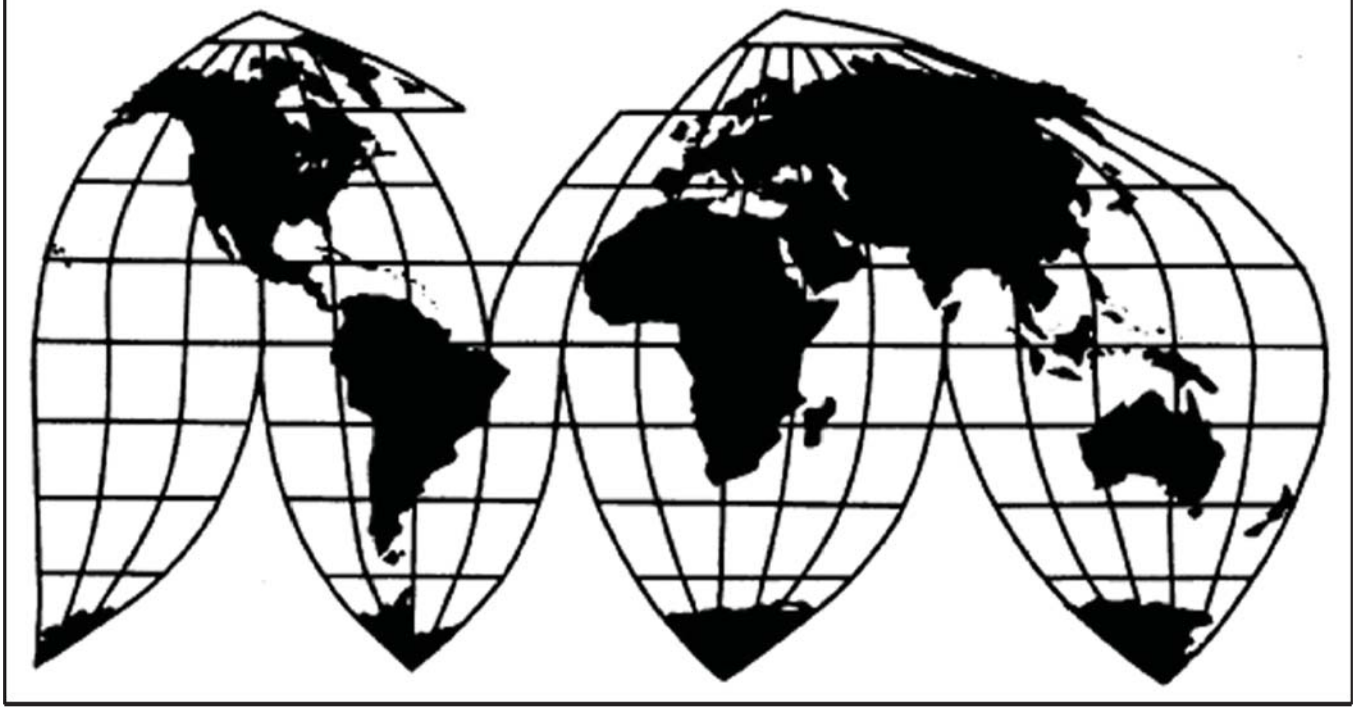
Tapered Roller Bearings from China

Investigation No. 731-TA-344 (Fourth Review)

Publication 4824 **September 2018**

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

COMMISSIONERS

David S. Johanson, Chairman
Irving A. Williamson
Meredith M. Broadbent
Rhonda K. Schmidtlein
Jason E. Kearns

Catherine DeFilippo
Director of Operations

Staff assigned

Keysha Martinez, Investigator
Gregory LaRocca, Industry Analyst
Tana Von Kessler, Economist
Charles Yost, Accountant
Laura Thayn, Statistician
Nataline Viray-Fung, Attorney
Douglas Corkran, Supervisory Investigator

Special assistance from

Jason Duncan, Investigations Intern

Address all communications to
Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

U.S. International Trade Commission

Washington, DC 20436
www.usitc.gov

Tapered Roller Bearings from China

Investigation No. 731-TA-344 (Fourth Review)

Publication 4824

September 2018

CONTENTS

CONTENTS

CONTENTS

CONTENTS

Note.—Information that would reveal confidential operations of individual concerns may not be published.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

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 731-TA-344 (Fourth Review)

Tapered Roller Bearings from China

DETERMINATION

On the basis of the record[1] developed in the subject five-year review, the United States International Trade Commission ("Commission") determines, pursuant to the Tariff Act of 1930 ("the Act"), that revocation of the antidumping duty order on tapered roller bearings from 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.

BACKGROUND

The Commission, pursuant to section 751(c) of the Act (19 U.S.C. 1675(c)), instituted this review on July 3, 2017 (82 FR 30898) and determined on October 6, 2017 that it would conduct a full review (82 FR 48527, October 18, 2017). Notice of the scheduling of the Commission's review 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 February 26, 2018 (83 FR 8297). The hearing was held in Washington, DC, on July 31, 2018, and all persons who requested the opportunity were permitted to appear in person or by counsel.

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

Views of the Commission

Based on the record in this five-year review, we determine under section 751(c) of the Tariff Act of 1930, as amended ("the Tariff Act"), that revocation of the antidumping duty order on tapered roller bearings ("TRBs") from China would likely lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

I. Background

In June 1987, the Commission determined that an industry in the United States was materially injured by reason of LTFV imports of TRBs and parts thereof from China, Hungary, and Romania.[1] In September 1987, the Commission determined, pursuant to a petition that covered TRB imports from Japan not subject to a 1976 finding under the Antidumping Act of 1921 (*i.e.,* TRBs over four inches in outside diameter and parts thereof, and all TRBs produced and sold by NTN), that an industry in the United States was materially injured by reasons of LTFV imports of TRBs and parts thereof from Japan.[2] Commerce published antidumping duty orders with respect to TRBs from China on June 15, 1987, TRBs from Hungary and Romania on June 19, 1987, and TRBs from Japan on October 6, 1987.[3]

The Commission instituted the first reviews on April 1, 1999 and determined to conduct full reviews. It made an affirmative determination with respect to the review on TRBs from China and made negative determinations in the reviews of TRBs from Hungary, Japan, and

[1] *Tapered Roller Bearings and Parts Thereof, and Certain Housings Incorporating Tapered Rollers from Hungary, The People's Republic of China, and Romania*, Inv. Nos. 731-TA-341, 344, 345 (Final) ("Original Determinations"), USITC Pub. 1983 (July 1987).

[2] *Tapered Roller Bearings and Parts Thereof, and Certain Housings Incorporating Tapered Rollers from Japan*, Inv. No. 731-TA-343 (Final), USITC Pub. 2020 (Sept. 1987).

[3] *Tapered Roller Bearings and Parts Thereof, Finished or Unfinished, from the People's Republic of China*, 52 Fed. Reg. 22667 (June 15, 1987) (antidumping duty order); *see also* Confidential Report ("CR") at I-3, Public Report ("PR") at I-2. The Commission's original determinations were the subject of an appeal that challenged the Commission's decision to cumulate subject imports of TRBs. The Court of International Trade ("CIT") held that subject TRBs from Hungary should not be cumulated with subject TRBs from China and Romania because of quality differences. *Marsuda-Rodgers Int'l v. United States*, 719 F. Supp. 1092 (Ct. Int'l Trade 1989), *rev'd*, 923 F.2d 871 (Fed. Cir. 1990). However, the U.S. Court of Appeals for the Federal Circuit ("Federal Circuit") reversed the lower court, thereby affirming the Commission's decision to cumulate. *Marsuda-Rodgers Int'l v. United States*, 923 F.2d 871 (Fed. Cir. 1990). Cumulation is not an issue in the present review involving TRBs, which concerns subject merchandise from China only.

Romania.[4] Commerce issued the continuation of the antidumping duty order on TRBs from China on July 11, 2000.[5]

The Commission instituted the second review on June 1, 2005. After a full review, the Commission made an affirmative determination.[6] Commerce issued the continuation of the antidumping duty order on TRBs from China on September 15, 2006.[7]

The Commission instituted the third review on August 1, 2011. After a full review, the Commission made an affirmative determination.[8] Commerce issued the continuation of the antidumping duty order on TRBs from China on August 30, 2012.[9]

The Commission instituted this fourth review on July 3, 2017.[10] The Timken Company ("Timken"), a domestic producer of TRBs and Bosda, Inc. ("Bosda"), an importer of subject merchandise, responded to the Commission's notice of institution. The Commission found that the domestic interested party group response to the notice of institution was adequate and that the respondent interested party group response to the notice was inadequate, but determined to conduct a full review in light of issues surrounding the domestic like product definition and certain changes in conditions of competition in the U.S. TRB market.[11]

Timken participated in the hearing and submitted prehearing and posthearing briefs and final comments. Bosda, Xinchang Kaiyuan Automotive Bearings Co., Ltd., a producer of subject merchandise, and Dana Inc., a purchaser and importer of TRBs (collectively "respondents") also participated in the hearing and jointly submitted prehearing and posthearing briefs and final comments.

U.S. industry data are based on the questionnaire responses of nine U.S. producers of TRBs that are believed to account for the vast majority of domestic production of TRBs in

---

[4] *Certain Bearings from China, France, Germany, Hungary, Italy, Japan, Romania, Singapore, Sweden, and the United Kingdom*, Inv. Nos. AA1921-143, 731-TA-341, 343-345, 391-397, and 399 (Review) ("*First Review Determinations*"), USITC Pub. 3309 at 1-2 (June 2000).

[5] 65 Fed. Reg. 42665 (July 11, 2000). In an appeal of the Commission's negative review determinations as to the orders on TRBs from Japan, the CIT upheld various findings by the Commission, but remanded for further explanation of the likely impact of subject TRBs from Japan on the entire domestic industry, the reliability of capacity figures reported by Japanese TRB producers, and of how the Commission's findings were made in the context of the TRB business cycle. *Timken Co. v. United States*, 264 F.Supp.2d 1264, 1285 (Ct. Int'l Trade 2003). The Commission's negative determinations on remand were affirmed by both the CIT and the Federal Circuit. *Timken Co. v. United States*, 321 F.Supp.2d 1361, 1373 (Ct. Int'l Trade 2004), *aff'd,* 122 Fed. Appx. 510 (Fed. Cir. 2005).

[6] *See Certain Bearings from China, France, Germany, Italy, Japan, Singapore, and the United Kingdom*, Inv. Nos. 731-TA-344, 391-393, 396, and 399 (Second Review) ("*Second Review Determinations*"), USITC Pub. 3876 at 1-2 (Aug. 2006).

[7] 71 Fed. Reg. 54469 (Sept. 15, 2006).

[8] *Tapered Roller Bearings from China*, Inv. No. 731-TA-344 (Third Review) ("*Third Review Determination*"), USITC Pub. 4343 at 1-3 (Aug. 2012).

[9] 77 Fed. Reg. 52682 (Aug. 30, 2012).

[10] 82 Fed. Reg. 30898 (July 3, 2017).

[11] Commission Determination on Adequacy, EDIS Doc. 624739 (Oct. 16, 2017).

2017.[12] U.S. import data and related information are based on Commerce's official import statistics and the questionnaire responses of 34 U.S. importers of TRBs that accounted for *** percent of subject imports during 2017.[13] Foreign industry data and related information are based on the questionnaire responses of eight producers of TRBs in China, with reported 2017 exports to the United States equivalent to *** percent of subject imports.[14]

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."[15] 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."[16] 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.[17]

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

> . . . tapered roller bearings and parts thereof, finished and unfinished, from the PRC; flange, take up cartridge, and hanger units incorporating tapered roller bearings; and tapered roller housings (except pillow blocks) incorporating tapered rollers, with or without spindles, whether or not for automotive use. The subject merchandise is currently classifiable under Harmonized Tariff Schedule of the United States (HTSUS) subheadings: 8482.20.00, 8482.91.00.50, 8482.99.15, 8482.99.45, 8483.20.40, 8483.20.80, 8483.30.80, 8483.90.20, 8483.90.30, 8483.90.80, 8708.70.6060, 8708.99.2300, 8708.99.4850, 8708.99.6890,

[12] CR/PR at III-1.

[13] CR/PR at IV-1.

[14] CR at IV-8, PR at IV-6.

[15] 19 U.S.C. § 1677(4)(A).

[16] 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).

[17] *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).

8708.99.8115, and 8708.99.8180. The HTSUS subheadings are provided for convenience and customs purposes only; the written description of the scope of the order is dispositive.[18]

Tapered roller bearings are a type of antifriction bearing that permit free motion between moving and fixed parts by holding, separating, or guiding the moving parts to minimize friction and wear. Like any antifriction bearing, a TRB is made up of four basic components—the cup, the cone, the cage, and the rollers. The cup, also called the outer ring, is the largest part of the assembly, and its inner surface is tapered to conform to the angle of the roller assembly. The cone forms the inner race of the bearing, while the cage keeps the rollers equally distributed around the cup and cone. The rollers, cage, and cone are joined together to form a cone assembly. When joined with a cup, the cone assembly and cup form a TRB set.[19] The rolling elements transmit the physical load or force from the moving parts to the stationary support. Under normal operating conditions, the races and rolling elements carry the load, while the cage spaces and retains the rollers. TRBs provide combined radial and thrust load capability. TRB sizes vary considerably, from a few millimeters to several meters in outside diameter. TRBs are primarily made from alloy steel; however, some bearing types and certain components may be fabricated from materials such as stainless steel, bronze, copper, ceramic, and certain plastics.[20]

TRBs are used to counteract friction caused by both radial and thrust loads. TRBs are able to withstand such combined loads while offering moderate speed capacity and heavy load capacity. The primary end market for this type of bearing is the automotive industry.[21] TRBs are also used extensively in the heavy machinery sector – primarily construction and agricultural equipment – as well as the railroad and general industry sectors. More specifically, TRBs are widely used in these industries in transmissions and wheel applications.[22]

1. The Original Investigations

In the original investigations, the Commission found that all TRBs constituted one like product regardless of individual sizes, dimensions, physical characteristics, or uses, because there were no clear dividing lines between the multitude of TRBs within the scope.[23] The Commission concluded that certain machine parts incorporating TRBs, such as wheel hub

[18] *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China: Final Results of the Expedited Fourth Sunset Review of the Antidumping Duty Order*, 82 Fed. Reg. 51389 (Nov. 6, 2017).

[19] CR at I-18-20, PR at I-15-16.

[20] CR at I-19-20, PR at I-15-16.

[21] CR at I-21, PR at I-16-17.

[22] *First Review Determinations*, USITC Pub. 3309 at TRB-1-20.

[23] *Original Determinations*, USITC Pub. 1983 at 5-7.

assemblies, were also part of the like product, but the Commission did not separately state a rationale for their inclusion.[24]

---

[24] In the original investigations, the Commission report described wheel hub assemblies as follows:

> prelubricated, preset, double-row tapered roller bearings that have been sealed; however, instead of a cup, the cone assemblies are sealed into a cast, flanged housing with bolt holes for direct mounting onto the wheel hub. The flanged housing performs as the outer race of the bearing, taking the place of the typical tapered roller bearing cup. The useful life of both of these types of bearing units {wheel hub and cartridge bearing units which were both grouped under the heading self-contained tapered roller bearing packages} is the life of the automobile and the next generation of the self-contained units will have flanged inner and outer rings as part of the assembly. This will allow it to take over the functions of other usually separate components in the wheel hub system.

