Iron Construction Castings from Brazil, Canada, and China

Investigation Nos. 701-TA-249 and 731-TA-262-263, and 265 (Fourth Review)

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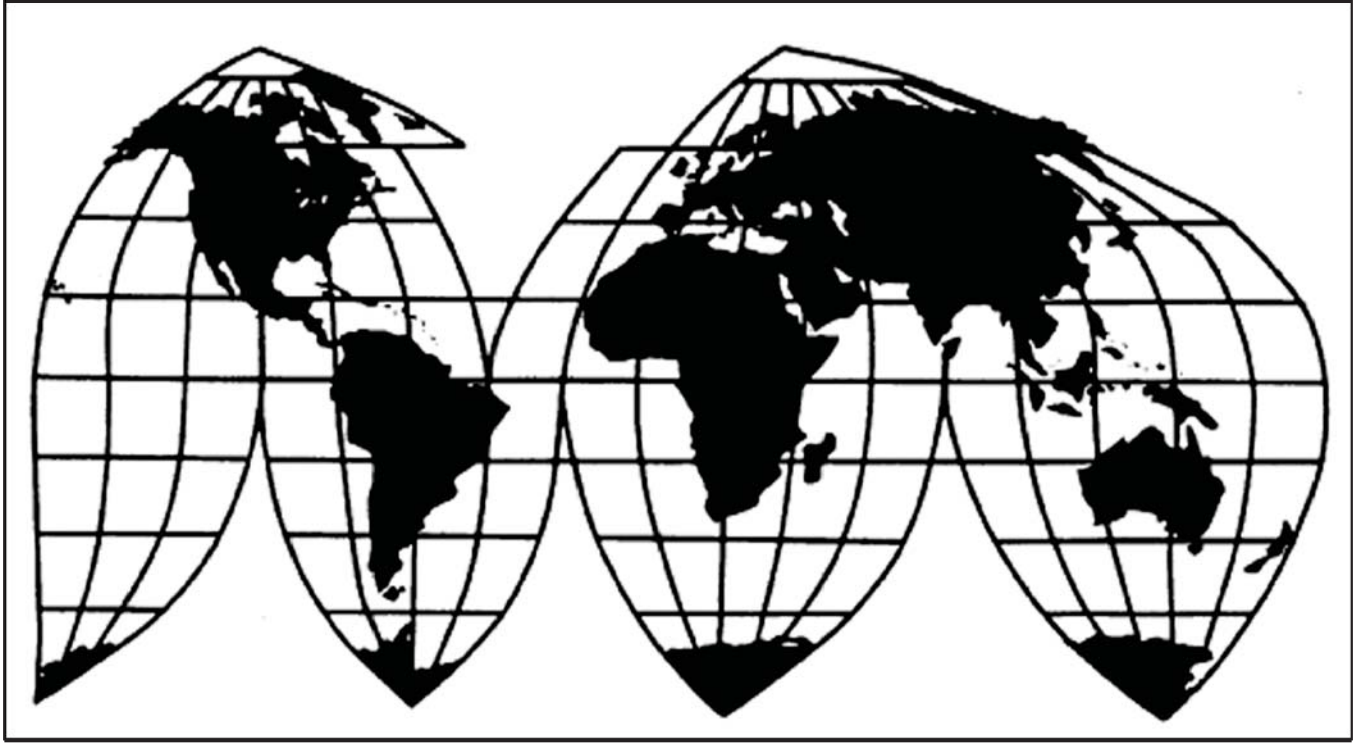
U.S. International Trade Commission



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CONTENTS

Page

Determination **1**
Views of the Commission **3**

Part I: Introduction **I-1**
Background I-3
The original investigation I-3
The first five-year reviews I-4
The second five-year reviews I-4
The third five-year reviews I-4
Related investigations I-4
Summary data I-6
Statutory criteria and organization of the report I-11
Statutory criteria I-11
Organization of report I-12
Commerce's reviews I-13
Administrative reviews I-13
Changed circumstances reviews I-13
Scope inquiry reviews I-13
Five-year reviews results I-14
The subject merchandise I-16
Commerce’s scope I-16
Tariff treatment I-17
The product I-18
Description and applications I-18
Manufacturing processes I-21
Domestic like product issues I-22
U.S. market participants I-23
U.S. producers I-23
U.S. importers I-25
U.S. purchasers I-28
Apparent U.S. consumption I-28
U.S. market shares I-29

CONTENTS

Page

Part II: Conditions of competition in the U.S. market II-1
U.S. market characteristics II-1
Channels of distribution II-1
Geographic distribution II-1
Supply and demand considerations II-2
U.S. supply II-2
U.S. demand II-8
Substitutability issues II-12
Lead times II-12
Knowledge of country sources II-12
Factors affecting purchasing decisions II-13
Comparisons of domestic products, subject imports, and nonsubject imports II-16
Comparison of U.S.-produced and imported castings II-21
Elasticity estimates II-24
U.S. supply elasticity II-24
U.S. demand elasticity II-25
Substitution elasticity II-25

Part III: Conditions of the U.S. industry III-1
Overview III-1
Changes experienced by the industry III-1
Anticipated changes in operations III-2
U.S. production, capacity, and capacity utilization III-2
Constraints on capacity III-3
U.S. producers' U.S. shipments and exports III-4
U.S. producers' inventories III-5
U.S. producers' imports and purchases III-5
U.S. employment, wages, and productivity III-6
Financial experience of U.S. producers III-8
Background III-8
Operations on heavy castings III-8
Variance analysis III-9
Operations on light castings III-11

CONTENTS

Page

Variance analysis III-11
Capital expenditures and research and development expenses III-13
Assets and return on investment III-14

Part IV: U.S. imports and the foreign industry IV-1
U.S. imports IV-1
Overview IV-1
Imports from subject and nonsubject countries IV-2
U.S. importers' imports subsequent to June 30, 2016 ..... IV-10
U.S. importers' inventories IV-10
Cumulation considerations IV-11
Presence in the market IV-11
Geographical markets IV-16
The industry in Brazil IV-18
Overview IV-18
Operations on heavy castings IV-19
Exports from Brazil IV-20
Operations on light castings IV-23
The industry in Canada IV-23
Overview IV-23
Operations on heavy castings IV-25
Exports from Canada IV-25
The industry in China IV-28
Overview IV-28
Operations on castings IV-29
Antidumping or countervailing duty orders in third country markets IV-32
Global market IV-32
India IV-33
Foreign prices IV-36

Part V: Pricing data V-1
Factors affecting prices V-1
Raw material costs V-1

CONTENTS

Page

Part V: Pricing data .....Continued

Transportation costs to the U.S. market V-2

U.S. inland transportation costs V-2

Pricing practices V-3

Pricing methods V-3

Sales terms and discounts V-4

Price leadership V-4

Price data V-5

Price trends V-7

Price comparisons V-8

Purchasers' perception of relative price trends V-9

Appendixes

A. *Federal Register* notices A-1

B. List of hearing witnesses B-1

C. Summary data C-1

D. Comments by U.S. producers, importers, purchasers, and foreign producers regarding the effects of the orders and the likely effects of revocation D-1

E. Nonsubject sources price data E-1

Note.—Information that would reveal confidential operations of individual concerns may not be published and therefore has been deleted. Such deletions are indicated by asteriks.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Fourth Review)

Iron Construction Castings from Brazil, Canada, and China

DETERMINATION

On the basis of the record[1] developed in the subject five-year reviews, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that revocation of the countervailing duty order on heavy iron construction castings from Brazil, the antidumping duty order on heavy iron construction castings from Canada, and the antidumping duty orders on iron construction castings from Brazil and China would be likely to lead to continuation or recurrence of material injury to industries in the United States within a reasonably foreseeable time.

BACKGROUND

The Commission, pursuant to section 751(c) of the Act (19 U.S.C. 1675(c)), instituted these reviews on October 1, 2015 (80 F.R. 59192) and determined on January 4, 2016 that it would conduct full reviews (81 F.R. 1967, January 14, 2016). Notice of the scheduling of the Commission's reviews and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* on June 23, 2016 (81 F.R. 40921). The hearing was held in Washington, DC, on October 20, 2016, and all persons who requested the opportunity were permitted to appear in person or by counsel.

The Commission made these determinations pursuant to section 751(c) of the Act (19 U.S.C. 1675(c)). It completed and filed its determinations in these reviews on December 21, 2016. The views of the Commission are contained in USITC Publication 4655 (December 2016), entitled *Iron Construction Castings from Brazil, Canada, and China: Investigation Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Fourth Review)*.

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

Views of the Commission

Based on the record in these five-year reviews, we determine under section 751(c) of the Tariff Act of 1930, as amended ("the Tariff Act"), that revocation of the countervailing duty order on heavy iron construction castings ("heavy castings") from Brazil, the antidumping duty orders on heavy castings from Brazil, Canada, and China, and the antidumping duty orders on light iron construction castings ("light castings") from Brazil and China would be likely to lead to continuation or recurrence of material injury to industries in the United States within a reasonably foreseeable time.

I. Background

Original Investigations: In February 1986, the Commission determined that an industry in the United States was materially injured by reason of imports of heavy castings from Canada that were being sold at less than fair value.[1] On March 5, 1986, the Department of Commerce ("Commerce") published an antidumping duty order covering the subject merchandise from Canada.[2] In May 1986, the Commission determined that an industry in the United States was materially injured by reason of imports of heavy castings from Brazil that were being subsidized by the government of Brazil, that an industry in the United States was materially injured by reason of imports of heavy castings from Brazil, India, and China that were being sold at less than fair value, and that an industry in the United States was threatened with material injury by reason of imports of light castings from Brazil, India, and China that were being sold at less than fair value.[3] On May 9, 1986, Commerce published antidumping duty orders covering the subject merchandise from Brazil and China.[4] On May 15, 1986, Commerce published a countervailing duty order covering the subject merchandise from Brazil.[5]

First reviews: In October 1999, in the full first five-year reviews of the orders, the Commission cumulated imports of subject light castings from Brazil and China and determined that revocation of the antidumping duty orders covering those subject imports would be likely to lead to continuation or recurrence of material injury to an industry in the United States

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[1] *Iron Construction Castings from Canada*, Inv. No. 731-TA-263 (Final), USITC Pub. 1811 (Feb. 1986).

[2] 51 Fed. Reg. 7600 (Mar. 5, 1986); 51 Fed. Reg. 34110 (Sept. 25, 1986) (amended). The Commission's determination in *Iron Construction Castings from Canada*, Inv. No. 731-TA-263 (Final), USITC Pub. 1811 (Feb. 1986), and the order on castings from Canada covered both heavy and light castings. The order was subsequently revoked in part by Commerce to exclude light castings. 63 Fed. Reg. 49687 (Sept. 17, 1998); 63 Fed. Reg. 50881 (Sept. 23, 1998) (corrected).

[3] *Iron Construction Castings from Brazil, India and the People's Republic of China*, Inv. Nos. 701-TA-249 and 731-TA-262, 264 and 265 (Final), USITC Pub. 1838 (Apr. 1986) ("*Original Investigations*").

[4] 51 Fed. Reg. 17220 (May 9, 1986). The antidumping duty orders with respect to light and heavy castings from India that were also issued at that time were revoked by Commerce in 1991. 56 Fed. Reg. 4789 (Feb. 6. 1991).

[5] 51 Fed. Reg. 17786 (May 15, 1986).

within a reasonably foreseeable time. The Commission also cumulated imports of subject heavy castings from Brazil, Canada, and China and further determined that revocation of the antidumping duty orders covering heavy castings from Brazil, Canada, and China, and the countervailing duty order covering heavy castings from Brazil, would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[6]

Second reviews: In June 2005, in the expedited second five-year reviews of the orders, the Commission cumulated all subject imports of light castings and determined that revocation of the antidumping duty orders covering light castings from Brazil and China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. The Commission also cumulated all imports of subject heavy castings and further determined that revocation of the antidumping duty orders covering heavy castings from Brazil, Canada, and China, and the countervailing duty order covering heavy castings from Brazil, would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[7]

Third reviews: In October 2010, in the expedited third five-year reviews of the orders, the Commission cumulated all subject imports of light castings and determined that revocation of the antidumping duty orders covering light castings from Brazil and China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. The Commission also cumulated all imports of subject heavy castings and further determined that revocation of the antidumping duty orders covering heavy castings from Brazil, Canada, and China, and the countervailing duty order covering heavy castings from Brazil, would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[8]

The current reviews: On October 1, 2015, the Commission instituted these fourth five-year reviews.[9] The Commission received a joint response to the notice of institution from four U.S. producers of iron construction castings: D&L Foundry; EJ USA, Inc. ("EJ"); Neenah Foundry Company ("Neenah"); and U.S. Foundry and Manufacturing Corp. ("U.S. Foundry") (collectively "Domestic Producers"). The Commission found the response of each of these firms to be

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[6] *Iron Metal Castings from India; Heavy Iron Construction Castings from Brazil; and Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 303-TA-13, 701-TA-249, and 731-TA-262, 263 and 265 (Review), USITC Pub. 3247 (Oct. 1999) ("*First Reviews*"). The Commission also determined in those full first reviews that revocation of the countervailing duty order on iron metal castings from India would not be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time. *Id.* Accordingly, Commerce revoked the countervailing duty order effective January 1, 2000 on iron metal castings from India. 64 Fed. Reg. 61602 (Nov. 12, 1999).

[7] *Certain Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 701-TA-249 and 731-TA-262, 263 and 265 (Second Review), USITC Pub. 3781 (June 2005) ("*Second Reviews*").

[8] *Certain Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 701-TA-249 and 731-TA-262, 263 and 265 (Third Review), USITC Pub. 4191 (Oct. 2010) ("*Third Reviews*").

[9] *Iron Construction Castings From Brazil, Canada, and China; Institution of Five-year Reviews*, 80 Fed. Reg. 59192 (Oct. 1, 2015).

individually adequate. Because these firms accounted for a substantial share of U.S. production of iron construction castings, the Commission determined that the domestic interested party group response to its notice of institution was adequate with respect to all reviews.[10]

With respect to the orders on iron construction castings from Brazil, the Commission received a joint response from Saint-Gobain Canalização Ltda., ("Saint-Gobain"), a Brazilian producer and exporter of subject merchandise; Jim Cox Sales, Inc., ("Jim Cox"); and Famcon Pipe & Supply Inc. ("Famcon"), both U.S. importers of subject merchandise from Brazil. The Commission found the response of each of these firms to be individually adequate. Because these firms produced, exported, or imported substantial quantities of subject merchandise from Brazil, the Commission determined that the respondent interested party group response was adequate. On January 4, 2016, the Commission determined to conduct full reviews of the orders on iron construction castings from Brazil because the group responses from domestic interested parties and respondent interest parties were adequate.[11]

The Commission did not receive a response from any respondent interested party concerning subject imports from Canada or China and therefore determined that the respondent interested party group response with regard to the reviews of iron construction castings from each of these countries was inadequate. The Commission determined to conduct full reviews of the orders on iron construction castings from Canada and China notwithstanding inadequate respondent interested party group responses in order to promote administrative efficiency in light of the Commission's determination to conduct full reviews of the orders on iron construction castings from Brazil.[12]

The Commission received prehearing and posthearing submissions from domestic producers D&L Foundry; EJ; Neenah; and U.S. Foundry. The Commission also received prehearing and posthearing submissions from Saint-Gobain, Jim Cox, and Famcon, as well as ABIFA – Associação Brasileira de Fundição (Brazilian Foundry Association) ("ABIFA"), an industry association including Brazilian producers of subject merchandise (collectively "Brazilian Respondents"). Representatives of D&L Foundry; EJ; Neenah; and U.S. Foundry, as well as of Saint-Gobain and Jim Cox, appeared at the Commission's hearing accompanied by counsel.

U.S. industry data are based on the questionnaire responses of five U.S. producers of heavy castings that are believed to account for all U.S. production of heavy castings in 2015, and five U.S. producers of light castings that are believed to have accounted for all U.S. production of light castings in 2015.[13] U.S. import data and related information are based on Commerce's official import statistics and the questionnaire responses of 17 U.S. importers of heavy castings that are believed to have accounted for *** percent of subject U.S. imports of

[10] *See* Explanation of Commission Determination on Adequacy (EDIS Document No. 571974).

[11] *See* Explanation of Commission Determination on Adequacy (EDIS Document No. 571974).

[12] *See* Explanation of Commission Determination on Adequacy (EDIS Document No. 571974).

[13] Confidential Report ("CR") at I-14, I-30; Public Report ("PR") at I-12, I-24; CR/PR at Tables I-7 and I-8.

heavy castings during 2015,[14] and the questionnaire responses of 13 U.S. importers of light castings that are believed to have accounted for *** percent of subject U.S. imports of light castings during 2015.[15] Foreign industry data and related information are based on the questionnaire responses of one producer of heavy castings in Brazil, and one producer of heavy castings in Canada.[16]

II. Domestic Like Product and Industry

A. Domestic Like Product

In making its determination under section 751(c) of the Tariff Act, the Commission defines the "domestic like product" and the "industry."[17] 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 under this subtitle."[18] The Commission's practice in five-year reviews is to examine the domestic like product definition from the original investigation and consider whether the record indicates any reason to revisit the prior findings.[19]

Commerce has defined the imported merchandise within the scope of the orders under review as follows:

> *Brazil.* The merchandise covered by the order consists of certain iron construction castings from Brazil, limited to manhole covers, rings, and frames, catch

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[14] CR at I-14; PR at I-12. In 2015, these 17 importers are believed to have accounted for *** percent of imports of heavy castings from Brazil, *** percent of imports of heavy castings from Canada, *** percent of imports of heavy castings from China, and *** percent of total U.S. imports of heavy castings from all sources. CR at IV-1 to IV-2; PR at IV-1.

[15] CR at I-14; PR at I-12. In 2015, these 13 importers are believed to have accounted for *** percent of imports of light castings from Brazil, ***percent of imports of light castings from China, and *** percent of total U.S. imports of light castings from all sources. CR at IV-1 to IV-2; PR at IV-1.

[16] CR at I-15; PR at I-13. In addition to the questionnaire response received from one subject Brazilian producer of heavy castings, Brazilian Respondents also submitted data to the Commission compiled by ABIFA, which included capacity, production, and capacity utilization data for certain Brazilian producers of heavy castings and light castings. CR/PR at Tables IV-15, IV-17.

[17] 19 U.S.C. § 1677(4)(A).

[18] 19 U.S.C. § 1677(10); *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); *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996); *Torrington Co. v. United States*, 747 F. Supp. 744, 748-49 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991); *see also* S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

[19] *See*, *e.g.*, *Internal Combustion Industrial Forklift Trucks from Japan*, Inv. No. 731-TA-377 (Second Review), USITC Pub. 3831 at 8-9 (Dec. 2005); *Crawfish Tail Meat from China*, Inv. No. 731-TA-752 (Review), USITC Pub. 3614 at 4 (July 2003); *Steel Concrete Reinforcing Bar from Turkey*, Inv. No. 731-TA-745 (Review), USITC Pub. 3577 at 4 (Feb. 2003).

basin grates and frames, cleanout covers and frames used for drainage or access purposes for public utility, water and sanitary systems, classifiable as heavy castings under Harmonized Tariff Schedule (HTS) item under 7325.10.0010; and to valve, service, and meter boxes which are placed below ground to encase water, gas, or other valves, or water and gas meters, classifiable as light castings under HTS item number 7325.10.0050. The HTS item numbers are provided for convenience and customs purposes only. The written product description remains dispositive.

Canada. The merchandise covered by the order consists of certain iron construction castings from Canada, limited to manhole covers, rings, and frames, catch basin grates and frames, clean-out covers, and frames used for drainage or access purposes for public utility, water and sanitary systems, classifiable as heavy castings under HTS item number 7325.10.0010. The HTS item number is provided for convenience and customs purposes only. The written product description remains dispositive.

PRC. The products covered by the order are certain iron construction castings from the PRC, limited to manhole covers, rings and frames, catch basin grates and frames, cleanout covers and drains used for drainage or access purposes for public utilities, water and sanitary systems; and valve, service, and meter boxes which are placed below ground to encase water, gas, or other valves, or water or gas meters. These articles must be of cast iron, not alloyed, and not malleable. This merchandise is currently classifiable under the HTS item numbers 7325.10.0010 and 7325.10.0050. The HTS item numbers are provided for convenience and customs purposes. The written product description remains dispositive.[20]

Commerce has defined the scope of the countervailing duty order with respect to heavy castings from Brazil as follows:

> The products covered by this investigation are certain heavy iron construction castings, which are defined for purposes of this proceeding as manhole covers, rings and frames; catch basin grates and frames; and cleanout covers and frames. Such castings are used for drainage or access purposes for public utility, water and sanitary systems. These articles must be of cast iron, not alloyed, and not malleable. The merchandise is currently classified under Harmonized Tariff Schedule (HTS) item number 7325.10.00. While the HTSUS subheading is provided for convenience and customs purposes, the written description of the scope of this order is dispositive.[21]

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[20] *Certain Iron Construction Castings From Brazil, Canada, and the People's Republic of China: Final Results of Expedited Fourth Sunset Reviews of the Antidumping Duty Orders*, 81 Fed. Reg. 7083 (Feb. 10, 2016).

[21] *See Heavy Iron Construction Castings From Brazil: Final Results of Expedited Fourth Sunset Review of the Countervailing Duty Order,* 81 Fed. Reg. 6237 (February 5, 2016); Department of Commerce memorandum from Christian Marsh to Ronald K. Lorentzen dated January 29, 2016, titled (Continued…)

Castings are described as either "light" or "heavy" depending on their weight and end use. Iron castings are cast from either gray iron or ductile iron. Heavy castings are used principally for drainage or access purposes by utilities and municipalities in storm drainage, water transportation and water treatment, sanitary systems, natural gas transmission, and highway systems. Manhole sets, consisting of a cover and a frame, and sometimes accessory parts such as rings, constitute the bulk of domestic production of heavy castings. Heavy castings generally range in weight from 250 to 1,000 pounds. Light castings consist primarily of valve, service, and meter boxes. They are used by utilities and municipalities to encase the underground valves and meters of water, gas, or other utilities, and to provide access to this equipment for periodic adjustment or readings. Light castings generally range in weight from 10 to 120 pounds.[22]

1. The Original Investigations

In the original investigations, the Commission defined light and heavy iron construction castings as separate domestic like products, explaining that the characteristics of heavy and light castings differ markedly even though both types are made of iron that is not alloyed and not malleable. The Commission found in the preliminary determinations that heavy iron construction castings are relatively flat, designed for use on street surfaces for drainage and access purposes in water and sewage systems, and generally weigh from 270 to 1,000 pounds, whereas light iron construction castings are tubular, designed for use below the ground to encase water or gas valves and meters in utility systems, and generally weigh under 120 pounds. The Commission emphasized that the foundry methods employed in the production of heavy and light castings are distinctly different, such that domestic producers equip themselves to specialize in one or the other, but generally not both.[23] [24]

(…Continued)
"Issues and Decision Memorandum for the Final Results of the Expedited Fourth Sunset Review of the Countervailing Duty Order on Heavy Iron Construction Castings from Brazil," at 4 (EDIS Document No. 593853).

[22] CR at I-21 to I-22, I-24; PR at I-18 to I-19, I-20.

[23] *Iron Construction Castings from Brazil, Canada, India and the People's Republic of China*, Inv. Nos. 701-TA-249 and 731-TA-262- 265 (Preliminary), USITC Pub. 1720 at 6-7 (Jun. 1985). In the final determinations, the Commission found that the record contained no new information that warranted altering its prior findings. *Original Investigations*, USITC Pub. 1838 at 6 and n.12; *Iron Construction Castings from Canada*, Inv. No. 731-TA-263 (Final), USITC Pub. 1811 at 4 (Feb. 1986).

[24] The Commission also determined in the original investigations that out-of-scope "other" or "specialty" castings, including tree grates, water-tight, and bolt-down castings, were not like heavy or light castings in characteristics and uses, and should not be, therefore, included as part of the domestic like product. It found that those articles also differed from heavy and light castings in materials and configurations, and differed in end uses, as reflected by the differing end-users and channels of distribution. The Commission also observed that additional fabrication, finishing, and assembly are required to achieve characteristics and uses inherent to specialty castings that are not required for the (Continued…)

2. Previous Five-Year Reviews

In the full first five-year reviews, expedited second five-year reviews, and expedited third five-year reviews of the orders on iron construction castings from Brazil, Canada, and China, the Commission again found heavy castings and light castings to be separate like products.[25]

3. The Current Reviews

Domestic Producers state that they support the definition of the domestic like products the Commission adopted in the previous proceedings.[26] No party has expressed disagreement with the like product definition.[27] The record does not indicate that the characteristics or uses of the products have significantly changed since the prior proceedings.[28] Consequently, we again define two separate domestic like products, consisting of heavy castings and light castings.

III. Domestic Industry

Section 771(4)(A) of the Tariff Act defines the relevant industry as the domestic "producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[29] 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.

In the original investigations, the full first five-year reviews, the expedited second five-year reviews, and the expedited third five–year reviews, the Commission defined the domestic industries as all producers of heavy iron construction castings and all producers of light iron construction castings.[30] No party disagrees with these domestic industry definitions.[31]

(…Continued)
production of light or heavy iron construction castings. *Iron Construction Castings from Canada*, USITC Pub. 1811 at 4 and n.9 (Feb. 1986).

[25] *First Reviews*, USITC Pub. 3247 at 6-7; *Second Reviews,* USITC Pub. 3781 at 6; *Third Reviews*, USITC Pub. 4191 at 6.

[26] Domestic Producers' Prehearing Brief at 4-5.

[27] *See* Brazilian Respondents' November 2, 2015 Response to Notice of Institution at 11.

[28] *See generally* CR at I-21 to I-25; PR at I-18 to I-21.

[29] 19 U.S.C. § 1677(4)(A). The definitions in 19 U.S.C. § 1677 are applicable to the entire subtitle containing the antidumping and countervailing duty laws, including 19 U.S.C. §§ 1675 and 1675a. *See* 19 U.S.C. § 1677.

[30] *Original Investigations*, USITC Pub. 1838 at 7-8; *First Reviews*, USITC Pub. 3247 at 7; *Second Reviews*, USITC Pub. 3781 at 6-7; *Third Reviews*, USITC Pub. 4191 at 6-7.

[31] *See* Domestic Producers' Prehearing Brief at 5-6; Brazilian Respondents' November 2, 2015 Response to Notice of Institution at 11.

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.[32] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[33] The Commission did not exclude any producers from either domestic industry as related parties under 19 U.S.C. § 1677(4)(B) in any of the prior proceedings.[34]

In these reviews, domestic light castings producer *** is a related party under 19 U.S.C. § 1677(4)(B)(ii)(II) because its corporate parent, ***, imported subject merchandise of light castings from China, although *** did not itself import any subject merchandise.[35] *** imported *** pounds of subject light castings from China in 2014, but did not otherwise import subject merchandise during the period of review (January 2013 through June 2016).[36]

*** accounted for *** percent of domestic production of light castings in 2015.[37] It produced *** pounds of light castings in 2013, *** pounds in 2014, *** pounds in 2015, *** pounds in January-June ("interim") 2015, and *** pounds in interim 2016.[38] It ***, but ***.[39]

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[32] *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).

[33] 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.

[34] *See First Reviews*, USITC Pub. 3247 at 9; *Second Reviews*, USITC Pub. 3781 at 7 n.22; *Third Reviews*, USITC Pub. 4191 at 7 n.22.

[35] ***. CR/PR at Tables I-8, I-9, III-12 and n.1.

[36] CR/PR at Table III-12.

[37] CR/PR at Table I-8.

[38] CR/PR at Table III-12.

[39] ***. Both *** and *** share a common corporate parent, ***. *See* questionnaire response of ***. However, *** is a producer solely of light castings, and the only subject merchandise produced by *** is heavy castings. As the Commission has previously found, the relationship between *** and *** is not pertinent under the related parties provision given that imports of light castings from Canada (Continued…)

The small amount of imports of subject merchandise by *** compared to the domestic production of light castings by *** indicates that *** primary interest is in domestic production. No party has argued that *** should be excluded from the domestic industry. We accordingly find that appropriate circumstances do not exist to exclude *** from the domestic industry producing light castings.

***, a domestic producer of heavy castings, reported purchasing subject imports of heavy castings from Canada throughout the period of review. The Commission has previously concluded that a purchaser may be treated as a related party if it controls large volumes of subject imports. The Commission has found such control to exist when the domestic producer was responsible for a predominant proportion of an importer's purchases and these purchases were substantial.[40]

*** purchased *** pounds of subject imports of heavy castings from Canada in 2013, *** pounds in 2014, *** pounds in 2015, *** pounds in interim 2015, and *** pounds in interim 2016.[41] The importer of record for *** purchases of subject imports was ***. *** purchases constituted *** percent of *** heavy castings imports from Canada in 2013, *** percent in 2014, *** percent in 2015, *** percent in interim 2015, and *** percent in interim 2016. The record consequently indicates that *** was responsible for a predominant portion of *** imports of heavy castings from Canada. It further indicates that these purchases accounted for a substantial share of total subject imports from Canada: *** percent in 2013, *** percent in 2014, *** percent in 2015, *** percent in interim 2015, and *** percent in interim 2016.[42] Given that *** was responsible for a predominant proportion of *** purchases and that those purchases were a substantial share of subject imports from Canada, we find that *** is a related party.

We next examine whether appropriate circumstances exist to exclude *** from the domestic industry producing heavy castings. *** is the *** domestic producer of heavy castings, accounting for *** percent of domestic production in 2015.[43] It supports continuation of the orders.[44] Its U.S. production was *** pounds in 2013, *** pounds in 2014, *** pounds in 2015, *** pounds in interim 2015, and *** pounds in interim 2016.[45] Its purchases of subject imports as a percentage of its domestic production constituted *** percent in 2013, *** percent in 2014, *** percent in 2015, *** percent in interim 2015, and *** percent in interim 2016.[46] *** explained that a ***.[47] No party has argued that *** should be excluded from the domestic industry.

(…Continued)
are not subject merchandise. *See Second Reviews*, USITC Pub. 3781 at 7 n.22; *Third Reviews*, USITC Pub. 4191 at 7 n.22.

[40] *See Chlorinated Isocyanurates from China and Spain*, Inv. Nos. 731-TA-1082-1083 (Second Review), USITC Pub. 4646 (Nov. 2016).

[41] CR/PR at Table III-11.

[42] CR/PR at Tables III-11, IV-1.

[43] CR/PR at Table I-7.

[44] CR/PR at Table I-7.

[45] CR/PR at Table III-11.

[46] CR/PR at Table III-11.

The available data, including the *** ratio of its purchases of subject merchandise to its domestic production, indicate that *** primary interest is in domestic production and not in purchasing imports of subject merchandise. It supports continuation of the orders, and is responsible for a substantial proportion of domestic production. Accordingly, we find that appropriate circumstances do not exist to exclude *** from the domestic industry producing heavy castings.

We therefore define the two domestic industries to consist of all domestic producers of heavy castings and all domestic producers of light castings.

IV. Cumulation

A. Legal Standard

With respect to five-year reviews, section 752(a) of the Tariff Act provides as follows:

> the Commission may cumulatively assess the volume and effect of imports of the subject merchandise from all countries with respect to which reviews under section 1675(b) or (c) of this title were initiated on the same day, if such imports would be likely to compete with each other and with domestic like products in the United States market. The Commission shall not cumulatively assess the volume and effects of imports of the subject merchandise in a case in which it determines that such imports are likely to have no discernible adverse impact on the domestic industry.[48]

Cumulation therefore is discretionary in five-year reviews, unlike original investigations, which are governed by section 771(7)(G)(i) of the Tariff Act.[49] The Commission may exercise its discretion to cumulate, however, only if the reviews are initiated on the same day, the Commission determines that the subject imports are likely to compete with each other and the domestic like product in the U.S. market, and imports from each such subject country are not likely to have no discernible adverse impact on the domestic industry in the event of revocation. Our focus in five-year reviews is not only on present conditions of competition, but also on likely conditions of competition in the reasonably foreseeable future.

(…Continued)

[47] ***.

[48] 19 U.S.C. § 1675a(a)(7).

[49] 19 U.S.C. § 1677(7)(G)(i); *see also*, *e.g.*, *Nucor Corp. v. United States*, 601 F.3d 1291, 1293 (Fed. Cir. 2010) (Commission may reasonably consider likely differing conditions of competition in deciding whether to cumulate subject imports in five-year reviews); *Allegheny Ludlum Corp. v. United States*, 475 F. Supp. 2d 1370, 1378 (Ct. Int'l Trade 2006) (recognizing the wide latitude the Commission has in selecting the types of factors it considers relevant in deciding whether to exercise discretion to cumulate subject imports in five-year reviews); *Nucor Corp. v. United States*, 569 F. Supp. 2d 1328, 1337-38 (Ct. Int'l Trade 2008).

The statutory threshold for cumulation is satisfied in these reviews, because all reviews were initiated on the same day: October 1, 2015.[50]

B. Arguments of the Parties

Domestic Producers argue that the Commission should exercise its discretion to cumulate subject imports of heavy castings from Brazil, Canada, and China, and subject imports of light castings from Brazil and China. They contend that revocation of the orders on subject merchandise from Brazil, Canada, and China is not likely to have no discernible adverse impact on the domestic industry. They argue that imports from each of the subject countries are likely to compete with each other and the domestic like product in the event of revocation. They further argue that there are no differences in likely conditions of competition that would warrant a decision by the Commission to decline to exercise its discretion to cumulate imports from all subject countries.[51]

Brazilian Respondents argue that the Commission should not cumulate subject imports of heavy castings from Brazil with subject imports of heavy castings from Canada and China. They argue that subject imports of heavy castings from Brazil are likely to have no discernible adverse impact on the domestic industry in the event of revocation, and that there is not likely to be a reasonable overlap of competition between and among subject imports of heavy castings from Brazil, subject imports of heavy castings from Canada and China, and the domestic like product in the event of revocation. Finally, they argue that subject imports of heavy castings from Brazil are likely to compete under different conditions of competition from subject imports of heavy castings from Canada and China in the event of revocation, and that the Commission should therefore not exercise its discretion to cumulate subject imports of heavy castings from Brazil with subject imports of heavy castings from Canada and China.[52]

Brazilian Respondents also argue that the Commission should not cumulate subject imports of light castings from Brazil with subject imports of light castings from China. They argue that subject imports of light castings from Brazil are likely to have no discernible adverse impact on the domestic industry in the event of revocation, and that there is not likely to be a reasonable overlap of competition between and among subject imports of light castings from Brazil, subject imports of light castings from China, and the domestic like product in the event of revocation. Finally, they argue that subject imports of light castings from Brazil are likely to compete under different conditions of competition from subject imports of light castings from China in the event of revocation, and that the Commission should therefore not exercise its discretion to cumulate subject imports of light castings from Brazil with subject imports of light castings from China.[53]

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[50] CR at I-2; PR at I-2.

[51] Domestic Producers' Prehearing Brief at 7-33; Domestic Producers' Posthearing Brief at 4-9.

[52] Brazilian Respondents' Prehearing Brief at 14-31; Brazilian Respondents' Posthearing Brief at 5-8.

[53] Brazilian Respondents' Prehearing Brief at 14-31; Brazilian Respondents' Posthearing Brief at 5-8.

C. Heavy Castings

1. The Original Investigations and Previous Five-Year Reviews

Original Investigations. In the original investigations, the Commission cumulated subject imports of heavy castings from Brazil, Canada, and China for its analysis of material injury by reason of subject imports.[54] The Commission found that heavy castings were essentially fungible because they were made to uniform specifications supplied by municipalities and other end users. It also found that prices of imports of heavy castings from all subject countries and domestic producers' prices were within a very narrow range. It found that there was an overlap among the importers and the domestic producers as to the end users and geographic areas in which the product was directed. Accordingly, the Commission found that imports of heavy castings from all subject countries competed with each other and with the domestic like product.[55]

First Five-Year Reviews. In the full first five-year reviews, the Commission exercised its discretion to cumulate subject imports of heavy castings from Brazil, Canada, and China. The Commission did not make explicit separate "no discernible adverse impact" findings regarding heavy castings from Brazil, Canada, or China.[56] It stated that although the industries in Brazil and China were not exporting heavy castings to the United States in more than small quantities at that time, there was nothing on the record to indicate that the circumstances warranting cumulation in the original investigations would not recur if the orders were revoked. The Commission concluded that subject imports from Brazil, Canada, and China would be likely to compete with each other and with the domestic like product in the U.S. market if the orders were revoked. The Commission did not find that subject imports of heavy castings from any of the subject countries were likely to compete under different conditions of competition in the U.S. market in the event of revocation, and accordingly concluded that it was appropriate to exercise its discretion to cumulate subject imports of heavy castings from Brazil, Canada, and China.[57]

Second and Third Five-Year Reviews. In both the expedited second five-year reviews and third five-year reviews, the Commission noted that no party had asserted that subject imports of heavy castings from any country would likely have no discernible adverse impact and stated

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[54] *Original Investigations*, USITC Pub. 1838 at 12-13.

[55] *Original Investigations*, USITC Pub. 1838 at 12 and n.45; *Iron Construction Castings from Canada*, Inv. No. 731-TA-263 (Final), USITC Pub. 1811 at 8 (Feb. 1986).

[56] The Commission's only "no discernible adverse impact" discussion concerning heavy castings in the first five-year reviews focused on whether revocation of the countervailing duty order on subject imports from India would be likely to have no discernible adverse impact on the domestic industry. Three Commissioners found that subject imports from India would be likely to have no discernible adverse impact, and one Commissioner declined to exercise discretion to cumulate with respect to subject imports from India. *First Reviews*, USITC Pub. 3247 at 12-14, 27-31.

[57] *First Reviews*, USITC Pub. 3247 at 14-15.

that the record did not otherwise suggest this was an issue in the reviews.[58] In both reviews, it found a likely reasonable overlap of competition between subject imports of heavy castings from Brazil, Canada, and China and between those imports and the domestic like product, and did not find that subject imports of heavy castings from any of the subject countries were likely to compete under different conditions of competition in the U.S. market in the event of revocation. Accordingly, the Commission concluded that it was appropriate to exercise its discretion to cumulate subject imports of heavy castings from Brazil, Canada, and China.[59] In the expedited third five-year reviews, the Commission observed that the record contained very little new information about either the subject industries or the characteristics of the subject imports, and that most of the available information was from the original investigations and prior reviews, particularly the full first reviews.[60]

2. Likelihood of No Discernible Adverse Impact

The statute precludes cumulation if the Commission finds that subject imports from a country are likely to have no discernible adverse impact on the domestic industry.[61] Neither the statute nor the Uruguay Round Agreements Act ("URAA") Statement of Administrative Action ("SAA") provides specific guidance on what factors the Commission is to consider in determining that imports "are likely to have no discernible adverse impact" on the domestic industry.[62] With respect to this provision, the Commission generally considers the likely volume of subject imports and the likely impact of those imports on the domestic industry within a reasonably foreseeable time if the orders are revoked. Our analysis for each of the subject countries takes into account, among other things, the nature of the product and the behavior of subject imports in the original investigations.

Brazil. Subject imports of heavy castings from Brazil have remained in the U.S. market since the orders were imposed, but at much lower levels than in the original investigations. During the original period of investigation, the quantity of U.S. shipments of subject imports of heavy castings from Brazil increased from 1.9 million pounds in 1983 to 19.5 million pounds in 1985. In the first reviews, the quantity of U.S. shipments of subject imports from Brazil was 227,000 pounds in 1997 and 73,000 pounds in 1998. In the second reviews, the quantity of subject imports from Brazil ranged between a period low of 391,000 pounds in 2003 and a period high of 1.5 million pounds in 2004. In the third reviews, the quantity of subject imports from Brazil was 685,000 pounds in 2009. In these reviews, the quantity of subject imports of heavy castings from Brazil was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015.[63]

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[58] *Second Reviews,* USITC Pub. 3781 at 8; *Third Reviews,* USITC Pub. 4191 at 8.

[59] *Second Reviews,* USITC Pub. 3781 at 9; *Third Reviews,* USITC Pub. 4191 at 10.

[60] *Third Reviews,* USITC Pub. 4191 at 9.

[61] 19 U.S.C. § 1675a(a)(7).

[62] SAA, H.R. Rep. No. 103-316, vol. I at 887 (1994).

[63] CR/PR at Tables 1-1, IV-1; INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-18; *Third Reviews,* USITC Pub. 4191 at Table I-14. The quantity of subject imports of heavy (Continued…)

In these reviews, a usable questionnaire response was received from one subject Brazilian producer of heavy castings, Saint-Gobain, which according to Brazilian Respondents, accounted for the majority of subject imports of heavy castings from Brazil during the period of review.[64] Reported annual production capacity for Saint-Gobain increased during the period of review from *** pounds in 2013 to *** pounds in 2014, and then declined to *** pounds in 2015.[65] Saint-Gobain's reported capacity utilization increased from *** percent in 2013 to *** percent in 2014, and then declined to *** percent in 2015.[66] While Saint-Gobain accounted for the majority of subject imports of heavy castings from Brazil during the period of review, according to Brazilian Respondents,[67] we observe that Saint-Gobain is not the sole producer of heavy castings in Brazil.[68] Indeed, the data that ABIFA and Saint-Gobain provided to the Commission indicate that subject Brazilian producers of heavy castings have substantial excess capacity. The ABIFA data concern seven Brazilian producers of heavy castings, and indicate that in 2015 the combined heavy castings capacity of these producers (and Saint-Gobain, which submitted data separately to the Commission) was *** pounds, their combined production of heavy castings was *** pounds, and their capacity utilization with respect to heavy castings was *** percent.[69] Thus, the record indicates that the eight Brazilian subject producers for which data are available had over *** pounds of unused capacity in 2015, which refutes Brazilian Respondents' argument that the subject heavy castings industry in Brazil has very limited capacity and no excess capacity.[70] Moreover, the record indicates that there are likely other subject producers of heavy castings in Brazil in addition to those reflected in the ABIFA data which may also have unused capacity.[71]

(…Continued)
castings from Brazil was ***pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-1.

[64] CR at IV-24; PR at IV-19; *see* Brazilian Respondents' Posthearing Brief at Q-17 to Q-18 (response to Chairman Williamson).

[65] CR/PR at Table IV-13. Capacity was *** pounds in interim 2015 and interim 2016. *Id.*

[66] CR/PR at Table IV-13. Capacity utilization was *** percent in interim 2015, and *** percent in interim 2016. *Id.*

[67] CR at IV-24; PR at IV-19; *see* Brazilian Respondents' Posthearing Brief at Q-17 to Q-18 (response to Chairman Williamson).

[68] We note that the ABIFA data provided to the Commission reported that Saint-Gobain had smaller production capacity for heavy castings than all but one of the other seven Brazilian producers included in those data. CR/PR at Table IV-15.

[69] CR/PR at Table IV-15.

[70] Brazilian Respondents' Prehearing Brief at 21-22. We also note that Saint-Gobain has the ability to increase production of heavy castings in its current facilities. Its representative testified that it could produce a maximum of 3,000 metric tons (or 6.6 million pounds) of heavy castings per year by increasing its work force by 40 percent, and making some adaptations to its machinery to allow it to operate at its upper limit capacity. Hearing Transcript ("Hearing Tr.") at 152 (Siqueira); Brazilian Respondents' Posthearing Brief at Q-36 (response to Commissioner Schmidtlein).

[71] Domestic Producers assert that three Brazilian companies (Carmense Commercial Ltda., Fundição Diadema Ltda., and Fuminas Industria e Comercio de Fundidos Ltda.) that are not members of ABIFA are in fact producers of castings according to information on their websites. *See* Domestic (Continued…)

Further, the record indicates that over the period of review Saint-Gobain's export orientation increased, and that its largest export market for heavy castings was the United States. Total exports of heavy castings from Saint-Gobain increased from *** pounds in 2013 to *** pounds in 2014, and then declined to *** pounds in 2015.[72] Total exports as a percentage of its shipments increased from *** percent in 2013 to *** percent in 2014, and then *** to *** percent in 2015.[73] Export shipments of heavy castings from Saint-Gobain to the United States were *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015.[74] Exports of heavy castings to the United States by Saint-Gobain as a percentage of its total shipments were *** percent in 2013, *** percent in 2014, and *** percent in 2014.[75] The largest market for export shipments of heavy castings from Saint-Gobain was the United States in each full year of the period of review, although not in interim 2016.[76]

Official export statistics, which include both heavy and light castings (as well as some out-of-scope merchandise), indicate that total Brazilian exports of castings increased from 3.0 million pounds in 2013 to 4.2 million pounds in 2014, and then to 5.1 million pounds in 2015.[77] The largest export destination for Brazilian castings in each year between 2013 and 2015 was the United States.[78] Thus, the available data indicate that there is some degree of export orientation for the subject heavy castings industry in Brazil, the Brazilian Respondents' contrary argument notwithstanding,[79] that this export orientation increased during the period of review, and that the United States is an important export market for the Brazilian industry. [80]

(…Continued)
Producers' Prehearing Brief at Exh. 5. They further maintain that *** data indicate that three other Brazilian companies that are not members of ABIFA (Fundigusa Com. E. Ind. Ltda., Electro Aço Altona SA, and Wartsila) shipped subject merchandise to the United States during the period of review. *See* Domestic Producers' Posthearing Brief, Exh. 1 at 20-21 (response to Commissioner Schmidtlein) and Exh. 2 (confidential slide 17). Brazilian Respondents dispute these contentions. Brazilian Respondents' Posthearing Brief at Q-17 to Q-19 (response to Chairman Williamson); Brazilian Respondents' Final Comments at 3 n.5.

[72] CR/PR at Table IV-13. Total exports were *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[73] CR/PR at Table IV-13. Total exports as a percentage of shipments were *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[74] CR/PR at Table IV-13. Export shipments of heavy castings to the United States were *** pounds in interim 2015 and *** pounds in interim 2016.

[75] CR/PR at Table IV-13. Exports of heavy castings to the United States as a percentage of total shipments were *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[76] CR/PR at Table IV-13. In interim 2016, Saint-Gobain's export shipments to the European Union exceeded those to the United States. *Id.*

[77] CR/PR at Table IV-16.

[78] CR/PR at Table IV-16. Official export statistics show that Brazilian exports of castings to the United States increased from 2.0 million pounds in 2013 to 2.7 million pounds in 2014, and then declined to 2.0 million pounds in 2015. *Id.*

[79] Brazilian Respondents' Prehearing Brief at 11-13. Brazilian Respondents assert that roughly 90 percent of the sales of Brazilian castings production went to the Brazilian domestic market. *Id.* at 12, 19-22 and Exh. 1 at 6. In their posthearing brief, Brazilian Respondents compared production data (Continued…)

Thus, the record indicates that the subject heavy castings industry in Brazil has substantial capacity and excess capacity; has maintained a presence in the U.S. market since the orders were imposed; and has shown an increasing degree of export orientation during the period of review, with the United States as an important export market. Accordingly, we do not find that subject imports of heavy castings from Brazil would likely have no discernible impact on the domestic industry if the antidumping and countervailing duty orders were revoked.

Canada. During the original period of investigation, the quantity of U.S. shipments of subject imports of heavy castings from Canada increased from 8.6 million pounds in 1983 to 21.0 million pounds in 1985. In the first reviews, the quantity of U.S. shipments of subject imports from Canada was 10.2 million pounds in 1998. In the second reviews, the quantity of subject imports from Canada was 9.6 million pounds in 2003. In the third reviews, the quantity of subject imports from Canada was 6.6 million pounds in 2009. In these reviews, the quantity of subject imports from Canada was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015.[81]

(…Continued)
reported by ABIFA with official Brazilian export statistics, and derived a percentage of Brazilian castings production that was purportedly exported between 2013 and 2015, with the assumption that the remainder was consumed in the home market. Brazilian Respondents' Posthearing Brief at Q-21 to Q-22 (response to Commissioner Schmidtlein). However, it is not clear that the information from these two different data sources can be reliably analyzed in conjunction with each other. The data cited by Brazilian Respondents do not contain information as to actual shipments of Brazilian-produced castings to the home market, or information distinguishing shipments as either home market consumption or inventory retention, and our reported questionnaire data on these issues are limited to those provided by Saint-Gobain. Accordingly, we do not find that Brazilian Respondents' assertions about the percentage of Brazilian castings production that went to the home market are supported by the record.

