Forged Steel Fittings from Taiwan

Investigation No. 731-TA-1396 (Final)

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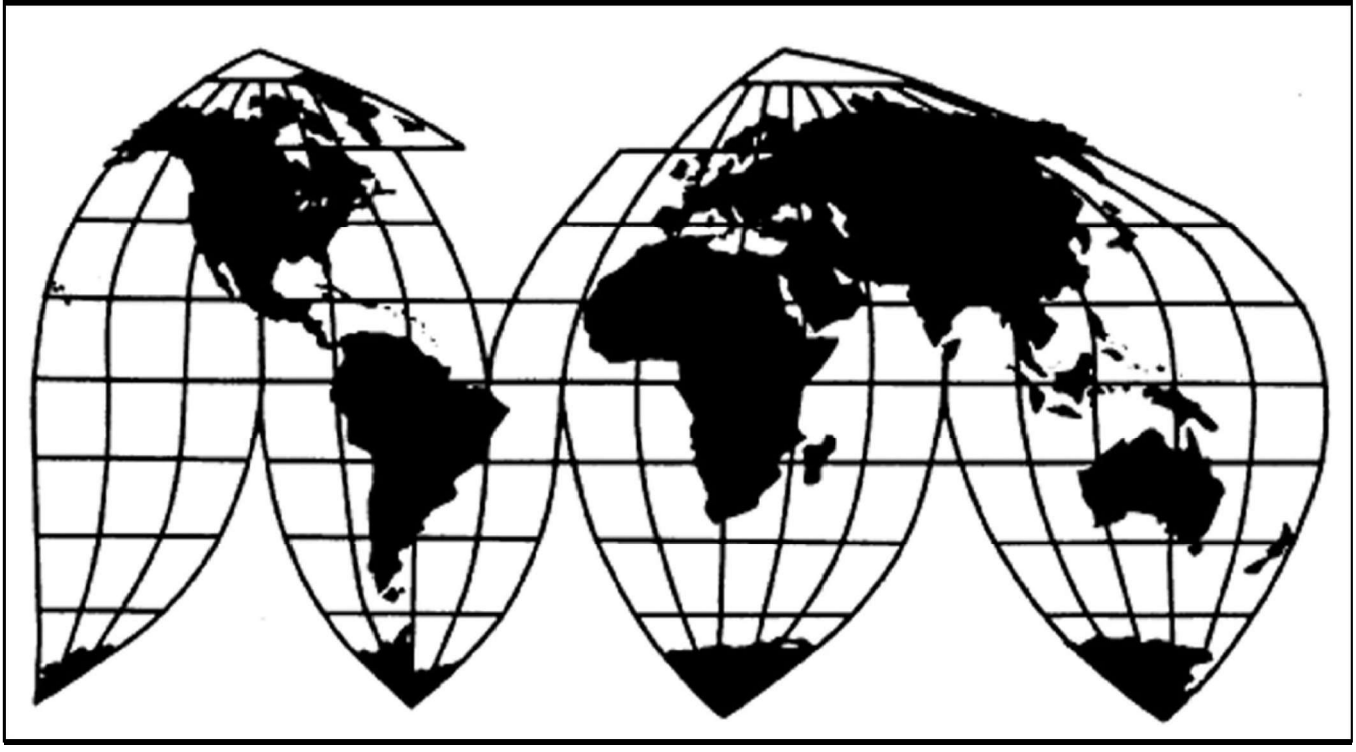
U.S. International Trade Commission



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U.S. International Trade Commission

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Appendixes

Note.—Information that would reveal confidential operations of individual concerns may not be published.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

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 731-TA-1396 (Final)
Forged Steel Fittings from Taiwan

DETERMINATION

On the basis of the record[1] developed in the subject investigation, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that an industry in the United States is materially injured by reason of imports of forged steel fittings from Taiwan that have been found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value ("LTFV").[2]

BACKGROUND

The Commission instituted this investigation effective October 5, 2017, following receipt of a petition filed with the Commission and Commerce by 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. The Commission established a general schedule for the final phase of its investigations on forged steel fittings from China, India, and Taiwan[3] following notifications of preliminary determinations by Commerce that imports of forged steel fittings from China, Italy, and Taiwan were being sold at LTFV within the meaning of section 733(b) of the Act (19 U.S.C. 1673b(b)).[4] Notice of the scheduling of the final phase of the Commission's investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by

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

[2] *Forged Steel Fittings From Taiwan: Final Determination of Sales at Less Than Fair Value,* 83 FR 36519, July 30, 2018.

[3] *Forged Steel Fittings From China, India, and Taiwan: Scheduling of the Final Phase of Countervailing Duty and Antidumping Duty Investigations,* 83 FR 25715, June 4, 2018.

[4] *Forged Steel Fittings From the People's Republic of China: Affirmative Preliminary Determination of Sales at Less Than Fair Value, Postponement of Final Determination and Extension of Provisional Measures*, 83 FR 22948, May 17, 2018; *Forged Steel Fittings From Italy: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination and Extension of Provisional Measures*, 83 FR 22954, May 17, 2018; and *Forged Steel Fittings From Taiwan: Affirmative Preliminary Determination of Sales at Less Than Fair Value*, 83 FR 22957, May 17, 2018; *see also Forged Steel Fittings From the People's Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination*, 83 FR 11170, March 14, 2018.

publishing the notice in the *Federal Register* of June 4, 2018, (83 FR 25715, June 4, 2018). The hearing was held in Washington, DC, on August 2, 2018, and all persons who requested the opportunity were permitted to appear in person or by counsel.

The Commission made this determination pursuant to section 735(b) of the Act (19 U.S.C. 1673d(b)).

Views of the Commission

Based on the record in the final phase of this investigation, we determine that an industry in the United States is materially injured by reason of imports of forged steel fittings ("FSF") from Taiwan found by the U.S. Department of Commerce ("Commerce") to be sold in the United States at less than fair value.

I. Background

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 ("USW"), which represents U.S. workers engaged in the production of FSF (collectively, "Petitioners"), filed the petitions in this investigation on October 5, 2017. Petitioners appeared at the hearing accompanied by counsel and submitted prehearing and posthearing briefs and final comments.

Two respondent groups participated jointly in the final phase of these investigations. Italian producers M.E.G.A. S.p.A. ("MEGA") and Industria Meccanica Ligure S.p.A. ("IML") (collectively "Respondents") appeared at the hearing accompanied by counsel and jointly submitted prehearing and posthearing briefs and final comments.

Although antidumping and countervailing duty petitions on FSF from China and antidumping duty petitions on FSF from Italy and Taiwan were filed on the same day, October 5, 2017, the investigation schedules became staggered when Commerce issued only its final antidumping duty determination regarding Taiwan on July 30, 2018. This necessitates an earlier final Commission determination in the antidumping duty investigation regarding FSF from Taiwan.[1] U.S. industry data are based on the questionnaire responses of three integrated domestic producers that accounted for the large majority of domestic production of FSF in 2017 and one finisher that accounted for all of the available data on U.S. finishing operations.[2] U.S. import data are based on questionnaire responses from 41 U.S. importers of FSF that accounted for 60.2 percent of total subject imports (from China, Italy, and Taiwan) and *** percent of nonsubject imports in 2017 under the relevant HTS numbers.[3] Data concerning the subject industries are based on questionnaire responses from eleven firms whose exports were

[1] *See* 19 U.S.C. § 1677(7)(G)(iii). The record for the antidumping duty investigation of FSF from Taiwan closed on August 24, 2018. Commerce is currently scheduled to issue its final countervailing duty determination regarding China and its final antidumping duty determinations regarding China and Italy on October 1, 2018. Confidential Report ("CR") at I-2; Public Report ("PR") at I-2; *see also* 83 Fed. Reg. at 22951 (China) and 22956 (Italy). Pursuant to the statutory provision on staggered investigations, the record for each of these investigations will be the same as in the present investigation, except that the final Commerce antidumping or countervailing duty determinations and the parties' final comments concerning those determinations will be added to the record.

[2] CR at I-6 (as revised), PR at I-4, CR/PR at Table III-1.

[3] CR/PR at IV-1. On an individual basis, these questionnaire responses accounted for *** percent of U.S. imports of FSF from China, *** percent of U.S. imports of FSF from Italy, and *** percent of U.S. imports of FSF from Taiwan.

equivalent to *** percent of reported imports from China, *** percent of reported imports from Italy, and virtually all reported imports from Taiwan.[4]

II. Domestic Like Product

A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the "domestic like product" and the "industry."[5] 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."[6] 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."[7]

The decision regarding the appropriate domestic like product 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.[8] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[9] The Commission looks for clear dividing lines among possible like products and disregards minor variations.[10] Although the Commission must accept Commerce's determination as to the scope of the imported merchandise that is subsidized or

[4] CR at VII-3, VII-9, and VII-15, PR at VII-3, VII-7, and VII-11.

[5] 19 U.S.C. § 1677(4)(A).

[6] 19 U.S.C. § 1677(4)(A).

[7] 19 U.S.C. § 1677(10).

[8] *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).

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

[10] *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.").

sold at less than fair value,[11] the Commission determines what domestic product is like the imported articles Commerce has identified.[12]

B. Product Description

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

> …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, unions, and outlets. 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, MSS SP–83, MSS SP–97, 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 specifications, subject 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/PSI, *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, butt weld outlets, nipples, and all fittings that have a maximum pressure rating of 300 pounds of pressure/PSI or less.

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[11] *See*, *e.g., USEC, Inc. v. United States*, 34 Fed. Appx. 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).

[12] *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 in which Commerce found five classes or kinds).

Also excluded are fittings certified or made to the following standards, so long as the fittings are not also manufactured to the specifications of ASME B16.11, MSS SP–79, MSS SP–83, MSS SP–97, ASTM A105, ASTM A350, and ASTM A182:

• American Petroleum Institute (API) API 5CT, API 5L, or API 11B

• Society of Automotive Engineering (SAE) SAE J476, SAE J514, SAE J516, SAE J517, SAE J518, SAE J1026, SAE J1231, SAE J1453, SAE J1926, J2044 or SAE AS 35411

• Underwriter's Laboratories (UL) certified electrical conduit fittings

• ASTM A153, A536, A576, or A865

• Casing Conductor Connectors 16–42 inches in diameter made to proprietary Specifications

• Military Specification (MIL) MIL–C–4109F and MIL–F–3541

• International Organization for Standardization (ISO) ISO6150–B

To be excluded from the scope, products must have the appropriate standard or pressure markings and/or accompanied by documentation showing product compliance to the applicable standard or pressure, *e.g.*, ''API 5CT'' mark and/or a mill certification report.

Subject carbon and alloy forged steel fittings are normally entered under Harmonized Tariff Schedule of the United States (HTSUS) 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060. They also may be entered under HTSUS 7307.92.3010, 7307.92.3030, 7307.92.9000, and 7326.19.0010. The HTSUS subheadings and specifications are provided for convenience and customs purposes; the written description of the scope is dispositive.[13]

FSF are used in piping systems for oil and gas exploration and production, in chemical and petrochemical plants, electric power-generating plants, and industrial piping systems for distributing liquids and gases under high pressure or liquids and gases that are corrosive in nature. Fittings connect the pipes that are made to withstand the higher pressures in such systems, and the fittings themselves must also be able to withstand such pressures. The forging process produces steel pieces that are stronger than an equivalent cast or machined part; they have an approximately 20 percent higher strength-to-weight ratio compared to cast or machined parts of the same material.[14]

[13] *Forged Steel Fittings From Taiwan: Final Determination of Sales at Less Than Fair Value*, 83 Fed. Reg. 36519 (July 30, 2018).

[14] CR at I-12, I-19, PR at I-9, I-14.

Typically, FSF are produced from steel that meets American Society for Testing Materials ("ASTM") A105 or similar standards.[15] The manufacturing process for FSF generally begins with impression-die forging in which a heated piece of 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 shapes. Normalizing is a type of heat treatment that imparts additional toughness to the fitting.[16]

After the forging process, the products are finished at machining and assembly shops. Finishing involves shaping the steel (including turning, boring, milling, drilling, grinding, and polishing) through the use of metal-removal equipment, along with welding machines. A range of coatings may be applied to protect the performance properties of the products. Most FSF are forged, but fittings that do not have a bend in their shape are machined directly from a steel bar or a seamless steel pipe.[17]

C. Domestic Like Product Analysis

In the preliminary phase of these investigations, the Commission distinguished FSF from equivalent cast or machined parts and other kinds of fittings such as butt-weld fittings or flanges, applying its traditional six factor like product analysis, and defined a single domestic like product consisting of FSF that is coextensive with the scope. It found that FSF was stronger than equivalent cast or machined parts and that it had limited interchangeability with other types of pipe fittings due to differences in their specifications. Although FSF could theoretically be used instead of other kinds of fittings such as butt-weld fittings or flanges, the higher cost of FSF made such use impractical. Manufacturing FSF required specialized equipment, and there were no overlaps between producers of butt-weld fittings and flanges and producers of FSF in the United States.[18]

In the final phase of these investigations, Petitioners argue that the Commission should again define a single domestic like product consisting of FSF, coextensive with the scope, and Respondents do not address the issue.[19] There is no new information on this issue in the record of the final phase that is inconsistent with our definition in the preliminary determinations. In light of this, and the lack of contrary argument, we define a single domestic like product consisting of FSF coextensive with Commerce's scope of investigation.

III. Domestic Industry

The domestic industry is defined as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes

[15] CR at I-12, PR at I-10.

[16] CR at I-15-18, PR at I-12-14. FSF also can be made in an open-die process in which the dies used to form the fitting do not completely enclose the work piece. *Id.* at 17.

[17] CR at I-19-20, PR at I-14-15.

[18] *Forged Steel Fittings from China, Italy, and Taiwan,* Inv. Nos. 701-TA-589 and 731-TA-1394-1396 (Preliminary), USITC Pub. 4743 (Nov. 2017) at 7-8 ("Preliminary Determinations").

[19] Petitioners' Prehearing Brief at 2.

a major proportion of the total domestic production of the product."[20] 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.

These investigations raise two different domestic industry issues. The first concerns whether a firm that produces FSF by finishing rough forgings engages in sufficient production-related activity to qualify as a domestic producer. The second concerns whether appropriate circumstances exist to exclude any domestic producers from the domestic industry pursuant to the related parties provision.

In the preliminary phase of these investigations, the Commission found that Anvil International, Inc. ("Anvil"), the sole known firm engaged in finishing-only operations, engaged in sufficient production-related activities to qualify as a domestic producer, noting the substantial value added by finishing the product.[21] However, the Commission determined to exclude domestic producer Anvil from its definition of the domestic industry pursuant to the related parties provision, finding that Anvil's principal interest was in importation of subject merchandise rather than in domestic production.[22] In the final phase of these investigations, Petitioners do not contest the Commission's domestic industry determinations in the preliminary phase of these investigations.[23] Respondents do not address these issues.

A. Sufficient Production-Related Activities

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.[24]

Source and Extent of Firm's Capital Investment. Anvil had significant capital investments, although they were substantially lower than the combined investments by the integrated producers. Anvil's capital investment in fixed assets was $*** in 2017; it had capital expenditures of $*** in 2015, $*** in 2016, and $*** in 2017.[25]

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[20] 19 U.S.C. § 1677(4)(A).

[21] Preliminary Determinations, USITC Pub. 4743 at 9-10.

[22] Preliminary Determinations, USITC Pub. 4743 at 10-11.

[23] Petitioners' Prehearing Brief at 3.

[24] 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 Silicon Photovoltaic Cells and Modules from China*, Inv. Nos. 701-TA-481 and 731-TA-1190 (Final), USITC Pub. 4360 at 12-13 (Nov. 2012).

[25] Anvil U.S. Producer Questionnaire Response, EDIS Document Nos. 653400 at 2, 650176 at 44; CR/PR at Table III-4. Integrated producers had capital investments in fixed assets that ranged from $***

(Continued...)

Technical Expertise. Finishing FSF involves using a line of metal-removal equipment that can turn, bore, mill, drill, grind, polish, and weld the rough forgings to the tolerances and specifications required. The products may be coated to enhance their performance, and they may be assembled and adjusted by trained personnel. The finished parts are carefully labeled and tested before being shipped.[26] Anvil states that it has ***.[27] The integrated domestic producers rated the finishing process as complex.[28] Bonney Forge states that the finishing process requires ***.[29]

Value Added. The finishing operations added *** of the value of the finished FSF product in 2017.[30]

Employment Levels. Anvil employed *** employees in its finishing operations over the period of investigation.[31] Finishing operations required considerably more production and related workers and were more labor-intensive than forging operations.[32]

Quantity and Type of Parts Sourced in United States. The raw material for finishing FSF is rough forgings or unfinished FSF. Anvil *** raw materials from the domestic industry and instead sourced its rough forgings from *** over the period of investigation.[33] Shipments of domestically produced unfinished FSF in the U.S. commercial market was quite limited during the period of investigation.[34]

The record indicates that Anvil has made significant capital investments in its finishing operations, that substantial technical expertise is required to perform these operations, that finishing the product adds significant value to it, and that these operations require a number of trained personnel. Anvil did not source any of its raw material from the United States but there appears to be a limited supply of rough forgings in the U.S. commercial market. In light of these considerations, we find that Anvil, the sole U.S. firm engaged in finishing-only operations, engages in sufficient production-related activities in the United States to qualify as a domestic producer.

(…Continued)
to $*** in 2017 and capital expenditures ranging from $*** to $*** in 2017. EDIS Documents Nos. 653401, 648890, and 648921 at 41; CR/PR at Table VI-6.

[26] CR at I-19, PR at I-14-15.

[27] CR/PR at Table III-5.

[28] CR/PR at Table III-5. ***.

[29] CR/PR at Table III-5.

[30] CR/PR at Table III-4.

[31] CR/PR at Table III-17.

[32] CR/PR at Table III-16.

[33] CR/PR at Table III-4.

[34] U.S. producers' U.S. shipments of unfinished FSF were *** short tons in 2015, *** short tons in 2016, *** short tons in 2017, *** short tons in interim (January to March) 2017 and *** short tons in interim 2018. They accounted for only *** of integrated U.S. producers' shipments by quantity over the period of investigation. CR/PR at Table III-10.

B. Related Parties

We must determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.[35] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[36]

U.S. finisher Anvil is a related party that is subject to exclusion from the definition of the domestic industry under appropriate circumstances because it imported FSF from *** during the period of investigation.[37] The ratio of Anvil's subject imports to domestic production was *** percent in 2015, *** percent in 2016, *** percent in 2017, *** percent in January to March ("interim") 2017, and *** percent in interim 2018.[38] During the period of investigation, Anvil imported unfinished FSF from *** as a raw material for its finishing operations[39] as well as finished FSF from ***. Its imports of finished FSF ***, while its imports of unfinished FSF ***.[40]

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

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

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

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

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

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

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

[37] None of the respondents addressed the related party issue in the final phase of these investigations and Petitioners indicated that they did not contest the Commission's decision to exclude Anvil from the domestic industry as a related party in its preliminary determinations. Petitioners' Prehearing Brief at 3.

[38] CR/PR at Table III-15. Anvil's imports of *** were *** short tons in 2015, *** short tons in 2016, *** short tons in 2017, *** short tons in interim 2017, and *** short tons in interim 2018. Anvil's imports of *** were *** short tons in 2015, *** short tons in 2016, *** short tons in 2017, *** short tons in interim 2017, and *** short tons in interim 2018. CR/PR at Table III-15.

[39] The ratio of Anvil's subject imports of *** to its domestic production was *** percent in 2015, *** percent in 2016, *** percent in 2017, *** percent in interim 2017, and *** percent in interim 2018. CR/PR at Table III-15.

Anvil imported its unfinished FSF *** over the period of investigation. In the second quarter of 2018, Anvil arranged for ***. Anvil Importer Questionnaire, EDIS No. 648972 at 10, 12, 15.

[40] Derived from CR/PR at Table III-15.

The ratio of Anvil's subject imports of finished FSF to its domestic production ***.[41] Anvil states that it ***.[42] Anvil is ***.[43] Anvil's operating income ratio was ***.[44]

Anvil's increasing imports relative to its production from 2015 to 2017 with respect to both unfinished and finished FSF, as well as its position on the China antidumping case and its focus on importing low-priced FSF, indicate that its primary interests lie in importation rather than production.[45] Based on the foregoing, and given that none of the parties have argued to the contrary, we find that appropriate circumstances exist to exclude Anvil from the domestic industry as a related party. We therefore define the domestic industry as all U.S. producers of the domestic like product except Anvil.

[41] CR/PR at Table III-15.

[42] CR/PR at Table III-15.

[43] Anvil U.S. Producer Questionnaire Response, EDIS Document No. 650176 at 6.

[44] CR/PR at Table VI-5.

[45] Commissioner Broadbent does not exclude Anvil from the domestic industry as a related party. In light of the Commission's finding that Anvil engages in sufficient production-related activities in the United States to qualify as a domestic producer, she does not characterize Anvil's sourcing of ***, its raw material, as evidence of an interest in importation rather than domestic production. As noted above, U.S. integrated producers did not supply commercial quantities of unfinished FSF to firms engaged in finishing-only operations during the POI. At the hearing, a witness for Bonney Forge, the petitioner and one of the largest integrated producers, indicated affirmatively that they do not sell unfinished forgings to finishing-only operations. Hearing Tr. at 50 (Leone). Although Anvil did import subject finished FSF, these imports ***, indicating that Anvil's primary interest remained in domestic production rather than importation throughout the period. Therefore, she defines the domestic industry as all producers of FSF, including Anvil. She notes that this approach is consistent with prior Commission findings concerning related parties that import appreciable and rising volumes of finished subject merchandise in addition to unfinished inputs. See *e.g. Crystalline Silicon Photovoltaic Products from China and Taiwan*, Inv. Nos. 701-TA-511 and 731-TA-1246-1247 (Final), USITC Pub. 4519 at 16-20 (Feb. 2015). Anvil accounted for a small share of domestic production, and its inclusion in the domestic industry does not substantially affect her analysis of the domestic industry as a whole.

IV. Cumulation[46]

For purposes of evaluating the volume and effects for a determination of material injury by reason of subject imports, section 771(7)(G)(i) of the Tariff Act requires the Commission to cumulate subject imports from all countries as to which petitions were filed and/or investigations self-initiated by Commerce on the same day, if such imports compete with each other and with the domestic like product in the U.S. market. In assessing whether subject 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.[47]

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.[48] Only a "reasonable overlap" of competition is required.[49]

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[46] Pursuant to Section 771(24) of the Tariff Act, imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible. 19 U.S.C. §§ 1671b(a), 1673b(a), 1677(24)(A)(i), 1677(24)(B).

Imports from each subject country exceed the statutory negligibility threshold. Subject imports from China accounted for *** percent of all FSF imports by quantity for October 2016 through September 2017, the most recent 12-month period preceding the filing of the petitions; subject imports from Italy accounted for *** percent; and subject imports from Taiwan accounted for *** percent. CR/PR at Table IV-3.

[47] *See Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan*, Inv. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986), *aff'd*, *Fundicao Tupy, S.A. v. United States*, 678 F. Supp. 898 (Ct. Int'l Trade), *aff'd*, 859 F.2d 915 (Fed. Cir. 1988).

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

A. Arguments of the Parties

Petitioners maintain that there is a reasonable overlap in competition among FSF from the subject countries and the domestic like product. They argue that FSF is fungible whether produced by the domestic industry or by subject producers in China, Italy, or Taiwan; and that domestically produced FSF and subject imports from all three subject countries are sold throughout the contiguous United States, have been present throughout the period of investigation, and were primarily sold through distributors.[50] Petitioners maintain that even though all subject Italian FSF are normalized, there is widespread competition between them and other subject imports and the domestic like product.[51]

Respondents assert that there is severely attenuated competition between subject imports from Italy, which are normalized, and subject imports from China and Taiwan and the domestic product, which they allege are overwhelmingly non-normalized.[52] Respondents acknowledge that normalized FSF can be substituted for non-normalized FSF in applications that do not require normalized FSF, but argue that only normalized FSF is appropriate if the application requires the normalized product.[53]

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 antidumping petitions with respect to all three countries and the countervailing duty petition with respect to China on the same day, October 5, 2017.[54] Additionally, as discussed below, the record supports finding a reasonable overlap of competition among FSF produced in China, Italy, Taiwan, and the United States.

Fungibility. FSF regardless of source is produced in accordance with Manufacturer's Standardization Society ("MSS") and ASTM specifications, as well as American Society of Mechanical Engineers ("ASME") design standards.[55] With respect to their U.S. shipments of FSF, virtually all of the domestic producers' shipments, all of the shipments of subject imports

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(…Continued)

[49] The Statement of Administrative Action (SAA) to the Uruguay Round Agreements Act (URAA), expressly states that "the new section will not affect current Commission practice under which the statutory requirement is satisfied if there is a reasonable overlap of competition." H.R. Rep. No. 103-316, Vol. I at 848 (1994) (*citing Fundicao Tupy, S.A. v. United States*, 678 F. Supp. at 902; *see Goss Graphic Sys., Inc. v. United States*, 33 F. Supp. 2d 1082, 1087 (Ct. Int'l Trade 1998) ("cumulation does not require two products to be highly fungible"); *Wieland Werke, AG*, 718 F. Supp. at 52 ("Completely overlapping markets are not required.").

[50] Petitioners' Prehearing Brief at 4-5.

[51] Petitioners' Posthearing Brief at 1-2 & Responses to Commissioner Questions at 1-8.

[52] Respondents' Prehearing Brief at 9; Respondents' Posthearing Brief at 1.

[53] Respondents' Prehearing Brief at 9.

[54] None of the statutory exceptions to cumulation apply.

[55] CR at II-1, PR at II-1.

from Italy and Taiwan, and *** percent of the shipments of subject imports from China, were finished FSF.[56] Furthermore, the domestic producers and the importers of FSF from the subject countries all ship a broad range of FSF products in the U.S. market including elbow, tee, coupled, and union FSF.[57] All U.S. producers, a plurality of importers, and a majority of purchasers report that U.S. and subject country FSF are always interchangeable.[58] Most purchasers report that subject imports from China, Italy, and Taiwan are generally comparable across a broad array of factors considered in purchasing decisions, except that subject imports from China are inferior to subject imports from Italy with respect to product consistency and quality exceeding industry standards. Most purchasers report that domestically produced FSF and subject FSF from Italy and Taiwan are comparable across most factors, although the U.S. is superior to subject imports from Italy with respect to delivery. They report that U.S. and subject FSF from China are comparable in terms of quality, but that the domestic product is either comparable or superior to subject imports from China with respect to product consistency, and superior with regard to delivery and reliability of supply.[59] Importers report that not all subject suppliers are accepted on approved manufacturer lists ("AMLs"), and most purchasers report that subject imports from China usually met minimum quality specifications while domestic sources and other subject sources always met them.[60]

Although Respondents argue that subject imports from Italy compete to a limited degree with other subject imports and with the domestic like product because they are normalized, all of the parties agree that normalized FSF can be substituted for non-normalized FSF in applications that do not require normalized FSF, [61] and the record indicates that about 90 percent of the U.S. market does not require normalization.[62] Additionally, a majority of importers' U.S. shipments of subject imports from each country are normalized based on 2017 data: *** percent for shipments of subject imports from China; *** percent for shipments from Italy; and *** percent for shipments from Taiwan.[63] We recognize that responding importers indicated that most of their purchasers required normalized fittings, [64] and that U.S. shipments of normalized fittings are limited,[65] but the record also shows that the parties agree

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

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

[58] CR at II-22, PR at II-16 & CR/PR at Table II-10.

[59] CR/PR at Tables II-9a and II-9b.

[60] CR at II-22-23, PR at II-16 & CR/PR at Table II-11.

[61] Respondents' Prehearing Brief at 9; Petitioners' Posthearing Brief, Responses to Commissioner Questions at 1-2.

[62] Petitioners' Posthearing Brief at 1 and Responses to Commissioner Questions at 1; Tr. at 173 (Weinstein). *See also* Respondents' Posthearing Brief, Responses to Commissioner Questions at 3.

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

[64] Although we did not request data from all importers of subject merchandise, all responding importers indicated that *** percent of their imports from subject sources were normalized, because most of their purchasers required normalized fittings. CR at IV-11 n.8, PR at IV-9 n.8.