Original Determinations, USITC Pub. 1983 at 7.

Timken notes that in 1989 investigations involving antifriction bearings other than tapered roller bearings, certain respondents had argued that wheel hub assemblies containing ball bearings constituted a like product that was separate from other ball bearings. *Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom*, Inv. Nos. 303-TA-19 -20 and 731-TA-391-399 (Final), USITC Pub. 2185 at 21-22 (May 1989). The Commission in the 1989 investigations summarized respondents' arguments as follows:

> Many respondents insist that wheel hub units should be considered a separate like product, arguing that they are really automotive parts, not bearings. They note that the primary functions of a wheel hub unit are to attach a wheel to a vehicle, to link the wheel to the steering mechanism, and to aid in the braking process. The bearings in a wheel hub unit represent less than half of the value of the unit as a whole, but, if the bearing wears out, the entire unit must be replaced. Further, wheel hub units are not interchangeable with bearings and are dedicated to use in an automobile. Primarily, for these reasons, the Customs Service classifies wheel hub units as auto parts, not antifriction bearings.

USITC Pub. 2185 at 21. In the 1989 investigations, wheel hub assemblies (specifically referred to as second and third generation wheel hub assemblies) were described as prelubricated, preset, deep-groove ball bearings that have been sealed into a cast or forged flanged housing with bolt holes for direct mounting onto the wheel hub, in which the flanged housing performs as the outer race of the bearing. USITC Pub. 2185 at 20. The Commission rejected respondents' like product argument, stating:

> We determine that wheel hub units are not a separate like product. They are not significantly different from other ball bearings, especially other housed and mounted ball bearings, in terms of functional characteristics and applications. In

(Continued…)

2. Prior Reviews

In the first reviews, the Commission found that TRBs, ball bearings ("BBs"), cylindrical roller bearings, and spherical plain bearings ("SPBs") were separate domestic like products consistent with Commerce's scope definitions.[25] NTN Corporation, a Japanese producer of all four types of bearings under review, and its U.S. affiliates, argued in their response to the notice of institution and prehearing brief that the Commission should treat wheel hub assemblies as a separate like product.[26] The Commission rejected the argument, stating that the "Commission in its 1989 determination on antifriction bearings other than TRBs considered and rejected arguments that wheel hub assemblies should be carved out as a separate like product from the general category of BBs."[27]

In the second reviews, the Commission stated that no party had taken issue with the Commission's domestic like product definitions for TRBs, BBs, or SPBs from the first five-year reviews and that it did not find that the record contained any new information that would warrant a change in the Commission's definitions of the three domestic like products. Accordingly, the Commission continued to define TRBs, BBs, and SPBs as separate domestic like products, coextensive with Commerce's scope definitions for each type of bearing.[28]

In the third review, the Commission defined a single like product coextensive with Commerce's scope definition.[29] Responding exporters and importers of wheel hub assemblies argued that the Commission should define wheel hub assemblies as a separate like product because wheel hub assemblies have differences in physical characteristics and uses, customer and producer perceptions, and price from other TRBs, and were not interchangeable with them.[30] The Commission rejected the arguments, finding instead that all TRBs share the same basic elements and perform the same basic functions.[31] The Commission also found that the lack of interchangeability between TRBs and wheel hub assemblies was characteristic of all

---

(…Continued)

> addition, like other housed bearings, if the bearing in the wheel hub unit wears out, the entire unit must be replaced. Thus, the unit itself is inseparable from its bearing functions. Moreover, none of the respondents agree as to the definition of this allegedly separate like product. Some make no distinction among the generations of wheel hub units, other define the product as generations 2 and 3, and still other define it as just generation 3. Such definitional vagueness was fatal, in our view, to the evaluation of other candidates for separate like treatment, such as "aerospace" bearings, and is similarly fatal here. As in *Tapered Roller Bearings*, we include wheel hub units in the like product category corresponding to the type of rolling element employed therein. Specifically, in these investigations, they are ball bearings.

USITC Pub. 2185 at 21-22.

[25] *First Review Determinations*, USITC Pub. 3309 at 12.

[26] *First Review Determinations*, USITC Pub. 3309 at 8.

[27] *First Review Determinations,* USITC Pub. 3309 at 8.

[28] *Second Review Determinations*, USITC Pub. 3876 at 8.

[29] *Third Review Determination*, USITC Pub. 4343 at 14–15.

[30] *Third Review Determination*, USITC Pub. 4343 at 8-11.

[31] *Third Review Determination*, USITC Pub. 4343 at 15.

TRBs because interchangeability was extremely limited for all TRBs. It found that this limited interchangeability informed questionnaire responses as to customer and producer perceptions. The Commission also observed that there was no industry-wide definition of a wheel hub assembly.[32]

3. The Current Review

a. Party Arguments

Timken. Timken argues that the Commission should continue to define one domestic like product, consisting of all TRBs, coextensive with the scope.[33] It contends that Commission decisions in other investigations, particularly the recent final determination concerning TRBs from Korea involving a different scope of investigation, are not controlling in this review.[34] Timken contends because the characteristics of wheel hub assemblies have not changed since the most recent review, the Commission should continue to define a single like product.[35] It describes the progression of wheel hub assemblies through four "generations" and emphasizes that all wheel hub assemblies are functionally similar to two single-row TRBs.[36] Additionally, Timken argues that the first generation of wheel hub assemblies ("Gen 1") are sealed double row TRBs and that a separate like product which included such a Gen 1 wheel hub assembly would also necessarily need to include all double row and all housed bearings.[37] It asserts that all TRBs may be incorporated into a housing assembly and that wheel hub assemblies are one of several types of housed TRB assemblies.[38] It contends that while all TRBs are interchangeable only on a part number basis, wheel hub assemblies are interchangeable with single and double-row TRBs during the design stage, which is a greater level of interchangeability than between a four- and twelve-inch TRB.[39] Timken further argues that other housed and unhoused in-scope TRBs are not interchangeable past the design phase and therefore there is nothing distinctive about the lack of interchangeability between TRBs and wheel hub assemblies.[40]

Timken argues that wheel hub assemblies are made from the same components as other TRBs, often in the same facilities, on the same lines, with the same workers.[41] It contends

---

[32] *Third Review Determination*, USITC Pub. 4343 at 15-18.

[33] Timken Prehearing Brief at 69-70.

[34] *See* Timken Posthearing Brief at Question 1.

[35] Timken Prehearing Brief at 69-70.

[36] Timken Prehearing Brief at 72-76; Tr. at 66-71 (Stewart, Russell).

[37] Timken Posthearing Brief at Question 2.

[38] Timken Prehearing Brief at 71, 87; Timken Posthearing Brief at Question 1. Timken argues that there is no clear dividing line between wheel hub assemblies, housed bearings, railroad bearings, and all double row TRBs. *Id.*

[39] Timken Prehearing Brief at 88.

[40] Timken Posthearing Brief at 9.

[41] Timken Prehearing Brief at 88-89.

that TRBs and wheel hub assemblies are sold both in the automotive original equipment manufacturing ("OEM") and aftermarkets, although some TRBs are used for non-automotive end uses.[42] Timken argues that the Commission previously recognized in the third review that customer perception was of "limited use" because an individual customer is only familiar with products it purchased; nonetheless, it argues that narrative responses from market participants show that many perceive wheel hub assemblies and TRBs as similar.[43] It concedes that the prices for TRBs and wheel hub assemblies are different, but asserts that this is a reflection of the smaller size of most TRBs.[44]

Respondents. Respondents contend that the Commission should define two domestic like products in this review: (1) TRBs and (2) wheel hub assemblies.[45] They observe that Timken argued in the preliminary phase investigation of *TRBs from Korea* that there is a clear dividing line between TRBs and wheel hub assemblies.[46] They argue that wheel hub assemblies did not exist during the original investigations and have continued to evolve, changing in physical characteristics and function.[47] They assert that wheel hub assemblies undergo additional manufacturing to add components, notably a flange.[48] Respondents further argue that wheel hub assemblies include more advanced features than a standard TRB, such as a wheel speed sensor, traction control system, and vehicle stability controls, which allow them to function in a vehicle.[49] Respondents contend that housed TRB assemblies are only used in industrial applications, whereas wheel hub assemblies are dedicated to automotive use.[50] They observe that other automotive parts such as brake rotors and brake drums also incorporate TRBs but are clearly different products from TRBs.[51]

Respondents also argue that questionnaire responses indicate that TRBs and wheel hub assemblies have different physical characteristics and uses, distinct channels of distribution, and are not interchangeable.[52] Respondents assert that TRBs are used in a wide variety of

---

[42] Timken Prehearing Brief at 89-90.

[43] Timken Prehearing Brief at 91.

[44] Timken Prehearing Brief at 91; Timken Posthearing Brief at 9-10.

[45] Respondent Prehearing Brief at 11-12.

[46] Timken's actual argument was that the Commission should not include in its domestic like product out-of-scope wheel hub assemblies. *Tapered Roller Bearings from Korea*, Inv. No. 731-TA-1380 (Preliminary) ("*Korea Preliminary*"), USITC Pub. 4721 at 13 n.74 (Aug. 2017). The issue of the like product treatment of wheel hub assemblies was not argued in the final phase investigation.

[47] Respondent Prehearing Brief at 16.

[48] Respondent Prehearing Brief at 13. Tr. at 137 ("A TRB does not have a flange.") (Hughes). We observe that respondents also at times appear to be arguing that only certain wheel hub assemblies should be considered a separate like product. In the hearing, counsel for respondents asserted that Gen 1 wheel hub assemblies are housed bearings and not wheel hub assemblies because they lack a flange and "a lot of the other specific functionality that a wheel hub has." Tr. at 171 (Vander Schaaf).

[49] Respondent Prehearing Brief at 17-18; Respondent Posthearing Brief at 7.

[50] Respondent Prehearing Brief at 14.

[51] Respondent Prehearing Brief at 18-19.

[52] Respondent Prehearing Brief at 20-23.

applications whereas wheel hub assemblies are sold only to the automotive markets.[53] Respondents assert that customers and producers perceive TRBs and wheel hub assemblies as different products with different purposes.[54] They observe that Timken's arguments in the investigation on TRBs from Korea regarding manufacturing facilities are not consistent with its arguments in this review that TRBs and wheel hub assemblies are manufactured in the same facilities and using the same processes and employees.[55] Respondents argue that wheel hub assemblies are roughly four times more expensive than TRBs and that questionnaire responses confirm the price differences.[56]

b. Analysis and Conclusion

Physical Characteristics and Uses. A wheel hub assembly consists of the cone, cage, and rollers of a TRB in a housing that allows it to be connected to a wheel. Such assemblies sometimes have additional features that allow them to perform specialized functions alongside other automotive parts.[57] The use of a housing does not distinguish wheel hub assemblies from other in-scope housed TRBs, such as those used for railway applications.[58] Additionally, not all wheel hub assemblies have additional features that distinguish them from other TRBs. Specifically, Gen 1 wheel hub assemblies, which consist of a double row of TRBs in a sealed housing, do not have the additional features that are found on Gen 2 and Gen 3 wheel hub assemblies. Gen 1 wheel hub assemblies have been in the U.S. market since 1973 and continue to be manufactured and sold today in the aftermarket for older vehicles, albeit in decreasing volumes.[59]

TRBs have a wide variety of end-use applications, and wheel hub assemblies are only used in automobile wheels, but all TRBs (including wheel hub assemblies) serve the same essential purpose of permitting free motion between moving and fixed parts in a manner to

---

[53] Respondent Prehearing Brief at 23-26.

[54] Respondent Prehearing Brief at 27-29.

[55] Respondent Prehearing Brief at 29-31.

[56] Respondent Prehearing Brief at 34-35.

[57] CR at I-24, PR at I-18.

[58] Tr. at 117-18 (Stewart).

[59] Timken Prehearing Brief at 77; Respondent Posthearing Brief at Question 2; CR at I-24, PR at I-18. Respondents argue that the existence of the flange in Gen 2 and Gen 3 wheel hub assemblies separate them from all other TRBs and at the hearing appeared to suggest that the Commission should define wheel hub assemblies as consisting only of Gen 2 and Gen 3 assemblies. *See* Tr. at 171 (Vander Schaaf). In commenting on the draft questionnaires, different respondent counsel suggested that the questionnaires define wheel hub assemblies to encompass only wheel hub assemblies with a flange, but did not provide a justification for doing so and did not explain whether this proposed definition was limited to Gen 2 and Gen 3 assemblies. Because of the lack of justification, the Commission retained the definition of a wheel hub assembly used in the prior review, which grouped Gen 1 assemblies with Gen 2 and Gen 3 assemblies. In light of this, we consider the definition of wheel hub assemblies used in the questionnaire controlling.

minimize friction.[60] Nonetheless, because Gen 1 wheel hub assemblies consist of a double row of TRBs, and because the major end use for all TRBs is in automotive production, some TRBs and wheel hub assemblies have the same end uses.[61]

The majority of responding U.S. producers reported that wheel hub assemblies are somewhat similar to other TRBs with regard to physical characteristics and uses. The majority of responding importers and purchasers reported that they are never comparable.[62]

Manufacturing Facilities, Production Processes and Employees. Of the nine domestic producers that responded to the questionnaires, two (***) produced both wheel hub assemblies and other TRBs.[63] Timken states that the wheel hub assemblies it produces are made from the same components as other TRBs made in the same facilities with the same workers.[64] The majority of market participants reported that the manufacturing facilities for wheel hub assemblies are not similar to those for other TRBs.[65]

Channels of Distribution. The record indicates that the majority of wheel hub assemblies and other TRBs are sold to distributors and automotive end users. Outside of these channels, other TRBs are also sold to agricultural, industrial, and other end users whereas wheel hub assemblies are also sold to a more limited range of other end users, namely agricultural equipment end users.[66] The narrative responses of questionnaire respondents indicate that there is some overlap between channels of distribution for wheel hub assemblies and other TRBs.[67] Additionally, pluralities of U.S. producers, importers, or purchasers reported that the channels of distribution for wheel hub assemblies and other TRBs were at least somewhat comparable.[68]

Interchangeability. The record indicates that every TRB is designed for a specific application, which results in TRBs of many sizes and configurations that are not interchangeable. Wheel hub assemblies are not unique from other TRBs in this respect. All TRBs are only interchangeable with other TRBs on a part number basis. Therefore, interchangeability is extremely limited for all TRBs within or across a group and even TRBs or wheel hub assemblies of similar sizes and configurations are not interchangeable.[69] The majority of questionnaire respondents indicated that wheel hub assemblies and other TRBs are

---

[60] CR at I-20, PR at I-15.

[61] *See* CR/PR at Table E-2 (***).

[62] CR/PR at Table I-5.

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

[64] Timken Prehearing Brief at 88-89. *See also* CR/PR at Tables E-1-3. Timken reports that ***. CR/PR at Table E-1. This is consistent with Timken's assertion that the Commission accepted in its preliminary determination in *TRBs from Korea*, concerning additional manufacturing steps needed for wheel hub assemblies. *Korea Preliminary*, USITC Pub. 4721 at 13 n.74.