[80] While we primarily rely on the conditions described above as a basis for our finding of lack of no discernible adverse impact, we observe that the heavy castings industry in Brazil may have the ability to shift production from out-of-scope merchandise to subject heavy castings in the event of revocation. In addition to the production of subject castings, the record indicates that Saint-Gobain and other Brazilian foundries are also engaged in the production of nonsubject iron products largely for the automotive industry. CR at II-10 to II-11; PR at II-6; Hearing Tr. at 151-52 (Siqueira). The record indicates that Saint-Gobain's production of other products on the same machinery used to produce castings accounted for over *** percent of total production on that machinery throughout the period of review. CR/PR at Table IV-14. Given the limited record, it is unclear to what extent subject Brazilian producers could shift production from out-of-scope products to subject heavy castings on the same equipment in the event of revocation, although Saint-Gobain stated that any such shift on its part would require additional equipment and the training of a new labor force, which would take a couple of years to accomplish. Hearing Tr. at 152-53 (Siqueira); Brazilian Respondents' Posthearing Brief at Q-37 (response to Commissioner Schmidtlein). The record does not contain information regarding possible limitations that other Brazilian producers of heavy castings might face.

[81] CR/PR at Tables 1-1, IV-1; INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-18. The quantity of subject imports from Canada was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-1.

In these reviews, a usable questionnaire response was received from one subject Canadian producer of heavy castings, ***.[82] Reported annual production capacity for *** declined during the period of review from *** pounds in 2013 to *** pounds in 2014, and then increased to *** pounds in 2015.[83] Its capacity utilization declined from *** percent in 2013 to *** percent in 2014, and then increased to *** percent in 2015.[84] *** export shipments from *** went to the United States. Total exports of heavy castings (which were equal to export shipments to the United States) from *** declined from *** pounds in 2013 to *** pounds in 2014, and then increased to *** pounds in 2015.[85] Total exports as a percentage of shipments declined from *** percent in 2013 to *** percent in 2014, and then to *** percent in 2015.[86]

According to official export statistics, total Canadian exports of heavy castings and (out-of-scope) light castings combined declined from 12.0 million pounds in 2013 to 10.7 million pounds in 2014, and then increased to 11.3 million pounds in 2015.[87] These data indicate that Canadian exports to the United States of heavy castings and (out-of-scope) light castings combined declined from 10.8 million pounds in 2013 to 9.9 million pounds in 2014, and then increased to 10.7 million pounds in 2015.[88] These data also show that the largest export destination for castings from Canada in 2015 was the United States by a very wide margin, followed by Sweden and the United Kingdom.[89]

Based on the foregoing, we do not find that subject imports of heavy castings from Canada would likely have no discernible adverse impact on the domestic industry if the antidumping duty order were revoked.

China. During the original period of investigation, the quantity of U.S. shipments of subject imports of heavy castings from China increased from 10.8 million pounds in 1983 to 19.5 million pounds in 1985. In the first reviews, the quantity of U.S. shipments of subject imports of heavy castings from China was 1.3 million pounds in 1998. In the second reviews, the quantity of subject imports of heavy castings from China was 2.3 million pounds in 2003. In the third reviews, the quantity of subject imports of heavy castings from China was 1.4 million

[82] CR at IV-34; PR at IV-25.

[83] CR/PR at Table IV-18. Capacity was *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[84] CR/PR at Table IV-18. Capacity utilization was *** percent in interim 2015, and *** percent in interim 2016. *Id.*

[85] CR/PR at Table IV-18. Total exports were *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[86] CR/PR at Table IV-18. Total exports as a percentage of shipments were *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[87] CR/PR at Table IV-20.

[88] CR/PR at Table IV-20.

[89] CR/PR at Table IV-20.

pounds in 2009. In these reviews, the quantity of subject imports of heavy castings from China was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015.[90]

No subject Chinese producer submitted a questionnaire in these reviews.[91] According to official export statistics, which include both heavy and light castings (as well as some out-of-scope merchandise), total Chinese exports of castings increased from 820.8 million pounds in 2013 to 943.8 million pounds in 2014, and then declined to 882.6 million pounds in 2015.[92] Those data show that Chinese exports of castings to the United States increased from 50.0 million pounds in 2013 to 55.8 million pounds in 2014, and then to 59.8 million pounds in 2015.[93] Global Trade Atlas data reflect that China is the world's largest exporter of articles of nonmalleable cast iron, which is a broader category that includes both heavy and light castings.[94]

Based on the foregoing, we do not find that subject imports of heavy castings from China would likely have no discernible adverse impact on the domestic industry if the antidumping duty order were revoked.

3. Likelihood of a Reasonable Overlap of Competition

The Commission generally has considered four factors intended to provide a framework for determining whether subject imports compete with each other and with the domestic like product.[95] Only a "reasonable overlap" of competition is required.[96] In five-year reviews, the

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[90] CR/PR at Tables 1-1, IV-1; INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-18. The quantity of subject imports from China was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-1.

[91] CR at IV-42; PR at IV-29.

[92] CR/PR at Table IV-21.

[93] CR/PR at Table IV-21.

[94] CR at IV-45; PR at IV-32.

[95] The four factors generally considered by the Commission in assessing whether imports compete with each other and with the domestic like product are as follows: (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 geographical markets of 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 subject imports are simultaneously present in the market with one another and the domestic like product. *See, e.g., Wieland Werke, AG v. United States*, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[96] *See Mukand Ltd. v. United States*, 937 F. Supp. 910, 916 (Ct. Int'l Trade 1996); *Wieland Werke,* 718 F. Supp. at 52 ("Completely overlapping markets are not required."); *United States Steel Group v. United States,* 873 F. Supp. 673, 685 (Ct. Int'l Trade 1994), *aff'd*, 96 F.3d 1352 (Fed. Cir. 1996). We note, however, that there have been investigations where the Commission has found an insufficient overlap in competition and has declined to cumulate subject imports. *See, e.g*., *Live Cattle from Canada and Mexico*, Inv. Nos. 701-TA-386 and 731-TA-812-13 (Preliminary), USITC Pub. 3155 at 15 (Feb. 1999), *aff'd sub nom, Ranchers-Cattlemen Action Legal Foundation v. United States*, 74 F. Supp. 2d 1353 (Ct. Int'l (Continued…)

relevant inquiry is whether there likely would be competition even if none currently exists because the subject imports are absent from the U.S. market.[97]

Fungibility. In comparisons of the interchangeability among subject imports of heavy castings from Brazil, subject imports from Canada, and subject imports from China and the domestic like product, all reporting U.S. producers, and a majority of reporting U.S. importers and purchasers found that heavy castings from each of these four sources are either "always" or "frequently" interchangeable.[98]

The record does not support Brazilian Respondents' argument that there is a lack of fungibility with respect to subject imports of heavy castings from Brazil because the heavy castings that Saint-Gobain exports to the U.S. market are specialty products that do not compete with domestically produced product.[99] An importer witness presented by Brazilian Respondents acknowledged that the heavy castings that Saint-Gobain exports to the United States compete directly for sales with domestically produced product, and are generally interchangeable with domestically produced product in terms of end use.[100] Similarly, a number of domestic producers of heavy castings testified that they produce hinged manhole covers and frames, some made from ductile iron, comparable to those that Saint-Gobain currently exports to the United States, and that these products compete with and are interchangeable with the products exported by Saint-Gobain.[101] Moreover, we note that the *** responding purchaser reported that subject imports of heavy castings from Brazil and the domestic like product were comparable in terms of "quality exceeds industry standards" and product range.[102] Thus, the information in the record, including testimony from Brazilian Respondents' witness, indicates that subject imports from Brazil currently are and would likely be generally interchangeable with the domestic like product.

Channels of Distribution. During the period of review, U.S. producers' sales of heavy castings were primarily to distributors. Importers of subject merchandise of heavy castings from Brazil, Canada, and China also sold primarily to distributors, with importers of subject product from Canada and China selling *** percent of subject Imports to distributors from 2012 to 2014.[103]

(…Continued)

Trade 1999); *Static Random Access Memory Semiconductors from the Republic of Korea and Taiwan*, Inv. Nos. 731-TA-761-62 (Final), USITC Pub. 3098 at 13-15 (Apr. 1998).

[97] *See generally*, *Chefline Corp. v. United States*, 219 F. Supp. 2d 1313, 1314 (Ct. Int'l Trade 2002).

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

[99] *See* Brazilian Respondents' Prehearing Brief at 25-28.

[100] Hearing Transcript at 179-80, 191-92 (Cox); 233 (Berer).

[101] Domestic Producers' Posthearing Brief, Exh. 1, at 4-7 (response to Chairman Williamson); Exh. 3 at Paragraphs 4-7 (declaration of Scott A. Hoffman of Neenah); Exh. 4 at Paragraph 3 (declaration of Jason McGowan of D&L Foundry); Exh. 5 at paragraphs 3-6 (declaration of Adam San Solo of U.S. Foundry); Exh. 6 at paragraphs 4-7 (declaration of Tom Teske of EJ); Hearing Tr. at 84 (San Solo); 86 (Hoffman).

[102] CR/PR at Table II-11a.

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

Geographic Overlap. The data with respect to geographic market areas in the United States served by U.S. producers and importers were collected with respected to all castings, and were not broken down between heavy castings and light castings. U.S. producers reported selling castings to all regions in the United States. Importers of subject merchandise from China reported selling to all regions in the United States, while importers of subject merchandise from Brazil and Canada reported selling in all regions except "other."[104]

Simultaneous Presence in Market. Domestically produced heavy castings were present in the U.S. market throughout the period January 2013 through June 2016.[105] Subject imports of heavy castings from Brazil were present in the U.S. market during 27 of 42 months during this period. Subject imports of heavy castings from Canada were present in 39 of 42 months during this period and subject imports of heavy castings from China were present in all 42 months during this period.[106]

Conclusion. The information in the record supports a finding that imports of heavy castings from each subject country are sufficiently fungible to satisfy the "likely reasonable overlap" standard, in light of market participants' assessments of interchangeability, Brazilian Respondents' acknowledgment that the specialty heavy castings that Saint-Gobain exports to the United States compete directly with and are interchangeable with domestically produced heavy castings, as well as the information supplied by domestic producers of comparable specialty products that currently compete with Saint-Gobain's products. The information in the record indicates that, even with the orders in place, there was overlap in channels of distribution and geographic market areas for the domestic like product and subject heavy castings imports from all sources during the period of review, and that the domestic like product and subject imports of heavy castings from each subject country were present in the U.S. market throughout the period of review. In light of the foregoing, we find that there will likely be a reasonable overlap of competition between the domestic like product and imports of heavy castings from all three subject countries and between imports of heavy castings from each subject country, upon revocation.

4. Likely Conditions of Competition

We next consider whether subject imports of heavy castings from Brazil, Canada, and China are likely to compete under different conditions of competition in the U.S. market. In the first, second, and third five-year reviews, the Commission did not find that subject imports of heavy castings from any of the subject countries were likely to compete under different conditions of competition in the U.S. market in the event of revocation.[107] Domestic Producers argue that subject imports of heavy castings from Brazil, Canada, and China would likely

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

[105] CR/PR at Table V-3 to V-4.

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

[107] *First Reviews*, USITC Pub. 3247 at 14-15; *Second Reviews,* USITC Pub. 3781 at 9; *Third Reviews,* USITC Pub. 4191 at 10.

compete under similar conditions of competition in the event of revocation of the orders.[108] Brazilian Respondents argue that subject imports of heavy castings from Brazil would likely compete under substantially different conditions of competition than subject imports of heavy castings from Canada and China in the event of revocation.[109]

There are a number of similarities between the heavy castings industries in Brazil, Canada, and China. The industries in all three subject countries have substantial capacity and/or excess capacity.[110] The industries in all three subject countries have some degree of export orientation.[111] The industries in all three subject countries have shown a continuing interest in the U.S. market since imposition of the orders.[112]

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[108] Domestic Producers' Posthearing Brief at 8-9.

[109] Brazilian Respondents' Prehearing Brief at 17-25; Brazilian Respondents' Posthearing Brief at 6-8.

[110] The data submitted by ABIFA, which as previously discussed do not necessarily include all Brazilian producers of heavy castings, indicate that Brazilian subject producers of heavy castings had over *** pounds of unused capacity in 2015. CR/PR at Table IV-15. The questionnaire data submitted by the sole responding Canadian producer *** indicate that this producer alone had over *** pounds of unused capacity in 2015. CR/PR at Table IV-15. While the Commission has no questionnaire data on the capacity of the subject Chinese industry, the available data indicate that the overall Chinese castings industry is the largest in the world, with 215 Chinese producers identified by Domestic Producers, and is the world's largest exporter of nonmalleable cast iron (including out-of-scope merchandise as well as heavy and light castings). CR at IV-41, IV-45; PR at IV-29, IV-32; CR/PR at Table IV-22. Domestic Producers have presented information indicating that 57 Chinese castings producers have an estimated capacity of 2.9 billion pounds to produce castings (both heavy and light castings). Domestic Producers' Prehearing Brief at 23 and Exh. 11.

[111] Questionnaire data from Brazilian producer Saint-Gobain indicate that its export orientation increased during the period of review, with its total exports as a percentage of its shipments increasing from *** percent in 2013 to *** percent in 2014, and then *** to *** percent in 2015. They were *** percent in interim 2015 and *** percent in interim 2016. CR/PR at Table IV-13. Questionnaire data from the sole responding Canadian producer, ***, indicate that its export orientation declined somewhat during the period of review. *** total exports as a percentage of its shipments declined from *** percent in 2013 to *** percent in 2014, and then to *** percent in 2015. They were *** percent in interim 2015 and *** percent in interim 2016. CR/PR at Table IV-18. As noted, the available data from the Global Trade Atlas indicate that China is the world's largest exporter of nonmalleable cast iron (including out-of-scope merchandise as well as heavy and light castings). CR at IV-45; PR at IV-32; CR/PR at Table IV-22.

[112] As noted, subject imports of heavy castings from all three countries have remained in the U.S. market since imposition of the orders, including during the current period of review, although at much lower levels than in the original investigations. CR/PR at Table IV-1. Questionnaire data from Saint-Gobain indicate that its leading export market was the United States in 2013, 2014, and 2015, although in interim 2016 the European Union was its leading market followed by the United States. CR/PR at Table IV-13. Moreover, official Brazilian export statistics show that the largest export market for Brazilian castings (including heavy and light castings as well as some out-of-scope merchandise) was the United States in 2013, 2014, and 2015. CR/PR at Table IV-16. Similarly, questionnaire data from Canadian producer *** indicate that the United States was *** export market for its shipments of (Continued…)

While Brazilian Respondents assert that there are differences in size and number of producers and exporters between the subject Brazilian industry and the subject Chinese and Canadian industries,[113] there is no indication that any such differences would result in subject imports from the three countries competing under different conditions of completion in the event of revocation. While the subject Brazilian heavy castings industry may be smaller than the subject Chinese industry, and may not have the identical export orientation as the other subject industries, it has shown the same capability and inclination to export heavy castings to the United States as the other subject industries. The available data do not support Brazilian Respondents' assertion that the sales of the subject Brazilian industry are overwhelmingly devoted to the Brazilian market,[114] and instead show that the export orientation of the subject Brazilian heavy castings industry increased over the period of review,[115] and that the United States was a leading export market.[116] Similarly, while Brazilian Respondents assert that there were differences in the level of capacity utilization between the subject Brazilian industry and the subject Canadian and Chinese industries,[117] we have already found, as previously discussed, that the record indicates that all three subject industries have substantial capacity and/or excess capacity.

Brazilian Respondents also assert that the behavior of the subject industry in Brazil under the orders has been different from that of the other subject industries, stating that the Brazilian industry now devotes its production efforts to high-value products (including out-of-scope castings for the automotive sector, as well as the specialty subject products that Saint-Gobain currently exports to the United States), rather than the standardized castings produced

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(…Continued)
heavy castings during the period of review, CR/PR at Table IV-18, while official Canadian export statistics show that the United States was by far the largest export market for Canadian castings (including out-of-scope merchandise including light castings), accounting for between *** percent and *** percent of total Canadian castings exports during the period of review. CR/PR at Table IV-20. Official Chinese export statistics show that the United States was one of the five largest export markets for Chinese castings (including heavy and light castings as well as some out-of-scope merchandise) in 2013, 2014, and 2015. CR/PR at Table IV-21.

[113] Brazilian Respondents' Prehearing Brief at 19-21.

[114] As discussed previously, Brazilian Respondents' assertions that 90 percent of the castings produced in Brazil were consumed in the Brazilian market are not supported by the record. *See* Brazilian Respondents' Prehearing Brief at 12, 19-22 and Exh. 1 at 6; Brazilian Respondents' Posthearing Brief at Q-21 to Q-22 (response to Commissioner Schmidtlein).

[115] As noted, data from the sole responding Brazilian producer, Saint-Gobain, indicate that its export orientation increased during the period of review, with its total exports as a percentage of its shipments increasing from *** percent in 2013 to *** percent in 2014, and then *** to *** percent in 2015. They were *** percent in interim 2015 and *** percent in interim 2016. CR/PR at Table IV-13.

[116] As noted, the largest market for export shipments of heavy castings from Saint-Gobain was the United States in each full year of the period of review (2013, 2014, and 2015), although the European Union was its largest export market in interim 2016. CR/PR at Table IV-13.

[117] Brazilian Respondents' Prehearing Brief at 9-10; Brazilian Respondents' Posthearing Brief at 7.

by subject producers in Canada and China.[118] While this may reflect a single producer's experience under the discipline of the orders, the record does not indicate that subject producers in Brazil would restrict exports to the United States to such specialty products if the orders were revoked. As noted, Saint-Gobain was the only subject Brazilian producer to submit a questionnaire response, but the ABIFA data indicate that there are six subject Brazilian producers with greater capacity to produce heavy castings than Saint-Gobain, and one with comparable capacity.[119] None of these other seven producers submitted a questionnaire response providing information on their production capabilities.[120]

Thus, the record does not indicate that subject imports of heavy castings from Brazil will likely compete under different conditions of competition than subject imports of heavy castings from Canada and China.

5. Conclusion

In sum, we determine that subject imports of heavy castings from all three countries are not likely to have no discernible adverse impact on the domestic industry in the event of revocation and that there would likely be a reasonable overlap of competition between and among the subject imports from each country and the domestic like product. We also determine that subject imports from all three countries would be likely to compete under similar conditions of competition upon revocation of the antidumping and countervailing duty orders. Accordingly, for the reasons discussed above, we exercise our discretion to cumulate subject imports of heavy castings from Brazil, Canada, and China.

D. Light Castings

1. The Original Investigations and Previous Five-Year Reviews

Original Investigations. The Commission did not cumulate subject imports of light castings from Brazil, China, or India in the original investigations; it made separate affirmative determinations of threat of material injury individually for subject imports from Brazil, China, and India.[121]

First Five-Year Reviews. In the first full five-year reviews, the Commission exercised its discretion to cumulate the likely volume and effect of subject imports of light castings from Brazil and China. It stated that it did not find that imports of light castings from Brazil or those from China were likely to have no discernible adverse impact on the domestic industry if the

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[118] Brazilian Respondents' Posthearing Brief at 19-22.

[119] CR/PR at Table IV-15.

[120] CR at IV-23 to IV-24; PR at IV-19. Moreover, Domestic Producers have presented information that there may be additional Brazilian producers of subject heavy castings that are not reflected in the data submitted by ABIFA. *See* Domestic Producers' Prehearing Brief at Exh. 5; Domestic Producers' Posthearing Brief at 20-21 and Exh. 2 (confidential slide 17).

[121] *Original Investigations*, USITC Pub. 1838 at 20-21.

respective orders were revoked, noting the high production capacity in each subject country and the substitutability of light castings made in Brazil, China, and the United States. It stated that while the current levels of imports of light castings from Brazil and China were insignificant or zero, this could reasonably be attributed to the effects of the orders. It found a likely reasonable overlap of competition between the subject imports from Brazil and China and between those imports and the domestic like product, stating that during the original investigations, subject imports of light castings from Brazil and China were simultaneously present in the market and competed with each other and the domestic like product. The Commission found no indication that conditions of competition would be significantly different for subject imports from Brazil and China if the orders were revoked.[122]

Second and Third Five-Year Reviews. In both the expedited second five-year reviews and expedited third five-year reviews, the Commission stated that no party had asserted that subject imports of light castings from any country would likely have no discernible adverse impact and that the record did not otherwise suggest this was an issue in the reviews.[123] In both reviews, it exercised its discretion to cumulate subject imports of light castings from Brazil and China. It further found a likely reasonable overlap of competition between the subject imports from Brazil and China and between those imports and the domestic like product, and also found no indication that conditions of competition would be significantly different for subject imports from Brazil and China if the orders were revoked.[124]

2. Likelihood of No Discernible Adverse Impact

Brazil. During the original period of investigation, the quantity of U.S. shipments of subject imports of light castings from Brazil increased from zero in 1983 to 1.6 million pounds in 1985. In the first reviews, there were no reported U.S. shipments of subject imports from Brazil in 1997 or 1998. In the second reviews, the quantity of subject imports from Brazil was 882,000 pounds in 2003. In the third reviews, the quantity of subject imports from Brazil was 250,000 pounds in 2009. In these reviews, the quantity of subject imports of light castings from Brazil was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015.[125]

In these reviews, the Commission did not receive a usable questionnaire response from any producers of light castings in Brazil.[126] Data provided by ABIFA indicate that in 2015 the capacity of Brazilian light castings producers was *** pounds, their production was *** pounds, and their capacity utilization was *** percent.[127]

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[122] *First Reviews*, USITC Pub. 3247 at 11-12.

[123] *Second Reviews,* USITC Pub. 3781 at 8; *Third Reviews,* USITC Pub. 4191 at 8.

[124] *Second Reviews,* USITC Pub. 3781 at 9-10; *Third Reviews,* USITC Pub. 4191 at 11.

[125] CR/PR at Tables 1-2, IV-3; INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-19. The quantity of subject imports of light castings from Brazil was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-3.

[126] CR at IV-30; PR at IV-23.

[127] CR/PR at Table IV-17.

According to official export statistics, which include both heavy and light castings (as well as some out-of-scope merchandise), total Brazilian exports of castings increased from 3.0 million pounds in 2013 to 4.2 million pounds in 2014, and then to 5.1 million pounds in 2015.[128] Those data show that Brazilian exports of castings to the United States increased from 2.0 million pounds in 2013 to 2.7 million pounds in 2014, and then declined to 2.0 million pounds in 2015.[129] According to those data, the largest export destinations for castings from Brazil in 2015 were the United States, Argentina, and France.[130]

Brazilian Respondents argue that subject imports of light castings from Brazil would likely have no discernible adverse impact on the domestic industry in the event of revocation, in that subject producers in Brazil have neither the capacity nor the incentive to increase shipments to the U.S. market substantially. They assert that Brazilian exports of light castings to the United States and the rest of the world have been at minimal levels for the past 30 years, and exports to the United States would continue to be at minimal levels even if all Brazilian light castings exports were to be diverted to the U.S. market. They state that the number of Brazilian producers of subject merchandise is small and declining, and that only *** Brazilian companies exported light castings to the United States during the period of review.[131] While we observe that subject imports of light castings from Brazil have been minimal, and were *** in 2015, in the absence of questionnaire responses from light castings producers in Brazil and given the limited data provided by ABIFA,[132] there is nothing on the record before the Commission in this review to indicate that there would not likely be an increase in the volume of light castings from Brazil upon revocation.

Based on the foregoing, we do not find that subject imports of light castings from Brazil would likely have no discernible adverse impact on the domestic industry if the antidumping duty order were revoked.

China. During the original period of investigation, the quantity of U.S. shipments of subject imports of light castings from China increased from 927,000 pounds in 1983 to 1.6 million pounds in 1985. In the first reviews, the quantity of U.S. shipments of subject imports from China was *** pounds in 1998. In the second reviews, the quantity of subject imports from China was 2.5 million pounds in 2003. In the third reviews, the quantity of subject imports from China was 544,000 pounds in 2009. In these reviews, the quantity of subject imports from China was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015.[133]

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[128] CR/PR at Table IV-16. .

[129] CR/PR at Table IV-16.

[130] CR/PR at Table IV-16.

[131] Brazilian Respondents' Prehearing Brief at 21-22; Brazilian Respondents' Posthearing Brief at 5-6.

[132] As previously noted, Saint-Gobain, the one subject Brazilian producer to submit a questionnaire response, is a producer of heavy castings, but ***. CR/PR at Table IV-17.

[133] CR/PR at Tables 1-2, IV-3; INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-19. The quantity of subject imports of light castings from China was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-3.

No subject Chinese producer submitted a questionnaire response in these reviews.[134] According to official export statistics, which include both heavy and light castings (as well as some out-of-scope merchandise), total Chinese exports of castings increased from 820.8 million pounds in 2013 to 943.8 million pounds in 2014, and then declined to 882.6 million pounds in 2015.[135] Those data show that Chinese exports of castings to the United States increased from 50.0 million pounds in 2013 to 55.8 million pounds in 2014, and then to 59.8 million pounds in 2015.[136] Global Trade Atlas data reflect that China is the world's largest exporter of articles of nonmalleable cast iron, which is a broader category that includes both heavy and light castings.[137]

Based on the foregoing, we do not find that subject imports of light castings from China would likely have no discernible adverse impact on the domestic industry if the antidumping duty order were revoked.

3. Likelihood of a Reasonable Overlap of Competition

Fungibility. A majority of reporting U.S. producers, importers, and purchasers found that light castings from Brazil and China are either "always" or "frequently" interchangeable with each other and with the domestic like product.[138]

Channels of Distribution. During the period of review, U.S. producers' sales of light castings were primarily to distributors. Importers of subject merchandise of light castings from Brazil also sold primarily to distributors. No importers provided data with respect to distribution channels for sales of imports of light castings from China.[139]

Geographic Overlap. The data with respect to geographic market areas in the United States served by U.S. producers and importers were collected with respected to all castings, and were not broken down between heavy castings and light castings. U.S. producers reported selling castings to all regions in the United States. Importers of subject merchandise from China reported selling to all regions in the United States, while importers of subject merchandise from Brazil reported selling in all regions except "other."[140]

Simultaneous Presence in Market. Domestically produced light castings were present in the U.S. market throughout the period January 2013 through June 2016.[141] Subject imports of light castings from Brazil were present in the U.S. market in six of 42 months during this period

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[134] CR at IV-42; PR at IV-29.

[135] CR/PR at Table IV-21.

[136] CR/PR at Table IV-21.

[137] CR at IV-45; PR at IV-32.

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

[139] CR/PR at Table II-1 and n.1. However, one importer reported that ***. INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at II-2.

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

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

and during each calendar year except 2015, while subject imports of light castings from China were present in all 42 months.[142]

Conclusion. With respect to light castings, the limited information available indicates that the products from domestic and all subject sources were always or frequently interchangeable with each other. The information in the record indicates that there was overlap in channels of distribution among subject imports of light castings from Brazil and the domestic like product in shipments to distributors in the U.S. market. While there is minimal data in the record regarding channels of distribution with respect to subject imports of light castings from China, there is no information in the record to indicate that there has been any change such that subject imports of light castings from China would no longer likely overlap in channels of distribution with the domestic like product and subject imports of light castings from Brazil upon revocation, as the Commission found in the first three reviews. The information available indicates a geographic overlap. The domestic like product and subject imports of light castings from each subject country were present in the U.S. market in each calendar year of the period of review, with the exception that subject imports of light castings from Brazil were not present in the U.S. market during 2015. There is no information in the record to indicate that subject light castings imports from Brazil would not likely be simultaneously present in the U.S. market with the domestic like product and subject imports of light castings from China upon revocation. We consequently find that there will likely be a reasonable overlap of competition between the domestic like product and imports of light castings from Brazil and China and between imports of light castings from both subject countries, upon revocation.

4. Likely Conditions of Competition

We next consider whether subject imports of light castings from Brazil and China are likely to compete under different conditions of competition in the U.S. market.

In the first, second, and third five-year reviews, the Commission did not find that subject imports of light castings from either subject country were likely to compete under different conditions of competition in the U.S. market in the event of revocation.[143] Domestic producers argue that the Commission should not decline to cumulate subject imports of light castings from Brazil and China based on likely conditions of competition.[144]

In the current reviews, the record indicates that light castings manufactured by subject producers in Brazil and China and by producers in the United States are generally interchangeable with each other, and that subject producers in both subject countries have substantial capacity to produce light castings and have some degree of export orientation. The

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

[143] *First Reviews*, USITC Pub. 3247 at 11-12; *Second Reviews,* USITC Pub. 3781 at 9-10; *Third Reviews,* USITC Pub. 4191 at 11.

[144] Domestic Producers' Prehearing Brief at 32-33.

record consequently does not indicate that subject imports of light castings from Brazil and China will likely compete under different conditions of competition upon revocation.

5. Conclusion

In sum, we determine that subject imports of light castings from both Brazil and China are not likely to have no discernible adverse impact on the domestic industry in the event of revocation and that there would likely be a reasonable overlap of competition between and among the subject imports from both countries and the domestic like product. We also determine that subject imports of light castings from Brazil and China would be likely to compete under similar conditions of competition upon revocation of the antidumping duty orders. Accordingly, for the reasons discussed above, we exercise our discretion to cumulate subject imports of light castings from Brazil and China.

V. Revocation of the Antidumping and Countervailing Duty Orders Would Likely Lead to Continuation or Recurrence of Material Injury Within a Reasonably Foreseeable Time

A. Legal Standards

In a five-year review conducted under section 751(c) of the Tariff Act, Commerce will revoke an antidumping or countervailing duty order unless: (1) it makes a determination that dumping or subsidization is likely to continue or recur and (2) the Commission makes a determination that revocation of the antidumping or countervailing duty order "would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time."[145] The SAA states that "under the likelihood standard, the Commission will engage in a counterfactual analysis; it must decide the likely impact in the reasonably foreseeable future of an important change in the status quo – the revocation or termination of a proceeding and the elimination of its restraining effects on volumes and prices of imports."[146] Thus, the likelihood standard is prospective in nature.[147] The U.S. Court of International Trade has found that

[145] 19 U.S.C. § 1675a(a).

[146] SAA at 883-84. The SAA states that "{t}he likelihood of injury standard applies regardless of the nature of the Commission's original determination (material injury, threat of material injury, or material retardation of an industry). Likewise, the standard applies to suspended investigations that were never completed." *Id*. at 883.

[147] While the SAA states that "a separate determination regarding current material injury is not necessary," it indicates that "the Commission may consider relevant factors such as current and likely continued depressed shipment levels and current and likely continued {sic} prices for the domestic like product in the U.S. market in making its determination of the likelihood of continuation or recurrence of material injury if the order is revoked." SAA at 884.

"likely," as used in the five-year review provisions of the Act, means "probable," and the Commission applies that standard in five-year reviews.[148]

The statute states that "the Commission shall consider that the effects of revocation or termination may not be imminent, but may manifest themselves only over a longer period of time."[149] According to the SAA, a "'reasonably foreseeable time' will vary from case-to-case, but normally will exceed the 'imminent' timeframe applicable in a threat of injury analysis in original investigations."[150]

Although the standard in a five-year review is not the same as the standard applied in an original investigation, it contains some of the same fundamental elements. The statute provides that the Commission is to "consider the likely volume, price effect, and impact of imports of the subject merchandise on the industry if the orders are revoked or the suspended investigation is terminated."[151] It directs the Commission to take into account its prior injury determination, whether any improvement in the state of the industry is related to the order or the suspension agreement under review, whether the industry is vulnerable to material injury if an order is revoked or a suspension agreement is terminated, and any findings by Commerce regarding duty absorption pursuant to 19 U.S.C. § 1675(a)(4).[152] The statute further provides that the presence or absence of any factor that the Commission is required to consider shall not necessarily give decisive guidance with respect to the Commission's determination.[153]

In evaluating the likely volume of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether the likely volume of imports would be significant either in absolute terms

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[148] *See NMB Singapore Ltd. v. United States*, 288 F. Supp. 2d 1306, 1352 (Ct. Int'l Trade 2003) ("'likely' means probable within the context of 19 U.S.C. § 1675(c) and 19 U.S.C. § 1675a(a)"), *aff'd mem.*, 140 Fed. Appx. 268 (Fed. Cir. 2005); *Nippon Steel Corp. v. United States*, 26 CIT 1416, 1419 (2002) (same); *Usinor Industeel, S.A. v. United States*, 26 CIT 1402, 1404 nn.3, 6 (2002) ("more likely than not" standard is "consistent with the court's opinion;" "the court has not interpreted 'likely' to imply any particular degree of 'certainty'"); *Indorama Chemicals (Thailand) Ltd. v. United States*, 26 CIT 1059, 1070 (2002) ("standard is based on a likelihood of continuation or recurrence of injury, not a certainty"); *Usinor v. United States*, 26 CIT 767, 794 (2002) ("'likely' is tantamount to 'probable,' not merely 'possible'").

[149] 19 U.S.C. § 1675a(a)(5).

[150] SAA at 887. Among the factors that the Commission should consider in this regard are "the fungibility or differentiation within the product in question, the level of substitutability between the imported and domestic products, the channels of distribution used, the methods of contracting (such as spot sales or long-term contracts), and lead times for delivery of goods, as well as other factors that may only manifest themselves in the longer term, such as planned investment and the shifting of production facilities." *Id*.

[151] 19 U.S.C. § 1675a(a)(1).

[152] 19 U.S.C. § 1675a(a)(1). Commerce has not made any duty absorption findings. CR at I-15; PR at I-13.

[153] 19 U.S.C. § 1675a(a)(5). Although the Commission must consider all factors, no one factor is necessarily dispositive. SAA at 886.

or relative to production or consumption in the United States.[154] In doing so, the Commission must consider "all relevant economic factors," including four enumerated factors: (1) any likely increase in production capacity or existing unused production capacity in the exporting country; (2) existing inventories of the subject merchandise, or likely increases in inventories; (3) the existence of barriers to the importation of the subject merchandise into countries other than the United States; and (4) 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.[155]

In evaluating the likely price effects of subject imports if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider whether there is likely to be significant underselling by the subject imports as compared to the domestic like product and whether the subject imports are likely to enter the United States at prices that otherwise would have a significant depressing or suppressing effect on the price of the domestic like product.[156]

In evaluating the likely impact of imports of subject merchandise if an order under review is revoked and/or a suspended investigation is terminated, the Commission is directed to consider all relevant economic factors that are likely to have a bearing on the state of the industry in the United States, including but not limited to the following: (1) likely declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity; (2) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment; and (3) likely negative effects on the existing development and production efforts of the industry, including efforts to develop a derivative or more advanced version of the domestic like product.[157] All relevant economic factors are to be considered within the context of the business cycle and the conditions of competition that are distinctive to the industry. As instructed by the statute, we have considered the extent to which any improvement in the state of the domestic industry is related to the orders under review and whether the industry is vulnerable to material injury upon revocation.[158]

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[154] 19 U.S.C. § 1675a(a)(2).

[155] 19 U.S.C. § 1675a(a)(2)(A-D).

[156] *See* 19 U.S.C. § 1675a(a)(3). The SAA states that "{c}onsistent with its practice in investigations, in considering the likely price effects of imports in the event of revocation and termination, the Commission may rely on circumstantial, as well as direct, evidence of the adverse effects of unfairly traded imports on domestic prices." SAA at 886.

[157] 19 U.S.C. § 1675a(a)(4).

[158] The SAA states that in assessing whether the domestic industry is vulnerable to injury if the order is revoked, 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 may also demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports." SAA at 885.

B. Conditions of Competition and the Business Cycle

In evaluating the likely impact of the subject imports on the domestic industry if an order is revoked, the statute directs the Commission to consider all relevant economic factors "within the context of the business cycle and conditions of competition that are distinctive to the affected industry."[159]

1. Prior Five-Year Reviews

In its full first and expedited second and third five-year review determinations, the Commission identified the following conditions of competition pertinent to its analysis of the U.S. markets for both heavy and light castings. It observed that the heavy and light construction castings industries were mature industries, primarily employing the basic sand-cast method that had changed little since the original investigations, although light castings were also produced in permanent molds in higher-volume, standardized production. The Commission found that the markets for heavy and light castings were highly cyclical, closely following trends in housing, highway, public works, and building construction, that the majority of all sales of heavy and light castings by U.S. producers and importers were to distributors, and that there was no overlap in the applications of light and heavy castings, in that heavy castings were mainly used for drainage purposes while light castings were mainly used to encase underground valves and meters.[160] In both the second and third five-year reviews, the Commission referenced the domestic producers' assertion that foundry closures and consolidations had taken place in both the heavy and light castings industries in the United States in the pertinent review periods.[161]

Heavy Castings. In the full first five-year reviews, the Commission discussed several conditions of competition pertinent to heavy castings. It found that domestic foundries, by virtue of their proximity to the municipalities and construction supply distributors, required relatively short lead times and could fill most orders for less popular or customized models without maintaining inventories for such items. The Commission found that importers, with their longer lead times, generally handled only the faster-moving, more standardized models because of the resulting inventory carrying costs associated with supplying a range of products. Thus, the Commission found that, while domestic producers might typically handle 4,000 to 5,000 items, importers might carry only 150 to 200. The Commission also observed that, in the case of heavy castings, the substitutes for cast iron most frequently identified in questionnaire responses were plastics, concrete, fiberglass, and composites. Additionally, the record indicated that some domestic sales were subject to "Buy American" provisions.[162] The Commission

[159] 19 U.S.C. § 1675a(a)(4).
[160] *First Reviews*, USITC Pub. 3247 at 16-17; *Second Reviews,* USITC Pub. 3781 at 12.
[161] *Second Reviews,* USITC Pub. 3781 at 12; *Third Reviews,* USITC Pub. 4191 at 13-14.
[162] *First Reviews*, USITC Pub. 3247 at 17.

viewed these same conditions of competition as pertinent in both the expedited second and expedited third five-year reviews.[163]

Light Castings. In the full first five-year reviews, the Commission found that light construction castings were manufactured in a range of dimensions but were relatively standardized nationwide, that some producers and respondents indicated that plastics had made gains in the market for light castings, and that the domestic producers estimated that about 28 percent of light castings sales were subject to "Buy American" provisions in 1997 and 1998.[164] The Commission viewed these same conditions of competition as pertinent in both the expedited second and expedited third five-year reviews.[165]

2. The Current Reviews

The following conditions of competition inform our determinations.

Demand Conditions. The overall demand for both heavy castings and light castings is derived from construction activity and the performance of the U.S. economy.[166] A plurality of firms reported an increase in U.S. demand for heavy castings since January 2010, and most reported either increasing or fluctuating demand for light castings, in light of growth in the economy and an increase in municipal spending. Firms reported similar expectations for future U.S. demand.[167]

Apparent U.S. consumption of heavy castings was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015.[168] Apparent U.S. consumption of light castings was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015.[169] During the period of review, apparent U.S. consumption levels for both heavy castings and light castings were above the levels reported in 2009 in the third five-year reviews, but below the levels reported in 2003 in the second five-year reviews, before the 2008 financial crisis.[170]

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[163] *Second Reviews*, USITC Pub. 3781 at 13; *Third Reviews*, USITC Pub. 4191 at 14.

[164] *First Reviews*, USITC Pub. 3247 at 17.

[165] *Second Reviews*, USITC Pub. 3781 at 13-14; *Third Reviews*, USITC Pub. 4191 at 15.

[166] CR at II-13; PR at II-8; *see* Hearing Tr. at 134, 139 (Teske); 139 (Hoffman); 139-140 (San Solo).

[167] CR/PR at Table II-4; CR at II-17; PR at II-11.

[168] CR/PR at Table I-12. Apparent U.S. consumption of heavy castings was *** pounds in interim 2015, and *** pounds in interim 2016. *Id.*

[169] CR/PR at Table I-13. Apparent U.S. consumption of light castings was *** pounds in interim 2015, and *** pounds in interim 2016. *Id.*

[170] In the original investigations, apparent U.S. consumption of heavy castings increased from 405.2 million pounds in 1983 to 560.8 million pounds in 1985. In the full first five-year reviews, it was 683.3 million pounds in 1998. In the expedited second reviews, it was 630.8 million pounds in 2003. In the expedited third reviews, it was *** pounds in 2009. INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-18.

Apparent U.S. consumption of light castings increased in the original investigations from 76.2 million pounds in 1983 to 94.2 million pounds in 1985. In the full first five-year reviews, it was *** pounds in 1998. In the expedited second five-year reviews, it was *** pounds in 2003. In the expedited (Continued…)

Supply Conditions. The domestic industry supplied the largest share of the U.S. heavy castings market, followed by nonsubject imports and then subject imports. The market share of the domestic industry producing heavy castings was *** percent in 2013, and *** percent in 2014 and 2015.[171] The market share of cumulated subject imports of heavy castings was *** percent in 2013, and *** percent in 2014 and 2015.[172] The market share of nonsubject imports of heavy castings was *** percent in 2013, and *** percent in 2014 and 2015.[173] The largest supplier of nonsubject imports of heavy castings was India, which accounted for *** percent of total U.S. imports of heavy castings in 2015.[174]

By contrast, nonsubject imports supplied the largest share of the U.S. light castings market, followed by the domestic industry and then subject imports. The market share of the domestic industry producing light castings was *** percent in 2013, *** percent in 2014, and *** percent in 2015.[175] The market share of the cumulated subject imports of light castings was *** percent in 2013, *** percent in 2014, and *** percent in 2015.[176] The market share of nonsubject imports of light castings was *** percent in 2013, *** percent in 2014, and *** percent in 2015.[177] The largest supplier of nonsubject imports of light castings was India, which accounted for *** percent of total U.S. imports of light castings in 2015.[178]

(…Continued)
third five-year reviews, it was *** pounds in 2009. INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-19.

[171] CR/PR at Table I-14. The domestic industry's market share was *** percent in interim 2015 and *** percent in interim 2016. *Id.* In the original investigations, the market share of the domestic industry producing heavy castings declined from 79.7 percent in 1983 to 72.6 percent in 1985. In the full first five-year reviews, it was 79.5 percent in 1998. In the expedited second five-year reviews, it was 71.1 percent in 2003. In the expedited third five-year reviews, it was *** percent in 2009. INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-18.

[172] CR/PR at Table I-14. The market share of cumulated subject imports was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[173] CR/PR at Table I-14. The market share of nonsubject imports was *** percent in interim 2015 and *** percent in interim 2016. *Id.* In the original investigations, the market share of nonsubject imports of heavy castings increased from 15.0 percent in 1983 to 16.7 percent in 1985. In the full first five-year reviews, it was 18.8 percent in 1998. In the expedited second five-year reviews, it was 27.0 percent in 2003. In the expedited third five-year reviews, it was *** percent in 2009. INV-OO-108 (November 18, 2016) at Table I-18.

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

[175] CR/PR at Table I-14. The domestic industry's market share was *** percent in interim 2015 and *** percent in interim 2016. *Id.* In the original investigations, the market share of the domestic industry producing light castings declined from 74.8 percent in 1983 to 60.5 percent in 1985. In the full first five-year reviews, it was *** percent in 1998. In the expedited second reviews, it was *** percent in 2003. In the third five-year reviews, it was *** percent in 2009. INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-19.

[176] CR/PR at Table I-14. The market share of cumulated subject imports was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[177] CR/PR at Table I-14. The market share of nonsubject imports was *** percent in interim 2015 and *** percent in interim 2016. *Id.* In the original investigations, the market share of nonsubject
(Continued…)

Substitutability and Other Conditions. We find as to both heavy and light castings that domestically produced product and subject imports from all sources are moderately to highly substitutable.[179] We also find that price is a very important factor in purchasing decisions for both heavy and light castings.[180]

Purchasers reported that most of their purchases were not subject to any requirement to purchase domestic product, estimating that in 2015, approximately 24.0 percent of their purchases of heavy castings and 15.9 percent of their purchases of light castings were required by law to be domestically produced.[181]

C. Likely Volume of Cumulated Subject Imports of Heavy Castings

1. The Original Investigations and Prior Five-Year Reviews

In the original investigations, imports of heavy castings from Canada increased from 5.4 million pounds in 1982 to 21.0 million pounds in 1985, representing an increase from 1.5 percent of domestic consumption in 1982 to 3.7 percent in 1985. Imports of heavy castings from Brazil increased from 23,000 pounds in 1982 to 19.5 million pounds in 1985, increasing from less than 1 percent of domestic consumption in 1982 to 3.4 percent in 1985. Imports of heavy castings from China increased from 4.1 million pounds in 1982, 1.2 percent of domestic consumption, to 19.5 million pounds in 1985, 3.4 percent of domestic consumption. Accordingly, in 1985, imports of heavy castings from Brazil, Canada, and China totaled 60.0 million pounds, and represented 10.5 percent of domestic consumption.[182]

In the first five-year reviews, the Commission observed that cumulated subject imports of heavy castings from Brazil, Canada, and China totaled 12.62 million pounds in 1997, or 1.8 percent of domestic consumption, and 11.53 million pounds in 1998, or 1.7 percent of domestic consumption. The Commission explained that it viewed the sharp reduction in subject imports as reflecting the remedial effects of the antidumping duty orders. It found that, in the case of

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(…Continued)
imports of light castings increased from 23.9 percent in 1983 to 36.0 percent in 1985. In the full first five-year reviews, it was *** percent in 1998. In the expedited second five-year reviews, it was *** percent in 2003. In the expedited third five-year reviews, it was *** percent in 2009. INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-19.

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

[179] CR at II-19; PR at II-12; Hearing Tr. at 37 (Hoffman).

[180] All 15 reporting purchasers of castings reported that price was one of their top three factors in making purchasing decisions, CR/PR at Table II-7, while 14 of 17 purchasers of castings reported that price was a very important factor in their purchasing decisions. CR/PR at Table II-8. *See* Hearing Tr. at 37 (Hoffman).

[181] CR/PR at Table II-10. *See* Domestic Producers' Posthearing Brief, Exh. 3 at Paragraph 10 (declaration of Scott A. Hoffman of Neenah); Exh. 4 at Paragraph 7 (declaration of Jason McGowan of D&L Foundry); Exh. 5 at Paragraph 11 (declaration of Adam San Solo of U.S. Foundry); Exh. 6 at Paragraph 12 (declaration of Tom Teske of EJ); Hearing Tr. at 30-31 (Teske); 42-43 (San Solo).

[182] *Original Investigations,* USITC Pub. 1838 at 45-46.

Canada, a number of factors suggested that exports of heavy castings to the United States could increase: ***.[183]

The Commission noted that the record in the first five-year reviews did not include information on current heavy castings production capacity in China or Brazil. It found, however, that the information available in the original investigations showed that China's annual exports of both heavy and light castings to all markets, including the United States, ranged between 135 million pounds and 201.6 million pounds annually between 1981 and 1985, which the Commission found were significant quantities in relation to current total consumption in the United States. It also observed that Brazil's exports of all cast iron products to all markets, including the United States, ranged from 102 million pounds (51,000 short tons) to 224 million pounds (112,000 short tons) annually between 1981 and 1985, which exceeded total U.S. consumption. The Commission found, accordingly, that the record in the first reviews indicated that subject producers in Brazil, Canada, and China had ample production capacity to increase their shipments to the United States if the orders were revoked, and that the record did not indicate that there would be any limitations on resumption of significant export shipments from those countries to the United States if the orders were revoked. Accordingly, the Commission found that subject imports would be likely to increase significantly in the reasonably foreseeable future if the antidumping duty orders were revoked.[184]

In both the second and third five-year reviews, the Commission explained that cumulated subject imports were considerably lower than in the original investigations, reflecting the restraining effects of the orders. Based on the available information in those reviews, the Commission concluded that the producers in the subject countries were significantly export oriented and had ample production capacity to increase their shipments to the United States if the orders were revoked. In the absence of any indication of limitations on producers in the subject countries resuming significant exports to the United States if the orders were revoked, the Commission found that the likely volume of the cumulated subject imports would be significant.[185]

2. The Current Reviews

The record indicates that subject producers of heavy castings in Brazil, Canada, and China have the means and the incentive to increase shipments of subject merchandise to the U.S. market significantly within a reasonably foreseeable time if the antidumping duty and countervailing duty orders were revoked. The cumulated subject industries in Brazil, Canada, and China have substantial capacity and substantial excess capacity. The subject industries in Brazil, Canada, and China all have some degree of export orientation. The United States is an important export market for all three subject industries producing heavy castings. Moreover, even under the discipline of the orders, cumulated subject imports of heavy castings continued

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[183] *First Reviews,* USITC Pub. 3247 at 21-22.
[184] *First Reviews,* USITC Pub. 3247 at 22.
[185] *Second Reviews,* USITC Pub. 3781 at 15; *Third Reviews*, USITC Pub. 4191 at 17.

to be present in the U.S. market throughout the period of review, albeit at reduced volumes, indicating the continued interest of subject producers in the U.S. market.[186]

While we are conducting a cumulated analysis, the record provides extremely limited aggregated data concerning the subject industries, given that foreign producer questionnaire coverage is low for the subject industries in Brazil and Canada and non-existent for the subject industry in China.[187] Consequently, the discussion below addresses considerations pertinent to each of the subject industries individually.