[65] Bonney Forge reported that approximately *** percent of its FSF shipments were normalized, and PMW reported that *** percent of its shipments were normalized. CR at IV-11 & nn. 8-9, PR at IV-9 & nn.8-9.

that most of the U.S. market does not require normalization.[66] We find that the record indicates that the domestic industry and subject suppliers compete broadly for sales in which normalized fittings may be used.[67]

Channels of Distribution. The domestic industry sold *** percent of its commercial shipments of FSF to distributors over the period of investigation; the integrated producers internally consumed their unfinished FSF. U.S. importers of subject merchandise from China, Italy, and Taiwan sold the vast majority of their commercial U.S. shipments to distributors.[68] U.S. importers of subject merchandise from China increased the share of their shipments of FSF sold to distributors rather than end users over the period of investigation.[69]

Geographic Overlap. The domestic like product and FSF imported from the subject countries were sold in overlapping regions throughout the United States, and imports from all three subject countries entered the United States at East, North, South, and West borders of entry.[70]

Simultaneous Presence in Market. Subject imports from all three subject countries were present in the U.S. market in all 39 months from January 2015 through March 2018.[71] Domestic producers also shipped FSF throughout the period of investigation.[72]

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

V. Material Injury by Reason of Subject Imports

Based on the record in the final phase of this investigation, we find that an industry in the United States is materially injured by reason of imports of FSF from Taiwan that Commerce has found to be sold in the United States at less than fair value.

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[66] Petitioners' Posthearing Brief at 1 and Responses to Commissioner Questions at 1; Tr. at 173 (Weinstein). Respondents estimate that the amount of normalized FSF in the U.S. market is equal to approximately *** percent of U.S. consumption. Respondents' Posthearing Brief, Responses to Commissioner Questions at 3 & Exhibit 7.

[67] Petitioners' Posthearing Brief, Exhibit 3 & 14.

[68] CR/PR at Table II-1. In 2017, *** percent of U.S. importers' U.S. commercial shipments of FSF from Italy were sold to distributors, *** percent of their shipments from China were sold to distributors, and *** percent of their shipments from Taiwan were sold to distributors.

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

[70] CR/PR at Tables II-2 and IV-7.

[71] CR/PR at Table IV-8.

[72] CR/PR at Table III-10.

A. Legal Standards

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.[73] 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.[74] The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant."[75] In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[76] 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."[77]

Although the statute requires the Commission to determine whether the domestic industry is "materially injured or threatened with material injury by reason of" unfairly traded imports,[78] 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.[79] 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.[80]

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[73] 19 U.S.C. §§ 1671d(b), 1673d(b). The Trade Preferences Extension Act of 2015, Pub. L. 114-27, amended the provisions of the Tariff Act pertaining to Commission determinations of material injury and threat of material injury by reason of subject imports in certain respects.

[74] 19 U.S.C. § 1677(7)(B). The Commission "may consider such other economic factors as are relevant to the determination" but shall "identify each {such} factor ... and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[75] 19 U.S.C. § 1677(7)(A).

[76] 19 U.S.C. § 1677(7)(C)(iii).

[77] 19 U.S.C. § 1677(7)(C)(iii).

[78] 19 U.S.C. §§ 1671d(a), 1673d(a).

[79] *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).

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

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.[81] In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.[82] 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.[83] It is

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(…Continued)
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).

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

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

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

clear that the existence of injury caused by other factors does not compel a negative determination.[84]

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."[85] Indeed, the Federal Circuit has examined and affirmed various Commission methodologies and has disavowed "rigid adherence to a specific formula."[86]

The Federal Circuit's decisions in *Gerald Metals, Bratsk*, and *Mittal Steel* all involved cases where 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.[87] The additional "replacement/benefit" test looked at whether nonsubject imports might have replaced subject imports without any benefit to the U.S. industry. The Commission applied that specific additional test in subsequent cases, including the *Carbon and Certain Alloy Steel Wire Rod from Trinidad and Tobago* determination that underlies the *Mittal Steel* litigation.

Mittal Steel clarifies that the Commission's interpretation of *Bratsk* was too rigid and makes clear that the Federal Circuit does not require the Commission to apply an additional test nor any one specific methodology; instead, the court requires the Commission to have "evidence in the record" to "show that the harm occurred 'by reason of' the LTFV imports," and requires that the Commission not attribute injury from nonsubject imports or other factors to subject imports.[88] Accordingly, we do not consider ourselves required to apply the replacement/benefit test that was included in Commission opinions subsequent to *Bratsk*.

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

[85] *Mittal Steel*, 542 F.3d at 877-78; *see also id.* at 873 ("While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured 'by reason of' subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.") *citing United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swiff-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission's causation analysis as comporting with the Court's guidance in *Mittal*.

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

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

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

The progression of *Gerald Metals, Bratsk*, and *Mittal Steel* clarifies that, in cases involving commodity products where price-competitive nonsubject imports are a significant factor in the U.S. market, the Court will require the Commission to give full consideration, with adequate explanation, to non-attribution issues when it performs its causation analysis.[89]

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.[90] Congress has delegated this factual finding to the Commission because of the agency's institutional expertise in resolving injury issues.[91]

B. Conditions of Competition and the Business Cycle

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

1. Demand Considerations

U.S. demand for FSF depends on the demand for piping systems used in the oil and gas industries, as well as the chemical and petrochemical industries.[92] The parties agree that changes in oil and gas prices are an important condition of competition in the U.S. FSF market. Oil and gas prices are drivers of U.S. oil exploration and production activity, including oil and gas rig activity, which in turn drives demand for the piping systems used in the oil and gas industries.[93] Oil and gas prices fell from 2015 to their lowest level in 2016, recovered late in 2016, and then rose further in 2017 and early 2018.[94] The Baker Hughes Rotary Rig Count shows the same general trend for the number of active oil rigs in North America.[95] Apparent

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[89] 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.

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

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

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

[93] CR at II-10-11; PR at II-7. Petitioners' Prehearing Brief at 5-8; Respondents' Prehearing Brief at 2-3.

[94] CR/PR at Figures II-1(a) & (b).

[95] CR/PR at Figure II-2.

U.S. consumption for FSF followed similar trends; it fell from *** short tons in 2015 to *** short tons in 2016, and then increased to *** short tons in 2017.[96]

2. Supply Considerations

The domestic industry was the largest supplier of FSF to the U.S. market during the period of investigation; its share of apparent U.S. consumption was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[97] Capitol was the *** domestic producer, accounting for *** short tons of domestic production in 2017; Bonney Forge was the *** producer, accounting for *** short tons of domestic production; and PMW, a ***, accounted for *** short tons of domestic production.[98] The domestic industry's capacity was relatively flat from 2015 to 2017 at approximately *** short tons, and its capacity utilization ranged from *** percent to *** percent.[99] [100]

Cumulated subject imports were the second-largest supplier of FSF to the U.S. market; their share of apparent U.S. consumption was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[101] Nonsubject imports never accounted for more than *** percent of the U.S. market during the period of investigation.[102]

Domestic producers and U.S. importers of FSF from both subject and nonsubject countries supplied primarily finished FSF in a broad array of FSF product types, including elbow, tee, coupling, and union products.[103] The one exception to this was the subject imports from China, with the majority (*** percent) of U.S. importers' shipments of such imports consisting of unfinished fittings.[104] PMW reports that it supplies ***.[105]

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[96] CR/PR at Table IV-9. Apparent U.S. consumption was *** short tons in interim 2017 and *** short tons in interim 2018. *Id.* We note that Petitioners requested that in light of the sharp fluctuations in oil and gas prices and rig counts, the Commission take changes in the market from 2014 to 2015 into account when analyzing the condition of the domestic industry. Petitioners' Prehearing Brief at 27. While we have considered the effect of demand in the oil and gas sector in our analysis, we did not find it necessary to deviate from considering a three-year period in order to also consider data for 2014 when analyzing the conditions of competition.

[97] CR/PR at Table IV-10. The domestic industry's share of the U.S. market was *** percent in interim 2017 and *** percent in interim 2018. *Id.*

[98] CR/PR at Table III-6.

[99] CR/PR at Table III-6. The domestic industry's capacity was approximately *** short tons in interim 2017 and interim 2018. The domestic industry capacity utilization rate was *** percent in interim 2017 and *** percent in interim 2018. *Id.*

[100] Commissioner Broadbent notes that Anvil's capacity ***. Anvil's capacity utilization was ***. CR/PR at Table C-1.

[101] CR/PR at Table IV-10. Cumulated subject imports' share of the U.S. market was *** percent in interim 2017 and *** percent in interim 2018. *Id.*

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

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

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

[105] CR at VI-3 n.8; PR at VI-2 n.8.

3. Substitutability and Other Conditions

As discussed above, FSF is typically produced according to MSS and ASTM specifications, as well as ASME design standards.[106] The record indicates a high degree of substitutability between U.S.-produced FSF and FSF imported from subject sources. All U.S. producers, a plurality of importers, and a majority of purchasers reported that U.S. and subject-country FSF were always interchangeable.[107] As stated earlier, all of the parties agree that normalized fittings can be used in the same applications as non-normalized fittings.

The record shows that domestic product and subject imports are both sold primarily from inventory, [108] and that they are sold through some of the same distributors, for some of the same end users.[109]

Price is an important purchasing factor for FSF. All U.S. integrated producers stated that differences other than price were never significant, and the majority of responding U.S. importers and purchasers stated that differences other than price were sometimes or never significant.[110] Purchasers also cited price/cost most frequently when asked to report their top three purchasing factors, followed by quality and availability.[111]

The primary raw material used in making FSF is special bar quality ("SBQ") hot-rolled steel bar. SBQ hot-rolled steel bar prices fell throughout 2015, remained relatively stable in 2016, and then increased in 2017 and early 2018.[112] Raw materials as a share of the cost of goods sold ("COGS") for domestic FSF decreased from *** percent in 2015 to *** percent in 2016 before increasing to *** percent in 2017.[113]

*** U.S. producers' commercial shipments and *** percent of importers' commercial shipments were sold through spot sales in 2017.[114]

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

[106] CR at II-1; PR at II-1.

[107] CR at II-22, PR at II-16 & CR/PR at Table II-10.

[108] CR at II-15; PR at II-11.

[109] CR/PR at Table V-9. *** is the largest customer for both *** and ***. ***, and ***. Petitioners Posthearing Brief, Responses to Commissioner Questions at 5, Exhibits 3, 4 & 14; Respondents' Posthearing Brief at 5-6, Respondents' Final Comment at 4.

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

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

[112] CR/PR at Figure V-1.

[113] CR/PR at Table VI-3. Raw materials as a share of COGS for domestic FSF was *** percent in interim 2017 and *** percent in interim 2018. *Id.*

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

absolute terms or relative to production or consumption in the United States, is significant."[115] [116]

Cumulated subject imports from China, Italy, and Taiwan had a substantial presence in the U.S. market throughout the period of investigation. Shipments of cumulated subject imports increased by 10.2 percent from 2015 to 2017; they were 9,233 short tons in 2015, 7,417 short tons in 2016, and 10,172 short tons in 2017.[117] Their market share by quantity was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[118]

We find that the volume of subject imports is significant both in absolute terms and relative to consumption in the United States.[119]

D. Price Effects of the Subject Imports

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

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

(II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[120]

As discussed above, the record indicates that there is a high degree of substitutability between subject imports and domestically produced FSF and that price is an important factor in purchasing decisions.

The Commission collected quarterly pricing data on four FSF products.[121] Three U.S. integrated producers and 24 importers provided usable pricing data for sales of the requested

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[115] 19 U.S.C. § 1677(7)(C)(i).

[116] Commissioner Broadbent notes that, following the filing of the petitions in late 2017, the volume and market share of subject imports declined in interim 2018, while the domestic industry's financial condition improved. She finds that these changes were related to the pendency of the investigations, and reduces the weight accorded to the data for the period after the filing of the petitions in making her determination of material injury pursuant to 19 U.S.C. § 1677(7)(I).

[117] CR/PR at Table C-3. Shipments of cumulated subject imports were 2,677 short tons in interim 2017 and 2,376 short tons in interim 2018. *Id.*

[118] CR/PR at Table IV-10. Cumulated subject imports had a market share by quantity of *** percent in interim 2017 and *** percent in interim 2018. *Id.*

[119] Respondents argue that the volume of subject imports is not significant because it tracked demand trends. Respondents' Prehearing Brief at 14-15. To the extent subject import volumes fluctuated in line with demand trends, this does not mitigate the significance of subject import volumes in absolute terms and relative to consumption. Moreover, the statute does not require an absolute or relative increase in subject imports for a finding of significant volume.

[120] 19 U.S.C. § 1677(7)(C)(ii).

[121] The pricing products were: 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); and Product 4 – ASME B16.11, 2" 3000 Coupling (threaded).

products, although not all firms reported pricing for all products for all quarters.[122] These data yielded a total of 156 direct price comparisons between domestically produced FSF and subject imports. Subject imports undersold the domestic like product in 116 of the 156 quarterly comparisons, or in 74.4 percent of the comparisons, at margins ranging from *** percent from January 2015 to March 2018.[123] There were 1,054 short tons of subject imports in quarters with underselling and 84 short tons of subject imports in quarters with overselling.[124] [125]

Other information in the record supports a finding of significant underselling and also that the domestic industry lost sales of FSF to low-priced subject imports. Of the 25 purchasers that responded to questions on lost sales, 19 reported that they had purchased FSF imported from subject countries rather than the domestic product. Of those 19 purchasers, 17 reported that subject imports were priced lower than the domestic like product, and 16 reported that price was a primary reason for purchasing subject imports rather than the domestic Those 19 purchasers accounted for *** percent of the reported subject imports purchased by responding purchasers from 2015 to 2017.[127] In addition, five purchasers stated that U.S. producers had reduced prices from *** percent in order to compete with lower-priced imports from subject countries.[128] Given the consistent underselling, the high substitutability of the products, the importance of price in purchasing decisions, and confirmation that purchasers

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[122] CR at V-7; PR at V-4. Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' shipments of FSF, *** percent of U.S. shipments of subject imports from China, *** percent of U.S. shipments of subject imports from Italy, and *** percent of U.S. shipments of subject imports from Taiwan in 2017. CR at V-7; PR at V-5. The pricing data we have relied upon do not include domestic sales of FSF finished by Anvil as it has been excluded from the domestic industry, but they do include sales of finished FSF imported by Anvil.

[123] CR/PR at Table V-8. We note that while subject imports undersold the domestic like product in about three quarters of the price comparisons on an annual basis from 2015 to 2017, they undersold the domestic like product in only half of the price comparisons in interim 2018, when domestic sales of the four pricing products increased. CR/PR at Tables V-3-V-6.

[124] CR/PR at Table V-8.

[125] Commissioner Broadbent notes that, based on a domestic industry that includes Anvil, subject imports undersold the domestic like product in 112 out of 144 quarterly comparisons between the first quarter of 2015 and the final quarter of 2017. There were *** short tons of subject imports in quarters with underselling and *** short tons of subject imports in quarters with overselling. CR/PR at Table D-6.

[126] CR/PR at Table V-10. ***, Bonney Forge's ***, purchased *** short tons of FSF from subject producers over the period of investigation, and the primary reported reason was ***. Petitioners' Posthearing Brief, Responses to Commissioner Questions at 5; CR/PR at Table V-11.

[127] CR/PR at Tables V-9 & V-10. Responding purchasers reported buying a total of *** short tons of subject imports from 2015 to 2017, with *** short tons confirmed by 19 purchasers to have been bought instead of the domestic product, and 16 out of those 19 purchasers stating that they bought the subject imports because of their lower price. *Id.* Purchasers also stated that subject imports were lower-priced than the U.S. product. CR/PR at Table II-9a.

[128] CR/PR at Table V-12.

sourced subject imports primarily due to their lower prices, we find the underselling to be significant.[129] [130]

We have also examined trends in prices for the domestic like product and the subject imports between the first quarter of 2015 and the first quarter of 2018. Prices for the four domestically produced pricing products declined from January 2015 through late 2016 before stagnating or declining somewhat in 2017, at price levels well below those at the beginning of the period of investigation.[131] Subject import prices fluctuated at generally lower price levels than the domestic prices throughout the period of investigation.[132]

All of the parties acknowledge that oil and gas prices have a strong effect on the U.S. FSF market. From 2015 to 2016, as oil and gas prices fell, apparent U.S. consumption of FSF fell by *** percent, and U.S. producer prices for FSF also fell. Prices for SBQ hot-rolled steel bar, the primary raw material for FSF, also declined from 2015 to 2016. However, from 2016 to 2017, oil and gas prices increased, apparent U.S. consumption of FSF surged by *** percent, and prices for SBQ hot-rolled steel bar

[129] Respondents argue that the Commission should give reduced weight to the underselling comparisons because the coverage of the pricing products is low. Respondents' Prehearing Brief at 17. Given the broad range of products that constitute FSF (Bonney Forge has stated that it has 4,800 SKUs of FSF that it manufactures, Tr. at 64 (Drake and Leone)) and in the absence of any contrary evidence, we consider our pricing data representative of the prices in the industry. We also note that Respondents did not file any comments on the Commission's draft questionnaires when they had an opportunity to request that the Commission gather data on different or additional pricing products. *See* 19 C.F.R. § 207.20(b).

[130] Respondents maintain that the underselling data do not take into account the higher internal U.S. transportation costs for subject imports from Italy, that U.S. producers had superior delivery terms and times which resulted in higher inventory costs for purchasers of subject imports from Italy, that *** sales to a few high tonnage customers resulted in lower prices, and that *** prices had an effect on the underselling. Respondents' Posthearing Brief, Responses to Questions from Commissioners at 5-7. We note that these arguments by Respondents attempt to explain the underselling rather than dispute it. Furthermore, Respondents focus on Italian producers' costs and prices but we analyze subject import pricing on a cumulated basis in these investigations. In any event, our data show that most importers had lower inland transportation costs than the integrated domestic producers. CR at V-3; PR at V-2. Purchasers rate the domestic industry superior with regard to delivery terms and times in most instances with respect to subject imports from China and Italy, but not with respect to subject imports from Taiwan, and the impact of these factors on price is unclear. CR/PR at Table II-9a. *** sales to high tonnage customers are appropriately included in our pricing data as importer sales data, and *** sales are appropriately included in our pricing data as domestic sales. However, even if *** pricing data are excluded, there is still significant underselling (*** percent of the price comparisons). Derived from CR/PR at Table V-8 and *** Producer Questionnaire, EDIS Document No. 648890.

[131] Commissioner Broadbent notes that domestic prices, including those of U.S. producer Anvil, demonstrated similar trends. For all four pricing products, domestic prices fell between 2015 and 2016, with prices remaining at lower levels in 2017. CR/PR at Tables D-1-4.

[132] CR/PR at Tables V-3-V-6, Figures V-2-V-5. U.S. producer prices for FSF showed little variation between the last quarter of 2017 and the first quarter of 2018. Subject import prices were generally higher in the first quarter of 2018 than in the last quarter of 2017. *Id.*

increased. Nonetheless, prices for U.S. producer FSF were either stagnant or declining from 2016 to 2017.[133]

We find that in 2017, in the face of underselling by subject imports, the domestic industry was unable to take advantage of the sharp increase in consumption and raise its prices, as it would be expected to be able to do for a product with limited substitutes. Thus, we find that subject imports, which significantly undersold the domestic like product, prevented price increases which otherwise would have occurred to a significant degree.[134]

Respondents argue that declining raw material costs explain the continued low prices in 2017, noting that the domestic industry's per unit raw materials costs declined from 2016 to 2017.[135] However, the per unit raw material costs for***, increased from 2016 to 2017.[136] *** that produces ***, had decreasing per-unit raw material costs.[137] Thus, the per-unit raw material costs increased for the two firms that produced *** percent and sold *** percent (by quantity) of the domestically produced FSF in 2017.[138] Moreover, the evidence on the record that declining raw material prices would be expected to drive down the price of FSF is mixed. Petitioners state that prices are determined based on supply and demand trends, and that raw material prices are rarely discussed with FSF customers.[139] The domestic industry's sales are *** on the spot market, so they would not be impacted by raw material adjustment clauses in contracts that influence prices in some industries.[140] The questionnaire responses were generally mixed on the extent to which raw materials affected the price of FSF.[141] However, as discussed above, published prices for raw material SBQ hot-rolled steel bar, which are easily available and well known in the market, increased in 2017. To the extent that raw material costs impact prices in this market, the

[133] CR/PR at Tables C-3, V-3-V-6 and Figures II-1(a)&(b), II-2, V-1, V-2-V-5.

[134] Respondents argued that there is no price suppression in this case because the industry's COGS to net sales ratio declined over the period of investigation. Respondents' Final Comments at 7. We find significant price suppression on this record despite the lack of a cost-price squeeze. While it is true that the COGS to net sales ratio improved and there is no evidence of a cost-price squeeze between 2016 and 2017, that does not mandate a finding of no price suppression. The decline in the COGS to net sales ratio in 2017 is largely due to the decrease in unit other factory costs. Other factory costs account for most of the total COGS in this industry and these costs decreased on a per unit basis from 2016 to 2017 as sales volume increased and the costs were spread over a greater production and shipments volume. CR/PR at Table VI-3, CR at VI-13; PR at VI-2-3.

[135] Respondents' Posthearing Brief at 11-14.

[136] CR/PR at Table VI-5.

[137] CR at VI-3, PR at VI-2, CR/PR at Table VI-5.

[138] Derived from CR/PR at Table III-1 and Table VI-5.

[139] Tr. at 53-54 (Drake) & 57 (O'Connell).

[140] CR/PR at Table V-2.

[141] One U.S. producer reported that the price of raw materials has ***, two producers said that the price of FSF increased because of an increase in raw material prices, and six out of 17 importers that commented on raw material prices reported that there was a direct correlation between raw material prices and FSF prices. CR at V-2, PR at V-1.

increase in SBQ hot-rolled steel bar prices would have been a reason for producers to seek to increase prices, particularly given the limited substitutes for FSF and increasing demand.[142] Based on the foregoing, we find that the evidence does not support Respondents' argument that decreasing raw material costs kept the domestic industry's prices from rising in 2017, notwithstanding the sharp increase in demand at that time.

We therefore find that there was significant underselling of the domestic like product by cumulated subject imports and that low-priced cumulated subject imports suppressed prices of the domestic like product to a significant degree.

E. Impact of the Subject Imports[143]

Section 771(7)(C)(iii) of the Tariff Act provides that in examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."[144] 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 debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[145]

The domestic industry's capacity stayed relatively constant throughout the period of investigation; it was *** short tons in 2015, *** short tons in 2016, and *** short tons in 2017.[146] Production increased overall, initially decreasing from *** short tons in 2015 to ***

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[142] Tr. at 161-62 (Weinstein).

[143] The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). In its final determination of sales at less than fair value Commerce found weighted-average antidumping duty margins of 116.17 percent for imports of FSF from Taiwan. 83 Fed. Reg. 36519 (July 30, 2018). We also take into account in our analysis the fact that Commerce has made preliminary findings of weighted-average antidumping duty margins of 7.42 to 142.72 percent for imports of FSF from China, and weighted-average antidumping duty margins of 49.43 to 80.20 percent for FSF from Italy. (83 Fed Reg. at 22951 (China) and 22956 (Italy)). In addition to this consideration, our impact analysis has considered other factors affecting domestic prices. Our analysis of the significant underselling and price effects of subject imports, described in both the price effects discussion and below, is particularly probative to an assessment of the impact of the subject imports.

[144] 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.").

[145] 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

[146] CR/PR at Table III-6. Domestic industry capacity was *** short tons in interim 2017 and *** short tons in interim 2018. *Id.*

short tons in 2016, before increasing to *** short tons in 2017.[147] Capacity utilization was low, *** percent in 2015, *** percent in 2016, and *** percent in 2017.[148] U.S. shipments increased overall, initially decreasing from *** short tons in 2015 to *** short tons in 2016, before increasing to *** short tons in 2017.[149] The domestic industry's market share was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[150] The domestic industry's end-of-period inventories were *** short tons in 2015, *** short tons in 2016, and *** short tons in 2017.[151]

The number of production related workers ("PRWs") fell overall from 2015 to 2017, decreasing from *** in 2015 to *** in 2016 before partially recovering to *** in 2017.[152] Total hours worked also fell overall from 2015 to 2017, decreasing from *** in 2015 to *** in 2016 before partially recovering to *** in 2017.[153] Other employment indicia fell from 2015 to 2016, and then improved from 2016 to 2017. Wages paid were $*** in 2015, $*** in 2016, and $*** in 2017.[154] Productivity was *** short tons per 1,000 hours in 2015, *** short tons per 1,000 hours in 2016, and *** short tons per 1,000 hours in 2017.[155] Unit labor costs initially increased per short ton and then decreased; they were $*** per short ton in 2015, $*** per short ton in 2016, and $*** per short ton in 2017.[156]

The domestic industry's financial indicia generally declined from 2015 to 2016 and improved from 2016 to 2017. Net sales by value were $*** in 2015, $*** in 2016, and $*** in 2017.[157] The domestic industry's unit sales value was $*** in 2015, $*** in 2016, and $*** in 2017.[158] Total COGS were $*** in 2015, $*** in 2016, and $*** in 2017; the industry's COGS to

[147] CR/PR at Table III-6. Production was *** short tons in interim 2017 and *** short tons in interim 2018. *Id.*

[148] CR/PR at Table III-6. Capacity utilization was higher in interim 2018 (*** percent) than in interim 2017 (*** percent). *Id.*

[149] CR/PR at Table III-11. U.S. shipments were *** short tons in interim 2017 and *** short tons in interim 2018. *Id.*

[150] CR/PR at Table IV-10. The domestic industry's market share was *** percent in interim 2017 and *** percent in interim 2018.

[151] CR/PR at Table III-14. The domestic industry's end-of-period inventories were *** short tons in interim 2017 and *** short tons in interim 2018. *Id.*

[152] CR/PR at Table III-16. The number of PRWs was *** in interim 2017 and *** in interim 2018. *Id.*

[153] CR/PR at Table III-16. Total hours worked was *** in interim 2017 and *** in interim 2018. *Id.*

[154] CR/PR at Table III-16. Wages paid were $*** in interim 2017 and $*** in interim 2018. *Id.*

[155] CR/PR at Table III-16. Productivity was *** short tons per 1,000 hours in interim 2017 and *** short tons per 1,000 hours in interim 2018. *Id.*

[156] CR/PR at Table III-16. Unit labor costs were $*** per short ton in interim 2017 and $*** per short ton in interim 2018.

[157] CR/PR at Table VI-3. Net sales by value were $*** in interim 2017 and $*** in interim 2018. *Id.*

[158] CR at Table VI-3. Unit sales value was $*** in interim 2017 and $*** in interim 2018.

net sales ratio was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[159] Gross profits were $*** in 2015, $*** in 2016, and $*** in 2017.[160] Operating income was $*** in 2015, $*** in 2016, and $*** in 2017; net income was $*** in 2015, $*** in 2016, and $*** in 2017.[161] Operating income as a ratio to net sales was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[162]

The domestic industry's capital expenditures and research and development expenses decreased from 2015 to 2017. Capital expenditures were $*** in 2015, $*** in 2016 and $*** in 2017, and research and development expenditures were $*** in 2015, $*** in 2016, and $*** in 2017.[163] The domestic industry's total assets decreased from $*** in 2015, to $*** in 2016, and to $*** percent in 2015, *** percent in 2016, and *** percent in 2017.[164] [165]

As shown by its output and financial performance indices, the domestic industry's *** from 2015 to 2016 when subject imports undersold the domestic like product and apparent U.S. consumption decreased by *** percent. When demand increased by *** percent but the underselling continued in 2017, the domestic industry was able to increase its sales, shipments, and market share to some extent, but its prices were stagnant or somewhat decreasing and its capacity utilization remained low.