[65] CR/PR at Table I-5.

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

[67] CR/PR at Table E-2.

[68] CR/PR at Table I-5.

[69] *See, e.g.,* Timken Prehearing Brief at 82.

never interchangeable.[70] Several purchasers commented that there are different product types but that unhoused TRBs are components of wheel hub assemblies.[71]

Customer and Producer Perceptions. Responding producers reported that customers and producers perceived wheel hub assemblies and other TRBs to be somewhat similar. The majority of responding importers and purchasers indicated that they were somewhat or never similar.[72] Numerous narrative responses from questionnaire respondents indicated that customers perceived the two products as somewhat similar, with some respondents indicating that ***[73] Indeed, ***.[74] A majority of U.S. producers and purchasers reported that they perceived wheel hub assemblies and other TRBs to be at least somewhat similar, while a majority of importers reported they were never similar.[75]

Price. The record indicates that prices for wheel hub assemblies are generally much higher than prices for other TRBs due to the additional features in wheel hub assemblies.[76] All responding producers and the majority of responding importers and purchasers indicated that prices for wheel hub assemblies and other TRBs were never similar.[77]

Conclusion. The record in this review continues to reflect the difficulties observed in prior proceedings of formulating an industry-wide definition of a wheel hub assembly.[78] As discussed above, we consider the definition of a wheel hub assembly used in the questionnaires as controlling.

While the physical characteristics of a wheel hub assembly may differ somewhat from other TRBs, such differences do not appear sufficient to constitute a clear dividing line because other TRBs share some of the same physical characteristics as wheel hub assemblies, such as a housing.[79] Indeed, even within the universe of wheel hub assemblies, there is a wide range of physical characteristics, some of which overlap with standard TRBs. While it is true that wheel hub assemblies are used only in automotive applications, the majority of other TRBs are also

---

[70] CR/PR at Table I-5.

[71] *See generally* CR/PR at Tables E-1-3.

[72] CR/PR at Table I-5.

[73] CR/PR at Table E-2.

[74] CR/PR at Table E-3.

[75] CR/PR at Table I-5.

[76] CR/PR at Tables I-9 and E-1-3.

[77] CR/PR at Table I-5.

[78] Tr. at 171 (Vander Schaaf) ("I would call {a Gen 1 product} a sealed bearing. However, it's very much like a tapered roller bearing."). In their separate comments on draft questionnaires, respondents could not agree on the definition of a wheel hub assembly, and one respondent later changed its definition of a wheel hub assembly. *See generally*, Bosda Comments on Draft Questionnaires, Dana Comments on Draft Questionnaires, and Tr. at 171.

[79] As indicated in the discussion above, in our analysis we have taken into account the responses to the questionnaire data presented in CR/PR Table I-5 regarding the comparability of wheel hub assemblies and other TRBs. Although these data provide evidence of differences between wheel hub assemblies and other TRBs, other information on the record indicates that the similarities between these two types of TRBs outweigh their differences.

used in automotive applications and both wheel hub assemblies and other TRBs perform the same general function in the same general manner in the objects in which they are used. The record indicates some overlap in manufacturing processes, facilities, and employees, with two domestic producers producing wheel hub assemblies as well as other TRBs. Timken reported it ***. There is also an overlap in channels of distribution as both wheel hub assemblies and other TRBs are sold to distributors and automotive and agricultural end users. Questionnaire responses are mixed regarding customer and producer perceptions. Information on the record indicates that wheel hub assemblies and other TRBs are not interchangeable, but the record also indicates that due to the intensely design-specific nature of TRBs, virtually every TRB product, including wheel hub assemblies, is not interchangeable with any other such product. There is a clear difference in price between wheel hub assemblies and other TRBs due to the many added features that wheel hub assemblies can have.

Additionally, the record does not suggest that there have been any significant changes in the characteristics of either wheel hub assemblies or other TRBs since the last review,[80] in which the Commission stated that "the record does not indicate that the differences between TRBs and wheel hub assemblies are any more significant than the differences between the thousands of other TRB part numbers that are within the scope of this review."[81] Instead, respondents simply argue that the primary changes that have occurred since the prior review are Timken's arguments in the Commission's investigation concerning TRBs from Korea.[82] Thus, we continue to define a single domestic like product, consisting of all TRBs coextensive with Commerce's scope.

B. 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

---

[80] *See, e.g.*, Tr. at 19 (Vander Schaaf), 36, 43, 47 (Ruel).

We are mindful of our recent final determination concerning TRBs from Korea. *See Tapered Roller Bearings from Korea*, Inv. No. 731-TA-1380 (Final), USITC Pub. 4806 (Aug. 2018). However, *TRBs from Korea* involved a different scope, which expressly excluded, *inter alia*, "tapered roller bearing wheel hub units, rail bearings, and other housed tapered roller bearings." *Id*. at 7. In light of this, the like product analysis in *TRBs from Korea* had a different starting point from the one here. It also had a different record (and, as referenced above, different arguments), so the record before the Commission in that investigation is not the same as the one here. *See, e.g., Hyundai Steel Co. v. United States*, 2018 WL 3374502 at 8 n.13 (Ct. Int'l Trade June 29, 2018); *see also* 19 U.S. C. § 1677m(g). Indeed, this review involves a record dating back to the original investigations in 1987 that we are obligated to consider. 19 U.S.C. § 1675a(a)(1)(a). The like product definition in this review is in line with how the Commission defined the like product in the prior proceedings involving this order and is not inconsistent with *TRBs from Korea*.

[81] *Third Review Determination*, USITC Pub. 4343 at 14.

[82] *E.g.,* Tr. at 227 (Vander Schaaf).

the product."[83] 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 Commission did not exclude any related parties from the domestic industry, because these firms either accounted for relatively small percentages of total U.S. bearings shipments by value or their performance indicators were consistent with those of the industry as a whole.[84] The Commission thus found that the inclusion of data from the related producers within the domestic industry would not significantly distort industry performance or fail to provide an accurate picture of the domestic industry as a whole.[85]

In the first reviews, four domestic producers of TRBs were related parties due to ownership or affiliation with exporters of the subject merchandise, or because they imported subject merchandise during the period of review. No party to the first five-year reviews argued for the exclusion of any related party, and the Commission found that appropriate circumstances did not exist to exclude any related parties in those reviews.[86]

In the second reviews, the Commission found that *** was a related party due to its imports of subject merchandise during the period of review, but that its imports were in smaller quantities and represented a significantly smaller percentage of the firm's U.S. production than was the case for each of the three firms that imported subject imports of TRBs during the review period of the first reviews. The Commission determined that appropriate circumstances did not exist to warrant excluding *** from the domestic industry as a related party.[87]

In the third review, the Commission found that *** was a related party due to its imports of subject merchandise during the period of review, but the volume of its imports was a small fraction of its domestic production and the firm did not appear to benefit from its importation of subject merchandise.[88] No party to the third review argued for the exclusion of the related party, and the Commission found that appropriate circumstances did not exist to exclude the related party in the review.[89]

In the current review, we also 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

---

[83] 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.

[84] *Original Determinations,* USITC Pub. 1983 at 9.

[85] *Original Determinations*, USITC Pub. 1983 at 9 n.24.

[86] *First Review Determinations*, USITC Pub. 3309 at 15.

[87] *Confidential Second Review Determinations*, EDIS Doc. 622398 at 11-13; *Second Review Determinations*, USITC Pub. 3876 at 9-10.

[88] *Confidential Third Review Determination*, EDIS Doc. 622399 at 15-16; *Third Review Determination*, USITC Pub. 4343 at 15-16.

[89] *Confidential Third Review Determination*, EDIS Doc. 622399 at 17; *Third Review Determination*, USITC Pub. 4343 at 16.

subject merchandise or which are themselves importers.[90] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each investigation.[91]

In this review, five domestic producers are related parties because they imported subject merchandise from China during the period of review. Timken does not make any related party arguments. Respondents assert that they do not believe that the import operations of *** are significant enough to warrant excluding them from the domestic industry.[92] We discuss each related party in turn below.

*****. Domestic producer *** is a related party because its sister company, ***, imported subject merchandise during the period of review. It accounted for *** percent of domestic production in 2017 and *** continuation of the order.[93] It imported *** TRBs in 2015, *** TRBs in 2016, and *** TRBs in 2017.[94] *** ratio of subject imports to domestic production was *** percent throughout the period of review.[95] Because *** principal interest appears to lie in domestic production, we find that appropriate circumstances do not exist to exclude it from the domestic industry as a related party.

*****. Domestic producer *** is a related party because its sister company, ***, imported subject merchandise during the period of review. It accounted for *** percent of domestic production in 2017 and *** continuation of the order.[96] It imported *** TRBs in 2015, *** TRBs in 2016, and *** TRBs in 2017.[97] *** ratio of subject imports to domestic production

---

[90] *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).

[91] 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.

[92] Respondent Posthearing Brief at Question 19. Respondents only present arguments concerning domestic firms that produce wheel hub assemblies and do not address whether the Commission should exclude domestic producers of TRBs that imported subject merchandise.

[93] CR/PR at Table I-9.

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

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

[96] CR/PR at Table I-9.

[97] CR/PR at Table III-6. These are the ***.

was *** percent throughout the period of review.[98] Because *** principal interest appears to lie in domestic production, we find that appropriate circumstances do not exist to exclude it from the domestic industry as a related party.

***. Domestic producer *** is a related party because it imported subject merchandise during the period of review. It accounted for *** percent of domestic production in 2017 and *** continuation of the order.[99] It imported *** TRBs in 2015, *** TRBs in 2016, and *** TRBs in 2017.[100] *** ratio of subject imports to domestic production was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[101] The principal interest of *** appears to lie in importation. We find that appropriate circumstances exist to exclude it from the domestic industry.

***. Domestic producer *** is a related party because it imported subject merchandise during the period of review. It accounted for *** percent of domestic production in 2017 and *** continuation of the order.[102] It imported *** TRBs in 2015, *** TRBs in 2016, and *** TRBs in 2017.[103] *** ratio of subject imports to domestic production was *** percent in 2015, *** percent in 2016, and *** percent in 2017, and *** percent for the 2015-17 period of review.[104] *** principal interest appears to lie in importation. We find that appropriate circumstances exist to exclude it from the domestic industry.

***. Domestic producer *** is a related party because it imported subject merchandise during the period of review. It accounted for *** percent of domestic production in 2017 and *** continuation of the order.[105] It imported *** TRBs in 2015, *** TRBs in 2016, and *** TRBs in 2017.[106] *** ratio of subject imports to domestic production was *** percent throughout the period of review.[107] *** principal interest appears to lie in domestic production. We find that appropriate circumstances do not exist to exclude it from the domestic industry as a related party.

In light of the foregoing and our domestic like product definition, we define the domestic industry to consist of all domestic producers of TRBs, except for ***, the related parties we have excluded from the domestic industry.

---

[98] CR/PR at Table III-6.
[99] CR/PR at Table I-9.
[100] CR/PR at Table III-6.
[101] CR/PR at Table III-6.
[102] CR/PR at Table I-9.
[103] CR/PR at Table III-6.
[104] CR/PR at Table III-6.
[105] CR/PR at Table I-9.
[106] CR/PR at Table III-6.
[107] CR/PR at Table III-6.

III. Revocation of the Antidumping Duty Order 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."[108] The Uruguay Round Agreements Act Statement of Administrative Action (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."[109] Thus, the likelihood standard is prospective in nature.[110] The U.S. Court of International Trade has found that "likely," as used in the five-year review provisions of the Act, means "probable," and the Commission applies that standard in five-year reviews.[111]

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."[112] According to the SAA, a "'reasonably foreseeable time' will vary from case-to-case,

---

[108] 19 U.S.C. § 1675a(a).

[109] SAA, H.R. Rep. 103-316, vol. I at 883-84 (1994). 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.

[110] 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.

[111] *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'").

[112] 19 U.S.C. § 1675a(a)(5).

but normally will exceed the 'imminent' timeframe applicable in a threat of injury analysis in original investigations."[113]

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."[114] 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).[115] 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.[116]

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 or relative to production or consumption in the United States.[117] 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.[118]

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

---

[113] 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*.

[114] 19 U.S.C. § 1675a(a)(1).

[115] 19 U.S.C. § 1675a(a)(1). Commerce has not made any duty absorption findings since the prior review. CR at I-14, PR at I-10.

[116] 19 U.S.C. § 1675a(a)(5). Although the Commission must consider all factors, no one factor is necessarily dispositive. SAA at 886.

[117] 19 U.S.C. § 1675a(a)(2).

[118] 19 U.S.C. § 1675a(a)(2)(A-D).

United States at prices that otherwise would have a significant depressing or suppressing effect on the price of the domestic like product.[119]

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.[120] 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.[121]

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."[122] The following conditions of competition inform our determination.[123]

1. Demand Conditions

In the first reviews, the Commission found that demand for TRBs had grown considerably since the first investigation."[124] In the second reviews, the Commission found that

---

[119] *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.

[120] 19 U.S.C. § 1675a(a)(4).

[121] 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.

[122] 19 U.S.C. § 1675a(a)(4).

[123] In the original investigations, the Commission did not make specific findings regarding conditions of competition and the business cycle.

[124] *See First Review Determinations*, USITC Pub. 3309 at 23, 24.

demand for TRBs had grown during the period of review.[125] It observed that apparent U.S. consumption of TRBs was higher in 2005 than in 2000, but had fluctuated on a yearly basis.[126] The Commission found that, much like in the first reviews, demand for TRBs was driven by the demand for end use products that incorporate TRBs, and demand for those products tended to follow general economic conditions.[127] It observed, however, that there was a wide variety of distinct industries that use TRBs; thus, the TRB industry was not characterized by a regular and measurable business cycle that might be characteristic of other industries.[128]

In the third review, the Commission found that domestic consumption was modestly higher in 2011 than in 2006 but fluctuated on an annual basis, reaching the lowest level in 2009.[129] As in the previous reviews, the Commission found that demand for TRBs was driven by demand for end use products and typically followed overall U.S. economic activity.[130]

In this review, demand for TRBs continues to be driven by the demand for end use products that incorporate TRBs, such as those produced by the automotive industry, heavy machinery sector (primarily in agricultural and construction equipment), and the general industrial sector.[131] Market participants reported mixed demand trends during the period of review. Most questionnaire respondents reported increasing or fluctuating demand for TRBs in the automotive and heavy equipment/industrial sectors, and fluctuating or stable demand in the agricultural sector.[132] Demand as measured by value of apparent U.S. consumption declined from $2.3 billion in 2015, to $2.0 billion in 2016 and 2017.[133] [134]

---

[125] *Second Review Determinations*, USITC Pub. 3876 at 14.

[126] *Second Review Determinations*, USITC Pub. 3876 at 14.

[127] *Second Review Determinations*, USITC Pub. 3876 at 14-15.

[128] *Second Review Determinations*, USITC Pub. 3876 at 15.

[129] *Third Review Determination*, USITC Pub. 4343 at 21.

[130] *Third Review Determination*, USITC Pub. 4343 at 20-21.