Brazil. The data ABIFA provided to the Commission indicate that subject Brazilian producers of heavy castings had substantial capacity and excess capacity. These data provide information on eight Brazilian producers of heavy castings; these producers had heavy castings capacity of *** pounds and unused heavy castings capacity of over *** pounds in 2015.[188] As previously discussed, these data do not necessarily include all subject Brazilian producers of heavy castings.[189]

The available information indicates some degree of export orientation of the subject Brazilian industry, which increased over the period of review. Saint-Gobain, the one responding Brazilian producer, reported that its total exports as a percentage of its shipments increased from *** percent in 2013 to *** percent in 2014, and then *** to *** percent in 2015.[190] Official export statistics, which include both heavy and light castings, as well as some out-of-scope merchandise, indicate that total Brazilian exports of castings increased from 3.0 million pounds in 2013 to 4.2 million pounds in 2014, and then to 5.1 million pounds in 2015.[191]

Furthermore, the available information indicates that the United States is a substantial export market for heavy castings from Brazil. Subject imports of heavy castings from Brazil have remained in the U.S. market since the orders were imposed, albeit at lower levels than in the original investigations.[192] The largest market for export shipments of heavy castings from Saint-Gobain was the United States in each full year of the period of review, although not in

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[186] The volume of cumulated subject imports of heavy castings was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015. It was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-1.

[187] CR at IV-23-24, IV-34, IV-42, PR at IV-19, IV-25, IV-29.

[188] CR/PR at Table IV-15. Both the ABIFA data and the Saint-Gobain questionnaire response indicate the same amount of unused capacity for Saint-Gobain in 2015. See CR/PR at Tables IV-13, IV-15.

[189] *See* Domestic Producers' Prehearing Brief at Exh. 5; Domestic Producers' Posthearing Brief at 20-21 and Exh. 2 (confidential slide 17).

[190] CR/PR at Table IV-13. Total exports as a percentage of shipments were *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[191] CR/PR at Table IV-16.

[192] The quantity of subject imports of heavy castings from Brazil was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015; it was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-1.

interim 2016.[193] The percentage of exports to the United States by Saint-Gobain as a percentage of total shipments increased over the period of review, from *** percent in 2013, *** percent in 2014, and then to *** percent in 2015.[194] In addition, official export statistics indicate that the largest export destination for Brazilian castings in each year between 2013 and 2015 was the United States.[195]

Canada. In these reviews, the data on the subject Canadian industry are limited because only one Canadian producer of heavy castings, ***, submitted a usable questionnaire response.[196] Nevertheless, the available data from *** alone indicate that the subject Canadian industry has substantial capacity and excess capacity. In 2015, *** reported capacity of *** pounds and unused capacity of *** pounds.[197]

The available data on the subject Canadian industry indicate some degree of export orientation. Total exports as a percentage of *** shipments were *** percent in 2013, *** percent in 2014, and *** percent in 2015.[198] According to official export statistics, total Canadian exports of heavy castings and (out-of-scope) light castings combined declined from 12.0 million pounds in 2013 to 10.7 million pounds in 2014, and then increased to 11.3 million pounds in 2015.[199]

The available data indicate that the United States is by far the leading export market for heavy castings from Canada. Subject imports of heavy castings from Canada have remained in the U.S. market since the orders were imposed, but at lower levels than in the original investigations.[200] Moreover, *** percent of export shipments from *** went to the United States during the period of review.[201] In addition, official import statistics indicate that the largest export destination for castings from Canada (including nonsubject light castings) in 2015 was the United States by a wide margin.[202]

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[193] CR/PR at Table IV-13. In interim 2016, Saint-Gobain's export shipments to the European Union exceeded those to the United States. *Id.*

[194] CR/PR at Table IV-13. Exports of heavy castings to the United States as a percentage of total shipments were *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[195] CR/PR at Table IV-16. Official export statistics show that Brazilian exports of castings to the United States increased from 2.0 million pounds in 2013 to 2.7 million pounds in 2014, and then declined to 2.0 million pounds in 2015. *Id.*

[196] CR/PR at IV-34.

[197] CR/PR at Table IV-18.

[198] CR/PR at Table IV-18. Total exports as a percentage of shipments were *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[199] CR/PR at Table IV-20.

[200] The quantity of subject imports from Canada was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015; it was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-1.

[201] CR/PR at Table IV-18.

[202] CR/PR at Table IV-20.

China. No subject Chinese producer submitted a questionnaire in these reviews.[203] However, the available data indicate that the subject Chinese industry is the largest in the world, and has substantial capacity. Domestic Producers have identified 215 Chinese producers, and have presented information indicating that 57 Chinese castings producers have an estimated capacity of 2.9 billion pounds to produce castings (both heavy and light castings).[204]

The available data indicate that the Chinese industry is export oriented. Global Trade Atlas data reflect that China is the world's largest exporter of articles of nonmalleable cast iron, which is a broader category that includes both heavy and light castings.[205] According to official export statistics, which include both heavy and light castings (as well as some out-of-scope merchandise), total Chinese exports of castings increased from 820.8 million pounds in 2013 to 943.8 million pounds in 2014, and then declined to 882.6 million pounds in 2015.[206]

The available data show that the United States is an important market for the subject Chinese industry. Subject imports of heavy castings from China have remained in the U.S. market since the orders were imposed, but at lower levels than in the original investigations.[207] Official Chinese export statistics show that the United States was one of the five largest export markets for Chinese castings (including heavy and light castings as well as some out-of-scope merchandise) in 2013, 2014, and 2015, and that Chinese exports of castings to the United States increased from 50.0 million pounds in 2013 to 55.8 million pounds in 2014, and then to 59.8 million pounds in 2015.[208]

Conclusion. We find that subject producers in Brazil, Canada, and China would likely direct significant volumes of heavy castings to the U.S. market should the antidumping and countervailing duty orders be revoked. As discussed above, the cumulated subject industries have large capacity and unused capacity, and are active in export markets. In the event of revocation, they are likely to direct additional exports to the U.S. market in light of their continued presence in the U.S. market during the period of review even under the discipline of the orders, and the relative importance of the United States as an export market. Moreover, the subject imports demonstrated the ability during the original period of investigation to increase exports to the United States substantially in a short period of time.[209] We

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[203] CR at IV-42; PR at IV-29.

[204] CR at IV-41, IV-45; PR at IV-29, IV-32; CR/PR at Table IV-22; Domestic Producers' Prehearing Brief at 23 and Exh. 11.

[205] CR at IV-45; PR at IV-32.

[206] CR/PR at Table IV-21.

[207] The quantity of subject imports of heavy castings from China was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015; it was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-1.

[208] CR/PR at Table IV-21.

[209] During the original period of investigation, the quantity of U.S. shipments of cumulated subject imports of heavy castings from Brazil, Canada, and China increased from 21.3 million pounds in 1983 to 60.0 million pounds in 1985. INV-OO-108 (November 18, 2016) (EDIS Document No. 595381) at Table I-18.

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consequently conclude that cumulated subject import volumes would likely be significant, both in absolute terms and relative to U.S. consumption, upon revocation of the orders.[210]

D. Likely Price Effects of Cumulated Subject Imports of Heavy Castings

1. The Original Investigations and Prior Five-Year Reviews

In the original investigations, the Commission found general underselling by the subject imports of heavy castings. It confirmed that the domestic industry lost sales of heavy castings to subject imports on the basis of price. It found that prices were flat over the period of investigation at a time of a marked rise in domestic consumption, indicating price suppression.[211]

In the full first reviews, the Commission did not receive any pricing data with respect to subject imports from Brazil or China. The Commission found significant underselling by subject

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We acknowledge Saint-Gobain's argument regarding the long period of time since the original investigations and the changes in the composition of the domestic and subject industries that have taken place during this period. Brazilian Respondents' Prehearing Brief at 3-13. However, absent evidence that would show how the Brazilian industry, and not just Saint-Gobain, would compete differently upon revocation without the discipline of the orders, we rely on information from the original investigations as to the likely unrestrained behavior of the industry in Brazil.

[210] We have also examined inventories in our analysis of the likely volumes of subject imports, although we do not have questionnaire or other data available on inventories of subject merchandise in China. Reported end-of-period inventories of subject merchandise of Saint-Gobain in Brazil were *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015. They were *** pounds in interim 2015, and *** pounds in interim 2016. CR/PR at Table IV-13. Reported end-of-period inventories of subject merchandise of *** in Canada were *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015. They were *** pounds in interim 2015, and *** pounds in interim 2016. CR/PR at Table IV-18. U.S. importers' cumulated end-of-period inventories from Brazil, Canada, and China were *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015. They were *** pounds in interim 2015, and *** pounds in interim 2015. CR/PR at Table IV-7. We note that Table IV-7 erroneously lists the volume of importers' end-of-period inventories in short tons, when in fact the unit of quantity for the volumes reported in Table IV-7 should be 1,000 pounds.

With respect to the potential for product shifting, Saint-Gobain, the only reporting Brazilian subject producer of heavy castings, states that shifting from production of out of-scope merchandise to subject merchandise would require additional equipment and the training of a new labor force, which it stated would take a couple of years to accomplish. CR at II-10 to II-11; PR at II-6 to II-7; Hearing Tr. at 152-153 (Siqueira); Brazilian Respondents' Posthearing Brief at Q-37. The one responding Canadian producer, ***, reported that it has *** ability to shift production between alternate products and heavy castings. CR at II-12; PR at II-7. Domestic Producers contend that subject producers in Brazil *** have some ability to product shift. Domestic Producers' Prehearing Brief at 58-59.

We note that there is no indication in the record that heavy castings from Brazil, Canada, or China are subject to any antidumping or countervailing duty orders or proceedings in any markets other than the United States. CR at IV-45; PR at IV-32.

[211] *Original Investigations*, USITC Pub. 1838 at 14-15.

imports of heavy castings from Canada in each quarter examined from January 1997 to March 1999. The Commission noted that, because the market was fairly price competitive, if the orders were revoked, the cumulated subject imports would have to be priced aggressively to regain market share. It observed that the cumulated subject imports, in turn, would be likely to have significant depressing and suppressing effects on prices of the domestic like product. Accordingly, the Commission found that the likely volume of cumulated subject imports from Brazil, Canada, and China resulting from revocation of the antidumping duty orders would be likely to have significant price effects.[212]

In the expedited second five-year reviews, there was no new product-specific pricing information on the record. The Commission noted, however, that average unite values (AUVs) of the cumulated subject heavy castings imports were below the AUVs for the domestic like product in 2003, the only year since the first five-year reviews for which comparable data were available. Based on information available in those reviews, the Commission found that the market for the subject merchandise was fairly price competitive. If the orders were revoked, the Commission found, the subject imports would likely undersell the domestic like product and have significant depressing and suppressing effects on prices of the domestic like product.[213]

In the expedited third five-year reviews, the Commission noted that there was no new product-specific pricing information on the record, but observed that AUV data showed that the AUV of cumulated subject imports of heavy castings was below the AUV for the domestic like product in 2009. The Commission found, based on the record in the reviews, that the market for subject merchandise was fairly price competitive, and that if the orders were revoked, the cumulate subject imports would likely undersell the domestic like product and have significant depressing and suppressing effects on prices of the domestic like product.[214]

2. The Current Reviews

As previously stated, we have found that domestically produced heavy castings and the cumulated subject imports are moderately to highly substitutable, and price is a very important factor in purchasing decisions for heavy castings.

The Commission requested pricing data for two heavy castings products in these reviews.[215] The pricing data showed that, with the orders in place, there was mixed

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[212] *First Reviews,* USITC Pub. 3247 at 22-23.

[213] *Second Reviews,* USITC Pub. 3781 at 16.

[214] *Third Reviews*, USITC Pub. 4191 at 18-19.

[215] The two products were (product 1) standard heavy duty manhole cover and frame assemblies of gray cast iron, approximately 400 pounds weight (375 to 450 pounds actual weight); and (product 2) standard light duty manhole cover and frame assemblies of gray cast iron, approximately 150 pounds weight (140 to 160 pounds actual weight). CR at V-9; PR at V-5. The pricing data for these two products reported by U.S. producers accounted for approximately 64.8 percent of U.S. producers' U.S. shipments of heavy castings in 2015. Pricing data for these imported products accounted for *** percent of reported U.S. commercial shipments of heavy castings from Brazil in 2015, and *** percent of U.S. commercial shipments of heavy castings from Canada in 2015. No importer provided pricing data (Continued…)

underselling and overselling by cumulated subject imports during the period of review. Prices for heavy castings from Canada were lower than those of the domestic like product in all 14 quarterly comparisons, while prices for heavy castings from Brazil were higher than those of the domestic like product in all 14 quarterly comparisons.[216] However, as previously discussed, the product mix and prices for the subject imports from Brazil during the period of review under the discipline of the orders are not necessarily representative of the product mix and pricing of the subject Brazilian heavy castings that would exist in the U.S. market upon revocation. Accordingly, we do not believe that the pricing data showing overselling by subject imports from Brazil under the discipline of the orders during the current period of review are representative of the pricing behavior that would likely occur upon revocation.

Given the importance of price in purchasing decisions and the substitutability of the products, suppliers of subject merchandise will need to offer heavy castings at low prices in order to increase their sales in the U.S. market and gain market share. Absent the discipline of the orders, this will likely cause significant underselling by subject imports, as occurred during the original investigations.[217] With increasing volumes of subject merchandise being offered at low prices, the domestic industry would, in order to retain sales, be forced to cut prices and/or restrain price increases when its costs increase. Consequently, the increasing volumes of cumulated subject imports of heavy castings are likely to have a significant effect on prices for the domestic like product.

For the foregoing reasons, we find that cumulated subject imports of heavy castings would likely have significant price effects upon revocation of the orders.

E. Likely Impact of Cumulated Subject Imports of Heavy Castings

1. The Original Investigations and Prior Five-Year Reviews

In the original investigations, the Commission found that the rates at which the domestic producers of heavy construction castings increased production, shipments, capacity, capacity utilization, and employment were considerably below the rate at which apparent U.S. consumption had increased. In finding an adverse impact by reason of the subject imports, the Commission explained that, while the domestic industry had shown some improvement during the period of investigation, six of the fifteen domestic producers reported operating losses during the entire period of investigation. The Commission found it particularly significant that the industry had net operating losses in the first year of the period of investigation and

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(…Continued)
for imports of heavy castings from China. CR at V-9 to V-10; PR at V-5. There were no pricing data for subject imports from any source with respect to product 2. CR/PR at Tables V-3, V-4.

[216] CR at V-18; PR at V-8.

[217] As previously discussed, in the original determinations, the Commission found general underselling by the cumulated subject imports of heavy castings. *Original Investigations*, USITC Pub. 1838 at 14-15.

marginal operating income in the other years, notwithstanding the increases in domestic consumption, production, and shipments.[218]

In the first five-year reviews, the Commission observed that the domestic industry's operating income as a percentage of net sales was 12.9 percent in 1997 and 15.5 percent in 1998. Production exceeded capacity in both 1997 and 1998, and U.S. shipments, net sales, and number of production workers in 1998 exceeded levels in 1997. Domestic producers' share of apparent U.S. consumption, 78.6 percent in 1997 and 79.6 percent in 1998, was comparable to their share at the beginning of the original period of investigation, 79.8 percent in 1983. The Commission found that the domestic industry producing heavy castings was not currently vulnerable; however, given the generally substitutable nature of the subject imports and the domestic like product, it found that the significant potential volume of LTFV and subsidized subject imports, when combined with the expected adverse price effects of these imports, would have a significant adverse impact on the production, shipments, sales, and revenue levels of the domestic industry. This reduction in the industry's production, sales, and revenue levels would have a direct adverse impact on the industry's profitability and employment levels, as well as its ability to raise capital and make and maintain necessary capital investments. Accordingly, the Commission concluded that, if the antidumping duty orders were revoked, the subject imports would be likely to have a significant adverse impact on the domestic industry within a reasonably foreseeable time.[219]

In the second five-year reviews, the Commission found that, although the record did not permit a determination of whether the industry was currently vulnerable to material injury in the event of revocation, apparent U.S. consumption declined in 2003 compared with apparent U.S. consumption in the first review period, and the domestic producers' share of that total consumption in 2003 declined to its lowest level in any year for which data were obtained in the original investigations or the two review periods. The Commission also found that the volume and price effects of the subject imports would likely have a significant adverse impact on the industry's production, sales, and revenue levels and would have a direct adverse impact on the industry's profitability and employment levels as well as its ability to raise capital and make and maintain necessary capital investments. Accordingly, the Commission concluded that, if the antidumping duty orders on heavy castings from Brazil, Canada, and China were revoked, subject imports would be likely to have a significant adverse impact on the domestic industry within a reasonably foreseeable time.[220]

In the third five-year reviews, the Commission was evenly divided as to whether the industry producing heavy castings was in a vulnerable condition.[221] It found that the likely

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[218] *Original Investigations*, USITC Pub. 1838 at 10-11.

[219] *First Reviews,* USITC Pub. 3247 at 24.

[220] *Second Reviews,* USITC Pub. 3781 at 18.

[221] Three Commissioners found that the information on the record was insufficient for them to make a determination as to whether the industry producing heavy castings was currently vulnerable, while three Commissioners found that the domestic industry was not vulnerable to material injury. *Third Reviews*, USITC Pub. 4191 at 21 nn.95, 96.

volume and price effects of the subject imports would likely have a significant adverse impact on the industry's production, sales, and revenue levels and would have a direct adverse impact on the industry's profitability and employment levels as well as its ability to raise capital and make and maintain necessary capital investments. Accordingly, the Commission concluded that, if the countervailing duty order on subject imports of heavy castings from Brazil and the antidumping duty orders on subject imports of heavy castings from Brazil, Canada, and China were revoked, subject imports would be likely to have a significant adverse impact on the domestic industry within a reasonably foreseeable time.[222]

2. The Current Reviews

Almost all of the performance indicators of the domestic industry producing heavy castings improved during the period of review, including production, capacity utilization, shipments, net sales, revenues, and operating income, and the industry's market share remained stable. While employment declined slightly, the domestic industry's hours worked, wages paid, and productivity all increased.[223]

The capacity of U.S. producers of heavy castings rose by *** percent from 2013 to 2015, increasing from *** pounds in 2013 to *** pounds in 2014 and 2015.[224] Production rose by *** percent from 2013 to 2015, increasing from *** pounds in 2013 to *** pounds in 2014, and to *** pounds in 2015.[225] Capacity utilization increased from *** percent in 2013 to *** percent in 2014, and then to *** percent in 2015.[226]

Net sales quantities rose by *** percent from 2013 to 2015, increasing from *** pounds in 2013 to *** pounds in 2014, and to *** pounds in 2015.[227] U.S. shipments rose by *** percent from 2013 to 2015, increasing from *** pounds in 2013 to *** pounds in 2014 to *** pounds in 2015.[228] U.S. producers' ending inventories fell by *** percent from 2013 to 2015, declining from *** pounds in 2013 to *** pounds in 2014 and then increasing to *** pounds in 2015.[229] The domestic industry's share of apparent U.S. consumption was stable throughout

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[222] *Third Reviews*, USITC Pub. 4191 at 21.

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

[224] CR/PR at Tables III-2, C-1. Capacity was *** pounds in interim 2015 and interim 2016. *Id.*

[225] CR/PR at Tables III-2, C-1. Production was *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[226] CR/PR at Tables III-2, C-1. Capacity utilization was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[227] CR/PR at Tables III-16, C-1. Net sales were *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[228] CR/PR at Tables III-6, C-1. U.S. shipments were *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[229] CR/PR at Tables III-8, C-1. U.S. producers' ending inventories were *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

the period of review, declining slightly from *** percent in 2013 to *** percent in 2014 and 2015.[230]

Employment fell slightly by *** percent from 2013 to 2015, declining from *** production-related workers (PRWs) in 2013 to *** PRWs in 2014 to *** PRWs in 2015.[231] Hours worked rose slightly by *** percent from 2013 to 2015, and were *** hours in 2013, *** hours in 2014, and *** hours in 2015.[232] Wages paid rose by *** percent from 2013 to 2015, increasing from $*** in 2013 to $*** in 2014, and to $*** in 2015.[233] Productivity (in pounds per hour) rose by *** percent from 2013 to 2015, increasing from *** in 2013 to *** in 2014, and then to *** in 2015.[234]

Net sales value rose by *** percent from 2013 to 2015, increasing from $*** in 2013 to $*** in 2014, and then to $*** in 2015.[235] Total cost of goods sold (COGS) rose by *** percent from 2013 to 2015, increasing from $*** in 2013 to $*** in 2014, and then to $*** in 2015.[236] Operating income rose by *** percent from 2013 to 2015, increasing from $*** in 2013 to $*** in 2014, and then to $*** in 2015.[237] The industry's operating income margin increased from *** percent in 2013 to *** percent in 2014, and then to *** percent in 2015.[238]

Capital expenditures fell by *** percent from 2013 to 2015, declining from $*** in 2013 to $*** in 2014, and then increasing to $*** in 2015.[239] Research and development ("R&D") expenses declined from $*** in 2013 to $*** in 2014, and then increased to $*** in 2015.[240]

As previously discussed, almost all of the domestic industry's performance indicators improved between 2013 and 2015, including production, capacity utilization, shipments, net sales, productivity, revenues, and operating income. The domestic industry remained profitable throughout the period of review, and its operating income increased between 2013

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[230] CR/PR at Tables I-14, C-1. The domestic industry's share of apparent U.S. consumption was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[231] CR/PR at Tables III-14, C-1. Employment was *** PRWs in interim 2015 and *** PRWs in interim 2016. *Id.*

[232] CR/PR at Tables III-14, C-1. Hours worked were *** hours in interim 2015 and interim 2016. *Id.*

[233] CR/PR at Tables III-14, C-1. Wages paid were $*** in interim 2015 and $*** in interim 2016. *Id.*

[234] CR/PR at Tables III-14, C-1. Productivity (in pounds per hour) was *** in interim 2015 and *** in interim 2016. *Id.*

[235] CR/PR at Tables III-16, C-1. Net sales value was $*** in interim 2015 and $*** in interim 2016. *Id.*

[236] CR/PR at Tables III-16, C-1. Total COGS was $*** in interim 2015 and $*** in interim 2016. *Id.*

[237] CR/PR at Tables III-16, C-1. Operating income was $*** in interim 2015 and $*** in interim 2016. *Id.*

[238] CR/PR at Tables III-16, C-1. The operating income margin was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[239] CR/PR at Table III-22, C-1. Capital expenditures were $*** in interim 2015 and $*** in interim 2016. *Id.*

[240] CR/PR at Table III-22. R&D expenses were $*** in interim 2015 and interim 2016. *Id.*

and 2015 and was higher in interim 2016 than in interim 2015. In light of this, we do not conclude that the domestic industry is in a vulnerable condition.

We found above that revocation of the orders would likely result in a significant increase in cumulated subject import volume that would likely have significant price effects on the domestic industry. The likely significant volume of the cumulated subject imports would likely have an adverse impact on the production, shipments, sales, market share, and revenues of the domestic industry. These reductions would likely have a direct adverse impact on the industry's profitability and employment, as well as its ability to raise capital and make and maintain necessary capital investments. We therefore conclude that, if the orders were revoked, subject imports from Brazil, Canada, and China would be likely to have a significant impact on the domestic industry within a reasonably foreseeable time.

We have also considered the role of nonsubject imports in the U.S. market. The volume of nonsubject imports of heavy castings increased over the period of review.[241] Like the market share of the domestic industry, the market share of nonsubject imports remained generally stable over the period of review, increasing slightly from *** percent in 2013 to *** percent in 2014 and 2015.[242] Given their current presence in the market, nonsubject imports would likely continue to be in the U.S. market in the event of revocation of the orders. However, given the large market share of the domestic industry, the likely increased volume of subject imports in the event of revocation would likely result in market share gains by subject imports at least in part at the expense of the domestic industry, regardless of any effects from nonsubject imports.

Accordingly, we find that revocation of the antidumping and countervailing duty orders on heavy castings from Brazil, Canada, and China would likely have a significant impact on the domestic industry.

F. Likely Volume of Cumulated Subject Imports of Light Castings

1. The Original Investigations and Prior Five-Year Reviews

In the original investigations, the Commission made affirmative determinations of threat of material injury with respect to subject imports of light castings from Brazil and China on an individual, non-cumulated, basis. It found that imports of light castings from Brazil increased from zero in 1982 to 1.64 million pounds in 1985, resulting in a market share increase in the final year of the period of investigation alone from 0.8 percent in 1984 to 1.7 percent in 1985. Moreover, capacity utilization in Brazil declined over the period of investigation. Accordingly, the Commission found that the presence of underutilized capacity along with the rapid increase in market penetration "point[ed] to continued increases in imports of Brazilian light castings."

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[241] The volume of nonsubject imports was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015. It was *** pounds in interim 2015, and *** pounds in interim 2016. CR/PR at Table I-12.

[242] CR/PR at Table I-14. The market share of nonsubject imports was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

The Commission indicated that imports of light castings from China increased from 95,000 pounds in 1982 to 1.64 million pounds in 1985, resulting in a market share increase from 0.1 percent in 1982 to 1.7 percent in 1985. The Commission also stated that its finding of a threat of material injury by reason of subject imports from China was supported by the substantial increase in Chinese producers' production capacity during the period of investigation and significant year-end inventories in the final years of the period.[243]

In the full first five-year reviews, the Commission stated that there were no imports of light castings from Brazil or China in 1997. In 1998, imports from China totaled *** pounds, and imports from Brazil remained at zero. The Commission observed that, in assessing the likely volume of cumulated subject imports if the orders were revoked, it viewed the near absence of subject imports from the U.S. market as reflecting the remedial effects of the antidumping duty orders. Brazil's exports of all cast-iron products to all markets, including the United States, ranged from 102 million pounds to 224 million pounds annually between 1981 and 1985. Available export information from the original investigations showed that China's annual exports of iron construction castings, both heavy and light, to all markets, including the United States, ranged between 135 million pounds and 201.6 million pounds between 1981 and 1985 The Commission found no record information indicating any likely limitations on the resumption of significant export shipments from Brazil or China to the United States if the orders were revoked. Accordingly, the Commission found in the first reviews that cumulated imports of light castings into the United States from Brazil and China would be likely to increase significantly in the reasonably foreseeable future if the antidumping duty orders were revoked.[244]

In the expedited second five-year reviews, the volume of cumulated subject imports of light castings fluctuated during the review period. It was 258,000 pounds in 1999, 1.4 million pounds in 2000, 2.3 million pounds in 2001, 1.8 million pounds in 2002, 3.4 million pounds in 2003, and 1.6 million pounds in 2004. Cumulated subject imports of light castings accounted for *** percent of apparent U.S. consumption in 2003 compared with 3.4 percent in 1985, even though the volume in 2003 was larger in absolute terms than it was in 1985. Based on the available information in the second reviews, the Commission concluded that the producers in Brazil and China were significantly export oriented and had ample production capacity to increase their shipments to the United States if the orders were revoked. The Commission found that, rather than indicate any limitations on the likely resumption of significant export shipments from Brazil or China to the United States if the orders were revoked, the record showed broad fluctuations in the volume of subject imports under the orders, including a 2003 increase above the prior record volume in 1985, which the Commission found confirmed that the subject producers were able to increase their exports to the United States quickly. Accordingly, the Commission found that the likely volume of the cumulated subject imports,

[243] *Original Investigations*, USITC Pub. 1838 at 22-24.
[244] *First Reviews,* USITC Pub. 3247 at 18-19.

both in absolute terms and relative to production and consumption, would be significant absent the orders.[245]

In the expedited third five-year reviews, cumulated subject imports were 794,000 pounds in 2009 compared with 3.2 million pounds in 1985, and were *** percent of apparent U.S. consumption in 2009 compared with 3.5 percent in 1985, reflecting reduced import volume under the restraining effect of the orders. The Commission concluded that producers in Brazil and China were largely export oriented and had ample production capacity to increase their shipments to the United States if the orders were revoked. It found that the record did not indicate that there would be any limitations on Brazilian or Chinese producers resuming significant exports to the United States upon revocation. Accordingly, the Commission found that the likely volume of the cumulated subject imports would be significant, both in absolute terms and relative to production and consumption in the United States, if the orders were revoked.[246]

2. The Current Reviews

The record indicates that subject producers of light castings in Brazil and China have the means and the incentive to increase shipments of subject merchandise to the U.S. market significantly within a reasonably foreseeable time if the antidumping duty orders were revoked. The cumulated subject industries in Brazil and China have substantial capacity and substantial excess capacity. The subject industries in Brazil and China both have some degree of export orientation. The United States is an important export market for both subject industries producing light castings. Moreover, even under the discipline of the orders, cumulated subject imports of light castings continued to be present in the U.S. market throughout the period of review, albeit at reduced volumes, indicating the continued interest of subject producers in the U.S. market.[247]

While we are conducting a cumulated analysis, the record provides extremely limited aggregated data concerning the subject industries due to the absence of questionnaire responses from any subject light castings producer and limited data with respect to the Brazilian light castings industry submitted by ABIFA. Consequently, the discussion below addresses considerations pertinent to the subject industries in Brazil and China individually.

Brazil. Brazilian Respondents argue that the subject Brazilian industry producing light castings has insignificant annual production capacity and annual production.[248] However, the record indicates that the Brazilian light castings industry has excess capacity. In these reviews, the Commission did not receive a usable questionnaire response from any producers of light

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[245] *Second Reviews,* USITC Pub. 3781 at 18-19.

[246] *Third Reviews*, USITC Pub. 4191 at 22-23.

[247] The volume of cumulated subject imports of light castings was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015. It was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-3.

[248] Brazilian Respondents' Posthearing Brief at Q-16 (response to Commissioner Pinkert).

castings in Brazil.[249] However, data provided by ABIFA, which may not include all Brazilian producers of subject light castings, indicate that in 2015 the capacity of Brazilian light castings producers was *** pounds and their unused capacity was *** pounds.[250]

The available data suggest that the Brazilian light castings industry has some degree of export orientation. According to official export statistics, which include both heavy and light castings (as well as some out-of-scope merchandise), total Brazilian exports of castings increased from 3.0 million pounds in 2013 to 4.2 million pounds in 2014, and then to 5.1 million pounds in 2015.[251]

The available data also suggest that the United States is an important market for Brazilian exports of light castings. Subject imports of light castings from Brazil have remained in the U.S. market during the period of review, but at lower levels than in the original investigations.[252] Official export statistics show that Brazilian exports of all castings to the United States increased from 2.0 million pounds in 2013 to 2.7 million pounds in 2014, and then declined to 2.0 million pounds in 2015.[253] According to official export statistics, the largest export destination for castings from Brazil in 2013, 2014, and 2015 was the United States.[254]

China. No subject Chinese producer submitted a questionnaire response in these reviews.[255] However, the available data indicate that the subject Chinese industry is the largest in the world, and has substantial capacity. Domestic Producers have identified 215 Chinese producers, and have presented information indicating that 57 Chinese castings producers have an estimated capacity of 2.9 billion pounds to produce castings (both heavy and light castings).[256]

The available data also indicate that the Chinese industry is export oriented. Global Trade Atlas data reflect that China is the world's largest exporter of articles of nonmalleable cast iron, which is a broader category that includes both heavy and light castings.[257] According to official export statistics, which include both heavy and light castings (as well as some out-of-scope merchandise), total Chinese exports of castings increased from 820.8 million pounds in 2013 to 943.8 million pounds in 2014, and then declined to 882.6 million pounds in 2015.[258]

The available data show that the United States is an important market for the subject Chinese industry. Subject imports of light castings from China remained in the U.S. market

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[249] CR at IV-30; PR at IV-23.

[250] CR/PR at Table IV-17.

[251] CR/PR at Table IV-16.

[252] In these reviews, the quantity of subject imports of light castings from Brazil *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015; it was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-3.

[253] CR/PR at Table IV-16.

[254] CR/PR at Table IV-16.

[255] CR at IV-42; PR at IV-29.

[256] CR at IV-41, IV-45; PR at IV-29, IV-32; CR/PR at Table IV-22; Domestic Producers' Prehearing Brief at 23 and Exh. 11.

[257] CR at IV-45; PR at IV-32.

[258] CR/PR at Table IV-21.

throughout the period of review, but at lower levels than in the original investigations.[259] Official Chinese export statistics show that the United States was one of the five largest export markets for Chinese castings (including heavy and light castings as well as some out-of-scope merchandise) in 2013, 2014, and 2015, and that Chinese exports of castings to the United States increased from 50.0 million pounds in 2013 to 55.8 million pounds in 2014, and then to 59.8 million pounds in 2015.[260]

Conclusion. We find that subject producers in Brazil and China would likely direct significant volumes of light castings to the U.S. market should the antidumping duty orders be revoked. As discussed above, the cumulated subject industries have large capacity and unused capacity, as well as an appreciable degree of export orientation. In the event of revocation, they are likely to direct additional exports to the U.S. market in light of their continued presence in the U.S. market even under the discipline of the orders during the period of review, as well as the relative importance of the United States as an export market. Moreover, the subject imports demonstrated during the original investigations their ability to increase exports to the United States substantially in a short period of time.[261] We therefore conclude that cumulated subject import volumes of light castings would likely be significant, both in absolute terms and relative to U.S. consumption, upon revocation of the orders.[262]

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[259] In these reviews, the quantity of subject imports from China was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015; it was *** pounds in interim 2015 and *** pounds in interim 2016. CR/PR at Table IV-3.

[260] CR/PR at Table IV-21.

[261] During the original period of investigation, the quantity of U.S. shipments of cumulated subject imports from Brazil and China increased from 927,000 pounds in 1983 to 3.3 million pounds in 1985. INV-OO-108 (November 18, 2016) at Table I-19.

[262] We have also examined inventories in our analysis of the likely volumes of subject imports, although we do not have questionnaire or other data available on inventories of subject merchandise of light castings in Brazil or China. U.S. importers' cumulated end-of-period inventories of light castings from Brazil and China were *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015. They were *** pounds in interim 2015, and *** pounds in interim 2016. CR/PR at Table IV-8. We note that Table IV-8 erroneously lists the volume of importers' end-of-period inventories in short tons, when in fact the unit of quantity for the volumes reported in Table IV-8 should be 1,000 pounds.

With respect to the potential for product shifting, there is no information in the record on the ability of subject producers of light castings in Brazil or China to shift from production of other products to production of subject merchandise on the same equipment. Domestic Producers contend that subject producers of light castings have some ability to product shift. Domestic Producers' Prehearing Brief at 58-59.

We note that there is no indication in the record that light castings from Brazil or China are subject to any antidumping or countervailing duty orders or proceedings in any markets other than the United States. CR at IV-45; PR at IV-32.

G. Likely Price Effects of Cumulated Subject Imports of Light Castings

1. The Original Investigations and Prior Five-Year Reviews

In the original determinations, the Commission found that the available pricing data for one Brazilian light castings product demonstrated margins of underselling in excess of 10 percent throughout 1985. Light castings from China undersold the domestic product in each quarter from 1983 to 1985, in most periods by margins of approximately 30 percent. The Commission found that the domestic like product and the subject imported light castings were essentially fungible.[263]

In the full first five-year reviews, the Commission found that there were no current pricing data on imports from Brazil and China and that prices for domestically produced light castings generally declined over 1997 and 1998. The Commission explained that purchasers considered price to be one of the most important factors in purchasing decisions and referenced the finding in the original determinations regarding the fungibility of the domestic like product and the subject imports. Thus, the Commission found it likely that Brazilian and Chinese producers would offer low prices to U.S. purchasers in order to regain market share if the antidumping duty orders were revoked, and found that the likely volume of subject imports would be likely to enter the United States at prices that would significantly undersell domestic producers and have a significant depressing or suppressing effect on prices for the domestic like product.[264]

In the expedited second five-year reviews, the Commission noted the absence of new product-specific pricing information, but stated that available AUV data showed that the AUV of the cumulated subject imports of light castings was below that of the domestic like product in 2003. The Commission found, in the absence of any evidence of the contrary, that the likely increased volume of subject imports would likely undersell the domestic like product if the orders were revoked and would be likely to have significant depressing and suppressing effects on prices of the domestic like product. Accordingly, the Commission found that the likely volume of subject imports from Brazil and China resulting from revocation of the antidumping duty orders would be likely to have significant adverse price effects on domestic prices for light castings.[265]

In the expedited third five-year reviews, where there was no new product-specific pricing information on the record, the Commission observed that AUV data showed that the AUV of cumulated subject imports of light castings was below that of the domestic like product in 2003, the only year since the first five-year reviews for which AUV comparison data were available. The Commission found, in the absence of any evidence of the contrary, that subject imports of light castings would likely undersell the domestic like product if the orders were

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[263] *Original Investigations,* USITC Pub. 1838 at 23.
[264] *First Reviews,* USITC Pub. 3247 at 19.
[265] *Second Reviews,* USITC Pub. 3781 at 20.

revoked and would be likely to have significant depressing and suppressing effects on prices of the domestic like product.[266]

2. The Current Reviews

We have previously found that domestically produced light castings and the cumulated subject imports are moderately to highly substitutable and that price is a very important factor in purchasing decisions for light castings.

The Commission requested pricing data for two light castings products in these reviews, but received no responses from any U.S. importers of light castings from Brazil or China. Consequently, the record does not contain pricing comparisons.[267]

Given the importance of price in purchasing decisions and the substitutability of the products, suppliers of subject merchandise will need to offer light castings at low prices in order to increase their sales in the U.S. market and gain market share. Absent the discipline of the orders, this will likely cause significant underselling by subject imports, as occurred during the original investigations.[268] With increasing volumes of subject merchandise being offered at low prices, the domestic industry would, in order to retain sales, be forced to cut prices and/or restrain price increases when its costs increase. Consequently, the increasing volumes of cumulated subject imports of light castings are likely to have a significant effect on prices for the domestic like product.

For the foregoing reasons, we find that cumulated subject imports of light castings would likely have significant price effects upon revocation of the orders.

H. Likely Impact of Cumulated Subject Imports of Light Castings

1. The Original Investigations and Prior Five-Year Reviews

In concluding in the original determinations that the domestic industry producing light castings was threatened with material injury by reason of subject imports from Brazil and China considered individually, the Commission found that the domestic industry producing light construction castings was beginning to experience difficulties and was vulnerable to material injury from subject imports, as reflected in particular in the industry's declining income toward the end of the period and flat or decreasing prices for the domestic product.[269]

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[266] *Third Reviews*, USITC Pub. 4191 at 23-24.

[267] CR at V-9 to V-10; PR at V-5.

[268] As previously discussed, in the original investigations, the Commission found that the available pricing data for light castings from Brazil demonstrated margins of underselling in excess of 10 percent throughout 1985, and that light castings from China undersold the domestic product in each quarter from 1983 to 1985, in most periods by margins of approximately 30 percent. *Original Investigations,* USITC Pub. 1838 at 23.

[269] *Original Investigations*, USITC Pub. 1838 at 17-19.

In the first five-year reviews, the Commission found that the domestic industry producing light castings was vulnerable to material injury if the orders were revoked. It based that finding primarily upon the operating loss experienced by the domestic industry of $***, or *** percent of net sales, in 1997 and $***, or *** percent of net sales, in 1998. The Commission stated that, given the generally substitutable nature of the subject imports and the domestic like product, the significant volume of low-priced subject imports, when combined with the expected adverse price effects of these imports, would have a significant adverse impact on the production, shipments, sales, and revenue levels of the domestic industry. This reduction in the industry's production, sales, and revenue levels would have a direct adverse impact on the industry's profitability and employment levels as well as its ability to raise capital and make and maintain necessary capital investments. Accordingly, the Commission concluded that, if the antidumping duty orders were revoked, the subject imports would be likely to have a significant adverse impact on the domestic industry within a reasonably foreseeable time.[270]

In the second five-year reviews, the Commission found that the limited information available did not provide a basis for departing from the Commission's prior findings that the domestic industry producing light castings was vulnerable to material injury if the orders were revoked. The Commission noted that the industry's share of apparent U.S. consumption in 2003 was only *** percent, *** its market share in ***. Although the domestic producers' market share had been lost largely to nonsubject imports rather than subject imports, the Commission found that the loss of market share indicated that the domestic industry might be more vulnerable than it had been previously. The Commission found that, in the event of revocation, the volume and price effects of the subject imports would likely have a significant adverse impact on the industry's production, sales, and revenue levels and would have a direct adverse impact on the industry's profitability and employment levels as well as its ability to raise capital and make and maintain necessary capital investments. Therefore, the Commission concluded that, if the antidumping duty orders on subject imports from Brazil and China were revoked, subject imports would be likely to have a significant adverse impact on the domestic industry within a reasonably foreseeable time.[271]

In the third five-year reviews, the Commission was evenly divided on the issue of the domestic industry's vulnerability.[272] It found that, in the event of revocation, the volume and price effects of the subject imports would likely have a significant adverse impact on the industry's production, sales, and revenue levels and would have a direct adverse impact on the industry's profitability and employment levels as well as its ability to raise capital and make and maintain necessary capital investments. Accordingly, the Commission concluded that, if the antidumping duty orders on subject imports from Brazil and China were revoked, subject

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[270] *First Reviews,* USITC Pub. 3247 at 20.

[271] *Second Reviews,* USITC Pub. 3781 at 21.

[272] Three Commissioners found that the information on the record was insufficient for them to make a determination as to whether the industry was currently vulnerable, while three Commissioners found that the domestic industry was vulnerable to material injury. *Third Reviews*, USITC Pub. 4191 at 25 nn.114, 115.

imports would be likely to have a significant adverse impact on the domestic industry within a reasonably foreseeable time.[273]

2. The Current Reviews

As discussed below, most of the performance indicators of the domestic industry producing light castings improved over the period of review, including production, capacity utilization, net sales, shipments, revenues, and all employment indicators. However, the domestic industry's profitability declined over the period of review. While the industry's market share was stable during the period of review, that market share remained below *** percent during each of the three calendar years of the period, and below that reported in any of the prior periods examined.[274]

The capacity of U.S. producers of light castings rose slightly by *** percent from 2013 to 2015, increasing from *** pounds in 2013 to *** pounds in 2014 and 2015.[275] Production rose by *** percent from 2013 to 2015, increasing from *** pounds in 2013 to *** pounds in 2014 to *** pounds in 2015.[276] Capacity utilization increased from *** percent in 2013 to *** percent in 2014, and then to *** percent in 2015.[277]

Net sales quantities rose by *** percent from 2013 to 2015, increasing from *** pounds in 2013 to *** pounds in 2014 and then to *** pounds in 2015.[278] U.S. shipments rose by *** percent from 2013 to 2015, increasing from *** pounds in 2013 to *** pounds in 2014 and then to *** pounds in 2015.[279] U.S. producers' ending inventories rose by *** percent from 2013 to 2015, increasing from *** pounds in 2013 to *** pounds in 2014 and then to *** pounds in 2015.[280] The domestic industry's share of apparent U.S. consumption was largely stable throughout the period of review, increasing from *** percent in 2013 to *** percent in 2014 and then declining to *** percent in 2015.[281]

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[273] *Third Reviews*, USITC Pub. 4191 at 25.

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

[275] CR/PR at Tables III-3, C-2. Capacity was *** pounds in interim 2015 and interim 2016. *Id.*

[276] CR/PR at Tables III-3, C-2. Production was *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[277] CR/PR at Tables III-3, C-2. Capacity utilization was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[278] CR/PR at Tables III-19, C-2. Net sales were *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[279] CR/PR at Tables III-7, C-2. U.S. shipments were *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[280] CR/PR at Tables III-9, C-2. U.S. producers' ending inventories were *** pounds in interim 2015 and *** pounds in interim 2016. *Id.*

[281] CR/PR at Tables I-15, C-2. The domestic industry's share of apparent U.S. consumption was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

Employment rose slightly by *** percent from 2013 to 2015, increasing from *** PRWs in 2013 to *** PRWs in 2014 and then declining to *** PRWs in 2015.[282] Hours worked rose by *** percent from 2013 to 2015, increasing from *** hours in 2013 to *** hours in 2014, and then to *** hours in 2015.[283] Wages paid rose by *** percent from 2013 to 2015, increasing from $*** in 2013 to $*** in 2014, and then to $*** in 2015.[284] Productivity (in pounds per hour) rose by *** percent from 2013 to 2015, increasing from *** in 2013 to *** in 2014, and then to *** in 2015.[285]

Net sales value rose by *** percent from 2013 to 2015, increasing from $*** in 2013 to $*** in 2014, and then to $*** in 2015.[286] Total COGS rose by *** percent from 2013 to 2015, increasing from $*** in 2013 to $*** in 2014, and then to $*** in 2015.[287] Operating income fell by *** percent from 2013 to 2015, declining from $*** in 2013 to $*** in 2014, and then increasing to $*** in 2015.[288] The industry's operating income margin declined from *** percent in 2013 to *** percent in 2014, and then increased to *** percent in 2015.[289]

Capital expenditures declined by *** percent during 2013 and 2015, declining from $*** in 2013 to $*** in 2014, and then increasing to $*** in 2015.[290] R&D expenses increased from $*** in 2013 to $*** in 2014, and then to $*** in 2015.[291]

As indicated above, most of the performance indicators of the domestic industry improved during the period of review, including production, capacity utilization, net sales, shipments, revenues, and employment indicators, but its financial performance declined, and its market share remained stable. Given the data in the record, we do not conclude that the domestic industry is in a vulnerable condition.[292]

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[282] CR/PR at Tables III-15, C-2. Employment was *** PRWs in interim 2015 and *** PRWs in interim 2016. *Id.*

[283] CR/PR at Tables III-15, C-2. Hours worked were *** hours in interim 2015 and *** hours in interim 2016. *Id.*

[284] CR/PR at Tables III-15, C-2. Wages paid were $*** in interim 2015 and $*** in interim 2016. *Id.*

[285] CR/PR at Tables III-15, C-2. Productivity (in pounds per hour) was *** in interim 2015 and *** in interim 2016. *Id.*

[286] CR/PR at Tables III-19, C-2. Net sales value was $*** in interim 2015 and $*** in interim 2016. *Id.*

[287] CR/PR at Tables III-19, C-2. Total COGS was $*** in interim 2015 and $*** in interim 2016. *Id.*

[288] CR/PR at Tables III-19, C-2. Operating income was $*** in interim 2015 and $*** in interim 2016. *Id.*

[289] CR/PR at Tables III-19, C-2. The operating income margin was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[290] CR/PR at Table III-22, C-2. Capital expenditures were $*** in interim 2015 and $*** in interim 2016. *Id.*

[291] CR/PR at Table III-22. R&D expenses were $*** in interim 2015 and $*** in interim 2016. *Id.*

[292] Commissioners Pinkert and Schmidtlein find the domestic industry producing light castings to be vulnerable given its low market share, low capacity utilization rate, and decreased operating income from 2013 to 2015, notwithstanding increased apparent U.S. consumption during that period.

As addressed above, we have found that revocation of the orders would likely result in a significant increase in cumulated subject import volume that would likely have adverse price effects on the domestic industry. The likely significant volume of the cumulated subject imports would likely have an adverse impact on the production, shipments, sales, market share, and revenues of the domestic industry. These reductions would likely have a direct adverse impact on the industry's profitability and employment, as well as its ability to raise capital and make and maintain necessary capital investments. We therefore conclude that, if the orders were revoked, subject imports from Brazil and China would be likely to have a significant impact on the domestic industry within a reasonably foreseeable time.