We find that the cumulated subject imports had a significant adverse impact on the domestic industry. As discussed above, significant volumes of low-priced cumulated subject imports that were highly substitutable with the domestic like product entered the U.S. market, significantly undersold the domestic like product, and suppressed domestic prices to a significant degree at a time of growing demand. This underselling and price suppression prevented the domestic industry from fully benefitting from the strong (*** percent) increase in apparent consumption from 2016 to 2017. In particular, the price suppression caused by

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[159] CR/PR at Table VI-3. COGS was $*** in interim 2017 and $*** in interim 2018; its COGS to net sales ratio was *** percent in interim 2017 and *** percent in interim 2018. *Id.*

[160] CR/PR at Table VI-3. Gross profits were $*** in interim 2017 and $*** in interim 2018. *Id.*

[161] CR/PR at Table VI-3. Operating income was $*** in interim 2017 and $*** in interim 2018. Net income was $*** in interim 2017 and $*** in interim 2018. *Id.*

[162] CR/PR at Table VI-3. Operating income as a ratio to net sales was *** percent in interim 2017 and *** percent in interim 2018. *Id.*

[163] CR/PR at Table VI-6. Capital expenditures were $*** in interim 2017 and $*** in interim 2018. Research and development expenses were $*** in interim 2017 and $*** in interim 2018. *Id.*

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

[165] Commissioner Broadbent fully considered all relevant economic factors which have a bearing on the state of the domestic industry producing FSF, which includes Anvil. Anvil accounted for *** percent of domestic production in 2017, so its inclusion in the domestic industry does not substantially affect her analysis of the domestic industry as a whole.

Anvil's capacity *** from 2015 to 2017, while its production *** and its capacity utilization ***. CR/PR at Table III-7. Its end-of-period inventories ***. CR/PR at Table III-14.

The number of PRWs employed by Anvil *** in 2017, while wages paid ***. Productivity ***. CR/PR at Table III-17.

Anvil's gross income as a ratio to net sales *** percent in 2015 to *** percent in 2017. Its operating and net income as ratios to net sales *** percent in 2015 to a *** percent in 2017. CR/PR at Table VI-5.

subject imports prevented the industry from seeing better financial performance in 2017 than it did. While the industry's COGS to net sales ratio improved from 2016 to 2017, its unit net sales value, which fell from 2016 to 2017, should have been higher, allowing higher domestic industry profits in 2017, given the sharp increase in demand.[166]

We observe that in interim 2018, after the petitions were filed and apparent U.S. consumption was *** percent higher than in interim 2017, subject import U.S. shipment volume decreased by *** percent, underselling declined, and the domestic industry performed substantially better than it had in interim 2017.[167] The domestic industry's market share was *** percentage points higher in interim 2018 than in interim 2017; its capacity utilization rate was *** percentage points higher; its shipments were *** percent higher; its sales by quantity were *** percent higher; and its total net sales value was *** percent higher. The number of PRWs employed by the domestic industry was *** percent higher and their total hours worked were *** percent higher in interim 2018 than in interim 2017. In interim 2018, the domestic industry's COGS to net sales ratio was at its lowest level of the period of investigation at *** percent, and although the unit value of net sales was only *** percent higher in interim 2018 than in interim 2017, it was increasing rather than decreasing as had occurred in 2017. The domestic industry's profitability was higher in interim 2018 than in interim 2017; its operating margin was *** percent in interim 2018 compared to *** percent in interim 2017.[168] Its capital expenditures were also higher in interim 2018 than in interim 2017.[169] Thus, the domestic industry did not benefit substantially from increased consumption until after the petitions on FSF were filed and subject import volume and underselling decreased in response to the pending investigations. When subject imports began to retreat from the market and were priced less aggressively in interim 2018, the domestic industry was able to substantially increase its sales, shipments, and profitability as apparent U.S. consumption continued the increase begun in 2017.[170]

We have considered Respondents' arguments that competition between subject imports from Italy and the domestic like product and other subject imports is severely

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[166] We have considered Respondents' argument that underselling by the subject imports did not injure the domestic industry because the domestic industry increased its profitability over the period of investigation. Respondents' Prehearing Brief at 17. We note that 19 U.S.C. § 1677(7)(J) provides that "***he 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."

[167] Commissioner Broadbent does not join this paragraph in light of her determination to reduce the weight accorded to post-petition information. She further notes that domestic industry improvements corresponding to the filing of antidumping and countervailing duty petitions do not inform her analysis of whether dumped or subsidized subject imports injured the domestic industry during the period of investigation.

[168] CR/PR at Table C-3.

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

[170] *** state that customers that had previously relied on imported FSF had turned to them to supply it after the petitions were filed. Petitioners' Posthearing Brief, Exhibit 3 at 1 (Declaration of Ken O'Connell) & Exhibit 14 at 2 (Declaration of Nicholas Tee).

attenuated due to normalization.[171] As discussed above, we have found that there is a reasonable overlap of competition between subject imports and the domestic like product and with subject imports from China, Italy, and Taiwan and determined to cumulate subject imports from all three countries. We find that the fact that subject imports from Italy are normalized and to a large extent are sold to large oil companies does not limit the extent to which cumulated subject imports compete with the domestic like product. The record indicates that about 90 percent of the U.S. market does not require normalization,[172] and the parties agree that normalized FSF can be used in applications that do not require normalized FSF. As previously stated, a substantial amount of subject merchandise from all three subject countries is normalized. Normalized subject imports are therefore competing with domestic FSF in applications that do not require normalization. Moreover, the domestic industry competed for sales of normalized FSF. Although the domestic industry shipped a limited amount of normalized FSF to the U.S. market during the period of investigation, it reported that it had substantial unused capacity to produce normalized fittings and could have shipped up to *** short tons of normalized FSF if there had been more demand for it.[173] Furthermore, all sources supply FSF that are destined for major oil companies, and ***.[174]

We note further that the largest customer for both domestic producer *** and Respondent *** is distributor ***.[175] Respondents maintain that a large share of their sales to *** and that the domestic industry does not compete with them for these sales because of Respondents' ***.[176] However, the record indicates that the domestic industry and Respondents both compete for sales to ***. Petitioners provided purchase orders for domestically produced normalized product ***.[177] Additionally *** stated that it purchased *** short tons of subject merchandise from Italy instead of the domestic like product primarily for price reasons.[178]

We therefore find that there is not attenuated competition between subject imports from any of the subject countries with the domestic like product, but rather that competition is direct and price-based.

We have also considered Respondents' arguments that supply is limited in the U.S. market with several importers and purchasers reporting constraints.[179] We find that the domestic industry had ample unused capacity to supply its customers.[180] Several of the comments regarding constrained supply were from importers who have had supply issues

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[171] Respondents' Prehearing Brief at 2-6.

[172] Petitioners' Posthearing Brief at 1 and Responses to Commissioner Questions at 1; Tr. at 173 (Weinstein). Respondents' Posthearing Brief, Responses to Commissioner Questions at 3.

[173] Petitioners' Posthearing Brief, Responses to Commissioner Questions at 3.

[174] Petitioners' Posthearing Brief, Responses to Commissioner Questions at 1-8, Exhibit 3 at 2, Exhibit 4 (Excerpt from *** AML), Exhibit 6 (purchase orders), Exhibit 14 at 2 and Attachment B.

[175] Respondents' Final Comments at 4; Petitioners' Posthearing Brief at 5.

[176] Respondents Final Comments at 4, Respondents' Posthearing Brief at 4.

[177] Petitioners' Posthearing Brief, Exhibit 6.

[178] CR/PR at Table V-11. ***. Petitioners' Posthearing Brief, Exhibit 3.

[179] Respondents' Prehearing Brief at 6-7.

[180] CR/PR at Table III-6.

regarding subject merchandise since the filing of the petitions.[181] Although some purchasers did say that U.S. producers were not accepting new customers, the record reflects that the industry had no problem accommodating additional orders after the petitions were filed.[182]

In conducting our impact analysis, we have also considered the role of other factors so as not to attribute injury from other factors to subject imports. We have already discussed the role of apparent U.S. consumption in these investigations. We have also considered the role of nonsubject imports. Nonsubject imports never accounted for more than *** percent of apparent U.S. consumption, and their share of the market declined from 2015 to 2017.[183] The relatively smaller nonsubject import volume and market share was not likely to apply the substantial pressure on the domestic prices that the larger volume of subject imports exerted. Nonsubject imports' small and overall declining market share thus do not explain the inability of the domestic industry to benefit fully from the increase in demand in 2017. This conclusion is supported by the fact that the volume of nonsubject imports was higher in interim 2018 than in interim 2017 yet the domestic industry experienced significant improvements in its performance indicators, as discussed above.

Accordingly, we find that cumulated subject imports had a significant adverse impact on the domestic industry.

VI. Conclusion

For the reasons stated above, we determine that an industry in the United States is materially injured by reason of subject imports of FSF from Taiwan that Commerce has found to be sold in the United States at less than fair value.

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

[182] CR at II-9, PR at II-6. *See also* CR at II-5-II-6, PR at II-4-II-5. Petitioners' Posthearing Brief, Exhibit 3 at 1 (Declaration of Ken O'Connell) & Exhibit 14 at 2 (Declaration of Nicholas Tee).

[183] CR/PR at Table IV-10. The share of the U.S. market held by nonsubject imports was *** percent in 2015, *** percent in 2016, *** percent in 2017, *** percent in interim 2017, and *** percent in interim 2018. *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 Forge"), 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	Petitions filed with Commerce and the Commission; institution of the Commission's investigations (82 FR 47578, October 12, 2017)
October 25, 2017	Commerce's notice of initiation of sales at LTFV investigations of imports of forged steel fittings from China, Italy, and Taiwan (82 FR 50614, November 1, 2017)
November 1, 2017	Commerce's notice of initiation of countervailable subsidies investigation on imports of forged steel fittings from China (82 FR 50623, November 1, 2018)
November 20, 2017	Commission's preliminary determinations (82 FR 56049, November 27, 2018)
March 14, 2018	Commerce's preliminary affirmative determination of countervailable subsidies for China and alignment of final determination with final antidumping duty determination (83 FR 11170, March 14, 2018)
May 17, 2018	Commerce's preliminary affirmative determination of sales at LTFV for China, postponement of final determination and extension of provisional measures (83 FR 22948, May 17, 2018)

[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 hearing is presented in appendix B of this report.

Effective date	Action
May 17, 2018	Commerce's preliminary affirmative determination of sales at LTFV for Italy, postponement of final determination and extension of provisional measures (83 FR 22954, May 17, 2018)
May 17, 2018	Commerce's preliminary affirmative determination of sales at LTFV for Taiwan (83 FR 22957, May 17, 2018)
May 30, 2018	Scheduling of final phase of Commission's investigations (83 FR 25715, June 4, 2018)
July 30, 2018	Commerce's final affirmative determination of sales at LTFV for Taiwan (83 FR 36519, July 30, 2018)
August 2, 2018	Commission's hearing
August 31, 2018	Commission's vote (Taiwan AD)
September 14, 2018	Commission's views (Taiwan AD)
October 1, 2018 (expected)	Scheduled date for Commerce's final determinations (China AD, Italy AD, China CVD)

STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

Statutory criteria

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

> *shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.*

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

> *In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.. . .In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the*

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

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.

Organization of report

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

[5] Ibid.

MARKET SUMMARY

FSF are generally 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 Forge and Capitol Manufacturing Company ("Capitol"), while leading 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 U.S. importers of FSF from China are ***. The leading U.S. importers of FSF from Italy are ***, and the leading U.S. importers of FSF from Taiwan are ***.

Leading importers of product from nonsubject countries (primarily Thailand, Japan, and Mexico) include ***. U.S. purchasers of FSF are primarily distributors. Distributors that purchase subject FSF include national pipe, valve, and fitting distributors, regional distributors, and independent distributors. National and regional distributors purchase directly from producers.[6] Leading purchasers of FSF include ***.

Apparent U.S. consumption of FSF totaled approximately *** short tons *** in 2017. Currently, three firms produce FSF from their own forgings, while a fourth finishes flanges from imported forgings. U.S. shipments by the three integrated producers of FSF totaled *** short tons *** in 2017, and accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. shipments of FSF imports from nonsubject sources totaled *** short tons *** in 2017. U.S. shipments of FSF imports from nonsubject sources accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. U.S. shipment of imports from subject sources totaled 10,172 short tons ($44.1 million) in 2017. U.S. shipments of subject imports accounted for *** percent of apparent U.S. consumption by quantity and *** percent by value. The incremental value of finishing of imported forgings by the sole responding *** non-integrated U.S. finisher of FSF totaled ***.

SUMMARY DATA AND DATA SOURCES

A summary of data collected in the final phase of these investigations[7] is presented in appendix C.[8] Except as noted, U.S. industry data are based on questionnaire responses of three firms that accounted for the large majority of U.S. production of FSF during 2017. Additional data are presented separately for a fourth firm that finished imported forgings. U.S. imports are

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

[7] The U.S. Department of Commerce did not postpone its final antidumping duty determination for its investigation on FSF from Taiwan.

[8] Petitioners contend that data for 2014 provide "an important context in terms of the conditions of competition that the industry was facing." Hearing transcript, p. 50 (Drake). Data for 2014 are provided in the Commission's staff report issued in the preliminary phase of these investigations (memoranda INV-PP-145 and 148, dated November 13 and 15, 2017).

based on questionnaire data from 41 firms that accounted for 60.2 percent of U.S. imports from the subject sources and *** percent of U.S. imports from nonsubject sources. Foreign industry data are based on questionnaire responses from eleven firms with exports equivalent to *** percent of reported exports from China, *** percent of reported exports from Italy, and virtually all reported 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 SUBSIDIES AND SALES AT LTFV

Subsidies

On March 14, 2018, Commerce published a notice in the *Federal Register* of its preliminary determination of countervailable subsidies for producers and exporters of FSF from China.[9] [10] Commerce identified the following government programs in China to be countervailable:

1. Provision of special bar quality ("SBQ") for LTAR
2. Provision of Electricity for LTAR
3. Provision of Land and/or Land-Use Rights for LTAR in Jiangsu Province and the Western Region of China
4. Import Tariff and VAT Exemptions on Imported Equipment for Encouraged Industries
5. VAT Refunds for Foreign Invested Enterprises (FIEs) on Purchases of Chinese-Made Equipment
6. Technology Reward from Jiangyan Economic Development Zone (February 25, 2016)
7. Reward from Financial Bureau of Jiangyan City (April 21, 2016)
8. Year 2015 Technology Innovation Reward from Financial Bureau of Jiangyan City (May 12, 2016) [11]

[9] *Decision Memorandum for the Preliminary Affirmative Determination: Countervailing Duty Investigation of Forged Steel Fittings from the People's Republic of China: Enforcement and Compliance Office of AD/CVD Operations Countervailing Duty Investigation,* March 7, 2018.

[10] *Issues and Decision Memorandum for the Post-Preliminary Affirmative Determination: Countervailing Duty Investigation of Forged Steel Fittings from the People's Republic of China: Enforcement and Compliance Office of AD/CVD Operations Countervailing Duty Investigation*, May 25, 2018.

[11] *Forged Steel Fittings from the People's Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination*, 83 FR 11170, March 14, 2018.

Table I-1 presents Commerce's countervailable subsidy margin with respect to imports of FSF from China.

Table I-1
FSF: Commerce's countervailable subsidy margin with respect to imports from China

Country	Exporter/Producer	Preliminary subsidy rate (percent)	Final subsidy rate (percent)
China	Both-Well (Taizhou) Steel Fittings Co., Ltd.	14.07	Pending
	All-Others	14.07	Pending

Source: 83 FR 11170, May 14, 2018. See also *Post-Preliminary Analysis of Countervailing Duty Investigation: Forged Steel Fittings from the People's Republic of China,* May 25, 2018, adjusting the rate from 13.79 to 14.07 percent.

Sales at LTFV

On May 17, 2018, Commerce published a notice in the *Federal Register* of its preliminary determinations of sales at LTFV with respect to imports from China, [12] Italy,[13] and Taiwan.[14] On July 30, Commerce published notice of its final determination with respect to imports from Taiwan.[15] Table I-2 presents Commerce's dumping margins with respect to imports of FSF from China, Italy, and Taiwan.

[12] *Forged Steel Fittings From the People's Republic of China: Affirmative Preliminary Determination of Sales at Less Than Fair Value, Postponement of Final Determination and Extension of Provisional Measures,* 83 FR 22948, May 14, 2018.

[13] *Forged Steel Fittings From Italy: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination and Extension of Provisional Measures*, 83 FR 22954, May 14, 2018.

[14] *Forged Steel Fittings From Taiwan: Affirmative Preliminary Determination of Sales at Less Than Fair Value,* 83 FR 22957, May 14, 2018.

[15] Commerce, *Forged Steel Fittings From Taiwan: Final Determination of Sales at Less Than Fair Value*, 83 FR 36519, July 30, 2018.

Table I-2
FSF: Commerce's weighted-average LTFV margins with respect to imports from China, Italy, and Taiwan

Country	Exporter/Producer	Preliminary dumping margin (percent)	Final dumping margin (percent)
China	Both-Well (Taizhou) Steel Fittings Co., Ltd.	7.42	Pending
	Separate Rate Companies[1]	7.42	Pending
	China-Wide	142.72	Pending
Italy	M.E.G.A. S.p.A.	80.20	Pending
	I.M.L. Industria Meccanica Ligure S.p.A.	80.20	Pending
	All Others	49.43	Pending
Taiwan	Both Well Steel Fittings Co., Ltd.	116.17	116.17
	Luchu Shin Yee Works Co. Ltd.	116.17	116.17
	All Others	116.17	116.17

[1] Commerce identified 30 exporters and related foreign producers under the separate rate. See notice (83 FR 22948) for the list of companies.

Source: 83 FR 22948, 83 FR 22954, and 83 FR 22957 of May 17, 2018; 83 FR36519 of July 30, 2018.

THE SUBJECT MERCHANDISE

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows: [16]

> 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, unions, and outlets. 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, MSS SP–83, MSS SP–97, ASTM A105, ASTM A350, and ASTM A182, the scope is not limited to fittings made to these specifications. The term forged is an industry

[16] Commerce revised the scope for the final phase from that of the preliminary phase of these investigations by: (1) including "outlets" among the subject fittings; (2) specifying that subject fittings are also generally manufactured to specification MSS SP-97; (3) including a ceiling on pressure ratings for subject fittings; (4) excluding fittings certified or manufactured to certain specifications; and (5) requiring that excluded fittings bear standard or pressure markings, be accompanied with product-compliance documentation, or both.

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 specifications, subject 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/PSI, *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, butt weld outlets, nipples, and all fittings that have a maximum pressure rating of 300 pounds of pressure/PSI or less. Also excluded are fittings certified or made to the following standards, so long as the fittings are not also manufactured to the specifications of ASME B16.11, MSS SP–79, MSS SP–83, MSS SP–97, ASTM A105, ASTM A350, and ASTM A182:

- American Petroleum Institute (API) API 5CT, API 5L, or API 11B
- Society of Automotive Engineering (SAE) SAE J476, SAE J514, SAE J516, SAE J517,SAE J518, SAE J1026, SAE J1231, SAE J1453, SAE J1926, J2044 or SAE AS 35411
- Underwriter's Laboratories (UL) certified electrical conduit fittings
- ASTM A153, A536, A576, or A865
- Casing Conductor Connectors 16–42 inches in diameter made to proprietary specifications
- Military Specification (MIL) MIL–C–4109F and MIL–F–3541
- International Organization for Standardization (ISO) ISO6150–B

To be excluded from the scope, products must have the appropriate standard or pressure markings and/or accompanied by documentation showing product compliance to the applicable standard or pressure, *e.g.,* ''API 5CT'' mark and/or a mill certification report. Subject carbon and alloy forged steel fittings are normally entered under Harmonized Tariff Schedule of the United States (HTSUS) 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060. They also may be entered under HTSUS 7307.92.3010, 7307.92.3030, 7307.92.9000, and 7326.19.0010. The HTSUS subheadings and specifications are provided for convenience and customs purposes; the written description of the scope is dispositive.

Tariff treatment

The subject carbon and alloy FSF are currently imported under statistical reporting numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060 of the *Harmonized Tariff Schedule of the United States* ("HTSUS" or "HTS"). The general rate of duty is 3.7 percent *ad valorem* for HTS subheading 7307.99.10, 3.2 percent *ad valorem* for HTS subheading

3707.99.30 and 4.3 percent *ad valorem* for HTS subheading 7307.99.50. FSF may also be imported under HTSUS statistical reporting numbers 7307.92.3010, 7307.92.3030, 7307.92.9000, or 7326.19.0010. The general rate of duty is "Free" for HTS subheading 7307.92.30, 6.2 percent *ad valorem* for HTS subheading 7307.92.90, and 2.9 percent *ad valorem* for HTS subheading 7326.19.00.[17] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

Sections 232 and 301 tariff treatment

HTS subheadings 7307.92, 7307.99, and 7326.19 were not included in the enumeration of steel mill products that are subject to the additional 25-percent *ad valorem* Section-232 national-security duties under HTS chapter 99. See U.S. note 16(b), subchapter III of chapter 99.[18]

No goods classifiable in chapter 73 were included by Office of the United States Trade Representative ("USTR") in the enumeration of products imported from China that became subject to (appendices A and B of 83 FR 28710) or are expected to (appendix C of 83 FR 28710) become subject to additional 25-percent ad valorem duties under Section 301 of the Trade Act of 1974.[19]

However, HTS subheadings 7307.92.30, 7307.92.90, 7307.99.10, 7307.99.30, 7307.99.50, and 7326.19.00 for ferrous fittings, including FSF, were included among the additional products imported from China identified for a supplemental action to consider proposing additional 10-percent *ad valorem* Section 301 duties. The USTR is seeking public comments via filings of written comments (by August 17), a public hearing (August 20-23), and filings of posthearing rebuttal-comments (by August 30).[20]

THE PRODUCT

Description and applications

FSF are used in piping systems for oil and gas, in chemical and petrochemical plants, electric power-generating plants, and industrial piping systems for distributing liquids and gases under high pressure or liquids and gases that are corrosive in nature. Fittings connect the pipes that are made to withstand the higher pressures in such systems, and the fittings themselves must also be able to withstand such pressures.

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[17] USITC, *HTSUS (2018) Revision 7*, July 2018, pp. 73-21, 73-22, 73-40.

[18] *Imports of Steel Mill Articles (Steel Articles) Under Section 232 of the Trade Expansion Act of 1962, As Amended (19 U.S.C.1862)*, Presidential Proclamation 9705, March 8, 2018, 83 FR 11625, March 15, 2018.

[19] *Notice of Action Pursuant to Section 301: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 FR 28710, June 20, 2018.

[20] *Request for Comments Concerning Proposed Modification of Action Pursuant to Section 301: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 FR 33608, July 17, 2018.

FSF typically are produced from steel that meets ASTM A105 or similar standards. They are connected to pipes (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 class 6000, and class 9000. Typical applications of socket-weld fittings are:

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

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

Socket-weld elbow fitting

Butt-weld elbow fitting

Threaded elbow fitting

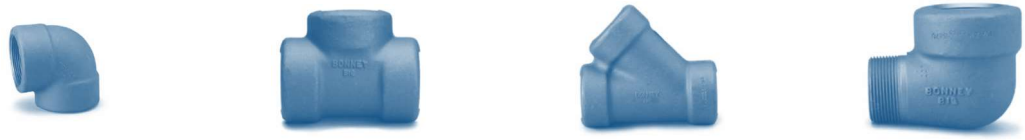
Note.— Socket-weld and threaded fittings are within the product scope of these investigations. The butt-weld fitting is included for comparison purposes with the socket-weld fitting. The socket-weld fitting requires only a fillet weld, whereas butt-weld fittings imply more extensive welding of the butt-weld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

Source of photographs: 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.

Threaded fittings are common for pipeworks— such as water-distribution, fire-protection, and cooling systems— which are low-pressure applications, or installations that are not subject to vibration, elongation or bending forces. However, threaded fittings are generally 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 four inches and in pressure ratings from class 2000 to 3000 and 6000. Common shapes of FSF are (figure I-2):

- 45- and 90-degrees elbows
- Equal and reducing tees
- Laterals
- Street elbows

Figure I-2
Common shapes for FSF



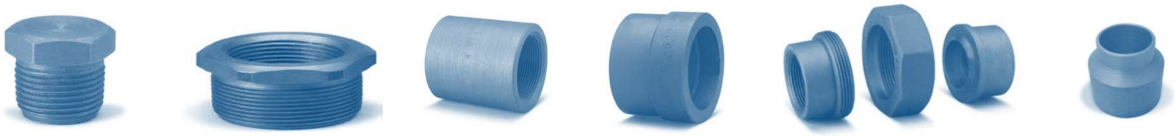
Elbow Tee Lateral Street elbow

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

Examples of other forged products that belong to the family of FSF (figure I-3) include:

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

Figure I-3
Examples of other FSF



Plug Bushing Coupling Reducer Unions Boss

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

Although FSF are available in larger sizes, it is generally less economical to use FSF larger than four inches; rather, other nonsubject fittings are generally used instead. Larger FSF are usually made in a different forging process— open-die forging— than FSF up to four inches which are generally made using a closed-die process.

FSF are required to be heat treated by "normalization" to be sold in the Alaskan and Canadian markets,[21] but normalized fittings are generally not required in the continental

[21] For extremely cold weather conditions, where temperatures can drop down to 35 degrees below zero for above-ground piping, Canada requires FSF to meet ASTM A350, among other standards. Hearing transcript, p. 37 (Leone).

United States.[22] A Petitioner's witness estimated that normalization adds approximately "$120, $140 a ton" compared to the cost for a non-normalized FSF.[23] Otherwise, a normalized fitting can be used in any application where a non-normalized fitting can be used.[24] Counsels to Petitioners testified that Bonney Forge has produced normalized fittings for decades,[25] and that Both-Well, a producer in both China and Taiwan, normalizes its FSF.[26] Counsel to the Italian respondents testified that all of the FSF produced by IML and MEGA is normalized.[27] The three U.S. integrated producers reported that less than *** percent of their FSF were normalized, whereas non-integrated producer *** reported that *** percent of its U.S. fittings are normalized. Together, normalized fittings represented *** percent of all U.S. shipments of FSF by these four producers in 2017.[28] U.S. importers reported that normalized fittings represented *** percent of their U.S. shipments of FSF originating from China, *** percent from Italy, and *** percent from Taiwan in that same year.[29]

Manufacturing processes[30]

Forging operations

FSF manufacturing normally begins with impression-die forging, also called "closed-die forging" (figure I-4). In closed-die forging, a heated piece of 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 shapes. These metal-forming dies must be precisely machined and carefully heat-treated to form the steel piece correctly, as well as to withstand the tremendous forces involved. Forging dies are usually made of machine-

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In the preliminary phase investigation, 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.

[22] See e.g., hearing transcript, p. 38 (Cloutier). There is a North Dakota LF-2 standard that requires normalized FSF but it is not universal throughout the state. Hearing transcript, p. 67 (Leone).

[23] Hearing transcript, p. 42 (Almer).

[24] Hearing transcript, p. 30 (O'Connell); pp. 35-36 (Drake).

[25] Bonny Forge previously outsourced the normalizing process, but brought that process in-house more than a decade ago with its own dedicated equipment and operating expertise. Hearing transcript, pp. 65-66 (Drake).

A witness for Bonny Forge testified that the other two domestic producers manufacture and inventory normalized FSF "to a much lesser degree" than does Bonny Forge. Hearing transcript, p. 96 (O'Connell).

[26] Hearing transcript, p. 11 (Cloutier).

[27] Hearing transcript, p. 14 (Gurley).

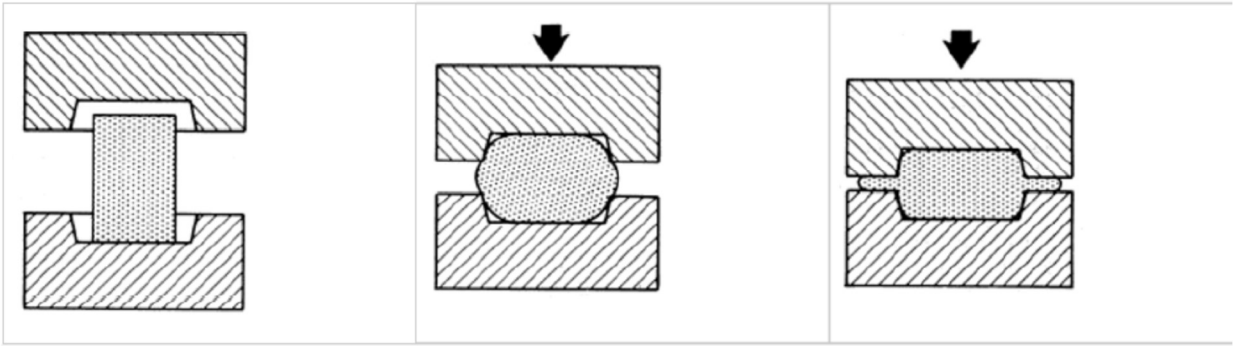
[28] Domestic producer questionnaire responses.