[131] CR at II-11, PR at II-7.

[132] CR/PR at Table II-4.

[133] Data derived from the record as shown in Table ALT C-1, EDIS Doc. 655119. We rely primarily on value-based indicators as the best measure for the product in a review such as this, which involves a large grouping of items differing greatly in size, applications, and price. *See, e.g., Diamond Sawblades and Parts Thereof from China*, Inv. No. 731-TA-1092 (Review), USITC Pub. 4559 at 12 n.64 (Sept. 2015); *Tapered Roller Bearings from Korea*, Inv. No. 731-TA-1380 (Final), USITC Pub. 4806 at 22 (Aug. 2018). We are mindful of limitations of using value rather than quantity measures, such as the difficulty in determining whether changes in value are caused by changes in product mix or price. Therefore, we have also considered quantity data where appropriate.

[134] Respondents argue that the Commission should not use official import statistics to calculate import volume and claim that such data overstate wheel hub assembly imports. Respondent Final Comments at 4-5. In its prehearing report, the Commission initially relied on questionnaire data to calculate wheel hub assembly imports due to evidence indicating that certain importers were reporting wheel hub assembly imports under mixed categories of the HTSUS, particularly 8708.99.8115 and 8708.99.8180. For example, *** indicated that it classified a majority of its imports under HTSUS subheading 8708. *Notes from Phone Call with ****, EDIS Doc. 650095 (July 11, 2018). However, Timken provided additional evidence that imports classified under HTSUS statistical reporting number

(Continued…)

2. Supply Conditions

In the first reviews, the Commission found that the "TRB industry is the most concentrated of all the bearings industries." Timken accounted for nearly all domestic TRB production.[135]

In the second reviews, the Commission found the overall structure of the TRB industry remained comparable to past periods, with Timken continuing to account for a majority of U.S. production by value.[136] The Commission observed that both domestic TRB capacity and production fell irregularly over the period of review, largely because of sharp increases in the prices for raw materials which decreased the availability of TRBs.[137]

In the third review, the Commission found that the structure of the domestic industry remained comparable to past periods of review.[138] The Commission observed that one firm, SKF, closed operations, while production remained concentrated around Timken.[139] The Commission found that while capacity increased irregularly, domestic production decreased during the period.[140] The Commission observed that the domestic industry's market share declined during the period of review while the market shares of both subject and nonsubject imports increased.[141]

In this review, the record indicates that the U.S. market continues to be supplied by the domestic industry, subject imports, and nonsubject imports. Timken continues to be the largest domestic producer; it accounted for *** percent of domestic production of TRBs in

---

(…Continued)
8708.99.8115 wholly consisted of wheel hub assemblies subject to this review and this number was used by importers of subject merchandise. Timken Posthearing Brief at Question 15. In light of the above, and because there were gaps in questionnaire coverage of imports from nonsubject sources, import data in the Commission report are based on official import statistics. We deem this to be a more accurate measure of import volumes from both subject and nonsubject sources than questionnaire data.

Respondents argue that they were not given an opportunity to examine and address the use of official import statistics and provide new information regarding such data. Respondent Final Comments at 5. This is not correct. To the contrary, in their posthearing brief respondents did address questions posed to them concerning the specific issue of whether the Commission should rely on questionnaire data or official import statistics including HTSUS 8708.99.8115 and 8708.99.8180. In response, respondents argued that the data provided by questionnaire respondents was excellent and accounted for all or nearly all imports of wheel hub assemblies from China and over 100 percent of subject TRB imports from China. Respondent Posthearing Brief at Question 18. Respondents, however, did not identify any deficiencies in the HTS data the Commission report ultimately used, nor did they provide any new data for the Commission to consider.

[135] *First Review Determinations*, USITC Pub. 3309 at 24-25.
[136] *Second Review Determinations*, USITC Pub. 3876 at 15.
[137] *Second Review Determinations*, USITC Pub. 3876 at 15.
[138] *Third Review Determination*, USITC Pub. 4343 at 21.
[139] *Third Review Determination*, USITC Pub. 4343 at 21.
[140] *Third Review Determination*, USITC Pub. 4343 at 21.
[141] *Third Review Determination*, USITC Pub. 4343 at 22.

2017.[142] The domestic industry reported some changes in operations, consisting of ***.[143] It reported *** during the 2015-2017 period of review.[144] Most U.S. producers reported no supply constraints during the period of review.[145] The domestic industry's capacity was *** units in 2015, *** units in 2016, and *** units in 2017.[146] The domestic industry accounted for the largest share of apparent U.S. consumption by value over the period of review. Its share of apparent U.S. consumption by value was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[147]

Subject imports supplied a smaller share of the U.S. market than the domestic industry or nonsubject imports. Their share of the value of apparent U.S. consumption increased from *** percent in 2015 to *** percent in 2016, and to *** percent in 2017.[148]

Nonsubject imports supplied a large but decreasing share of the U.S. market by value. Their market share was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[149] The largest sources of nonsubject imports were Japan and India.[150]

3. Substitutability and Other Conditions

In the first reviews, the Commission found that the domestic TRB industry was capital intensive and needed to operate at high capacity utilization rates.[151] It observed that there were thousands of different TRBs with separate part numbers."[152] It found that TRBs of a similar type, size, and configuration were generally interchangeable regardless of country of origin.[153] The Commission made the same finding in the second reviews.[154] There it further explained that while some purchasers and importers reported that TRBs from China were of a lower quality and did not meet OEM standards, "a majority of responding purchasers rated domestically produced TRBs and imported TRBs from China as comparable in terms of the quality of the TRB meeting industry standards."[155] The Commission found that while there were

[142] CR/PR at Table I-10.
[143] CR/PR at Table III-2.
[144] CR/PR at Table III-2.
[145] CR at II-9, PR at II-6.
[146] Table ALT C-1.
[147] Table ALT C-1.
[148] Table ALT C-1.
[149] Table ALT C-1.
[150] CR/PR at Table IV-1. Nonsubject imports include imports from three TRB producers in China for which Commerce revoked the order pursuant to administrative reviews. CR at I-15-16, PR at I-11-12.
[151] *First Review Determinations*, USITC Pub. 3309 at 25.
[152] *First Review Determinations*, USITC Pub. 3309 at 25.
[153] *First Review Determinations*, USITC Pub. 3309 at 25.
[154] *Second Review Determinations*, USITC Pub. 3876 at 16.
[155] *Second Review Determinations*, USITC Pub. 3876 at 17.

some TRBs sold as customized products, most were "sold as standard TRBs by both U.S. producers and subject importers."[156]

In the third review, the Commission again found that TRBs of similar type, size, and configuration continued to be generally interchangeable regardless of country of origin, an observation supported by the responses of a majority of market participants.[157] Although some TRBs were sold as customized products, the Commission observed that most were sold as standard TRBs by both U.S. producers and subject importers.[158] The Commission found that purchasers overwhelmingly listed quality and price as the most important factors driving purchasing decisions with 15 of 17 purchasers reporting that price was very important.[159] It observed that raw material costs increased during the period of review.[160]

In this review, we find that there is a moderate degree of substitutability between subject imports and the domestic like product. While TRBs generally share the same basic elements (*e.g*., cups, cones, rolling elements, and cages) and the same basic function (to reduce friction), every TRB is designed for a particular application and each will have a size and configuration tailored to that application and is not interchangeable with a TRB designed for a different application.[161] The majority of responding producers, importers, and purchasers reported that TRBs from China were frequently interchangeable with domestically produced TRBs.[162] However, 27 of 36 responding purchasers reported that they require their suppliers to become qualified or certified to sell TRBs to their firm, which reduces the interchangeability between TRBs from different sources if producers have not undertaken such certification requirements.[163] However, few purchasers reported issues with certification from Chinese suppliers, and most responding purchasers described Chinese product as meeting industry standards.[164]

We also find that price is an important factor in purchasing decisions, although other factors are also important. While purchasers in questionnaire responses most frequently identified price as one of the top three factors in purchasing decisions, they named quality most often as the first-most important factor.[165] When asked to rate the importance of 15 factors in their purchasing decisions, purchasers generally rated product consistency, availability, quality meets industry standards, and reliability of supply as more important than price.[166]

---

[156] *Second Review Determinations*, USITC Pub. 3876 at 17.

[157] *Third Review Determination*, USITC Pub. 4343 at 22. A majority of market participants reported that U.S. and Chinese TRBs were always or frequently interchangeable.

[158] *Third Review Determination*, USITC Pub. 4343 at 22.

[159] *Third Review Determination*, USITC Pub. 4343 at 22.

[160] *Third Review Determination*, USITC Pub. 4343 at 23.

[161] CR at I-33-34, PR at I-23-24.

[162] CR/PR at Table II-10.

[163] CR at II-20-21, PR at II-16-17.

[164] CR at II-21, PR at II-17-18, and CR/PR at Table II-9.

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

[166] CR/PR at Table II-7.

Nonetheless, 30 responding purchasers described price as a very important purchasing factor.[167]

TRBs from all sources are sold to end users and distributors. Domestic industry sales are predominantly to end users and those of subject imports are predominantly to distributors. Of sales to end users, sales to the automotive sector accounted for nearly *** percent of U.S. producer sales and *** percent of sales of subject imports.[168] Shipments of subject imports to the automotive end-use market, as a share of total subject imports, increased substantially during the period of review.[169] Consequently, the record indicates increasing competition between the domestic like product and the subject imports in this important end-use market.

TRBs are manufactured from bearing-grade alloy steel bar or seamless tubing.[170] Raw materials ranged from *** to *** percent of the total cost of goods sold ("COGS") during the period of review.[171] The average price of scrap metal, an input for steel bar and tubing, fluctuated over the period of review, with sharp declines in 2015 and the second half of 2016, and an overall decrease of 40 percent from 2012 to 2017.[172]

On August 18, 2017, the United States Trade Representative ("USTR") initiated an investigation concerning imports from China pursuant to Section 301 of the Trade Act of 1974.[173] This investigation encompassed a public hearing, consultations with the government of China, and two rounds of public written comments. As a result of the investigation, USTR determined to impose an additional *ad valorem* duty of 25 percent on certain imports from China.[174] The first tranche of tariffs applied under Section 301 was implemented on July 6, 2018 and the second tranche of tariffs was implemented on August 8, 2018. Tariffs applied under the Section 301 action on Chinese products pertain to certain types of TRBs within the scope definition, specifically, subject imports covered by seven HTS subheadings are subject to the tariffs applied as a result of the Section 301 action. Section 301 tariffs are supplemental to any tariffs already in place, and therefore subject imports face an additional 25 percent duty along with existing MFN tariffs.[175]

---

[167] CR/PR at II-7.

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

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

[170] CR at I-26, PR at I-19.

[171] CR/PR at Table III-8. Three U.S. producers, 15 importers, and four foreign producers reported that the price of raw materials increased since 2012; 4 U.S. producers, 13 importers, and four foreign producers reported that raw material prices fluctuated. CR at V-1, PR at V-1.

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

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

[173] *Initiation of Section 301 Investigation; Hearing; and Request for Public Comments: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 82 Fed. Reg. 40213 (Aug. 24, 2017).

[174] *Notice of Action Pursuant to Section 301: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 83 Fed. Reg. 40823 (Aug. 16, 2018).

[175] CR/PR at Table I-1; CR at I-7-8, PR at I-5. Tariffs applied pursuant to Section 232 of the Trade Expansion Act of 1962 do not directly affect in-scope TRBs, but have affected raw material costs for (Continued…)

C. Likely Volume of Subject Imports

In the original investigations, the Commission found a large and stable volume and market penetration of cumulated subject imports as well as declining shipments by the domestic industry.[176] It found that the value of the subject imports' U.S. market share increased from 8 percent in 1983 to 11 percent in 1986.[177]

In the first reviews, the Commission found that the volume of subject TRB imports from China would likely be significant in the reasonably foreseeable future if the order were revoked.[178] It based this conclusion on the steady increase in subject TRB imports from China since the time of the original investigations, some excess capacity in China, and a finding that a significant portion of the excess capacity would be directed at the U.S. market should the order be revoked.[179] Furthermore, the Commission found that the Chinese producers of subject TRBs "compete at the low-end, commodity segment of the U.S. market where price is a particularly important factor in purchasing decisions" and "lower prices would have the effect of increasing *** market share."[180]

In the second reviews, the Commission again found that the volume of subject imports from China would likely be significant in the reasonably foreseeable future if the order were revoked.[181] It based its conclusion on sharp increases in China's reported capacity to produce TRBs, excess capacity in China, and the finding that a significant portion of Chinese capacity, particularly unused capacity, would be likely directed to the United States should the order be revoked.[182] Moreover, the Commission found that producers of TRBs in China would be able to rapidly increase their sales to the United States absent the restraining effects of the order, and Chinese TRB producers continued to compete primarily in the low-end commodity segment of the U.S. TRB market where price was a particularly important factor in purchasing decisions.[183] The Commission also found that it was likely that "within a reasonably foreseeable time Chinese producers will qualify for . . . sales of high-value TRBs to major U.S. customers because Chinese producers were already selling high-value TRBs to European and Chinese customers,

---

(…Continued)
domestic producers importing steel to produce the domestic like product. *Id.*; Tr. at 99, 111-12 (Coughlin).

[176] *Original Determinations*, USITC Pub. 1983 at 16. For the original 1987 determination on TRBs from China, the Commission cumulatively assessed the volume and price effects of subject imports from six countries: Hungary, China, Romania, Yugoslavia, Japan, and Italy. The orders on TRBs from Yugoslavia and Italy were revoked in 1996, and the orders on TRBs from Hungary, Japan, and Romania were revoked in 2000. *See* 60 Fed. Reg. 58046 (Nov. 24, 1996); 61 Fed. Reg. 52920 (Oct. 9, 1996); 65 Fed. Reg. 42665 (July 11, 2000).

[177] *Original Determinations*, USITC Pub. 1983 at 16.

[178] *First Review Determinations,* USITC Pub. 3309 at 27.

[179] *First Review Determinations,* USITC Pub. 3309 at 26.

[180] *First Review Determinations,* USITC Pub. 3309 at 27.

[181] *Second Review Determinations*, USITC Pub. 3876 at 21.

[182] *Second Review Determinations*, USITC Pub. 3876 at 19.

[183] *Second Review Determinations*, USITC Pub. 3876 at 19.

and multinational TRB producers "can use *** Chinese operations as an export platform to the United States.[184]

In the third review, the Commission again concluded that the volume of subject imports from China would likely be significant in the reasonably foreseeable future if the order was revoked.[185] The Commission based its conclusion on the sharp increase in reported capacity of Chinese producers which resulted in significant excess capacity.[186] The Commission observed that Chinese producers were able rapidly to increase sales to the United States, evidenced by a significant increase in subject import market share from 2009 to 2011.[187] The Commission found that the TRB industry in China remained export dependent and the United States was its single largest export market during the period of review.[188] The Commission also found that there was significant direct competition between subject imports and domestically produced TRBs.[189]

In this review, subject imports from China increased in volume and gained market share, even with the order in place. The value of subject imports from China declined slightly from $*** in 2015 to $*** in 2016, and then increased to $*** in 2017.[190] Subject imports as a share of the U.S. market increased throughout the period of review, rising from *** percent in 2015 to *** percent in 2016, and then to *** percent in 2017.[191]

The record contains limited information concerning the TRB industry in China, but the available information indicates that the subject industry in China has substantial production capacity and considerable unused capacity and export orientation.[192] The Commission issued questionnaires to 39 firms believed to be producers and/or exporters of subject merchandise. Eight firms accounting for *** percent of U.S. imports of subject merchandise submitted usable responses.[193] The firms that responded to the Commission's questionnaire reported capacity of 29.4 million units in 2015, 32.9 million units in 2016, and 38.6 million units in 2017.[194]

---

[184] *Second Review Determinations*, USITC Pub. 3876 at 21.

