sources	48.5	67.9	29.9	76.0	44.5
Nonsubject sources	51.5	32.1	70.1	24.0	55.5
All import sources	100.0	100.0	100.0	100.0	100.0

Source: Official U.S. imports statistics under statistical report numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060 accessed October 24, 2017.

Presence in the market

As shown in table IV-6, merchandise imported under the broad HTS statistical reporting numbers containing FSF was present in all 44 months from January 2014 to August 2017.

Table IV-6
FSF: U.S. imports by source and month of entry, 2016

Month of entry	China	Italy	Taiwan	Subject	Nonsubject	Total U.S. imports
	Quantity (short tons)					
2014.--						
January	10,683	667	851	12,202	9,991	22,193
February	9,100	420	666	10,186	9,743	19,929
March	7,240	717	630	8,587	10,315	18,902
April	10,594	774	871	12,239	11,472	23,711
May	10,803	920	888	12,611	10,026	22,638
June	10,611	1,044	742	12,397	10,041	22,438
July	12,097	1,443	818	14,358	10,590	24,947
August	10,074	999	651	11,724	10,130	21,854
September	10,820	764	1,051	12,634	10,980	23,614
October	9,843	711	472	11,026	11,395	22,422
November	9,779	995	805	11,579	10,584	22,163
December	10,473	917	914	12,304	10,559	22,863
2015.--						
January	12,872	934	1,221	15,026	11,290	26,316
February	8,450	764	716	9,930	9,373	19,303
March	10,588	1,287	1,113	12,988	11,379	24,367
April	7,333	1,766	904	10,002	10,229	20,231
May	5,968	2,842	614	9,424	9,807	19,231
June	6,386	1,999	875	9,260	8,555	17,815
July	5,626	1,758	603	7,987	8,529	16,516
August	5,732	1,732	629	8,093	7,627	15,720
September	5,887	996	539	7,422	6,762	14,185
October	5,035	1,043	599	6,677	7,934	14,611
November	4,920	862	387	6,170	7,800	13,970
December	5,439	997	366	6,803	7,330	14,133

Table continued on next page

Table IV-6--Continued

FSF: U.S. imports by source and month of entry, 2016

Month of entry	China	Italy	Taiwan	Subject	Nonsubject	Total U.S. imports
	Quantity (short tons)					
2016.--						
January	5,600	1,078	558	7,236	8,401	15,637
February	4,590	911	454	5,955	7,223	13,179
March	3,448	792	338	4,578	7,744	12,322
April	4,449	833	440	5,722	8,348	14,069
May	4,520	514	492	5,525	7,814	13,339
June	4,848	616	319	5,782	7,629	13,411
July	5,116	487	527	6,130	7,603	13,734
August	4,847	624	613	6,084	9,266	15,350
September	5,213	1,102	445	6,760	7,866	14,625
October	5,273	657	495	6,425	8,410	14,835
November	6,330	1,312	669	8,311	7,328	15,639
December	5,833	1,283	674	7,790	7,625	15,415
2017.--						
January	7,175	1,479	652	9,307	8,588	17,894
February	6,423	833	455	7,712	9,447	17,159
March	6,769	1,889	793	9,451	10,846	20,297
April	8,133	1,422	627	10,181	10,391	20,573
May	11,010	2,148	797	13,955	13,217	27,172
June	9,528	1,569	817	11,914	12,700	24,614
July	10,443	1,458	730	12,631	11,704	24,335
August	7,849	1,798	1,002	10,649	11,435	22,084

Source: Official U.S. imports statistics under statistical report numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060 accessed October 24, 2017.

APPARENT U.S. CONSUMPTION AND U.S. MARKET SHARES

Table IV-7 and figure IV-2 present data on apparent U.S. consumption and market shares for FSF.

Table IV-7
FSF: U.S. shipments of domestic product, U.S. shipments of imports, and 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 (short tons)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	11,238	9,372	8,127	3,759	6,216
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	56,698	46,898	40,944	19,161	31,771
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Share of quantity (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Share of value (percent)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

Figure IV-2
FSF: Apparent U.S. consumption, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

For most U.S. producers, the main raw material used to produce FSF is special bar quality ("SBQ") hot-rolled steel bar.[1] Three of the four reporting U.S. producers are integrated, forging from purchased steel bar. The remaining U.S. producer purchases unfinished FSF as its main raw material. Figure V-1 presents the average price of carbon steel and alloy steel "SBQ" hot-rolled bar, which in September 2017 were approximately *** dollars and *** dollars per hundredweight, respectively. This represents price increases from the minimum of approximately *** dollars and *** dollars per hundredweight, respectively, in October of 2016, an increase of about *** percent. For integrated producers, raw materials, as a share of the cost of goods sold, decreased from *** percent in 2014 to *** percent in 2016, and were *** percent in the first six months of 2017. For finishers, raw materials decreased from *** percent of the cost of goods sold in 2014 to *** percent in 2016.

Figure V-1
Hot-rolled bar: Prices of carbon steel and alloy steel "SBQ" bar, monthly, January 2014-September 2017

* * * * * * *

Transportation costs to the U.S. market

Transportation costs for FSF shipped from China, Italy, and Taiwan to the United States averaged ***, ***, and *** percent, respectively, in 2016. These estimates were derived from official import data and represent the transportation and other charges on imports.[2]

U.S. inland transportation costs

All U.S. producers and 15 of 22 importers reported that they typically arrange transportation to their customers. Seven importers ship from the point of importation, whereas the remaining 15 ship from a U.S. storage facility. Most U.S. producers reported that their U.S. inland transportation costs ranged from *** percent while most importers reported costs of up to *** percent.

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[1] Conference transcript, pp. 69-70 (Almer).