[29] Importer questionnaire responses.

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

cut and polished, high-alloy steel. The machinery throughout the process is highly specialized, and facilities must be equipped to melt and move steel, as well as have the ability to absorb the shocks and vibrations generated by the hammering process.

Figure I-4
Closed-die forging process

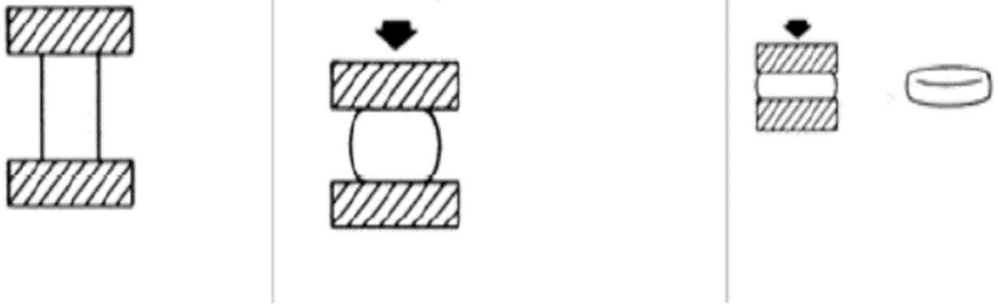


Source: Forging Industry Association, "Impression Die Forging Process Operations," https://www.forging.org/impression-die-forging-process-operations, retrieved November 1, 2017, descriptive text added by USITC staff.

Alternatively, FSF are also produced using an open-die forging process. For both closed-die forging and open-die forging, pressure is applied to a work piece placed between two dies. However, the dies in the open-die process do not completely enclose the work piece; generally, it is the sides of the work piece that 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 work piece.[31] The forging process has been improved in recent years through increased automation, which includes induction heating, partial mechanical positioning and manipulation, and direct heat treatment of parts after forging.

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

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.—***. USITC 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.

In the heat-treatment process, the forged steel is heated and cooled at temperatures and durations which impart the desired characteristics to the product. More specifically, heat treatment by "normalization" imparts additional toughness to the fitting.[32] For this treatment process, the FSF is heated in a normalization furnace to 1,650 degrees for about three hours on average, depending on the wall thickness,[33] and is then allowed to gradually cool. Normalization realigns the steel grains and makes the FSF especially suitable for low-temperature applications.[34]

Forging 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 structure forms to follow the general shape of the part. As a result, the grain structure 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 line of metal-removal equipment, including turning, boring, milling, drilling, grinding, and polishing, along with welding machines, to complete the manufacture of FSF and valves

[32] For more technical information about the normalization process for steel, see: "Normalization," *The Making, Shaping and Treating of Steel*, W.T. Lankford Jr., N.L. Samways, R.F. Craven, and H.E. McGannon, eds., Pittsburgh, PA: United States Steel Corp., 1985, p. 1262, in the Respondents' prehearing brief, exhibit 1.

[33] Hearing transcript, pp. 23-24 (Almer).

[34] Hearing transcript, p. 38 (Cloutier).

(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 labeled and documented to ensure their traceability, all the way back to the original input materials. The finished parts undergo rigorous quality and functionality tests before being washed, labeled, packed, and shipped.

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

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

Source: USITC staff photograph of FSF samples supplied by Bonney Forge.

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.[35] These fittings are machined directly from a steel bar or a seamless steel pipe. For example, a hex bushing (figure I-7) can be produced directly from bar, "where you can just turn it, drill it, stamp it, build the hex head on it."[36] For certain cylindrical fittings, (e.g., certain couplings), the fitting can be produced by cutting and finishing a seamless steel pipe. Examples are presented in figure I-7.[37]

[35] "The vast majority" of Bonney Forge's FSF are forged. Conference transcript, p. 17 (Almer).
[36] Conference transcript, p. 29 (Almer).
[37] 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).

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," that acquire the rough forgings and only perform the machining and finishing operations. Of the responding domestic producers, integrated producers include Bonney Forge, PMW, and Capitol.[38] Anvil is the sole responding finisher.

DOMESTIC LIKE PRODUCT AND DOMESTIC INDUSTRY ISSUES

No issues with respect to domestic like product have been raised in these investigations. The petitioners propose a single domestic like product corresponding to the scope. No party has proposed an alternative domestic like product or requested that the Commission collect further information on the issue. Petitioners contend that FSF constitute a single domestic like product that does not encompass out-of-scope 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.[39] In the preliminary phase of these investigations, the Commission identified a single domestic like product consisting of FSF coextensive with Commerce's scope.[40]

With respect to the domestic industry, petitioners argued that finishing operations constitute sufficient production-related activity to be considered domestic production. The Commission found that, in light of the substantial value added,[41] and the lack of contrary argument in the record, finishers should be included in the definition of the domestic industry. However, the only known finisher, Anvil, a related party that accounts for approximately *** percent of domestic production, was excluded from the domestic industry.[42]

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[38] See e.g., Bonney Forge, "Full Manufacturing Capabilities," http://www.bonneyforge.com/about.php?pg=capabilities, retrieved November 1, 2017.

[39] Petitioners' postconference brief pp. 2-6.

[40] *Forged Steel Fittings from China, Italy, and Taiwan, Inv. Nos. 701-TA-589 and 731-TA-1394-1396 (Preliminary),* USITC Publication 4743, November 2017, pp. I-5-I-69-10.

[41] *Forged Steel Fittings from China, Italy, and Taiwan, Inv. Nos. 701-TA-589 and 731-TA-1394-1396 (Preliminary),* USITC Publication 4743, November 2017, pp. 9-10.

[42] Ibid.

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

U.S. MARKET CHARACTERISTICS

Forged steel fittings ("FSF") are connection components for pipes used primarily in the oil and gas industry, as well as in chemical, petrochemical, and power plants.[1] FSF sold in the United States typically are 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 U.S. market for FSF is supplied primarily by domestic producers (approximately *** percent by quantity in 2017) and importers of FSF from subject countries (approximately *** percent). According to questionnaire data, subject imports from China represented *** percent of apparent U.S. consumption and *** percent of total imports of FSF in 2017; subject imports from Italy represented *** percent of apparent U.S. consumption and *** percent of total imports in 2017; and subject imports from Taiwan represented *** percent of apparent U.S. consumption and *** percent of total imports in 2017. Total apparent U.S. consumption of FSF fluctuated, decreasing in 2016 but reaching higher levels in 2017 and in January-March 2018 compared to January-March 2017. Overall, apparent U.S. consumption in 2017 was *** percent higher than in 2015.

U.S. PURCHASERS

The Commission received 25 usable questionnaire responses from firms that bought FSF since January 2015.[2] Twenty-two responding purchasers are distributors and three are end users (one for the oil and gas sector and two for other sectors). Two firms also identified as "other," including [3] In general, responding U.S. purchasers were concentrated in the Central Southwest, but some were also located in the Mountain, Midwest, and the Pacific Coast regions. Large purchasers of FSF include ***.

CHANNELS OF DISTRIBUTION

U.S. producers and importers from each of the subject sources sold mainly to distributors, as shown in table II-1. ***. Importers of nonsubject FSF shipped between *** of their product to finishers/converters during 2015-17.[4]

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[1] Petitioners' postconference brief, p. 2.

[2] Of the 25 responding purchasers, 20 purchased domestic FSF, 4 purchased imports of the subject merchandise from China, 9 purchased imports of the subject merchandise from Italy, 13 purchased imports of the subject merchandise from Taiwan, and 4 purchased imports of FSF from other sources.

[3] *** reported also making "service parts" for non-oil and gas sectors, and *** reported re-selling FSF along with its own manufactured products.

[4] ***.

Table II-1
FSF: U.S. producers' and importers' U.S. commercial shipments, by sources and channels of distribution, 2015-17, January to March 2017, and January to March 2018

Item	Period				
	Calendar year			January-March	
	2015	2016	2017	2017	2018
	Share of reported shipments (*percent*)				
U.S. integrated producers' U.S. commercial shipments of FSF:					
Distributors	***	***	***	***	***
Finishers / converters	***	***	***	***	***
End users	***	***	***	***	***
U.S. finisher's U.S. commercial shipments of FSF:					
Distributors	***	***	***	***	***
Finishers / converters	***	***	***	***	***
End users	***	***	***	***	***
U.S. importers' U.S. commercial shipments of FSF from China:					
Distributors	***	***	***	***	***
Finishers / converters	***	***	***	***	***
End users	***	***	***	***	***
U.S. importers' U.S. commercial shipments of FSF from Italy:					
Distributors	***	***	***	***	***
Finishers / converters	***	***	***	***	***
End users	***	***	***	***	***
U.S. importers' U.S. commercial shipments of FSF from Taiwan:					
Distributors	***	***	***	***	***
Finishers / converters	***	***	***	***	***
End users	***	***	***	***	***
U.S. importers' U.S. commercial shipments of FSF from subject sources:					
Distributors	87.7	86.8	89.9	89.6	90.3
Finishers / converters	---	---	0.0	0.0	---
End users	12.3	13.2	10.1	10.3	9.7
U.S. importers' U.S. commercial shipments of FSF from nonsubject sources:					
Distributors	***	***	***	***	***
Finishers / converters	***	***	***	***	***
End users	***	***	***	***	***
U.S. importers' U.S. commercial shipments of FSF from all sources:					
Distributors	***	***	***	***	***
Finishers / converters	***	***	***	***	***
End users	***	***	***	***	***

Note.--Since the channels were based on commercial U.S. shipments, these data do not reflect importers' direct imports for their own use.

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

GEOGRAPHIC DISTRIBUTION

U.S. producers reported selling FSF to all regions in the contiguous United States. Importers from each of the subject sources also reported selling to all regions, though the greatest number of firms reported selling to the Central Southwest (table II-2). For integrated U.S. producers, *** percent of sales were within 100 miles of their production facilities, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. For the non-integrated U.S. producer, *** percent of sales were within 100 miles of their production facilities, *** percent were between 101 and 1,000 miles, and *** percent were over 1,000 miles. Importers sold *** percent within 100 miles of their U.S. points of shipment, *** percent between 101 and 1,000 miles, and *** percent over 1,000 miles.

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	6	7	15	20
Midwest	4	7	7	16	20
Southeast	4	6	11	16	23
Central Southwest	4	10	13	17	28
Mountain	4	7	7	15	20
Pacific Coast	4	5	9	15	21
Other[1]	4	3	4	8	12
All regions (except Other)	4	4	7	14	18
Reporting firms	4	11	16	18	32

[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

Table II-3 provides a summary of the supply factors regarding FSF from U.S. producers and from subject countries.

Table II-3

FSF: Supply factors that affect the ability to increase shipments to the U.S. market

Country	Capacity (short tons)		Capacity utilization (percent)		Ratio of inventories to total shipments (percent)		Shipments by market, 2017 (percent)		Able to shift to alternate products
	2015	2017	2015	2017	2015	2017	Home market shipments	Exports to non-U.S. markets	No. of firms reporting "yes"
United States									
Integrated producers	***	***	***	***	***	***	***	***	1 of 3
Non-integrated producers	***	***	***	***	***	***	***	***	1 of 1
China[1]	***	***	***	***	***	***	***	***	0 of 0
Italy	***	***	***	***	***	***	***	***	2 of 4
Taiwan	***	***	***	***	***	***	***	***	0 of 0

[1] No Chinese producer provided questionnaire responses in these final phase investigations, so the data presented in this section come from the questionnaire responses of Chinese producers that responded in the preliminary phase.

Note.--Responding U.S. producers accounted for the vast majority of U.S. production of FSF in 2017. Responding foreign producer/exporter firms accounted for approximately *** percent of reported U.S. imports of FSF from China during 2017, *** percent of reported U.S. imports of FSF from Italy, and *** of reported U.S. imports of FSF from Taiwan. For more on the number of responding firms and their share of U.S. production and of U.S. imports from each subject country, please refer to Part I, "Summary Data and Data Sources."

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

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, some (albeit decreasing) inventories, and some ability to shift production to or from alternate products. A factor mitigating the responsiveness of supply is the limited ability to shift shipments from alternate markets.

Domestic capacity utilization for integrated producers increased from *** percent in 2015 to *** percent in 2017, reflecting an increase in total production of *** percent. For the non-integrated U.S. producer, capacity utilization fell from *** percent in 2015 to *** percent in 2017 as production fell by *** percent. 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. Integrated domestic producers' inventories as a ratio to total shipments decreased from *** percent in 2015 to *** percent in 2017, while the non-integrated producer's inventories rose from *** percent in 2015 to *** percent in 2017. Domestic integrated producers' exports as a share of total shipments in 2017 was *** percent, the lowest level during January 2015-March 2018. The non-integrated U.S. producer reported ***. *** integrated U.S. producers *** reported being able to shift production to or from

alternate products; other products reportedly produced on the same equipment include stainless, butt weld fittings, butt weld outlets, custom forgings, tank flanges, striking tools, and flanges and other commercial products. *** integrated U.S. producers reported that production is only constrained by equipment and/or facility limitations, while *** reported that *** also constrained by the mix of products sold. *** reported that its ability to shift production is limited, primarily due to ***.

Subject imports from China

Based on available information,[5] producers of FSF from China have the ability to respond to changes in demand with moderate-to-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 the ability to shift shipments from alternate markets. A factor mitigating the responsiveness of supply is the limited availability of inventories.

Chinese producers' capacity utilization decreased slightly from *** percent in 2015 to *** percent in 2017, driven primarily by a reported decrease in production of *** percent. This relatively moderate level of capacity utilization suggests that Chinese producers may have some ability to increase production of FSF in response to an increase in prices. Chinese producers' inventories relative to total shipments decreased from *** percent in 2015 to *** percent in 2017. Chinese producers' exports to non-U.S. markets reportedly accounted for *** percent of their total shipments in 2017. One Chinese producer reported producing other products on the same equipment as FSFs, but did not elaborate.

Subject imports from Italy

Based on available information, producers of FSF from Italy have the ability to respond to changes in demand with moderate-to-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 inventories, ability to shift shipments from alternate markets, and some ability to shift production to or from alternate products. A factor mitigating this responsiveness of supply may be the increasing level of capacity utilization.

Responding Italian producers' capacity and production both decreased from 2015 to 2017, though capacity decreased more than production, leading to an overall increase in capacity utilization from *** percent in 2015 to *** percent in 2017. Reported inventories and inventories as a ratio to total shipments both decreased, though reported inventories were relatively high (at *** percent of total shipments in 2017). Italian producers' export shipments to non-U.S. markets were at *** percent in 2017. *** reported being able to shift production to or from other products. ***. ***. ***.

[5] No Chinese producer provided questionnaire responses in these final phase investigations, so the data presented in this section come from the questionnaire responses of Chinese producers that responded in the preliminary phase.

Subject imports from Taiwan

Based on available information, producers of FSF from Taiwan have the ability to respond to changes in demand with moderate-to-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 inventories and the ability to shift shipments from alternate markets. Factors mitigating responsiveness of supply may include a limited availability of unused capacity and limited ability to shift production to or from alternate products.

Responding producers of FSF from Taiwan reported a decreasing amount of overall capacity between 2015 and 2017. Reported inventories as a ratio to total shipments increased from *** to *** percent during this time. Reported export shipments to non-U.S. markets was equivalent to *** percent of total shipments during 2017. One responding producer from Taiwan reported ***.

Imports from nonsubject sources

Imports from nonsubject sources account for a small percentage of total U.S. imports of FSF. Based on questionnaire data, nonsubject sources represented between *** percent (2017) and *** percent (2015) of total U.S. apparent consumption during 2015-17. Reported nonsubject import sources were Thailand (three firms), Japan, Mexico, Spain, and the United Kingdom (two firms each), as well as Canada, France, India, and South Korea (one firm each).

Supply constraints

One responding U.S. producer reported experiencing supply constraints since January 2015, and 9 of 35 responding importers did. *** stated that it has had some raw material supply issues since the announcement of the AD/CVD investigation. Among importers, four cited the imposition of preliminary duties as having tightened supply from China, Italy, and/or Taiwan and the remaining firms noted a tightening of supply generally. Seven of 23 responding purchasers reported supply constraints. Three of these purchasers stated that U.S. producers were not accepting new customers. Among the four remaining purchasers, one reported being placed on allocation, another cited the inability of suppliers to meet timely shipping commitments, a third stated that a subject source refused the order while these investigations are ongoing, and the last did not provide a reason.

New suppliers

Eight of 24 purchasers indicated that new suppliers entered the U.S. market since January 1, 2015. Five of these purchasers named Titus as a new entrant, two named Triangle Metals, one mentioned Chemoil Products and Apache Pressure Products, one mentioned Indian firms Shakti Forge and Vaibhav Fitting, and one mentioned Korean and Indian manufacturers generally.

U.S. demand

Based on available information, the overall demand for FSF is likely to experience small 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 accounts for a small cost share of the overall cost of these piping systems. *** reported a cost share for piping systems, estimating ***. Most importers reported cost shares of 1-2 percent for energy/refining systems or oil and gas systems, although one importer reported a cost share of 25 percent in the "oil industry." Other importers reported cost shares of 1 percent for pressure vessels, 2 percent for "closures," and 25 percent for hose assembly. Among purchasers, *** reported using FSF to make *** for trucks and estimated a cost share of *** percent, and another firm reported using FSF to make ***, though this firm did not estimate cost shares.

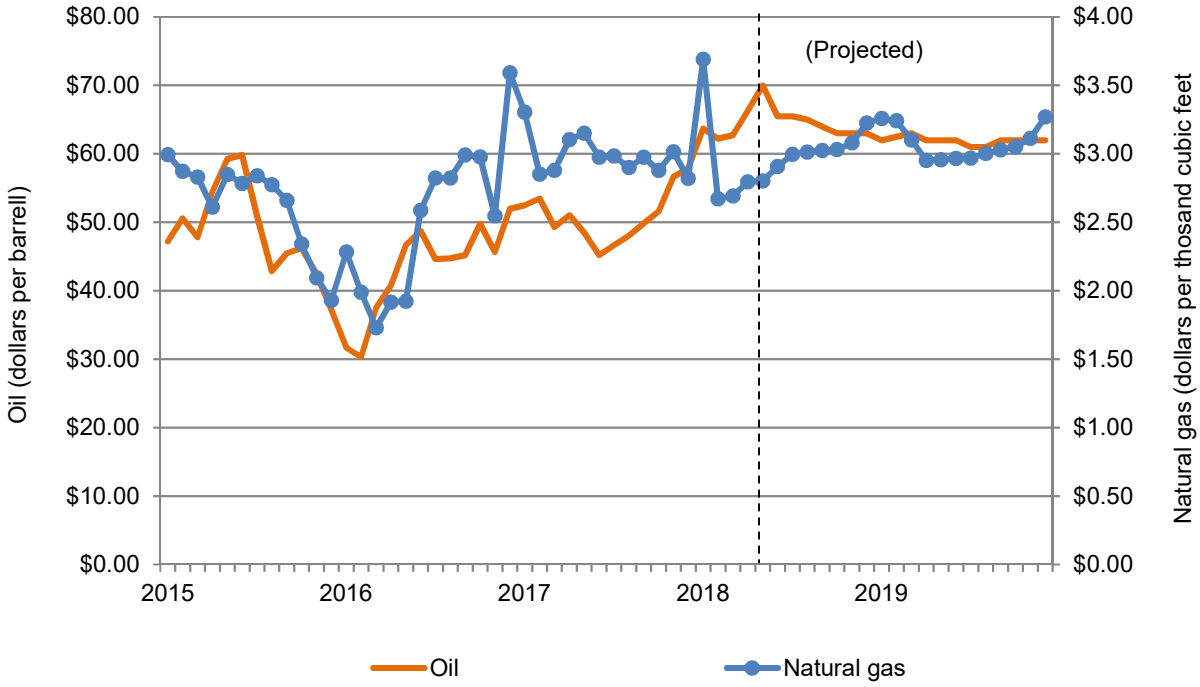
Business cycles

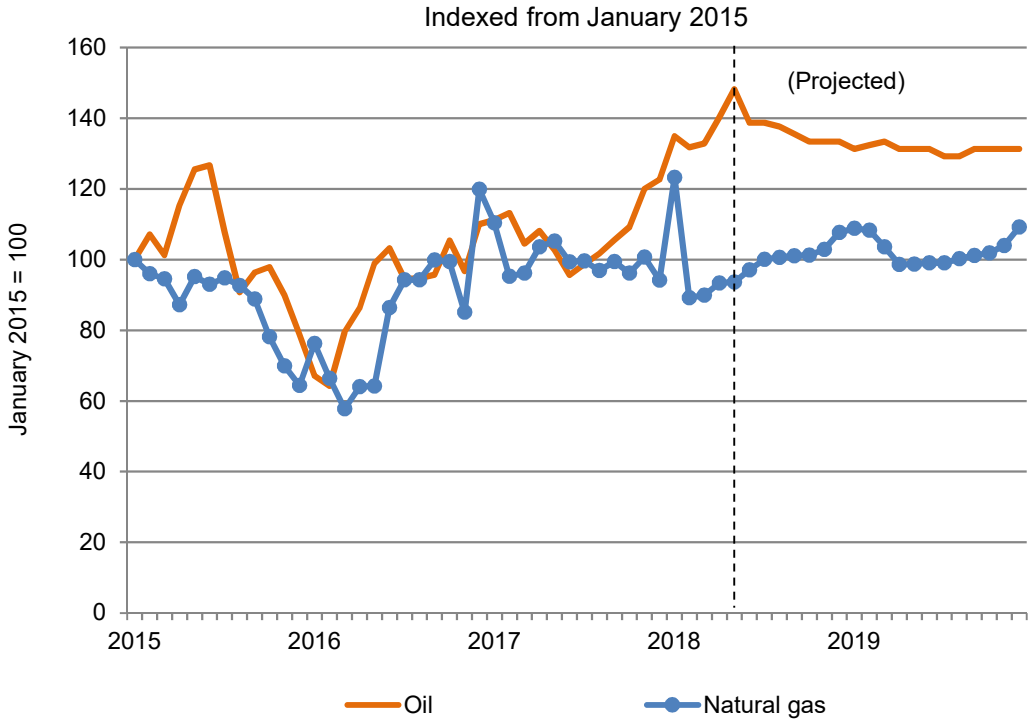
Most firms reported that the FSF market was not subject to business cycles or distinct conditions of competition. Six of 33 responding importers reported that the market was subject to business cycles, with three of them pointing to the oil and gas industry as a driving factor, one referencing seasonality in agriculture, one referencing seasonality in general, and one highlighting "industrial cycles." *** noted the energy sector's demand for oil and gas exploration and production as a distinct condition of competition, with three importers stating that oil and gas prices and/or demand was a distinct condition of competition. Three of 24 responding purchasers stated that the FSF market is subject to business cycles driven by the oil and gas industry, maintenance schedules of refineries and power plants, or the overall economy. Two purchasers reported that conditions of competition affected the market—increased imports, particularly from China, and some competitors trimming inputs or relaxing tolerances to provide cheaper FSF.

Demand trends

As reported above, demand for FSF is driven mostly by demand for oil and gas exploration and production, which is influenced by oil and gas prices. As shown in figures II-1(a) and (b), the price of crude oil increased by 22.6 percent between January 2015 and December 2017, while the price of natural gas decreased by 5.8 percent. Between December 2017 and March 2018, the price of oil increased by 8.4 percent and the price of natural gas decreased by 4.5 percent. The U.S. Energy Information Administration projects that between March 2018 and December 2019, the price of oil will decrease by 1.2 percent and the price of natural gas will increase by 21.4 percent.

Figures II-1(a) and (b)
Oil and gas prices: Prices of crude oil (West Texas Intermediate spot price) and natural gas (Henry Hub spot price), monthly, January 2015-May 2018 (actual) and June 2018-December 2019 (projected)



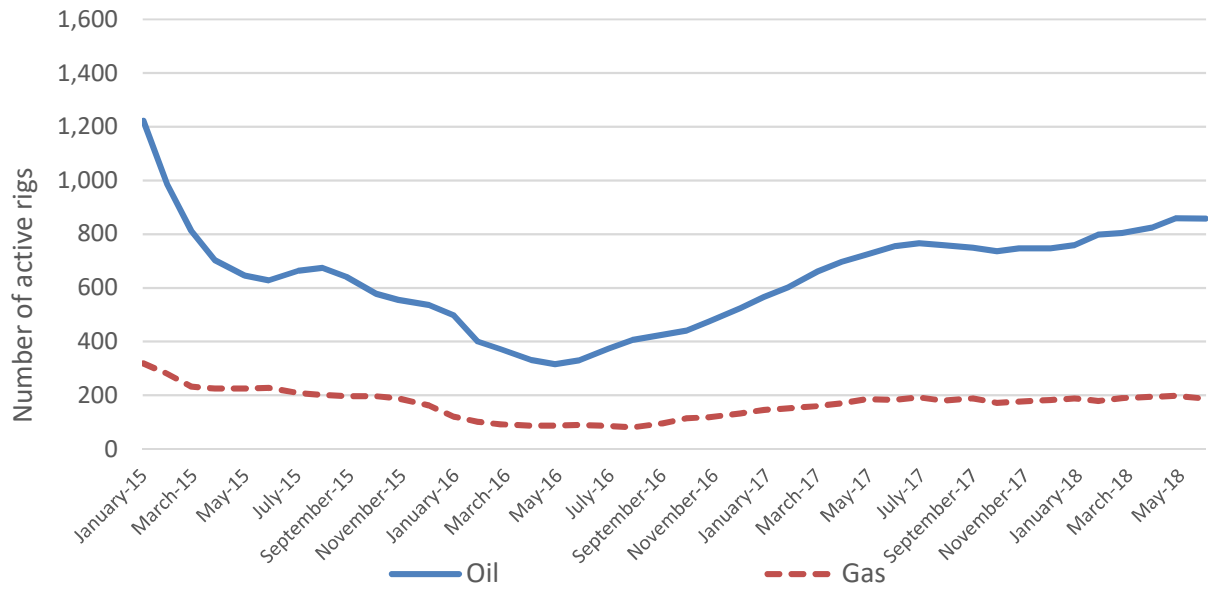


Source: U.S. Energy Information Administration, Short Term Energy Outlook, June 2018, available at https://www.eia.gov/outlooks/steo/, retrieved July 7, 2018.

Based on data published by Baker Hughes,[6] the number of oil rigs in the United States decreased overall between January 2015 and December 2017 (figure II-2). In general, the number of active rigs dropped sharply between January 2015 and the first half of 2016, then recovered in the latter half of 2016, and continued to recover throughout 2017 and into the first half of 2018.

Figure II-2

Rotary Rig Count: Weekly average number of active rotary oil and gas rigs in North America, weekly, January 2, 2015-June 29, 2018



Source: Baker Hughes website, available at http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother, retrieved July 7, 2018.

When asked about demand trends in the oil and gas sector and other sectors both inside and outside the United States, most firms reported that demand had either decreased or not changed between January 1, 2015, and December 31, 2016. However, most firms reported that demand had either increased or not changed since January 1, 2017 (table II-4).

[6] Baker Hughes is a drilling contractor and GE subsidiary that publishes data on North American and international rig counts. See http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-rigcountsoverview.