[185] *Third Review Determination*, USITC Pub. 4343 at 26.

[186] *Third Review Determination*, USITC Pub. 4343 at 24-25.

[187] *Third Review Determination*, USITC Pub. 4343 at 24. The Commission emphasized that the increase in volume of subject imports was particularly pronounced when measured by quantity rather than value.

[188] *Third Review Determination*, USITC Pub. 4343 at 25-26.

[189] *Third Review Determination*, USITC Pub. 4343 at 26.

[190] CR/PR at Table IV-1. As discussed above, we rely primarily on value-based indicators as the best measure of volume in a review such as this, which involves a large grouping of items differing greatly in size, applications, and price. Subject imports by number of units also increased, from *** units in 2015, to *** units in 2016, and then to *** units in 2017. *Id.*

[191] Table ALT C-1.

[192] Timken has argued that because major TRB producers in China did not respond to the Commission's questionnaire, data on the record concerning the TRB industry in China are understated. Timken Prehearing Brief at 29-35.

[193] CR at IV-8, PR at IV-6.

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

Production increased from 22.1 million units in 2015 to 26.0 million units in 2016, and then to 34.0 million units in 2017.[195] Responding subject producers reported capacity utilization of 75.1 percent in 2015, 79.0 percent in 2016, and 88.0 percent in 2017.[196] Consequently, the record indicates that subject producers have some ability to increase production upon revocation of the order.[197]

Several factors indicate that subject imports are likely to increase upon revocation. That subject producers are interested in the United States as an export market is demonstrated by the data discussed above indicating that, even with the order in place, subject imports were substantial and growing during the period of review. The record also indicates that China is among the largest global exporters of TRBs, and that the subject industry is highly export oriented.[198] The available evidence also indicate that Chinese producers shift their exports between different individual markets.[199] While we view global comparisons of prices with caution, particularly given the wide range of prices in the TRB market, some market participants reported that prices in the United States are generally higher than in other countries.[200] This provides additional incentive for subject producers to direct additional exports to the U.S. market, either by using excess capacity or diverting exports currently shipped to other markets, should the order be revoked. We find that, in the event of revocation, subject producers have the incentive and ability to increase their exports to the U.S. market and that the likely volume of subject imports will be significant, both in absolute terms and relative to U.S. consumption.[201]

---

[195] Between 2015 and 2017, capacity in China increased by 31.5 percent and production increased by 54.0 percent. CR/PR at Table IV-7.

[196] CR/PR at Table IV-7. Inventories of the subject merchandise in China declined from 2015 to 2017. *Id*. Inventories of the subject merchandise in the United States, by contrast, rose from 2015 to 2017. CR/PR at Table IV-3.

While we do not rely on product shifting as a basis for our likely volume finding, we note that three of eight responding subject producers reported that they produce other products on the same equipment and machinery that they use to produce TRBs. CR at IV-13, PR at IV-9.

TRBs from China are not subject to antidumping or countervailing duty orders in any other country. CR at IV-15, PR at IV-11.

[197] Timken submitted data showing that exports of TRBs from China were over 193 million units in 2017, which is 5.7 times the production reported by responding producers in China. Timken Prehearing Brief at 31. Using the average percent of exports to production provided by responding producers, Timken estimates that total TRB production in China would have been *** units. It argues that data provided by the China Bearing Industry Association ("CBIA") corroborate this estimate, as it reported 212.5 million units produced in China in the first 11 months of 2017. *Id.* at 31-32. Timken also submits ***. *Id*. at 32.

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

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

[200] CR at V-16, PR at V-8.

[201] As discussed above, we recognize that Section 301 tariffs of 25 percent have been imposed on certain subject imports from China. Evidence on the record of this review indicates that the 25 percent tariff on subject imports imposed under the Section 301 trade action likely would not by itself (Continued…)

D. Likely Price Effects

In the original investigations, the Commission found general price decreases during the period of the investigation, as well as nearly universal underselling by cumulated subject imports.[202] The record further demonstrated that subject imports were purchased because of their lower prices and that prices in the U.S. market were trending downward.[203] Moreover, the Commission found that due to competition from subject imports, the prices of domestically produced TRBs had been insufficient to cover domestic producers' operating costs.[204]

In the first reviews, the Commission found that revocation of the antidumping duty order on TRBs from China would likely lead to significant underselling by subject imports of the domestic like product, as well as significant price depression and suppression within a reasonably foreseeable time.[205] The Commission determined that the limited pricing data collected in the reviews established uniform underselling by subject imports from China, even with the order in place.[206] The Commission found that subject imports undersold the domestic product during every quarter for which price comparisons were available, with average underselling margins ranging from 57.4 percent to 65.4 percent.[207] Furthermore, the Commission found that subject imports from China competed in the price-competitive, commodity segment of the TRB market, and if the order was revoked producers in China would likely price aggressively to gain additional market share.[208]

In the second reviews, the Commission found that revocation of the antidumping duty order on TRBs from China would likely lead to significant underselling by subject imports of the domestic like product, as well as significant price suppression within a reasonably foreseeable time.[209] The Commission found that the limited pricing data revealed almost uniform underselling by subject imports from China, even with the order in place.[210] The Commission found that subject imports undersold domestically produced TRBs in 217 of 222 quarters and the average underselling margins increased from 68.4 percent in 2000 to the period high of 72.5 percent in 2005.[211] Because price was found to be a very important factor in purchasing decisions and the domestic like product and subject imports were found to be substitutable, the Commission concluded that "if the orders were revoked, subject imports would likely continue to be priced aggressively to gain market share, and would likely continue to undersell

---

(…Continued)
deter a significant volume of subject imports from entering the U.S. market if the order were revoked, in light of the other factors discussed above.

[202] *Original Determinations*, USITC Pub. 1983 at 16.
[203] *Original Determinations*, USITC Pub. 1983 at 16.
[204] *Original Determinations*, USITC Pub. 1983 at 16.
[205] *First Review Determinations*, USITC Pub. 3309 at 27.
[206] *First Review Determinations*, USITC Pub. 3309 at 27.
[207] *First Review Determinations*, USITC Pub. 3309 at 27.
[208] *First Review Determinations*, USITC Pub. 3309 at 27.
[209] *Second Review Determinations*, USITC Pub. 3876 at 22-23.
[210] *Second Review Determinations*, USITC Pub. 3876 at 22.
[211] *Second Review Determinations*, USITC Pub. 3876 at 22.

the domestic like product by substantial margins so as to significantly suppress domestic prices."[212] Moreover, the Commission found that significant and increasing volumes of subject imports were likely to suppress domestic prices and keep domestic producers from recouping increases in costs.[213]

In the third review, the Commission concluded that revocation of the order would likely lead to significant underselling by subject imports, loss of market share for the domestic industry, and significant price depression or suppression within a reasonably foreseeable time.[214] The Commission found that the available pricing data indicated pervasive underselling by subject imports during the period of review and that such underselling led to increased subject import sales volume and market share at the expense of domestic producers.[215] It observed that domestic producers responded to low-priced subject imports by ceding market share and focusing on higher-priced TRB products.[216] The Commission also found that revocation of the order would result in aggressive pricing of subject imports to capture additional market share.[217] During the period of review, the Commission observed that prices for both domestic and subject TRBs increased, a trend that the Commission attributed to domestic industry's pricing practices which would be unsustainable if the order were revoked.[218]

In this review, the Commission requested quarterly pricing data for four TRB products.[219] One U.S. producer and three importers provided usable data, although not all firms reported pricing for all products for all quarters. Pricing data reported by these firms accounted for less than one percent of U.S. producers' shipments of TRBs and 1.4 percent of U.S. shipments of subject imports from China in 2017.[220]

Subject imports from China undersold the domestic like product in 42 of 43 comparisons at margins ranging from 0.6 to 72.6 percent.[221] By volume, 3.4 billion units undersold the

---

[212] *Second Review Determinations*, USITC Pub. 3876 at 22.

[213] *Second Review Determinations*, USITC Pub. 3876 at 22-23.

[214] *Third Review Determination*, USITC Pub. 4343 at 29.

[215] *Third Review Determination*, USITC Pub. 4343 at 28.

[216] *Third Review Determination*, USITC Pub. 4343 at 28.

[217] *Third Review Determination*, USITC Pub. 4343 at 28.

[218] *Third Review Determination*, USITC Pub. 4343 at 29.

[219] CR at V-6, PR at V-4. The products are:

Product 1 – LM 11949 – Cone assemblies (TS single row, straight 0.75 inch bore).
Product 2 – 25580 – Cone assemblies (TS single row, straight 1.75 inch bore).
Product 3 – LM 501349 – Cone assemblies (TS single row, 1.6250 inches bore).
Product 4 – LM 11910 – Cups (TS single row, outer diameter "OD" 1.7810 inches).

[220] CR at V-7, PR at V-4-5. This is not uncommon in cases such as this, with a wide range of product sizes and specifications. *See, e.g.*, *Kern-Liebers USA, Inc. v. United States*, 19 CIT 87, 114-15 (1995).

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

domestic like product, whereas only 29.3 million units from China were priced higher than the domestic like product.[222]

Given the incentive for subject producers to ship significant volumes of subject imports to the U.S. market upon revocation of the order and the resulting price competition without the discipline of the order, subject imports from China would likely continue to undersell the domestic like product to increase sales and continue gaining market share. We consequently conclude that there will likely be significant price underselling should the order under review be revoked.

Because, as discussed above, price is of substantial importance in purchasing decisions for TRBs, the presence of significant quantities of subject imports from China that are likely to continue entering the United States if the order were revoked and that are likely to continue underselling the domestic like product will force domestic TRB producers to cut prices, forgo prices increases, or risk losing additional sales to subject import competition. In light of these considerations, we conclude that the subject imports will also likely have significant price-depressing or price-suppressing effects.

We consequently find that upon revocation, significant volumes of subject imports from China would likely continue to significantly undersell the domestic like product to continue gaining market share and likely would have significant depressing and/or suppressing effects on prices of the domestic like product.

E. Likely Impact

In the original investigations, the Commission found that the large and stable volume and market penetration of cumulated subject imports at a time of declining shipments by the domestic industry, coupled with evidence of fairly consistent underselling by imports at a time of declining U.S. prices, demonstrated that the subject imports were a cause of material injury to the domestic industry.[223]

In the first reviews, the Commission found that if the antidumping duty order on TRBs from China were revoked, subject imports would likely have had a significant impact on the domestic industry within a reasonably foreseeable time.[224] The Commission explained that the condition of the domestic industry had improved since the original orders were imposed in 1987, and that the operating margin for the domestic industry went from losses during the original investigation to profits during the first period of review.[225] Additionally, domestic producers' operating income increased from interim 1998 to interim 1999, and the domestic industry's production and capacity increased from 1997 to 1998.[226] Based on the domestic industry's performance, the Commission did not find that the industry was in a vulnerable

---

[222] CR/PR at Table V-8.
[223] *Original Determinations*, USITC Pub. 1983 at 15-16.
[224] *First Review Determinations*, USITC Pub. 3309 at 28.
[225] *First Review Determinations*, USITC Pub. 3309 at 28.
[226] *First Review Determinations*, USITC Pub. 3309 at 28.

state.[227] It found, however, that revocation of the antidumping duty order on TRBs from China would likely lead to a significant increase in the volume of subject imports from China that would undersell the domestic like product and significantly suppress or depress U.S. prices.[228] The Commission found that these developments would likely have a significant adverse impact on the production, shipments, sales, market share, and revenues of the domestic industry.[229] According to the Commission, such a reduction in the domestic industry's production, shipments, sales, market share, and revenues would adversely impact the domestic industry's profitability as well as its ability to raise capital and make necessary capital investments.[230]

In the second reviews, the Commission found that revocation of the order on subject imports from China would likely have a significant impact on the domestic industry.[231] The Commission found that the domestic industry was vulnerable to material injury in light of the declines in many key industry performance indicators over the period of review.[232] In particular, the Commission found that since U.S. demand for TRBs was unlikely to experience strong increases in the reasonably foreseeable future, the likely increases in subject import volume would likely have the effect of exacerbating the declines in the domestic industry's capacity, production, market share, employment, and capital expenditures.[233] Additionally, the Commission determined that, in light of the likely aggressive pricing of subject imports, the domestic industry would either need to cut prices for the domestic like product or lose sales, causing likely and significant declines in the domestic industry's operating performance.[234] Ultimately, the Commission found that revocation of the order would likely cause a major increase in the volume of subject imports, which would in turn likely cause the domestic industry's revenues to decline significantly and continue the trend of declining profitability for the industry in the reasonably foreseeable future.[235]

In the third review, the Commission again concluded that revocation of the order would likely have a significant impact on the domestic industry within a reasonably foreseeable time.[236] The Commission found that while some indicators of the domestic industry's performance improved during the period of review, most indicators declined as the domestic industry cut costs and sacrificed market share.[237] The Commission observed that the domestic industry's operating income and operating margin both increased during the period, although capacity utilization declined.[238] The Commission emphasized, however, that domestic

---

[227] *First Review Determinations*, USITC Pub. 3309 at 28.
[228] *First Review Determinations*, USITC Pub. 3309 at 28.
[229] *First Review Determinations*, USITC Pub. 3309 at 28.
[230] *First Review Determinations*, USITC Pub. 3309 at 28.
[231] *Second Review Determination,* USITC Pub. 3876 at 25.
[232] *Second Review Determination,* USITC Pub. 3876 at 24.
[233] *Second Review Determination,* USITC Pub. 3876 at 24.
[234] *Second Review Determination,* USITC Pub. 3876 at 24-25.
[235] *Second Review Determination,* USITC Pub. 3876 at 25.
[236] *Third Review Determination*, USITC Pub. 4343 at 33.
[237] *Third Review Determination*, USITC Pub. 4343 at 31–32.
[238] *Third Review Determination*, USITC Pub. 4343 at 32.

producers closed several facilities and that closures led to reductions in the number of production workers, the number of hours worked, and hourly wages, as well as a precipitous drop in capital expenditures.[239] Although the Commission determined that the domestic industry was not currently vulnerable to material injury, it observed weak U.S. demand conditions meant that the domestic industry would likely lose market share if subject import volume increased significantly.[240] The Commission considered increasing volumes of nonsubject imports as an additional market factor but concluded that revocation of the order would result in significantly higher subject imports while nonsubject imports were not expected to increase significantly.[241]

In this review, the domestic industry's performance indicators fluctuated from 2015 to 2017. Its capacity was *** units in 2015, *** units in 2016, and *** units in 2017. Production decreased from *** units in 2015 to *** units in 2016, then increased to *** units in 2017.[242] Capacity utilization showed similar trends, decreasing from *** in 2015 to *** in 2016, then increasing to *** in 2017. Similarly, the value of U.S. shipments decreased from $*** in 2015 to $*** in 2016, then increased to $*** in 2017.[243] The domestic industry's share of apparent U.S. consumption by value was *** percent in 2015, *** percent in 2016, and *** percent in 2017.[244]

Employment indicators also fluctuated during the period of review. The number of production workers, hours worked, and wages paid all declined from 2015 to 2016 and increased between 2016 and 2017 to levels lower than in 2015.[245] Productivity decreased *** between 2015 and 2016 and remained stable through 2017.[246]

The domestic industry's financial indicators generally showed declines in 2016 and improvements in 2017. Net sales decreased from $*** in 2015 to $*** in 2016, then increased to $*** in 2017. Total COGS were $*** in 2015, $*** in 2016, and $*** in 2017.[247] Gross profits were $*** in 2015, $*** in 2016, and $*** in 2017. Operating income was $*** in 2015, $*** in 2016, and $*** in 2017. The ratio of operating income to net sales was ***

---

[239] *Third Review Determination*, USITC Pub. 4343 at 31.