We have also considered the role of nonsubject imports in the U.S. market. The volume of nonsubject imports of light castings increased over the period of review.[293] As previously discussed, nonsubject imports supplied a larger share of the U.S. market during the period of review than did the domestic industry, with the market share of nonsubject imports increasing from *** percent in 2013 to *** percent in 2014, and to *** percent in 2015.[294] The largest supplier of nonsubject imports during the period of review was India, which accounted for *** percent of total U.S. imports of light castings in 2015.[295] The record indicates that U.S.

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[293] The volume of nonsubject imports was *** pounds in 2013, *** pounds in 2014, and *** pounds in 2015. It was *** pounds in interim 2015, and *** pounds in interim 2016. CR/PR at Table I-13.

[294] CR/PR at Table I-15. The market share of nonsubject imports was *** percent in interim 2015 and *** percent in interim 2016. *Id.*

[295] CR/PR at Table IV-3. Brazilian Respondents have asserted that domestic producers are "gaming the system" by seeking continuation of the orders against the subject countries but not filing an antidumping petition with respect to imports of castings from India, and that the domestic producers are ***. Brazilian Respondents' Posthearing Brief at Q-5 to Q-8 (response to Commissioner Broadbent).

However, the record does not indicate any affiliations between U.S. castings producers and Indian castings producers. CR/PR at Tables I-7 through I-9. The record indicates that one *** U.S. producer of heavy castings, ***, which accounted for only *** percent of U.S. production of heavy castings in 2015, imported approximately *** pounds of heavy castings from India during the period of review, which accounted for approximately *** percent of total reported nonsubject imports of heavy castings from India during the period of review. CR/PR at Tables 1-7, III-10; IV-1. The record further indicates that the *** of one U.S. producer of light castings, ***, which accounted for *** percent of U.S. production of light castings in 2015, imported approximately *** pounds of heavy castings from India during the period of review, which accounted for approximately *** percent of total nonsubject imports of light castings from India during the period of review. CR/PR at Tables I-8, I-9, III-12, IV-3. The record also indicates that another U.S. producer of light castings, ***, which accounted for *** percent of U.S. production of light castings in 2015, purchased imports of light castings from India (as well as Canada), for a combined total of *** pounds of imports purchased from both sources, which accounted for *** percent of total reported nonsubject imports of light castings from India during the period of review. CR/PR at Tables 1-8, III-13, IV-3; *see* Domestic Producers' Posthearing Brief, Exh. 1 at 8-9 (response to Commissioner Pinkert). Because the record indicates no corporate affiliations between domestic castings producers and nonsubject Indian producers, and only a limited amount of imports and purchases of nonsubject castings from India by U.S. producers, Brazilian Respondents' arguments lack a (Continued…)

producers of light castings and nonsubject imports of light castings from India directly compete in the U.S. market.[296] Thus, any competition from subject imports on the basis of price in the U.S. market in the event of revocation will not exclusively affect nonsubject imports, but will also likely have an adverse effect on both the domestic industry's prices and its market share.

Accordingly, we find that revocation of the antidumping duty orders on light castings from Brazil and China would likely have a significant impact on the domestic industry.

VI. Conclusion

For the above-stated reasons, we determine that revocation of the antidumping duty orders on heavy castings from Brazil, Canada, and China and the countervailing duty order on heavy castings from Brazil would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time. We further determine that revocation of the antidumping duty orders on light castings from Brazil and China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

(…Continued)
factual basis. In any event, their pertinence to these reviews is unclear; the inquiry in these reviews is whether revocation of the orders on heavy castings from Brazil, Canada, and China and on light castings from Brazil and China will cause a continuation or recurrence of material injury to the respective domestic industries in the reasonably foreseeable future, and not whether the industries' current performance is impaired by imports from India.

[296] *See* CR/PR at Tables E-1 through E-4.

PART I: INTRODUCTION

BACKGROUND

On October 1, 2015, the U.S. International Trade Commission ("Commission" or "USITC") gave notice, pursuant to section 751(c) of the Tariff Act of 1930, as amended ("the Act"),[1] that it had instituted reviews to determine whether revocation of the countervailing duty order on heavy iron construction castings ("heavy castings") from Brazil, and the antidumping duty orders on heavy castings from Brazil, Canada, and China, and the antidumping duty orders on light iron construction castings ("light castings") from Brazil and China would likely lead to the continuation or recurrence of material injury to a domestic industry.[2] [3] On January 4, 2016, the Commission determined that it would conduct full reviews pursuant to section 751(c)(5) of the Act. [4] The following tabulation presents information relating to the background and schedule of this proceeding:[5]

[1] 19 U.S.C. 1675(c).

[2] *Iron Construction Castings From Brazil, Canada, and China; Institution of Five-Year Reviews;* 80 FR 59192*,* October 1, 2015. All interested parties were requested to respond to this notice by submitting the information requested by the Commission.

[3] In accordance with section 751(c) of the Act, the U.S. Department of Commerce ("Commerce") published a notice of initiation of five-year reviews of the subject antidumping and countervailing duty orders concurrently with the Commission's notice of institution. *Initiation of Five-Year (''Sunset'') Review,* 80 FR 59133, October 1, 2015*.*

[4] *Iron Construction Castings From Brazil, Canada, and China; Notice of Commission Determination To Conduct Full Five-Year Reviews,* 81 FR 1967, January 14, 2016*.*

[5] The Commission's notice of institution, notice to conduct full reviews, scheduling notice, and statement on adequacy are referenced in appendix A and may also be found at the Commission's web site (internet address *www.usitc.gov*). Commissioners' votes on whether to conduct expedited or full reviews may also be found at the web site. Appendix B of this report contains the list of witnesses appearing at the hearing.

Effective date	Action
March 5, 1986	Antidumping duty order – certain iron construction castings from Canada (51 FR 7600)
May 9, 1986	Antidumping duty order – iron construction castings from Brazil (51 FR 17220)
May 9, 1986	Antidumping duty order – iron construction castings from India (51 FR 17221)
May 9, 1986	Antidumping duty order – iron construction castings from the People's Republic of China (51 FR 17222)
May 15, 1986	Countervailing duty order – certain heavy iron construction castings from Brazil (51 FR 17786)
February 6, 1991	Revocation of antidumping duty order and termination of administrative reviews – iron construction castings from India (56 FR 4789)
September 17, 1998	Commerce's final results of changed circumstances and revocation in part of antidumping duty order – iron construction castings from Canada (63 FR 49687)
November 12, 1999	Continuation of antidumping duty orders – certain iron construction castings from Brazil, Canada, and the People's Republic of China and continuation of countervailing duty order – heavy iron construction castings from Brazil (64 FR 61591)
June 29, 2005	Continuation of antidumping duty orders – certain iron construction castings from Brazil, Canada, and the People's Republic of China and continuation of countervailing duty order – heavy iron construction castings from Brazil (70 FR 37326)
November 19, 2010	Continuation of antidumping duty orders – certain iron construction castings from Brazil, Canada, and the People's Republic of China and continuation of countervailing duty order – heavy iron construction castings from Brazil (75 FR 70900)
October 1, 2015	Commission's institution of five-year reviews (80 FR 59192)
October 1, 2015	Commerce's initiation of five-year reviews (80 FR 59133)
January 14, 2016	Commission's determination to conduct full five-year reviews (81 FR 1967)
February 5, 2016	Commerce's final results of expedited fourth sunset review of countervailing duty order on heavy iron construction castings from Brazil (81 FR 6237)
February 10, 2016	Commerce's final results of expedited fourth sunset review of antidumping duty orders on certain iron construction castings from Brazil, Canada, and the People's Republic of China (81 FR 7083)
June 23, 2016	Commission's scheduling of the reviews (81 FR 40921)
October 20, 2016	Commission's hearing
December 2, 2016	Commission's vote
December 21, 2016	Commission's determinations and views

The original investigations[6]

The original investigations resulted from petitions filed on May 13, 1985 with Commerce and the Commission by the Municipal Castings Fair Trade Council, a trade association representing 15 domestic producers of iron construction castings ("castings"). In February 1986, the Commission determined that an industry in the United States was materially injured by reason of imports from Canada of heavy castings which were being sold at less than fair value.[7] On March 5, 1986, Commerce published an antidumping duty order covering the subject merchandise from Canada.[8] In April 1986, the Commission determined that an industry in the United States was materially injured by reason of imports of heavy castings from Brazil that were being subsidized by the government of Brazil, that an industry in the United States was materially injured by reason of imports of heavy castings from Brazil and China that were being sold at less than fair value, and that an industry in the United States was threatened with material injury by reason of imports of light castings from Brazil and China that were being sold at less than fair value. On May 9, 1986, Commerce published antidumping duty orders covering the subject merchandise from Brazil and China.[9] On May 15, 1986, Commerce published a countervailing duty order covering the subject merchandise from Brazil, with a country-wide margin of 3.40 percent.[10]

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[6] Unless otherwise noted, this information is derived from *Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Third Review),* USITC Publication 4191, October 2010, pp. I-3-I-6.

[7] The Commission's original determinations and the original antidumping duty order on iron construction castings from Canada covered both heavy and light castings; however, the order was subsequently revoked in part by Commerce to exclude light iron construction castings. As the result of a 1998 changed circumstances review, the antidumping duty order was revoked in part due to an expression of no interest from the domestic interested parties. *Iron Construction Castings From Canada: Notice of Final Results of Changed Circumstances Antidumping Duty Administrative Review, and Revocation in Part of Antidumping Duty Order*, 63 FR 49687, September 17, 1998; *Iron Construction Castings From Canada: Notice of Final Results of Changed Circumstances Antidumping Duty Administrative Review, and Revocation in Part of Antidumping Duty Order: Correction*, 63 FR 50881, September 23, 1998.

[8] *Antidumping Duty Order; Certain Iron Construction Castings from Canada*, 51 FR 7600, March 5, 1986.

[9] *Antidumping Duty Order; Iron Construction Castings from Brazil,* 51 FR 17220, May 9, 1986; and *Antidumping Duty Order, Iron Construction Castings from the People's Republic of China (the PRC),* 51 FR 17222, May 9, 1986. The antidumping duty orders with respect to light and heavy castings from India that were also issued at that time were revoked in 1991. *Revocation of Antidumping Duty Order and Termination of Administrative Reviews; Iron Construction Castings from India*, 56 FR 4789, February 6, 1991.

[10] *Countervailing Duty Order; Certain Heavy Iron Construction Castings From Brazil,* 51 FR 17786, May 15, 1986.

The first five-year reviews

On November 2, 1998, the Commission gave notice that it had instituted five-year reviews on castings. After conducting full reviews and following Commerce's affirmative determinations, on October 25, 1999, the Commission determined that revocation of the countervailing duty order on heavy castings from Brazil; revocation of the antidumping duty orders on heavy castings from Brazil, Canada, and China; and revocation of the antidumping duty orders on light castings from Brazil and China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[11]

The second five-year reviews

On October 1, 2004, the Commission gave notice that it had instituted second five-year reviews on castings. After conducting expedited reviews, on June 8, 2005, the Commission determined that revocation of the countervailing duty order on heavy castings from Brazil; revocation of the antidumping duty orders on heavy castings from Brazil ,Canada, and China; and revocation of the antidumping duty orders on light castings from Brazil and China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[12]

The third five-year reviews

On May 3, 2010, the Commission gave notice that it had instituted third five-year reviews on castings. After conducting expedited reviews, on October 27, 2010, the Commission determined that revocation of the countervailing duty order on heavy castings from Brazil, the antidumping duty orders on heavy castings from Brazil and Canada, and revocation of the antidumping duty orders on light castings from Brazil and China would be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.[13]

PRIOR AND RELATED INVESTIGATIONS

On October 8, 1980, the Commission published its determination that an industry in the United States was materially injured by reason of imports of certain iron metal castings from India that were being subsidized by the Government of India.[14] On October 16, 1980, Commerce issued a countervailing duty order in regards to the subject merchandise from

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[11] *Iron Metal Castings From India; Heavy Iron Construction Castings From Brazil;* and *Iron Construction Castings From Brazil, Canada, and China,* 64 FR 58442, October 29, 1999.

[12] *Certain Iron Construction Castings From Brazil, Canada, and China*, 70 FR 34505, June 14, 2005.

[13] *Iron Construction Castings From Brazil, Canada, and China; Determinations,* 75 FR 67395, November 2, 2010.

[14] *Certain Iron-Metal Castings from India: Investigation No. 303-TA-13 (Final)*, USITC Publication 1098, September 1980.

India.[15] On November 2, 1998, the Commission instituted a five-year review concerning the countervailing duty order on India. On October 29, 1999, the Commission determined that revocation of the countervailing duty on iron metal castings from India would not be likely to lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time,[16] and Commerce revoked the countervailing duty order effective January 1, 2000.[17]

On December 18, 1980, the Commission made an affirmative preliminary determination concerning imports of certain iron construction castings from India that were alleged to be sold at LTFV. Commerce subsequently issued a negative determination as to the existence of LTFV sales, and the Commission's investigation was terminated.[18]

On January 19, 1984, the Commission instituted investigation No. 332-176, Competitive Assessment of the U.S. Foundry Industry, of which Part III dealt with castings.[19] On December 2, 1985, the Commission instituted investigation No. TA-201-58, Certain Metal Castings, and at the end of its investigation made a negative determination.[20]

The Commission also conducted a countervailing duty investigation of light castings from Brazil. In August 1987, the Commission terminated the countervailing duty investigation of light castings from Brazil in response to petitioners' withdrawal of the petition.[21] The termination followed an affirmative preliminary determination[22] on remand from a decision of the Court of International Trade holding that the statute required those allegedly subsidized imports from Brazil to be cumulated with allegedly LTFV imports of light castings from Brazil and other countries.[23]

Following receipt on May 4, 2004, of a request from the Committee on Ways and Means of the U.S. House of Representatives, the Commission instituted investigation No. 332-460, Foundry Products: Competitive Conditions in the U.S. Market, under section 332(g) of the Tariff Act of 1930. The purpose of the investigation was to provide a report analyzing competitive

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[15] The scope of the order consisted of manhole covers and frames, clean-out covers and frames, and catch basin grates and frames, which are defined as heavy iron construction castings in these current reviews. *Certain Iron Metal Castings From India: Countervailing Duty Order*, 45 FR 68650, October 16, 1980.

[16] *Iron Metal Castings From India; Heavy Iron Construction Castings From Brazil; and Iron Construction Castings From Brazil, Canada, and China*, 64 FR 58442, October 29, 1999; determination upheld in *Neenah Foundry Co. v. United States*, 25 CIT 766, 155 F. Supp. 2d 766 (2001).

[17] *Revocation of Countervailing Duty Order: Iron Metal Castings From India,* 64 FR 61602, November 12, 1999.

[18] *Certain Iron Metal Castings From India; Antidumping: Final Determination of Sales at Not Less Than Fair Value*, 46 FR 39871, August 5, 1981.

[19] *Competitive Assessment of the U.S. Foundry Industry: Investigation No. 332-176,* USITC Publication 1582, September 1984.

[20] *Certain Metal Castings: Investigation No. TA-201-58*, USITC Publication 1849, May 1986.

[21] *Certain Light Iron Construction Castings From Brazil*, 52 FR 29902, August 12, 1987.

[22] *Iron Construction Castings From Brazil (Light)*, 51 FR 12217, April 9, 1986.

[23] *Bingham & Taylor, Division, Virginia Industries, Inc. V. United States*, 10 CIT 67, 627 F. Supp. 793 (1986), *aff'd* 815 F. 2d 1482 (Fed. Cir. 1987).

conditions facing the U.S. foundry industry in the U.S. market, including an overview of the industry together with a detailed analysis of selected key foundry products, including castings.[24]

SUMMARY DATA

Table I-1 and Table I-2 present a summary of data from the original investigations (1985), the first full five-year reviews (1998), second expedited reviews (2003), third expedited reviews (2009), and the current reviews on the orders for heavy castings from Brazil, Canada, and China and the orders for light castings from Brazil and China.

[24] *Foundry Products: Competitive Conditions in the U.S. Market: Investigation No. 332-460*, USITC Publication 3771, May 2005.

Table I-1
Heavy castings: Comparative data from the original investigations, the first reviews and the current reviews, 1985-2015

Item	Original investigation	First reviews	Second reviews	Third reviews	These reviews
	1985	1998	2003	2009	2015
Quantity (1,000 pounds)					
U.S. consumption quantity	560,786	683,348	630,761	***	***
Share of quantity (percent)					
Share of U.S. consumption:					
U.S. producers' share	72.6	79.5	71.1	***	***
U.S. importers' share:					
Brazil	3.5	---	0.1	***	***
Canada	3.7	1.5	1.5	***	***
China	3.5	0.2	0.4	***	***
Subject sources	10.7	1.7	1.9	***	***
Nonsubject sources	16.7	18.8	27.0	***	***
All sources	27.4	20.5	28.9	***	***
Value (1,000 dollars)					
U.S. consumption	---	293,677	245,915	***	***
Share of value (percent)					
Share of U.S. consumption:					
U.S. producers' share	---	88.5	82.3	***	***
U.S. importers' share:					
Brazil	---	---	0.1	***	***
Canada	---	1.2	1.4	***	***
China	---	0.2	0.5	***	***
Subject sources	---	1.4	1.9	***	***
Nonsubject sources	---	10.1	15.8	***	***
All sources	---	11.5	17.7	***	***
Quantity (1,000 pounds); Value (1,000 dollars); and Unit Value (dollars per pound)					
U.S. imports from.--					
Brazil:					
Quantity	19,508	73	391	685	662
Value	2,911	37	156	540	869
Unit value	$0.15	$0.51	$0.40	$0.79	$1.31
Canada:					
Quantity	21,004	10,178	9,557	6,619	1,273
Value	5,128	3,558	3,359	3,588	1,114
Unit value	$0.24	$0.35	$0.35	$0.54	$0.87
China:					
Quantity	19,482	1,279	2,285	1,418	3,139
Value	---	588	1,136	1,257	3,411
Unit value	---	$0.46	$0.50	$0.89	$1.09
Subject sources:					
Quantity	59,994	11,530	12,233	8,722	5,074
Value	---	4,183	4,652	5,385	5,393
Unit value	---	$0.36	$0.38	$0.62	$1.06
Nonsubject sources:					
Quantity	93,792	128,388	170,256	65,531	111,441
Value	---	29,704	38,819	31,615	58,267
Unit value	---	$0.23	$0.23	$0.48	$0.52
All sources:					
Quantity	153,786	139,918	182,488	74,253	116,515
Value	---	33,887	43,470	37,000	63,660
Unit value	---	$0.24	$0.24	$0.50	$0.55

Table continued on next page.

Table I-1 -- Continued
Heavy castings: Comparative data from the original investigations, the first reviews and the current reviews, 1985-2015

Item	Original investigation	First reviews	Second reviews	Third reviews	These reviews
	1985	1998	2003	2009	2015
	Quantity (1,000 pounds); Value (1,000 dollars); and Unit Value (dollars per pound)				
U.S. industry:					
Capacity (quantity)	458,432	533,763	---	***	***
Production (quantity)	313,723	542,637	446,955	***	***
Capacity utilization (percent)	68.4	101.7	---	***	***
U.S. shipments:					
Quantity	407,000	543,430	448,273	***	***
Value	---	***	202,445	***	***
Unit value	---	***	$0.45	***	***
Ending inventory	***	***	---	---	***
Inventories/total shipments	---	***	---	---	***
Production workers	1,244	1,625	---	---	***
Hours worked (1,000)	2,740	3,602	---	---	***
Wages paid (1,000 dollars)	25,137	49,408	---	---	***
Hourly wages	$9.17	$13.72	---	---	***
Productivity (pounds per hour)	114.0	150.6	---	---	***
Financial data:					
Net sales:					
Quantity	---	544,369	---	---	***
Value	---	257,939	---	253,979	***
Unit value	---	$0.47	---	---	***
Cost of goods sold	---	182,262	---	180,640	***
Gross profit or (loss)	---	75,677	---	73,339	***
SG&A expense	---	35,611	---	54,300	***
Operating income or (loss)	---	40,066	---	19,039	***
Unit COGS	---	0.33	---	---	***
Unit operating income	---	0.07	---	---	***
COGS/ Sales (percent)	---	70.7	---	---	***
Operating income or (loss)/ Sales (percent)	---	15.5	---	7.5	***

Source: Office of Investigations memo INV-W-222, INV-HH-091, and compiled from data submitted in response to Commission questionnaires.

Table I-2
Light castings: Comparative data from the original investigations, the first reviews and the current reviews, 1985-2015

Item	Original investigation	First reviews	Second reviews	Third reviews	These reviews
	1985	1998	2003	2009	2015
			Quantity (1,000 pounds)		
U.S. consumption quantity	94,217	***	***	***	***
			Share of quantity (percent)		
Share of U.S. consumption:					
U.S. producers' share	60.5	***	***	***	***
U.S. importers' share:					
Brazil	1.7	***	***	***	***
Canada subject[1]	---	---	---	---	***
China	1.7	***	***	***	***
Subject sources	3.5	0.1	***	***	***
Nonsubject sources	36.0	***	***	***	***
All sources	39.5	***	***	***	***
			Value (1,000 dollars)		
U.S. consumption	---	***	***	***	***
			Share of value (percent)		
Share of U.S. consumption:					
U.S. producers' share	---	***	***	***	***
U.S. importers' share:					
Brazil	---	***	***	***	***
Canada subject[1]	---	---	---	---	***
China	---	***	***	***	***
Subject sources	---	***	***	***	***
Nonsubject sources	---	***	***	***	***
All sources	---	***	***	***	***
			Quantity (1,000 pounds); Value (1,000 dollars); and Unit Value (dollars per pound)		
U.S. importers' U.S. shipments of imports from					
Brazil:					
Quantity	1,640	0	882	250	0
Value	---	0	240	157	9
Unit value	---	---	$0.27	$0.63	$81.00
Canada subject:					
Quantity	---	---	---	---	---
Value	---	---	---	---	---
Unit value	---	---	---	---	---
China:					
Quantity	1,644	***	2,526	544	1,246
Value	---	***	765	366	1,083
Unit value	---	***	$0.30	$0.67	$0.87
Subject sources:					
Quantity	3,284	***	3,408	794	1,246
Value	---	***	1,005	524	1,092
Unit value	---	***	$0.29	$0.66	$0.88
Nonsubject sources:					
Quantity	33,933	***	83,776	34,908	69,252
Value	---	***	21,675	17,380	31,987
Unit value	---	***	$0.26	$0.50	$0.46
All countries:					
Quantity	37,217	***	87,184	35,702	71,161
Value	---	***	22,680	17,904	34,547
Unit value	---	***	$0.26	$0.50	$0.49

Table continued on next page.

Table I-2 -- Continued
Light castings: Comparative data from the original investigations, the first reviews and the current reviews, 1985-2015

Item	Original investigation	First reviews	Second reviews	Third reviews	These reviews
	1985	1998	2003	2009	2015
	Quantity (1,000 pounds); Value (1,000 dollars); and Unit Value (dollars per pound)				
U.S. industry:					
Capacity (quantity)	70,236	***		***	***
Production (quantity)	45,694	***	***	***	***
Capacity utilization (percent)	65.1	***	---	***	***
U.S. shipments:					
Quantity	57,000	***	***	***	***
Value	---	***	***	***	***
Unit value	---	***	***	***	***
Ending inventory	17,159	***	---	---	***
Inventories/total shipments	---	---	---	---	***
Production workers	342	***	---	---	***
Hours worked (1,000)	554	***	---	---	***
Wages paid (1,000 dollars)	6,119	***	---	---	***
Hourly wages	11.04	***	---	---	***
Productivity (pounds per hour)	82.0	***	---	---	***
Financial data:					
Net sales:					
Quantity	---	***	---	---	***
Value	---	***	---	***	***
Unit value	---	***	---	---	***
Cost of goods sold	---	***	---	***	***
Gross profit or (loss)	---	***	---	***	***
SG&A expense	---	***	---	***	***
Operating income or (loss)	---	***	---	***	***
Unit COGS	---	***	---	---	***
Unit operating income	---	***	---	---	***
COGS/ Sales (percent)	---	***	---	---	***
Operating income or (loss)/ Sales (percent)	---	***	---	***	***

[1]Canada was a subject source from 1986 to 1988. Since 1988, Canada has been reported as part of the "nonsubject" aggregate.

Source: Office of Investigations memo INV-W-222, INV-HH-091, and compiled from data submitted in response to Commission questionnaires.

STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

Statutory criteria

Section 751(c) of the Act requires Commerce and the Commission to conduct a review no later than five years after the issuance of an antidumping or countervailing duty order or the suspension of an investigation to determine whether revocation of the order or termination of the suspended investigation "would be likely to lead to continuation or recurrence of dumping or a countervailable subsidy (as the case may be) and of material injury."

Section 752(a) of the Act provides that in making its determination of likelihood of continuation or recurrence of material injury--

> *(1) IN GENERAL.-- . . . the Commission shall determine whether revocation of an order, or termination of a suspended investigation, would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time. The Commission shall consider the likely volume, price effect, and impact of imports of the subject merchandise on the industry if the order is revoked or the suspended investigation is terminated. The Commission shall take into account--*
>
> *(A) its prior injury determinations, including the volume, price effect, and impact of imports of the subject merchandise on the industry before the order was issued or the suspension agreement was accepted,*
>
> *(B) whether any improvement in the state of the industry is related to the order or the suspension agreement,*
>
> *(C) whether the industry is vulnerable to material injury if the order is revoked or the suspension agreement is terminated, and*
>
> *(D) in an antidumping proceeding . . ., (Commerce's findings) regarding duty absorption . . ..*
>
> *(2) VOLUME.--In evaluating the likely volume of imports of the subject merchandise if the order is revoked or the suspended investigation is terminated, the Commission shall consider whether the likely volume of imports of the subject merchandise would be significant if the order is revoked or the suspended investigation is terminated, either in absolute terms or relative to production or consumption in the United States. In so doing, the Commission shall consider all relevant economic factors, including--*
>
> *(A) any likely increase in production capacity or existing unused production capacity in the exporting country,*
>
> *(B) existing inventories of the subject merchandise, or likely increases in inventories,*
>
> *(C) the existence of barriers to the importation of such merchandise into countries other than the United States, and*
>
> *(D) 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.*
>
> *(3) PRICE.--In evaluating the likely price effects of imports of the subject merchandise if the order is revoked or the suspended investigation is terminated, the Commission shall consider whether--*

(A) there is likely to be significant price underselling by imports of the subject merchandise as compared to domestic like products, and

(B) imports of the subject merchandise are likely to enter the United States at prices that otherwise would have a significant depressing or suppressing effect on the price of domestic like products.

(4) IMPACT ON THE INDUSTRY.--In evaluating the likely impact of imports of the subject merchandise on the industry if the order is revoked or the suspended investigation is terminated, the Commission shall consider all relevant economic factors which are likely to have a bearing on the state of the industry in the United States, including, but not limited to–

(A) likely declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity,

(B) likely negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, and

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

The Commission shall evaluate all such relevant economic factors . . . within the context of the business cycle and the conditions of competition that are distinctive to the affected industry.

Section 752(a)(6) of the Act states further that in making its determination, "the Commission may consider the magnitude of the margin of dumping or the magnitude of the net countervailable subsidy. If a countervailable subsidy is involved, the Commission shall consider information regarding the nature of the countervailable subsidy and whether the subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement."

Organization of report

Information obtained during the course of the reviews that relates to the statutory criteria is presented throughout this report. A summary of trade and financial data for castings as collected in the reviews is presented in appendix C. U.S. industry data are based on the questionnaire responses of *** U.S. producers of heavy castings, *** that are believed to have accounted for the vast majority of domestic production of heavy castings in 2015.[25] [26] The *** responding producers of light castings, *** are believed to have accounted for the vast majority

[25] In response to the Commission's notice of institution in these current reviews, domestic producers of iron construction castings estimated that four producers of heavy iron construction castings, D&L Foundry, EJ USA, Neenah Foundry, and U.S. Foundry accounted for *** percent of U.S. production of heavy castings in 2014. *Domestic Interested Parties' Response to the Notice of Institution*, November 2, 2015, pp. 18-19.

[26] Responding producers include ***.

of domestic production of light castings in 2015.[27] U.S. import data and related information are based on Commerce's official import statistics and the questionnaire responses of *** U.S. importers of heavy castings and *** U.S. importers of light castings that are believed to have accounted for *** percent of total subject U.S. imports of heavy castings and *** percent of the total subject U.S. imports of light castings during 2015.[28]

Foreign industry data and related information are based on the questionnaire responses of one producer of heavy castings in Brazil and *** producer of heavy castings in Canada.[29] The Commission received no responses from foreign producers in China. Responses by U.S. producers, importers, purchasers, and foreign producers of castings to a series of questions concerning the significance of the existing antidumping and countervailing duty orders and the likely effects of revocation of such orders are presented in appendix D.

COMMERCE'S REVIEWS

Administrative reviews

Commerce conducted numerous administrative reviews after imposition of the orders;[30] however, it has not conducted any administrative reviews, new shipper reviews, changed circumstances reviews,[31] or critical circumstances reviews, nor has it made any duty-absorption[32] or anti-circumvention findings since the last five-year reviews.

Scope inquiry reviews

Commerce made numerous scope rulings prior to the third five-year reviews.[33] In May 2007, Commerce made a scope ruling, in which it determined that castings made of gray and

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[27] In the Response to the Notice of Institution, it was noted that *** accounted for *** percent of U.S. production of light castings in 2014. Staff used this information to estimate U.S. production in 2015. *Domestic Interested Parties' Response to the Notice of Institution*, November 2, 2015, pp. 19.

[28] Given the large volume of nonsubject imports of castings and other products entering the United States, staff believes that the data reported by responding U.S. imports of castings from subject countries are understated.

[29] One firm (***) submitted a questionnaire that was incomplete and contained unusable data.

[30] *Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Third Review),* USITC Publication 4191, October 2010, pp. I-7-I-11.

[31] *Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA-249 and 731-TA-262,263, and 265 (Third Review),* USITC Publication 4191, October 2010, pp. I-7-I-11.

[32] *Issues and Decision Memorandum for the Final Results of Expedited Fourth Sunset Reviews of the Antidumping Duty Orders on Certain Iron Construction Castings from Brazil, Canada, and the People's Republic of China*, A-122-503, A-351-503, A-570-502, U.S. Department of Commerce Memorandum, February 2016, p. 5.

[33] *Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Third Review),* USITC Publication 4191, October 2010, table I-9. According to ***, *** companies for which scope exclusion requests were granted by Commerce prior to the third five-year reviews imported iron construction castings during 2010-14.

ductile cast iron are included within the scope of the antidumping orders on castings from Brazil, Canada and China.[34] Since the third-five year sunset review, Commerce has made one scope ruling, in which it determined that National Diversified Sales' grates and frames are outside the scope of the antidumping order on iron construction castings from China.[35]

Five-year reviews

Commerce has issued the final results of its expedited reviews with respect to all subject countries.[36] Table I-3 presents the countervailable subsidy rates calculated by Commerce in its original investigations and subsequent reviews for heavy castings from Brazil. Tables I-4, I-5, and I-6 present the dumping margins calculated by Commerce in its original investigations and subsequent reviews for iron construction castings from Brazil, Canada, and China respectively.

Table I-3
Heavy castings: Commerce's original and first through fourth five-year countervailable subsidy rates for producers/exporters in Brazil

Producer/exporter	Original rate (*percent*)	First five-year review rate (*percent*)	Second five-year review rate (*percent*)	Third five-year review rate (*percent*)	Fourth five-year review rate (*percent*)
Brazil-wide entity	3.40	3.40	3.40	1.06	1.06

Source: *Continuation of Countervailing Duty Order: Heavy Iron Construction Castings From Brazil*, 64 FR 61591, November 12, 1999; *Continuation of Antidumping Duty Orders on Certain Iron Construction Castings from Brazil, Canada, and the People's Republic of China, and the Countervailing Duty Order on Heavy Iron Construction Castings from Brazil*,70 FR 37326, June 29, 2005; *Certain Iron Construction Castings From Brazil, Canada, and the People's Republic of China: Final Results of the Expedited Sunset Reviews of the Antidumping Duty Orders*, 75 FR 54595, September 8, 2010; *Final Results of Expedited Sunset Review: Heavy Iron Construction Castings From Brazil*, 75 FR 54596, September 8, 2010; *Heavy Iron Construction Castings from Brazil: Final Results of Expedited Fourth Sunset Review of the Countervailing Duty Order*,81 FR 6237, February 5, 2016.

[34] *Notice of Scope Rulings*, 72 FR 43245, August 3, 2007.

[35] *Notice of Scope Rulings*, 75 FR 79339, December 20, 2010. According to ***, National Diversified Sales ***.

[36] *Heavy Iron Construction Castings from Brazil: Final Results of Expedited Fourth Sunset Review of the Countervailing Duty Order, 81 FR 6237, February 5, 2016; Certain Iron Construction Castings From Brazil, Canada, and the People's Republic of China: Final Results of Expedited Fourth Sunset Reviews of Antidumping Orders, 81 FR 7083, February 10, 2016.*

Table I-4
Castings: Commerce's original and first through fourth five-year dumping margins for producers/exporters in Brazil

Producer/exporter	Original margin (*percent*)	First five-year review margin (*percent*)	Second five-year review margin (*percent*)	Third five-year review margin (*percent*)	Fourth five-year review margin (*percent*)
Fundicao Aldebara	58.74	58.74	58.74	58.74	--
Sociedade de Metalurgia	16.61	16.61	16.61	16.61	--
Usina Siderurgica	5.95	5.95	5.95	5.95	--
Brazil-wide entity	26.16	26.16	26.16	26.16	58.74

Source: *Continuation of Antidumping Duty Orders on Certain Iron Construction Castings from Brazil, Canada, and the People's Republic of China*, 64 FR 61591, November 12, 1999; *Continuation of Countervailing Duty Order: Heavy Iron Construction Castings From Brazil*, 64 FR 61591, November 12, 1999; *Continuation of Antidumping Duty Orders on Certain Iron Construction Castings from Brazil, Canada, and the People's Republic of China, and the Countervailing Duty Order on Heavy Iron Construction Castings from Brazil*, 70 FR 37326, June 29, 2005; *Certain Iron Construction Castings From Brazil, Canada, and the People's Republic of China: Final Results of Expedited Fourth Sunset Reviews of Antidumping Orders*, 81 FR 7083, February 10, 2016.

Table I-5
Heavy castings: Commerce's original and first through fourth five-year dumping margins for producers/exporters in Canada

Producer/exporter	Original margin (*percent*)[1]	First five-year review margin (*percent*)	Second five-year review margin (*percent*)	Third five-year review margin (*percent*)	Fourth five-year review margin (*percent*)
Mueller	9.80	9.80	9.80	9.80	([2])
Bibby	8.60	8.60	8.60	8.60	([2])
LaPerle	4.40	4.40	4.40	4.40	([2])
Canada-wide entity	7.50	7.50	7.50	7.50	([2])

[1] Commerce revised the final weighted-average dumping margins following the allegation and correction of ministerial errors. *Iron Construction Castings From Canada; Amendment to Final Determination of Sales at Less Than Fair Value and Amendment to Antidumping Duty Order*, 51 FR 34110, September 25, 1986.
[2] Commerce reported final results of its sunset review as follows: "Pursuant to section 751(c)(1) and 752(c)(1) and (3) of the Act, the Department determines that revocation of the antidumping orders on certain construction castings from Brazil, Canada, and the PRC would likely lead to a continuation or recurrence of dumping, and that the magnitude of the dumping margins likely to prevail would be weighted-average margins up to 58.74 percent for Brazil, up to 25.52 percent for the PRC, and above *de minimis* for Canada.

Source: *Continuation of Antidumping Duty Orders on Certain Iron Construction Castings from Brazil, Canada, and the People's Republic of China*, 64 FR 61591, November 12, 1999; *Continuation of Countervailing Duty Order: Heavy Iron Construction Castings From Brazil*, 64 FR 61591, November 12, 1999; *Continuation of Antidumping Duty Orders on Certain Iron Construction Castings from Brazil, Canada, and the People's Republic of China, and the Countervailing Duty Order on Heavy Iron Construction Castings from Brazil*, 70 FR 37326, June 29, 2005; *Certain Iron Construction Castings From Brazil, Canada, and the People's Republic of China: Final Results of Expedited Fourth Sunset Reviews of Antidumping Orders*, 81 FR 7083, February 10, 2016.

Table I-6
Castings: Commerce's original and first through fourth five-year dumping margins for producers/exporters in China

Producer/exporter	Original margin (*percent*)	First five-year review margin (*percent*)	Second five-year review margin (*percent*)	Third five-year review margin (*percent*)	Fourth five-year review margin (*percent*)
PRC-wide entity	11.66	11.66	11.66	11.66	25.52

Source: *Continuation of Antidumping Duty Orders on Certain Iron Construction Castings from Brazil, Canada, and the People's Republic of China*, 64 FR 61591, November 12, 1999; *Continuation of Countervailing Duty Order: Heavy Iron Construction Castings From Brazil*, 64 FR 61591, November 12, 1999*; Continuation of Antidumping Duty Orders on Certain Iron Construction Castings from Brazil, Canada, and the People's Republic of China, and the Countervailing Duty Order on Heavy Iron Construction Castings from Brazil*, 70 FR 37326, June 29, 2005; *Certain Iron Construction Castings From Brazil, Canada, and the People's Republic of China: Final Results of Expedited Fourth Sunset Reviews of Antidumping Orders*, 81 FR 7083, February 10, 2016.

THE SUBJECT MERCHANDISE

Commerce's scope[37]

Commerce has defined the scope of this investigation as follows:

> The merchandise covered by the AD orders is as follows:
> *Brazil*—Certain iron construction castings from Brazil, limited to manhole covers, rings, and frames, catch basin grates and frames, cleanout covers and frames used for drainage or access purposes for public utility, water and sanitary systems, classifiable as heavy castings under Harmonized Tariff Schedule ("HTS") item number 7325.10.0010; and to valve, service, and meter boxes which are placed below ground to encase water, gas, or other valves, or water and gas meters, classifiable as light castings under HTS item number 7325.10.0050. The HTS item numbers are provided for convenience and customs purposes only. The written product description remains dispositive.
>
> *Canada*—Certain iron construction castings from Canada, limited to manhole covers, rings, and frames, catch basin grates and frames, clean-out covers, and frames used for drainage or access purposes for public utility, water and sanitary systems, classifiable as heavy castings under HTS item number 7325.10.0010. The HTS item number is provided for convenience and customs purposes only. The written product description remains dispositive.

[37] *Certain Iron Construction Castings From Brazil, Canada, and the People's Republic of China: Final Results Expedited Fourth Sunset Reviews of Antidumping Duty Orders*, 81 FR 7083, February 10, 2016.

PRC—Certain iron construction castings from the PRC, limited to manhole covers, rings and frames, catch basin grates and frames, cleanout covers and drains used for drainage or access purposes for public utilities, water and sanitary systems; and valve, service, and meter boxes which are placed below ground to encase water, gas, or other valves, or water or gas meters. These articles must be of cast iron, not alloyed, and not malleable. This merchandise is currently classifiable under HTS item numbers 7325.10.0010 and 7325.10.0050. The HTS item numbers are provided for convenience and customs purposes. The written product description remains dispositive.

The merchandise subject to the CVD order consists of certain heavy iron construction castings from Brazil. The merchandise is defined as manhole covers, rings and frames; catch basin grates and frames; and cleanout covers and frames used for drainage or access purposes for public utility, water and sanitary systems. The merchandise is currently classified under HTS item number 7325.10.00. The HTS item number is provided for convenience and customs purposes. The written product description remains dispositive.[38]

Tariff treatment[39]

Heavy and light iron castings subject to these reviews currently are classified under HTS subheading 7325.10.00 as other cast articles of nonmalleable cast iron. The general or NTR rate of duty for merchandise entering the United States under HTSUS subheading 7325.10.00 is "free" and applies to products from Brazil, Canada, and China. Iron construction castings are imported under the statistical reporting numbers reported below, with explanatory descriptors added for clarity.[40]

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[38] *Heavy Iron Construction Castings from Brazil: Final Results of Expedited Fourth Sunset Review of the Countervailing Duty Order*, 81 FR 6237, February 5, 2016. (The full scope appears in *Issues and Decision Memorandum for the Final Results of the Fourth Expedited Sunset Review of the Countervailing Duty Order on Heavy Iron Construction Castings from Brazil*, United States Department of Commerce, International Trade Administration, January 29, 2016.)

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

[40] During the period examined in the original investigations, heavy iron castings and light iron castings were provided for, in part, under the Tariff Schedule for the United States, Annotated ("TSUSA") item 657.0990. Upon conversion to the HTSUS, iron construction castings initially were imported under statistical reporting numbers 7325.10.0010 (manhole covers, rings, and frames) and 7325.10.0050 (other). Effective July 1, 1999, heavy and light castings were broken out into a number of separate HTS statistical reporting numbers: 7325.10.0010, 7325.10.0020, 7325.10.0025, 7325.10.0030, 7325.10.0035, and 7325.10.0080. *Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 7 1-TA-249 and 731-TA-262, 263, and 265 (Third Review)*, USITC Publication 4191, October 2010, p. I-24.

7325.10.0010 – Manhole covers, rings and frames (heavy)
7325.10.0020 – Catch basins, grates and frames (heavy)
7325.10.0025 – Cleanout covers and frames (heavy)
7325.10.0030 – Valve and service boxes (light)
7325.10.0035 – Meter boxes (light)
7325.10.0080[41] – Other

THE PRODUCT

Description and applications[42]

Castings are described by the industry as either "light" or "heavy", depending on their weight and end-use. Iron castings are cast from either gray iron[43] (containing flakes of graphite), which provides excellent machinability, good wear resistance, and high vibration absorption, but has lower elasticity, or are cast from ductile iron (containing high carbon and silicon content), having a high modulus of elasticity and high strength to permit heavier loads with less deflection.[44]

U.S. purchasers stated in their questionnaire responses that they consider dimensional conformity, product appearance (i.e., surface finish, patterns, fittings, and sharp edges), and applicable specifications as important quality characteristics when purchasing castings.[45] Castings must meet industry specifications for some end-use applications, including standards from ASTM, American Association of State Highway and Transportation Officials (AASHTO), American Water Works Association (AWWA), or Standard Plans for Public Works Construction (SPPWC).[46] ASTM A-48 is the most common standard for both heavy and light castings.[47] The standard specification for heavy castings related to drainage structure castings, such as frames,

---

[41] HTS statistical reporting number 7325.10.0080 contains light and heavy iron construction castings not used for drainage or access purposes for public utility, water and sanitary systems.

[42] Unless otherwise noted, this section is based on information contained in *Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Third Review), USITC Publication 4191, October 2010, pp. I-26 through I-27.

[43] Iron construction castings made from either gray iron or ductile iron is within scope of the antidumping duty order. *Notice of Scope Rulings*, 72 FR 43245, August 3, 2007. Gray iron is used more frequently in the production of manhole covers due good machinability and ease of casting, and where strength is not a main consideration. Ductile iron is used more frequently in the production of pumps and frames due to its increased strength and ductility. Penticton Foundry website, "The Differences Between Ductile Iron and Gray Iron Castings," http://www.pentictonfoundry.com/news/differences-between-ductile-iron-and-gray-iron-castings-ductile-vs-gray-iron/ (accessed October 31, 2016).

[44] *Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Second Review), USITC Publication 3781, June 2005, pp. I-9.

[45] Compiled from U.S. purchaser questionnaire responses, Question III-23.

[46] Emails from ***, September 7, 2016, ***, September 7, 2016, ***, September 7, 2016.

[47] ASTM-A48 is the standard specification for iron castings intended for general engineering use where tensile strength is a major consideration. In order to meet this standard, the surface of the iron

(*continued*...)

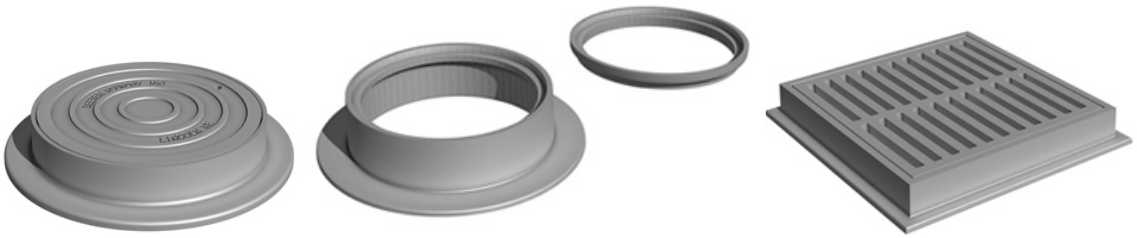
grates, rings, and manhole covers, is AASHTO M306.[48] Many light castings used in roads, such as valve and meter boxes, may need to comply with AWWA specifications if they are used to cover water distribution systems, in addition to ASTM A-48 standards.[49]

Heavy castings

Heavy castings are used principally for drainage or access purposes by utilities and municipalities in storm drainage, water transportation and water treatment, sanitary systems, natural gas transmission, and highways systems (see figure I-1). Heavy castings are typically installed by general contractors or more rarely by municipal work crews. Manhole sets, consisting of a cover and a frame, and sometimes accessory parts such as rings, constitute the bulk of domestic production.50 Heavy castings generally range in weight from 250 to 1,000 pounds (123 to 454 kg) and are produced by the sand cast method. High-performance castings, such as those used in airport runways, are increasingly being made of ductile iron, a stronger and more expensive material than gray iron.

Figure I-1
Examples of heavy castings

Manhole cover and frame *Manhole rings* *Catch basins, grates and frames*



Source: Deeter Foundry, http://www.deeter.com/products/trench-covers/ (accessed August 30, 2016).

Although the basic configuration of the heavy castings included in these reviews varies little, there are many models of each of these products. Individual models are distinguished by their dimensions, markings, vents, pick holes, and other characteristics. Some differences in the models result from the diverse weather and wear problems characteristic of the various regions in which they are used. For example, castings used in the Northwest are designed to handle

(…*continued*)
construction casting must be free of adhering sand, scale, cracks, and hot tears, as determined by visual examination. *ASTM International*, ASTM A48 / A48M–03 (2012), Standard Specifications for Gray Iron Castings, https://www.astm.org/Standards/A48.htm (accessed August 29, 2016); email from ***, September 7, 2016.

[48] AASHTO M306 has higher loading requirements that exceed normal highway loading, and has restrictive dimensional tolerances. AASHTO website, "Standard Specification for Gray Iron Castings," https://bookstore.transportation.org/item_details.aspx?ID=1442 (accessed September 12, 2016).

[49] Email from ***, September 7, 2016.

[50] Compiled from U.S. producer questionnaire responses, Question IV-2b.

heavy rain runoff, whereas those sold in the Southwest are designed to prevent clogging with sand.

Other differences result from the preferences of the individual municipalities and utilities that are the end users of these products. Domestic foundries, by virtue of their proximity to the end users and construction supply distributors, require relatively short lead times and can fill most orders for less popular or customized models without maintaining inventories of such items. Importers, with their longer lead times, generally handle only the faster-moving, more standardized models because of the resulting inventory carrying costs incurred by supplying a complete range of products. Thus, while domestic producers may typically handle 4,000 to 5,000 items, importers may carry only 150 to 200.

Light castings

Light castings primarily consist of valve, service, and meter boxes (see figure I-2). These products are used by utilities and municipalities to encase the underground valves and meters of water, gas, or other utilities, and to provide access to this equipment for periodic adjustment or readings. Light castings are also manufactured in sets, usually containing three pieces – a base, a top, and a cover with lettering and/or a pattern. Light castings generally range in weight from 10 to 120 pounds (4.5 to 55 kg) and are produced in the United States by sand cast, shell mold, or permanent mold processes. Such castings are manufactured in a range of dimensions, but are relatively standardized nationwide. Valve, service, and meter boxes must reach below the frost line and consequently the type of boxes used in Northern regions may differ from those used in Southern regions. Light castings are typically made of gray iron, but other materials are increasingly being used. For natural gas applications, the underground sections and, occasionally, the covers of valve, service, and meter boxes, are increasingly made of plastic.

Figure I-2
Examples of light castings

Sewer valve box and cover

Meter box and cover

Source: U.S. Foundry, http://www.usfoundry.com/usfoundry-products/catalog/valuebox (accessed September 7, 2016).