Table II-4
FSF: Firms' responses regarding U.S. demand and demand outside the United States

Item	January 1, 2015-December 31, 2016		
	Increase	No change	Decrease
Oil and gas sector demand in the United States			
U.S. producers	---	1	3
Importers	5	11	13
Purchasers	6	4	11
All other sector demand in the United States			
U.S. producers	---	1	3
Importers	4	13	9
Purchasers	3	7	8
Oil and gas sector demand outside the United States			
U.S. producers	---	1	1
Importers	1	11	4
Purchasers	---	3	5
All other sector demand outside the United States			
U.S. producers	---	1	1
Importers	---	13	2
Purchasers	---	4	2
Item	**Since January 1, 2017**		
	Increase	**No change**	**Decrease**
Oil and gas sector demand in the United States			
U.S. producers	4	---	---
Importers	15	11	2
Purchasers	17	2	2
All other sector demand in the United States			
U.S. producers	1	3	---
Importers	11	12	2
Purchasers	9	5	2
Oil and gas sector demand outside the United States			
U.S. producers	1	1	---
Importers	4	11	1
Purchasers	4	4	1
All other sector demand outside the United States			
U.S. producers	---	2	---
Importers	2	13	---
Purchasers	4	3	---

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

Substitute products

No U.S. producer, importer, or purchaser reported substitutes for FSF.

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 a high degree of substitutability between domestically produced FSF and FSF imported from subject sources.

Lead times

Most FSF is sold from inventory. U.S. producers reported that the vast majority of their commercial shipments in 2017 were sold from inventory; *** percent for integrated producers and *** percent for finisher Anvil. Importers reported that 65 percent of their commercial shipments were sold from U.S. inventory, with lead times averaging 7 days for subject sources. The balance of U.S. producers' commercial shipments (*** percent for integrated producers and *** percent for finisher Anvil) and 30 percent of importers' commercial shipments were produced to order, with lead times averaging *** days, *** days, and 106 days, respectively. Importers reported selling the remaining 5 percent from their foreign manufacturers' inventories, with lead times averaging 49 days.

Knowledge of country sources

Twenty-one purchasers indicated they had marketing/pricing knowledge of domestic product, 5 of product from China, 8 of product from Italy, 14 of product from Taiwan, and 2 of product from nonsubject countries.

As shown in table II-5, most purchasers always or usually make decisions based on the producer, while most of the purchasers' customers only sometimes make decisions based on the producer. Of the 11 purchasers that reported that they always make decisions based on the manufacturer, 3 firms reported that decisions are based on approved manufacturers lists, other firms reported purchasing from reputable producers or from only one producer. Most purchasers and their customers only sometimes or never make decisions based on the country of origin.

Table II-5
FSF: Purchasing decisions based on producer and country of origin

Decision	Always	Usually	Sometimes	Never
Purchaser makes decision based on producer	11	5	4	4
Purchaser's customers make decision based on producer	3	1	12	6
Purchaser makes decision based on country	6	2	9	7
Purchaser's customers make decision based on country	2	3	13	4

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

Factors affecting purchasing decisions

The most often cited top three factors firms consider in their purchasing decisions for FSF were price/cost (22 firms), quality (20 firms), and availability of supply (17 firms) as shown in table II-6. Quality was the most frequently cited first-most important factor (cited by 12 firms), followed by price/cost (8 firms); price/cost was the most frequently reported second-most important factor (11 firms); and availability of supply was the most frequently reported third-most important factor (12 firms). The majority of purchasers reported that they usually (10 of 24) or sometimes (8 of 24) purchase the lowest-priced product.

Table II-6
FSF: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third	Total
Price / Cost	8	11	3	22
Quality	12	6	2	20
Availability / Supply	1	4	12	17
All other factors[1]	3	2	4	9

[1] Other factors include the range of product, lead time, credit terms, relationship with the supplier, and approved manufacturers' list requirements.

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

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table II-7). The factors rated as very important by more than half of responding purchasers were quality meets industry standards (23), availability (22), price (22), product consistency (19), delivery time (19), reliability of supply (18), and quality exceeds industry standards (14).

Table II-7
FSF: Importance of purchase factors, as reported by U.S. purchasers, by factor

Factor	Very important	Somewhat important	Not important
Availability	22	2	---
Delivery terms	9	11	4
Delivery time	19	5	---
Discounts offered	12	8	4
Extension of credit	7	10	7
Minimum quantity requirements	5	10	9
Packaging	4	14	6
Price	22	2	---
Product consistency	19	5	---
Product range	7	14	2
Quality meets industry standards	23	1	---
Quality exceeds industry standards	14	4	6
Reliability of supply	18	6	---
Technical support/service	11	9	3
U.S. transportation costs	7	11	6

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

Supplier certification

Seven of 24 responding purchasers require their suppliers to become certified or qualified to sell FSF to their firm. Purchasers reported that the time to qualify a new supplier ranged from 10 to 180 days. Two purchasers reported that foreign suppliers (one subject and one nonsubject) had failed in their attempt to qualify FSF, or had lost their approved status since 2015.

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since 2015 (table II-8); reasons reported for changes in sourcing included increased competition, price, exchange rates, and the need to diversify sources. Four of 24 responding purchasers reported that they had changed suppliers since January 1, 2015. Specifically, firms dropped or reduced purchases from the United States because of the following reasons: increased competition, customers wanted lower prices, exchange rates made other sources more competitive, or inventory reduction. Firms added or increased purchases from Italy and nonsubject sources because of a favorable exchange rate, from the United States because of end user specification and increased demand from the oil industry, and from China because of new supplier contracts and increased demand from the oil industry. Firms reported decreasing purchases from Taiwan due to new supplier contracts, market conditions, inventory reduction, and switching to domestic sources. Firms also reported changes because of these AD/CVD investigations, switching from subject sources to either domestic or nonsubject sources. As noted earlier, eight of 24 purchasers reported new suppliers, including Titus (5 firms), Triangle (2 firms), Chemoil Products, Apache Pressure Products, Shakti Forge, and Vaibhav Fitting (1 firm each), as well as Korean and Indian manufacturers generally.

Table II-8
FSF: Changes in purchase patterns from U.S., subject, and nonsubject countries

Source of purchases	Did not purchase	Decreased	Increased	Constant	Fluctuated
United States	3	3	7	5	5
China	14	---	4	---	---
Italy	11	2	2	1	4
Taiwan	5	6	1	2	3
Other	16	2	1	---	---

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

Importance of purchasing domestic product

Fifteen of 21 responding purchasers reported that most or all of their purchases had no domestic requirement. Seven reported that domestic product was required by law (for 1 to 10 percent of their purchases), 12 reported it was required by their customers (for 4 to 80 percent of their purchases), and 3 reported other preferences (one specified price, another reported that ***) for domestic product.

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing FSF produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 15 factors (tables II-9a-c) for which they were asked to rate the importance.

Most purchasers rated U.S. FSF as either comparable or superior to subject country FSF on most factors, while most rated subject country FSF as superior to U.S. FSF on price. Most purchasers reported that U.S. product was either superior or comparable to Chinese product on most factors, while almost all purchasers rated Chinese product as superior to U.S. product on price. Most purchasers rated U.S. and Italian product as comparable on most factors, while most firms rated U.S. product as superior on availability, delivery terms, and delivery time, and Italy as superior on price. Either a majority or plurality of purchasers reported that U.S. and subject FSF from Taiwan were comparable on most factors except price, for which the large majority rated Taiwan as superior.

Five purchasers, comparing FSF from China with that from Italy, reported that the Chinese products were generally comparable or inferior to those from Italy. Six purchasers reported that FSF from China and Taiwan are generally comparable in all factors listed. Six purchasers reported that FSF from Italy and Taiwan are generally comparable for all factors except price and quality exceeding industry standards.

Table II-9a
FSF: Purchasers' comparisons between U.S.-produced and subject imported product

Factor	U.S. vs. China			U.S. vs. Italy			U.S. vs. Taiwan		
	S	C	I	S	C	I	S	C	I
Availability	8	3	2	8	7	---	7	10	2
Delivery terms	8	5	---	9	6	---	8	9	1
Delivery time	8	5	---	11	4	---	8	10	1
Discounts offered	4	7	---	---	14	---	4	11	1
Extension of credit	4	7	---	1	13	---	4	12	---
Minimum quantity requirements	6	3	1	5	9	1	5	11	---
Packaging	4	9	---	2	13	---	3	14	---
Price[1]	---	1	12	1	6	8	3	1	15
Product consistency	6	6	1	2	13	---	5	13	---
Product range	6	6	1	2	12	1	4	13	1
Quality meets industry standards	3	10	---	---	15	---	1	17	---
Quality exceeds industry standards	5	7	1	3	10	1	5	11	2
Reliability of supply	7	4	1	5	10	---	5	11	2
Technical support/service	9	3	1	3	12	---	8	10	---
U.S. transportation costs[1]	4	6	2	5	9	---	2	13	2

[1] A rating of superior means that price/U.S. transportation cost is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Note.--S=first listed country's product is superior; C=both countries' products are comparable; I=first listed country's product is inferior.

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

Table II-9b
FSF: Purchasers' comparisons between subject import sources

Factor	China vs. Italy			China vs. Taiwan			Italy vs. Taiwan		
	S	C	I	S	C	I	S	C	I
Availability	---	3	2	1	4	1	1	5	---
Delivery terms	---	3	2	---	5	1	1	5	---
Delivery time	---	3	2	1	4	1	1	5	---
Discounts offered	---	2	3	---	3	2	1	5	---
Extension of credit	---	2	2	---	4	1	1	4	---
Minimum quantity requirements	---	2	3	1	4	1	1	5	---
Packaging	---	2	3	---	5	1	2	4	---
Price[1]	5	---	---	2	4	---	---	1	5
Product consistency	---	2	3	---	4	2	1	3	1
Product range	---	4	1	1	5	---	1	5	---
Quality meets industry standards	---	3	2	---	6	---	1	4	---
Quality exceeds industry standards	---	1	4	---	4	2	2	2	1
Reliability of supply	---	2	3	1	3	2	1	5	---
Technical support/service	---	1	3	---	4	2	2	3	---
U.S. transportation costs[1]	---	5	---	---	5	1	---	6	---

[1] A rating of superior means that price/U.S. transportation cost is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Note.--S=first listed country's product is superior; C=both countries' products are comparable; I=first listed country's product is inferior.

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

Table II-9c
FSF: Purchasers' comparisons between U.S. and nonsubject imported product, and subject and nonsubject imported product

Factor	U.S. vs. nonsubject			China vs. nonsubject			Italy vs. nonsubject			Taiwan vs. nonsubject		
	S	C	I	S	C	I	S	C	I	S	C	I
Availability	2	2	---	---	2	1	---	3	---	---	2	---
Delivery terms	2	2	---	---	2	1	---	3	---	---	2	---
Delivery time	3	1	---	---	2	1	---	3	---	---	2	---
Discounts offered	3	1	---	---	2	1	---	3	---	---	2	---
Extension of credit	1	3	---	---	2	1	---	3	---	---	2	---
Minimum quantity requirements	2	2	---	---	2	1	---	3	---	---	2	---
Packaging	---	4	---	---	2	1	---	3	---	---	2	---
Price[1]	---	3	1	2	1	---	---	3	---	2	---	---
Product consistency	---	4	---	---	2	1	---	3	---	---	2	---
Product range	1	3	---	---	2	1	---	3	---	---	2	---
Quality meets industry standards	---	4	---	---	2	1	---	3	---	---	2	---
Quality exceeds industry standards	---	4	---	---	2	1	---	3	---	---	2	---
Reliability of supply	---	4	---	---	2	1	---	3	---	---	2	---
Technical support/service	2	2	---	---	2	1	---	3	---	---	2	---
U.S. transportation costs[1]	---	4	---	---	3	---	---	2	---	---	2	---

[1] A rating of superior means that price/U.S. transportation cost is generally lower. For example, if a firm reported "U.S. superior," it meant that the U.S. product was generally priced lower than the imported product.

Note.--S=first listed country's product is superior; C=both countries' products are comparable; I=first listed country's product is inferior.

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

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/or Taiwan, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. As shown in table II-10, all U.S. producers, a plurality of importers, and a majority of purchasers reported that U.S. and subject country FSF were "always" interchangeable.

Table II-10
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				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject countries:												
U.S. vs. China	3	---	---	---	9	5	3	2	11	4	2	1
U.S. vs. Italy	3	---	---	---	9	6	3	1	11	5	---	1
U.S. vs. Taiwan	4	---	---	---	9	8	3	2	14	4	1	2
Subject countries comparisons:												
China vs. Italy	3	---	---	---	7	2	4	3	11	2	2	1
China vs. Taiwan	3	---	---	---	8	4	3	1	13	4	2	---
Italy vs. Taiwan	3	---	---	---	7	2	4	3	12	2	1	2
Nonsubject countries comparisons:												
U.S. vs. nonsubject	2	---	---	---	5	5	3	1	7	1	3	---
China vs. nonsubject	2	---	---	---	5	2	2	---	7	1	2	1
Italy vs. nonsubject	2	---	---	---	5	2	3	---	7	1	2	1
Taiwan vs. nonsubject	2	---	---	---	5	3	2	---	7	1	1	2

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

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

In additional comments, several importers noted that the existence of approved manufacturers' lists ("AML") may limit interchangeability between domestic and subject imported FSF. While some firms stated that there are suppliers from Italy (Silbo) and Taiwan (Global Stainless) that are fully qualified and accepted on end users' AMLs, *** stated that "if an AML exists, Italy is rarely interchangeable with China or Taiwan." *** reported that the lack of heat-treated/vacuum-degassed product from the United States, China, or Taiwan makes them not interchangeable with this type of product from Italy. According to ***, for firms that do not use AMLs, product will typically be interchangeable, while *** added that products that are made to specification are interchangeable.

As can be seen from table II-11, 18 of 24 responding purchasers reported that domestically produced product always met minimum quality specifications. At least half of the purchasers reported that products from Italy and Taiwan always met minimum quality specifications.

Table II-11
FSF: Ability to meet minimum quality specifications, by source[1]

Source	Always	Usually	Sometimes	Rarely or never
United States	18	5	---	---
China	1	4	2	---
Italy	9	2	---	---
Taiwan	10	8	---	---

[1] Purchasers were asked how often domestically produced or imported FSF meets minimum quality specifications for their own or their customers' uses.

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

In addition, producers, importers, and purchasers 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-12, all responding U.S. integrated producers reported that differences other than price were "never" significant for all country comparisons. *** reported that price was "***" a factor in comparisons with product from Taiwan. Among importers, either a majority or a plurality of responding firms reported that differences other than price were "sometimes" significant for all country comparisons.

Table II-12
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				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject countries:												
U.S. vs. China	---	---	---	3	6	2	6	3	5	2	7	3
U.S. vs. Italy	---	---	---	3	3	2	10	4	3	1	7	6
U.S. vs. Taiwan	---	---	1	3	5	6	9	2	5	3	6	7
Subject countries comparisons:												
China vs. Italy	---	---	---	3	5	---	6	3	4	---	6	4
China vs. Taiwan	---	---	---	3	---	3	6	3	4	1	7	6
Italy vs. Taiwan	---	---	---	3	5	2	5	3	4	---	5	7
Nonsubject countries comparisons:												
U.S. vs. nonsubject	---	---	---	2	2	1	6	3	1	2	3	3
China vs. nonsubject	---	---	---	2	---	1	4	2	2	---	3	4
Italy vs. nonsubject	---	---	---	2	---	---	4	2	1	1	3	4
Taiwan vs. nonsubject	---	---	---	2	1	1	4	3	1	---	3	4

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

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

Several importers expanded on these non-price factors. *** stated that Italian FSF is "normalized" with a vacuum de-gas process, whereas this type of product is either limited or unavailable from other sources. *** also reported that product from the United States and Italy is of comparatively higher quality than that from China or Taiwan. *** listed quality and technical support as important non-price factors, while *** commented that product availability was an important non-price factor and *** stated that domestic producers sometimes have trouble keeping up with demand.

ELASTICITY ESTIMATES

U.S. supply elasticity

The domestic supply elasticity[7] for FSF measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of FSF. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced FSF. Analysis of these factors above indicates that the U.S. industry has the ability to greatly increase or decrease shipments to the U.S. market; an estimate in the range of 5 to 7 is suggested.[8]

U.S. demand elasticity

The U.S. demand elasticity for FSF measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of FSF. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the FSF in the production of any downstream products. Based on the available information, the aggregate demand for FSF is likely to be inelastic; a range of -0.1 to -0.4 is suggested.[9]

[7] A supply function is not defined in the case of a non-competitive market.

[8] In their prehearing brief, the Italian respondents argued that a range of 2 to 4 was more appropriate for the elasticity of supply, claiming that the domestic industry was unable to increase production sufficiently to meet increasing demand. Prehearing Brief of IML and MEGA, p. 11.

[9] In their prehearing brief, the Italian respondents agreed with the proposed range of -0.1 to -0.4 for the elasticity of demand. Prehearing Brief of IML and MEGA, p. 11.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[10] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/ discounts/ promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced FSF and imported FSF is likely to be in the range of 4 to 7.[11]

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

[11] In their prehearing brief, the Italian respondents argued that the proposed range of 4 to 7 for the elasticity of substitution was too high given their belief in the asymmetric substitutability between normalized and non-normalized FSF and some quality concerns regarding FSF from China. They suggest that a range of 2 to 5 would be more appropriate. Prehearing Brief of IML and MEGA, p. 11.

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 three integrated producers and one finisher that accounted for the large majority of U.S. production of FSF during 2017.

U.S. PRODUCERS

The Commission issued a U.S. producer questionnaire to 13 firms based on information contained in the petition, staff research, and approved manufacturers lists. Three firms provided usable data on their integrated operations and one firm provided information on its dedicated finishing operations.[1] Staff believes that these responses represent the large majority of U.S. production of FSF. Table III-1 lists U.S. integrated producers and finishers of FSF, their production locations, positions on the petition, and share of integrated production and dedicated finishing.

Table III-2 presents information on U.S. producers' ownership, related and/or affiliated firms of FSF. As indicated in table III-2, two U.S. producers are related to domestic firms. No U.S. producers are related to foreign producers or U.S. importers of the subject merchandise. In addition, no integrated U.S. producer directly imports the subject merchandise or purchases the subject merchandise from U.S. importers. However, Anvil imports FSF from ***.

Table III-3 presents U.S. producers' reported changes in operations since January 1, 2015. *** reported lower levels of operations and new union contracts, while *** reported layoffs and reduced work hours. *** reported relocation of its forged steel production and periodic shutdowns due to the oil and gas market crash.

[1] Integrated producers Bonney Forge, Capitol Manufacturing Company ("Capitol"), and Pennsylvania Machine Works ("PMW") provided usable questionnaire responses, as did finisher Anvil. *** certified they are not producers of FSF. Of the companies that provided usable responses, *** is directly related to ***. *** did not provide a U.S. producer questionnaire response.

Table III-1
FSF: U.S. producers, their positions on the petition, production locations, and shares of reported production, 2017

Firm	Position on petition	Production location(s)	Share of integrated production (percent)	Share of non-integrated (i.e., finishing only) production (percent)[1]
Anvil	***	Longview, TX Houston, TX Houston, TX	***	***
Bonney Forge	Petitioner	Mount Union, PA Houston, TX	***	***
Capitol Manufacturing	***	Crowley, LA Allentown, PA Catasauqua, PA	***	***
PMW	***	Aston, PA Houston, TX Swedesboro, NJ	***	***
Total			***	***

[1] Anvil was the only firm that submitted data as a finisher of unfinished forged steel fittings in the final phase of these investigations. *** also reported purchasing certain unfinished fittings from other U.S.-based suppliers and finishing them in the United States. It included these small volumes as part of its integrated U.S. production operations, since it was unable to separately account for them. This company's finishing of acquired forgings accounted for less than *** percent of its overall production in 2017. Additionally, ***, a U.S.-based company, may finish forgings imported from ***.

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

Note.--The Commission found in its preliminary phase determinations that finishers are included in the FSF domestic industry; however, the Commission excluded Anvil, a related party and the only confirmed finisher, from the domestic industry.

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

Table III-2
FSF: U.S. producers' ownership, related and/or affiliated firms, 2017

* * * * * * *

Table III-3
FSF: U.S. producers' reported changes in operations, since January 1, 2015

* * * * * * *

Integrated vs non-integrated operations

Table III-4 presents summary information on integrated versus non-integrated (i.e., finisher only) operations by firms located in the United States, while table III-5 presents firms' assessment of the complexity of finishing operations.

Table III-4
FSF: Comparison of U.S. producers' integrated and finishing operations, 2017

Sufficient production-related activities factors	Integrated producers	Non-integrated producers
Capital investments	• Historical value of acquired assets: $***. • Current period capital expenditures: $***.	• Historical value of acquired assets: $***. • Current period capital expenditures: $***.
Technical expertise	• Research and development expenditures: $***.	• Research and development expenditures: $***.
Value added to the product in the United States	• *** percent in 2017.	• *** percent in 2017.
Employment	• Employment: *** average production related workers.	• Employment: *** range of average production related workers.
Quantity, type and source of parts	• Raw materials sourced in the United States: $***.	• Raw materials sourced in the United States: $***.
Costs and activities	• ***	• ***

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

Table III-5
FSF: U.S producers' finishing operations complexity and importance

* * * * * * *

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Integrated U.S. producers

Table III-6 and figure III-1 present integrated U.S. producers' production, capacity, and capacity utilization. Total production capacity for the three responding companies increased marginally, ending *** percent higher in 2017, compared to 2015. While the other U.S. producers maintained stable capacity levels, *** increased annual capacity by *** short tons between 2015 and 2017. Production levels for *** decreased in 2016 compared to the previous year and then increased in 2017. Total production for the interim period of January to March 2018 was *** short tons higher than the same period in 2017. Average capacity utilization decreased by *** percentage points in 2016 from 2015, from *** percent and then increased to *** percent in 2017. Capitol Manufacturing's average capacity utilization rates ***, but were ***.[2]

[2] According to this firm ***. Producer questionnaire, II-10.

Table III-6
FSF: Integrated U.S. producers' capacity, production, and capacity utilization, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Figure III-1
FSF: Integrated U.S. producers' capacity, production, and capacity utilization, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Non-integrated U.S. producers

Anvil is the only non-integrated company to submit a questionnaire to the Commission. Table III-7 and figure III-2 present Anvil's production, capacity, and capacity utilization. Reported finishing capacity remained unchanged from 2015 to 2016; however, it decreased by *** percent from 2016 to 2017, consistent with the closure of the Longview facility, and was lower in the first quarter of 2018. Anvil's finishing volume *** in 2016 but ***, as did its capacity utilization.

Table III-7
FSF: Non-Integrated U.S. producers' (i.e., Anvil's) capacity, production, and capacity utilization, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Figure III-2
FSF: U.S. producers' capacity, production, and capacity utilization, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Alternative products

As shown in tables III-8 and III-9, FSF accounted for *** percent of the product forged during 2017 by integrated U.S. producers. All three responding integrated U.S. producers reported producing a total of *** short tons of FSF in 2017 in equipment also used to make other products.[3] Between 2015 and 2016, total production for both forging and finishing operations decreased *** percent and *** percent, respectively. Production levels recovered in 2017, and were higher in January - March 2018 than in January - March 2017.

Table III-8
FSF: U.S. producers' overall plant capacity and production on the same equipment as subject production using forging machinery, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Table III-9
FSF: U.S. producers' overall capacity and production on finishing machinery, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

[3] Firms reported in questionnaires that they produce the following products in the same forging equipment as FSF: stainless FSF, butt weld fittings, butt weld outlets, flanges, custom forgings, tank flanges, and striking tools. Bar items were reported on the same finishing equipment.

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

Integrated U.S. producers

Table III-10 presents U.S. producers' U.S. shipments, export shipments, and total shipments. Both U.S. and export shipments decreased in 2016 and experienced a net increase in 2017, and U.S. shipments were also higher in January to March 2018 than in January – March 2017. U.S. shipments accounted for more than 90 percent of total shipments in each full and partial year.

Table III-10
FSF: Integrated U.S. producers' U.S. shipments, exports shipments, and total shipments, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Table III-11 presents integrated U.S. producers' U.S. shipments by type. As noted below, virtually all U.S. shipments from integrated producers are finished, with unfinished fittings representing only *** percent of all U.S. shipments by quantity in 2015, 2016, and 2017, respectively.

Table III-11
FSF: Integrated U.S. producers' U.S. shipments, by level of processing, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Non-integrated U.S. producers

Table III-12 presents Anvil's U.S. shipments, export shipments, and total shipments. U.S. shipments decreased in 2016 by *** percent but increased in 2017 by *** percent, and U.S. shipments were also higher in January to March 2018 than January – March 2017.

Table III-12
FSF: Non-integrated U.S. producers' U.S. shipments, by level of processing, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Consolidated (non-integrated and integrated) U.S. producers

Table III-13 presents consolidated U.S. producers' U.S. shipments, export shipments, and total shipments for use in measuring apparent consumption, i.e., combining integrated U.S. producers and non-integrated U.S. finishers. As indicated in the table, no non-integrated U.S. producer reported finishing domestic origin unfinished FSF. Therefore, the lines for integrated U.S. producers' U.S. shipments in this table contain no deduction for domestic-origin merchandise processed by non-integrated U.S. finishers and match data reported in table III-9. Since the sole non-integrated U.S. producer Anvil only finished domestically product it imported

from *** the lines for U.S. finishers' U.S. shipment of U.S. origin FSF are blank. Finally, the incremental value of finishing by non-integrated U.S. producer Anvil has been added to the value of the consolidated U.S. shipments in this table.[4] Over the 2015 to 2017 period, the consolidated value of consolidated U.S. producers' U.S. shipments decreased from 2015 to 2016 before increasing in 2017. During this period, the net increase reflected the increase in integrated U.S. producers' U.S. shipment values, which were in-part offset by a net decrease in the incremental value from finishing.

Table III-13
FSF: Consolidated U.S. producers' U.S. shipments, by level of processing, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

U.S. PRODUCERS' INVENTORIES

Table III-14 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments**.** End-of-period inventories declined during 2015-17. In January-March 2018, integrated producers inventories were lower than in January – March 2017, while finisher inventories were higher.

Table III-14
FSF: U.S. producers' inventories, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

U.S. PRODUCERS' IMPORTS AND PURCHASES

Integrated U.S. producers did not report imports of FSF and only one U.S. producer reported purchasing forged steel fittings.[5] Anvil, however, reported direct imports, as presented in table III-15.

Table III-15
FSF: U.S. producers' imports, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

[4] The value added to the imported unfinished FSF by non-integrated U.S. producers was calculated based on subtracting the average unit value of the unfinished imports from the average unit value of the non-integrated U.S. producers' U.S. shipments and applying that difference in AUVs to the quantity of the non-integrated U.S. producers' U.S. shipments. This methodology ensures that in the consolidated apparent U.S. consumption table there is no double counting and avoids reclassifying merchandise already reported once as an import.

[5] ***.

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-16, III-17, and III-18 present U.S. producers' employment-related data. The number of production and related workers decreased from 2015 to 2017, but was higher in January –March 2018 than in January –March 2017.

Table III-16
FSF: U.S. producers' employment related data, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Table III-17
FSF: Non-integrated U.S. producers' employment related data, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Table III-18
FSF: U.S. producers' employment related data for integrated and non-integrated U.S. producers, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

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

U.S. IMPORTERS

The Commission issued importer questionnaires to 175 potential importers of FSF, as well as to all U.S. producers of FSF.[1] Usable questionnaire responses were received from 41 companies,[2] representing *** percent of U.S. imports of FSF from China, *** percent of U.S. imports of FSF from Italy, *** percent of U.S. imports of FSF from Taiwan; 60.2 percent of U.S. imports of FSF from subject countries, and *** percent of U.S. imports of FSF from nonsubject countries in 2017 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 2017. In this final phase of investigations, the reported data reflects greater response, from U.S. importers of both subject and nonsubject FSF than in the preliminary phase of the investigations. In addition, following changes to Commerce's scope,[3] a few U.S. importers that had previously responded as U.S. importers of subject products, have since responded as U.S. importers of "certain excluded fittings."[4]

[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 2017.

[2] *** submitted a late U.S. importer questionnaire response, and stated that forged steel fittings are not a standard product line for the company. The firm reported imports of *** short tons from Taiwan in 2017. *** U.S. Inc. also provided a late response and reported importing *** short tons from Italy in 2017. *** did not provide a completed U.S. importer questionnaire but reported imports of forged steel fittings from China from sources ***. *** estimated that it imported ***short tons in 2015; *** short tons in 2016; *** short tons in 2017; and *** short tons in January to March 2018, sold *** to distributors.