[2] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2016 and then dividing by the customs value based on the HTS subheadings 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060.

PRICING PRACTICES

Pricing methods

All U.S. producers sell using price lists. Three of four U.S. producers also reported using other methods, such as transaction-by-transaction negotiation and market prices. The majority of importers reported using transaction-by-transaction negotiations; of the remaining importers, most reported using set price lists (table V-1).

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

Method	U.S. producers	Importers
Transaction-by-transaction	1	13
Contract	---	4
Set price list	4	9
Other	3	3
Responding firms	4	22

[1] The sum of responses down does not add up to the total number of responding firms as each firm was instructed to check all applicable price setting methods employed.

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

U.S. producers reported selling *** percent of their FSF under annual contracts, and *** percent of the FSF in the spot market. Importers sold *** percent of their product in the spot market, about *** percent under short-term contracts, with the remainder divided between long-term and annual contracts (table V-2).

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

* * * * * * *

Sales terms and discounts

U.S. producers and importers typically quote prices on an f.o.b. basis with exception of six importers who reported quoting prices on a delivered basis. Three of four producers offer annual volume discounts, while two offer no discounts. Most importers do not offer any discounts, but six offer quantity discounts. The most commonly reported sales terms by the U.S. producers and importers were sales terms of net 30 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 FSF products shipped to unrelated U.S. customers during January 2014-June 2017.

Product 1.—ASME B16.11, ¼" 3000 Tee (threaded)

Product 2.—ASME B16.11, 1" 2000 90 Elbow (threaded)

Product 3.—ASME B16.11, ¾" 3000 Union (threaded)

Product 4.— ASME B16.11, 2" 3000 Coupling (threaded)

Four U.S. producers and 22 importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[3] Pricing data reported by these firms accounted for approximately 6.8 percent of U.S. producers' shipments of product, 10.2 percent of U.S. shipments of subject imports from China, and 3.9 percent of U.S. shipments of subject imports from both Italy and Taiwan in 2016.[4]

Price data for products 1-4 are presented in tables V-3 to V-6 and figures V-1 to V-4.

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

* * * * * * *

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

* * * * * * *

[3] 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.

[4] Overall, the coverage for pricing products in 2016 was 5.6 percent for imports from subject countries and 6.8 percent for U.S. producers.

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

* * * * * * *

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

* * * * * * *

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

* * * * * * *

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

* * * * * * *

Table V-5a
FSF: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by quarters, January 2014 to June 2017

* * * * * * *

Table V-5b
FSF: Weighted-average f.o.b. prices and quantities of domestic and imported product 3 and margins of underselling/(overselling), by quarters, January 2014 to June 2017

* * * * * * *

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

* * * * * * *

Table V-6a
FSF: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by quarters, January 2014 to June 2017

* * * * * * *

Table V-6b
FSF: Weighted-average f.o.b. prices and quantities of domestic and imported product 4 and margins of underselling/(overselling), by quarters, January 2014 to June 2017

* * * * * * *

Figure V-4
FSF: Weighted-average prices and quantities of domestic and imported product 4, by quarters, January 2014-June 2017

* * * * * * *

Price trends

In general, prices decreased during January 2014-June 2017 for all four products from the United States and Taiwan. Prices for imports from Italy increased for products 1 and 4, but decreased for products 2 and 3. Table V-7 summarizes the price trends, by country and by product. As shown in the table, domestic price declines ranged from *** to *** percent during January 2014-June 2017 while price changes for Italy ranged from a decrease of *** percent to an increase of *** percent, and import price declines ranged from *** to *** percent for Taiwan. The majority of price declines occurred in the last quarter of 2016.

Table V-7
FSF: Summary of weighted-average f.o.b. prices for products 1-4 from the United States, China, Italy, and Taiwan, January 2014-June 2017

* * * * * * *

Price comparisons

As shown in table V-8, prices for FSF imported from China were below those for U.S.-produced FSF in *** instances (*** pounds), prices for FSF imported from Italy were below those for U.S.-produced FSF in *** instances (*** pounds), and prices for FSF imported from Taiwan were below those for U.S.-produced FSF in *** instances (*** pounds); margins of underselling ranged from *** percent for China, from *** percent for Italy, and from *** percent for Taiwan.

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

Source	Underselling				
	Number of quarters	Quantity[1] (pounds)	Average margin (percent)	Margin range (percent)	
				Min	Max
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Total	106	2,256,312	21.4	0.0	69.2
Source	**(Overselling)**				
	Number of quarters	Quantity[1] (pounds)	Average margin (percent)	Margin range (percent)	
				Min	Max
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Total	46	899,378	(13.7)	(0.2)	(46.0)

[1] These data include only quarters in which there is a comparison between the U.S. and subject product.

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

LOST SALES AND LOST REVENUE

The Petitioner did not submit allegations of lost sales and lost revenues.

PART VI: FINANCIAL EXPERIENCE OF U.S. PRODUCERS

BACKGROUND

Four firms provided usable financial results on their FSF operations.[1] All responding U.S. producers reported financial data on a GAAP basis and for calendar-year annual periods.

For the period as a whole, Capitol accounted for *** percent of net sales by quantity, Bonney accounted for *** percent, Anvil accounted for *** percent, and PMW accounted for *** percent.[2] Commercial sales account for the vast majority of reported FSF revenue, with transfers to related firms representing a relatively small share. Accordingly, the tables below present a combined revenue total.

OPERATIONS ON FORGED STEEL FITTINGS

Income-and-loss data for the U.S. producers' FSF operations are presented in Table VI-1. Table VI-2 presents corresponding changes in average per short ton values. Table VI-3 presents selected company-specific financial data.[3]

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

* * * * * * *

Table VI-2
FSF: Changes in AUVs, between calendar years and between partial year periods

* * * * * * *

Table VI-3
FSF: Results of operations of U.S. producers, by firm, 2014-16, January-June 2016, and January-June 2017

* * * * * * *

[1] ***.