Manufacturing processes[51]

Heavy castings

Foundries produce castings by pouring molten iron into sand molds, allowing the iron to cool and solidify, then removing ("shaking out") the solidified casting from the mold for finishing and sale. The molten iron is produced from pig and scrap iron, coke, and limestone in cupola furnaces, but can also be made in electric furnaces. The molds into which the iron is poured are produced in several ways. The sand-cast method is used to produce heavy castings and, in some foundries, light castings. In this process, green sand is packed into metal frames ("flasks") fitted with wood or metal patterns bearing the external shapes of the finished castings. Each mold consists of two flasks of sand – the "cope" with the pattern of the casting's top half and the "drag" with the bottom half. After the sand has been packed firmly, the patterns are removed and the cope and drag are joined such that an internal cavity having the shape of the entire casting is created. Molten iron is poured into this cavity via a hole cut through the sand. After a cooling period, the green sand mold is shaken loose from the iron casting. Once completely cooled, the casting is finished, stored, and allowed to rust slightly to protect the casting from further deterioration. The green sand is reprocessed and used for further molds.

Light castings

Light castings have some inner surfaces that can be formed only with sand "cores" inserted into the cavity before the cope and drag are closed. Molten iron is poured into the mold cavity via a hole ("sprue") cut through the sand. After the iron cools, the casting is shaken out of the sand on shaker belts, and the sand from the molds and cores is reprocessed for further use. The casting is then particle blasted or ground to remove rough edges and overpourings, and then dip-painted or sold as is.

The shell mold process used by some producers to make light castings is similar to the sand cast method, except that the cores are made of resin-treated sand, which is baked and placed inside a metal mold. The sand-resin mold is designed to burn and separate itself from the iron casting at 1,200 degrees Fahrenheit.

Some foundries also produce light castings in permanent molds. These molds are made of a metal with a higher melting point than that of the cast gray iron and, instead of being discarded after each pour, are used for up to several thousand pours. However, initial tooling costs for permanent molds are high; therefore, the process is economical only for high-volume, standardized production.

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[51] Unless otherwise noted, this section is based on information contained *in Iron Construction Castings from Brazil, Canada, and China*, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Third Review), USITC Publication 4191, October 2010, pp. I-27 through I-28.

DOMESTIC LIKE PRODUCT ISSUES

The Commission's decision regarding the appropriate domestic product(s) that are "like" the subject imported product is based on a number of factors including: (1) physical characteristics and uses; (2) common manufacturing facilities and production employees; (3) interchangeability; (4) customer and producer perceptions; (5) channels of distribution; and (6) price. Information regarding these factors is discussed below.

The domestic like product is defined as the domestically produced product or products which are like, or in the absence of like, most similar in characteristics and uses with, the subject merchandise. The domestic industry is defined as the U.S. producers as a whole of the domestic like product, or those producers whose collective output of the domestic like product constitutes a major proportion of the total domestic production of the product. In the original investigations, the Commission defined heavy and light castings as separate like products, explaining that the characteristics of heavy and light castings differ markedly even though both types are made of iron that is not alloyed and not malleable. The Commission noted in particular that heavy castings are relatively flat, designed for use on street surfaces for drainage and access purposes in water and sewage systems, and generally weigh from 270 to 1,000 pounds, whereas light castings are tubular, designed for use below the ground to encase water or gas valves and meters in utility systems, and generally weigh under 120 pounds. The Commission also noted that the foundry methods employed in the production of heavy and light castings are distinctly different, such that domestic producers equip themselves to specialize in one or the other, but typically not both. In its full first five-year reviews and its expedited second and third five-year reviews, the Commission again found heavy castings and light castings to be separate like products.[52]

In its notice of institution for these reviews, the Commission solicited comments from interested parties regarding the appropriate domestic like product definition, and domestic interested parties indicated they agree with the Commission's definitions for heavy and light castings.[53] The respondent interested parties indicated they "take no position on this issue and reserve the right to comment at a later point as evidence is gathered in the course of a full review."[54] No additional comments or requests for data specifically concerning the domestic like product were provided by parties in their comments on the draft questionnaires in these five-year reviews.

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[52] *Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Third Review), USITC Publication 4191, October 2010, pp. 4-7.*

[53] *Domestic Interested Parties' Response to the Notice of Institution,* November 2, 2015, p. 27.

[54] *Respondent Interested Parties' Response to the Notice of Institution*, November 2, 2015, p. 11.

U.S. MARKET PARTICIPANTS

U.S. producers

At the time of the original investigations, there were approximately 40 U.S. producers of castings, believed to account for the majority of U.S. production. The top eight producers of castings accounted for 60 percent of U.S. production in 1985.[55]

In the full first five-year reviews, the Commission found 13 U.S. producers of castings. The top four firms (***) accounted for 79 percent of the U.S. industry producing heavy castings in 1998, and among the four U.S. producers of light castings, the top producing firm, ***, alone accounted for *** percent of all U.S. production of light castings.[56]

In the expedited second five-year reviews, the domestic interested parties reported 12 U.S. producers of castings. Seven responding firms produced an estimated *** percent of U.S. production of heavy castings and two firms produced an estimated *** percent of U.S. production of light castings in 2003.[57]

During the expedited third reviews, the domestic interested parties identified 10 domestic producers of castings, of which seven produced heavy castings and six produced light castings.[58] The top three firms, ***, accounted for an estimated *** percent of U.S. production of heavy castings in 2009, while the three largest producers of light castings, ***, accounted for an estimated *** percent of U.S. production in 2009.[59]

In response to the Commission's notice of institution in these current reviews, domestic producers of castings provided a list of eight known and currently operating U.S. producers of castings.[60] The four responding producers of heavy castings, D&L, EJ (formerly East Jordan), Neenah, and U.S. Foundry, accounted for an estimated *** percent of U.S. production in 2014. The sole responding producer of light castings, EJ, accounted for an estimated *** percent of U.S. production in 2014.

As noted by the domestic interested parties, since the prior five-year reviews, the U.S. castings industry has continued to consolidate. In April 2010, Municipal Castings Inc., a producer of heavy castings, ceased its operations in Madison, Minnesota. The company's president noted that "forecasts do not show an appreciable growth in new residential or

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[55] *Iron Construction Castings from Brazil, India, and the People's Republic of China, Inv. Nos. 701-TA-249 and 731-TA-262, 264, and 265 (Final),* USITC Publication 1838, April 1986, p. A-11.

[56] *Staff Report on Iron Metal Castings from India, Heavy Iron Construction Castings from Brazil, and Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 303-TA-13, 701 -TA-249, and 731-TA 262, 263, and 265 (Review),* September 29, 1999 (INV-W-222), p. I-30.

[57] *Staff Report on Certain Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Second Review),* May 3, 2005 (INV-CC-060), pp. I-14-I-15.

[58] *Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Third Review),* USITC Publication 4191, October 2010, pp. I-32.

[59] *Staff Report on Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Third Review),* September 16, 2010 (INV-HH-091), tables I-10 and I-11.

[60] *Domestic Interested Parties' Response to the Notice of Institution,* November 2, 2015, pp. 15-16.

subdivision construction for the next 18 months."[61] In 2012, Campbell Foundry, a producer of heavy castings, ceased production at its facilities in Harrison, New Jersey and Emporia, Virginia, while Etheridge Foundry & Machine Co., Portland, Maine, ceased production during the same year.[62]

In these current proceedings, the Commission issued U.S. producers' questionnaires to eight firms, all of which provided the Commission with information on their product operations. These firms are believed to account for all U.S. production of heavy and light castings in 2015.[63] Presented in table I-7 is a list of current domestic producers of heavy castings and each company's position on continuation of the orders, production location(s), related and/or affiliated firms, and share of reported production of heavy castings in 2015. Presented in table I-8 is a list of current domestic producers of light castings and each company's position on continuation of the orders, production location(s), related and/or affiliated firms, and share of reported production of light castings in 2015. Presented in table I-9 is a list of all current U.S. producers of castings that reported ownership, related and/or affiliated firms, since January 2013.

Table I-7
Heavy castings: U.S. producers, positions on orders, U.S. production locations, related and/or affiliated firms, and shares of 2015 reported U.S. production

Firm	Position on continuation of orders	Production location(s)	Share of production (percent)
Alhambra	***	Alhambra, CA.	***
D&L	Support	Moses Lake, WA	***
EJ[1]	Support	East Jordan, MI Ardmore, OK	***
Neenah	Support	Neenah, WI Lincoln, NE	***
US Foundry	Support	Medley, FL	***
Total			***

[1] EJ is the ***.

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

[61] *Investigation Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Fourth Review): Iron Construction Castings from Brazil, Canada, and China*, INV-NN-097, December 22, 2015, p. I-20.

[62] *Domestic Interested Parties' Response to the Notice of Institution*, November 2, 2015, p. 25.

[63] In the Response to the Notice of Institution, domestic interested parties identified eight firms that produce heavy and light castings. It was noted that *** accounted for *** percent of U.S. production of heavy castings and that *** accounted for *** percent of U.S. production of light castings in 2014. Staff used this information to estimate U.S. production in 2015. *Domestic Interested Parties' Response to the Notice of Institution*, November 2, 2015, pp. 18-19.

Table I-8
Light castings: U.S. producers, positions on orders, U.S. production locations, related and/or affiliated firms, and shares of 2015 reported U.S. production

Firm	Position on continuation of orders	Production location(s)	Share of production (percent)
D&L	Support	Moses Lake, WA	***
EJ	Support	East Jordan, MI Ardmore, OK	***
Tyler[1]	***	Tyler, TX	***
Vestal	***	Sweetwater, TN	***
Bingham & Taylor	***	Culpeper, VA	***
Total			***

[1]Tyler Pipe, Co. is related to importer *** which is a separate company that shares the same premises, shares services, and is also a division of McWane Inc.

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

Table I-9
Castings: U.S. producers' ownership, related and/or affiliated firms, since January 2013

* * * * * * *

As indicated in table I-7, one U.S. producer of heavy castings is related to a foreign producer of the non-subject merchandise in ***, and as indicated in table I-8, one U.S. producer of light castings is related to ***. In addition, as discussed in greater detail in Part III, *** directly import heavy castings, *** heavy castings from U.S. importers, and *** directly imports light castings. Additionally, as indicated in table I-9, *** affiliated with related firms.

U.S. importers

In the final phase of the original investigations, castings were imported by approximately 40 firms.[64] During the first reviews, the Commission issued questionnaires to 61 firms believed to be importers of subject castings, as well as to all U.S. producers of castings. Usable importer questionnaire responses were received from 23 companies. The three largest known U.S. importers of heavy castings in terms of quantity during 1998 were ***, accounting for 48.6 percent of total known imports of heavy castings in 1998, ***. The three largest known U.S. importers of light castings in terms of quantity during 1998 were ***, accounting for 71.5 percent of total known imports of light castings in 1998.[65]

[64] *Iron Construction Castings from Brazil, India, and the People's Republic of China, Inv. Nos. 701-TA-249 and 731-TA-262, 264, and 265 (Final),* USITC Publication 1838, April 1986, p. A-18.

[65] *Staff Report on Iron Metal Castings from India, Heavy Iron Construction Castings from Brazil, and Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 303-TA-13, 701 -TA-249, and 731-TA-262, 263, and 265 (Review),* September 29, 1999 (INV-W-222), p. I-33.

In their response to the Commission's notice of institution in these reviews, domestic producers provided a list of 68 known and currently operating U.S. importers of castings from Brazil, Canada, and China.[66]

In the current proceedings, the Commission issued U.S. importers' questionnaires to 36 firms believed to be importers and/or purchasers of heavy castings, as well as to all U.S. producers of heavy castings. Usable importer questionnaire responses were received from 17 firms, representing *** percent of U.S. imports of heavy castings from Brazil, *** percent of U.S. imports of heavy castings from Canada, *** percent of U.S. imports of heavy castings from China,[67] and *** percent of U.S. imports of heavy castings from all other sources in 2015.[68] Table I-10 lists all responding U.S. importers of heavy castings from Brazil, Canada, China, and other non-subject sources, their locations, and their shares of U.S. imports in 2015. The Commission issued U.S. importers' questionnaires to 31 firms believed to be importers and/or purchasers of light castings, as well as to all U.S. producers of light castings. Usable importer questionnaire responses were received from *** firms, representing *** percent of U.S. imports of light castings from Brazil, *** percent of U.S. imports of light castings from China,[69] and *** percent of U.S. imports of light castings from all other sources. Table I-11 lists all responding U.S. importers of light castings from Brazil and China, and other sources, their locations, and their shares of U.S. imports in 2015.

[66] *Domestic Interested Parties' Response to the Notice of Institution*, November 2, 2015, exh. 11.

[67] None of the responding firms indicated they imported product subject to these reviews from China.

[68] *** represented *** percent of all imports of heavy castings from Canada in 2015, according to official U.S. Customs data. ***, a subsidiary of *** reported that it has manufactured or exported castings since 1998. The firm also explained that *** is a distributor of DI Pipe produced in the USA by sister companies (***) and that the only producer of castings under the *** umbrella is Canadian producer ***. The Commission issued a questionnaire to *** and staff believes that *** represents a portion of the import volume attributed to *** in official U.S. Customs data.

[69] None of the responding firms indicated they imported product subject to these reviews from China.

Table I-10
Heavy castings: U.S. importers, source(s) of imports, U.S. headquarters, and shares of imports in 2015

Firm	Headquarters	Share of imports by source (percent)					
		Brazil	Canada	China	Subject	All other sources	Total
Accucast, Ltd.	Waco, TX	***	***	***	***	***	***
ACO Polymer Products, Inc.	Mentor, OH	***	***	***	***	***	***
Alhambra Foundry Co., Ltd.	Alhambra, CA	***	***	***	***	***	***
Canada Pipe Company Ulc, Fonderie Laperle Division	Ste-Croix, QC	***	***	***	***	***	***
Capitol Foundry Of Virginia , Inc.	Virginia Beach, VA	***	***	***	***	***	***
Castings, Inc.	Grand Junction, CO	***	***	***	***	***	***
Creswell Trading Co. Inc.	Malvern, PA	***	***	***	***	***	***
EJ Prescott Inc, Dba Quality Water Products	Gardiner, ME	***	***	***	***	***	***
EJ USA	East Jordan, MI	***	***	***	***	***	***
Famcon Pipe & Supply, Inc.	Oxnard, CA	***	***	***	***	***	***
General Foundries Inc.	North Brunswick, NJ	***	***	***	***	***	***
Jim Cox Sales, Inc.	Haslet, TX	***	***	***	***	***	***
Masonry Supply, Inc.	Selma, NC	***	***	***	***	***	***
National Casting Corporation	Roseville, CA	***	***	***	***	***	***
Olympic Foundry Inc	Seattle, WA	***	***	***	***	***	***
Serampore Industries	Houston, TX	***	***	***	***	***	***
Sigma Corporation	Cream Ridge, NJ	***	***	***	***	***	***
Total		***	***	***	***	***	***

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

Table I-11
Light castings: U.S. importers, source(s) of imports, U.S. headquarters, and shares of imports in 2015

Firm	Headquarters	Share of imports by source (percent)				
		Brazil	China	Subject	All other sources	Total
Accucast Ltd	Waco, TX	***	***	***	***	***
Bingham & Taylor Corp.	Culpeper, VA	***	***	***	***	***
Capitol Foundry Of Virginia , Inc.	Virginia Beach, VA	***	***	***	***	***
Castings, Inc.	Grand Junction, CO	***	***	***	***	***
General Foundries Inc.	North Brunswick, NJ	***	***	***	***	***
Ironsmith, Inc.	Palm Desert, CA	***	***	***	***	***
Lonestar Weights Llc	Wichita Falls, TX	***	***	***	***	***
Masonry Supply, Inc.	Selma, NC	***	***	***	***	***
Mueller Co., Llc	Chattanooga, TN	***	***	***	***	***
National Casting Corporation	Roseville, CA	***	***	***	***	***
Olympic Foundry Inc	Seattle, WA	***	***	***	***	***
Serampore Industries	Houston, TX	***	***	***	***	***
Sigma Corporation	Cream Ridge, NJ	***	***	***	***	***
Total		***	***	***	***	***

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

U.S. purchasers

The Commission received 17 usable questionnaire responses from U.S. firms that bought castings during January 2013-June 2016.[70] Thirteen responding purchasers are distributors, four are end users of heavy castings, two are end users of light castings, one is a wholesaler, and one is a "sales agent, representative." In general, responding U.S. purchasers are located in all regions of the contiguous United States, though the majority are located in the Pacific Coast (***) and Southeast (***) regions, while relatively few are located in the Midwest and Central Southwest regions (***).

The largest purchaser of heavy castings in 2015 was ***, which accounted for *** percent of all reported purchases of heavy castings in 2015. The largest purchaser of light castings in 2015 was ***, which accounted for *** percent of all reported purchases of light castings in 2015.

APPARENT U.S. CONSUMPTION

Data concerning apparent U.S. consumption of heavy castings during 2013-2015, January to June 2015, and January to June 2016 are shown in table I-12 and figure I-3. Apparent U.S. consumption of heavy castings is based on U.S. producers' shipments of heavy castings and U.S. shipments of imports of heavy castings as compiled from questionnaire responses submitted by U.S. importers. Based on a comparison with official import statistics, staff believes that questionnaire data for U.S. imports of heavy castings from subject countries are understated.

Apparent U.S. consumption of heavy castings in terms of quantity increased *** percent from 2013 to 2015, and was *** percent lower in January to June 2015 than in January to June 2016. Apparent consumption in terms of value was *** percent higher from 2013 to 2015, and was *** percent higher in January to June 2016 than in January to June 2015.

[70] Of the 16 purchasers that reported purchases of heavy iron construction castings, 14 purchased domestic product, *** purchased subject product from China, *** purchased subject product from Brazil and Canada, and 14 purchased imports of heavy castings from nonsubject countries India (12 firms) and ***. *** also reported purchasing 100 percent of its product from domestic sources, but did not report a quantity. Of the nine purchasers that reported purchases of light castings, eight purchased domestic product, *** purchased subject product from China, and seven purchased imports of light castings from nonsubject countries India (six firms) and ***.

Table I-12
Heavy castings: U.S. shipments of domestic product, U.S. shipments of imports, and apparent U.S. consumption, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Figure I-3
Heavy castings: U.S. shipments of domestic product, U.S. shipments of imports, and apparent U.S. consumption, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Data concerning apparent U.S. consumption of light castings during 2013-2015, January to June 2015, and January to June 2016 are shown in table I-13 and figure I-4. Apparent U.S. consumption of light castings is based on U.S. producers' shipments of light castings and U.S. shipments of imports of light castings as compiled from questionnaire responses submitted by U.S. producers and importers. Based on a comparison with official import statistics, staff believes that questionnaire data for U.S. imports of light castings from subject countries are underrepresented.

Apparent U.S. consumption of light castings in terms of quantity increased *** percent from 2013 to 2015, and was *** lower in January to June 2016 than in January to June 2015. Apparent consumption in terms of value increased *** percent from 2013 to 2015, and was *** percent lower in January to June 2016 than in January to June 2015.

Table I-13
Light castings: U.S. shipments of domestic product, U.S. shipments of imports, and apparent U.S. consumption, 2013-15, January to June 2015, and January to June 2016

*** * * * * * ***

Figure I-4
Light castings: U.S. shipments of domestic product, U.S. shipments of imports, and apparent U.S. consumption, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

U.S. MARKET SHARES

U.S. market share data for heavy castings during 2013-15, January to June 2015, and January to June 2016 are presented in table I-14. U.S. market share data for light castings during 2013-15, January to June 2015, and January to June 2016 are presented in table I-15. Based on quantity, the U.S. market share represented by U.S. producers' U.S. shipments of heavy castings remained relatively unchanged at *** percent in 2013, *** in 2014 and 2015, and was *** percent in January to June 2016. The market share of quantity held by total U.S. import shipments for heavy castings remained relatively unchanged at *** percent in 2013 and *** percent in 2014 and 2015, and was *** percent in January to June 2016.

Table I-14
Heavy castings: Market shares, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Based on quantity, the U.S. market share represented by U.S. producers' U.S. shipments of light castings remained relatively unchanged at *** percent in 2013, *** percent in 2014, *** percent in 2015, *** percent in January to June 2015, and *** percent in January to June 2016. The market share of quantity held by total U.S. import shipments for light castings remained relatively stable at *** percent in 2013, *** percent in 2014, *** percent in 2015, *** percent in January to June 2015, and *** percent in January to June 2016.

Table I-15
Light castings: Market shares, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

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

U.S. MARKET CHARACTERISTICS

The heavy castings covered by these reviews consist of manhole covers, rings, and catch basin grates and frames, as well as cleanout covers and frames. The light castings covered by these reviews consist of valve, service, and meter boxes. These articles are cast from either gray iron (containing flakes of graphite), which provides excellent machinability, good wear resistance, and high vibration absorption, but has lower elasticity; or are cast from ductile iron (containing high carbon and silicon content), having a high modulus of elasticity and high strength to permit heavier loads with less deflection. Heavy castings usually have walls of 1-inch (25.4 mm) or greater thickness, and light castings typically have 1/4-inch (6.4 mm) thick walls.

Demand for castings is largely seasonal and is derived from trends in housing construction, highway construction, public works projects, and overall economic growth. Purchasers estimated that nearly one-quarter of their heavy castings purchases in 2015 were required by law to be domestic. Apparent U.S. consumption of castings increased by *** percent from 2013 to 2015.

CHANNELS OF DISTRIBUTION

U.S. producers and importers sold mainly to distributors for both heavy and light castings (table II-1). However, importers of heavy castings from Brazil increased their sales to end users from January 2013 to June 2016, while U.S. producers *** decreased their sales to end users during this time.

Table II-1
Castings: U.S. producers' and importers' share of reported U.S. commercial shipments (percent), by sources and channels of distribution, January 2013- June 2016

* * * * * * *

GEOGRAPHIC DISTRIBUTION

U.S. producers reported selling castings to all regions in the United States (table II-2). The two largest producers of heavy castings (***) as well as the largest producer of light castings (***) reported selling to all regions in the United States, whereas all other reporting U.S. producers reported selling to specific regions within the United States. At least one importer of castings from subject countries reported selling to all regions in the United States. A majority of sales of Brazilian product was concentrated in the Southeast, Northeast, Midwest, and Mountain regions, and a majority of sales of Canadian product were made to the Northeast and Midwest regions. *** sold to all regions in the United States, while *** reported selling only to the central Southwest Region.

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

Region	U.S. producers	U.S. importers		
		Brazil	Canada	China
Northeast	6	***	***	***
Midwest	5	***	***	***
Southeast	7	***	***	***
Central Southwest	5	***	***	***
Mountains	5	***	***	***
Pacific Coast	6	***	***	***
Other[1]	4	***	***	***
Present in all continental regions	3	***	***	***

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

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

U.S. producers reported that the majority of their sales of both heavy and light castings sales were between 101 and 1,000 miles of their production facility (table II-3). Importers reported that the majority of their sales of subject heavy castings were between 101 and 1,000 miles of their U.S. point of shipment. Only one importer that reported shipments of subject light castings reported its shipment distances, and it reported that *** percent of its sales of light castings sales were within 100 miles of its U.S. point of shipment.

Table II-3
Castings: Distance shipped within the United States

* * * * * * *

SUPPLY AND DEMAND CONSIDERATIONS

U.S. supply

Domestic production

Based on available information, U.S. producers of castings have the ability to respond to changes in demand with moderate-to-large changes in the quantity of shipments of U.S.-produced castings to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, 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.

Industry capacity

Domestic capacity utilization for both heavy and light castings increased overall from 2013 to 2015 driven primarily by the increase in production. Domestic capacity utilization for

heavy castings increased from *** percent in 2013 to *** percent in 2015 with a *** percent increase in production. Domestic capacity utilization for light castings increased from *** percent in 2013 to *** percent in 2015 with a *** percent increase in production. Domestic producers reported less than a *** percent increase in capacity for both heavy and light castings. These relatively low levels of capacity utilization suggest that U.S. producers may have substantial ability to increase production of castings in response to an increase in prices.

Alternative markets

U.S. producers' exports of heavy and light castings remained under *** percent of their total shipments during 2013-2015. U.S. producers *** stated that it would be difficult to shift their shipments to other markets due to competition from low cost sources in China and India. *** reported that it faces competition from lower cost sources in Brazil and that it was difficult to compete in the Brazilian market because of the duties imposed by the Brazilian government of approximately 80 percent of the value of the castings.[1] More generally, *** reported that it is difficult to export because foreign markets can have different material specifications, performance requirements, certification processes, and government regulations. *** also reported that specific products would have to go through a qualification process before being offered for quote. Given these export levels, U.S. producers may have a limited ability to shift shipments between the U.S. market and other markets in response to price changes.

Inventory levels

U.S. producers' inventories of heavy castings decreased from 2013 to 2015, while their inventories of light castings increased. Relative to total shipments, U.S. producers' inventories of heavy castings decreased from *** percent in 2013 to *** percent in 2015. U.S. producers' light castings inventory levels, relative to total shipments, increased slightly from *** percent in 2013 to *** percent in 2015. These inventory levels suggest that U.S. producers may have some ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

Half of responding U.S. producers stated that they could switch production from castings to other iron products, such as industrial counterweights, brake drums, and cast iron drain, waste, and vent products, while half reported that they could not. Most producers reported that the biggest impediment to shifting production from castings to other products was the limited ability to shift between molds/patterns. Among the U.S. producers that reported being able to switch production, U.S. producer *** reported that all of its foundries can produce ***; it reported that its *** facility could switch between mold set ups quickly; whereas its *** facility is constrained by the number of changes. D&L reported that ***. It

[1] U.S. producer *** reported that it did not have any experience outside of North American markets.

testified that 90 percent of its business is in-scope castings, but that approximately ten percent could be industrial counterweights utilized in various kinds of equipment.[2] Among the responding producers that reported not being able to switch production, *** reported not being able to switch production to other products because its foundry is optimized to produce heavy gray iron municipal castings with its sand mold lines. It elaborated that only specific types of castings can be made with these particular sand mold lines, and that the company has not invested in other molds. *** added that the cost of implementing new technology was a constraint, and *** specified that the costs of mold patterns and core box tooling were constraints. Based on these responses, domestic producers may have some ability to respond to changes in demand by shifting production to or from alternate products.

Supply constraints

U.S. producer *** and *** were the only firms that reported supply constraints. *** reported that it refused one or more customers because it was not willing to sell at the requested low prices, and *** reported that when sourcing bridge scuppers, it had no choice but to purchase an imported product due to lack of a domestic source for approximately 1 percent of its purchases.

Subject imports from Brazil[3]

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

Industry capacity

Based on questionnaire data, Brazilian capacity utilization for heavy castings fluctuated but decreased overall from 2013 to 2015, driven by similar fluctuations in both production and capacity. Brazilian capacity utilization increased from *** percent in 2013 to *** percent in 2014 and dropped to *** percent in 2015. Brazilian capacity and production decreased by *** percent and *** percent, respectively, from 2013 to 2015. The first half of 2015 and 2016 showed steady capacity but a large difference in production. This difference in production led to *** percent Brazilian capacity utilization in the first half of 2015 and *** percent Brazilian capacity utilization in the first half of 2016. This relatively high (but fluctuating) level of capacity

[2] Hearing transcript, p. 126 (McGowan).

[3] For data on the number of responding foreign firms and their share of U.S. imports from Brazil, please refer to Part I, "Summary Data and Data Sources." Only one Brazilian firm (Saint-Gobain) reported production information on heavy castings.

utilization suggests that Brazilian producers may have moderate ability to increase production of product in response to an increase in prices.

Domestic interested parties argue that there are at least 14 identified companies from Brazil *** that produce the subject merchandise.[4] They argue that Saint-Gobain represents only *** percent of the castings industry in Brazil, and that the Brazilian industry at large has significant and expanding capacity.[5] In its questionnaire response, Saint-Gobain reported that it represented approximately *** percent of the castings industry in Brazil during 2015. Brazilian respondents argue that there are currently eight to ten known Brazilian producers that manufacture light castings in commercial quantities, including four to five that produce heavy castings.[6] They argue that these producers have a modest production capacity compared to the industry in the United States, Canada, China, and India.

Alternative markets

Brazilian producer's exports, as a percentage of total shipments, remained relatively constant between 2013 and 2014 at *** percent and *** percent, respectively, and increased to *** percent in 2015.[7] From 2013 to 2015, total shipments declined by *** percent, shipments to the home market decreased by *** percent, and exports increased by *** percent. Quantities of home market shipments and exports both increased in 2014 compared to 2013, but dropped in 2015. Shipments to the United States represented over *** of all Saint-Gobain's exports and increased by *** percent during 2013-15. *** represented its next largest non-U.S. markets. Saint-Gobain's reported exports indicate that Brazilian producers may have substantial ability to shift shipments between domestic or other markets and the U.S. market in response to price changes.

Brazilian respondents argue that the industry in Brazil is shrinking and no longer capable of exporting significant quantities of subject merchandise.[8] They state that Brazilian producers have strong commitments to European and Brazilian home markets, and that the increase in Saint-Gobain's exports to the United States from 2013 to 2015 represented a small volume of product.[9] Domestic interested parties argue that the United States is the largest export destination for Brazilian producers and that these producers are capable of exporting significant

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[4] Hearing transcript, p. 22 (Rosenthal); Domestic interested parties' hearing presentation exhibit, pp. 16-17.

[5] Hearing transcript, p. 22-23 (Rosenthal); Domestic interested parties' hearing presentation exhibit, pp. 18-21; Domestic interested parties' prehearing brief, pp. 10-11, 48-51; Domestic interested parties' posthearing brief, p. 5, exh 1.

[6] Hearing transcript, p. 14 (Ferer), pp. 154, 189-190 (Siqueira); Brazilian respondents' prehearing brief, p. 8.

[7] In the first half of both 2015 and 2016, Saint-Gobain's exports remained at over *** of total shipments.

[8] Hearing transcript, pp. 211-212 (Siqueira); Brazilian respondents' prehearing brief, pp. 9-13, 22.

[9] Hearing transcript, pp. 156-157, 161 (Siqueira); Brazilian respondents' prehearing brief, p. 35; Brazilian respondents' posthearing brief, pp. Q-23–Q-26.

volumes of subject product to the U.S. market even without diverting shipments from other markets.[10]

Inventory levels

Brazilian producer's inventories declined from 2013 to 2015, but relative to total shipments, inventory levels fluctuated from *** percent in 2013 to *** percent in 2014 to *** percent in 2015. While total shipments were highest in 2014, inventories were lowest in 2014. These inventory levels suggest that responding Brazilian producers may have a limited ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

Saint-Gobain stated that ***. Saint-Gobain stated that it would only be possible to increase the production of heavy castings by acquiring additional equipment and training a new labor force, and that this would take at least a couple of years to accomplish.[11]

Brazilian respondents argue that in addition to technical limitations in Brazilian producers' ability to shift iron production capacity, Brazilian foundries are primarily engaged in the production of iron products for the automotive industry, and that the higher prices for automotive iron products limits these foundries' incentive to produce iron construction castings.[12] These responses indicate that Brazilian producers may have limited ability to respond to changes in demand by shifting production to or from alternate products.

Subject imports from Canada[13]

Based on available information, producers of castings from Canada have the ability to respond to changes in demand with moderate changes in the quantity of shipments of castings to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, high inventory levels, and the ability to shift shipments from alternate markets or inventories. A factor mitigating responsiveness of supply is the limited ability to shift production to or from alternate products.

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[10] Domestic interested parties' prehearing brief, p. 6; Domestic interested parties' posthearing brief, p. 6, exh. 1.

[11] Hearing transcript, pp. 152-153 (Siqueira); Brazilian respondents' posthearing brief, pp. Q-35–Q-37.

[12] Hearing transcript, pp. 213-215 (Berer); Brazilian respondents' prehearing brief, pp. 37-38; Brazilian respondents' posthearing brief, pp. Q-26–Q-30.

[13] For data on the number of responding foreign firms and their share of U.S. imports from Canada, please refer to Part I, "Summary Data and Data Sources." Only one Canadian firm (Bibby) reported production information on heavy castings.

Industry capacity

Canadian producer Bibby's capacity utilization fluctuated from *** percent in 2013 to *** percent in 2014 to *** percent in 2015.[14] The fluctuations in capacity utilization were driven by ***; Bibby's *** remained relatively unchanged during this time period. This relatively low level of capacity utilization suggests that Canadian producers may have substantial ability to increase production of product in response to an increase in prices.

Alternative markets

Bibby's exports, as a percentage of total shipments, decreased *** from *** percent in 2013 to *** percent in 2015. Bibby ***, and exports to the United States dropped *** percent from 2013 to 2015. These data suggest that Canadian producers may have a limited ability to shift shipments between domestic or other markets and the U.S. market in response to price changes.

Inventory levels

Bibby's inventories declined between 2013 and 2015. Relative to total shipments, Bibby's inventory levels decreased *** from *** percent in 2013 to *** percent in 2015. These inventory levels suggest that responding Canadian producers may have substantial ability to respond to changes in demand with changes in the quantity shipped from inventories.

Production alternatives

Bibby stated that ***, indicating *** ability to respond to changes in demand by shifting production to or from alternate products.

Subject imports from China

No Chinese producer submitted a questionnaire for these reviews. *** reported importing *** pounds of Chinese heavy castings between 2013 and 2015, and *** reported importing *** pounds of Chinese light castings in *** for ***.

Domestic interested parties state that there is significant Chinese production capacity, and that China is the world's largest producer and exporter of iron castings.[15]

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[14] Bibby reported capacity utilization of *** percent for the first half of 2015 and *** percent for the first half of 2016. Bibby reported similar *** for both time periods, but lower *** for the first half of 2016. Bibby did not elaborate on why *** was lower in the first half of 2016.

[15] Hearing transcript, pp. 24 (Rosenthal), 43 (San Solo), 59 (Teske); Domestic interested parties' posthearing brief, pp. 14-15.

Nonsubject imports

Nonsubject imports accounted for the vast majority of U.S. imports of both heavy and light castings in 2015. The largest nonsubject source during 2013-15 was India, accounting for *** percent of U.S. imports of heavy castings and *** percent of U.S. imports of light castings in 2015 (tables IV-1 and IV-3).

New suppliers

Two purchasers indicated that new suppliers have entered the U.S. market since January 1, 2013. Both purchasers identified new Indian foundries, and one identified *** in the United States. Only two purchasers reported expecting additional foundry construction, citing foreign firms as well. Purchaser *** reported not expecting new domestic foundry construction due to EPA regulations, and purchaser *** reported that bigger U.S. producers will continue the trend of buying smaller U.S. producers.

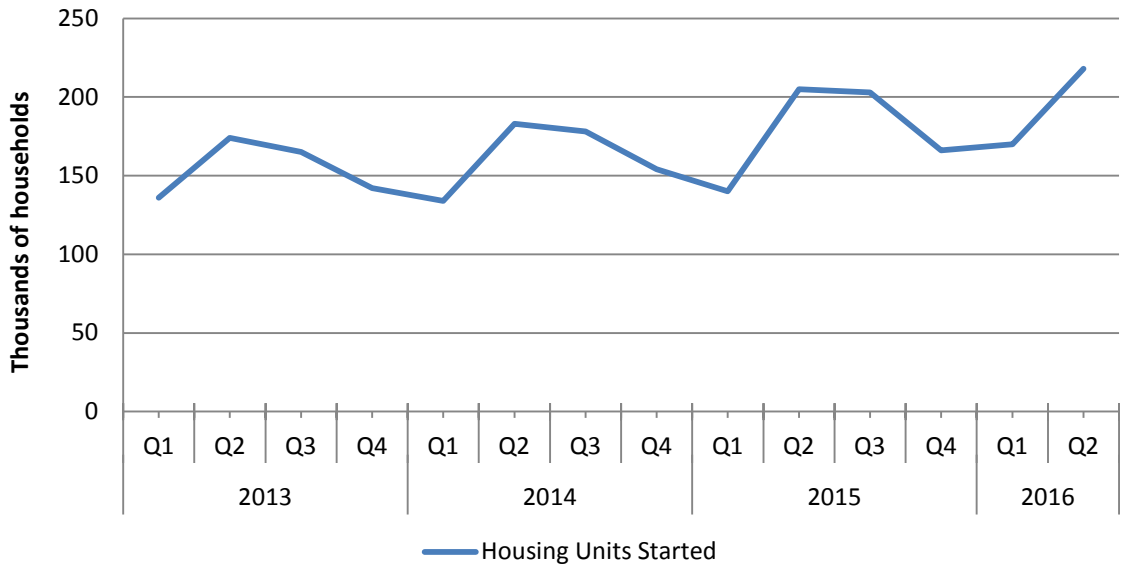
U.S. demand

Based on available information, the overall demand for castings is likely to experience moderate changes in response to changes in price. The main contributing factors are the lack of substitute products and the large cost share of product in most of its end-use products. The overall demand for heavy and or light castings is derived from construction activity and the performance of the U.S. economy. Demand for castings is driven by construction contractors, utilities service operations, and government construction and maintenance activities.[16] As seen in figure II-1, construction of new houses has increased by 25 percent from the first quarter of 2013 to the first quarter of 2016.[17]

[16] *Investigation Nos. 303-TA-13, 701 -TA-249, and 731-TA-262, 263, and 265 (First Review): Iron Metal Castings from India, Heavy Iron Construction Castings from Brazil, and Iron Construction Castings from Brazil, Canada, and China*, Staff Report, INV-W-222, September 29, 1999, p. II-8.

[17] Data for the second quarter of 2016 are preliminary and were not controlled for seasonality.

Figure II-1
Demand trends: Quarterly new single-family housing starts in the United States, January 2013-June 2016



Source: Census Bureau, New Residential Construction, retrieved September 20, 2016.

Purchaser *** noted that since 2010, there has been an increase in federal spending for construction as a part of the American Recovery and Reinvestment Act.[18] The domestic interested parties stated that demand had picked up "in the last couple of years," and that the domestic industry had benefitted from some additional ARRA spending, but that these provisions do not insulate the domestic industry from competition.[19] They stated that demand levels in the United States have not recovered from the recession in 2007-2010.

In response to a hearing question regarding demand projections for castings in the United States, U.S. producer EJ stated that it sees continued stability with the potential for a small increase in areas where the housing market has picked up; Neenah stated that it anticipates low single-digit growth based on population growth in the Sun Belt states; and U.S.

[18] The American Recovery and Reinvestment Act of 2009 ("ARRA") was a stimulus package designed to save and create domestic jobs, provide temporary relief programs, and invest in domestic infrastructure, education, health, and renewable energy in the wake of the 2007-2008 financial crisis. Section 1605 of the ARRA mandated that "{n}one of the funds appropriated or otherwise made available by this Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States. Public Law 111-5, available at https://www.gpo.gov/fdsys/pkg/PLAW-111publ5/html/PLAW-111publ5.htm. Retrieved November 1, 2016.

[19] Hearing transcript, pp. 31-31, 128-129 (Teske, San Solo); Domestic interested parties' posthearing brief, pp. 2-4.

Foundry anticipated single-digit growth for "a year or two," depending on domestic interest rates and global market stability.[20]

End uses and cost share

U.S. demand for castings depends on the demand for U.S.-produced downstream products. Reported end uses for heavy castings include covers, rings, and frames for manholes, grates and frames for catch basins and cleanout covers and frames. Most responding firms reported that castings represent 75 percent or more of the total cost of end-use products. Two firms, U.S. producer *** and purchaser *** reported that heavy castings account for 30 to 40 percent of the total cost of end use products.

Reported end uses for light castings include valve, service, and meter boxes. A majority of firms reported that light castings account for 90 percent or more of the total cost of end-use products. *** and *** reported that light castings account for 40 percent of the total cost of end-use products. Worm gear locks and light weight lids and meter frames were also reported end uses; light castings account for over 90 percent of the cost for these end uses.

Business cycles

All eight U.S. producers, 11 of 19 importers, and 10 of 15 purchasers indicated that the market was subject to business cycles, specifically season-related changes in demand from the construction industry. Only three importers and one purchaser reported that the market was subject to distinct conditions of competition, citing U.S. legislation requiring federally funded projects to buy domestic products, changes in economic growth, raw material cost fluctuations, and price competition.

One producer, six importers, and three purchasers reported changes in business cycles or conditions of competition. *** cited the Consolidated Appropriations Act of 2014, which included an American Iron and Steel Institute (AIS) requirement, and importer *** cited the Buy America Act.[21] *** reported that domestic producers are producing more competitive and innovative castings and end users are requiring more domestic castings rather than imported castings. Purchaser *** reported that increases in federal spending through the American Recovery & Reinvestment Act have changed the castings market, and purchaser *** reported that the introduction of ductile iron castings as an alternative has changed the castings market.

[20] Hearing transcript, pp. 139-140 (Teske, Hoffman, and San Solo).

[21] Public Law 113-76, or the Consolidated Appropriations Act, 2014, states "{n}one of the funds appropriated or made available in this Act shall be used to procure carbon, alloy, or armor steel plate for use in any Government-owned facility or property under the control of the Department of Defense which were not melted and rolled in the United States or Canada." January 17, 2014. Available at https://www.congress.gov/113/plaws/publ76/PLAW-113publ76.htm.

Demand trends

Most firms reported an increase in demand for heavy castings and either increasing or fluctuating demand for light castings since January 1, 2010 (table II-4). Purchasers reported increasing demand for their final products for both heavy and light castings. Most firms cited growth in the economy and an increase in municipal spending since 2010 as reasons for an increase in demand. Firms expect demand to continue in this manner.

Table II-4
Castings: Firms' responses regarding U.S. demand

Item	Number of firms reporting			
	Increase	No change	Decrease	Fluctuate
Heavy castings:				
Demand in the United States: U.S. producers	3	1	0	1
Importers	6	4	2	5
Purchasers	7	2	0	5
Foreign producers	1	1	0	0
Anticipated future demand in the United States: U.S. producers	1	2	0	2
Importers	5	5	1	5
Purchasers	7	4	0	4
Foreign producers	0	2	0	0
Demand for purchasers' final products: Purchasers	6	3	0	0
Light castings:				
Demand in the United States: U.S. producers	3	1	0	2
Importers	4	3	3	4
Purchasers	2	4	0	4
Foreign producers	1	1	0	0
Anticipated future demand in the United States: U.S. producers	3	2	0	1
Importers	3	4	1	5
Purchasers	2	3	0	3
Foreign producers	0	2	0	0
Demand for purchasers' final products: Purchasers	3	1	0	0

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

Substitute products

A majority of U.S. producers, importers, and purchasers reported that there were no substitutes for either heavy or light castings. Most of the firms that did identify substitutes indicated that composite products can be substituted for heavy castings in manhole covers and catch basins and for light castings in access covers and meter box covers. These firms indicated that composite products are lighter and stronger than both heavy and light iron castings, but

are also are more expensive and only make up a small market share. Firms also listed plastic products as substitutes for light castings in meter and valve box applications, and reported that plastic is a less expensive alternative but is limited to non-traffic applications. Two purchasers (***) listed ductile iron castings as substitutes for heavy and light "gray iron" castings in manhole covers and meter box applications, and reported that ductile iron is more expensive but can handle higher weight loads. Other reported substitutes include steel for heavy castings in drainage grate applications. At the hearing, Brazilian producer Saint-Gobain and importer of Brazilian castings Jim Cox stated that composites make up a very small percentage of the market.[22]

SUBSTITUTABILITY ISSUES

The degree of substitution between domestic and imported castings depends upon such factors as relative prices, quality (e.g., mold/pattern specification, weight, and strength etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, payment terms, product services, etc.). Based on available data, staff believes that there is moderate-to-high degree of substitutability between domestically produced castings and castings imported from subject sources.

Lead times

U.S. producers sold a majority of both heavy and light castings from inventory, and importers sold the majority of their heavy castings from inventory (table II-5). Importers reported that all of their light castings were produced-to-order. While lead times for importers' sales from inventory were shorter for than for U.S. producers' sales from inventory, lead times for importers' produced-to-order sales were significantly longer than lead times for U.S. producers' produced-to-order sales.

Table II-5
Castings: U.S. producers' and U.S. importers' lead times, 2015

* * * * * * *

Knowledge of country sources

Sixteen purchasers indicated they had marketing/pricing knowledge of domestic product, 2 of Canadian product, 4 of Chinese product, and 11 of Indian (nonsubject) product. No purchaser reporting having any marketing/pricing knowledge of Brazilian product. A plurality of purchasers (8 of 17) reported always making purchasing decisions based on producer, whereas most of their customers either sometimes or never make purchasing

[22] Hearing transcript, p. 187 (Siqueira and Cox).

decisions based on producer (table II-6). Purchasers cited volume commitments to suppliers and quality differences as reasons. A plurality of purchasers (7 of 17) reported that they and their customers sometimes make purchasing decisions based on country of origin. Purchasers cited a need to carry imports to be profitable and a preference for domestic product as reasons.

Table II-6
Castings: Purchasing decisions based on producer and country of origin, by number of reporting firms

Decision	Always	Usually	Sometimes	Never
Purchases based on producer:				
Purchaser's decision	8	3	3	3
Purchaser's customer's decision	1	2	5	4
Purchases based on country of origin:				
Purchaser's decision	4	2	7	4
Purchaser's customer's decision	1	1	7	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 castings were price (15 firms), quantity (9 firms), and availability/supply (7 firms) (table II-7). Price and quantity were the most frequently cited first-most important factors (cited by 5 firms each). Price was also the most frequently cited second- and third-most important factor.

Table II-7
Castings: Ranking of factors used in purchasing decisions as reported by U.S. purchasers, by factor

Factor	First	Second	Third	Total
Price	5	5	5	15
Quality	5	3	1	9
Availability/supply	4	2	1	7
Specifications/range of products	1	1	2	4
Service	0	4	0	4
Other[1]	2	2	5	9

[1] Other factors include domestic preference (2 firms), supplier/purchaser relationship, delivery/lead times, credit terms, freight allowances, and R&D capabilities.

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

The majority of purchasers (10 of 17) reported that they usually purchase the lowest-priced product. When asked if they purchased castings from one source although a comparable product was available at a lower price from another source, nine purchasers indicating buying a higher-priced product for the following reasons: a desire to support the domestic industry, quality issues among suppliers of Indian product, customer and/or country of origin requirements, code of conduct compliance, product availability, and inventory management control and simplicity. Three of 15 purchasers reported that certain types of product were only available from a single source. Purchaser *** reported that domestic producers make larger,

heavier, and specialty products for government projects in the United States, and that these projects require certain patterns to meet contract specifications.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table II-8). The factors rated as very important by the vast majority of responding purchasers were availability, delivery time, and reliability of supply (16 firms each), product consistency (15); price (14); and quality meets industry standard (14). A majority of purchasers also reported that meeting minimum quantity requirements (11 firms) and technical support/service (10) were somewhat important.

Table II-8
Castings: Importance of purchase factors, as reported by U.S. purchasers, by number of responding firms

	Number of firms reporting		
	Very	Somewhat	Not
Availability	16	0	0
Delivery terms	8	8	0
Delivery time	16	1	0
Discounts offered	9	3	4
Extension of credit	5	7	4
Minimum quantity requirements	1	11	5
Packaging	2	8	5
Price	14	3	0
Product consistency	15	2	0
Product range	7	8	1
Quality exceeds industry standards	7	8	2
Quality meets industry standards	14	2	0
Reliability of supply	16	1	0
Technical support/service	6	10	1
U.S. transportation costs	7	6	4

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

Supplier certification

Seven of 17 responding purchasers require their suppliers to become certified or qualified to sell castings to their firm. Most purchasers reported that the time to qualify a new supplier ranged from 90 to 180 days.[23] Purchasers indicated that supplier certification generally includes proof of the ability to meet ASTM or ISO requirements, onsite audits, and sample tests. No purchasers reported that a domestic or foreign supplier had failed in its attempt to qualify product, or had lost its approved status since January 1, 2010.

[23] Purchaser *** reported that it qualified suppliers within three days but did not elaborate on the supplier certification process.

U.S. producer U.S. Foundry stated that federal and state department of transportation projects have some additional certification requirements, and that while some larger municipalities may require manufacturers to become certified, the majority of its castings are sold privately and do not require certification.[24] Importer Jim Cox testified that municipalities sometimes have a natural preference for U.S.-made products, and that an increasing number of purchasers are requiring that their suppliers become certified.[25] It stated that the certification process can range up to 180 days or longer.