[240] *Third Review Determination*, USITC Pub. 4343 at 32.

[241] *Third Review Determination*, USITC Pub. 4343 at 33.

[242] Table ALT C-1.

[243] Table ALT C-1. End-of-period inventories for the domestic industry were *** units in 2015, *** units in 2016, and *** units in 2017. *Id.*

[244] Table ALT C-1.

[245] The number of production workers was *** in 2015, *** in 2016, and *** in 2017. Hours worked were *** in 2015, *** in 2016, and *** in 2017. Wages paid were $*** in 2015, $*** in 2016, and $*** in 2017. Table ALT C-1.

[246] Productivity was *** units per hour in 2015, and *** units per hour in 2016 and 2017. Table ALT C-1.

[247] Table ALT C-1.

percent in 2015, *** percent in 2016, and *** percent in 2017. Net income was $*** in 2015, $*** in 2016, and $*** in 2017.[248]

Due to the domestic industry's overall improvements from 2016 to 2017, we do not find that the domestic industry is in a vulnerable condition. Its performance indicators largely tracked trends in apparent U.S. consumption.

As discussed above, however, we conclude that revocation of the antidumping duty order on imports of TRBs from China would likely lead to a significant increase in the volume of subject imports that would likely undersell the domestic like product and either significantly suppress and/or depress prices for the domestic like product or take market share from the domestic industry. We find that the likely volume and price effects of subject imports would likely have a significant impact on the production, shipments, sales, and revenue of the domestic industry. These reductions would have a direct adverse impact on the domestic industry's profitability and employment, as well as its ability to raise capital and make and maintain necessary capital investments.

We have also considered the role of nonsubject imports in the U.S. market. We observe that although nonsubject imports accounted for a sizeable share of apparent U.S. consumption during the period of review, they still held a smaller share of the U.S. market than the domestic industry. Additionally, nonsubject imports lost market share from 2015 to 2017. Therefore, any increase in low-priced subject imports will likely capture at least some market share from the domestic industry even if it takes market share from nonsubject imports as well. We find this is especially likely to occur in the end-use market, where there was increasing competition between the domestic industry and subject imports during the period of review.[249]

Accordingly, we find that revocation of the antidumping duty order on TRBs from China would likely have a significant impact on the domestic industry.

IV. Conclusion

For the above reasons, we determine that revocation of the antidumping duty order on TRBs from China would likely lead to continuation or recurrence of material injury to an industry in the United States within a reasonably foreseeable time.

[248] Table ALT C-1. Capital expenditures declined from $*** in 2015 to $*** in 2016 and increased to $*** in 2017. Derived from CR/PR at Table III-10. Research and development expenditures increased throughout the period. *Id*.

[249] *See* CR/PR at Table II-1.

PART I: INTRODUCTION

BACKGROUND

On July 3, 2017, 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 a review to determine whether revocation of the antidumping duty order on tapered roller bearings ("TRBs") from China would likely lead to the continuation or recurrence of material injury to a domestic industry.[2] [3] On October 6, 2017, the Commission determined that it would conduct a full review 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]

Effective date	Action
June 15, 1987	Commerce's antidumping duty order on TRBs from China (52 FR 22667, June 15, 1987)
August 30, 2012	Commerce's continuation of the antidumping duty order on TRBs from China in the third five-year review (77 FR 52682, August 30, 2012)
July 3, 2017	Commission's institution of a five-year review (82 FR 30898, July 3, 2017)
July 1, 2017	Commerce's initiation of a five-year review (82 FR 30844, July 3, 2017)
October 6, 2017	Commission's determination to conduct a full five-year review (82 FR 48527, October 18, 2017)
November 6, 2017	Commerce's final results of expedited five-year review of the antidumping duty order (82 FR 51389, November 6, 2017)
February 20, 2018	Commission's scheduling of the review (83 FR 8297, February 26, 2018)
July 31, 2018	Commission's hearing

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

[2] *Tapered Roller Bearings from China; Institution of a Five-Year Review*, 82 FR 30898, July 3, 2017. 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 duty order concurrently with the Commission's notice of institution. *Initiation of Five-Year ("Sunset") Review*, 82 FR 30844, July 3, 2017.

[4] *Tapered Roller Bearings From China; Notice of Commission Determination To Conduct a Full Five-Year Review,* 82 FR 48527, October 18, 2017. The Commission found that the domestic interested party group response was adequate and the respondent interested party group response was inadequate. The Commission also found that other circumstances warranted conducting a full review.

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

Effective date	Action
September 7, 2018	Commission's vote
September 24, 2018	Commission's determination and views

The original investigation

The original investigations resulted from petitions filed by Timken on August 25, 1986, alleging that an industry in the United States was materially injured and threatened with material injury by reason of less-than-fair-value ("LTFV") imports of TRBs from China, Hungary, Italy, Japan,[6] Romania, and Yugoslavia. Following affirmative final determinations by Commerce and by the Commission, Commerce published antidumping duty orders with respect to China on June 15, 1987, Hungary and Romania on June 19, 1987, and Japan[7] on October 6, 1987.[8] After the final determinations, the Commission issued a negative remand determination on TRBs from Hungary that was later reversed.[9]

On June 15, 1987, Commerce issued its antidumping duty order on TRBs from China with the final weighted-average dumping margins of 0.97 percent for Premier Bearing & Equipment, Ltd. ("Premier"), 4.69 percent for China National Machinery & Equipment Import & Export Corporation ("CMEC"), and a country-wide rate of 2.96 percent. [10]

[6] The petition, as it related to Japan, was filed to cover those TRBs that were not subject to a 1976 finding by the Treasury Department ("Treasury"). *See* section entitled "Previous and Related Investigations" for further discussion of this finding.

[7] The 1987 order on Japan pertained to finished TRBs and components four inches in outside diameter and under from NTN Toyo Bearing Co., Ltd. and NTN Bearing Corporation of America, finished TRBs and components over four inches in outside diameter, and finished and unfinished parts for all sizes of TRBs.

[8] Commerce also issued orders on TRBs from Italy and Yugoslavia, but the orders were ultimately revoked on October 9, 1996 (61 FR 52920) and November 24, 1995 (60 FR 58046), respectively.

[9] On December 21, 1989, the Commission made a unanimous negative remand determination on TRBs from Hungary because in July 1989, the U.S. Court of International Trade ("CIT") reversed the Commission's earlier cumulative injury determination. However, the antidumping duty orders remained in place because the U.S. Court of Appeals for the Federal Circuit reversed the CIT's remand decision on November 20, 1990.

[10] *Antidumping Duty Order; Tapered Roller Bearings and Parts Thereof, Finished or Unfinished, From the People's Republic of China*, 52 FR 22667, June 15, 1987; as amended, *Tapered Roller Bearings From the People's Republic of China; Amendment to Final Determination of Sales at Less Than Fair Value and Antidumping Duty Order in Accordance With Decision Upon Remand,* 55 FR 6669, February 26, 1990.

The first five-year review

In April 1999, the Commission instituted the first five-year review on TRBs from China[11] [12] and determined on July 2, 1999 that it would conduct a full review.[13] On March 3, 2000, Commerce determined in its full review that revocation of the antidumping duty order on TRBs from China would be likely to lead to continuation or recurrence of dumping.[14] On June 22, 2000, the Commission found that revocation of the antidumping duty order on TRBs from 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.[15] It also found that revocation of the antidumping duty orders on TRBs from Hungary, Japan, and Romania 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] Commerce published notice of the continuation of the antidumping duty order with respect to TRBs from China on July 11, 2000.[17]

The second five-year review

In August 2006, the Commission completed a full five-year review of the subject order and determined that revocation of the antidumping duty order on TRBs from 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.[18] Consequently, Commerce issued a continuation of the antidumping duty order on imports of TRBs from China, effective September 15, 2006.[19]

---

[11] Included in the first five-year reviews were the then-outstanding orders on TRBs from Hungary, Japan, and Romania.

[12] *Institution of Five-Year Reviews Concerning the Antidumping Duty Orders on Certain Bearings from China, France, Germany, Hungary, Italy, Japan, Romania, Singapore, Sweden, and the United Kingdom*, 64 FR 15783, April 1, 1999.

[13] *Notice of Commission Determination to Conduct Full Five-Years Concerning the Antidumping Duty Orders on Certain Bearings from China, France, Germany, Hungary, Italy, Japan, Romania, Singapore, Sweden, and the United Kingdom,* 64 FR 38471, July 16, 1999.

[14] *Tapered Roller Bearings From the People's Republic of China; Final Results of Full Sunset Review,* 65 FR 11550, March 3, 2000.

[15] *Certain Bearings From China, France, Germany, Hungary, Italy, Japan, Romania, Singapore, Sweden, and the United Kingdom,* 65 FR 39925, June 28, 2000.

[16] Ibid.

[17] *Continuation of the Antidumping Duty Orders: Certain Bearings from France, Germany, Hungary, Italy, Japan, Singapore, the United Kingdom, and the People's Republic of China,* 65 FR 42665, July 11, 2000. Commerce revoked the orders on TRBs from Hungary, Japan, and Romania. 65 FR 42667, July 11, 2000.

[18] *Certain Bearings From China, France, Germany, Italy, Japan, Singapore, and the United Kingdom*, 71 FR 51850, August 31, 2006.

[19] *Tapered Roller Bearings and Parts Thereof from the People's Republic of China and Ball Bearings and Parts Thereof from France, Germany, Italy, Japan, and the United Kingdom: Continuation of Antidumping Duty Orders*, 71 FR 54469, September 15, 2006.

The third five-year review

In August 2012, the Commission completed a full third five-year review on TRBs from China, in which it determined that revocation of the antidumping duty order on TRBs from 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. [20] Consequently, Commerce issued a continuation of the antidumping duty order on imports of TRBs from China, effective August 30, 2012.[21]

PREVIOUS AND RELATED INVESTIGATIONS

Tapered roller bearings have been the subject of several prior import relief investigations in the United States.[22] On October 31, 1973, a complaint was filed at Treasury on behalf of domestic producers alleging that tapered roller bearings from Japan were being sold at LTFV. Treasury instituted an antidumping investigation on December 4, 1973, and on October 24, 1974, the then Tariff Commission instituted investigation No. AA 1921-143. On August 18, 1976, Treasury published a finding of dumping with respect to tapered roller bearings and certain components thereof from Japan. On August 10, 1981, Commerce published a clarification of the scope of the antidumping finding, limiting the scope to tapered roller bearings 4 inches or less in outside diameter because the original investigations had focused on tapered roller bearings in this size range.[23] Commerce subsequently revoked the order, in part, with respect to tapered roller bearings from Japan exported to and sold in the United States, either as a unit or separately, produced and sold by NTN.[24]

On June 28, 2017, a petition was filed by Timken, alleging that an industry in the United States was materially injured and threatened with material injury by reason of LTFV imports of certain tapered roller bearings from Korea.[25] Accordingly, effective June 28, 2017, the

---

[20] *Tapered Roller Bearings from China, Determination*, 77 FR 50716, August 22, 2012.

[21] *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China: Continuation of the Antidumping Duty Order*, 77 FR 52682, August 30, 2012.

[22] The Commission has also conducted an investigation on railway freight car journal roller bearings. The scope in that investigation was limited to tapered roller bearings used in large capacity freight rail cars with diameters of 5.5”x10”, 6”x11”, and 6.5”X12.” See, e.g., *Certain Tapered Roller Bearings and Parts Thereof from Japan, the Federal Republic Of Germany, and Italy, Investigations Nos. 731-TA-120, 731-TA-121, and 731-TA-122 (Preliminary)*, USITC Publication 1359, March 1983.

[23] *Tapered Roller Bearings and Certain Components Thereof from Japan; Clarification of Scope of Antidumping Finding*, 46 FR 40550, August 10, 1981.

[24] *Tapered Roller Bearings and Certain Components from Japan,* 41 FR 34974, August 18, 1976; and *Tapered Roller Bearings and Certain Components Thereof From Japan; Final Results of Administrative Review and Revocation In Part of Antidumping Finding,* 47 FR 25757, June 15, 1982.

[25] The scope in that investigation is narrower than the scope of the current proceeding and covers tapered roller bearings with an outside diameter of eight inches or less, not including (1) tapered roller bearings that have been further manufactured such as wheel hub units, (2) cages, or (3) unfinished parts. In the preliminary phase of that investigation, the Commission concluded that the appropriate

(*continued*...)

Commission instituted antidumping duty investigation No. 731-TA-1380 (Preliminary).[26] On August 11, 2017, the Commission voted to continue the antidumping duty investigation on certain tapered roller bearings from Korea, determining that there was a reasonable indication that an industry in the United States is materially injured by reason of imports of tapered roller bearings from Korea that are alleged to be sold in the United States at LTFV.[27] At the time of this report's issuance, the Commission's final phase investigation was ongoing.[28]

In addition to Title VII investigations, on June 9, 1993, following receipt of a request from the Office of the United States Trade Representative ("USTR"), the Commission instituted investigation No. 332-344 under section 332(g) of the Act for the purpose of analyzing the economic effects of antidumping and countervailing duty orders and suspension agreements. The Commission conducted eight case studies representing various U.S. industries, including tapered roller bearings and ball bearings.[29]

On April 19, 2017, Commerce initiated an investigation on steel imports under Section 232, as well as on aluminum products. Tariffs applied under Section 232 were implemented on enumerated products effective as of March 23, 2018 and subsequently modified to take into account country exemptions (not including China). The tariffs on steel and aluminum products do not directly affect products identified as under the scope of this review. The tariffs do affect raw material costs for domestic producers importing steel for use in manufacturing products under the scope of this review.

On August 14, 2017, USTR initiated a Section 301 investigation on products of China and on a range of practices maintained by China. The first tranche of additional tariffs applied under Section 301 were implemented on July 6, 2018. The second tranche of tariffs, on a different product grouping, applied under Section 301 are being implemented on August 23, 2018, while a third group awaits action. As presented in table I-1, the additional tariffs already apply to certain TRBs or parts that are products of China, and thus have a direct impact on some products under the scope of this review. Products classified in seven subject HTS subheadings face an additional 25 percent duty. The tariffs applied under the Section 301 investigation do not directly affect the remaining products classified in nine other subject HTS codes.