[2] ***.

[3] Unless noted otherwise, the financial data of the ***.

Net sales

The volume of FSF sales declined during 2014-16, but was higher in interim 2017 compared to interim 2016 (see table VI-1). On a company-specific basis, the directional pattern of changes in sales quantity was uniform.

Overall, the U.S. industry's average unit sales value ("AUV") increased by *** percent from 2014-16 but was lower in interim 2017 than in interim 2016. *** reported the same directional pattern of increasing AUVs during 2014-16, while *** reported decreasing AUVs from 2014 to 2016. *** responding producers reported lower AUVs in interim 2017 compared to interim 2016 (see table VI-3). On a company-specific basis, *** reported much higher net sales AUVs than the rest of the companies, roughly ***.[4] *** generally had the next highest net sales AUVs, followed by ***.

Cost of goods sold and gross profit or (loss)

As seen in table VI-1, other factory costs became the largest component of FSF cost of goods sold ("COGS") after 2014. It accounted for between *** percent (2014) and *** percent (interim 2016) of total COGS. Other factory costs include both a variable and a fixed component, whereas raw materials and direct labor are variable expenses. Therefore, as the quantity of sales decreased, the share of COGS represented by other factory costs increased.[5] Raw material costs were, after 2014, the second largest component of COGS representing between *** percent (interim 2016) and *** percent (2014), followed by direct labor, which represented between *** percent (interim 2017) and *** percent (2015).[6]

Raw material costs associated with integrated production generally reflect purchased bars which are cut prior to forging.[7] Anvil's finisher-only operations consumes ***.[8]

Table VI-2 shows that although the FSF net sales AUVs increased from 2014 to 2016 (by $*** per short ton), COGS unit value increased to a greater extent ($*** per short ton) which led to a decrease in the gross profit margin. The lower gross profit margin combined with the decrease in net sales quantity during this time resulted in gross profit decreasing from $*** million in 2014 to $*** million in 2016. Conversely, the opposite was true during the half-year periods. The net sales AUVs were lower in interim 2017 compared to interim 2016 (by $***), but the COGS unit value was lower by $***, which led to an increasing gross profit margin. This combined with an increase in sales quantity resulted in the industry realizing a higher gross profit in the first half of 2017 than in the first half of 2016.

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[4] In response to questions from staff, ***.

[5] Similarly, the cost of other factory costs per short ton will often increase as sales volume decreases. In response to questions from staff, ***.

[6] The only company ***. ***.

[7] Conference transcript p. 15 (Almer).

[8] Approximately ***.

SG&A expenses and operating income

While the industry's SG&A expenses decreased from $*** in 2014 to $*** in 2016, the industry's SG&A expense ratio (SG&A expenses as a share of sales) increased from *** percent in 2014 and *** percent 2016 because of the decrease in net sales revenue. Operating income decreased from 2014 to 2016, becoming an operating loss in 2015 and 2016, and then returned to an operating profit in interim 2017.

All other expenses and net income

Classified below the operating income level are interest expense, other expense, and other income. In table VI-1, these items are aggregated and only the net amount is shown. The net "all other expenses" decreased from 2014 to 2016 and was slightly higher in interim 2017 compared to the same period in 2016. ***.[9] Like operating income, net income decreased from 2014 to 2016, becoming a net loss in 2015 and 2016 before returning to a net income in interim 2017.

VALUE ADDED BY FINISHING OPERATIONS

In general, the Commission calculates "value added" by determining the share of conversion costs (direct labor and other factory costs) to total COGS. Based on the information reported to the Commission, value added calculated for the producer with finishing-only operations (***) ranged from ***. The value added analysis for finishing-only operations is presented in table VI-4.

Table VI-4
FSF: Finishing-only producer's value-added, 2014-16, January-June 2016, and January-June 2017

* * * * * * *

Table VI-5 presents the integrated U.S. producers' cost of goods sold ("COGS") by level of processing (i.e., forging operations vs. finishing operations). The integrated U.S. producers reported that between *** percent (2014) and *** percent (interim 2016) of their total COGS was related to finishing operations.

Table VI-5
FSF: Integrated U.S. producers' COGS, by level of processing, 2014-16, January-June 2016, and January-June 2017

* * * * * * *

[9] Bonney's U.S. producer questionnaire response at III-10.

CAPITAL EXPENDITURES AND RESEARCH AND DEVELOPMENT EXPENSES

Table VI-6 presents capital expenditures and research and development ("R&D") expenses by firm. Capital expenditures decreased by *** percent from 2014 to 2016, but were *** percent higher in the first half of 2017 than in the same period in 2016. ***.[10] *** to report research and development expenses, which ***.

Table VI-6
FSF: Capital expenditures and research and development expenses of U.S. producers, 2014-16, January-June 2016, and January-June 2017

* * * * * * *

ASSETS AND RETURN ON ASSETS

Table VI-7 presents data on the U.S. producers' total assets and their return on assets (operating income divided by total assets).[11] The FSF industry's assets decreased from $*** in 2014 to $*** in 2016. ROA continually declined from *** percent to *** percent.

Table VI-7
FSF: U.S. producers' total assets and return on investment, 2014-16

* * * * * * *

[10] In its U.S. producer questionnaire response, ***.

[11] With respect to a company's overall operations, staff notes that total asset value (i.e., the bottom line number on the asset side of a company's balance sheet) reflects an aggregation of a number of assets which are generally not product specific. Accordingly, high level allocation factors may be required in order to report a total asset value for FSF.