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since 2010 (table II-9). A majority of responding purchasers reported that their purchases of U.S. produced heavy castings have increased since 2010 due to economic growth. A plurality of purchasers reported that purchases of domestically produced light castings have remained constant, but did not elaborate on this trend. The vast majority of purchasers reported not purchasing from subject sources.

Table II-9
Castings: Changes in purchase patterns from U.S., subject, and nonsubject countries

	Did not purchase	Decreased	Increased	Constant	Fluctuated
Heavy castings:					
United States	1	2	9	3	1
Brazil	13	1	0	0	0
Canada	12	1	0	0	0
China	10	0	1	2	0
All other countries	1	3	4	3	2
Sources unknown	9	0	0	1	0
Light castings:					
United States	6	0	2	6	1
Brazil	13	0	0	0	0
China	12	0	0	1	0
All other countries	7	1	1	2	2
Sources unknown	10	0	0	1	0

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

Six of 17 responding purchasers reported changing suppliers since January 1, 2010. Specifically, firms dropped or reduced purchases from Romaine Stone and other Indian suppliers because of lead times. Firms added or increased purchases from domestic sources, such as EJ, John Bouchard & Sons, and Bass & Hays because of more competitive lead times.

[24] Hearing transcript, p. 121 (San Solo).
[25] Hearing transcript, p. 147 (Cox).

Purchaser *** reported increasing purchases from Hebei (China) because of its lower prices and Ironsmith due to its ability to produce difficult decorative grates.

Importance of purchasing domestic product

Purchasers reported that most of their purchases have no domestic requirements (table II-10). However, purchasers estimated that approximately 24.0 percent of their purchases of heavy castings and 15.9 percent of their purchases of light castings in 2015 were required by law to be domestic.

Table II-10
Castings: Importance of purchasing domestic product

Factor	Share of purchases (percent)	Count of firms (number)
Heavy castings:		
Purchases no domestic requirements	68.8	14
Purchases domestic requirements by law	24.0	12
Purchases domestic requirements by customers	6.9	7
Purchases domestic requirements other	0.3	2
Total	100.0	15
Light castings:		
Purchases no domestic requirements	81.2	9
Purchases domestic requirements by law	15.9	8
Purchases domestic requirements by customers	2.6	5
Purchases domestic requirements other	0.2	2
Total	100.0	9

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

Brazilian respondents argue that the American Iron and Steel ("AIS") Requirement in the ARRA and other federal and state Buy America provisions insulate a considerable portion of the domestic industry from import competition.[26] Domestic interested parties argue that while some federal projects contain Buy American provisions, this represents only a small share of their business, and that the vast majority of sales to the private market are not subject to these provisions.[27]

Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing castings produced in the United States, subject countries, and nonsubject countries. First, purchasers were asked for a

[26] Brazilian respondents' prehearing brief, pp. 38-40.
[27] Hearing transcript, p. 43 (San Solo); Domestic interested parties' posthearing brief, p. 4.

country-by-country comparison on the same 15 factors, for which they were asked to rate the importance (table II-8).

Most purchasers reported not purchasing from subject sources. Accordingly, responses for country comparisons of U.S-produced and subject imports for heavy castings were limited (II-11a). For the two responding purchasers that compared U.S. and Brazilian heavy castings, both indicated that U.S. and Brazilian product were comparable on all factors, with one firm indicating that U.S. product is superior on availability, delivery terms, and delivery time.[28] For the two responding purchasers that compared U.S. and Canadian heavy castings, both reported that U.S. product was superior to Canadian product on delivery time, and comparable to Canadian product on extension of credit, minimum quantity requirements, and packaging. A majority of responding purchasers reported that U.S. product was superior to Chinese product on availability, delivery terms, delivery time, quality exceeds industry standards, and quality meets industry standards. A majority of responding purchasers reported that U.S. product was inferior to Chinese product on the basis of price. Most purchasers reported that U.S. and nonsubject product were comparable on all factors except product range, for which U.S. product was rated as superior.

[28] No purchaser reported having country knowledge of Brazilian product.

Table II-11a
Castings: Purchasers' comparisons between U.S.-produced and imported heavy castings

Factor	Number of firms reporting					
	United States vs Brazil			United States vs Canada		
	S	C	I	S	C	I
Availability	1	1	0	1	1	0
Delivery terms	1	1	0	1	1	0
Delivery time	1	1	0	2	0	0
Discounts offered	0	2	0	1	1	0
Extension of credit	0	2	0	0	2	0
Minimum quantity requirements	0	2	0	0	2	0
Packaging	0	2	0	0	2	0
Price[1]	0	1	0	1	0	0
Product consistency	0	1	0	1	0	0
Product range	0	1	0	1	0	0
Quality exceeds industry standards	0	1	0	1	0	0
Quality meets industry standards	0	1	0	0	1	0
Reliability of supply	0	1	0	1	0	0
Technical support/service	0	1	0	1	0	0
U.S. transportation costs[1]	0	1	0	0	1	0
Factor	**United States vs China**			**United States vs Nonsubject**		
	S	**C**	**I**	**S**	**C**	**I**
Availability	3	2	0	1	2	0
Delivery terms	4	1	0	1	2	0
Delivery time	5	0	0	1	2	0
Discounts offered	0	2	1	0	3	0
Extension of credit	0	3	0	1	2	0
Minimum quantity requirements	1	3	0	1	2	0
Packaging	2	2	0	0	3	0
Price[1]	1	0	2	0	2	1
Product consistency	2	2	0	1	2	0
Product range	2	1	0	2	1	0
Quality exceeds industry standards	3	1	0	1	2	0
Quality meets industry standards	3	1	0	0	3	0
Reliability of supply	2	2	0	1	2	0
Technical support/service	1	1	1	1	2	0
U.S. transportation costs[1]	0	2	0	1	2	0

[1] A rating of superior means that price/U.S. transportation costs 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 list country's product is inferior.

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

Responses for comparisons of U.S-produced and subject imports of light castings were also limited (table II-11b). The only reporting purchaser that compared U.S. and Brazilian light castings reported that U.S.-produced product was superior to Brazilian product on availability, delivery terms, and delivery time, and that U.S. and Brazilian light castings were comparable on discounts offered, extension of credit, minimum quantity requirements, and packaging. For the two firms that compared U.S. and Chinese light castings, both reported that U.S. and Chinese product were comparable on discounts offered, minimum quantity requirements, and packaging. For the two firms that compared U.S. and nonsubject light castings, both reported that U.S. and nonsubject product were comparable on all factors except product range, for which one rated U.S. product as superior and the other rated U.S. and non-subject product as comparable.

Table II-11b
Castings: Purchasers' comparisons between U.S.-produced and imported light castings

Factor	Number of firms reporting					
	United States vs Brazil			United States vs China		
	S	C	I	S	C	I
Availability	1	0	0	1	0	1
Delivery terms	1	0	0	1	0	1
Delivery time	1	0	0	1	0	1
Discounts offered	0	1	0	0	2	0
Extension of credit	0	1	0	1	1	0
Minimum quantity requirements	0	1	0	0	2	0
Packaging	0	1	0	0	2	0
Price[1]	0	0	0	1	0	0
Product consistency	0	0	0	1	1	0
Product range	0	0	0	1	0	1
Quality exceeds industry standards	0	0	0	1	1	0
Quality meets industry standards	0	0	0	1	1	0
Reliability of supply	0	0	0	1	0	1
Technical support/service	0	0	0	0	0	1
U.S. transportation costs[1]	0	0	0	0	1	0

Factor	United States vs Nonsubject		
	S	C	I
Availability	0	2	0
Delivery terms	0	2	0
Delivery time	0	2	0
Discounts offered	0	2	0
Extension of credit	0	2	0
Minimum quantity requirements	0	2	0
Packaging	0	2	0
Price[1]	0	2	0
Product consistency	0	2	0
Product range	1	1	0
Quality exceeds industry standards	0	2	0
Quality meets industry standards	0	2	0
Reliability of supply	0	2	0
Technical support/service	0	2	0
U.S. transportation costs[1]	0	2	0

[1] A rating of superior means that price/U.S. transportation costs 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 list country's product is inferior.

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

Comparison of U.S.-produced and imported castings

In order to determine whether U.S.-produced castings can generally be used in the same applications as imports from Brazil, Canada, and China, 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-12, all U.S. producers and a majority of importers reported that heavy and light castings from the United States and subject countries are either always or frequently interchangeable.[29] *** reported that iron castings are generally interchangeable as long as they are made from the same drawing. All purchasers reported that heavy and light castings from the United States and product from Brazil and Canada are either always or frequently interchangeable. Purchasers were split when comparing U.S. product and product from China and nonsubject countries. Purchaser *** stated that quality control was the reason why U.S. product and product from China and nonsubject countries were only sometimes interchangeable.

Brazilian respondents argue that for end users that require a higher-end product such as the type Saint-Gobain exports, there is no interchangeability between Brazilian and domestic castings.[30] In their questionnaire responses, importers Jim Cox and Famcon reported that ***. The Brazilian respondents noted that Brazilian product competes with domestic product among end users, however, and that Brazilian castings were interchangeable with domestic castings in terms of the end use.[31] In response to a hearing question regarding on whether there were quality differences between standard cast iron or "gray iron" products produced in the United States, Brazil, Canada, and China, Jim Cox indicated that there were not.[32]

Domestic interested parties argue that while the product that Saint-Gobain exports to the United States is a feature-rich casting with hinged covers, security devices, and is made with ductile iron, the domestic industry also produces such a product.[33] Importer Jim Cox also stated that it is aware of at least one U.S. producer that produces a ductile iron product.[34]

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[29] U.S. producers did not provide additional details.

[30] Brazilian respondents' prehearing brief, pp. 30, 44-45; Brazilian respondents' posthearing brief, pp. Q-8–Q-14.

[31] Hearing transcript, pp. 179-180, 192 (Cox).

[32] Hearing transcript, pp. 185-187 (Cox).

[33] Hearing transcript, pp. 34, 86 (Hoffman), 84 (San Solo), 88 (Rosenthal); Domestic interested parties' posthearing brief, p. 6, exhs. 1 and 7.

[34] Hearing transcript, pp. 188-198 (Cox).

Table II-12
Castings: Interchangeability between castings produced in the United States and in other countries, by country pair

Country pair	U.S. Producers				U.S. importers				U.S. purchasers			
	A	F	S	N	A	F	S	N	A	F	S	N
Heavy castings:												
United States vs. Brazil	1	3	0	0	2	2	0	2	1	2	0	0
United States vs. Canada	1	3	0	0	1	2	1	0	2	1	0	0
United States vs. China	1	3	0	0	2	2	0	0	2	2	3	0
Brazil vs. Canada	1	3	0	0	1	1	0	0	1	0	0	0
Brazil vs. China	1	3	0	0	1	1	0	1	1	0	0	0
Canada vs. China	1	3	0	0	1	1	0	0	1	0	0	1
United States vs. Other	1	3	0	0	5	2	0	0	3	4	4	0
Brazil vs. Other	1	3	0	0	1	1	0	0	1	0	1	0
Canada vs. Other	1	3	0	0	1	2	0	0	1	0	0	0
China vs. Other	1	3	0	0	1	1	0	0	1	0	2	0
Light castings:												
United States vs. Brazil	1	1	1	0	1	2	0	0	0	1	0	0
United States vs. China	1	1	1	0	1	2	0	0	1	1	0	0
Brazil vs. China	1	1	0	0	0	1	0	0	0	0	0	0
United States vs. Other	1	1	2	0	4	3	1	0	3	2	1	0
Brazil vs. Other	1	1	0	0	1	2	0	0	0	0	0	0
China vs. Other	1	1	0	0	2	1	0	0	0	0	0	0

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

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

As can be seen in table II-13, most responding purchasers reported that domestically produced product always met minimum quality specifications. Most responding purchasers reported that the subject country product always or usually met minimum quality specifications.

Table II-13

Castings: Ability to meet minimum quality specifications, by source[1]

	Always	Usually	Sometimes	Rarely or never
Heavy castings:				
United States	10	4	0	1
Brazil	1	0	0	0
Canada	0	2	0	0
China	1	2	1	0
Other	5	3	3	1
Light castings:				
United States	5	1	0	1
Brazil	0	0	0	0
China	0	1	0	0
Other	2	3	0	1

[1] Purchasers were asked how often domestically produced or imported castings meet 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 the sales of castings from the United States, subject, or nonsubject countries. As seen in table II-14, a majority of U.S. producers indicated that factors other than price are sometimes significant for comparisons between domestic and subject imported heavy and light castings. U.S. producer *** reported that while many of its light castings customers' only consideration is price, some consider quality as more important and some will only purchase light castings that are made in the United States.[35]

Importer and purchaser responses were limited and generally evenly distributed. A majority of importers and purchasers reported that factors other than price were always significant between U.S.-produced and Brazilian-produced heavy and light castings. Importers *** reported that *** produces heavy castings that meet specific needs for wastewater professionals and are more durable and capable of bearing traffic loads than domestic product, and that this quality difference makes factors other than price always significant. Purchaser *** noted that the distribution networks set up by importers of Indian heavy castings is a non-price factor that is sometimes significant. Purchaser *** reported that the quality of U.S.-produced and Indian-produced product was above industry standards. Purchaser *** reported that there were no significant factors other than price based on country of origin as long as all the specifications are met.

[35] U.S. producers did not elaborate on what factors were important in comparing heavy castings from the United States and subject import sources.

Table II-14

Castings: Significance of differences other than price between castings produced in the United States and in other countries, by country pair

Country pair	U.S. Producers				U.S. importers				U.S. purchasers			
	A	F	S	N	A	F	S	N	A	F	S	N
Heavy castings:												
United States vs. Brazil	0	0	3	1	4	0	2	0	2	0	0	1
United States vs. Canada	0	0	3	1	1	0	2	0	2	0	0	1
United States vs. China	0	0	3	1	1	0	2	0	3	0	2	1
Brazil vs. Canada	0	0	2	1	0	0	1	0	0	0	0	1
Brazil vs. China	0	0	2	1	0	0	1	0	0	0	0	0
Canada vs. China	0	0	2	1	0	0	1	0	0	0	0	0
United States vs. Other	0	0	3	1	3	2	2	2	2	5	4	1
Brazil vs. Other	0	0	2	1	0	0	1	0	0	0	0	0
Canada vs. Other	0	0	2	1	0	0	1	0	0	0	0	0
China vs. Other	0	0	2	1	0	0	1	0	0	0	1	0
Light castings:												
United States vs. Brazil	0	0	2	1	2	0	1	0	2	0	0	0
United States vs. China	0	0	2	1	1	0	2	0	2	0	1	0
Brazil vs. China	0	0	1	1	0	0	1	0	0	0	0	0
United States vs. Other	1	0	2	1	4	2	2	1	2	1	3	0
Brazil vs. Other	0	0	1	1	0	0	1	0	0	0	0	0
China vs. Other	0	0	1	1	0	0	1	1	0	0	0	0

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

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

ELASTICITY ESTIMATES

This section discusses elasticity estimates. No party commented on these estimates in their posthearing briefs.

U.S. supply elasticity

The domestic supply elasticity[36] for castings measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of castings. The elasticity of domestic supply depends on several factors including the level of excess capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced castings. Analysis of these factors above indicates that the U.S. industry is likely to be able to increase or decrease shipments to the U.S. market; an estimate in the range of 3 to 5 is suggested.

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

U.S. demand elasticity

The U.S. demand elasticity for castings measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of castings. This estimate depends on factors discussed above such as the limited substitute products, as well as the component share of the castings in the production of any downstream products. Based on the available information, the aggregate demand for castings is likely to be inelastic; a range of -0.5 to -1 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[37] Product differentiation, in turn, depends upon such factors as quality (e.g., mold/patterns, strength, weight etc.) and conditions of sale (e.g., availability, "Buy American" clauses, sales terms/ discounts/ promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced castings and imported castings is likely to be in the range of 3 to 5.

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

PART III: CONDITION OF THE U.S. INDUSTRY

OVERVIEW

Since the Commission's original 1985 investigations concerning castings from Brazil, Canada, and China, the U.S. industry has experienced a number of changes, marked by closures, openings, and acquisitions. In the original investigations, 40 firms were identified as producers of castings and since that time many firms have exited the industry entirely or have been acquired by other firms.

The information in this section of the report pertaining to the fourth five-year reviews was compiled from responses to the Commission's questionnaires. Eight firms were identified as possible U.S. producers of iron construction castings in the domestic interested parties' response to the Commission's notice of institution or identified by staff research. The eight firms which supplied information on their operations in these reviews accounted for the vast majority of U.S. production of heavy and light castings during 2015.[1]

Changes experienced by the industry

Domestic producers were asked to indicate whether their firm had experienced any plant openings, relocations, expansions, acquisitions, consolidations, closures, or prolonged shutdowns because of strikes or equipment failure; curtailment of production because of shortages of materials or other reasons, including revision of labor agreements; or any other change in the character of their operations or organization relating to the production of iron construction castings since 2013. Five of the eight responding domestic producers indicated that they had experienced such changes; their responses are presented in table III-1.

Table III-1
Castings: U.S. producers reported changes in operations, since January 1, 2013

* * * * * * *

[1] This estimate is based on the domestic interested parties' belief that *** account for approximately *** percent of the production of heavy castings and that *** represented *** percent of the production of light castings. Additionally, the Commission received questionnaire responses from *** which together with members of the domestic interested parties accounted for the all U.S. percent of light casting production.

Anticipated changes in operations

The Commission asked domestic producers to report anticipated changes in the character of their operations relating to the production of castings. No U.S. producers reported anticipated changes in operations.[2]

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Table III-2 and figure III-1 present U.S. producers' production, capacity, and capacity utilization for heavy castings, while table III-3 and figure III-2 present U.S. producers' production, capacity, and capacity utilization for light castings. U.S. producers' capacity and production of heavy castings increased overall during 2013-2015, by *** percent and *** percent, respectively. U.S. producers' capacity and production of light castings increased overall during 2013-2015, by *** percent and *** percent, respectively. These increases were attributable to ***, which focused capital expenditures on improving production efficiency by installing new equipment at its *** facility that ***. According to the firm, these improvements led to a *** percent increase in production. During the same time period, the firm ***, which also contributed to an increase in production. At its *** facility, the ***.[3]

U.S. producers' capacity utilization gradually rose during this period and increased overall between 2013 and 2015 by *** percentage points and *** percentage points for heavy and light castings, respectively. Of the *** responding firms, *** reported using the sand-cast production method, *** reported using the permanent-mold production method, and *** reported using both the sand-cast and the shell-mold production methods.

Table III-2
Heavy castings: U.S. producers' capacity, production, and capacity utilization by firm, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Figure III-1
Heavy castings: U.S. producers' capacity, production, and capacity utilization, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

[2] Appendix D presents U.S. producers' comments regarding the likely effects of revocation of the antidumping orders on imports from Brazil, Canada, and China and of the countervailing duty order on imports from Brazil.

[3] ***, email message to USITC staff, September 16, 2016.

Table III-3
Light castings: U.S. producers' capacity, production, and capacity utilization by firm, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Figure III-2
Light castings: U.S. producers' capacity, production, and capacity utilization, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table III-4 presents U.S. producers' overall capacity and production of products on the same machinery as castings. U.S. producers' production of other products on the same machinery as castings accounted for *** percent of production in 2013, *** percent in 2014, *** percent in 2015, *** percent in January to June 2015, and *** percent in January to June 2016.

Table III-4
Castings: U.S. producers' overall capacity and production of products on the same machinery as castings, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Four out of eight firms reported production of products other than heavy or light castings on the same machinery used to produce castings: ***. These others products include but are not limited to: ***. *** reported that it only produces castings for a sister company of *** as a courtesy, and that the castings it produces are not sold on the open market. *** reported that its primary business is building products used in new home construction and that a majority of the company's production is focused on that line of business. Table III-5 provides firms' narrative responses to factors that affect their ability to shift production.

Table III-5
Castings: U.S. producers' reported factors that affect their ability to shift production

* * * * * * *

Constraints on capacity

Seven of the eight responding U.S. producers reported constraints in the manufacturing process. Three companies, *** noted that current permit limiting melting hours are constraints on capacity. Some of the other constraints noted were routine service and maintenance, which affected plant operating hours, as well as regulatory requirements.

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

Tables III-6 and III-7 present U.S. producers' U.S. shipments, export shipments, and total shipments of heavy and light castings, respectively. The quantity of U.S. producers' U.S. shipments for heavy castings increased by *** percent from 2013 to 2015, and was *** percent higher in January to June 2016 than in January to June 2015. The value of U.S. producers' shipments of heavy castings increased by *** percent from 2013 to 2015, and was *** percent higher in January to June 2016 than in January to June 2015. U.S. shipments of heavy castings accounted for between *** and *** percent of total shipments of heavy castings, by quantity, during the period for which data were collected.

The quantity of U.S. producers' exports of heavy castings increased by *** percent from 2013 to 2015. In contrast to their U.S. shipments, however, U.S. producers' exports, by quantity, were *** percent lower during January to June 2016 than during January to June 2015. U.S. producers' exports accounted for no more than *** percent of the total shipment quantity in any period for which data were collected. *** firms reported export shipments of heavy castings. *** reported export shipments to ***. *** reported shipments to ***. *** reported shipments but did not identify the market(s).

Table III-6
Heavy castings: U.S. producers' U.S. shipments, export shipments, and total shipments, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

The quantity of U.S. producers' commercial U.S. shipments of light castings increased by *** percent from 2013 to 2015, and was *** percent higher in January to June 2016 than in January to June 2015. Transfers of light castings to related firms increased by *** percent from 2013 to 2015, and were *** percent lower in January to June 2016 than in January to June 2015. The value of U.S. producers' U.S. commercial shipments of light castings increased by *** percent from 2013 to 2015, and was *** percent higher in January to June 2016 than in January to June 2015. The value of U.S. producers' transfers of light castings to related firms increased by *** percent from 2013 to 2015, but was *** percent lower in January to June 2016 than in January to June 2015. U.S. shipments of light castings accounted for *** to *** percent of total U.S. producers' shipments of light castings, by quantity, during the period for which data were collected.

The quantity of U.S. producers' exports of light castings decreased by *** percent from 2013 to 2015, and was *** percent higher in January to June 2016 than in January to June 2015. U.S. producers' exports of light castings accounted for no more than *** percent of the total shipment quantity in any period for which data were collected. *** firms reported export shipments of light castings. *** reported export shipments to *** and *** reported shipments to ***. *** reported shipments but did not identify the market(s).

Table III-7
Light castings: U.S. producers' U.S. shipments, export shipments, and total shipments, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

U.S. PRODUCERS' INVENTORIES

Table III-8 presents U.S. producers' end-of-period inventories and the ratio of these inventories to U.S. producers' production, U.S. shipments, and total shipments for heavy castings. The ratio of U.S. producers' inventories to U.S. production, U.S. shipments, and total shipments all declined from 2013 to 2015. The majority of ending inventories were held by ***, which accounted for *** percent in of total inventories of heavy castings 2013, *** percent in 2014, and *** percent in 2015.

Table III-8
Heavy castings: U.S. producers' inventories, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table III-9 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 for light castings. The ratio of U.S. producers' inventories to U.S. production, U.S. shipments, and total shipments remained relatively unchanged from 2013 to 2015. The majority of ending inventories were held by ***, which accounted for *** percent of total inventories of light castings in 2013, *** percent in 2014, and *** percent in 2015.

Table III-9
Light castings: U.S. producers' inventories, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

U.S. PRODUCERS' IMPORTS AND PURCHASES

Table III-10 presents data on individual U.S. producers' U.S. production and U.S imports of heavy castings. No U.S. producer reported directly importing heavy castings from subject sources. *** ratio of imports from nonsubject country India to production decreased from *** percent in 2013 to *** percent in 2015. The firm reported that in order to remain profitable, it must ***.[4] *** ratio of imports to production increased from less than *** percent in 2013 to *** percent in 2015. *** reported that its imports are ***.[5]

[4] *** importer questionnaire response, section II-6.
[5] *** importer questionnaire response, section II-6.

Table III-10
Heavy castings: U.S. producers' imports, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table III-11 presents data on individual U.S. producers' reported purchases of imports of heavy castings as well as the ratio of such purchases to U.S. production. ***'s ratio of purchases of imports of heavy castings from Canada to production decreased from *** percent in 2013 to *** percent in 2015.

Table III-11
Heavy castings: U.S. producers' purchases of imports, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table III-12 presents data on individual U.S. producers' U.S. production and U.S imports of light castings. *** reported importing light castings from nonsubject country India throughout the period for which data were collected and a very small amount from China in 2014. *** ratio of imports from India to production decreased from *** percent in 2013 to *** percent in 2015, but was *** percent in January to June 2016.

No U.S. producer reported purchasing light castings imported from Brazil.

Table III-12
Light castings: U.S. producers' imports, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table III-13 presents data on individual U.S. producers' reported purchases of imports of light castings as well as the ratio of such purchases to U.S. production. ***'s ratio of purchases of imports of light castings from *** to production decreased from *** percent in 2013 to *** percent in 2015.

Table III-13
Light castings: U.S. producers' purchases of imports, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-14 shows U.S. producers' employment-related data for heavy castings. The number of production and related workers ("PRWs") employed for heavy castings decreased by *** percent from 2013 to 2015, and was *** percent lower in January to June 2016 than in January to June 2015. Total hours worked increased by *** percent from 2013 to 2015, and were *** percent lower in January to June 2016 than in January to June 2015. In addition, hours worked per PRW increased by *** percent from 2013 to 2015, and were *** percent lower in

January to June 2016 than in January to June in 2015. Wages paid increased by *** percent from 2013 to 2015, and were *** percent higher in January to June 2016 than in January to June 2015. Hourly wages paid increased by *** percent from 2013 to 2015, and were *** percent higher in January to June 2016 than in January to June 2015. PRW productivity increased from *** pounds per hour in 2013 to *** pounds per hour in 2015, and was *** pounds per hour in January to June 2016. This increase in productivity was largely attributable to ***, which reported that in late 2013 it installed new equipment which broadened the firm's production capacity and ultimately made production more efficient.[6]

Table III-14
Heavy castings: U.S. producers' employment related data, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table III-15 shows U.S. producers' employment-related data for light castings. The number of PRWs employed for light castings increased by *** percent from 2013 to 2015, and was *** percent higher in January to June 2016 than in January to June 2015. Total hours worked increased by *** percent from 2013 to 2015, and were *** percent lower in January to June 2016 than in January to June 2015. In addition, hours worked per PRW increased by *** percent from 2013 to 2015, and were *** percent lower in January to June 2016 than in January to June in 2015. Wages paid increased by *** percent from 2013 to 2015, but were *** percent lower in January to June 2016 than in January to June 2015. Hourly wages paid increased by *** percent from 2013 to 2015, and were *** percent lower in January to June 2016 than in January to June 2015. PRW productivity increased from *** pounds per hour in 2013 to *** pounds per hour in 2015, and was *** pounds per hour in January to June 2016.

Table III-15
Light castings: U.S. producers' employment related data, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

[6] ***, email message to USITC staff, September 16, 2016.

FINANCIAL EXPERIENCE OF U.S. PRODUCERS

Background

Five U.S. producers reported their financial results on heavy castings.[7] Five U.S. producers reported their financial results on light castings.[8] With the exceptions noted below, U.S. producers reported their heavy castings and light castings financial results for calendar-year periods.[9] All U.S. producers reported their financial results based on U.S. generally accepted accounting principles (GAAP).[10]

The heavy castings operations of the U.S. producers are relatively concentrated, with the largest share of the period's total heavy castings sales volume accounted for by *** (*** percent).[11] The next largest producer of heavy castings in terms of share of total sales volume was *** (*** percent), followed by *** (*** percent), *** (*** percent), and *** (*** percent).

With regard to light castings, *** accounted for *** percent of total sales volume, followed by *** (*** percent), *** (*** percent), *** (*** percent), and *** (*** percent).

In conjunction with differences in the scale of company-specific operations, U.S. producers also differ in terms of the extent to which their sales are focused on specific regions of the country, as opposed to the entire U.S. market.[12]

Operations on Heavy Castings

Table III-16 presents U.S. producers' overall financial results on heavy castings. Table III-17 presents a variance analysis of these financial results.[13] Table III-18 presents selected company-specific financial results information.

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[7] *** reported financial results on heavy castings.

[8] *** reported financial results on light castings.

[9] *** reported on a fiscal year basis ending September and July, respectively.

[10] Staff conducted a verification of EJ's U.S. producer questionnaire on September 29, 2016. Data changes pursuant to verification are reflected in this and other relevant sections of the staff report. Verification report (EJ), p. 2

[11] ***. August 30, 2016 *** response to follow-up questions.

***. August 31, 2016 *** response to follow-up questions.

[12] ***. August 30, 2016 *** response to follow-up questions. ***. August 26, 2016 e-mail with attachment from *** to USITC auditor.

[13] The Commission's variance analysis is calculated in three parts: sales variance, cost of goods sold (COGS) variance, and sales, general and administrative (SG&A) expenses variance. Each part consists of a price variance (in the case of the sales variance) or a cost variance (in the case of the COGS and SG&A expenses variances) and a volume (quantity) variance. The price and cost variances are calculated as the change in unit price/cost times the new volume, while the volume variance is calculated as the change in volume times the old unit price/cost. Summarized at the bottom of table III-17, the price variance is from sales, the cost/expense variance is the sum of those items from COGS and SG&A, respectively, and

(*continued*...)

Table III-16
Heavy castings: Results of operations of U.S. producers, 2013-15, January-June 2015, and January-June 2016

* * * * * * *

Table III-17
Heavy castings: Variance analysis on the operations of U.S. producers, 2013-15, January-June 2015, and January-June 2016

* * * * * * *

Table III-18
Heavy castings: Results of operations of U.S. producers, by firm, 2013-15, January-June 2015, and January-June 2016

* * * * * * *

Heavy castings revenue

The U.S. industry's heavy castings revenue primarily represents U.S. commercial sales. With the exception of ***, all U.S. producers also reported exports.

Quantity

As shown in the revenue section of the table III-17 variance analysis, heavy castings sales volume variances were positive throughout the period. While U.S. producers were not uniform in terms of the pattern of sales volume (see table III-18), the three larger volume producers (***) all reported increases in sales volume during 2013-2015 and higher sales volume in interim 2016 compared to interim 2015.[14] In contrast, *** reported lower sales volume throughout the period and *** alternated between increasing and decreasing sales volumes.[15]

Value

Table III-16 shows that the U.S. industry's heavy castings average unit sales value moved within a relatively narrow range during 2013 through interim 2016. On a company-specific basis, however, the pattern was more mixed in terms of directional trend in 2013-14 and the interim period (see table III-18). The revenue section of the table III-17 variance analysis shows

(…*continued*)
the net volume variance is the sum of the price, COGS, and SG&A volume variances. The Commission's variance analysis is generally enhanced when product mix remains constant during the period.

[14] ***. August 30, 2016 *** response to follow-up questions. ***. Ibid.
***. August 31, 2016 *** response to follow-up questions.
***. August 29, 2016 *** response to follow-up questions.

[15] ***. August 31, 2016 *** response to follow-up questions.

that price variances generally played a minor role in terms of explaining the change in overall heavy castings revenue.

As shown in table III-18, company-specific average heavy castings sales values were mixed in terms of the extent to which they shared the same directional trend as the corresponding average raw material cost. U.S. producers generally indicated that there is no direct pass through of raw material costs to customers.[16]

Heavy castings cost of goods sold

As noted in a previous section of this report, the primary raw material inputs for heavy castings, as well as light castings, are pig and/or scrap iron. Depending on company-specific cost classification, raw material cost may also include other items such as energy and alloys.[17]

On an overall basis, the share of raw material cost to total COGS ranged from a low of *** percent for full-year 2015 to a high of *** percent for interim 2015 (see table III-16). (Note: This pattern is generally consistent with the decline in ferrous scrap prices in 2015.) While relatively stable in 2013 and 2014, the U.S. industry's average unit raw material cost declined most notably in 2015 and was lower in interim 2016 compared to interim 2015. On a company-specific basis and with the exception of ***, U.S. producers all reported the same directional trend with respect to changes in heavy castings average raw material costs; i.e., declines in 2015 and lower average raw material costs in interim 2016 compared to interim 2015.

Direct labor and other factory costs (collectively "conversion costs") together represent the majority of heavy castings COGS. As shown in table III-18 and while a range of company-specific average direct labor costs and average other factory costs were reported, *** average direct labor cost and average other factory costs were at a much higher level compared to the other U.S. producers.[18]

Heavy castings gross and operating profit

The U.S. industry's heavy castings absolute gross profit increased throughout the period, which reflects a combination of higher sales volume, a factor throughout the period, and a widening gross profit ratio (gross profit divided by net sales), a factor in 2015 and interim 2016. As shown in table III-16, the improvement in heavy castings gross profit ratio in 2014-15 is primarily due to a decline in average raw material cost and higher average sales value. Similarly, higher heavy castings gross profit ratio in interim 2016 compared to interim 2015

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[16] ***. August 30, 2016 *** response to follow-up questions. ***. August 31, 2016 *** response to follow-up questions. ***. August 31, 2016 *** response to follow-up questions. ***. August 29, 2016 *** response to follow-up questions.

[17] ***. August 30, 2016 *** response to follow-up questions. ***. August 31, 2016 *** response to follow-up questions. ***. August 29, 2016 *** response to follow-up questions. ***. August 31, 2016 *** response to follow-up questions.

[18] *** higher average cost may reflect product mix to some extent, a primary factor appears to be the company's cost structure (see footnote 22). As noted above, *** accounts for only *** of the period's total heavy castings sales volume.

reflects a combination of lower average raw material cost and higher average sales value. On a company-specific basis, the larger-volume producers followed the same directional pattern of heavy castings gross profit, with *** consistently reporting the highest gross profit ratios.[19] In contrast, smaller volume producers reported a mixed pattern.[20]

The U.S. industry's total heavy castings SG&A expense ratio (total SG&A expenses divided by net sales) increased marginally during 2013-2015 and was somewhat higher during the interim period. As shown in table III-18, underlying company-specific SG&A expense ratios reflect a relatively wide range. ***, with the highest SG&A ratios throughout the period, reported a number of activities which support castings operations and that would generally be classified as part of SG&A expenses.[21] ***.[22]

Given the relatively stable pattern, changes in the U.S. industry's overall SG&A expense ratios had at most a secondary impact on the level of heavy castings operating income; i.e., the pattern of operating profitability was primarily a function of factors impacting/determining heavy castings gross profitability.

Operations on Light Castings

Table III-19 presents U.S. producers' overall financial results on light castings. Table III-20 presents a variance analysis of these financial results.[23] Table III-21 presents selected company-specific financial results information.

Table III-19
Light castings: Results of operations of U.S. producers, 2013-15, January-June 2015, and January-June 2016

* * * * * * *

Table III-20
Light castings: Variance analysis on the operations of U.S. producers, 2013-15, January-June 2015, and January-June 2016

* * * * * * *

Table III-21
Light castings: Results of operations of U.S. producers, by firm, 2013-15, January-June 2015, and January-June 2016

* * * * * * *

[19] ***. August 30, 2016 *** response to follow-up questions.
[20] ***. August 31, 2016 *** response to follow-up questions.
[21] ***. August 30, 2016 *** response to follow-up questions.
***. *** U.S. producer questionnaire, response to III-10a and III-11.
[22] ***. August 26, 2016 e-mail with attachment from *** to USITC auditor.
[23] See footnote 13.

Light castings revenue

With the exception of ***, which reported transfers, light castings revenue reflects commercial sales. Like heavy castings, light castings commercial sales primarily reflect U.S. domestic shipments, but also include a small level of exports.

Quantity

In terms of explaining changes in total revenue, the revenue section of the table III-20 variance analysis shows that light castings sales volume variances were generally more important than corresponding price variances. On a company-specific basis, as shown in table III-21, the directional trend of sales volume varied. *** producer of light castings by volume, reported increases in sales volume throughout the period, while *** reported mixed patterns of sales volume.[24] *** reported static light castings sales volume throughout the period.[25]

Value

Table III-19 shows that light castings average unit sales value remained within a relatively narrow range: declining modestly in 2014, increasing in 2015, and then somewhat lower in interim 2016 compared to interim 2015.[26] In contrast with the directional pattern reported by most U.S. producers, *** average sales value was *** percent higher in interim 2016 compared to interim 2015.[27] Similar to heavy castings sales, producers of light castings generally do not directly pass through to customers changes in prices of primary raw material inputs.[28]

The revenue section of the table III-20 variance analysis shows that positive sales volume variances were the primary factor explaining the pattern of higher light casting sales revenue during the full year period and were also the primary factor explaining the lower light castings revenue in interim 2016 compared to interim 2015.

Light castings cost of goods sold

On an overall basis, the share of light castings raw material cost to total COGS ranged from a low of *** percent in interim 2016 to a high of *** percent in 2014 (see table III-19).[29] For most of the period, light castings raw material cost, as a share of total COGS, was about the same as heavy castings (see table III-19 and table III-16). With the exception of an increase in light castings average raw material cost in 2014, in contrast with a decline in heavy casting raw material cost in 2014, light castings average unit raw material cost followed a

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[24] ***. September 29, 2016 e-mail with attachment from *** to USITC auditor.

[25] ***. September 16, 2016 e-mail with attachment from *** to USITC auditor.

[26] ***. Ibid.

[27] ***.

[28] ***. September 29, 2016 e-mail with attachment from Bingham & Taylor to USITC auditor. ***. September 30, 2016 e-mail to *** from USITC auditor.

[29] ***. Ibid. See also *Heavy castings cost of goods sold* section regarding the primary inputs included in raw material costs.

directional pattern similar to that of heavy castings: a notable decline in 2015 and also lower in interim 2016 compared to interim 2015.[30] As shown in table III-21 and with some exceptions, U.S. producers generally reported the same directional pattern of average light castings raw material costs.

Similar to heavy castings, light castings conversion costs (direct labor and other factory costs) represent the majority of light castings COGS. Table III-21 shows that *** consistently reported the highest company-specific light castings average unit conversion costs (i.e., combined average direct labor and average other factory costs). With somewhat less period-to-period variability as compared to ***, *** reported the second highest light castings average conversion costs.[31]

On an overall basis, the directional pattern of average light castings direct labor and other factory costs was mixed but remained within a relatively narrow range during 2013 through interim 2016. As a result and like heavy castings, period-to-period changes in average light castings COGS were largely a function of changes in average raw material cost.[32]

Light castings gross and operating profit

Table III-19 shows that light castings absolute gross profit and the corresponding gross profit ratio both declined in 2014 and then increased in 2015. Absolute gross profit and gross profit ratio were also higher in interim 2016 compared to interim 2015. In 2014, the contraction in gross profit ratio reflects a decline in average sales value and an increase in average COGS. The subsequent expansion of the light castings gross profit ratio reflects declines in average COGS due to lower average raw material costs combined with relatively stable average sales values.[33]

As shown in table III-19, light casting SG&A expense ratios were somewhat lower compared to heavy castings SG&A expense ratios (see table III-16).[34] While fluctuating somewhat during the period, light castings SG&A expense ratios remained within a relatively narrow range and therefore can be considered a secondary factor in terms of explaining the pattern of operating profit. As such and like heavy castings, the pattern of operating results was primarily determined at the gross level.

Capital expenditures and research and development expenses

Table III-22 presents U.S. producers' heavy castings and light castings capital expenditures and research and development (R&D) expenses, respectively, by firm.

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[30] ***. September 16, 2016 e-mail with attachment from *** to USITC auditor.

[31] ***. September 8, 2016 *** response to follow-up questions.

[32] The exception was 2014 when the increase in average other factory costs was only partially offset by corresponding declines in average raw material cost and direct labor.

[33] ***. September 16, 2016 e-mail with attachment from *** to USITC auditor.

[34] When comparing company-specific SG&A expense ratios for operations on heavy castings and light castings (see table III-20 and table III-18), ***. September 8, 2016 *** response to follow-up questions. ***. Verification report (EJ), p. 5.

Table III-22

Heavy castings and light castings: Capital expenditures and research and development (R&D) expenses of U. S. producers, 2013-15, January-June 2015, and January-June 2016

* * * * * * *

*** accounted for the *** company-specific share of total heavy castings capital expenditures (*** percent) and light castings capital expenditures (*** percent).[35] As noted above and in terms of sales volume, *** was the *** producer and *** producer during the period. *** accounted for the second largest share of heavy castings capital expenditures (*** percent), as well as the second largest share of light castings capital expenditures (*** percent).[36]

With regard to the remaining producers and capital expenditures related to heavy castings operations, ***, ***, and *** accounted for *** percent, *** percent, and *** percent, respectively.[37] With regard to light castings, *** and *** accounted for *** percent and *** percent of capital expenditures, respectively.[38] As shown in table III-22, *** did not report light castings capital expenditures during the period.

Table III-22 shows that R&D expenses were reported by *** for heavy castings operations and by *** for light castings operations.[39]

Assets and return on investment

Table III-23 presents data on the U.S. producers' heavy castings and light castings total assets, asset turnover (sales divided by total assets), and return on assets, respectively, by firm.[40]

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[35] ***. *** U.S. producer questionnaire, response to III-13 (note 1). ***.

[36] ***. *** U.S. producer questionnaire, response to III-13 (note 1).

[37] ***. *** U.S. producer questionnaire, response to III-13 (note 1).

***. August 31, 2016 *** response to follow-up questions.

***. *** U.S. producer questionnaire, response to III-13 (note 1).

[38] ***. *** U.S. producer questionnaire, response to III-13 (note 2).

***. *** U.S. producer questionnaire, response to III-13 (note 2).

[39] ***. August 30, 2016 *** response to follow-up questions.

***. August 31, 2016 *** response to follow-up questions.

***. *** U.S. producer questionnaire, response to III-13 (note 4).

[40] With regard to a company's overall operations, staff notes that a total asset value (i.e., the bottom line value on the asset side of a company's balance sheet) reflects an aggregation of a number of assets that, in many instances, are not product specific. Accordingly, it is reasonable to assume that U.S. producers used high-level allocation factors in order to report total asset values specific to heavy castings and light castings operations, respectively. As such, the pattern of asset values reported can reflect changes in underlying asset account balances, as well as period-to-period variations in relevant allocation factors. The ability of U.S. producers to assign total asset values to discrete product lines affects the meaningfulness of calculated asset turnover and corresponding return on assets; i.e., asset turnover ratio multiplied by corresponding operating profit ratio.

(*continued*...)

Table III-23
Heavy castings and light castings: U.S. producers' total assets, asset turnover, and return on assets, 2013-15

* * * * * * *

(…*continued*)

***. September 29, 2016 e-mail with attachment from *** to USITC auditor.

PART IV: U.S. IMPORTS AND THE FOREIGN INDUSTRIES

U.S. IMPORTS

Overview

The Commission issued questionnaires to *** firms believed to have imported heavy castings since January 2013 and *** firms believed to have imported light castings since January 2013.[1] The Commission received questionnaire responses from *** firms that reported imports of heavy castings and *** firms that reported imports of light castings.[2] Firm questionnaire data accounted for *** percent of total U.S. imports of heavy castings by quantity during 2015 and *** percent of total U.S. imports of light castings by quantity during 2015. Given the large volume of nonsubject imports of castings and other products entering the United States, staff believes that the data reported by responding U.S. imports of castings from subject countries are understated. Firms responding to the Commission's questionnaire accounted for the following shares of U.S. imports of heavy and light castings from the individual subject countries (as a share of official import statistics, by quantity) in 2015:

- *** percent of heavy castings imports from Brazil
- *** percent of heavy castings imports from Canada
- *** percent of heavy castings imports from China
- *** percent of light castings imports from Brazil[3]
- *** percent of light castings imports from China

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[1] The Commission issues questionnaires to those firms identified by data provided by U.S. Customs. Data compiled using official import statistics for the ten-digit code (7325.10.0080) under which iron construction castings fall is significantly broader than the ten-digit HTS codes specific to light and heavy iron construction castings and are not presented in this section of the report. Manhole covers, rings, and frames, catch basins, grates and frames, cleanout covers and frames used for drainage or access purposes for public utility, water and sanitary systems, were collectively imported under Harmonized Tariff Schedule (HTS) statistical reporting number 7325.10.0010 until 1999. Starting in 2000, heavy castings were imported under the following statistical reporting numbers: 7325.10.0010, 7325.10.0020, and 7325.10.0025. Heavy castings may also be imported under HTS statistical reporting number 7325.10.0080 as "other". Valve, service, and meter boxes which are placed below ground to encase water, gas, or other valves, or water and gas meters. These types of light castings were imported under HTS statistical reporting number 7325.10.0010 until 1999. Starting in 2000, these light castings were imported under the following two reporting number: 7325.10.0030 and 7325.10.0035. Light castings may also be imported under HTS statistical reporting number 7325.10.0080 as "other".

[2] Ten firms reported they have not imported heavy castings since January 2013 and *** firms reported they have not imported light castings.

[3] In 2015, there were no imports of light castings under HTS numbers 7325.10.0030 and 7325.10.0035 in official U.S. import statistics and a minimal amount reported by questionnaire respondents.

In light of the data coverage by the Commission's questionnaires, import data in this report are based on official U.S. import statistics for castings.

Imports from subject and nonsubject countries

Table IV-1 and Figure IV-1 present information on U.S. imports of heavy castings from Brazil, Canada, and China and all other sources. Subject imports of heavy castings, by quantity, from subject countries decreased by 4.7 percent from 2013 to 2015, and were 23.8 percent higher during January to June 2016 than during January to June 2015. Reported average unit values for subject heavy castings imports ranged from $1.02 to $1.32 per pound during January 2013 through June 2016. In addition, the ratio of imports of heavy castings from subject sources to U.S. production ranged from 0.9 to 1.2 percent during January 2013 through June 2016. The ratio of total imports of heavy castings to U.S. production increased by 0.4 percentage points from 2013 to 2015, and was 1.4 percentage points lower during January to June 2016 than January to June 2015.

India, a nonsubject country, accounted for 87.2 percent of U.S. imports of heavy castings as reported by U.S. importers in 2015. Nonsubject imports of heavy castings from India, by quantity, increased 17.8 percent from 2013 to 2015, and were 4.1 percent lower during January to June 2016 than during January to June 2015. Reported average unit values for total heavy castings imports from India ranged from $0.42 to $0.47 per pound during January 2013 through June 2016. In addition, the ratio of imports of heavy castings from India to U.S. production ranged from 19.7 to 20.5 percent during January 2013 through June 2016. The ratio of total imports of heavy castings from nonsubject sources to U.S. production increased from 21.9 percent to 22.5 percent from 2013 to 2015, and was 1.6 percentage points lower in January to June 2016 than in January to June 2015.