[3] Commerce changed the scope of the subject FSF in the final phase of these investigations to further exclude products not manufactured by the petitioners. Also see Part I, "Commerce's scope."

[4] The following companies participated in the preliminary phase of the investigations as subject importers, but due to Commerce's scope change have now reported importing only certain excluded fittings: ***. *** did not provide a U.S. importer questionnaire response.

Table IV-1
FSF: U.S. importers by source, 2017

Firm	Headquarters	Share of imports by source (percent)					
		China	Italy	Taiwan	Subject source	Nonsubject sources	All import sources
Air-Way	Olivet, MI	***	***	***	***	***	***
All State Fastener	Amarillo, TX	***	***	***	***	***	***
Amer Pipe	Chesterfield, MO	***	***	***	***	***	***
American Supply	Pearl, MS	***	***	***	***	***	***
Anvil	Exeter, NH	***	***	***	***	***	***
DNOW	Houston, TX	***	***	***	***	***	***
Dwyer	Houston,, TX	***	***	***	***	***	***
Eaton	Beachwood, OH	***	***	***	***	***	***
Ferguson	Newport News, VA	***	***	***	***	***	***
Global Stainless	Houston, TX	***	***	***	***	***	***
Grainger	Lake Forest, IL	***	***	***	***	***	***
Industrial Valco	Rancho Dominguez, CA	***	***	***	***	***	***
Itex	Houston, TX	***	***	***	***	***	***
ITF	Houston, TX	***	***	***	***	***	***
Ligen	Marshall, NC	***	***	***	***	***	***
Matco-Norca	Brewster, NY	***	***	***	***	***	***
Mega	Scanzorosciate, IT	***	***	***	***	***	***
Merit Brass	Cleveland, OH	***	***	***	***	***	***
Midland	Kansas City, MO	***	***	***	***	***	***
Missouri Pipe	St. Louis, MO	***	***	***	***	***	***
Mitsui	New York, NY	***	***	***	***	***	***
MRC Global	Houston, TX	***	***	***	***	***	***
MS Global	Cerritos, CA	***	***	***	***	***	***
MSC Direct	Melville, NY	***	***	***	***	***	***
National Oilwell Varco	Houston, TX	***	***	***	***	***	***

Table continued on the next page.

Table IV-1--Continued
FSF: U.S. importers by source, 2017

Firm	Headquarters	Share of imports by source (percent)					
		China	Italy	Taiwan	Subject source	Nonsubject sources	All import sources
Nichirin	Lewisburg, TN	***	***	***	***	***	***
Norca	Lake Success, NY	***	***	***	***	***	***
Parker Hannifin	Cleveland, OH	***	***	***	***	***	***
Peters	Seminole, TX	***	***	***	***	***	***
Rapid Cool	Blacksburg, VA	***	***	***	***	***	***
Reditek	Pompano Beach, FL	***	***	***	***	***	***
Samwon	Schaumburg, IL	***	***	***	***	***	***
Schieffer	Peosta, IA	***	***	***	***	***	***
Silbo	Montvale, NJ	***	***	***	***	***	***
Smith Cooper	Commerce, CA	***	***	***	***	***	***
Texas Pipe	Houston, TX	***	***	***	***	***	***
Texcel	Houston, TX	***	***	***	***	***	***
Titus	Dallas, TX	***	***	***	***	***	***
Toyota Tsusho	Georgetown, KY	***	***	***	***	***	***
Triangle Metals	Bixby, OK	***	***	***	***	***	***
World Wide	Branchburg, NJ	***	***	***	***	***	***
World Wide Fittings	Vernon Hills, IL	***	***	***	***	***	***
Wurth	Brimingham, AL	***	***	***	***	***	***
Xylem	Rye Brook, NY	***	***	***	***	***	***
Total		***	***	***	***	***	***

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

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. import quantities from subject and nonsubject sources fluctuated during 2015-17, declining in 2016 from the previous year and then increasing in 2017. Imports from China declined from 2015 to 2016, before surpassing 2015 levels in 2017. Imports from Italy and Taiwan exhibited similar trends but did not surpass 2015 levels in 2017. Similarly, the quantity of subject imports from Italy and Taiwan were lower in January-March 2018 than in January-March 2017, while the quantity of subject imports from China were higher. In aggregate, the volume of imports from the three subject countries was lower in January-March 2018 than in January-March 2017.

Average unit values for subject imports (in aggregate) increased and then decreased during 2015-17, and were higher in January to March 2018 than in January to March 2017. In comparison, the average unit values for the volumes of imports from nonsubject countries were noticeably higher than those of subject countries and displayed different directional movement in January to March in 2018. [5]

Subject import quantities were equivalent to two-thirds or more of U.S. integrated production during 2015-17. In January-March 2018, however, subject import quantities were equivalent to less than one-third of U.S. integrated production.

Table IV-2
FSF: U.S. imports by source, 2015-17, January to March 2017, and January to March 2018

Item	Calendar year			January to March	
	2015	2016	2017	2017	2018
	Quantity (short tons)				
U.S. imports from.--					
China	1,979	1,200	2,895	***	***
Italy	1,851	1,221	1,803	***	***
Taiwan	5,696	3,898	5,081	***	***
Subject source	9,526	6,319	9,779	2,695	1,369
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Value (1,000 dollars)				
U.S. imports from.--					
China	5,290	3,249	7,754	***	***
Italy	6,688	5,050	7,252	***	***
Taiwan	19,295	13,574	17,001	***	***
Subject source	31,273	21,873	32,007	8,859	5,217
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
	Unit value (dollars per short ton)				
U.S. imports from.--					
China	2,673	2,708	2,678	***	***
Italy	3,613	4,136	4,022	***	***
Taiwan	3,387	3,482	3,346	***	***
Subject source	3,283	3,461	3,273	3,287	3,811
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

Table continued on the next page.

[5] ***.

Table IV-2--Continued
FSF: U.S. imports by source, 2015-17, January to March 2017, and January to March 2018

Item	Calendar year			January to March	
	2015	2016	2017	2017	2018
	Share of quantity (percent)				
U.S. imports from.--					
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject source	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	100.0	100.0	100.0	100.0	100.0
	Share of value (percent)				
U.S. imports from.--					
China	***	***	***	***	***
Italy	***	***	***	***	***
Taiwan	***	***	***	***	***
Subject source	***	***	***	***	***
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 source	***	***	***	***	***
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***

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

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

Figure IV-1
FSF: U.S. imports by source, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

NEGLIGIBILITY

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.[6] Negligible imports are generally defined in the Act, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation.

However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.[7]

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

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

Item	October 2016 through September 2017	
	Questionnaire data	
	Quantity (short tons)	Share of quantity (percent)
U.S. imports from.--		
China	2,314	***
Italy	2,235	***
Taiwan	5,347	***
Subject sources	9,896	***
Nonsubject sources	***	***
All sources	***	***

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

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

[6] 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)).

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

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 presented in table IV-4, in 2017, the majority *** of FSF in the U.S. market from domestic and all import sources (combined) was finished FSF. The majority of unfinished FSF in the U.S. market were from China, ***.

Table IV-4
FSF: U.S. producers' U.S. shipments and U.S. importers' U.S. imports, by type and source, 2017

Item	U.S. producers' U.S. shipments	U.S. importers' U.S. imports						Producers and importers combined
		China	Italy	Taiwan	Subject sources	Nonsubject sources	All import sources	
	Quantity (short tons)							
Unfinished fittings	***	***	***	***	***	***	***	***
Finished fittings	***	***	***	***	***	***	***	***
Total	***	2,895	1,803	5,081	9,779	***	***	***
	Share across (percent)							
Unfinished fittings	***	***	***	***	***	***	***	***
Finished fittings	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***
	Share down (percent)							
Unfinished fittings	***	***	***	***	***	***	***	***
Finished fittings	***	***	***	***	***	***	***	***
Total	***	***	***	***	***	***	***	***

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

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

Figure IV-2
FSF: U.S. producers' U.S. shipments and U.S. importers' U.S. imports, by level of processing and source, 2017

* * * * * * *

Table IV-5 presents U.S. shipments by product type. Elbows and tees comprised the largest shares of shipments by U.S. producers and importers of FSF from subject sources. Integrated U.S. producers' U.S producer constitute the majority of domestic producers and importers of FSF from subject source.

Table IV-5
FSF: U.S. producers' and U.S. importers' U.S. shipments, by product type and source, 2017

Item	Integrated U.S. producers' U.S. shipments	Non-integrated U.S. producers' U.S. shipments	U.S. importers' U.S. shipments						Producers and importers combined
			China	Italy	Taiwan	Subject sources	Nonsubject sources	All import sources	
	Quantity (short tons)								
U.S. shipments in 2017--									
Elbows	***	***	***	***	***	***	***	***	***
Tee	***	***	***	***	***	***	***	***	***
Couplings	***	***	***	***	***	***	***	***	***
Union	***	***	***	***	***	***	***	***	***
Other	***	***	***	***	***	***	***	***	***
All product types	***	***	2,344	1,676	5,606	9,626	***	***	***
	Share across (percent)								
U.S. shipments in 2017--									
Elbows	***	***	***	***	***	***	***	***	***
Tee	***	***	***	***	***	***	***	***	***
Couplings	***	***	***	***	***	***	***	***	***
Union	***	***	***	***	***	***	***	***	***
Other	***	***	***	***	***	***	***	***	***
All product types	***	***	***	***	***	***	***	***	***
	Share down (percent)								
U.S. shipments in 2017--									
Elbows	***	***	***	***	***	***	***	***	***
Tee	***	***	***	***	***	***	***	***	***
Couplings	***	***	***	***	***	***	***	***	***
Union	***	***	***	***	***	***	***	***	***
Other	***	***	***	***	***	***	***	***	***
All product types	***	***	***	***	***	***	***	***	***

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

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

Figure IV-3
FSF: U.S. producers' U.S. importers' U.S. shipments by product type and source, 2017

* * * * * * *

Table IV-6 presents U.S. producers' and U.S. importers' U.S shipments that are normalized versus not normalized for 2017. Responding U.S. importers from all subject sources indicated their majority of their FSF were normalized.[8] Integrated U.S. producers indicated very little of their U.S. shipments in 2017 were normalized, estimated at less than *** percent of their total.[9] Non-integrated U.S. producer *** indicated that *** of its U.S. imports from China were normalized, ergo, ***.

Table IV-6
FSF: U.S. producers' and U.S. importers' U.S shipments normalized versus not normalized, 2017

Item	Integrated U.S. producers' U.S. shipments	Non-integrated U.S. producers' U.S. shipments	U.S. importers' U.S. shipments			
			China	Italy	Taiwan	Subject sources
	Quantity (short tons)					
Normalized	***	***	***	***	***	***
Not normalized	***	***	***	***	***	***
Unknown / non-responsive	***	***	***	***	***	***
Total	***	***	2,895	1,803	5,081	9,779
	Share down (percent)					
Normalized	***	***	***	***	***	***
Not normalized	***	***	***	***	***	***
Unknown / non-responsive	***	***	***	***	***	***
Total	***	***	***	***	***	***

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

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

Figure IV-4
FSF: U.S. producers' and U.S. importers' U.S shipments normalized versus not normalized, 2017

* * * * * * *

[8] These data were gathered from the largest U.S. importers from subject sources following the Commission's hearing. Not all companies were contacted. Additionally, not all companies that were contacted responded. Of the companies that did report data, every one indicated that 100 percent of its imports from subject sources were normalized. Many responding U.S. importers indicated that 100 percent of their customers required normalized fittings, while one indicated it did not know, another indicated that 70 percent were actually required, and a third indicated that 20.6 percent were required.

[9] ***.

Geographical markets

As shown in table IV-7, 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 (particularly Houston-Galveston, Texas), followed by the North (particularly Chicago, Illinois). Other major ports of entry include Los Angeles, California, Cleveland, Ohio; and New York, New York.

Table IV-7
FSF: U.S. imports by border of entry, 2017

Item	Border of entry				
	East	North	South	West	All borders
	Quantity (short tons)				
U.S. imports from.--					
China	2,843	10,225	7,891	4,030	24,989
Italy	1,933	2,808	10,594	67	15,403
Taiwan	780	1,226	1,420	1,379	4,805
Subject source	5,556	14,259	19,905	5,476	45,196
Nonsubject sources	9,708	4,705	16,802	2,044	33,259
All import sources	15,264	18,964	36,707	7,520	78,455
	Share across (percent)				
U.S. imports from.--					
China	11.4	40.9	31.6	16.1	100.0
Italy	12.6	11.2	68.8	0.4	100.0
Taiwan	16.2	4.9	29.6	28.7	100.0
Subject source	12.3	57.1	44.0	12.1	100.0
Nonsubject sources	29.2	18.8	50.5	6.1	100.0
All import sources	19.5	75.9	46.8	9.6	100.0
	Share down (percent)				
U.S. imports from.--					
China	18.6	53.9	21.5	53.6	31.9
Italy	12.7	14.8	28.9	0.9	19.6
Taiwan	5.1	6.5	3.9	18.3	6.1
Subject source	36.4	75.2	54.2	72.8	57.6
Nonsubject sources	63.6	24.8	45.8	27.2	42.4
All import sources	100.0	100.0	100.0	100.0	100.0

Note.--Shares and ratios shown as "0.0" represent values greater than zero, but less than "0.05" percent. Official statistics are overly broad compared to the scope merchandise.

Source: Official U.S. import statistics using HTS statistical reporting numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, 7307.99.5060, accessed July 7, 2018.

Presence in the market

As presented in table IV-8, figure IV-5 and figure IV-6, merchandise imported under the broad statistical reporting numbers containing FSF was present in all 39 months from January 2015 through March 2018.

Table IV-8
FSF: U.S. imports by month, January 2015 through March 2018

Item	U.S. imports					
	China	Italy	Taiwan	Subject sources	Nonsubject sources	All import sources
2015.--						
January	3,057	456	636	4,149	3,483	7,631
February	2,565	346	386	3,297	2,469	5,766
March	2,523	626	533	3,683	3,381	7,064
April	2,659	833	511	4,003	2,966	6,969
May	1,905	1,376	386	3,667	2,897	6,564
June	2,505	1,350	501	4,356	2,327	6,684
July	1,958	1,101	321	3,380	2,402	5,781
August	1,822	753	300	2,875	2,218	5,093
September	2,174	254	283	2,711	2,038	4,748
October	1,457	465	312	2,234	2,241	4,476
November	1,544	415	198	2,156	2,424	4,580
December	2,287	418	190	2,894	1,653	4,547
2016.--						
January	1,718	232	364	2,314	2,215	4,529
February	1,669	259	267	2,196	1,780	3,976
March	1,243	448	206	1,897	2,307	4,204
April	1,441	361	217	2,018	2,254	4,272
May	1,583	232	290	2,104	2,309	4,413
June	1,315	303	158	1,776	2,140	3,916
July	1,852	241	324	2,417	2,276	4,693
August	1,372	341	325	2,037	2,667	4,704
September	1,756	861	222	2,839	1,994	4,833
October	1,316	345	286	1,947	2,209	4,155
November	1,964	1,022	363	3,349	2,186	5,535
December	2,202	1,132	349	3,683	2,097	5,780

Table continued on the next page.

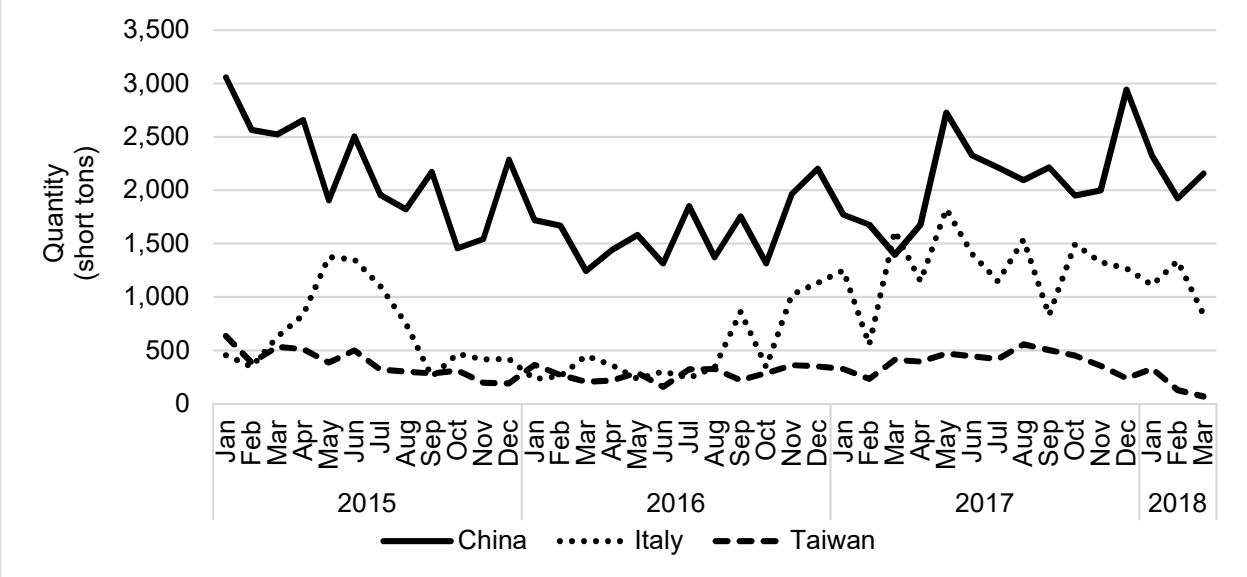
Table IV-8--Continued
FSF: U.S. imports by month, January 2015 through March 2018

Item	U.S. imports					
	China	Italy	Taiwan	Subject sources	Nonsubject sources	All import sources
2017.-- January	1,769	1,250	326	3,345	2,071	5,416
February	1,679	555	233	2,467	2,146	4,613
March	1,396	1,616	414	3,427	2,964	6,391
April	1,677	1,149	395	3,220	2,089	5,309
May	2,726	1,826	470	5,021	2,753	7,774
June	2,330	1,405	444	4,179	3,032	7,211
July	2,213	1,148	419	3,780	3,031	6,812
August	2,095	1,535	557	4,187	2,628	6,815
September	2,214	829	503	3,546	3,223	6,769
October	1,949	1,495	451	3,895	3,116	7,011
November	1,998	1,327	355	3,680	3,368	7,049
December	2,942	1,268	238	4,448	2,837	7,284
2018.-- January	2,323	1,112	330	3,764	2,504	6,268
February	1,923	1,340	127	3,390	2,432	5,821
March	2,157	833	68	3,059	2,944	6,003

Note.--Official statistics are overly broad compared to the scope merchandise.

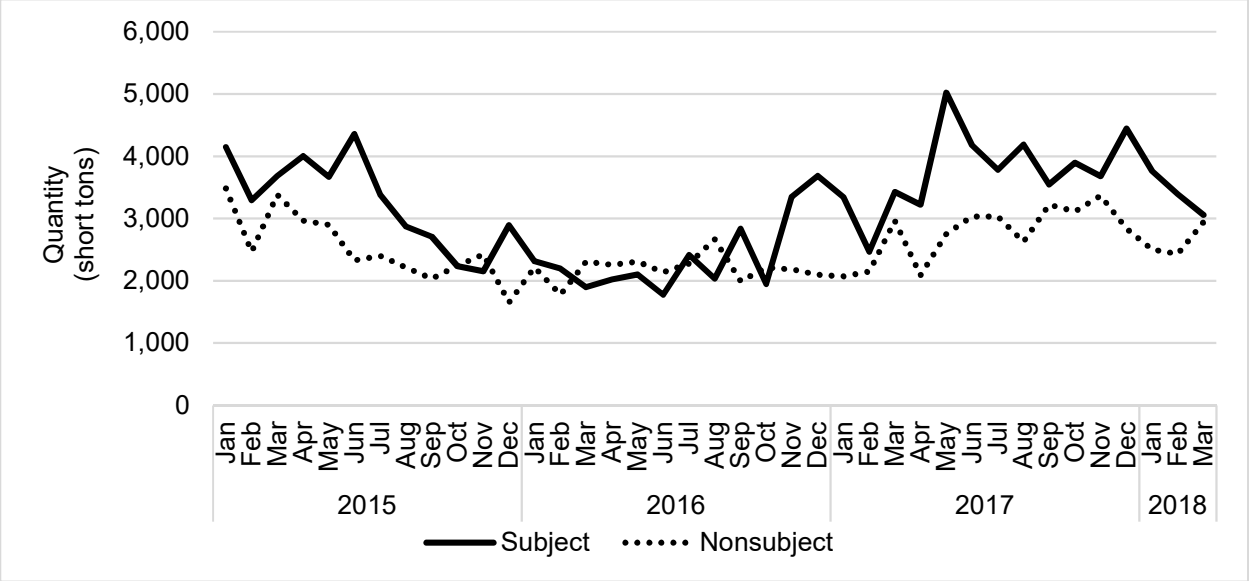
Source: Official U.S. import statistics using HTS statistical reporting numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, 7307.99.5060, accessed July 7, 2018.

Figure IV-5
FSF: U.S. imports from individual subject sources, by month, January 2015 through March 2018



Source: Official U.S. import statistics using HTS statistical reporting numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, 7307.99.5060, accessed July 7, 2018.

Figure IV-6
FSF: Month U.S. imports, by subject vs nonsubject, January 2015 through March 2018



Source: Official U.S. import statistics using HTS statistical reporting numbers 7307.99.1000, 7307.99.3000, 7307.99.5045, 7307.99.5060, accessed July 7, 2018.

APPARENT U.S. CONSUMPTION AND MARKET SHARES

The market based on integrated U.S. producers

Table IV-9 and table IV-10 and figure IV-7 presents data on apparent U.S. consumption and market shares based on integrated U.S. producers of FSF, respectively.

Table IV-9
FSF: Apparent U.S. consumption based on integrated U.S. producers, 2015-17, January to March 2017, and January to March 2018

Item	Calendar year			January to March	
	2015	2016	2017	2017	2018
	Quantity (short tons)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
China	1,939	1,427	2,890	***	***
Italy	1,739	1,267	1,677	***	***
Taiwan	5,555	4,723	5,605	***	***
Subject sources	9,233	7,417	10,172	2,677	2,376
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	5,560	4,458	8,798	***	***
Italy	7,101	5,669	7,563	***	***
Taiwan	27,478	23,061	27,720	***	***
Subject sources	40,139	33,188	44,081	11,175	11,615
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***

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

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

Table IV-10
FSF: Market shares based on integrated U.S. producers, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Figure IV-7
FSF: Apparent consumption, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

The market based on integrated U.S. producers' and non-integrated U.S. finishers

Table IV-11 and Table IV-12 presents data on apparent U.S. consumption and market shares including incremental value from finishing by Anvil.

Table IV-11
FSF: Apparent U.S. consumption based on integrated U.S. producers' and non-integrated U.S. finishers' operations combined, 2015-17, January to March 2017, and January to March 2018

Item	Calendar year			January to March	
	2015	2016	2017	2017	2018
	Quantity (short tons)				
U.S. producers' U.S. shipments	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
China	1,939	1,427	2,890	***	***
Italy	1,739	1,267	1,677	***	***
Taiwan	5,555	4,723	5,605	***	***
Subject sources	9,233	7,417	10,172	2,677	2,376
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
	Value (1,000 dollars)				
U.S. producers' U.S. shipments.-- Value of domestic origin fittings	***	***	***	***	***
Value added to imported fittings	***	***	***	***	***
Combined value	***	***	***	***	***
U.S. importers' U.S. shipments from.--					
China	5,560	4,458	8,798	***	***
Italy	7,101	5,669	7,563	***	***
Taiwan	27,478	23,061	27,720	***	***
Subject sources	40,139	33,188	44,081	11,175	11,615
Nonsubject sources	***	***	***	***	***
All import sources	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***

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

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

Table IV-12
FSF: Market shares based on integrated U.S. producers' and non-integrated U.S. finishers' operations combined, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Figure IV-8
FSF: Apparent consumption based on integrated U.S. producers' and non-integrated U.S. finishers' operation combined, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

For the integrated U.S. producers, the main raw material used to produce FSF is special bar quality ("SBQ") hot-rolled steel bar.[1] [2] A small share of FSF is also produced from seamless pipe. Independent finishers typically use unfinished forgings as their main raw material.[3]

For integrated domestic producers, raw materials as a share of the cost of goods sold ("COGS") decreased from *** percent in 2015 to *** percent in 2017. In general, the prices of SBQ hot-rolled steel bar followed similar trends. As shown in figure V-1, the prices of carbon SBQ bar and alloy SBQ bar both decreased between January 2015 and December 2017, by *** and *** percent, respectively. Prices generally decreased throughout 2015, remained relatively stable throughout most of 2016, and then increased beginning in late 2016 and throughout 2017. Between December 2017 and June 2018, the prices of carbon SBQ bar and alloy SBQ bar recovered by *** percent and *** percent, respectively, in the first quarter of 2018 and by *** percent and *** percent, respectively, in the second quarter of 2018, but were still below January 2015 levels.

Figure V-1
FSF: Prices of carbon steel SBQ bar and alloy steel SBQ bar, monthly, January 2015-June 2018

* * * * * * *

U.S. producers and importers reported that raw material prices generally affected the price of FSF. Two U.S. producers reported that the price of FSF increased because of an increase in raw material prices, with one reporting that ***, but that it is "***." One U.S. producer reported that the price of raw materials has "***." Among the 17 importers who provided narrative comments on raw material prices, six reported a direct correlation between raw material prices and FSF prices.

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

[2] SBQ 1-inch round 1000 series (carbon) hot-rolled steel bars are typically imported under subheadings 7213.99.0016, 7213.99.0060, 7214.99.0031, or 7214.99.0045, while SBQ 1-inch round 4100 series (alloy) hot-rolled steel bars are typically imported under subheadings 7227.90.6040 or 7228.30.8015. Both of these product types are included among the steel mill-product imports subject to the additional 25-percent ad valorem Section 232 national-security tariffs announced by the President on March 8, 2018. Please see part I, "Tariff treatment," for additional detail.

[3] Importer Anvil is one such firm.

Transportation costs to the U.S. market

Transportation costs for FSF shipped from China, Italy, and Taiwan to the United States averaged 5.4 percent, 6.2 percent, and 5.6 percent, respectively, during 2017. These estimates were derived from official import data and represent the transportation and other charges on imports.[4]

U.S. inland transportation costs

*** U.S. producers and 28 of 34 responding importers reported that they typically arrange transportation to their customers. Finisher Anvil reported that ***. The U.S. integrated producers and finisher Anvil reported that their U.S. inland transportation costs ranged from *** to *** percent, while most importers reported costs of less than 1 percent to 3.5 percent. Three importers also reported inland transport costs in the 5 to 6.5 percent range, two reported costs of 10 percent, and one reported a cost of 12 percent.

PRICING PRACTICES

Pricing methods

U.S. integrated producers, the U.S. finisher, and importers reported using multiple methods to set prices (table V-1). Most (22 of 35 responding) importers reported selling transaction-by-transaction, while *** did. *** U.S. producers *** reported using set price lists, while 12 importers did. Nine importers reported selling via contract, while ***. *** and three importers also reported selling via other methods: *** reported using "market prices;" *** stated that it sells some items ***; *** stated that its customers are given a discount factor off its published list price, that all customers are offered a cash discount of 2.0 percent if they pay the invoice on time, and that some customers are also offered a rebate; and *** reported using a "cost plus method."[5]

[4] 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 subheading 7307.99.1000, 7307.99.3000, 7307.99.5045, and 7307.99.5060.

[5] ***.

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	22
Contract	---	9
Set price list	4	12
Other	3	3
Responding firms	4	35

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

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

As shown in table V-2, U.S. producers and importers reported their 2017 U.S. commercial shipments of FSF by type of sale. *** reported selling only in the spot market.[6] Importers reported selling more than half of their FSF in the spot market, with more than 40 percent more of their sales through short-term contracts, and very small amounts via annual and/or long-term contracts.

Table V-2
FSF: U.S. producers' and importers' shares of U.S. commercial shipments by type of sale, 2017

* * * * * * *

Six importers reported fixing prices and quantities for their short-term contracts and three importers reported that prices can be renegotiated during their annual and long-term contracts. The vast majority of importers reported no contract provisions.