CAPITAL AND INVESTMENT

The Commission requested U.S. producers of FSF to describe any actual or potential negative effects of imports of FSF from China, Italy, and Taiwan on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-8 presents the number of firms reporting an impact in each category and table VI-9 provides the U.S. producers' narrative responses.

Table VI-8
FSF: Actual and anticipated negative effects of imports on investment, growth, and development, since January 1, 2014

Item	No	Yes
Negative effects on investment	0	4
Cancellation, postponement, or rejection of expansion projects		2
Denial or rejection of investment proposal		0
Reduction in the size of capital investments		3
Return on specific investments negatively impacted		3
Other		2
Negative effects on growth and development	2	2
Rejection of bank loans		0
Lowering of credit rating		0
Problem related to the issue of stocks or bonds		0
Ability to service debt		1
Other		1
Anticipated negative effects of imports	0	4

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

Table VI-9
FSF: 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,*

---

[1] Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that "The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition."

(VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,

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

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

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

Information on the nature of the alleged subsidies was presented earlier in this report; information on the volume and pricing of imports of the subject merchandise is presented in *Parts IV* and *V*; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in *Part VI*. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows. Also presented in this section of the report is information obtained for consideration by the Commission on nonsubject countries.

THE INDUSTRY IN CHINA

The Commission issued questionnaires to 82 firms believed to produce and/or export FSF from China.[3] Usable responses to the Commission's questionnaire were received from

[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."

[3] These firms were identified through a review of information submitted in the petition and contained in *** records.

three firms: Both-Well (Taizhaou), Tech Form, and WWF (Suzhou). Reported exports to the United States accounted for approximately *** percent of U.S. imports of FSF from China in 2016. According to estimates requested of the responding China producers, the production of FSF in China reported in questionnaires accounts for approximately *** percent of overall production of FSF in China. Tables VII-1 and VII-2 present information on the FSF operations of the responding producers and exporters in China.

Table VII-1
FSF: Summary data for producers in China, 2016

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
Both-Well (China)	***	***	***	***	***	***
WWF (Suzhou)	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

Table VII-2
FSF: Summary data for resalers in China, 2016

Firm	Resales exported to the United States (short tons)	Share of reported resales exported to the United States (percent)
Tech Form	***	***
Total	***	***

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

Changes in operations

As presented in table VII-3, one producer in China reported operational and organizational changes since January 1, 2014.

Table VII-3
FSF: Producers' reported changes in operations in China, since January 1, 2013

* * * * * * *

Operations on forged steel fittings

Table VII-4 presents information on the FSF operations of the responding producers and exporters in China.

Table VII-4
FSF: Data on industry in China, 2014-16, January to June 2016 and January to June 2017, and projection calendar years 2017 and 2018

* * * * * * *

Alternative products

As shown in table VII-5, responding Chinese firms produced other products on the same equipment and machinery used to produce FSF, namely ***.

Table VII-5
FSF: Chinese producers' overall capacity and production on the same equipment as subject production, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Exports

According to GTA, the leading export markets for iron and/or steel fittings, including but not limited to FSF, from China are the United States, Malaysia, and Kazakhstan (table VII-6). During 2016, the United States was the top export market for iron and/or steel fittings from China, accounting for 26.9 percent, followed by Malaysia, accounting for 5.5 percent.

Table VII-6
Iron and/or steel fittings: Exports from China, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Quantity (short tons)		
Exports from China to the United States	99,114	76,863	65,504
Exports from China to other major destination markets.--Malaysia	14,172	10,789	13,394
Kazakhstan	4,322	3,806	8,366
Netherlands	4,485	4,815	7,668
Japan	8,490	7,812	7,160
Russia	11,194	7,109	7,122
Korea South	9,072	7,624	6,341
Canada	11,147	7,530	5,813
Taiwan	3,617	4,624	4,628
All other destination markets	135,152	118,643	117,066
Total exports from China	300,765	249,617	243,062
	Value (1,000 dollars)		
Exports from China to the United States	307,739	221,452	182,777
Exports from China to other major destination markets.--Malaysia	21,614	12,978	15,291
Kazakhstan	22,576	16,468	25,882
Netherlands	15,314	13,259	16,106
Japan	48,900	40,134	36,042
Russia	38,469	23,875	22,104
Korea South	22,279	24,261	17,645
Canada	38,869	22,770	16,864
Taiwan	9,635	9,677	8,608
All other destination markets	484,334	418,011	379,055
Total exports from China	1,009,729	802,885	720,373

Table continued on next page.

Table VII-6 -- Continued
Iron and/or steel fittings: Exports from China, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Unit value (dollars per short ton)		
Exports from China to the United States	3,105	2,881	2,790
Exports from China to other major destination markets.-- Malaysia	1,525	1,203	1,142
Kazakhstan	5,224	4,326	3,094
Netherlands	3,414	2,753	2,100
Japan	5,760	5,137	5,034
Russia	3,437	3,358	3,103
Korea South	2,456	3,182	2,783
Canada	3,487	3,024	2,901
Taiwan	2,664	2,093	1,860
All other destination markets	3,584	3,523	3,238
Total exports from China	3,357	3,216	2,964
	Share of quantity (percent)		
Exports from China to the United States	33.0	30.8	26.9
Exports from China to other major destination markets.-- Malaysia	4.7	4.3	5.5
Kazakhstan	1.4	1.5	3.4
Netherlands	1.5	1.9	3.2
Japan	2.8	3.1	2.9
Russia	3.7	2.8	2.9
Korea South	3.0	3.1	2.6
Canada	3.7	3.0	2.4
Taiwan	1.2	1.9	1.9
All other destination markets	44.9	47.5	48.2
Total exports from China	100.0	100.0	100.0

Source: Official export statistics under HS subheading 7307.99 as reported by China Customs in the IHS/GTA database, accessed November 6, 2017.