Table IV-1
Heavy castings: U.S. imports, by source, 2013-15, January to June 2015, and January to June 2016

Item	Calendar year			January to June	
	2013	2014	2015	2015	2016
	Quantity (1,000 pounds)				
U.S. imports from.--					
Brazil	1,051	498	662	195	251
Canada	1,290	937	1,273	577	677
China	2,982	3,350	3,139	1,460	1,835
Subject sources	5,323	4,784	5,074	2,231	2,763
India	86,263	93,613	101,630	51,648	49,556
All other sources	9,275	11,813	9,811	5,703	3,681
Nonsubject sources	95,538	105,426	111,441	57,351	53,237
All sources	100,860	110,210	116,515	59,582	55,999
	Value (1,000 dollars)				
U.S. imports from.--					
Brazil	1,182	645	869	237	352
Canada	1,023	747	1,114	515	576
China	4,437	4,934	3,411	1,515	2,130
Subject sources	6,642	6,326	5,393	2,267	3,058
India	40,165	42,783	44,674	23,410	20,609
All other sources	13,377	18,518	13,593	8,946	2,526
Nonsubject sources	53,542	61,301	58,267	32,356	23,135
All sources	60,184	67,628	63,660	34,624	26,193
	Unit value (dollars per pound)				
U.S. imports from.--					
Brazil	1.13	1.30	1.31	1.21	1.40
Canada	0.79	0.80	0.87	0.89	0.85
China	1.49	1.47	1.09	1.04	1.16
Subject sources	1.25	1.32	1.06	1.02	1.11
India	0.47	0.46	0.44	0.45	0.42
All other sources	1.44	1.57	1.39	1.57	0.69
Nonsubject sources	0.56	0.58	0.52	0.56	0.43
All sources	0.60	0.61	0.55	0.58	0.47
	Share of quantity (percent)				
U.S. imports from.--					
Brazil	1.0	0.5	0.6	0.3	0.4
Canada	1.3	0.8	1.1	1.0	1.2
China	3.0	3.0	2.7	2.4	3.3
Subject sources	5.3	4.3	4.4	3.7	4.9
India	85.5	84.9	87.2	86.7	88.5
All other sources	9.2	10.7	8.4	9.6	6.6
Nonsubject sources	94.7	95.7	95.6	96.3	95.1
All sources	100.0	100.0	100.0	100.0	100.0

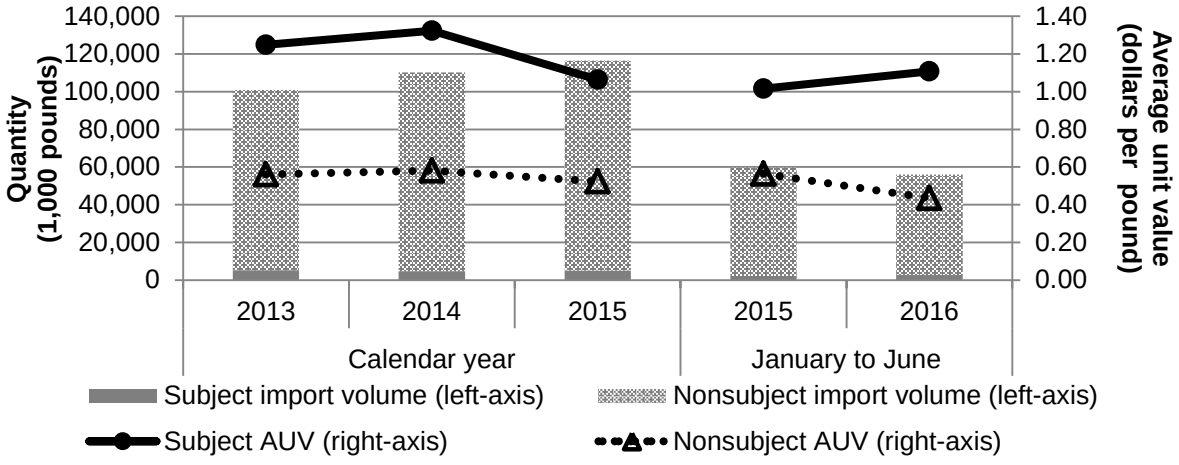
Table continued on next page.

Table IV-1 -- Continued
Heavy castings: U.S. imports, by source, 2013-15, January to June 2015, and January to June 2016

Item	Calendar year			January to June	
	2013	2014	2015	2015	2016
	Share of value (percent)				
U.S. imports from.--					
Brazil	2.0	1.0	1.4	0.7	1.3
Canada	1.7	1.1	1.7	1.5	2.2
China	7.4	7.3	5.4	4.4	8.1
Subject sources	11.0	9.4	8.5	6.5	11.7
India	66.7	63.3	70.2	67.6	78.7
All other sources	22.2	27.4	21.4	25.8	9.6
Nonsubject sources	89.0	90.6	91.5	93.5	88.3
All sources	100.0	100.0	100.0	100.0	100.0
	Ratio to U.S. production (percent)				
U.S. imports from.--					
Brazil	0.2	0.1	0.1	0.1	0.1
Canada	0.3	0.2	0.3	0.2	0.3
China	0.7	0.7	0.6	0.6	0.7
Subject sources	1.2	1.0	1.0	0.9	1.1
India	19.8	20.5	20.5	20.6	19.7
All other sources	2.1	2.6	2.0	2.3	1.5
Nonsubject sources	21.9	23.1	22.5	22.8	21.2
All sources	23.1	24.1	23.5	23.7	22.3

Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0010, 7325.10.0020, and 7325.10.0025, accessed August 27, 2016.

Figure IV-1
Heavy castings: U.S. import volumes and prices, 2013-15, January to June 2015, and January to June 2016



Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0010, 7325.10.0020, and 7325.10.0025, accessed August 27, 2016.

Table IV-2 presents information on U.S. imports of heavy castings from nonsubject sources. Imports of heavy castings, by quantity, from nonsubject sources increased by 16.6 percent from 2013 to 2015, and were 7.2 percent lower in January to June 2016 than in January to June 2015.

Table IV-2
Heavy castings: Nonsubject U.S. imports, by source, 2013-15, January to June 2015, and January to June 2016

Item	Calendar year			January to June	
	2013	2014	2015	2015	2016
	Quantity (1,000 pounds)				
Nonsubject U.S. imports from.--India	86,263	93,613	101,630	51,648	49,556
Mexico	7,970	10,791	7,943	4,801	2,693
Germany	413	619	1,106	627	436
France	155	82	370	44	297
Taiwan	79	104	118	60	53
United Kingdom	478	77	86	38	38
Japan	0	4	43	43	4
Indonesia	0	43	42	42	0
Sweden	0	0	32	0	0
Australia	75	38	21	6	6
Singapore	0	0	17	17	0
All other sources	105	55	33	25	154
All nonsubject sources	95,538	105,426	111,441	57,351	53,237
	Share of total U.S. imports (percent)				
Nonsubject U.S. imports from.--India	85.5	84.9	87.2	86.7	88.5
Mexico	7.9	9.8	6.8	8.1	4.8
Germany	0.4	0.6	0.9	1.1	0.8
France	0.2	0.1	0.3	0.1	0.5
Taiwan	0.1	0.1	0.1	0.1	0.1
United Kingdom	0.5	0.1	0.1	0.1	0.1
Japan	0.0	0.0	0.0	0.1	0.0
Indonesia	0.0	0.0	0.0	0.1	0.0
Sweden	0.0	0.0	0.0	0.0	0.0
Australia	0.1	0.0	0.0	0.0	0.0
Singapore	0.0	0.0	0.0	0.0	0.0
All other sources	0.1	0.0	0.0	0.0	0.3
All nonsubject sources	94.7	95.7	95.6	96.3	95.1

Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0010, 7325.10.0020, and 7325.10.0025, accessed August 27, 2016.

Table IV-3 and Figure IV-2 present information on U.S. imports of light castings from Brazil, China and all other sources. Subject imports of light castings decreased by 64.8 percent from 2013 to 2015, and were 56.2 percent higher during January to June 2016 than during January to June 2015. Reported average unit values for subject light castings imports ranged from $0.82 to $1.00 per pound during January 2013 through June 2016. In addition, the ratio of imports of light castings from subject sources to U.S. production ranged from 4.4 to 16.9 percent during January 2013 through June 2016. The ratio of total imports of light castings to U.S. production decreased from 312.7 percent to 301.1 percent from 2013 to 2015, and was 71.1 percentage points lower during January to June 2016 than in January to June 2015.

India, a nonsubject country, accounted for 97.3 percent of U.S. imports of light castings, by quantity, as reported by U.S. importers in 2015. Nonsubject imports of light castings from India, by quantity, increased 12.7 percent from 2013 to 2015, and were 23.2 percent lower during January to June 2016 than during January to June 2015. Reported average unit values for total imports of light castings from India ranged from $0.44 to $0.48 per pound during January 2013 through June 2016. In addition, the ratio of imports of light castings from India to U.S. production ranged from 241.8 to 316.1 percent during January 2013 through June 2016. Light castings from India accounted for 92.6 percent of all U.S. imports of light castings, by value, in 2015. The ratio of total imports of light castings from nonsubject sources to U.S. production remained relatively stable from 2013 to 2015, and was 73.6 percentage points lower during January to June 2016 than January to June 2015.

Table IV-3
Light castings: U.S. imports, by source, 2013-15, January to June 2015, and January to June 2016

Item	Calendar year			January to June	
	2013	2014	2015	2015	2016
	Quantity (1,000 pounds)				
U.S. imports from.--					
Brazil	104	123	0	0	4
China	3,435	1,384	1,246	518	805
Subject sources	3,539	1,507	1,246	518	809
India	61,452	63,037	69,252	37,370	28,697
All other sources	388	392	663	375	453
Nonsubject sources	61,840	63,429	69,915	37,745	29,149
All sources	65,380	64,936	71,161	38,263	29,958
	Value (1,000 dollars)				
U.S. imports from.--					
Brazil	118	131	9	0	22
China	3,437	1,259	1,083	468	643
Subject sources	3,555	1,390	1,092	468	665
India	29,221	30,449	31,987	17,680	12,513
All other sources	1,012	1,210	1,469	795	947
Nonsubject sources	30,233	31,659	33,456	18,474	13,460
All sources	33,788	33,049	34,547	18,942	14,124
	Unit value (dollars per pound)				
U.S. imports from.--					
Brazil	1.13	1.07	81.00	0.00	4.98
China	1.00	0.91	0.87	0.90	0.80
Subject sources	1.00	0.92	0.88	0.90	0.82
India	0.48	0.48	0.46	0.47	0.44
All other sources	2.61	3.08	2.22	2.12	2.09
Nonsubject sources	0.49	0.50	0.48	0.49	0.46
All sources	0.52	0.51	0.49	0.50	0.47
	Share of quantity (percent)				
U.S. imports from.--					
Brazil	0.2	0.2	0.0	0.0	0.0
China	5.3	2.1	1.8	1.4	2.7
Subject sources	5.4	2.3	1.8	1.4	2.7
India	94.0	97.1	97.3	97.7	95.8
All other sources	0.6	0.6	0.9	1.0	1.5
Nonsubject sources	94.6	97.7	98.2	98.6	97.3
All sources	100.0	100.0	100.0	100.0	100.0

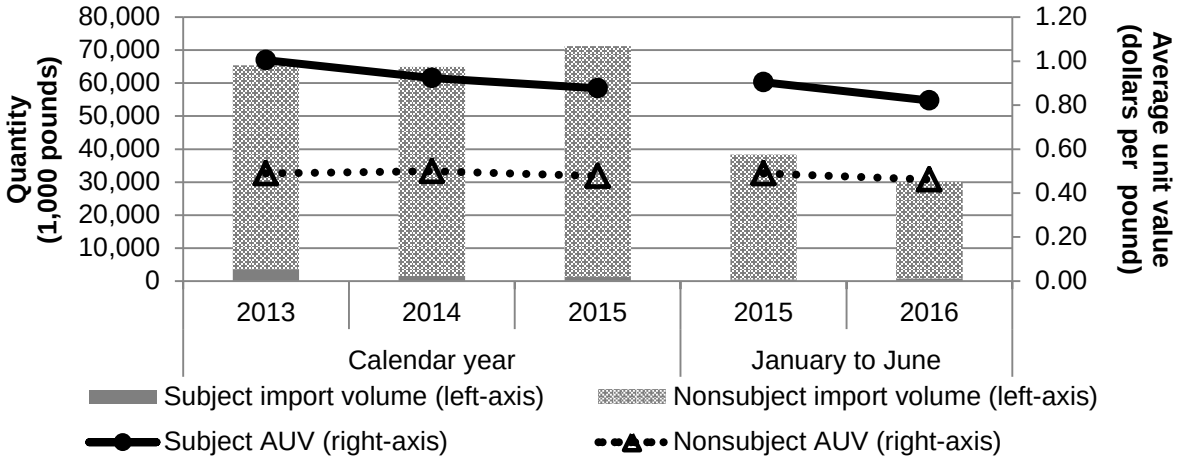
Table continued on next page.

Table IV-3 -- Continued
Light castings: U.S. imports, by source, 2013-15, January to June 2015, and January to June 2016

Item	Calendar year			January to June	
	2013	2014	2015	2015	2016
	Share of value (percent)				
U.S. imports from.--					
Brazil	0.3	0.4	0.0	0.0	0.2
China	10.2	3.8	3.1	2.5	4.6
Subject sources	10.5	4.2	3.2	2.5	4.7
India	86.5	92.1	92.6	93.3	88.6
All other sources	3.0	3.7	4.3	4.2	6.7
Nonsubject sources	89.5	95.8	96.8	97.5	95.3
All sources	100.0	100.0	100.0	100.0	100.0
	Ratio to U.S. production (percent)				
U.S. imports from.--					
Brazil	0.5	0.6	0.0	0.0	0.0
China	16.4	6.4	5.3	4.4	6.8
Subject sources	16.9	6.9	5.3	4.4	6.8
India	293.9	289.5	293.0	316.1	241.8
All other sources	1.9	1.8	2.8	3.2	3.8
Nonsubject sources	295.8	291.3	295.8	319.2	245.6
All sources	312.7	298.3	301.1	323.6	252.5

Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0010, 7325.10.0020, and 7325.10.0025, accessed August 27, 2016.

Figure IV-2
Light castings: U.S. import volumes and prices, 2013-15, January to June 2015, and January to June 2016



Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0010, 7325.10.0020, and 7325.10.0025, accessed August 27, 2016.

Table IV-4 presents information on U.S. imports of light castings from nonsubject sources. Imports of light castings, by quantity, from nonsubject sources increased by 13.1 percent from 2013 to 2015, and were 22.8 percent lower in January to June 2016 than in January to June 2015.

Table IV-4
Light castings: Nonsubject U.S. imports, by source, 2013-15, January to June 2015, and January to June 2016

Item	Calendar year			January to June	
	2013	2014	2015	2015	2016
	Quantity (1,000 pounds)				
Nonsubject U.S. imports from.--					
India	61,452	63,037	69,252	37,370	28,697
Canada	164	279	571	303	385
Germany	1	1	46	45	1
Taiwan	25	22	17	7	14
Mexico	32	15	10	10	7
Italy	16	30	8	1	3
Singapore	0	0	7	7	0
Denmark	0	0	1	1	1
Japan	0	0	1	0	0
Malaysia	0	0	1	0	0
Belgium	2	0	1	1	3
All other sources	148	44	1	0	38
All nonsubject sources	61,840	63,429	69,915	37,745	29,149
	Share of total U.S. imports (percent)				
Nonsubject U.S. imports from.--					
India	94.0	97.1	97.3	97.7	95.8
Canada	0.3	0.4	0.8	0.8	1.3
Germany	0.0	0.0	0.1	0.1	0.0
Taiwan	0.0	0.0	0.0	0.0	0.0
Mexico	0.0	0.0	0.0	0.0	0.0
Italy	0.0	0.0	0.0	0.0	0.0
Singapore	0.0	0.0	0.0	0.0	0.0
Denmark	0.0	0.0	0.0	0.0	0.0
Japan	0.0	0.0	0.0	0.0	0.0
Malaysia	0.0	0.0	0.0	0.0	0.0
Belgium	0.0	0.0	0.0	0.0	0.0
All other sources	0.2	0.1	0.0	0.0	0.1
All nonsubject sources	94.6	97.7	98.2	98.6	97.3

Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0030 and 7325.10.0035, accessed August 27, 2016.

U.S. IMPORTERS' IMPORTS SUBSEQUENT TO JUNE 30, 2016

The Commission requested importers to indicate whether they had imported or arranged for the importation of heavy castings from Brazil, Canada, and/or China and light castings from Brazil and/or China for delivery after June 30, 2016. *** firms indicated that they had arranged for such imports and provided quarterly data for their arranged imports for July 2016 through June 2017. *** firms reported arranged imports of heavy castings from Brazil, *** firm reported arranged imports of heavy castings from Canada, and *** firm reported arranged imports of heavy castings from China. *** firms reported arranged imports of light castings from other sources. Table IV-5 presents data provided by U.S. importers for arranged imports of heavy castings and table IV-6 presents data provided by U.S. importers for arranged imports of light castings.

Table IV-5
Heavy castings: U.S. importers' arranged imports, July 2016 to June 2017

* * * * * * *

Table IV-6
Light castings: U.S. importers' arranged imports, July 2016 to June 2017

* * * * * * *

U.S. IMPORTERS' INVENTORIES

Table IV-7 presents data for inventories of U.S. imports of heavy castings held in the United States. Inventories of heavy castings imports from Brazil increased by *** short tons from 2013-15, and decreased by *** short tons during the interim 2015 and 2016 periods. Inventories of heavy castings imports from China decreased by *** short tons from 2013-15, but increased by *** short tons during the interim 2015 and 2016 periods. Inventories of imports of heavy castings from nonsubject sources decreased by *** short tons during 2013-15.[4] Inventories of heavy castings from all other sources were primarily from France, India, and the United Kingdom.

Table IV-8 presents data for inventories of U.S. imports of light castings held in the United States. Inventories of light castings imports from Brazil decreased by *** short tons from 2013-15, and decreased by *** short tons during the interim 2015 and 2016 periods. Inventories of light castings imports from subject sources decreased by *** short tons during 2013-15, and decreased by *** short tons during the interim 2015 and 2016 periods. Inventories of imports of light castings from nonsubject sources increased by *** short tons during 2013-15. *** accounted for all inventories of light castings from Brazil. Inventories of light castings from all other sources were primarily from Canada, India, and Mexico.

[4] *** and *** accounted for all inventories of heavy castings from Brazil.

Table IV-7

Heavy castings: U.S. importers' end-of-period inventories of imports by source, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table IV-8

Light castings: U.S. importers' end-of-period inventories of imports by source, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

CUMULATION CONSIDERATIONS

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

Presence in the market

Table IV-9 and Figure IV-3 present data for U.S. imports of heavy castings by month for January 2013 through June 2016. Imports of heavy castings from Brazil were reported for a majority of months within the period of examination with the exception of 2014. Imports of heavy castings from Canada were reported for a majority of the months within the period of examination. Heavy castings imports from China were reported for all months within the period of examination.

Table IV-10 and Figure IV-4 present data for U.S. imports of light castings by month for January 2013 through June 2016. Imports of light castings from Brazil were only reported in 6 months. Imports of light castings from China were reported for all months within the period of examination.

Table IV-9
Heavy castings: U.S. imports by month, January 2013 through June 2016

Year / month	Border of entry					
	Brazil	Canada	China	Subject sources	Nonsubject sources	All sources
	Quantity (1,000 pounds)					
2013.--						
January	214	43	261	518	6,628	7,145
February	0	42	191	233	7,654	7,887
March	55	121	319	495	8,364	8,859
April	0	45	100	144	8,770	8,915
May	36	162	304	502	8,208	8,710
June	33	195	313	541	8,561	9,102
July	68	48	256	373	7,988	8,360
August	116	102	226	444	7,769	8,214
September	38	99	296	433	8,223	8,656
October	38	219	249	506	8,855	9,361
November	40	152	168	360	7,462	7,823
December	413	61	300	774	7,055	7,829
2014.--						
January	0	0	378	378	7,803	8,182
February	0	41	161	201	8,058	8,259
March	0	82	89	171	8,132	8,303
April	0	104	386	490	9,759	10,249
May	162	65	359	586	9,498	10,084
June	0	209	231	439	8,654	9,093
July	0	122	227	349	9,506	9,855
August	149	12	454	615	8,592	9,207
September	38	173	292	503	9,035	9,538
October	110	58	233	402	11,058	11,460
November	39	67	307	413	8,187	8,600
December	0	4	233	237	7,143	7,380

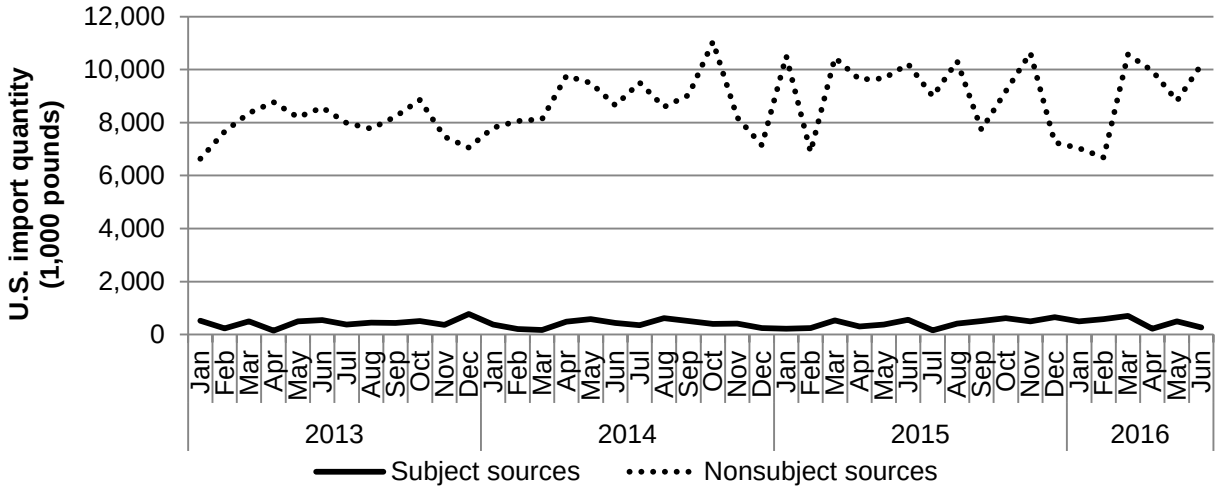
Table continued on next page.

Table IV-9 -- Continued
Heavy castings: U.S. imports by month, January 2013 through June 2016

Year / month	Border of entry					
	Brazil	Canada	China	Subject sources	Nonsubject sources	All sources
	Quantity (1,000 pounds)					
2015.-- January	39	0	183	222	10,509	10,731
February	0	42	199	241	6,887	7,127
March	78	145	309	532	10,454	10,986
April	38	127	140	306	9,629	9,935
May	0	89	282	371	9,663	10,034
June	39	174	346	559	10,210	10,769
July	0	0	155	155	8,986	9,141
August	34	121	255	410	10,315	10,725
September	39	199	272	511	7,736	8,247
October	115	129	378	622	9,179	9,801
November	83	205	207	495	10,630	11,126
December	196	41	412	649	7,243	7,892
2016.-- January	73	85	337	495	7,033	7,528
February	0	207	379	586	6,676	7,262
March	136	166	399	702	10,568	11,270
April	41	94	80	214	9,961	10,175
May	0	83	418	501	8,815	9,317
June	0	42	222	264	10,184	10,448

Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0010, 7325.10.0020, and 7325.10.0025, accessed August 27, 2016.

Figure IV-3
Heavy castings: U.S. imports by month, January 2013 through June 2016



Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0010, 7325.10.0020, and 7325.10.0025, accessed August 27, 2016.

Table IV-10
Light castings: U.S. imports by month, January 2013 through June 2016

Year / month	Border of entry				
	Brazil	China	Subject sources	Nonsubject sources	All sources
	Quantity (1,000 pounds)				
2013.-- January	0	199	199	4,264	4,464
February	0	237	237	4,822	5,059
March	50	105	154	4,952	5,106
April	0	235	235	5,423	5,658
May	0	241	241	5,105	5,346
June	0	391	391	5,370	5,761
July	0	366	366	4,563	4,929
August	0	470	470	4,524	4,994
September	0	392	392	5,014	5,406
October	0	417	417	6,227	6,644
November	54	230	284	5,177	5,461
December	0	152	152	6,400	6,553
2014.-- January	45	5	49	6,021	6,070
February	0	347	347	5,582	5,930
March	0	13	13	4,845	4,857
April	0	166	166	6,034	6,201
May	0	28	28	6,655	6,683
June	0	64	64	4,718	4,783
July	40	126	166	5,348	5,514
August	0	163	163	4,405	4,568
September	0	169	169	5,166	5,335
October	0	139	139	6,793	6,932
November	0	77	77	4,463	4,541
December	38	87	125	3,399	3,523

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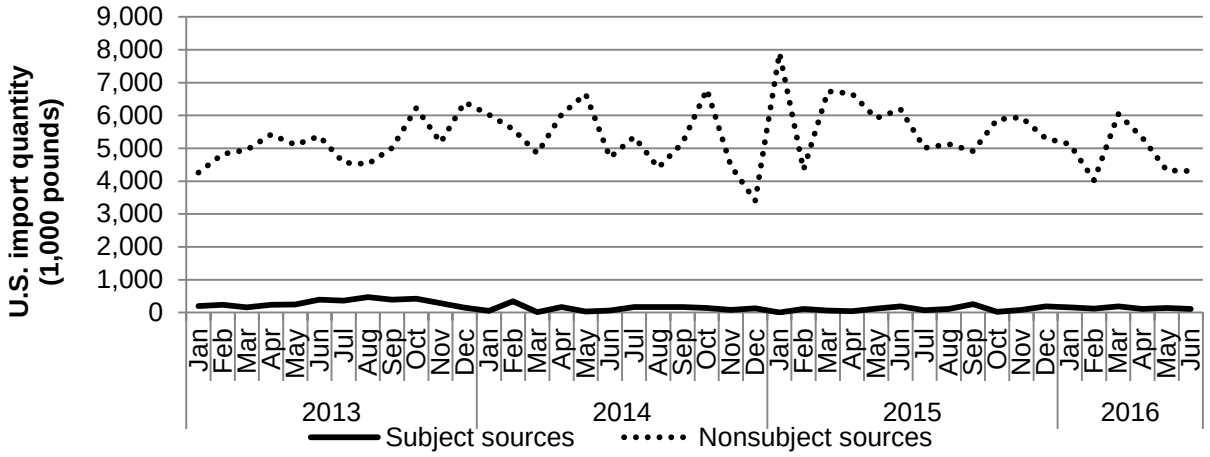
Table IV-10 -- Continued
Light castings: U.S. imports by month, January 2013 through June 2016

Year / month	Border of entry				
	Brazil	China	Subject sources	Nonsubject sources	All sources
	Quantity (1,000 pounds)				
2015.-- January	0	4	4	7,904	7,908
February	0	109	109	4,344	4,453
March	0	58	58	6,738	6,796
April	0	44	44	6,662	6,706
May	0	117	117	5,913	6,029
June	0	186	186	6,184	6,370
July	0	73	73	5,008	5,081
August	0	114	114	5,128	5,241
September	0	257	257	4,912	5,170
October	0	22	22	5,877	5,899
November	0	80	80	5,945	6,024
December	0	183	183	5,300	5,483
2016.-- January	0	154	154	5,130	5,284
February	0	118	118	4,027	4,145
March	0	187	187	6,038	6,225
April	0	107	107	5,317	5,424
May	4	133	137	4,331	4,468
June	0	106	106	4,307	4,413

Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0030 and 7325.10.0035, accessed August 27, 2016.

Figure IV-4
Light castings: U.S. imports by month, January 2013 through June 2016



Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0030 and 7325.10.0035, accessed August 27, 2016.

Geographical markets

Castings produced in the United States are shipped nationwide. Information summarizing ports of entry for heavy castings imported from the subject countries in 2015 is presented in table IV-11 and information summarizing reports for entry of light castings imported from the subject countries in 2015 is presented in table IV-12. Additional information on geographic markets may be found in Part II of this report.

Table IV-11
Heavy castings: U.S. imports by border of entry, 2015

Item	Border of entry				
	East	North	South	West	Total
	Quantity (1,000 pounds)				
U.S. imports from.--					
Brazil	81	0	299	282	662
Canada	1,148	124	0	0	1,273
China	1,435	810	136	758	3,139
Subject sources	2,664	934	436	1,039	5,074
India	47,563	8,483	25,884	19,699	101,630
All other sources	1,000	485	3,985	4,341	9,812
Nonsubject sources	48,563	8,969	29,869	24,040	111,441
All sources	51,228	9,903	30,305	25,079	116,515
	Border of entry as a share of source totals (share across)				
U.S. imports from.--					
Brazil	12.2	0.0	45.2	42.6	100.0
Canada	90.2	9.7	0.0	0.0	100.0
China	45.7	25.8	4.3	24.1	100.0
Subject sources	52.5	18.4	8.6	20.5	100.0
India	46.8	8.3	25.5	19.4	100.0
All other sources	10.2	4.9	40.6	44.2	100.0
Nonsubject sources	43.6	8.0	26.8	21.6	100.0
All sources	44.0	8.5	26.0	21.5	100.0
	Source as a share of border of entry total (share down)				
U.S. imports from.--					
Brazil	0.2	0.0	1.0	1.1	0.6
Canada	2.2	1.3	0.0	0.0	1.1
China	2.8	8.2	0.4	3.0	2.7
Subject sources	5.2	9.4	1.4	4.1	4.4
India	92.8	85.7	85.4	78.5	87.2
All other sources	2.0	4.9	13.1	17.3	8.4
Nonsubject sources	94.8	90.6	98.6	95.9	95.6
All sources	100.0	100.0	100.0	100.0	100.0

Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0010, 7325.10.0020, and 7325.10.0025, accessed August 27, 2016.

Table IV-12
Light castings: U.S. imports by border of entry, 2015

Item	Border of entry				
	East	North	South	West	Total
	Quantity (1,000 pounds)				
U.S. imports from.--					
Brazil	0	0	0	0	0
China	479	85	558	124	1,246
Subject sources	479	85	558	124	1,246
India	22,018	14,318	23,093	9,823	69,252
All other sources	210	381	47	24	663
Nonsubject sources	22,228	14,699	23,141	9,847	69,915
All sources	22,707	14,784	23,698	9,971	71,161
	Border of entry as a share of source totals (share across)				
U.S. imports from.--					
Brazil	0.0	0.0	100.0	0.0	100.0
China	38.5	6.8	44.7	10.0	100.0
Subject sources	38.4	6.8	44.7	10.0	100.0
India	31.8	20.7	33.3	14.2	100.0
All other sources	31.7	57.5	7.2	3.6	100.0
Nonsubject sources	31.8	21.0	33.1	14.1	100.0
All sources	31.9	20.8	33.3	14.0	100.0
	Source as a share of border of entry total (share down)				
U.S. imports from.--					
Brazil	0.0	0.0	0.0	0.0	0.0
China	2.1	0.6	2.4	1.2	1.8
Subject sources	2.1	0.6	2.4	1.2	1.8
India	97.0	96.8	97.4	98.5	97.3
All other sources	0.9	2.6	0.2	0.2	0.9
Nonsubject sources	97.9	99.4	97.6	98.8	98.2
All sources	100.0	100.0	100.0	100.0	100.0

Source: Official U.S. import statistics using HTS statistical reporting numbers 7325.10.0030 and 7325.10.0035, accessed August 27, 2016.

THE INDUSTRY IN BRAZIL[5]

Overview

During the original investigations, there were approximately 1,000 foundries in Brazil, of which some 490 produced iron castings. The 30 largest iron foundries, each producing in excess of 44 million pounds annually, accounted for approximately 50 to 55 percent of iron castings production. Four known producers of heavy iron construction castings exported to the United States in 1984. Between 1980 and 1983 the production of manhole covers declined from 40 million pounds to 20 million pounds before rising to 32 million pounds in 1985; the annual capacity to produce manhole covers was about 44 million pounds. The foundry industry in Brazil was characterized as being well-developed, with production of construction castings being automated and probably as technologically efficient as the foundries in the United States and Canada.[6]

First five-year reviews

In the first reviews, no producers of iron construction castings in Brazil responded to the Commission's questionnaires. U.S. producers listed 79 producers of heavy and/or light castings in Brazil and estimated that Brazil had an aggregate production capacity of 449.5 million pounds.[7]

Second five-year reviews

In the second reviews, domestic interested parties identified 96 producers/exporters of iron construction castings in Brazil. They mentioned that Brazil produced castings primarily for export and alleged that it had the ability to greatly increase the capacities of its labor-intensive facilities in response to changes in demand.[8]

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[5] Data compiled using official import statistics for the ten-digit code (7325.10.0080) under which iron construction castings fall are significantly broader than the ten-digit HTS codes specific to heavy iron construction castings (7325.10.0010, 7325.10.0020, and 7325.10.0025) and light iron construction castings (7325.10.0030 and 7325.10.0035). Therefore, those data are not presented in this section of the report.

[6] *Iron Construction Castings from Brazil, India, and the People's Republic of China, Inv. Nos. 701-TA-249 and 731-TA-262, 264, and 265 (Final),* USITC Publication 1838, April 1986, pp. A-34 to A-35.

[7] *Iron Metal Castings from India, Heavy Iron Construction Castings from Brazil, and Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 303-TA-13, 701-TA-249, and 731-TA-262, 263, and 265 (Review),* USITC Publication 3247, October 1999, pp. IV-8-IV-9.

[8] *Certain Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 70 -TA-249 and 731-TA-262, 263, and 265 (Second Review),* USITC Publication 3781, June 2005, pp. I-20.

Third five-year reviews

In the third reviews, domestic interested parties identified 98 producers/exporters of iron construction castings in Brazil. The domestic interested parties suggested that producers and exporters of castings in Brazil had the ability to increase exports to the United States significantly, which would likely have resulted in material injury to the U.S. industry, were the antidumping and countervailing duty orders to be revoked.[9]

Current five-year reviews

In these current reviews, domestic interested parties identified 98 producers/exporters of iron construction castings in Brazil.[10] The Commission also received one response to the notice of institution from a Brazilian foreign producer/exporter, Saint-Gobain Canalização ("Saint-Gobain"). The respondent interested parties stated that there are *** foundries in Brazil that produce castings and *** foundries that are capable of producing castings in commercial quantities.[11] The respondent interested parties presented data provided by the Brazilian Foundry Association, Associação Brasileira de Fundição ("ABIFA"), indicating that the Brazilian foundry sector has shown moderate growth. [12]

Operations on Heavy Castings

In the current five-year reviews, the Commission issued 7 questionnaires and received usable data from one subject Brazilian firm Saint-Gobain and data from ABIFA. As presented in table IV-13, the capacity of Brazilian producer Saint-Gobain decreased by *** percent from 2013 to 2015 and *** in both interim periods. Saint-Gobain's heavy casting production decreased by *** percent from 2013 to 2015 and was *** percent higher in January to June 2016 than in January to June 2015. The firm's capacity utilization decreased by *** percentage points from 2013 to 2015 and was *** percentage points higher in January to June 2016 than in January to June 2015. Heavy castings exported to the U.S. accounted for *** percent of total export shipments from 2013 to 2015, and *** percent in January to June 2016.

End-of-period inventories reported by Saint-Gobain decreased by *** percent from 2013 to 2015, while end-of-period inventories were *** pounds higher in January to June 2016 than in January to June 2015.

[9] *Response of domestic interested parties,* June 2, 2010, pp. 9-10.
[10] *Domestic Interested Parties' Response to the Notice of Institution,* November 2, 2015, exh. 2.
[11] *Respondent Interested Parties' Prehearing Briefs,* October 11, 2016, p. 8.
[12] *Respondent Interested Parties' Prehearing Briefs,* October 11, 2016, p. 13 and exh. 1.

Table IV-13

Heavy castings: Brazil capacity, production, shipments, and inventories, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table II-14 presents Brazilian producers' overall capacity and production of products on the same machinery as castings. Brazilian production of other products on the same machinery as castings accounted for *** percent of production in 2013, *** percent in 2014, *** percent in 2015, *** percent in January to June 2015, and *** percent in January to June 2016.

Table IV-14

Castings: Overall capacity and production of products on the same machinery as castings in Brazil, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table IV-15 presents Brazilian producers' capacity and production of heavy castings based on data provided by ABIFA. [13] According to ABIFA, in 2015 production of heavy castings reached *** pounds and capacity utilization was *** percent.

Table IV-15

Castings: Brazilian producers' capacity and production of heavy castings, 2015

* * * * * * *

Exports from Brazil

Table IV-16 presents Brazilian exports of heavy and light castings based on official export statistics. Total exports of castings from Brazil to all countries combined increased by 72.1 percent from 2013 to 2015. Brazilian exports to all other destination markets, besides the United States, increased by 211.7 percent from 2013 to 2015. The United States is the top export market for Brazil's castings, and exports to the U.S. accounted for between 38.6 and 66.1 percent of Brazil's exports of castings during the period of examination. Other substantial export markets for Brazilian castings include Argentina, France, Belgium, Guyana, Suriname, Colombia, Germany, and Paraguay.

[13] This data set includes Saint-Gobain, which provided a completed questionnaire and has data reported in Table IV-14.

Table IV-16
Castings: Brazil exports by destination market, 2013-15

Item	Calendar year		
	2013	2014	2015
	Quantity (1,000 pounds)		
Brazil's exports to the United States	1,966	2,726	1,973
Brazil's exports to other major destination markets.--			
Argentina	141	72	1,858
France	503	1,008	432
Belgium	16	49	214
Guyana	0	0	182
Suriname	0	3	101
Colombia	17	7	92
Germany	61	38	72
Paraguay	60	31	50
All other destination markets	210	220	143
Total Brazil exports	2,975	4,153	5,118
	Value (1,000 dollars)		
Brazil's exports to the United States	2,262	2,939	2,279
Brazil's exports to other major destination markets.--			
Argentina	216	91	841
France	584	1,226	451
Belgium	60	56	106
Guyana	0	2	192
Suriname	0	7	110
Colombia	41	25	86
Germany	367	361	101
Paraguay	154	60	86
All other destination markets	777	756	415
Total Brazil exports	4,460	5,523	4,666

Table continued on next page.

Table IV-16 -- Continued
Castings: Brazil exports by destination market, 2013-15

Item	Calendar year		
	2013	2014	2015
	Unit value (dollars per pound)		
Brazil's exports to the United States	1.15	1.08	1.15
Brazil's exports to other major destination markets.--			
Argentina	1.54	1.26	0.45
France	1.16	1.22	1.05
Belgium	3.76	1.14	0.49
Guyana	0.00	733.46	1.05
Suriname	0.00	2.35	1.09
Colombia	2.39	3.75	0.93
Germany	6.03	9.44	1.40
Paraguay	2.55	1.90	1.71
All other destination markets	3.69	3.44	2.91
Total Brazil exports	1.50	1.33	0.91
	Share of quantity (percent)		
Brazil's exports to the United States	66.1	65.6	38.6
Brazil's exports to other major destination markets.--			
Argentina	4.7	1.7	36.3
France	16.9	24.3	8.4
Belgium	0.5	1.2	4.2
Guyana	0.0	0.0	3.6
Suriname	0.0	0.1	2.0
Colombia	0.6	0.2	1.8
Germany	2.0	0.9	1.4
Paraguay	2.0	0.8	1.0
All other destination markets	7.1	5.3	2.8
Total Brazil exports	100.0	100.0	100.0

Source: Official Brazil exports statistics under HTS subheading 7325.10 as reported by Brazil's Foreign Trade Secretariat (SECEX) in the Global Trade Atlas (GTA) database, accessed September 4, 2016.

Operations on Light Castings

In the current five-year reviews, the Commission issued 7 questionnaires to producers of light castings in Brazil. No firms responded to questionnaires issued by the Commission.[14]

Table IV-17 presents Brazilian producers' capacity and production of light castings based on data provided by ABIFA. [15] According to ABIFA, in 2015 production of light castings was *** million pounds and capacity utilization was *** percent.

Table IV-17
Castings: Brazilian producers' capacity and production of light castings, 2015

* * * * * * *

THE INDUSTRY IN CANADA[16]

Overview

During the original investigations, there were approximately 120 iron foundries in Canada, with total production capacity estimated to be three billion pounds. Canadian iron foundry shipments decreased from 2.4 billion pounds in 1979 to 1.2 billion pounds in 1982, but then rose to 1.9 billion pounds in 1984. Production of heavy castings rose from *** million pounds in 1982 to *** pounds in 1984, while production of light castings increased from *** pounds to *** pounds during the same period. Exports to the United States in 1984 of heavy castings were *** pounds and of light castings were *** pounds; exports to other countries were minimal.[17]

First five year reviews

In the first review on Canada, U.S. producers listed 13 producers of heavy castings in Canada. One Canadian producer (***), accounting for about *** percent of U.S. imports of

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[14] ***

[15] This data set includes Saint-Gobain, which provided a completed questionnaire and has data reported in Table IV-14.

[16] Data compiled using official import statistics for the ten-digit code (7325.10.0080) under which iron construction castings fall are significantly broader than the ten-digit HTS codes specific to heavy iron construction castings (7325.10.0010, 7325.10.0020, and 7325.10.0025) and light iron construction castings (7325.10.0030 and 7325.10.0035). Therefore, those data are not presented in this section of the report.

[17] *Staff Report on Iron Construction Castings from Canada, Inv. No. 731-TA-263 (Final),* February 4, 1986 (INV-J-019), pp. A-42-A-44.

heavy iron construction castings from Canada in 1998, responded to the Commission's questionnaire. Its production in 1998 was *** pounds.[18]

Second five-year reviews

In the second review, domestic interested parties identified 13 producers/exporters of iron construction castings in Canada. They mentioned that Canada possessed a fully developed public works sector and was known to have a viable home market for castings.[19]

Third five-year reviews

In the third review, domestic interested parties identified 11 producers of iron construction castings in Canada. Counsel for the domestic interested parties also stated that between 2005 and 2009, exports of iron construction castings from Canada to the United States accounted for 98.7 percent of Canada's total export volume of these products. Counsel argued that because the United States is such a key export market, exports would likely increase were the antidumping order to be revoked.[20]

Current five-year reviews

In these current reviews, domestic interested parties identified 12 producers of iron construction castings in Canada. The domestic interested parties state that "supply conditions for iron construction castings in Canada are understood to have remained largely unchanged since the time of the third sunset review."[21] However, counsel for the domestic interested parties observed during their hearing testimony that the Canadian industry is in decline, partly due to the Canadian economy flagging against low oil prices.[22] The domestic interested parties asserted that because the Canadian industry has never sought trade protection in its home market, the castings market in Canada is now overrun with imports from China and is being decimated.[23] Furthermore, the domestic interested parties maintained that due to the combination of a slowing economy and a large volume of imports, the Canadian producers are unable to compete in their home market against exports from China and India.[24]

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[18] *Iron Construction Castings from India, Heavy Iron Construction Castings from Brazil; and Iron Construction Castings from Brazil, India, and China, Inv. Nos. 303-TA-13, 701 TA-249, and 731-TA-262, 264, and 265 (Review),* USITC Publication 3247, October 1999, pp. IV-8-IV-9.

[19] *Certain Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA-249 and 731-TA-262, 263, and 265 (Second Review),* USITC Publication 3781, June 2005, p. I-21.

[20] *Response of domestic interested parties,* June 2, 2010, pp. 10-11.

[21] *Domestic Interested Parties' Response to the Notice of Institution,* November 2, 2015, p. 26.

[22] Hearing transcript, p.105 (McGowan).

[23] Hearing transcript, p.46 (McGowan), p.94 (Rosenthal).

[24] Hearing transcript, p.94 (Rosenthal).

Operations on Heavy Castings

In the current five-year reviews, the Commission issued 6 questionnaires and received usable data from one subject firm ***.[25] [26] As presented in table IV-18, the capacity of subject Canadian producer *** decreased by *** percent from 2013 to 2015 and was *** percent lower in January to June 2016 than in January to June 2015. ***'s production of heavy castings decreased by *** percent from 2013 to 2015 and was *** percent lower in January to June 2016 than in January to June 2015. Capacity utilization decreased by *** percentage points from 2013 to 2015 and was *** percentage points higher in January to June 2016 than in January to June 2015. Heavy castings exported to the United States accounted for *** percent of total export shipments from 2013 to 2015, and was *** percentage points lower in January to June 2016 than in January to June 2015.

End-of-period inventories reported by *** decreased by *** percent from 2013 to 2015, while end-of-period inventories were *** percent higher in January to June 2016 than in January to June 2015.

Table IV-18
Heavy castings: Canada capacity, production, shipments, and inventories, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Table II-19 presents Canada's overall capacity and production of products on the same machinery as castings. Canadian production of other products on the same machinery as castings accounted for *** percent of production in 2013, *** percent in 2014, *** percent in 2015, *** percent in January to June 2015, and *** percent in January to June 2016.

Table IV-19
Castings: Overall capacity and production of products on the same machinery as castings in Canada, 2013-15, January to June 2015, and January to June 2016

* * * * * * *

Exports from Canada

Table IV-20 present Canadian exports of heavy and light castings based on official export statistics. Total exports of castings from Canada to all countries combined decreased by 5.9 percent from 2013 to 2015. Canadian exports to all other destination markets, besides the United States, decreased by 47.5 percent from 2013 to 2015. The top export market for Canadian castings is the United States, accounting for between 89.8 and 94.3 percent of

[25] *** is a division of *** which is a subsidiary of ***.

[26] One firm *** submitted a questionnaire that was incomplete and contained unusable data.

Canadian exports of castings during the period of examination. Other substantial export markets for Canadian castings include the United Kingdom, Brazil, Saudi Arabia, Germany, Iceland, Dominican Republic, and Austria.

Table IV-20
Castings: Canada exports by destination market, 2013-15

Item	Calendar year		
	2013	2014	2015
	Quantity (1,000 pounds)		
Canada's exports to the United States	10,804	9,941	10,680
Canada's exports to other major destination markets.--			
Sweden	34	23	110
United Kingdom	0	91	109
Brazil	12	91	87
Saudi Arabia	129	135	69
Germany	0	22	63
Iceland	33	0	48
Dominican Republic	1	1	38
Austria	0	15	22
All other destination markets	1,013	344	96
Total Canada exports	12,026	10,663	11,322
	Value (1,000 dollars)		
Canada's exports to the United States	12,576	13,044	13,243
Canada's exports to other major destination markets.--			
Sweden	69	22	91
United Kingdom	0	87	86
Brazil	24	87	75
Saudi Arabia	130	128	55
Germany	0	21	50
Iceland	33	0	41
Dominican Republic	1	1	31
Austria	0	14	18
All other destination markets	1,261	382	131
Total Canada exports	14,093	13,786	13,822

Table continued on next page.

Table IV-20 -- Continued
Castings: Canada exports by destination market, 2013-15

Item	Calendar year		
	2013	2014	2015
	Unit value (dollars per pound)		
Canada's exports to the United States	1.16	1.31	1.24
Canada's exports to other major destination markets.--			
Sweden	2.02	0.98	0.83
United Kingdom	0.00	0.95	0.79
Brazil	1.96	0.96	0.86
Saudi Arabia	1.01	0.95	0.81
Germany	0.98	0.92	0.80
Iceland	1.01	0.00	0.85
Dominican Republic	1.00	0.94	0.81
Austria	1.00	0.95	0.82
All other destination markets	1.24	1.11	1.37
Total Canada exports	1.17	1.29	1.22
	Share of quantity (percent)		
Canada's exports to the United States	89.8	93.2	94.3
Canada's exports to other major destination markets.--			
Sweden	0.3	0.2	1.0
United Kingdom	0.0	0.9	1.0
Brazil	0.1	0.9	0.8
Saudi Arabia	1.1	1.3	0.6
Germany	0.0	0.2	0.6
Iceland	0.3	0.0	0.4
Dominican Republic	0.0	0.0	0.3
Austria	0.0	0.1	0.2
All other destination markets	8.4	3.2	0.8
Total Canada exports	100.0	100.0	100.0

Source: Official Canada exports statistics under HTS subheading 7325.10 as reported by Statistics Canada in the Global Trade Atlas (GTA) database, accessed September 4, 2016.

THE INDUSTRY IN CHINA[27]

Overview

Production and most other data were not available for the foundry industry in China during the original investigations. Exports to the United States of iron construction castings rose from 1.3 million pounds in 1981 to 31 million pounds in 1985. Exports to third countries were much larger throughout the period. Also, it was noted that there was a large home market for iron construction castings in China.[28]

First five-year reviews

In the first reviews, the Commission received no responses from foreign producers in China. U.S. producers identified 86 producers of the subject merchandise (heavy or light) in China and estimated that China possessed a production capacity of 625.6 million pounds for iron castings.[29]

Second five-year reviews

In the second reviews, domestic interested parties identified 120 producers of iron construction castings in China. They mentioned that China produced castings primarily for export and alleged that China had the ability to greatly increase the capacities of its labor-intensive facilities in response to changes in demand.[30]

Third five-year reviews

In the third reviews, domestic interested parties identified 200 producers/exporters of iron construction castings in China. The domestic interested parties estimated Chinese production capacity to be approximately 3.7 million short tons. Counsel for the domestic

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[27] Data compiled using official import statistics for the ten-digit code (7325.10.0080) under which iron construction castings fall are significantly broader than the ten-digit HTS codes specific to heavy iron construction castings (7325.10.0010, 7325.10.0020, and 7325.10.0025) and light iron construction castings (7325.10.0030 and 7325.10.0035). Therefore, those data are not presented in this section of the report.

[28] *Iron Construction Castings from Brazil, India, and the People's Republic of China, Inv. Nos. 701-TA-249 and 731-TA-262, 264, and 265 (Final),* USITC Publication 1838, April 1986, pp. A-36 to A-37.

[29] *Iron Metal Castings from India, Heavy Iron Construction Castings from Brazil, and Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 303-TA-13, 701-TA-249, and 731-TA-262, 263, and 265 (Review),* USITC Publication 3247, October 1999, pp. IV-8-IV-9.