(…*continued*)
domestic like product included TRBs of all sizes, but not further manufactured TRBs such as wheel hub units, cages entering separately, or unfinished parts. *Tapered Roller Bearings from Korea, Investigation No. 731-TA-1380 (Preliminary)*, USITC Publication 4721, August 2017, p. 10.

[26] *Tapered Roller Bearings From Korea; Institution of Antidumping Duty Investigation and Scheduling of Preliminary Phase Investigation*, 82 FR 31067, July 5, 2017.

[27] *Tapered Roller Bearings From Korea; Determination*, 82 FR 39455, August 18, 2017.

[28] *Tapered Roller Bearings From Korea; Scheduling of the Final Phase of an Antidumping Duty Investigation,* 82 FR 8504, February 27, 2018.

[29] The results of the Commission's study are presented in *The Economic Effects of Antidumping and Countervailing Duty Orders and Suspension Agreements, Investigation No. 332-344*, USITC Publication 2900, June 1995.

Table I-1
TRBs: Impact of tariff actions on in-scope products

HTS subheadings	Section 232 steel and aluminum [1]	Section 301[2]
8482.20.00	N	Y
8482.91.00	N	Y
8482.99.15	N	Y
8482.99.45	N	Y
8483.20.40	N	N
8483.20.80	N	N
8483.30.80	N	N
8483.90.20	N	Y
8483.90.30	N	Y
8483.90.80	N	Y
8708.70.60	N	N
8708.99.23	N	N
8708.99.48	N	N
8708.99.68	N	N
8708.99.81	N	N
8708.99.81	N	N

[1] Proclamation No. 9740, 88 FR 20683, May 7, 2018.
[2] 83 FR 28710, June 20, 2018.

Source: Cited sources.

On May 23, 2018, Commerce initiated a Section 232 investigation on automobiles and parts of automobiles. As of the writing of this report, the investigation is ongoing. Bearings are under the scope of the 232 investigation.[30]

SUMMARY DATA

Table I-2 presents a summary of data from the original investigations and subsequent full five-year reviews.

[30] U.S. Department of Commerce (USDOC), Bureau of Industry and Security (BIS). "Section 232 National Security Investigation: Imports of Automobiles and Automotive Parts Survey." https://bis.doc.gov/index.php/autos232 (accessed August 8, 2018).

Table I-2
TRBs: Comparative data from the original investigation and subsequent reviews, 1986, 1998, 2005, 2011, and 2017

Item	Original investigation	First review	Second review	Third review	Fourth review
	1986	1998	2005	2011	2017
	Value (1,000 dollars)				
U.S. consumption	***	1,418,791	***	***	2,039,704
	Share of value (percent)				
Share of U.S. consumption: U.S. producers' share	***	80.2	***	***	56.6
U.S. importers' share: China subject	***	1.7	***	***	***
All other sources[1]	***	18.1	***	***	***
All import sources	***	19.8	***	***	43.4
	Value (1,000 dollars)				
U.S. imports.-- China subject	830	23,837	***	***	***
All other sources[1]	141,711	257,060	***	***	***
All import sources	142,541	280,896	***	***	886,130
	Quantity (1,000 bearings or bearing equivalents); Value (1,000 dollars); and Unit Value (dollars per B&BE)				
U.S. industry: Capacity (quantity)	176,109	154,931	140,347	***	121,869
Production (quantity)	102,531	146,862	126,778	***	78,092
Capacity utilization (percent)	51.3	90.3	90.3	***	64.1
U.S. shipments: Value	***	1,137,894	***	***	1,153,574
Quantity	***	124,534	***	***	55,712
Unit value	([2])	$8.86	***	***	$20.70
Ending inventory	***	17,033	***	***	***
Inventories/total shipments	***	11.8	***	***	***
Production workers	***	***	***	***	4,014
Hours worked (1,000)	***	***	***	***	8,034
Wages paid (1,000 dollars)	([2])	***	***	***	191,942
Hourly wages	([2])	***	***	***	$23.89
Productivity (B&BE per hour)	([2])	***	***	***	9.7
Financial data: Net sales (value)	***	***	***	***	***
Cost of goods sold	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***
COGS/ Sales (percent)	***	***	***	***	***
Operating income or (loss)/ Sales (percent)	***	***	***	***	***

Notes continued on next page.

[1] "All other sources" includes imports from Chinese firms that are not subject to the antidumping duty order. It also includes imports from countries that were subject to the original investigations and/or the first five-year reviews (Hungary, Japan, and Romania) but which are not currently subject to antidumping duty orders.
[2] Not available.

Note.–Value-based and employment data include parts of TRBs. Ten U.S. TRB producers provided data during the original 1985-87 investigation; the 7 reporting U.S. producers for 2000-05, the 7 reporting U.S. producers for 2006-11, and the 9 reporting producers for 2015-17 are believed to account for the "majority" of TRB production in the United States. U.S. import data are derived from official Commerce statistics that were adjusted for specified years within the 2000-11 period to reflect the revocations of the TRB order for Shanghai General Bearing (and subsequent reinstatement effective July 13, 2016), Tianshui Hailin, and Wafangdian.

Source: Data for 1986 compiled or derived from confidential staff report INV-K-061 (May 21, 1987); data for 1998 compiled or derived from confidential staff report, INV-X-101, May 8, 2000; data for 2005 compiled or derived from confidential staff report, INV-DD-084, June 16, 2006; data for 2011 compiled from confidential staff report INV-KK-073, (July 17, 2012); and data for 2017 compiled from responses to Commission questionnaires and official Commerce statistics, adjusted to exclude companies for which the order has been revoked.

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 review that relates to the statutory criteria is presented throughout this report. A summary of trade and financial data for TRBs as collected in the review is presented in appendix C. U.S. industry data are based on the questionnaire responses of nine U.S. producers of TRBs that are believed to have accounted for the vast majority of domestic production of TRBs in 2017. U.S. import data and related information are based on Commerce's official import statistics, adjusted to account for companies excluded from the order, and the questionnaire responses of 34 U.S. importers of TRBs that are believed to have accounted for the majority of both subject U.S. imports from China and total U.S. imports during 2017, *** percent and 90.4 percent, respectively, based on value.[31] Foreign industry data and related information are based on the questionnaire responses of eight producers of TRBs whose exports were equivalent to *** percent of subject U.S. imports of TRBs from China, based on value.[32] Responses by U.S. producers, importers, purchasers, and foreign producers of TRBs to a series of questions concerning the significance of the existing antidumping duty order and the likely effects of revocation of the order are presented in appendix D.

COMMERCE'S REVIEWS

Commerce has not conducted any critical circumstances reviews or made any anti-circumvention findings since the completion of the last five-year review. In addition, Commerce has not made any duty absorption findings.

Administrative and new shipper reviews

Since the last five-year review, Commerce has completed six antidumping duty administrative reviews with regard to subject imports of TRBs from China.[33] Table I-3 presents the results of the administrative reviews. In addition, Commerce has completed four new shipper reviews, in which it calculated a weighted-average dumping margin of 12.64 percent for merchandise produced and exported by GGB Bearing Technology (Suzhou) Co., Ltd. for the period June 1, 2010 through May 31, 2011, weighted average dumping margins of 60.25 percent and 0.00 percent for merchandise produced and exported by Haining Automann Parts Co., Ltd. and Zhejiang Zhengda Bearing Co., Ltd, respectively, for the period June 1, 2011

[31] The coverage for importer questionnaire responses is based on official import statistics for TRBs, adjusted for excluded Chinese firms.

[32] The coverage for foreign producer questionnaire responses does not include parts.

[33] For previously reviewed or investigated companies not included in an administrative review, the cash deposit rate continues to be the company-specific rate published for the most recent period.

through May 31, 2012, and a weighted-average dumping margin of 0.00 percent for merchandise produced and exported by Shanghai Tainai Bearing Co., Ltd for the period June 1, 2012, through May 31, 2013.[34]

Table I-3
TRBs: Administrative reviews of the antidumping duty order for China

Date results published	Period of review	Producer or exporter	Margin (percent)
February 21, 2013 (78 FR 12035); amended September 23, 2014 (79 FR 56773)	06/01/10-05/31/11	Changshan Peer Bearing Co., Ltd	0.00[1]
		Xiang Yang Automobile Bearing Co., Ltd	14.91
January 27, 2014 (79 FR 4327)	06/01/11-05/31/12	Changshan Peer Bearing Co., Ltd	0.74
		Dana Heavy Axle S.A. de C.V.	0.74
		Zhejiang Sihe Machine Co., Ltd	0.74
		Zhejiang Zhaofeng Mechanical and Electronic Co., Ltd.	0.74
January 27, 2015 (80 FR 4244)	06/01/12-05/31/13	Changshan Peer Bearing Co., Ltd	0.65
		Zhejiang Zhaofeng Mechanical and Electronic Co., Ltd	0.65
January 12, 2016 (81 FR 1396); amended January 26, 2016 (81 FR 4251)	06/01/13-05/31/14	Changshan Peer Bearing Co., Ltd.[1]	0.91
		Ningbo Xinglun Bearings Import & Export Co., Ltd.	0.91
		Xinchang Kaiyuan Automotive Bearing Co., Ltd	0.91
January 17, 2017 (82 FR 4844)	06/01/14-05/31/15	Changshan Peer Bearing Co., Ltd	0.00
		Haining Nice Flourish Auto Parts Co., Ltd	0.00
		Roci International (HK) Limited	0.00
January 10, 2018 (83 FR 1238)	06/01/15-05/31/16	GSP Automotive Group Wenzhou Co. Ltd	0.00
		Hangzhou Yonggu Auto-Parts Co., Ltd	0.00
		Zhejiang CTL Auto Parts Manufacturing Incorporated Co., Ltd	0.00

[1] Amended.

Source: Cited Federal Register notices.

Company revocations

As a result of a series of administrative reviews, Commerce revoked the antidumping duty order with respect to (1) Shanghai General Bearing Company, Limited ("SGBC"), effective June 1, 1994, (2) Wafangdian Bearing Company Limited, effective February 26, 2001, and (3)

[34] *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished From the People's Republic of China: Final Results of Antidumping Duty New Shipper Review*, 77 FR 65668, October 30, 2012; *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China: Final Results of the 2011-2012 Antidumping Duty Administrative Review and New Shipper Reviews*, 79 FR 4327, January 27, 2014; *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China: Final Results of the Antidumping Duty Administrative Review and Final Results of the New Shipper Review; 2012-2013*, 80 FR 4244, January 27, 2015.

Tianshui Hailin Import and Export Corporation and Hailin Bearing Factory ("Hailin"), effective June 1, 2001.[35]

Changed circumstances reviews

Commerce has conducted two changed circumstances reviews since the last review. Effective August 1, 2012, Commerce determined that SGBC/SKF[36] is the successor-in-interest to a company of the same name (SGBC), a producer/exporter of TRBs revoked from the AD order on TRBs from the China in 1997, and that merchandise from SGBC/SKF is not subject to the AD order on TRBs from China.[37] However, on January 17, 2017, as a result of a second changed circumstances review, Commerce reinstated SGBC/SKF in the antidumping order on TRBs from China, after it determined that SGBC/SKF sold TRBs at less than normal value.[38]

Scope rulings

On February 7, 2011, in response to an inquiry from Blackstone OTR LLC and OTR Wheel Engineering, Inc. (collectively, "Blackstone OTR"), Commerce ruled that Blackstone OTR's wheel hub assemblies are included in the scope of the order. On April 18, 2011, in response to an inquiry from New Trend Engineering Limited ("New Trend"), Commerce ruled that: (1) New Trend's splined and non-splined wheel hub assemblies without ABS elements are included in the scope of the order; and (2) New Trend's wheel hub assemblies with ABS elements are also included in the scope of the order. On June 14, 2011, in response to an inquiry from Bosda International (USA) LLC ("Bosda International"), Commerce ruled that Bosda International's wheel hub assemblies are included in the scope of the order. On August 2, 2011, in response to an inquiry from DF Machinery International, Inc. ("DF Machinery"), Commerce ruled that DF Machinery's agricultural hub units are included in the scope of the order.[39]

---

[35] *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China; Final Results of Antidumping Duty Administrative Review and Revocation in Part of Antidumping Duty Order*, 62 FR 6189, February 11, 1997; *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China; Amended Final Results of 1998-1999 Administrative Review and Determination To Revoke Order in Part*, 66 FR 11562, February 26, 2001; and *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, from the People's Republic of China: Final Results of 2000-2001 Administrative Review, Partial Rescission of Review, and Determination to Revoke Order, in Part*, 67 FR 68990, November 14, 2002.

[36] Effective August 1, 2012, the majority shareholder of SGBC merged with AB SKF (SKF) and, as a result of the merger, SGBC became part of the SKF Group.

[37] *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China: Notice of Final Results of Changed Circumstances Review*, 80 FR 19070, April 9, 2015.

[38] *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China: Final Results of Changed Circumstances Review and Reinstatement of Shanghai General Bearing Co., Ltd. in the Antidumping Duty Order*, 82 FR 4853, January 17, 2017.

[39] *Issues and Decision Memorandum for the Final Results of the Expedited Third Sunset Review of the Antidumping Duty Order on Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, from*

(*continued*...)

Five-year review

Commerce has issued the final results of its expedited review with respect to China and determined that revocation of the order would likely lead to continuation or recurrence of dumping, and that the magnitude of the margin of dumping likely to prevail if the order is revoked would be up to 60.25 percent.[40] Table I-4 presents the dumping margins calculated by Commerce in its original investigations and subsequent reviews.

Table I-4
TRBs: Commerce's original and first, second, and third five-year review dumping margins for producers/exporters in China

Producer/exporter	Original margin (*percent*)	First five-year review margin (*percent*)	Second five-year review margin[1] (*percent*)	Third five-year review margin (*percent*)	Fourth five-year review margin (*percent*)
CMC	0.39	0.03	0.03	0.03	([3])
Wanxiang	0.03	0.03	0.03	0.11	([3])
Zheijiang (ZMC)	4.32	0.11	0.11	0.11	([3])
Luoyang	1.05	3.20	3.20	3.20	([3])
Premier	0.97	5.43	5.43	5.60	([3])
Liaoning	0.00	9.72	9.72	9.72	([3])
CMEC	4.69	29.40	29.40	31.05	([3])
ZCCBC	29.40	0.00	0.00	([2])	([3])
All others	2.96	29.40	29.40	31.05	([3])

[1] There were two new shippers (Yantai Timken and Peer Bearing-Changshan) during the period of the second five-year review. Commerce applied the rate of 12.25 percent to Peer Bearing-Changshan for June 1, 2000 to January 1, 2001 and the rate of 0.00 percent to Yantai Timken for June 1, 2000 to November 30, 2000. 67 FR 10665, March 8, 2002.
[2] In its 2003-2004 administrative review, Commerce determined ZCCBC to be a part of the PRC-wide entity. 71 FR 9521, February 24, 2006.
[3] As a result of this review, Commerce determined that revocation of the antidumping duty order on TRBs from China would be likely to lead to continuation or recurrence of dumping and that the magnitude of the dumping margins likely to prevail would be weighted-average margins up to 60.25 percent.