THE INDUSTRY IN ITALY

The Commission issued questionnaires to 19 firms believed to produce and/or export FSF from Italy.[4] Usable responses to the Commission's questionnaire were received from three[5] firms: IML, MEGA, and Riganti. These firms' exports to the United States accounted for approximately *** percent of U.S. imports of FSF from Italy in 2016. According to estimates requested of the responding Italy producers, the production of FSF in Italy reported in

[4] These firms were identified through a review of information submitted in the petition and contained in *** records.

[5] CAST provided a questionnaire response with narrative information but did not provide usable data.

questionnaires accounts for the vast majority of overall production of FSF in Italy. Table VII-7 presents information on the FSF operations of the responding producers and exporters in Italy.

Table VII-7
FSF: Summary data for producers in Italy, 2016

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

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

Changes in operations

As presented in table VII-8 producers in Italy reported operational and organizational changes since January 1, 2014.

Table VII-8
FSF: Italy producers' reported changes in operations, since January 1, 2014

* * * * * * *

Operations on forged steel fittings

Table VII-9 presents information on the FSF operations of the responding producers and exporters in Italy.

Table VII-9
FSF: Data for producers in Italy, 2014-16, January to June 2016 and January to June 2017, and projection calendar years 2017 and 2018

* * * * * * *

Alternative products

As shown in table VII-10, responding Italian firms produced other products on the same equipment and machinery used to produce FSF namely ***.

Table VII-10
FSF: Italian producers' overall capacity and production on the same equipment as subject production, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Exports

According to GTA, the leading export markets for iron and/or steel fittings, including but not limited to FSF, from Italy are Germany, the United States, and France (table VII-11). During 2016, the United States was the second largest export market for iron and/or steel fittings from Italy, accounting for 12.8 percent. Germany was the largest export market, accounting for 19.4 and France accounted for 6.9 percent.

Table VII-11
Iron and/or steel fittings: Exports from Italy, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Quantity (short tons)		
Exports from Italy to the United States	11,086	6,860	7,448
Exports from Italy to other major destination markets.--			
Germany	9,383	10,853	11,283
France	3,631	3,582	4,023
United Kingdom	6,072	6,300	3,253
Poland	2,758	2,492	2,349
Belgium	546	1,542	2,324
Poland	2,758	2,492	2,349
Belgium	546	1,542	2,324
Czech Republic	2,672	2,036	1,833
All other destination markets	29,690	21,574	20,935
Total exports from Italy	69,143	59,272	58,121
	Value (1,000 dollars)		
Exports from Italy to the United States	44,678	28,691	37,370
Exports from Italy to other major destination markets.--			
Germany	63,927	57,233	53,300
France	37,501	32,605	36,155
United Kingdom	56,681	33,910	30,668
Poland	14,659	11,741	11,192
Belgium	9,781	12,567	14,699
Poland	14,659	11,741	11,192
Belgium	9,781	12,567	14,699
Czech Republic	9,640	5,506	5,087
All other destination markets	258,053	189,127	173,148
Total exports from Italy	519,360	395,689	387,510

Table continued on next page.

Table VII-11 -- Continued
Iron and/or steel fittings: Exports from Italy, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Unit value (dollars per short ton)		
Exports from Italy to the United States	4,030	4,183	5,018
Exports from Italy to other major destination markets.--			
Germany	6,813	5,273	4,724
France	10,329	9,103	8,987
United Kingdom	9,335	5,383	9,429
Poland	5,314	4,711	4,765
Belgium	17,913	8,151	6,325
Poland	5,314	4,711	4,765
Belgium	17,913	8,151	6,325
Czech Republic	3,608	2,705	2,775
All other destination markets	8,692	8,767	8,271
Total exports from Italy	7,511	6,676	6,667
	Share of quantity (percent)		
Exports from Italy to the United States	16.0	11.6	12.8
Exports from Italy to other major destination markets.--			
Germany	13.6	18.3	19.4
France	5.3	6.0	6.9
United Kingdom	8.8	10.6	5.6
Poland	4.0	4.2	4.0
Belgium	0.8	2.6	4.0
Poland	4.0	4.2	4.0
Belgium	0.8	2.6	4.0
Czech Republic	3.9	3.4	3.2
All other destination markets	42.9	36.4	36.0
Total exports from Italy	100.0	100.0	100.0

Source: Official export statistics under HS subheading 7307.99 as reported by Italy Customs in the IHS/GTA database, accessed November 6, 2017.

THE INDUSTRY IN TAIWAN

The Commission issued questionnaires to nine firms believed to produce and/or export FSF from Taiwan.[6] Usable responses to the Commission's questionnaire were received from three firms: Both-Well, Kopex, and Yih Kuang. These firms' exports to the United States accounted for approximately *** percent of U.S. imports of FSF from Taiwan in 2016. According to estimates requested of the responding Taiwan producers, the production of FSF in Taiwan reported in questionnaires accounts for all overall production of FSF in Taiwan. Tables VII-12

[6] These firms were identified through a review of information submitted in the petition and contained in *** records.

and VII-13 present information on the FSF operations of the responding producers and exporters in Taiwan.

Table VII-12
FSF: Summary data for producers in Taiwan, 2016

Firm	Production (short tons)	Share of reported production (percent)	Exports to the United States (short tons)	Share of reported exports to the United States (percent)	Total shipments (short tons)	Share of firm's total shipments exported to the United States (percent)
Both-Well (Taiwan)	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

Table VII-13
FSF: Summary data for resalers in Taiwan, 2016

Firm	Resales exported to the United States(short tons)	Share of reported resales exported to the United States (percent)
Yih Kuang	***	***
Kopex	***	***
Total	***	***

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

Changes in operations

No producers in Taiwan reported operational and organizational changes since January 1, 2014.