[30] *Certain Iron Construction Castings from Brazil, Canada, and China, Inv. Nos. 701-TA -249 and 731-TA-262, 263, and 265 (Second Review),* USITC Publication 3781, June 2005, p. I-21.

interested parties also stated that China still produced construction castings primarily for export and alleged that China maintained the ability to greatly increase the capacities of its labor-intensive facilities in response to changes in demand. In addition, at the time of the third reviews, imports of certain castings from China faced an antidumping order in the European Union.[31] [32]

Current five-year reviews

During these current reviews, the domestic interested parties identified 215 producers/exporters of iron construction castings in China. The domestic interested parties state that the Chinese industry continues to expand and is many times larger than it was at the time of the original investigations.[33] According to the China Foundry Association, total castings output, which includes subject iron construction castings, reached 46.2 million tons in 2014, a 2.4 percent and 4.7 percent increase from 2012 and 2013, respectively, for an average annual increase of 3.8 percent. Of the 46.2 million tons of castings output in 2014, gray iron castings and ductile iron castings made up the majority at 20.8 million tons and 12.4 million tons of total castings output, respectively, or 45.0 percent and 26.8 percent, respectively. Ductile iron output grew at a rate of 6.9 percent when compared to 2013, while gray iron grew at 1.2 percent.[34]

Operations on Castings

In the current five-year reviews, the Commission issued 81 questionnaires to producers of heavy and light castings in China. No companies responded to questionnaires issued by the Commission.

Exports from China

Table IV-21 present Chinese exports of castings based on official export statistics. Total exports of castings from Chinese to all countries combined increased by 7.5 percent from 2013 to 2015. Chinese exports to all other destination markets increased by 6.7 percent from 2013 to 2015. The top export market for Chinese castings is Italy, accounting for between 10.1 and 13.0 percent of Chinese exports of castings during the period of examination. Other substantial

[31] *Response of domestic interested parties*, June 2, 2010, pp. 11-13.

[32] The European Commission issued an antidumping duty order on certain castings from China in 2005. The order was later revoked, effective September 2011. "Council Implementing Regulation (EU) No 871/2011," *Official Journal of the European Union*, September 2011, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:227:0001:0002:EN:PDF, accessed December 18,2015.

[33] *Domestic Interested Parties' Response to the Notice of Institution,* November 2, 2015, p. 27.

[34] "2014 China Industry Data Released," *Modern Casting*, June 2015, p. 66.

export markets for Chinese castings include Japan, United Kingdom, Spain, South Korea, Taiwan, Algeria, and Australia.

Table IV-21
Castings: China exports by destination market, 2013-15

Item	Calendar year		
	2013	2014	2015
	Quantity (1,000 pounds)		
China's exports to the United States	49,879	55,794	59,842
China's exports to other major destination markets.--			
Japan	92,735	98,314	91,147
Italy	96,813	122,332	88,705
United Kingdom	56,456	65,181	67,209
Spain	47,451	64,532	62,292
Korea South	48,314	50,758	50,899
Taiwan	27,557	38,670	35,566
Algeria	23,593	21,154	30,389
Australia	29,811	26,512	28,125
All other destination markets	348,215	400,593	368,442
Total China exports	820,823	943,838	882,617
	Value (1,000 dollars)		
China's exports to the United States	43,425	50,277	53,473
China's exports to other major destination markets.--			
Japan	61,766	64,986	57,469
Italy	48,915	62,336	42,275
United Kingdom	33,879	38,384	36,757
Spain	25,979	34,829	29,962
Korea South	23,984	27,741	30,201
Taiwan	10,589	12,780	11,558
Algeria	10,019	8,602	11,945
Australia	20,929	19,795	18,538
All other destination markets	211,434	243,329	210,709
Total China exports	490,919	563,058	502,888

Table continued on next page.

Table IV-21 -- Continued
Castings: China exports by destination market, 2013-15

Item	Calendar year		
	2013	2014	2015
	Unit value (dollars per pound)		
China's exports to the United States	0.87	0.90	0.89
China's exports to other major destination markets.--			
Japan	0.67	0.66	0.63
Italy	0.51	0.51	0.48
United Kingdom	0.60	0.59	0.55
Spain	0.55	0.54	0.48
Korea South	0.50	0.55	0.59
Taiwan	0.38	0.33	0.32
Algeria	0.42	0.41	0.39
Australia	0.70	0.75	0.66
All other destination markets	0.61	0.61	0.57
Total China exports	0.60	0.60	0.57
	Share of quantity (percent)		
China's exports to the United States	6.1	5.9	6.8
China's exports to other major destination markets.--			
Japan	11.3	10.4	10.3
Italy	11.8	13.0	10.1
United Kingdom	6.9	6.9	7.6
Spain	5.8	6.8	7.1
Korea South	5.9	5.4	5.8
Taiwan	3.4	4.1	4.0
Algeria	2.9	2.2	3.4
Australia	3.6	2.8	3.2
All other destination markets	42.4	42.4	41.7
Total China exports	100.0	100.0	100.0

Source: Official China exports statistics under HTS subheading 7325.10 as reported by China Customs in the Global Trade Atlas (GTA) database, accessed September 4, 2016.

ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

The European Commission issued an antidumping duty order on certain castings from China in 2005. The order was later revoked, effective September 2011.[35] Iron construction castings from Brazil, Canada, and China are not subject to any antidumping or countervailing duty orders in third-country markets.

GLOBAL MARKET

Table IV-22 presents Global Trade Atlas (GTA) export value data for HS subheading 7325.10, defined as articles, not elsewhere specified or identified, of nonmalleable cast iron ("other articles of nonmalleable cast iron"). HS subheading 7325.10 is a broader category that encompasses both heavy and light castings, as defined by Commerce's scope. Global exports of other articles of nonmalleable cast iron were approximately $503.4 million in 2015. China is the largest global exporter of other articles of nonmalleable cast iron, followed by Germany and the Czech Republic.

Table IV-22

Articles, not elsewhere specified or identified, of nonmalleable cast iron: Global exports by major sources, 2011-2015

Country	2011	2012	2013	2014	2015
	Value ($1,000)				
China	544,306	502,595	490,921	563,074	503,393
Germany	515,551	495,120	504,401	499,096	409,213
Czech Republic	328,068	280,308	312,196	292,977	249,871
Poland	212,238	214,212	218,920	175,385	123,982
Belgium	133,105	138,132	137,458	148,660	101,225
Denmark	166,258	155,498	132,368	136,804	127,602
India	109,850	100,848	100,879	108,833	101,153
Spain	143,440	138,889	164,047	103,244	59,883
Italy	134,672	131,145	123,004	95,473	80,991
Turkey	92,066	84,696	92,024	90,868	67,417
All other countries	856,552	844,727	785,368	(a)	(a)
Total exports	3,236,107	3,086,171	3,061,585	(a)	(a)

[a] Not available

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

Source: Global Trade Atlas, HS subheading 7325.10.

[35] "Council Implementing Regulation (EU) No 871/2011," *Official Journal of the European Union*, September 2011, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:227:0001:0002:EN:PDF, accessed December 18, 2015.

INDIA

Although nonsubject country India[36] was only the seventh largest global exporter of the goods of HS 7325.10 in 2015, in terms of value, it was the largest source of U.S. imports of both heavy and light castings. According to GTA, U.S. imports of heavy castings from India totaled $40.2 million, or 68.6 percent of total U.S. imports in 2015, while U.S. imports from India of light castings totaled $27.6 million, or 92.4 percent of the U.S. total.[37]

In 2015, India ranked alongside the United States as the second-largest global producer of metal castings, by value, after China. India produced 9 million tons of metal castings in 2015, of which two-thirds were gray iron castings.[38] India had the second highest number of operating plants in the world after China that same year, with 4,600 facilities in 19 localities scattered throughout India.[39] Approximately 80 percent of Indian casting businesses were classified as small-to medium sized operations, which typically do not export abroad.[40] Rather, only larger facilities have International Quality Accreditation and are globally competitive. Approximately 34 percent of India's exports of metals castings were composed of low-value gray iron construction castings.[41] India's central government has invested heavily in its domestic infrastructure over the last decade, leading to ongoing rapid industrialization and resulting in an increased demand for castings in the country.[42] Privately-owned Indian companies have also been investing heavily and expanding capacity for castings during this time. However, India's overall capacity utilization in its metal castings industry reportedly

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[36] India is not currently subject to an antidumping order in this review. The antidumping duty orders with respect to heavy and light iron construction castings from India that were issued the same day as the Brazilian and Chinese orders under this review were revoked in 1991.

[37] Heavy iron construction castings are classified under HTS 7325.10.0010, 7325.10.0020, and 7325.10.0025. Light construction castings are classified under 7325.10.0030 and 7325.10.0035. HTS statistical reporting number 7325.10.0080 was not used to calculate U.S. imports from major sources since many items classified under this statistical reporting number are nonsubject articles (i.e., metal castings not used for drainage or access purposes for public utility, water and sanitary systems).

[38] Oudhia, S.P., "An Overview of the Indian Foundry Industry," *Metalworld*, February 2015; *Modern Casting*, "49th Census of World Casting Production, Steady Growth in Global Output," December 2015, pp. 26-31 and Foundry Informatics Centre, "Brief Profile of Indian Foundry Industry," updated October 24, 2015, http://www.foundryinfo-india.org/profile_of_indian.aspx (accessed August 29, 2016).

[39] India produces a lower-value metal casting than those produced in the United States. The Folk Group, "State of the Metal Casting Industry by Country," September 2015, http://www.folkgroup.com/stateofhteindustrybycountry.pdf (accessed September 7, 2016).

[40] Oudhia, S.P., "An Overview of the Indian Foundry Industry," *Metalworld*, February 2015.

[41] The Folk Group, "State of the Metal Casting Industry by Country," September 2015, http://www.folkgroup.com/stateofhteindustrybycountry.pdf (accessed September 7, 2016).

[42] "Global Steel Casting Market to Witness Growth Through 2020, Owing to the Rapidly Expanding Construction and Automotive Sector, Reports Technavio," *Business Wire*, August 31, 2016, http://www.businesswire.com/news/home/20160831005050/en/ (accessed September 7, 2016).

decreased from 60 percent in 2012–13 to approximately 45 percent in 2013–14 as a result of capacity expansions by large Indian metal castings manufacturers.[43]

Exports from India

Table IV-23 presents Indian exports of castings based on official export statistics. Total exports of castings from India to all countries combined decreased by 10.2 percent from 2013 to 2015. Indian exports to other major destination markets increased by 2.7 percent from 2013 to 2015. The top export market for Indian castings is Germany, accounting for between16.1 and 26.4 percent of Indian exports of castings during the period of examination. Other substantial export markets for Indian castings include Finland, Spain, Hungary, China, the Czech Republic, Italy, and France.

[43] Oudhia, S.P., "An Overview of the Indian Foundry Industry," *Metalworld*, February 2015.

Table IV-23
Castings: India exports by destination market, 2013-15

Item	Calendar year		
	2013	2014	2015
	Quantity (1,000 pounds)		
India's exports to the United States	9,890	10,148	9,618
India's exports to other major destination markets.--			
Germany	25,070	21,236	13,698
Finland	14,183	17,645	11,160
Spain	7,231	7,618	8,577
Hungary	4,915	4,421	4,351
China	3,885	4,524	4,095
Czech Republic	267	673	3,966
Italy	3,305	3,084	3,533
France	3,676	4,015	3,128
All other destination markets	22,393	23,002	23,003
Total India exports	94,816	96,368	85,129
	Value (1,000 dollars)		
India's exports to the United States	14,909	15,807	14,138
India's exports to other major destination markets.--			
Germany	18,384	19,280	14,397
Finland	8,128	10,582	7,499
Spain	9,046	10,937	9,880
Hungary	7,049	6,604	5,906
China	7,227	10,260	11,156
Czech Republic	149	447	2,960
Italy	3,118	3,193	3,419
France	2,332	2,492	2,050
All other destination markets	30,538	29,231	29,747
Total India exports	100,879	108,833	101,153

Table continued on next page.

Table IV-23 -- Continued
Castings: India exports by destination market, 2013-15

Item	Calendar year		
	2013	2014	2015
	Unit value (dollars per pound)		
India's exports to the United States	1.51	1.56	1.47
India's exports to other major destination markets.--			
Germany	0.73	0.91	1.05
Finland	0.57	0.60	0.67
Spain	1.25	1.44	1.15
Hungary	1.43	1.49	1.36
China	1.86	2.27	2.72
Czech Republic	0.56	0.66	0.75
Italy	0.94	1.04	0.97
France	0.63	0.62	0.66
All other destination markets	1.36	1.27	1.29
Total India exports	1.06	1.13	1.19
	Share of quantity (percent)		
India's exports to the United States	10.4	10.5	11.3
India's exports to other major destination markets.--			
Germany	26.4	22.0	16.1
Finland	15.0	18.3	13.1
Spain	7.6	7.9	10.1
Hungary	5.2	4.6	5.1
China	4.1	4.7	4.8
Czech Republic	0.3	0.7	4.7
Italy	3.5	3.2	4.1
France	3.9	4.2	3.7
All other destination markets	23.6	23.9	27.0
Total India exports	100.0	100.0	100.0

Source: Official India exports statistics under HTS subheading 7325.10 as reported by India's Ministry of Commerce in the Global Trade Atlas (GTA) database, accessed September 4, 2016.

Foreign Prices

U.S. producers, U.S. importers, and foreign producers were asked to compare prices of castings in the U.S. market, subject country markets, and third-country markets.

*** reported that domestic prices for castings are higher than in Europe, South and Central America, and Australia. It indicated that these markets have seen increased amounts of subject product from Chinese sources since the orders went into effect, and that Chinese producers/exporters "have been very aggressive with lower pricing in all of these markets." Importer *** reported that the heavy castings it imports from Brazil "are priced higher and are of higher quality than similar products that are manufactured in the United States." Importer ***, which also imports heavy castings from Brazil, reported that "pricing for imported heavy

iron castings has always been significantly higher than {for} domestically produced castings. ***." Among foreign producers, Brazilian producer Saint-Gobain reported that it sells "***." Canadian producer and importer Canada Pipe Company reported that heavy castings are less expensive in its home market, indicating that the price for heavy castings in the Canadian market is $*** per pound and in the U.S. market is $*** per pound.

U.S. purchasers were also asked to compare prices of U.S.-produced castings with those imported from Brazil, Canada, and China. One purchaser reported that there had been no change in price and seven purchasers reported that prices had changed by the same amount. One purchaser reported that domestic prices were now lower than the price of imports from Canada, and two reported that domestic prices were lower than the price of imports from China while one reported that domestic prices were now higher than those from China.

PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

The major raw materials used to produce castings are pig iron, steel scrap, and iron scrap. Cost shares of raw materials are similar for heavy and light castings. In the production of heavy castings, raw materials accounted for between *** percent and *** percent of U.S. producers' costs of goods sold ("COGS") from 2013-15, and were *** percent of COGS from January-June 2016. In the production of light castings, raw materials accounted for between *** percent and *** percent of U.S. producers' COGS from 2013-15 and were *** percent of COGS from January-June 2016.

Overall, the U.S. prices of raw materials decreased between January 2013 and June 2016 (figure V-1). The prices of pig iron, cupola cast scrap, and heavy melt scrap decreased by *** percent, *** percent, and *** percent, respectively, between January 2013 and June 2016. Between June 2016 and September 2016, the prices of pig iron, cupola cast scrap, and heavy melt scrap decreased by *** percent, *** percent, and *** percent, respectively.

The price of pig iron was at its highest in April 2013 at an average of $*** per metric ton, and the prices of cupola cast scrap and heavy melt scrap were at their highest in January 2014 at $*** per long ton and $*** per gross ton, respectively. The prices of pig iron and heavy melt scrap were at their lowest in December 2015 at an average of $*** per metric ton and $*** per gross ton, respectively, and the price of cupola cast scrap was at its lowest in November 2015 at $*** per long ton.

Figure V-1
Raw materials: Price indices of pig iron (USA import price), Cupola cast scrap (Chicago, consumer price), and No. 1 heavy melt scrap (Chicago, consumer price) in the United States, monthly, January 2013-September 2016

* * * * * * *

Firms' responses regarding raw material price changes since January 2010 were mixed. Three U.S. producers and four importers reported that raw material prices had decreased, with importer *** reporting that pig iron prices have decreased, and U.S. producer *** reporting that steel scrap and various grades of foundry coke have experienced a reduction in price as of 2015. One U.S. producer, two importers, and one foreign producer reported that raw material prices had increased since January 2010. U.S. producer *** reported that it was "forced to adjust prices up," and foreign producer *** reported that "***." Four U.S. producers, eight importers, and *** reported that raw material prices had fluctuated since January 2010, with U.S. producer *** reporting that scrap prices follow the oil prices, importer *** reporting that raw material price fluctuations depend on the cost of pig iron, and *** reporting that it implemented price increases in 2011, 2012, and 2013, but that it experienced slight price decreases in 2014 and 2015. Importer *** also reported that while raw material prices

fluctuate continually, they do so in a relatively narrow band. Two importers reported that raw material prices had not changed since January 2010, with *** stating that stable raw materials costs have kept price increases modest as other costs such as labor have increased.

When asked whether they anticipated any changes in the prices of raw materials, four U.S. producers, one importer, and *** reported that they expect prices to increase. All other responding U.S. producers, the majority of remaining importers, and *** reported that they expect prices to fluctuate. No firms reported that they expect raw material prices to decrease.

At the hearing, U.S. producer EJ stated that there was an abundance of steel scrap in the U.S. market because there is no export market for it.[1] It estimated that the strength of the U.S. dollar also contributed to the low prices of scrap. U.S. producer Neenah stated that while there has been a reduction in raw material costs due in part to a slowdown in the Chinese market, it does not typically pass through increases or decreases in raw material costs to its customers.[2]

Transportation costs to the U.S. market

Transportation costs for heavy castings shipped from China to the United States averaged 0.2 percent during 2015. These estimates were derived from official import data and represent the transportation and other charges on imports.[3]

Thirteen of 18 responding importers and both responding foreign producers reported that the exporter typically arranges international transportation.[4] Regarding shipping costs from Brazil to the United States, importer *** reported that the cost was $*** per pound and Brazilian producer Saint-Gobain reported that the cost was $*** per pound. Regarding shipping costs from Canada to the United States, *** Canadian producer Bibby reported that the cost was $*** per pound. Regarding shipping costs from China to the United States, importer *** reported that the cost was $*** per pound.

U.S. inland transportation costs

All six responding U.S. producers and 11 of 13 responding importers reported that they typically arrange transportation to their customers. U.S. producers reported that their U.S. inland transportation costs ranged from 3 to 13 percent for heavy castings and 1 to 8 percent for light castings, while importers reported costs of 5 to 15 percent for heavy castings and 1 to 7 percent for light castings.

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[1] Hearing transcript, p. 135 (Teske).

[2] Hearing transcript, p. 135 (Hoffman).

[3] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2015 and then dividing by the customs value based on the HTS subheadings 7325.10.0010, 7325.10.0020, and 7325.10.0025. Transportation cost estimates for all other subject import sources (imports of light castings from China and imports of both heavy and light castings from Brazil and Canada) were inconclusive.

[4] Importer *** reported that both the exporter and the importer arrange international transportation.

PRICING PRACTICES

Pricing methods

Transaction-by-transaction negotiations were the most commonly reported pricing method. Six U.S. producers and 16 importers reported using transaction-by-transaction negotiations, 3 U.S. producers and 8 importers reported using contracts, and 3 U.S. producers and 14 importers reported using set price lists (table V-1). U.S. producer ***.

Overall, importers of both subject and nonsubject product reported selling primarily through transaction-by-transaction negotiations and set price lists. One importer of heavy castings from Brazil (***) reported using set price lists, one (***) reported using transaction-by-transaction negotiations, and one (***) reported that it sets prices based on total landed costs. Importer of heavy castings from Canada *** and importer of heavy castings from China *** both reported using ***. Importer of light castings from Brazil *** reported using ***, and stated that ***. Importer of light castings from China *** reported using ***.

Table V-1

Castings: U.S. producers and importers reported price setting methods, by number of responding firms[1]

Method	U.S. producers	Importers of subject heavy product	Importers of subject light product	Importer totals[2]
Transaction-by-transaction	6	***	***	16
Contract	3	***	***	8
Set price list	3	***	***	14
Other	1	***	***	3

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

[2] A number of importers that did not report any imports of subject product reported price setting methods for their imports of nonsubject product. Among the 12 firms that reported imports of nonsubject heavy castings, 11 reported their source as India and one reported its source as France (from ***). Among the 13 firms that reported imports of nonsubject light castings, 11 reported sourcing from India, two reported sourcing from Canada, and one reported sourcing from Mexico.

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

U.S. producers reported selling the majority of their heavy castings in the spot market in 2015, and subject importers sold *** of their heavy castings in the spot market (table V-2). U.S. producers and importers also reported selling a plurality of their light castings in the spot market, while selling comparatively less through either annual or short-term contracts.

Table V-2

Castings: U.S. producers' and importers' shares of U.S. commercial shipments by type of casting, and by type of sale, 2015

* * * * * * *

Seven purchasers reported that they purchase product daily, seven purchase weekly, and one purchases monthly. Two purchasers also reported purchasing "as needed." Fifteen of 17 responding purchasers reported that they did not expect their purchasing patterns to change in the next two years. A plurality of purchasers (6 of 16) reported contacting between one and two suppliers before making a purchase, while four reported contacting up to three suppliers, two reported contacting up to four suppliers, two reported contacting up to five suppliers, and two reported contacting only one supplier.

Sales terms and discounts

A majority of U.S. producers and importers typically quote prices on an f.o.b. basis. Four U.S. producers reported offering no discounts, two reported offering total quantity discounts, and two reported offering annual volume discounts. Three U.S. producers reported offering various "other" discounts, including two that reported offering discounts for early payment, two that offered volume discounts, one that offered incentive rebates based on annual attainment, and one that offered discounts "to meet competition as needed."

Among the seven firms that reported imports of subject product, three reported offering total quantity discounts, two offered annual volume discounts, and four reported no specific discount policy. One importer also reported that its discount structure is based on what its competitors offer to the customer, and one reported offering discounts "from MSRP as agreed with {its} customers." Seven of eight U.S. producers reported sales terms of net 30 days and two reported sales terms of 2/10 net 30 days, while five of seven importers of subject product reported sales terms of net 30 days, one reported sales terms of net 60 days, and one reported "other" sales terms.

Price leadership

Six purchasers reported price leaders in the heavy castings market: four named EJ (or East Jordan Iron Works), three named Neenah, and one named U.S. Foundry. When asked to describe how these firms exhibited price leadership, *** reported that EJ's price levels "rule the market" and that they are the dominant supplier; *** reported that EJ and Neenah send out a letter or email; *** reported that EJ and Neenah have *** and that they were "competitive in the last bids (probably looking for new business);" *** reported that EJ and Neenah "are major players" in their markets and publish catalogs and list prices; and *** reported that ***.

Three purchasers reported price leaders in the light castings market. *** reported that EJ was a price leader ***, and *** reporting that *** was a price leader because it publishes catalogs and lists prices.[5]

[5] Purchaser *** named "all domestic and import suppliers" as price leaders in both the heavy and light castings markets, reporting that "prices for finished product are based on cost of raw material, manufacturing specifications, shipping, and supply and demand… {and that} all of these factors have increased over the past five years."

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 products shipped to unrelated U.S. customers during January 2013-June 2016.

Product 1.--Standard heavy duty manhole cover and frame assemblies of gray cast iron, approximately 400 pounds weight (375 to 450 pounds actual weight) (*Heavy Casting*).

Product 2.--Standard light duty manhole cover and frame assemblies of gray cast iron, approximately 150 pounds weight (140 to 160 pounds actual weight) (*Heavy Casting*).

Product 3.--Standard 5-1/4" valve boxes of gray cast iron for 4" through 12" valves; 2-piece screw type; approximate height 27 to 37 inches; equivalent to Tyler 562-S, with lid (*Light Casting*).

Product 4.--Standard 5-1/4" valve boxes of gray cast iron for 4" through 12" valves; 2-piece screw type; approximate height 40 to 60 inches; equivalent to Tyler 6644, with lid *(Light Casting*).

Six U.S. producers and four importers provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[6] Pricing data for products 1 and 2 reported by U.S. producers accounted for approximately *** percent of U.S. producers' shipments of heavy castings in 2015, and pricing data for products 3 and 4 accounted for *** percent of U.S. producers' shipments of light castings in 2015. Pricing data reported by importers of heavy castings from Brazil accounted for *** percent of reported U.S. commercial shipments of imports of heavy castings from Brazil in 2015.[7] Pricing data reported by importers of heavy castings from Canada accounted for *** percent of U.S. commercial shipments of such imports in 2015. No importer provided pricing data for imports of light castings from Brazil, and no importer provided pricing data for imports of heavy or light castings from China.

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

[6] 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.

[7] Pricing data reported by *** accounted for *** percent of their reported U.S. commercial shipments of imported Brazilian heavy castings in 2015, respectively, while pricing data reported by *** accounted for *** percent of its U.S. commercial shipments of imported Brazilian heavy castings in 2015. ***. Staff telephone interview with ***, October 17, 2016. ***.

Table V-3

Castings: Weighted-average f.o.b. prices and quantities of domestic and imported product 1[1] and margins of underselling/(overselling), by quarter, January 2013-June 2016

Period	United States		Brazil			Canada		
	Price *(per pound)*	Quantity *(pounds)*	Price *(per pound)*	Quantity *(pounds)*	Margin *(percent)*	Price *(per pound)*	Quantity *(pounds)*	Margin *(percent)*
2013: Jan.-Mar.	0.91	***	***	***	***	***	***	***
Apr.-June	0.93	***	***	***	***	***	***	***
July-Sept.	0.92	***	1.24	389,980	(35.0)	***	***	***
Oct.-Dec.	0.95	***	***	***	***	***	***	***
2014: Jan.-Mar.	0.90	***	***	***	***	***	***	***
Apr.-June	0.86	***	1.33	311,074	(55.3)	***	***	***
July-Sept.	0.92	***	1.33	371,863	(45.2)	***	***	***
Oct.-Dec.	0.93	***	1.30	227,679	(39.5)	***	***	***
2015: Jan.-Mar.	0.89	***	1.51	130,353	(70.7)	***	***	***
Apr.-June	0.86	***	***	***	***	***	***	***
July-Sept.	0.90	***	***	***	***	***	***	***
Oct.-Dec.	0.94	***	1.35	313,262	(43.2)	***	***	***
2016: Jan.-Mar.	0.89	***	***	***	***	***	***	***
Apr.-June	0.92	***	1.48	147,959	(60.9)	***	***	***

[1] Product 1: Standard heavy duty manhole cover and frame assemblies of gray cast iron, approximately 400 pounds weight (375 to 450 pounds actual weight) (*Heavy Casting*).

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

Table V-4

Castings: Weighted-average f.o.b. prices and quantities of domestic products 2, 3, and 4, by quarter, January 2013-June 2016

* * * * * * *

Figure V-2

Castings: Weighted-average prices and quantities of domestic and imported product 1, by quarter, January 2013-June 2016

* * * * * * *

Figure V-3

Castings: Weighted-average prices and quantities of domestic product 2, by quarter, January 2013-June 2016

* * * * * * *

Figure V-4

Castings: Weighted-average prices and quantities of domestic product 3, by quarter, January 2013-June 2016

* * * * * * *

Figure V-5

Castings: Weighted-average prices and quantities of domestic product 4, by quarter, January 2013-June 2016

* * * * * * *

Price trends

Prices increased for U.S. and Canadian product 1, and decreased for Brazilian product 1 during January 2013-June 2016. Domestic prices also increased for products 2, 3, and 4. Table V-5 summarizes the price trends, by country and by product. As shown in the table, domestic prices for product 1 increased by 0.6 percent, import prices for product 1 from Brazil decreased by *** percent, and import prices for product 1 from Canada increased by *** percent. Domestic price increases for products 2-4 during January 2013-June 2016 ranged from *** to *** percent.

Table V-5

Castings: Summary of weighted-average f.o.b. prices for product 1 from the United States, Brazil, and Canada, and products 2, 3, and 4 from the United States[1]

Item	Number of quarters	Low price (per unit)	High price (per unit)	Change in price[2] (percent)
Product 1				
United States	14	0.86	0.95	0.6
Brazil	14	1.24	***	***
Canada	14	***	***	***
Product 2				
United States	14	***	***	***
Product 3				
United States	14	***	***	***
Product 4				
United States	14	***	***	***

[1] No price data was reported for imports of product 2 from Canada or products 2, 3, or 4 from Brazil, and no price data of any kind was reported for imports from China.

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

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

Price comparisons

As shown in table V-6, prices for heavy castings imported from Canada were below those for U.S.-produced product in all 14 instances, for a quantity of approximately *** pounds; margins of underselling ranged from *** to *** percent. There were no instances of overselling for imports from Canada. Prices for heavy castings imported from Brazil were above those for U.S.-produced product in all 14 instances, for a quantity of approximately *** pounds; margins of overselling ranged from *** to *** percent. There were no instances of underselling for imports from Brazil.

Table V-6

Castings: Instances of underselling/(overselling) and the range and average of margins, by country, January 2013-June 2016[1]

Source	Underselling				
	Number of quarters	Quantity[1] (*pounds*)	Average margin (*percent*)	Margin range (*percent*)	
				Min	Max
Canada	14	***	***	***	***
Source	**(Overselling)**				
	Number of quarters	**Quantity[1] (*pounds*)**	**Average margin (*percent*)**	**Margin range (*percent*)**	
				Min	**Max**
Brazil	14	***	***	***	***

[1] In the original investigations, subject imports from Brazil were priced lower than domestic product in *** of 16 comparisons, with underselling margins ranging from *** to *** percent; subject imports from Canada were priced lower than domestic product in 29 of 38 comparisons (there were no underselling/(overselling) margins calculated for Canada); and subject imports from China were priced lower than domestic product in *** of 31 comparisons, with underselling margins ranging from 3.8 to *** percent. *Investigation No. 731-TA-263 (Final): Iron Construction Castings from Canada–Staff Report,* INV-J-019, February 4, 1986, pp. 85-88; *Investigation Nos. 701-TA-263 (Final) and 731-TA-262, 264, and 265 (Final): Iron Construction Castings from Brazil, India and China–Staff Report,* INV-J-054, April 7, 1986, pp. 92-100.

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

Domestic interested parties argue that the domestic industry's price data represents the entire product line by weight, whereas the price data reported by the importers of Brazilian product only includes higher-end hinged and tamper-resistant blast-resistant products.[8] They state that when comparing Saint-Gobain's products to specialty hinged manhole covers and frames of ductile iron from domestic producers, ***.[9]

[8] Hearing transcript, p. 87 (Kerwin).

[9] Domestic interested parties' posthearing brief, p. 10, exh. 1.

Purchasers' perceptions of relative price trends

Purchasers were asked how the prices of castings from the United States had changed relative to the prices of castings from subject sources since 2010. One purchaser reported that there had been no change in price, and seven purchasers reported that prices had changed by the same amount. One purchaser reported that domestic prices were now lower than the price of imports from Canada, and two reported that domestic prices were lower than the price of imports from China, while one reported that domestic prices were now higher than the price of imports from China.

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
80 FR 59192 October 1, 2015	*Iron Construction Castings From Brazil, Canada, and China; Institution of Five-Year Reviews*	https://www.gpo.gov/fdsys/pkg/FR-2015-10-01/pdf/2015-24652.pdf
80 FR 59133 October 1, 2015	*Initiation of Five-Year ("Sunset") Review*	https://www.gpo.gov/fdsys/pkg/FR-2015-10-01/pdf/2015-24980.pdf
81 FR 1967 January 14, 2016	*Iron Construction Castings From Brazil, Canada, and China; Notice of Commission Determination To Conduct Full Five-Year Reviews*	https://www.gpo.gov/fdsys/pkg/FR-2016-01-14/pdf/2016-00609.pdf
81 FR 6237 February 5, 2016	*Heavy Iron Construction Castings from Brazil: Final Results of Expedited Fourth Sunset Review of the Countervailing Duty Order*	https://www.gpo.gov/fdsys/pkg/FR-2016-02-05/pdf/2016-02286.pdf
81 FR 7083 February 10, 2016	*Certain Iron Construction Castings From Brazil, Canada, and the People's Republic of China: Final Results of Expedited Fourth Sunset Reviews of Antidumping Duty Orders*	https://www.gpo.gov/fdsys/pkg/FR-2016-02-10/pdf/2016-02699.pdf
81 FR 40921 June 23, 2016	*Iron Construction Castings From Brazil, Canada, and China; Scheduling of Full Five-Year Reviews*	https://www.gpo.gov/fdsys/pkg/FR-2016-06-23/pdf/2016-14878.pdf
Note.–The press release announcing the Commission's determinations concerning adequacy and the conduct of a full or expedited review can be found at http://usitc.gov/press_room/news_release/2012/er0409kk1.htm. A summary of the Commission's votes concerning adequacy and the conduct of a full or expedited review can be found at http://pubapps2.usitc.gov/sunset/caseProfSuppAttmnt/download/11452. The Commission's explanation of its determinations can be found at http://pubapps2.usitc.gov/sunset/caseProfSuppAttmnt/download/11453.		

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:	Iron Construction Castings from Brazil, Canada, and China
Inv. Nos.:	701-TA-249 and 731-TA-262, 263, and 265 (Fourth Review)
Date and Time:	October 20, 2016 - 9:30 a.m.

Sessions were held in connection with these investigations in the Main Hearing Room (room 101), 500 E Street, SW, Washington, DC.

OPENING REMARKS:

In Support of Continuation of Orders (**Paul C. Rosenthal**,
Kelley Drye & Warren LLP)
In Opposition of Continuation of Orders (**Felipe Berer**,
Akerman LLP)

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

Kelley Drye & Warren LLP
Washington, DC
on behalf of

D&L Foundry, Inc.
EJ USA, Inc.
Neenah Foundry Company
U.S. Foundry and Manufacturing Corp.

Jason McGowan, President, D&L Foundry, Inc.

Thomas M. Teske, Vice President and General Manager,
EJ USA, Inc.

In Support of the Continuation of

the Antidumping and Countervailing Duty Orders (continued):

Scott A. Hoffman, Vice President, Municipal Products Group, Neenah Foundry Company

Adam W. San Solo, Director of Sales and Engineering, U.S. Foundry and Manufacturing Corp.

Michael T. Kerwin, Director, Georgetown Economic Services

Paul C. Rosenthal)
) – OF COUNSEL
Grace W. Kim)

In Opposition of the Continuation of the Antidumping and Countervailing Duty Orders:

Akerman LLP
Miami, FL
on behalf of

Saint-Gobain Canalização Ltda.
ABIFA – Associação Brasileira de Fundição (Brazilian Foundry Association)
Jim Cox Sales, Inc.
Famcon Pipe & Supply, Inc.

Gustavo Luiz de Jesus Siqueira, General Director, Saint-Gobain Canalização Ltda.

James Cox, Vice President, Jim Cox Sales, Inc.

Felipe Berer)
) – OF COUNSEL
Ana Carolina Estevão)

REBUTTAL/CLOSING REMARKS:

In Support of Continuation of Orders (**Paul C. Rosenthal**, Kelley Drye & Warren LLP)
In Opposition of Continuation of Orders (**Felipe Berer**, Akerman LLP)

-END-

APPENDIX C

SUMMARY DATA

Table C-1
Heavy castings: Summary data concerning the U.S. market, 2013-15, January to June 2015, and January to June 2016
(Quantity=1,000 pounds; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2013	2014	2015	2015	2016	2013-15	2013-14	2014-15	2015-16
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Brazil	***	***	***	***	***	***	***	***	***
Canada	***	***	***	***	***	***	***	***	***
China	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***	***	***
All other	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Brazil	***	***	***	***	***	***	***	***	***
Canada	***	***	***	***	***	***	***	***	***
China	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***	***	***
All other	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. imports from:									
Brazil:									
Quantity	1,051	498	662	195	251	(37.0)	(52.7)	33.1	28.4
Value	1,182	645	869	237	352	(26.5)	(45.4)	34.6	48.5
Unit value	$1.13	$1.30	$1.31	$1.21	$1.40	16.6	15.3	1.1	15.7
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Canada:									
Quantity	1,290	937	1,273	577	677	(1.3)	(27.4)	35.9	17.4
Value	1,023	747	1,114	515	576	8.9	(27.0)	49.1	11.8
Unit value	$0.79	$0.80	$0.87	$0.89	$0.85	10.3	0.5	9.8	(4.8)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
China:									
Quantity	2,982	3,350	3,139	1,460	1,835	5.3	12.3	(6.3)	25.7
Value	4,437	4,934	3,411	1,515	2,130	(23.1)	11.2	(30.9)	40.6
Unit value	$1.49	$1.47	$1.09	$1.04	$1.16	(27.0)	(1.0)	(26.2)	11.8
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subject sources:									
Quantity	5,323	4,784	5,074	2,231	2,763	(4.7)	(10.1)	6.1	23.8
Value	6,642	6,326	5,393	2,267	3,058	(18.8)	(4.8)	(14.8)	34.9
Unit value	$1.25	$1.32	$1.06	$1.02	$1.11	(14.8)	6.0	(19.6)	9.0
Ending inventory quantity	***	***	***	***	***	***	***	***	***
India:									
Quantity	86,263	93,613	101,630	51,648	49,556	17.8	8.5	8.6	(4.1)
Value	40,165	42,783	44,674	23,410	20,609	11.2	6.5	4.4	(12.0)
Unit value	$0.47	$0.46	$0.44	$0.45	$0.42	(5.6)	(1.8)	(3.8)	(8.2)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All other sources:									
Quantity	9,275	11,813	9,811	5,703	3,681	5.8	27.4	(16.9)	(35.5)
Value	13,377	18,518	13,593	8,946	2,526	1.6	38.4	(26.6)	(71.8)
Unit value	$1.44	$1.57	$1.39	$1.57	$0.69	(3.9)	8.7	(11.6)	(56.3)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Nonsubject sources:									
Quantity	95,538	105,426	111,441	57,351	53,237	16.6	10.4	5.7	(7.2)
Value	53,542	61,301	58,267	32,356	23,135	8.8	14.5	(4.9)	(28.5)
Unit value	$0.56	$0.58	$0.52	$0.56	$0.43	(6.7)	3.8	(10.1)	(23.0)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	100,860	110,210	116,515	59,582	55,999	15.5	9.3	5.7	(6.0)
Value	60,184	67,628	63,660	34,624	26,193	5.8	12.4	(5.9)	(24.3)
Unit value	$0.60	$0.61	$0.55	$0.58	$0.47	(8.4)	2.8	(11.0)	(19.5)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
U.S. producers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***
Hourly wages (dollars)	***	***	***	***	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***	***	***	***	***
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)	***	***	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires and from official statistics of the U.S. Department of Commerce.
Notes:
fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.
fn3.--Not available.

Table C-2
Light castings: Summary data concerning the U.S. market, 2013-15, January to June 2015, and January to June 20:
(Quantity=1,000 pounds; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per pound; Period changes=percent--exceptions noted)

	Reported data					Period changes			
	Calendar year			January to June		Calendar year			Jan-Jun
	2013	2014	2015	2015	2016	2013-15	2013-14	2014-15	2015-16
U.S. consumption quantity:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Brazil	***	***	***	***	***	***	***	***	***
China	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***	***	***
All other	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. consumption value:									
Amount	***	***	***	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***	***	***	***
Importers' share (fn1):									
Brazil	***	***	***	***	***	***	***	***	***
China	***	***	***	***	***	***	***	***	***
Subject sources	***	***	***	***	***	***	***	***	***
India	***	***	***	***	***	***	***	***	***
All other	***	***	***	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***	***	***	***
All import sources	***	***	***	***	***	***	***	***	***
U.S. imports from:									
Brazil:									
Quantity	104	123	0	0	4	(99.9)	17.8	(99.9)	[fn2]
Value	118	131	9	0	22	(92.4)	10.9	(93.2)	[fn2]
Unit value	$1.13	$1.07	$81.00	$0.00	$4.98	7,047.2	(5.9)	7,492.8	[fn2]
Ending inventory quantity	***	***	***	***	***	***	***	***	***
China:									
Quantity	3,435	1,384	1,246	518	805	(63.7)	(59.7)	(10.0)	55.5
Value	3,437	1,259	1,083	468	643	(68.5)	(63.4)	(14.0)	37.5
Unit value	$1.00	$0.91	$0.87	$0.90	$0.80	(13.2)	(9.1)	(4.5)	(11.6)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Subject sources:									
Quantity	3,539	1,507	1,246	518	809	(64.8)	(57.4)	(17.3)	56.3
Value	3,555	1,390	1,092	468	665	(69.3)	(60.9)	(21.5)	42.2
Unit value	$1.00	$0.92	$0.88	$0.90	$0.82	(12.8)	(8.1)	(5.1)	(9.1)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
India:									
Quantity	61,452	63,037	69,252	37,370	28,697	12.7	2.6	9.9	(23.2)
Value	29,221	30,449	31,987	17,680	12,513	9.5	4.2	5.1	(29.2)
Unit value	$0.48	$0.48	$0.46	$0.47	$0.44	(2.9)	1.6	(4.4)	(7.8)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All other sources:									
Quantity	388	392	663	375	453	70.8	1.1	68.9	20.8
Value	1,012	1,210	1,469	795	947	45.2	19.6	21.4	19.2
Unit value	$2.61	$3.08	$2.22	$2.12	$2.09	(15.0)	18.2	(28.1)	(1.3)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Nonsubject sources:									
Quantity	61,840	63,429	69,915	37,745	29,149	13.1	2.6	10.2	(22.8)
Value	30,233	31,659	33,456	18,474	13,460	10.7	4.7	5.7	(27.1)
Unit value	$0.49	$0.50	$0.48	$0.49	$0.46	(2.1)	2.1	(4.1)	(5.7)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
All import sources:									
Quantity	65,380	64,936	71,161	38,263	29,958	8.8	(0.7)	9.6	(21.7)
Value	33,788	33,049	34,547	18,942	14,124	2.2	(2.2)	4.5	(25.4)
Unit value	$0.52	$0.51	$0.49	$0.50	$0.47	(6.1)	(1.5)	(4.6)	(4.8)
Ending inventory quantity	***	***	***	***	***	***	***	***	***
U.S. producers':									
Average capacity quantity	***	***	***	***	***	***	***	***	***
Production quantity	***	***	***	***	***	***	***	***	***
Capacity utilization (fn1)	***	***	***	***	***	***	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Export shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***	***	***	***
Production workers	***	***	***	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***	***	***	***
Hourly wages (dollars)	***	***	***	***	***	***	***	***	***
Productivity (pounds per hour)	***	***	***	***	***	***	***	***	***
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)	***	***	***	***	***	***	***	***	***

Source: Compiled from data submitted in response to Commission questionnaires and from official statistics of the U.S. Department of Commerce.
Notes:
fn1.--Reported data are in percent and period changes are in percentage points.
fn2.--Undefined.
fn3.--Not available.

HISTORICAL SUMMARY DATA

Appendix D-1

Heavy iron metal castings: Summary data concerning U.S. market, 1997-98, Jan.-Mar. 1998, and Jan.-Mar. 1999

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Appendix D-2

Light iron metal castings: Summary data concerning U.S. market, 1997-98, Jan.-Mar. 1998, and Jan.-Mar. 1999

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APPENDIX D

COMMENTS ON THE EXISTING ANTIDUMPING AND COUNTERVAILING DUTY ORDERS AND THE LIKELY EFFECTS OF REVOCATION

Appendix D-1
Castings: Effect of the orders

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APPENDIX E

NONSUBJECT SOURCES PRICE DATA

Six importers reported price data for imports from nonsubject source India for products 1-4 during January 2013-June 2016. Price data reported by these firms accounted for *** percent of U.S. commercial shipments of heavy castings from India and *** percent of U.S. commercial shipments of light castings from India in 2015. These price items and accompanying data are comparable to those presented in tables V-3 and V-4. Price and quantity data for India are shown in tables E-1 to E-4 and in figures E-1 to E-4 (with domestic and subject sources).

Prices of imports from India were lower in all quarterly price comparisons with both the United States and subject countries Brazil and Canada; prices for products 1-4 imported from India were lower than prices for U.S.-produced product in all 56 instances, and prices for product 1 imported from India were lower than prices for product 1 imported from both Brazil and Canada in all 14 instances. A summary of price differentials is presented in table E-5.

Table E-1

Iron construction castings: Weighted-average f.o.b. prices and quantities of domestic and imported product 1[1], by quarter, January 2013-June 2016

Period	United States		India	
	Price *(per pound)*	Quantity *(pounds)*	Price *(per pound)*	Quantity *(pounds)*
2013:				
Jan.-Mar.	0.91	***	***	***
Apr.-June	0.93	***	***	***
July-Sept.	0.92	***	***	***
Oct.-Dec.	0.95	***	***	***
2014:				
Jan.-Mar.	0.90	***	***	***
Apr.-June	0.86	***	***	***
July-Sept.	0.92	***	***	***
Oct.-Dec.	0.93	***	***	***
2015:				
Jan.-Mar.	0.89	***	***	***
Apr.-June	0.86	***	***	***
July-Sept.	0.90	***	***	***
Oct.-Dec.	0.94	***	***	***
2016:				
Jan.-Mar.	0.89	***	***	***
Apr.-June	0.92	***	0.58	1,415,330

[1] Product 1: Standard heavy duty manhole cover and frame assemblies of gray cast iron, approximately 400 pounds weight (375 to 450 pounds actual weight) (*Heavy Casting*).

Source: Compiled from data submitted in response to Commission questionnaires

Table E-2

Iron construction castings: Weighted-average f.o.b. prices and quantities of domestic and imported product 2[1], by quarter, January 2013-June 2016

* * * * * * *

Table E-3

Iron construction castings: Weighted-average f.o.b. prices and quantities of domestic and imported product 3[1], by quarter, January 2013-June 2016

Period	United States		India	
	Price *(per pound)*	Quantity *(pounds)*	Price *(per pound)*	Quantity *(pounds)*
2013: Jan.-Mar.	***	***	***	***
Apr.-June	***	***	***	***
July-Sept.	***	***	***	***
Oct.-Dec.	***	***	0.65	528,495
2014: Jan.-Mar.	***	***	0.63	639,976
Apr.-June	***	***	0.65	918,123
July-Sept.	***	***	0.65	786,799
Oct.-Dec.	***	***	0.66	811,680
2015: Jan.-Mar.	***	***	0.63	782,911
Apr.-June	***	***	0.63	895,737
July-Sept.	***	***	0.63	946,588
Oct.-Dec.	***	***	0.62	746,958
2016: Jan.-Mar.	***	***	0.66	737,182
Apr.-June	***	***	0.59	816,895

[1] Product 3: Standard 5-1/4" valve boxes of gray cast iron for 4" through 12" valves; 2-piece screw type; approximate height 27 to 37 inches; equivalent to Tyler 562-S, with lid (*Light Casting*).

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

Table E-4

Iron construction castings: Weighted-average f.o.b. prices and quantities of domestic and imported product 4[1], by quarter, January 2013-June 2016

* * * * * * *

Figure E-1

Iron construction castings: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, by quarter, January 2013-June 2016

* * * * * * *

Figure E-2

Iron construction castings: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, by quarter, January 2013-June 2016

* * * * * * *

Figure E-3

Iron construction castings: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, by quarter, January 2013-June 2016

* * * * * * *

Figure E-4

Iron construction castings: Weighted-average f.o.b. prices and quantities of domestic and imported product 4, by quarter, January 2013-June 2016

* * * * * * *

Table E-5

Iron construction castings: Summary of underselling, by country comparison, January 2013-June 2016

Comparison	Total number of comparisons	Nonsubject lower than the comparison source		Nonsubject higher than the comparison source	
		Number of quarters	Quantity (*pounds*)	Number of quarters	Quantity (*pounds*)
Heavy Castings					
Nonsubject vs United States:					
India vs. United States	28	28	***	--	--
Nonsubject vs subject countries:					
India vs. Brazil	14	14	***	--	--
India vs. Canada	14	14	***	--	--
Light Castings					
Nonsubject vs United States:					
India vs. United States	28	28	***	--	--

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