Four purchasers reported that they purchase product daily, 7 purchase weekly, 9 purchase monthly, and 3 purchase quarterly. Twenty of 24 responding purchasers reported that their purchasing frequency had not changed since 2015. Most (20 of 24) purchasers contact one to three suppliers before making a purchase, while four reported contacting up to five suppliers.

Sales terms and discounts

*** reported typically quoting prices on an f.o.b. basis, ***. Most (16 of 30) importers reported typically quoting prices on a delivered basis, while 15 also reported quoting prices on an f.o.b. basis.[7] Many firms (*** 13 importers) reported having no discount policy. *** and ten importers offer quantity discounts; *** and seven importers offer annual total volume discounts; and seven importers reported offering other discounts such as rebate programs

[6] ***.

[7] *** reported quoting prices on both a delivered and f.o.b. basis.

(three firms), group discounts (two firms), and other discounts based on corporation, division, competition, and the individual customer. Most (21 of 32) importers reported sales terms of net 30 days, while four importers and one U.S. integrated producer reported terms of 2/10 net 30 days, four importers reported terms of net 60 days, and *** eight importers reported "other" terms.[8]

Price leadership

Most responding purchasers reported Bonney Forge and Smith Cooper as price leaders. *** reported that Bonney Forge initiated price increases in the market. Other purchasers reported Titus, Triangle, and Both-Well as price setting firms.

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 2015-March 2018:

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)

Three U.S. integrated producers, finisher Anvil, and 24 importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[9] [10] Given that Anvil was excluded from the domestic industry after it was determined to be a related party in the preliminary phase of these investigations, the pricing data and comparisons presented here are only for the integrated producers. The pricing data

[8] *** reported terms of "***," *** reported terms of "***," two importers reported net 45 days, one reported 2/10 net 45 days, one reported 2 percent 30 net 45, one reported "2/10 prox 30," one reported that its "best receive 1 percent 10 discount," and three reported that their terms vary.

[9] 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.

[10] Some firms provided incomplete price data, such as value data with no accompanying quantity data, or vice versa. Not all firms responded to staff's requests for updated price data. In such instances, these firms' price data have not been included in this analysis. *** provided quarterly price data that appeared inconsistent and anomalous. Staff requested clarifications and/or revisions from these firms. *** provided price data for ***, but identified it as "other fittings," which resulted in unit values that covered an unusually large range and were generally multiples of the data submitted by other companies. Also, after repeated attempts to get *** to review and revise its data, the firm reported that its anomalous price data resulted from its "variation in product mix." These firms' price data have not been included in this analysis.

and comparisons for the three integrated producers plus finisher Anvil are presented in Appendix D. Pricing data reported by these firms accounted for approximately *** percent of U.S. producers' shipments of FSF, *** percent of U.S. shipments of subject imports from China, *** percent of U.S. shipments of subject imports from Italy, and *** percent of U.S. shipments of subject imports from Taiwan in 2017.

Price data for products 1-4 are presented in tables V-3 to V-6 and figures V-2 to V-5.

Table V-3
FSF: Weighted-average f.o.b. prices and quantities of domestic (integrated) and imported product 1 and margins of underselling/(overselling), by quarter, January 2015 to March 2018

* * * * * * *

Table V-4
FSF: Weighted-average f.o.b. prices and quantities of domestic (integrated) and imported product 2 and margins of underselling/(overselling), by quarter, January 2015 to March 2018

* * * * * * *

Table V-5
FSF: Weighted-average f.o.b. prices and quantities of domestic (integrated) and imported product 3 and margins of underselling/(overselling), by quarter, January 2015 to March 2018

* * * * * * *

Table V-6
FSF: Weighted-average f.o.b. prices and quantities of domestic (integrated) and imported product 4 and margins of underselling/(overselling), by quarter, January 2015 to March 2018

* * * * * * *

Figure V-2
FSF: Weighted-average prices and quantities of domestic (integrated) and imported product 1, by quarter, January 2015 to March 2018

* * * * * * *

Figure V-3
FSF: Weighted-average prices and quantities of domestic (integrated) and imported product 2, by quarter, January 2015 to March 2018

* * * * * * *

Figure V-4
FSF: Weighted-average prices and quantities of domestic (integrated) and imported product 3, by quarter, January 2015 to March 2018

* * * * * * *

Figure V-5
FSF: Weighted-average prices and quantities of domestic (integrated) and imported product 4, by quarter, January 2015 to March 2018

* * * * * * *

Price trends

In general, U.S. producers' prices decreased during January 2015-March 2018, while importers' prices increased over the same period. Domestic prices declined from January 2015 through late 2016 before stabilizing. Table V-7 summarizes the price trends, by country and by product. As shown in the table, domestic price decreases ranged from *** percent, while import price increases ranged from *** percent. Import price decreases ranged from *** percent.

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

* * * * * * *

Price comparisons

As shown in table V-8, subject imported FSF undersold U.S.-produced product in 116 of 156 instances (1,054 short tons). In the other 40 instances (84 short tons), subject FSF oversold domestic FSF. Prices for FSF imported from China were below those for U.S.-produced product in 27 of 52 instances (60 short tons), with margins of underselling ranging from 0.3 to 18.7 percent. Prices for FSF imported from Italy were below those for U.S.-produced product in 39 of 52 instances (197 short tons), with margins of underselling ranging from 0.1 to 30.6 percent. Prices for FSF imported from Taiwan were below those for U.S.-produced product in 50 of 52 instances (798 short tons), with margins of underselling ranging from 1.3 to 33.7 percent. In the remaining instances, prices for FSF imported from China were between 1.0 and 22.0 percent above prices for the domestic product in 25 instances, prices for FSF imported from Italy were between 0.2 and 34.8 percent above prices for the domestic product in 13 instances, and prices for FSF imported from Taiwan were between 2.4 and 11.0 percent above prices for the

domestic product in 2 instances. The volumes of overselling were 35 short tons from China, 43 short tons from Italy, and 7 short tons from Taiwan.[11]

Table V-8
FSF: Instances of underselling/overselling and the range and average of margins for integrated producers, by product, by year and by source, January 2015 through March 2018

Item	Underselling -- Integrated				
	Number of quarters	Quantity[1] (short tons)	Average margin (percent)	Margin range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, underselling, by product	116	1,054	13.4	0.1	33.7
2015	37	378	15.3	0.9	32.7
2016	34	232	14.1	0.3	33.4
2017	39	381	12.0	0.1	33.7
2018 Q1	6	63	6.5	2.3	14.2
Total, underselling, by year	116	1,054	13.4	0.1	33.7
China	27	60	6.3	0.3	18.7
Italy	39	197	10.1	0.1	30.6
Taiwan	50	798	19.7	1.3	33.7
Total, underselling, by source	116	1,054	13.4	0.1	33.7
Item	(Overselling) -- Integrated				
	Number of quarters	Quantity[1] (short tons)	Average margin (percent)	Margin range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, underselling, by product	40	84	(8.0)	(0.2)	(34.8)
2015	11	11	(8.6)	(1.0)	(22.0)
2016	14	35	(7.1)	(0.4)	(21.0)
2017	9	22	(9.1)	(0.2)	(34.8)
2018 Q1	6	16	(7.4)	(2.4)	(11.0)
Total, underselling, by year	40	84	(8.0)	(0.2)	(34.8)
China	25	35	(8.3)	(1.0)	(22.0)
Italy	13	43	(7.7)	(0.2)	(34.8)
Taiwan	2	7	(6.7)	(2.4)	(11.0)
Total, underselling, by source	40	84	(8.0)	(0.2)	(34.8)

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

Note.--***.

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

[11] ***.

LOST SALES AND LOST REVENUE

In the preliminary phase of the investigations, the Commission requested that U.S. producers of FSF report purchasers where they experienced instances of lost sales or revenue due to competition from imports of FSF from China, Italy, and/or Taiwan during January 2014-June 2017. None of the U.S. producers submitted lost sales or lost revenue allegations. In the final phase of the investigations, all three U.S. integrated producers and finisher Anvil reported that they had to reduce prices and that they had lost sales.

Staff contacted 123 purchasers and received responses from 25 purchasers. Responding purchasers reported purchasing 32,953 short tons of FSF during 2015-17 (table V-9).

Of the 25 responding purchasers, 19 reported that since 2015 they had purchased imported FSF from China, Italy, and/or Taiwan instead of U.S.-produced product, with five reporting purchases of Chinese product, nine reporting purchases of Italian product, and 11 reporting purchases of product from Taiwan. Seventeen of these purchasers reported that subject import prices were lower than U.S.-produced product, and 16 of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. Four purchasers estimated the quantity of FSF from China purchased instead of domestic product (*** short tons), nine purchasers estimated this quantity for Italian product (*** short tons), and ten purchasers estimated this quantity for product from Taiwan (*** short tons) (table V-10). Purchasers identified availability, delivery times, and product range as non-price reasons for purchasing imported rather than U.S.-produced product.

Table V-9
FSF: Purchasers' responses to purchasing patterns

Purchaser	Purchases in 2015-17 (short tons)			Change in domestic share[2] (pp, 2015-17)	Change in subject country share[2] (pp, 2015-17)
	Domestic	Subject	All other[1]		
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	26,428	5,008	1,517	3.6	(0.1)

[1] Includes all other sources and unknown sources.
[2] Percentage points (pp) change: Change in the share of the firm's total purchases of domestic and/or subject country imports between first and last years.

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

Table V-10
FSF: Purchasers' responses to purchasing subject imports instead of domestic FSF, by source

Source	Count of purchasers reporting subject instead of domestic	Count of purchasers reported that imports were priced lower	Count of purchasers reporting that price was a primary reason for shift	Quantity subject purchased (short tons)
China	5	4	4	***
Italy	9	8	9	***
Taiwan	11	11	10	***
Any subject source	19	17	16	3,265

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

Of the 25 responding purchasers, five reported that U.S. producers had reduced prices in order to compete with lower-priced imports from subject countries, and 11 reported that they had not (table V-12; eight reported that they did not know). The reported estimated price reductions ***, for an average of 14.2 percent. In describing the price reductions, two purchasers elaborated: one reported that U.S. producers began selling their products at prices comparable to subject imports in 2016, and that "with such small differences {in price}, most people chose domestic;" a second reported that U.S. producers reduced prices in an attempt to increase market share, which caused distributors of Chinese product to lower prices even more; and another reported that U.S. producers reduced prices due to market competitive conditions.

Table V-11
FSF: Purchasers' responses to purchasing subject imports instead of domestic FSF

Purchaser	Purchased imports instead of domestic (Y/N)	Imports priced lower (Y/N)	If purchased imports instead of domestic, was price a primary reason		
			Y/N	If Yes, quantity purchased instead of domestic (short tons)	If No, non-price reason
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
***	***	***	***	***	***
Total	Yes--19; No--5	Yes--17; No--1	Yes--16; No--3	3,265	

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

Table V-12
FSF: Purchasers' responses to U.S. producer price reductions, by firm

Purchaser	U.S. producers reduced priced to compete with subject imports (Y/N)	If U.S. producers reduced prices: Estimated U.S. price reduction (percent)	If U.S. producers reduced prices: Additional information, if available
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
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***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***
Total	Yes--5; No--11	14.2	

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

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.[2] In 2017, Capitol Manufacturing accounted for *** percent of the U.S. producers' net sales by quantity, Bonney Forge accounted for *** percent, Anvil accounted for *** percent, and PMW accounted for *** percent.[3] 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.

Staff verified the results of *** with its company records. The verification adjustments were incorporated into this report.[4] ***.[5]

OPERATIONS ON FSF

Income-and-loss data for all 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 income-and-loss data for the integrated U.S. producers; table VI-4 presents corresponding changes in average per short ton values for integrated U.S. producers; and table VI-5 presents selected company-specific financial data.[6]

Net sales

The vast majority (more than *** percent) of reported net sales were of commercial sales. As shown in table VI-1, total net sales by quantity and value declined from 2015 to 2016, but increased in 2017 to higher levels than in 2015, and were higher in January-March 2018, compared to the same period in 2017. *** of the U.S. producers reported decreasing net sales, by both quantity and value, from 2015 to 2016, increasing sales from 2016 to 2017, and higher net sales in the first quarter of 2018 than the first quarter of 2017. However, ***.[7]

The U.S. producers' average sales unit value ("AUV") increased from $*** in 2015 to $*** in 2016, before declining to $*** in 2017. U.S. producers' net sales AUV in January-

---

[1] Three of the firms (Bonney Forge, Capitol Manufacturing, and PMW) are integrated FSF producers and one firm (Anvil) has finisher-only operations.

[2] ***.

[3] By value, Capitol Manufacturing accounted for *** percent of net sales, Bonney Forge accounted for *** percent, Anvil accounted for *** percent, and PMW accounted for *** percent.

[4] Staff verification report, ***.

[5] The changes affected ***.

[6] The integrated producers' sales volume accounted for approximately *** percent of total sales volume from January 1, 2015 to March 31, 2018, therefore most of the financial trends experienced by the integrated producers (table VI-3) are similar to the trends for all U.S. producers (table VI-1).

[7] ***.

March 2018 was $*** compared to $*** in January-March 2017. *** reported an increase in net sales AUVs from 2015 to 2017, while *** reported decreasing AUVs from 2015 to 2017. *** responding producers reported higher AUVs in interim 2018 compared to interim 2017 (see table VI-5). *** reported much higher net sales AUVs than the rest of the companies, with AUVs roughly ***.[8] *** generally had the next highest AUVs, followed by ***.

Table VI-1
FSF: Results of operations of all U.S. producers (integrated and finisher only firms) 2015-17, January-March 2017, and January-March 2018

* * * * * * *

Table VI-2
FSF: Changes in AUVs for all U.S. producers (integrated and finisher only firms), between calendar years and between partial year periods

* * * * * * *

Table VI-3
FSF: Results of operations of integrated U.S. producers, 2015-17, January-March 2017, and January-March 2018

* * * * * * *

Table VI-4
FSF: Changes in AUVs for integrated producers, between calendar years and between partial year periods

* * * * * * *

Table VI-5
FSF: Results of operations of U.S. producers, by firm, 2015-17, January-March 2017, and January-March 2018

* * * * * * *

Cost of goods sold and gross profit or (loss)

As seen in table VI-1, other factory costs was the largest component of FSF cost of goods sold ("COGS") throughout 2015-17 and during both interim periods. It accounted for between *** percent (2015) and *** percent (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, the period's lowest sales quantity was in 2016 which was the same year where other

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

factory costs represented the largest share of COGS.[9] Raw material costs were the second largest component of COGS representing between *** percent (2016 and 2017) and *** percent (2015), followed by direct labor, which represented between *** percent (2016) and *** percent (2015).[10]

Raw material costs associated with integrated production generally reflect purchased bars which are cut prior to forging.[11] Anvil's finisher-only operations consumes imported unfinished steel fittings as the primary raw material input.[12] [13]

Gross profit declined from $*** in 2015 to $*** in 2016 before increasing to $*** in 2017. Although the FSF net sales AUV increased from 2015 to 2016 (by $*** per short ton), the per-short ton COGS increased to a greater extent ($*** per short ton) which led to a decrease in the gross profit margin. The lower gross profit margin combined with a decrease in net sales quantity from 2015 to 2016 resulted in the decline of total gross profit in 2016. The opposite is true from 2016 to 2017, the FSF net sales AUV decreased (by $*** per short ton), but the per-short ton COGS decreased to a greater extent ($*** per short ton), which increased the gross profit margin. The increase in the gross profit margin combined with an increase in sales volume between 2016 and 2017 led to the increase in gross profit. Gross profit was also higher when comparing interim 2018 ($***) to interim 2017 ($***), but this was due to both a lower per-short ton COGS, as well as a higher net sales AUV.

SG&A expenses and operating income

Total SG&A expenses decreased from $*** in 2015 to $*** in 2017, and was higher in interim 2018 ($***) compared to the same period in 2017 ($***).[14] [15] While *** producers reported a decrease in their reported SG&A expenses from 2015 to 2017, *** reported a noticeable increase in SG&A expenses in 2017. In response to questions by staff, ***.[16] The SG&A expense ratio (SG&A expenses as a share of sales) decreased from *** percent in 2015 and *** percent 2017, and was lower in interim 2018 compared to interim 2017. Operating income decreased from *** in 2015 to *** in 2016, before increasing to *** in 2017. It was also higher in interim 2018 ($***) compared to the same period in 2016 ($***).

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

[10] The only company ***.

[11] Conference transcript, p. 15 (Almer).

[12] Prior to 2017, approximately ***.

[13] ***.

[14] ***.

[15] ***.

[16] ***.

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 2015 to 2017 and was lower in interim 2018 compared to the same period in 2017.[17] Net income worsened from a *** in 2015 to a *** in 2016, but improved to a net income of $*** in 2017; net income was notably higher in interim 2018 compared to interim 2017.[18]

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 2015 to 2017, and were *** percent higher in January-March 2018 than in the same period in 2017. ***.[19] [20] R&D expenses decreased from 2015 to 2017, and were lower in January-March 2018 compared to the same period in 2017. *** to report R&D expenses.

Table VI-6
FSF: Capital expenditures and research and development expenses of U.S. producers, 2015-17, January-March 2017, and January-March 2018

* * * * * * *

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).[21] Total net assets decreased from $*** in 2015 to $*** in 2017. ***.[22] The U.S. producers' return on assets declined from *** percent in 2015 to *** percent in 2016, before improving to *** percent in 2017.

Table VI-7
FSF: U.S. producers' total assets and return on assets, 2015-17

* * * * * * *

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[17] As mentioned previously, ***.

[18] A variance analysis is not shown due to the difference in cost structures among the reporting firms.

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

[20] ***.

[21] 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 corporate allocations may be required in order to report a total asset value for FSF.

[22] ***.

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, 2015

Item	No	Yes
Negative effects on investment	0	4
Cancellation, postponement, or rejection of expansion projects		***
Denial or rejection of investment proposal		***
Reduction in the size of capital investments		***
Return on specific investments negatively impacted		***
Other		***
Negative effects on growth and development	2	2
Rejection of bank loans		***
Lowering of credit rating		***
Problem related to the issue of stocks or bonds		***
Ability to service debt		***
Other		***
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, 2015

* * * * * * *

PART VII: THREAT CONSIDERATIONS AND INFORMATION ON NONSUBJECT COUNTRIES

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

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors*[1]*--*
>
> *(I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*
>
> *(II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*
>
> *(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*
>
> *(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*
>
> *(V) inventories of the subject merchandise,*

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

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

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

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

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

Information on the nature of the subsidies was presented in *Part I* 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 foreign producers' or exporters' questionnaires to 92 firms believed to produce and/or export FSF from China.[3] Two companies, manufacturer Both-Well and

[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.

re-seller Tech Form Manufacturing, provided responses during the investigations' preliminary phase but not in the final phase.[4] These firms' exports to the United States were equivalent to *** percent of U.S. imports of product from China in 2017. According to estimates requested of the responding Chinese producers, the production of FSF in China reported in questionnaires accounts for approximately *** percent of overall production of product in China. Table 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, 2017

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 (Prelim)	***	***	***	***	***	***
Total	***	100.0	***	100.0	***	***

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

Table VII-2
FSF: Summary data on resellers in China, 2017

* * * * * * *

Changes in operations

No Chinese firm reported any operational or organizational changes since January 1, 2015.

Operations on FSF

Table VII-3 presents information on the FSF operations of the responding producers and exporters in China. From 2015 to 2016, reported capacity was stable; however, it decreased by *** percent from 2016 to 2017, and capacity is projected to decrease by *** percent from 2017 to 2018 and remain unchanged in 2019. Capacity data is based on one firm's questionnaire response, wherein they noted that shortage of labor as the reason for the decline in capacity projection. Reported production decreased by *** percent from 2015 to 2016, increased by *** percent from 2016 to 2017, and is projected to be stable for 2018 and 2019 at the 2017 level.

[4] Staff attempted to obtain responses, but these firms did not respond. Staff utilized these companies' responses from 2014-16 and projections for 2017 and 2018 as being unchanged from the companies' own estimates.

Capacity utilization decreased by *** percentage points from 2015 to 2016, increased by *** percentage points from 2016 to 2017, and is projected to increase in 2018 and remain unchanged in 2019. Reported exports to the United States decreased by *** percent from 2015 to 2016, increased by *** percent from 2016 to 2017, and are projected to decrease by *** percent from 2017 to 2018. Reseller exports to the United States increased from 2015 to 2017, and this trend is projected for 2018 and 2019.

Table VII-3
FSF: Data for producers and re-sellers in China, 2015-17, January to March 2017, and January to March 2018 and projection calendar years 2018 and 2019

* * * * * * *

Alternative products

As shown in table VII-4, responding Chinese firms produced other products on the same equipment and machinery used to produce FSF. These products include ***.

Table VII-4
FSF: Chinese producers' overall capacity and production on the same equipment as subject production, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Exports

According to GTA, the leading export markets for iron and/or steel fittings (including FSF) from China are the United States, Malaysia, and Canada, respectively (table VII-5). During 2017, the United States was the top export market for iron and/or steel fittings (including FSF) from China, accounting for 30.2 percent, followed by the Malaysia, accounting for 4.5 percent.

Table VII-5
Iron and/or steel fittings: Exports from China, 2015-17

Destination market	Calendar year		
	2015	2016	2017
	Quantity (short tons)		
Exports from China to the United States	76,813	65,432	80,405
Exports from China to other major destination markets.--			
Malaysia	10,789	13,394	11,878
Canada	7,530	5,813	8,599
Netherlands	4,815	7,668	8,333
Japan	7,812	7,160	8,307
Russia	7,109	7,122	6,748
South Korea	7,624	6,341	6,643
India	3,339	3,377	6,213
Iran	2,997	2,818	6,124
All other destination markets	120,788	123,936	122,825
Total exports from China	249,617	243,062	266,076
	Value (1,000 dollars)		
Exports from China to the United States	221,360	182,657	242,193
Exports from China to other major destination markets.--			
Malaysia	12,978	15,291	27,680
Canada	22,770	16,864	26,997
Netherlands	13,259	16,106	19,007
Japan	40,134	36,042	42,402
Russia	23,875	22,104	16,934
South Korea	24,261	17,645	18,083
India	13,552	10,410	15,589
Iran	11,491	11,364	15,918
All other destination markets	419,205	391,891	398,919
Total exports from China	802,885	720,373	823,721

Table continued on the next page.

Table IV-5—Continued
Iron and/or steel fittings: Exports from China, 2015-17

Destination market	Calendar year		
	2015	2016	2017
	Unit value (dollars per short ton)		
Exports from China to the United States	2,882	2,792	3,012
Exports from China to other major destination markets.--			
Malaysia	1,203	1,142	2,330
Canada	3,024	2,901	3,140
Netherlands	2,753	2,100	2,281
Japan	5,137	5,034	5,104
Russia	3,358	3,103	2,509
South Korea	3,182	2,783	2,722
India	4,058	3,083	2,509
Iran	3,835	4,032	2,599
All other destination markets	3,471	3,162	3,248
Total exports from China	3,216	2,964	3,096
	Share of quantity (percent)		
Exports from China to the United States	30.8	26.9	30.2
Exports from China to other major destination markets.--			
Malaysia	4.3	5.5	4.5
Canada	3.0	2.4	3.2
Netherlands	1.9	3.2	3.1
Japan	3.1	2.9	3.1
Russia	2.8	2.9	2.5
South Korea	3.1	2.6	2.5
India	1.3	1.4	2.3
Iran	1.2	1.2	2.3
All other destination markets	48.4	51.0	46.2
Total exports from China	100.0	100.0	100.0

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

Source: Official exports statistics under HS subheading 7307.99 as reported by China Customs in the IHS/GTA database, accessed June 28, 2018.

THE INDUSTRY IN ITALY

The Commission issued foreign producers' or exporters' questionnaires to 28 firms believed to produce and/or export FSF from Italy.[5] Usable responses to the Commission's

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

questionnaire were received from four firms: Mega SpA, Cast SpA, Riganti SpA, and IML SpA.[6] These firms' exports to the United States were equivalent to approximately *** percent of U.S. imports of FSF from Italy in 2017. According to estimates requested of the responding Italian producers, the production of FSF in Italy reported in questionnaires accounts for the vast majority of production of FSF in Italy. Table VII-6 presents information on the FSF operations of the responding producers and exporters in Italy.

Table VII-6
FSF: Summary data for producers in Italy, 2017

* * * * * * *

Changes in operations

Based on the U.S. importers' questionnaires responses no Italian firm reported any operational or organizational changes since January 1, 2015. However, *** did note that it reduced the number of operating hours at its facility from *** hours per day in 2015 to *** the beginning in 2016.

Operations on FSF

Table VII-7 presents information on the FSF operations of the responding producers and exporters in Italy. Reported capacity decreased by *** percent from 2015 to 2016 (reflecting ***'s reduced operating hours), remained constant from 2016 to 2017, and is projected remain unchanged in 2018, but will increase by *** percent from 2018 to 2019. Reported production decreased by *** percent from 2015 to 2016, but increased by *** percent from 2016 to 2017, and is projected to increase consecutively in 2018 and 2019. Capacity utilization ranged from *** to *** from 2015 to 2017; and it is projected to increase in 2018 and 2019. Reported exports to the United States decreased by *** percent from 2015 to 2016, increased by *** percent from 2016 to 2017. Exports to the United States are projected to decrease by *** percent from 2017 to 2018 before increasing by *** percent from 2018 to 2019. Exports to non-U.S. markets increased between 2015 and 2016, continued to increase in 2017; this trend is projected to continue in 2018 and 2019. Finally, inventories have declined in each successive year, a trend that is projected to extend into 2018 and 2019.

Table VII-7
Data for producers in Italy, 2015-17, January to March 2017, and January to March 2018 and projection calendar years 2018 and 2019

* * * * * * *

Alternative products

As shown in table VII-8, responding Italian firms produced other products on the same equipment and machinery used to produce FSF, namely: ***.

Table VII-8
FSF: Italian producers' overall capacity and production on the same equipment as subject production, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Exports

Table VII-9 presents the leading export markets for iron and/or steel fittings from Italy according to GTA. During 2017, the top export markets for iron and/or steel fittings from Italy were Germany (accounted for 21.1 percent), United States (accounted for 14.8 percent) and France (accounted for 5.8 percent), respectively.

Table VII-9
Iron and/or steel fittings: Exports from Italy, 2015-17

Destination market	Calendar year		
	2015	2016	2017
	Quantity (short tons)		
Exports from Italy to the United States	6,860	7,444	9,166
Exports from Italy to other major destination markets.--			
Germany	10,853	11,283	13,067
France	3,582	4,023	3,595
United Kingdom	6,300	3,253	3,174
Poland	2,492	2,349	3,159
Czech Republic	2,036	1,833	1,777
Austria	1,830	1,543	1,675
Sweden	1,218	1,162	1,496
United Arab Emirates	1,228	1,274	1,367
All other destination markets	22,874	23,952	23,353
Total exports from Italy	59,272	58,115	61,827
	Value (1,000 dollars)		
Exports from Italy to the United States	28,691	37,301	41,475
Exports from Italy to other major destination markets.--			
Germany	57,233	53,303	65,011
France	32,605	36,155	37,415
United Kingdom	33,910	30,668	29,925
Poland	11,741	11,192	16,528
Czech Republic	5,506	5,087	6,229
Austria	7,413	6,615	8,950
Sweden	11,415	10,458	14,519
United Arab Emirates	11,096	7,966	8,247
All other destination markets	196,077	188,466	181,372
Total exports from Italy	395,689	387,210	409,671

Table continued on the next page.