Operations on forged steel fittings

Table VII-14 presents information on the FSF operations of the responding producers and exporters in Taiwan. Both-Well (Taiwan) ***.[7]

[7] Both-Well (Taiwan)'s foreign producer/exporter questionnaire response, II-4d.

Table VII-14
FSF: Data for producers in Taiwan, 2014-16, January to June 2016 and January to June 2017, and projection calendar years 2017 and 2018

* * * * * * *

Alternative products

As shown in table VII-15, responding Taiwanese firms produced other products on the same equipment and machinery used to produce FSF namely ***.

Table VII-15
FSF: Taiwanese producers' overall capacity and production on the same equipment as subject production, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

Exports

According to GTA, the leading export markets for iron and/or steel fittings from Taiwan are the United States, China, and Saudi Arabia (table VII-16). During 2016, the United States was the top export market for FSF from Taiwan, accounting for 35.6 percent followed by China, accounting for 7.5 percent.

Table VII-16
Iron and/or steel fittings: Exports from Taiwan, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Quantity (short tons)		
Exports from Taiwan to the United States	9,798	7,696	5,021
Exports from Taiwan to other major destination markets.--China	1,030	628	1,058
Saudi Arabia	1,295	1,943	694
Vietnam	1,279	493	678
United Arab Emirates	951	1,168	629
Germany	481	536	568
Japan	507	553	559
Indonesia	422	187	527
Canada	1,271	1,060	514
All other destination markets	4,311	4,268	3,834
Total exports from Taiwan	21,345	18,534	14,082
	Value (1,000 dollars)		
Exports from Taiwan to the United States	36,156	27,943	19,380
Exports from Taiwan to other major destination markets.--China	7,977	5,931	10,143
Saudi Arabia	4,270	6,137	2,275
Vietnam	4,881	2,012	1,967
United Arab Emirates	3,574	4,339	2,404
Germany	1,947	1,940	2,018
Japan	2,481	3,847	4,074
Indonesia	1,117	594	988
Canada	4,243	3,370	1,622
All other destination markets	19,354	17,555	15,754
Total exports from Taiwan	86,001	73,669	60,625

Table continued on next page.

Table VII-16 -- Continued
Iron and/or steel fittings: Exports from Taiwan, 2014-16

Destination market	Calendar year		
	2014	2015	2016
	Unit value (dollars per short ton)		
Exports from Taiwan to the United States	3,690.01	3,630.69	3,859.84
Exports from Taiwan to other major destination markets.--China	7,748.11	9,440.10	9,584.85
Saudi Arabia	3,297.08	3,157.82	3,276.50
Vietnam	3,817.57	4,084.24	2,902.19
United Arab Emirates	3,756.81	3,713.19	3,818.90
Germany	4,051.59	3,622.01	3,554.32
Japan	4,892.52	6,952.20	7,289.47
Indonesia	2,645.96	3,172.09	1,874.58
Canada	3,338.45	3,178.34	3,158.37
All other destination markets	4,489.32	4,113.01	4,109.15
Total exports from Taiwan	4,029.09	3,974.78	4,305.16
	Share of quantity (percent)		
Exports from Taiwan to the United States	45.9	41.5	35.7
Exports from Taiwan to other major destination markets.--China	4.8	3.4	7.5
Saudi Arabia	6.1	10.5	4.9
Vietnam	6.0	2.7	4.8
United Arab Emirates	4.5	6.3	4.5
Germany	2.3	2.9	4.0
Japan	2.4	3.0	4.0
Indonesia	2.0	1.0	3.7
Canada	6.0	5.7	3.6
All other destination markets	20.2	23.0	27.2
Total exports from Taiwan	100.0	100.0	100.0

Source: Official export statistics under HS subheading 7307.99 as reported by Taiwan Customs in the IHS/GTA database, accessed November 6, 2017.

COMBINED SUBJECT COUNTRIES

Operations on forged steel fittings

Table VII-17 presents information on the FSF operations of the responding producers and exporters in all subject countries.

Table VII-17
FSF: Data for producers in subject countries, 2014-16, January to June 2016 and January to June 2017, and projection calendar years 2017 and 2018

* * * * * * *

Alternative products

As shown in table VII-18, responding subject firms produced other products on the same equipment and machinery used to produce FSF.

Table VII-18
FSF: Overall capacity and production on the same equipment as in-scope production by producers for Subject sources, 2014-16, January to June 2016, and January to June 2017

* * * * * * *

U.S. INVENTORIES OF IMPORTED MERCHANDISE

Table VII-19 presents data on U.S. importers' reported inventories of FSF.

Table VII-19
FSF: U.S. importers' inventories, 2014-16, January to June 2016, and January to June 2017

Item	Calendar year			January to June	
	2014	2015	2016	2016	2017
	Inventories (short tons); Ratios (percent)				
Imports from China					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Italy					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from Taiwan					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from subject sources:					
Inventories	5,247	5,725	4,701	4,371	4,029
Ratio to U.S. imports	48.0	58.3	65.8	80.1	35.4
Ratio to U.S. shipments of imports	46.7	61.1	57.8	58.1	32.4
Ratio to total shipments of imports	46.6	60.8	57.5	58.0	32.2
Imports from nonsubject sources:					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***
Imports from all import sources:					
Inventories	***	***	***	***	***
Ratio to U.S. imports	***	***	***	***	***
Ratio to U.S. shipments of imports	***	***	***	***	***
Ratio to total shipments of imports	***	***	***	***	***

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

U.S. IMPORTERS' OUTSTANDING ORDERS

The Commission requested importers to indicate whether they imported or arranged for the importation of FSF from China, Italy, and/or Taiwan after July 1, 2017. Data on arranged imports are presented in table VII-20.

Table VII-20
FSF: Arranged imports, July 2017 to June 2018

Item	Period				
	Jul-Sept 2017	Oct-Dec 2017	Jan-Mar 2018	Apr-Jun 2018	Total
Arranged U.S. imports from.- China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject sources	***	***	***	***	9,536
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

There are no known trade remedy actions on FSF in third-country markets.

INFORMATION ON NONSUBJECT COUNTRIES

Table VII-21 presents data on exports of iron and/or steel fittings from major nonsubject sources to the United States.

Table VII-21
Iron and/or steel fittings: Global exports by exporter, 2014-16

Exporter	Calendar year		
	2014	2015	2016
	Quantity (short tons)		
United States	55,401	42,305	31,054
China	300,765	249,617	243,062
Italy	69,143	59,272	58,121
Taiwan	21,345	18,534	14,082
Subject sources	391,253	327,423	315,265
All other major reporting exporters.-- Germany	45,266	44,320	42,550
Korea	43,850	33,623	33,178
Czech Republic	19,174	25,861	29,832
Australia	2,837	27,994	28,080
India	24,172	20,023	21,181
Singapore	21,170	26,934	19,464
Poland	19,357	16,914	18,415
Indonesia	9,686	22,431	13,681
Sweden	11,856	11,149	11,573
Japan	19,243	10,487	10,728
All other exporters	145,516	161,536	119,396
Nonsubject sources	362,126	401,274	348,077
Total global exports	808,780	771,002	694,396
	Value (1,000 dollars)		
United States	533,435	414,722	296,915
China	1,009,729	802,885	720,373
Italy	519,360	395,689	387,510
Taiwan	86,001	73,669	60,625
Subject sources	1,615,090	1,272,243	1,168,509
All other major reporting exporters.-- Germany	604,321	511,729	484,215
Korea	284,053	234,130	212,563
Czech Republic	91,142	77,626	82,049
Australia	15,019	20,767	16,681
India	83,941	59,110	61,003
Singapore	138,064	131,246	96,070
Poland	154,735	115,418	114,764
Indonesia	37,423	59,755	86,837
Sweden	72,477	58,539	62,321
Japan	208,541	161,419	165,406
All other exporters	1,221,913	1,146,724	934,515
Nonsubject sources	2,911,626	2,576,463	2,316,423
Total global exports	5,060,151	4,263,428	3,781,847

Table continued on next page.

Table VII-21 -- Continued
Iron and/or steel fittings: Global exports by exporter, 2014-16

Exporter	Calendar year		
	2014	2015	2016
	Unit value (dollars per short ton)		
United States	9,629	9,803	9,561
China	3,357	3,216	2,964
Italy	7,511	6,676	6,667
Taiwan	4,029	3,975	4,305
Subject sources	4,128	3,886	3,706
All other major reporting exporters.-- Germany	13,350	11,546	11,380
Korea	6,478	6,963	6,407
Czech Republic	4,753	3,002	2,750
Australia	5,294	742	594
India	3,473	2,952	2,880
Singapore	6,522	4,873	4,936
Poland	7,994	6,824	6,232
Indonesia	3,864	2,664	6,347
Sweden	6,113	5,251	5,385
Japan	10,837	15,393	15,419
All other exporters	8,397	7,099	7,827
Nonsubject sources	8,040	6,421	6,655
Total global exports	6,257	5,530	5,446
	Share of quantity (percent)		
United States	6.8	5.5	4.5
China	37.2	32.4	35.0
Italy	8.5	7.7	8.4
Taiwan	2.6	2.4	2.0
Subject sources	48.4	42.5	45.4
All other major reporting exporters.-- Germany	5.6	5.7	6.1
Korea	5.4	4.4	4.8
Czech Republic	2.4	3.4	4.3
Australia	0.4	3.6	4.0
India	3.0	2.6	3.1
Singapore	2.6	3.5	2.8
Poland	2.4	2.2	2.7
Indonesia	1.2	2.9	2.0
Sweden	1.5	1.4	1.7
Japan	2.4	1.4	1.5
All other exporters	18.0	21.0	17.2
Nonsubject sources	44.8	52.0	50.1
Total global exports	100.0	100.0	100.0

Source: Official export statistics under HS subheading 7307.99 as reported by various national statistical authorities in the IHS/GTA database, accessed November 6, 2017.

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 47578, October 12, 2017	*Forged Steel Fittings From the China, Italy, and Taiwan; Institution of Countervailing Duty and Antidumping Duty Investigations and Scheduling of Preliminary Phase Investigations*	https://www.gpo.gov/fdsys/pkg/FR-2017-10-12/pdf/2017-22039.pdf
82 FR 50614, November 1, 2017	*Forged Steel Fittings From the People's Republic of China, Italy, and Taiwan: Initiation of Less-Than-Fair-Value Investigations*	https://www.gpo.gov/fdsys/pkg/FR-2017-11-01/pdf/2017-23760.pdf
82 FR 50623, November 1, 2017	*Forged Steel Fittings From the People's Republic of China: Initiation of Countervailing Duty Investigation*	https://www.gpo.gov/fdsys/pkg/FR-2017-11-01/pdf/2017-23759.pdf

APPENDIX B

LIST OF CONFERENCE WITNESSES

CALENDAR OF PUBLIC PRELIMINARY CONFERENCE

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

Subject: Forged Steel Fittings from China, Italy, and Taiwan

Inv. Nos.: 701-TA-589 and 731-TA-1394-1396 (Preliminary)

Date and Time: October 26, 2017 - 9:30 a.m.