Table VII-9--Continued
Iron and/or steel fittings: Exports from Italy, 2015-17

Destination market	Calendar year		
	2015	2016	2017
	Unit value (dollars per short ton)		
Exports from Italy to the United States	4,183	5,011	4,525
Exports from Italy to other major destination markets.--			
Germany	5,273	4,724	4,975
France	9,103	8,987	10,408
United Kingdom	5,383	9,429	9,429
Poland	4,711	4,765	5,232
Czech Republic	2,705	2,775	3,506
Austria	4,051	4,288	5,344
Sweden	9,375	9,003	9,703
United Arab Emirates	9,035	6,253	6,032
All other destination markets	8,572	7,869	7,767
Total exports from Italy	6,676	6,663	6,626
	Share of quantity (percent)		
Exports from Italy to the United States	11.6	12.8	14.8
Exports from Italy to other major destination markets.--			
Germany	18.3	19.4	21.1
France	6.0	6.9	5.8
United Kingdom	10.6	5.6	5.1
Poland	4.2	4.0	5.1
Czech Republic	3.4	3.2	2.9
Austria	3.1	2.7	2.7
Sweden	2.1	2.0	2.4
United Arab Emirates	2.1	2.2	2.2
All other destination markets	38.6	41.2	37.8
Total exports from Italy	100.0	100.0	100.0

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

Source: Official exports statistics under HS subheading 7307.99 as reported by Italy Customs in the IHS/GTA database, accessed July 2, 2018.

THE INDUSTRY IN TAIWAN

The Commission issued foreign producers' or exporters' questionnaires to 13 firms believed to produce and/or export FSF from Taiwan.[7] Manufacturer Both Well and re-seller Yih

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

Kuang Metal provided responses during the investigations' preliminary phase but not in the final phase.[8] A second re-seller, Kopex, provided data in the final phase of these investigations. These firms' exports to the United States were equivalent to virtually all reported U.S. imports of FSF from Taiwan in 2017. According to estimates requested of the responding producers in Taiwan, the production of FSF in Taiwan reported in questionnaires accounts for all overall production of FSF in Taiwan. Tables VII-10 and VII-11 presents information on the FSF operations of the responding producers and exporters in Taiwan.

Table VII-10
FSF: Summary data on producers in Taiwan, 2017

* * * * * * *

Table VII-11
FSF: Summary data on re-sellers in Taiwan, 2017

* * * * * * *

Changes in operations

No producers in Taiwan reported operational and organizational changes since January 1, 2015.

Operations on FSF

Table VII-12 presents information on the FSF operations of the responding producers and exporters in Taiwan. Reported capacity decreased by *** percent from 2015 to 2016, and continued to decline from 2016 to 2017 by ***. Allocated capacity ***. However, as shown in table VII-13, overall capacity exceeded production, and capacity utilization declined from *** percent in 2015 to *** percent in 2017. Reported capacity is projected to decline in 2018, and stay at that level in 2019. Reported production declined by *** percent from 2015 to 2016, *** percent from 2016 to 2017, and is projected to decline by *** in 2018, while maintaining 2018 levels in 2019. Capacity utilization decreased by *** percentage points from 2015 to 2016 and increased by *** percentage point from 2017 to 2018 and is projected to remain stable by in 2018 and 2019. Reported exports to the United States declined consecutively from 2015 to 2017 and is projected to decline in 2018 and 2019. Exports to non-U.S. markets decreased between 2015 and 2017 and are projected to be stable, albeit at lower levels, during 2018-19. Finally, inventories declined from 2015 to 2016, declined further in 2017 and are projected to decline in 2018 and remain at that level in 2019.

[8] Staff attempted to obtain responses, but the firms did not respond. Staff utilized these companies' responses from 2014-16 and projections for 2017 and 2018 as being unchanged from the companies' own estimates.

Table VII-12
FSF: Data for producers and re-sellers in Taiwan, 2015-17, January to March 2017, and January to March 2018 and projection calendar years 2018 and 2019

* * * * * * *

Alternative products

As shown in table VII-13, responding firms in Taiwan produced other products on the same equipment and machinery used to produce FSF, namely ***.

Table VII-13
FSF: Taiwan producers' overall capacity and production on the same equipment as subject production, 2015-17, January to March 2017, and January to March 2018

* * * * * * *

Exports

Table VII-14 presents the leading export markets for iron and/or steel fitting (including FSF) from Taiwan according to GTA. During 2017, the United States was the top export market for iron and/or steel fitting (including FSF) from Taiwan, accounting for 46.1 percent, followed by the Canada, accounting for 9.2 percent.

Table VII-14:
Iron and/or Steel Fittings: Exports from Taiwan, 2015-17

Destination market	Calendar year		
	2015	2016	2017
	Quantity (short tons)		
Exports from Taiwan to the United States	7,693	5,019	7,400
Exports from Taiwan to other major destination markets.-- Canada	1,060	514	1,486
China	628	1,058	1,166
Saudi Arabia	1,943	694	616
United Arab Emirates	1,168	629	573
Japan	553	559	475
Germany	536	568	432
Vietnam	493	678	432
United Kingdom	281	449	416
All other destination markets	4,178	3,914	3,071
Total exports from Taiwan	18,534	14,082	16,067

Table continued on the next page.

Table VII-14--Continued
Iron and/or steel fittings: Exports from Taiwan, 2015-17

Destination market	Calendar year		
	2015	2016	2017
	Value (1,000 dollars)		
Exports from Taiwan to the United States	30,757	21,319	28,946
Exports from Taiwan to other major destination markets.--			
Canada	3,715	1,788	3,993
China	6,538	11,181	15,688
Saudi Arabia	6,765	2,508	2,108
United Arab Emirates	4,783	2,650	2,339
Japan	4,241	4,491	2,787
Germany	2,139	2,224	2,139
Vietnam	2,218	2,169	1,823
United Kingdom	1,627	2,241	2,300
All other destination markets	18,424	16,258	14,272
Total exports from Taiwan	81,207	66,828	76,397
	Unit value (dollars per short ton)		
Exports from Taiwan to the United States	3,998	4,248	3,912
Exports from Taiwan to other major destination markets.--			
Canada	3,504	3,482	2,688
China	10,406	10,565	13,452
Saudi Arabia	3,481	3,612	3,421
United Arab Emirates	4,093	4,210	4,081
Japan	7,663	8,035	5,867
Germany	3,993	3,918	4,951
Vietnam	4,502	3,199	4,220
United Kingdom	5,788	4,995	5,534
All other destination markets	4,410	4,153	4,647
Total exports from Taiwan	4,381	4,746	4,755

Table continued on the next page.

Table VII-14--Continued
Iron and/or steel fittings: Exports from Taiwan, 2015-17

Destination market	Calendar year		
	2015	2016	2017
	Share of quantity (percent)		
Exports from Taiwan to the United States	41.5	35.6	46.1
Exports from Taiwan to other major destination markets.-- Canada	5.7	3.6	9.2
China	3.4	7.5	7.3
Saudi Arabia	10.5	4.9	3.8
United Arab Emirates	6.3	4.5	3.6
Japan	3.0	4.0	3.0
Germany	2.9	4.0	2.7
Vietnam	2.7	4.8	2.7
United Kingdom	1.5	3.2	2.6
All other destination markets	22.5	27.8	19.1
Total export from Taiwan	100.0	100.0	100.0

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

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

SUBJECT COUNTRIES COMBINED

Table VII-15 presents summary data on FSF operations of the reporting subject producers in the subject countries.

Table VII-15
FSF: Data on the industry in subject countries, 2015-17, January to March 2017, and January to March 2018 and projection calendar years 2018 and 2019

Item	Actual experience					Projections	
	Calendar year			January to March		Calendar year	
	2015	2016	2017	2017	2018	2018	2019
	Quantity (short tons)						
Capacity	27,525	22,016	19,300	6,076	5,005	18,560	19,010
Production	24,056	17,035	16,573	5,495	4,414	15,704	16,396
End-of-period inventories	***	***	***	***	***	***	***
Shipments: Home market shipments: Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to: United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	22,937	17,683	16,888	5,650	4,797	16,274	16,916
	Ratios and shares (percent)						
Capacity utilization	87.4	77.4	85.9	90.4	88.2	84.6	86.2
Inventories/production	***	***	***	***	***	***	***
Inventories/total shipments	***	***	***	***	***	***	***
Share of shipments: Home market shipments: Internal consumption/ transfers	***	***	***	***	***	***	***
Commercial home market shipments	***	***	***	***	***	***	***
Total home market shipments	***	***	***	***	***	***	***
Export shipments to: United States	***	***	***	***	***	***	***
All other markets	***	***	***	***	***	***	***
Total exports	***	***	***	***	***	***	***
Total shipments	***	***	***	***	***	***	***

Table continued on the next page.

Table VII-15
FSF: Data on the industry in subject countries, 2015-17, January to March 2017, and January to March 2018 and projection calendar years 2018 and 2019

Item	Actual experience					Projections	
	Calendar year			January to March		Calendar year	
	2015	2016	2017	2017	2018	2018	2019
	Quantity (short tons)						
Resales exported to the United States	***	***	***	***	***	***	***
Total exports to the United States	***	***	***	***	***	***	***
	Ratios and shares (percent)						
Share of total exports to the United States: Exported by producers	***	***	***	***	***	***	***
Exported by resellers	***	***	***	***	***	***	***
Adjusted share of total shipments exported to US	***	***	***	***	***	***	***

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

U.S. INVENTORIES OF IMPORTED MERCHANDISE

Table VII-16 presents data on U.S. importers' reported inventories of FSF.

Table VII-16
FSF: U.S. importers' inventories, 2015-17, January to March 2017, and January to March 2018

Item	Calendar year			January to March	
	2015	2016	2017	2017	2018
	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	***	***	***	***	***

Table continued on the next page.

Table VII-16--Continued
FSF: U.S. importers' inventories, 2015-17, January to March 2017, and January to March 2018

Item	Calendar year			January to March	
	2015	2016	2017	2017	2018
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	4,816	3,812	3,341	3,786	2,212
Ratio to U.S. imports	50.6	60.3	34.2	35.1	40.4
Ratio to U.S. shipments of imports	52.2	51.4	32.8	35.4	23.3
Ratio to total shipments of imports	52.1	51.4	32.8	35.3	23.3
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 Taiwan after June 30, 2017. Data on arranged imports are presented in table VII-17.

Table VII-17
FSF: Arranged imports, July 2017 to June 2018

* * * * * * *

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-18 presents data on global exports of iron and/or steel fittings (including FSF) from major nonsubject sources to all worldwide destinations. Canada, India, Japan, Korea, Mexico, the Philippines, Spain, Thailand, and the United Kingdom recorded exports of FSF to the U.S. market during 2015-17.[9]

[9] Importer questionnaire responses of ***.

Table VII-18
Iron and/or steel fittings: Global exports by exporter, 2015-17

Exporter	Calendar year		
	2015	2016	2017
	Quantity (short tons)		
United States	42,304	31,056	35,885
China	249,617	243,062	266,076
Italy	59,272	58,115	61,827
Taiwan	18,534	14,082	16,067
Subject sources	327,423	315,259	343,970
All other major reporting exporters.-- Germany	44,320	43,080	45,159
Korea	33,623	33,178	40,686
India	20,023	21,181	28,398
Czech Republic	25,861	29,832	23,347
Poland	16,914	18,823	20,022
Singapore	26,934	19,464	15,065
Japan	10,487	10,728	13,545
Mexico	10,231	8,400	11,515
Sweden	11,149	11,573	11,372
Belgium	8,498	9,049	10,325
All other exporters	193,373	214,442	111,460
Total global exports	771,141	766,063	710,749
	Value (1,000 dollars)		
United States	414,722	296,904	346,467
China	802,885	720,373	823,721
Italy	395,689	387,210	409,671
Taiwan	73,669	60,625	69,306
Subject sources	1,272,243	1,168,209	1,302,698
All other major reporting exporters.-- Germany	511,729	495,026	526,794
Korea	234,130	212,563	231,844
India	59,110	61,003	89,153
Czech Republic	77,626	82,049	87,601
Poland	115,418	115,772	127,874
Singapore	131,246	96,070	71,957
Japan	161,419	165,406	180,308
Mexico	45,864	39,879	73,812
Sweden	58,539	62,321	63,350
Belgium	60,175	68,439	74,244
All other exporters	1,121,918	1,009,440	906,046
Total global exports	4,264,138	3,873,081	4,082,149

Table continued on the next page.

Table VII-18--Continued
Iron and/or steel fittings: Global exports by exporter, 2015-17

Exporter	Calendar year		
	2015	2016	2017
	Unit value (dollars per short ton)		
United States	9,803	9,560	9,655
China	3,216	2,964	3,096
Italy	6,676	6,663	6,626
Taiwan	3,975	4,305	4,314
Subject sources	3,886	3,706	3,787
All other major reporting exporters.-- Germany	11,546	11,491	11,665
Korea	6,963	6,407	5,698
India	2,952	2,880	3,139
Czech Republic	3,002	2,750	3,752
Poland	6,824	6,150	6,387
Singapore	4,873	4,936	4,776
Japan	15,393	15,419	13,312
Mexico	4,483	4,748	6,410
Sweden	5,251	5,385	5,571
Belgium	7,081	7,563	7,191
All other exporters	5,802	4,707	8,129
Total global exports	5,530	5,056	5,743
	Share of quantity (percent)		
United States	5.5	4.1	5.0
China	32.4	31.7	37.4
Italy	7.7	7.6	8.7
Taiwan	2.4	4.7	2.3
Subject sources	42.5	41.2	48.4
All other major reporting exporters.-- Germany	5.7	5.6	6.4
Korea	4.4	4.3	5.7
India	2.6	2.8	4.0
Czech Republic	3.4	3.9	3.3
Poland	2.2	2.5	2.8
Singapore	3.5	2.5	2.1
Japan	1.4	1.4	1.9
Mexico	1.3	1.1	1.6
Sweden	1.4	1.5	1.6
Belgium	1.1	1.2	1.5
All other exporters	25.1	28.0	15.7
Total global exports	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 7307.99 as reported by various national statistical authorities in the IHS/GTA database, accessed July 24, 2018.

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
83 FR 4899, February 2, 2018	*Forged Steel Fittings From the People's Republic of China, Italy, and Taiwan: Postponement of Preliminary Determinations in the Less-Than-Fair-Value Investigations*	https://www.gpo.gov/fdsys/pkg/FR-2018-02-02/pdf/2018-02103.pdf
83 FR 11170 March 14, 2018	*Forged Steel Fittings From the People's Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination*	https://www.gpo.gov/fdsys/pkg/FR-2018-03-14/pdf/2018-05154.pdf
83 FR 22948 May 17, 2018	*Forged Steel Fittings From the People's Republic of China: Affirmative Preliminary Determination of Sales at Less Than Fair Value, Postponement of Final Determination and Extension of Provisional Measures*	https://www.gpo.gov/fdsys/pkg/FR-2018-05-17/pdf/2018-10547.pdf
83 FR 22954 May 17, 2018	*Forged Steel Fittings From Italy: Preliminary Affirmative Determination of Sales at Less Than Fair Value, Postponement of Final Determination and Extension of Provisional Measures*	https://www.gpo.gov/fdsys/pkg/FR-2018-05-17/pdf/2018-10548.pdf
83 FR 22957 May 17, 2018	*Forged Steel Fittings From Taiwan: Affirmative Preliminary Determination of Sales at Less Than Fair Value*	https://www.gpo.gov/fdsys/pkg/FR-2018-05-17/pdf/2018-10553.pdf

Citation	Title	Link
83 FR 25715 June 4, 2018	*Forged Steel Fittings From China, Italy, and Taiwan; Scheduling of the Final Phase of Countervailing Duty and Anti-Dumping Duty Investigations*	https://www.gpo.gov/fdsys/pkg/FR-2018-06-04/pdf/2018-11915.pdf
83 FR 36519 July 30, 2018	*Forged Steel Fittings From Taiwan: Final Determination of Sales at Less Than Fair Value*	https://www.gpo.gov/fdsys/pkg/FR-2018-07-30/pdf/2018-16194.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

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

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

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

Date and Time: August 2, 2018 - 9:30 a.m.

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

OPENING REMARKS:

Petitioners (**Christopher T. Cloutier**, Schagrin Associates)
Respondents (**John M. Gurley**, Arent Fox LLP)

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 and CEO, Bonney Forge Corporation

Chuck Almer, Vice President of Operations, Bonney Forge Corporation

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

Heather McClure, Vice President, Corporate Controller, and Assistant Treasurer, Bonney Forge Corporation

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

Susan Leone, Executive Vice President of WFI, a subsidiary of Bonney Forge Corporation

Roxanne Brown, Legislative Director, USW

Christopher T. Cloutier)
) – OF COUNSEL
Elizabeth J. Drake)

In Opposition to the Imposition of
Antidumping and Countervailing Duty Orders:

Arent Fox LLP
Washington, DC
on behalf of

Industria Meccanica Ligure S.p.A. ("I.M.L.")
M.E.G.A. S.p.A. ("M.E.G.A.")

Ronnie Weinstein, President, Itex Piping Products LLC

Mauro Angeretti, Vice President, M.E.G.A.

Andrew Szamosszegi, Principal, Capital Trade, Inc.

John M. Gurley)
) – OF COUNSEL
Nancy A. Noonan)

REBUTTAL/CLOSING REMARKS:

Petitioners (**Elizabeth J. Drake**, Schagrin Associates)
Respondents (**John M. Gurley**, Arent Fox LLP)

-END-

APPENDIX C

SUMMARY DATA

CONTENTS

Combined (Integrated & Non-Integrated Producers)

Table C-1

FSF: Summary data concerning the U.S. market based on combining integrated U.S. producers and non-integrated U.S. finishers, 2015-17, January to March 2017, and January to March 2018

(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 March		Calendar year			Jan-Mar
	2015	2016	2017	2017	2018	2015-17	2015-16	2016-17	2017-18
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):									
Value of domestic origin fittings	***	***	***	***	***	***	***	***	***
Incremental value added to imported fittings	***	***	***	***	***	***	***	***	***
Combined value	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
China	***	***	***	***	***	***	***	***	***
Italy	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. importers' U.S. shipments of imports from.--									
China:									
Quantity	1,939	1,427	2,890	***	***	49.0	(26.4)	102.5	***
Value	5,560	4,458	8,798	***	***	58.2	(19.8)	97.4	***
Unit value	$2,867	$3,124	$3,044	***	***	6.2	8.9	(2.6)	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Italy:									
Quantity	1,739	1,267	1,677	***	***	(3.6)	(27.1)	32.4	***
Value	7,101	5,669	7,563	***	***	6.5	(20.2)	33.4	***
Unit value	$4,083	$4,474	$4,510	***	***	10.4	9.6	0.8	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Taiwan:									
Quantity	5,555	4,723	5,605	***	***	0.9	(15.0)	18.7	***
Value	27,478	23,061	27,720	***	***	0.9	(16.1)	20.2	***
Unit value	$4,947	$4,883	$4,946	***	***	(0.0)	(1.3)	1.3	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subject sources:									
Quantity	9,233	7,417	10,172	2,677	2,376	10.2	(19.7)	37.1	(11.2)
Value	40,139	33,188	44,081	11,175	11,615	9.8	(17.3)	32.8	3.9
Unit value	$4,347	$4,475	$4,334	$4,174	$4,888	(0.3)	2.9	(3.2)	17.1
Ending inventory quantity	4,816	3,812	3,341	3,786	2,212	(30.6)	(20.8)	(12.4)	(41.6)
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 U.S. finishers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***

Table continued on next page.

Table C-1--Continued
FSF: Summary data concerning the U.S. market based on combining integrated U.S. producers and non-integrated U.S. finishers, 2015-17, January to March 2017, and January to March 2018

(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 March		Calendar year			Jan-Mar
	2015	2016	2017	2017	2018	2015-17	2015-16	2016-17	2017-18
Combined U.S. producers' and finishers':									
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value									
Value of domestic origin forgings	***	***	***	***	***	***	***	***	***
Incremental value added to imported forgin	***	***	***	***	***	***	***	***	***
Combined value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***
Hourly wages (dollars per 1000 hours)	***	***	***	***	***	***	***	***	***
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.--The quantity for U.S. producers' U.S. shipments reflects the quantity of merchandise both forged and finished in the United States; The value for U.S. producers' U.S. shipments reflects the value of fittings produced in the United States plus the incremental value added by finishing operations both to domestically produced unfinished fittings and imported unfinished fittings. The average unit values presented for U.S. producers' U.S. shipments excludes the incremental value added by finishing operations conducted on imported fittings In measuring consumption and market share this methodology avoids reclassifying and/or double counting merchandise already reported once as an import.

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

Integrated Producers

Table C-2

FSF: Summary data concerning the U.S. market based on integrated U.S. producers, 2015-17, January to March 2017, and January to March 2018

(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 March		Calendar year			Jan-Mar
	2015	2016	2017	2017	2018	2015-17	2015-16	2016-17	2017-18
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 of imports from.--									
China:									
Quantity	1,939	1,427	2,890	***	***	49.0	(26.4)	102.5	***
Value	5,560	4,458	8,798	***	***	58.2	(19.8)	97.4	***
Unit value	$2,867	$3,124	$3,044	***	***	6.2	8.9	(2.6)	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Italy:									
Quantity	1,739	1,267	1,677	***	***	(3.6)	(27.1)	32.4	***
Value	7,101	5,669	7,563	***	***	6.5	(20.2)	33.4	***
Unit value	$4,083	$4,474	$4,510	***	***	10.4	9.6	0.8	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Taiwan:									
Quantity	5,555	4,723	5,605	***	***	0.9	(15.0)	18.7	***
Value	27,478	23,061	27,720	***	***	0.9	(16.1)	20.2	***
Unit value	$4,947	$4,883	$4,946	***	***	(0.0)	(1.3)	1.3	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subject sources:									
Quantity	9,233	7,417	10,172	2,677	2,376	10.2	(19.7)	37.1	(11.2)
Value	40,139	33,188	44,081	11,175	11,615	9.8	(17.3)	32.8	3.9
Unit value	$4,347	$4,475	$4,334	$4,174	$4,888	(0.3)	2.9	(3.2)	17.1
Ending inventory quantity	4,816	3,812	3,341	3,786	2,212	(30.6)	(20.8)	(12.4)	(41.6)
Nonsubject sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
U.S. producers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***

Table continued on next page.

Table C-2--Continued
FSF: Summary data concerning the U.S. market based on integrated U.S. producers, 2015-17, January to March 2017, and January to March 2018
(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 March		Calendar year			Jan-Mar
	2015	2016	2017	2017	2018	2015-17	2015-16	2016-17	2017-18
U.S. producers':									
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***	***	***	***	***
Productivity (short tons per 1,000 hours)	***	***	***	***	***	***	***	***	***
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:

Note.--Integrated U.S. producers' operations relate to production of forged steel fittings that are both forged in the United States and finished in the United States.

fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.

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

Related Party Exclusion -- Combined

Table C-3

FSF: Summary data concerning the U.S. market based on combining integrated U.S. producers and non-integrated U.S. finishers but then excluding one U.S. finisher Anvil, 2015-17, January to March 2017, and January to March 2018

(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 March		Calendar year			Jan-Mar
	2015	2016	2017	2017	2018	2015-17	2015-16	2016-17	2017-18
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1):									
Included U.S. producers	***	***	***	***	***	***	***	***	***
Excluded U.S. producers	***	***	***	***	***	***	***	***	***
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 U.S. producers	***	***	***	***	***	***	***	***	***
Excluded U.S. producers	***	***	***	***	***	***	***	***	***
All U.S. producers	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
China	***	***	***	***	***	***	***	***	***
Italy	***	***	***	***	***	***	***	***	***
Taiwan	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. importers' U.S. shipments of imports from.--									
China:									
Quantity	1,939	1,427	2,890	***	***	49.0	(26.4)	102.5	***
Value	5,560	4,458	8,798	***	***	58.2	(19.8)	97.4	***
Unit value	$2,867	$3,124	$3,044	***	***	6.2	8.9	(2.6)	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Italy:									
Quantity	1,739	1,267	1,677	***	***	(3.6)	(27.1)	32.4	***
Value	7,101	5,669	7,563	***	***	6.5	(20.2)	33.4	***
Unit value	$4,083	$4,474	$4,510	***	***	10.4	9.6	0.8	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Taiwan:									
Quantity	5,555	4,723	5,605	***	***	0.9	(15.0)	18.7	***
Value	27,478	23,061	27,720	***	***	0.9	(16.1)	20.2	***
Unit value	$4,947	$4,883	$4,946	***	***	(0.0)	(1.3)	1.3	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subject sources:									
Quantity	9,233	7,417	10,172	2,677	2,376	10.2	(19.7)	37.1	(11.2)
Value	40,139	33,188	44,081	11,175	11,615	9.8	(17.3)	32.8	3.9
Unit value	$4,347	$4,475	$4,334	$4,174	$4,888	(0.3)	2.9	(3.2)	17.1
Ending inventory quantity	4,816	3,812	3,341	3,786	2,212	(30.6)	(20.8)	(12.4)	(41.6)
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 U.S. finishers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***

Table continued on next page.

Table C-3--Continued
FSF: Summary data concerning the U.S. market based on combining integrated U.S. producers and non-integrated U.S. finishers but then excluding one U.S. finisher Anvil, 2015-17, January to March 2017, and January to March 2018

(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 March		Calendar year			Jan-Mar
	2015	2016	2017	2017	2018	2015-17	2015-16	2016-17	2017-18
Combined U.S. producers' and finishers, but excluding related party Anvil:									
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***
Hourly wages (dollars per hour)	***	***	***	***	***	***	***	***	***
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.--The quantity for U.S. producers' U.S. shipments reflects the quantity of merchandise both forged and finished in the United States; The value for U.S. producers' U.S. shipments at least conceptually, reflects the value of fittings produced in the United States plus the incremental value added by finishing operations both to domestically produced unfinished fittings and imported unfinished fittings, consistent with table C-1. However, de facto, as this table shows data excluding the related party Anvil and this company was the only responding entity to have reported finishing only operations, the data for U.S. producers excluding this company otherwise matches the data for integrated producers shown in table C-2. The overall U.S. consumption value, however, is consistent with the expanded valuation of the market as reported in table C-1, inclusive of the additional domestic value Anvil adds to imported fittings.

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

APPENDIX D

PRICE DATA AND COMPARISONS FOR ALL U.S. PRODUCERS (INTEGRATED AND NON-INTEGRATED)

The tables in this appendix present price data and comparisons for the three integrated producers and finisher Anvil. Anvil *** effect on these data. The inclusion of Anvil ***. For product ***. For product ***.

Table D-1
FSF: Weighted-average f.o.b. prices and quantities of domestic (combined integrated and non-integrated) and imported product 1, and margins of underselling/(overselling), by quarter, January 2015 through March 2018

* * * * * * *

Table D-2
FSF: Weighted-average f.o.b. prices and quantities of domestic (combined integrated and non-integrated) and imported product 2, and margins of underselling/(overselling), by quarter, January 2015 through March 2018

* * * * * * *

Table D-3
FSF: Weighted-average f.o.b. prices and quantities of domestic (combined integrated and non-integrated) and imported product 3, and margins of underselling/(overselling), by quarter, January 2015 through March 2018

* * * * * * *

Table D-4
FSF: Weighted-average f.o.b. prices and quantities of domestic (combined integrated and non-integrated) and imported product 4, and margins of underselling/(overselling), by quarter, January 2015 through March 2018

* * * * * * *

Table D-5
FSF: Number of quarters containing observations low price, high price, and change in price over period, by product and source, January 2015 through March 2018

* * * * * * *

Table D-6
FSF: Instances of underselling/overselling and the range and average of margins for combined integrated and non-integrated producers, by product, by year, and by country, January 2015 through March 2018

Item	Underselling -- Combined				
	Number of quarters	Quantity (short tons)	Average margin (percent)	Margin Range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, underselling, by product	119	***	***	***	***
2015	37	***	***	***	***
2016	33	***	***	***	***
2017	42	***	***	***	***
2018 Q1	7	***	***	***	***
Total, underselling, by year	119	***	***	***	***
China	28	***	***	***	***
Italy	40	***	***	***	***
Taiwan	51	***	***	***	***
Total, underselling, by country	119	***	***	***	***

Item	(Overselling) -- Combined				
	Number of quarters	Quantity (short tons)	Average margin (percent)	Margin Range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total, overselling, by product	37	***	***	***	***
2015	11	***	***	***	***
2016	15	***	***	***	***
2017	6	***	***	***	***
2018 Q1	5	***	***	***	***
Total, overselling, by year	37	***	***	***	***
China	24	***	***	***	***
Italy	12	***	***	***	***
Taiwan	1	***	***	***	***
Total, overselling, by country	37	***	***	***	***

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