Sessions were held in connection with these preliminary phase investigations in ALJ Courtroom A (Room 100), 500 E Street, S.W., Washington, DC.

OPENING REMARKS:

Petitioner (**Christopher T. Cloutier**, Schagrin Associates)

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

Schagrin Associates
Washington DC
on behalf of

Bonney Forge Corporation
United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union ("USW")

John Leone, Chairman, President, and CEO, Bonney Forge Corporation

Douglas Young, Senior Vice President and Chief Financial Officer, Bonney Forge Corporation

Chuck Almer, Vice President of Operations, Bonney Forge Corporation

Ken O'Connell, Vice President and Regional Sales Manager, Bonney Forge Corporation

In Support of the Imposition of
Antidumping and Countervailing Duty Orders (continued):

Roy Houseman, Legislative Representative, USW

Roger B. Schagrin)
) – OF COUNSEL
Christopher T. Cloutier)

CLOSING REMARKS:

Petitioner (**Roger B. Schagrin**, Schagrin Associates)

-END-

APPENDIX C

SUMMARY DATA

All producers

Table C-1
FSF: Summary data concerning the U.S. market, 2014-16, January to June 2016, and January to June 2017
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short 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):									
China	***	***	***	***	***	***	***	***	***
Italy	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
China	***	***	***	***	***	***	***	***	***
Italy	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. importers' U.S. shipments from:									
China:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Italy									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Taiwan									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subject sources:									
Quantity	11,238	9,372	8,127	3,759	6,216	(27.7)	(16.6)	(13.3)	65.4
Value	56,698	46,898	40,944	19,161	31,771	(27.8)	(17.3)	(12.7)	65.8
Unit value	5,045	5,004	5,038	5,097	5,111	(0.1)	(0.8)	0.7	0.3
Ending inventory quantity	5,247	5,725	4,701	4,371	4,029	(10.4)	9.1	(17.9)	(7.8)
Nonsubject sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Integrated U.S. producers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
Non-integrated finishers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value (fn3)	***	***	***	***	***	***	***	***	***
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 (short tons per 1,000 hours)	***	***	***	***	***	***	***	***	***
Unit labor costs (dollars per short tons)	***	***	***	***	***	***	***	***	***
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.
fn3.--Value includes integrated US production value and value added to imported unfinished fittings

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

Related party exclusion

Table C-2
FSF: Summary data concerning the U.S. market excluding one U.S. producer Anvil, 2014-16, January to June 2016, and January to June 2017
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short 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):									
China	***	***	***	***	***	***	***	***	***
Italy	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
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):									
China	***	***	***	***	***	***	***	***	***
Italy	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
Included integrated U.S. producers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
Included non-integrated finishers':									
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)	***	***	***	***	***	***	***	***	***
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.

Integrated producers only

Table C-3
FSF: Summary data concerning the U.S. market excluding U.S. finisher only firms, 2014-16, January to June 2016, and January to June 2017
(Quantity=short tons; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per short 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):									
China	***	***	***	***	***	***	***	***	***
Italy	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
China	***	***	***	***	***	***	***	***	***
Italy	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. importers' U.S. shipments from:									
China:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Italy									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Taiwan									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subject sources:									
Quantity	11,238	9,372	8,127	3,759	6,216	(27.7)	(16.6)	(13.3)	65.4
Value	56,698	46,898	40,944	19,161	31,771	(27.8)	(17.3)	(12.7)	65.8
Unit value	5,045	5,004	5,038	5,097	5,111	(0.1)	(0.8)	0.7	0.3
Ending inventory quantity	5,247	5,725	4,701	4,371	4,029	(10.4)	9.1	(17.9)	(7.8)
Nonsubject sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
U.S. producers': (fn3)									
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 (short tons per 1,000)	***	***	***	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***	***	***	***
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.

APPENDIX D

PRICING DATA

Below, in tables D-1 and D-2, are comparisons for integrated producers only. These data are drawn from tables V-3a/b – V-6a/b and correspond to tables V-7 and V-8, presented in Part V of the report.

Price trends

Table D-1
FSF: Summary of weighted-average f.o.b. prices for products 1-4 from the United States, China, Italy, and Taiwan, January 2014-June 2017, integrated producers only

Item	Number of quarters	Low price (per pound)	High price (per pound)	Change in price[1] (percent)
Product 1				
United States	14	***	***	***
China	10	***	***	***
Italy	14	***	***	***
Taiwan	14	***	***	***
Product 2				
United States	14	***	***	***
China	12	***	***	***
Italy	14	***	***	***
Taiwan	14	***	***	***
Product 3				
United States	14	***	***	***
China	10	***	***	***
Italy	14	***	***	***
Taiwan	14	***	***	***
Product 4				
United States	14	***	***	***
China	8	***	***	***
Italy	14	***	***	***
Taiwan	14	***	***	***

[1] Percentage change from the first quarter in which data were available to the last quarter in which price data were available.

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

Table D-2
FSF: Instances of underselling/overselling and the range and average of margins, by country, January 2014-June 2017, integrated producers only

Source	Underselling				
	Number of quarters	Quantity[1] (pounds)	Average margin (percent)	Margin range (percent)	
				Min	Max
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Total	106	2,267,691	21.0	0.2	69.0
Source	**(Overselling)**				
	Number of quarters	Quantity[1] (pounds)	Average margin (percent)	Margin range (percent)	
				Min	Max
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Total	46	887,999	(14.3)	(0.4)	(46.0)

[1] These data include only quarters in which there is a comparison between the U.S. and subject product.

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