Source: Commerce's antidumping duty order (52 FR 22667, June 15, 1987), as amended by *Tapered Roller Bearings from the People's Republic of China; Amendment to Final Determination of Sales at Less Than Fair Value and Antidumping Duty Order in Accordance with Decision Upon Remand*, 55 FR 6669, February 26, 1990; Commerce's final results of its first full five-year review, 65 FR 11550, March 3, 2000; second expedited five-year review, 70 FR 58383, October 6, 2005; third expedited five-year review, 76 FR 76143, December 6, 2011; and fourth expedited five-year review, 82 FR 51389, November 6, 2017.

(…*continued*)
the People's Republic of China, Christian Marsh, Deputy Assistant Secretary for AD/CVD Operations, November 29, 2011.

[40] *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China: Final Results of the Expedited Fourth Sunset Review of the Antidumping Duty Order*, 82 FR 51389, November 6, 2017. Commerce did not apply firm-specific rates as it had in previous reviews.

THE SUBJECT MERCHANDISE

Commerce's scope

In the current proceeding, Commerce has defined the scope as follows:[41]

> . . . tapered roller bearings and parts thereof, finished and unfinished, from the PRC; flange, take up cartridge, and hanger units incorporating tapered roller bearings; and tapered roller housings (except pillow blocks) incorporating tapered rollers,with or without spindles, whether or not for automotive use.The subject merchandise is currently classifiable under Harmonized Tariff Schedule of the United States (HTSUS) subheadings: 8482.20.00, 8482.91.00.50, 8482.99.15, 8482.99.45, 8483.20.40, 8483.20.80, 8483.30.80, 8483.90.20, 8483.90.30, 8483.90.80, 8708.70.6060, 8708.99.2300, 8708.99.4850, 8708.99.6890, 8708.99.8115, and 8708.99.8180. The HTSUS subheadings are provided for convenience and customs purposes only; the written description of the scope of the order is dispositive.

Tariff treatment

TRBs are currently imported under HTS statistical reporting numbers 8482.20.0020, 8482.20.0030, 8482.20.0040, 8482.20.0061, 8482.20.0064, 8482.20.0067, 8482.20.0070, 8482.20.0081, 8482.20.0090, 8482.91.0050, 8482.99.1550, 8482.99.1570, 8482.99.1580, 8482.99.4500, 8483.20.4080, 8483.20.8080, 8708.99.8115, and 8708.99.8180.[42] [43] The 2018 general rate of duty, applicable to products from China, is 5.8 percent ad valorem for HTS subheadings 8482.20.00, 8482.99.15, and 8482.99.45, 4.5 percent for HTS subheadings 8483.20.40 and 8483.20.80, 4.4 percent for HTS subheading 8482.91.00, and 2.5 percent for HTS subheading 8708.99.81.[44] All products of China classified in subheadings 8482.20.00,

---

[41] *Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China: Final Results of the Expedited Fourth Sunset Review of the Antidumping Duty Order*, 82 FR 51389, November 6, 2017; and *Issues and Decision Memorandum for the Final Results of Expedited Fourth Sunset Review of the Antidumping Duty Order on Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, from the People's Republic of China*, James P. Maeder, Deputy Assistant Secretary for AD/CVD Operations, October 31, 2017.

[42] Prior to July 2016, products reported under 8482.20.0061, 8482.20.0081, and 8482.99.1550 were reported under 8482.20.0060, 8482.20.0080, and 8482.99.1540, respectively. In addition, effective January 1, 2007, HTS statistical reporting numbers 8708.99.8015 and 8708.99.8080 were renumbered as 8708.99.8115 and 8708.99.8180, respectively.

[43] HTS statistical reporting numbers 8483.20.4080 and 8483.20.8080 are believed to include some products other than TRBs.

[44] USITC, Chapter 84, HTSUS (2018).

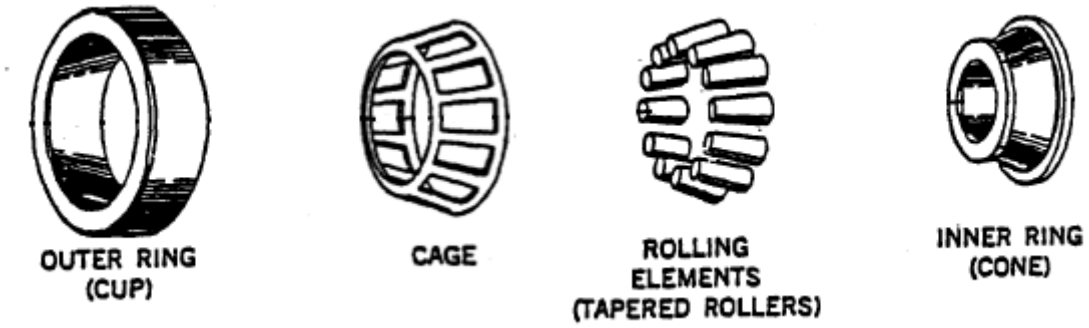
8482.91.00, 8482.99.15, and 8482.99.45 are subject to an additional duty of 25 percent ad valorem, effective as of July 6, 2018.[45] Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection.

THE PRODUCT

Description and applications[46]

TRBs are classified under the broader product category of antifriction bearings. Antifriction bearings are machine components that permit free motion between moving and fixed parts by holding, separating, or guiding the motion of parts to minimize friction and wear. Like any antifriction bearing, a TRB consists of four basic components: the cup, cone, rollers, and cage (Figure I-1). The cup, also called the outer ring, is the largest part of the assembly. The cup's inner surface is tapered to conform to the angle of the roller assembly. The cone forms the inner race of the bearing, or groove, in which the rollers are located. The cage keeps the rollers equally distributed in place around the cup and cone. The rollers reduce friction by operating as the rotating elements.

Figure I-1
TRBs: Tapered roller bearing parts



Source: *Tapered Roller Bearings and Parts Thereof, and Certain Housings Incorporating Tapered Rollers from Hungary, The People's Republic of China, and Romania, Inv. Nos. 731-TA-314, 344-345 (Final)*, USITC Publication 1983, June 1987, p. A-5.

[45] This duty is set out in HTS subheading 9903.88.01, pursuant to USTR's Federal Register notice of June 20, 2018 (83 FR 28710).

[46] Unless otherwise noted, information presented is based on *Tapered Roller Bearings from Korea, Inv. No. 731-TA-1380 (Final),* USITC Publication 4806, August 2018, pp. I-11-16.

The rollers, cage, and cone are joined together to form a cone assembly. When joined with a cup, the cone assembly and cup form a TRB set.[47] The rolling elements transmit the physical load or force from the moving parts to the stationary support. Under normal operating conditions, the races and rolling elements carry the load, while the cage spaces and retains the rollers.

TRB sizes vary considerably, from a few millimeters to several meters in outside diameter. TRBs manufactured to inch dimensions are classified by standard industry definitions published by the American Bearing Manufacturers Association ("ABMA") and the American National Standards Institute ("ANSI"). ABMA 19.2, for example, defines the quality classes (standard-quality classes 4 and 2 and precision-grade classes 3, 0, 00, and 000) for inch-dimension TRBs based on dimensional tolerances.[48] Class 4 is considered the standard or most basic tolerance, and has the least restrictive tolerances for bearings made to inch dimensions.

TRBs are used in applications where it is necessary to counteract friction caused by both radial and thrust loads. TRBs are able to withstand such combined loads while offering moderate speed capacity and heavy load capacity. More specifically, TRBs are widely used in the automotive and heavy machinery (construction, agriculture, and railway) sectors for transmissions and in wheel and axle applications. See figure I-2 for examples of various TRBs.

[47] TRBs may also be fitted with seals or shields, which protect the bearing from contamination and extend bearing life.

[48] See: Engineering360, "Tapered Roller Bearings Specifications, Bearing Quality," IEEE GlobalSpec, 2018.

Figure I-2
TRBs: Single-row and double-row tapered roller bearings

Single-row roller bearing
with flange not assembled

Single-row roller bearing
with a flanged outer ring

Single-row roller bearing

Double-row roller bearing

Source: Timken, *Tapered Roller Bearing Catalog*.

Wheel hub assemblies[49]

TRB wheel hub assemblies are more commonly used on vehicles with higher load factors, such as medium and heavy duty trucks, and can be attached to drive or non-drive axles.[50] Outer ring rotation is typically specific to non-drive axles, whereas inner ring rotation is used for both drive and non-drive axles.

These assemblies may include anti-lock braking system (ABS) sensors, which measure wheel speed. Certain customers choose the bearing to locate the ABS sensor; other customers measure wheel speed outside the bearing or completely independent of the bearing.

A Generation 1 ("Gen 1") wheel hub assembly typically is a double row tapered roller bearing that is pre-set to fall within certain parameters, such as internal clearance (figure I-3). No adjustments are necessary when mounting the unit on a vehicle. A Gen 1 wheel hub assembly is pre-lubricated and sealed for life.

Figure I-3
TRBs: Gen 1 double row tapered bearing

Source: Timken, Automotive Techtips.

A Generation 2 ("Gen 2") wheel hub assembly retains the characteristics of a Gen 1 assembly, but incorporates a flanged cup (i.e., the outer bearing ring is integrated into the flange) with threaded holes or studs that replaces the function of the hub (figure I-4). A Generation 3 ("Gen 3") wheel hub assembly builds on the Gen 2 assembly and has flanged inner and outer rings (figure I-5) for wheel and brake rotor attachment and mounting the assembly to the vehicle's suspension system. The distinguishing characteristic of a Gen 3 wheel unit from prior generations is the incorporation of the cup into the wheel hub assembly. Due to this

[49] Also referred to as wheel hub units, hub unit bearings, and wheel end solutions.

[50] A drive axle (live axle) is a crossbar or assembly that supports the vehicle and also drives the wheels connected to it. The attached differential is a geared assembly that allows the transmission of motion between drive axles, giving one axle the ability to turn faster than the other. Non-driving axles (dead axles) serve only as suspension and steering components and do not transfer power to vehicle wheels.

integration, bearings can only be assembled in a bearing factory that produces the bearing braces and sterile conditions exist.

Figure I-4
TRBs: Gen 2 double flange tapered bearing

Source: Timken, Automotive Techtips.

Figure I-5
TRBs: Gen 3 double flange tapered bearing

Source: Timken, Automotive Techtips.

Manufacturing processes[51]

Like other antifriction bearings, the production of TRBs is a technologically mature process that involves four major steps: green machining, heat treatment, finishing, and assembly and inspection.[52] TRBs are primarily made with alloy (other than stainless) steel; however, some bearing types and certain components may be of other materials such as stainless steel, bronze, copper, ceramic, and certain plastics. Special bearing-grade alloy steel in the form of seamless tubing is utilized in the production of most inner and outer rings. Alloy wire, in coils, is the base material for roller production. Cages can be composed of metal or a polymer compound depending upon customer specifications.[53] There is a generally accepted minimum industry standard for steel utilized in bearings production; however, the raw material used by most bearing manufacturers exceed this standard in quality. TRBs are generally produced on dedicated machinery, and a producer cannot switch from production of TRBs to different types of bearings without reconfiguring their production lines, which adds to costs.[54] Thus, firms cannot easily switch from producing one type of bearing to another.

[51] Unless otherwise noted, information presented is based on *Tapered Roller Bearings from Korea, Inv. No. 731-TA-1380 (Final),* USITC Publication 4806, August 2018, pp. I-16-18.

[52] The Timken Company. "Our Story." About. https://www.timken.com/about/our-story/.

[53] Staff field trip report, Timken, April 5-6, 2018.

[54] Staff field trip report, Timken, April 5-6, 2018.

Greening machining

Green machining is the first step in the TRB production process and refers to the machining operations performed on the raw material prior to heat treatment. For inner and outer rings, steel tubing is machined on to the desired contour and shape on single or multiple screw machines. The inner or outer ring is then sheared off from the end of the tube. Green machining the inner ring involves more steps than for the outer ring because of the complexity of the design and function of the inner ring. The machined components are then inspected and gauged to ensure adherence to the prescribed dimensional specifications. Alternately, the process may begin with steel bar, which is processed to create rough forgings. These forgings are then green-machined, inspected, and gauged so that they are ready for heat treatment. The green machining of rollers begins with the drawing or wire into a cold-header machine where the rollers are sheared in rapid succession and are “headed” or butted in a die to the desired shape.

Heat treatment

Following the green-machining process, TRB components are heat-treated to ensure durability, hardness, and shock resistance. The process begins with carburization, the heating of green-machined components in a carbon-rich atmosphere to impregnate carbon into the surface of the product. The components are then “quenched” by immersion into an oil bath. After quenching, the carburized outside case becomes very hard, whereas the lower-carbon core remains comparatively soft. The highly carburized outer layer ensures that the roller contact surfaces will be hard and wear-resistant, while the softer core enables the bearing to absorb shocks more readily. The next stage of heat treatment is applicable in the manufacture of all steel bearing parts, with the exception of cages. The components are placed in a tempering furnace and heated to very high temperatures for an extended period of time. This process improves the toughness and durability of the bearing components. The components are then placed in a stamping die for reshaping, as the heating process distorts their size, and are quenched once more in an oil bath.

Finishing

The third phase of production is finishing. This process consists mainly of a series of grinding and honing operations to ensure that the components are sized to the required precise tolerances and polished to ensure the smoothest possible rolling surfaces. Grinding is performed in a series of steps wherein the width, outside surface, and bore of the inner and outer rings are shaped. Honing involves the polishing of the inside surface of the outer ring and the outside surface of the inner ring.

Rollers are finished somewhat differently than the inner and outer rings, which involves rough-grinding the roller body, grinding the roller end, finish-grinding the roller body, and roller-honing. Rollers initially pass through multiple grinding machines that remove steel from the outside surface to obtain a specified size. During end-grinding, steel is removed from the large end of the roller, leaving a slightly convex shape. After final grinding and honing, the

rollers are inspected, gauged, and packaged in their sequential order of production to minimize the variance of a complement of rollers in an inner ring assembly.

Assembly and inspection

After the finishing process, the TRBs are assembled. Cages are mounted on an assembly nest and rollers are placed in the openings or pockets of the cage. The inner ring is then inserted into the middle of the cage. The inner and outer ring assemblies are then demagnetized, inspected, slushed with a protective anti-rust solution, and packaged for shipment. ***.[55]

TRB producers may meet certain international quality standards that are an indicator of a producer's ability to supply quality TRBs. International Standard Organization (ISO) standards 9001:2000 and ISO 9001:2008 specify the requirements for a quality management system for TRB producers. ISO standard certification demonstrates a firm's production complies with customer and regulatory requirements, meets international standards, and allows for continual improvement. ISO TS 16949 establishes the quality management system requirements for the design and development, production, installation, and service of automotive-related products, and ISO 14001 addresses environmental management system standards.

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) interchangeability; (3) channels of distribution; (4) common manufacturing facilities, production processes, and production employees; (5) customer and producer perceptions; and (6) price. Information regarding these factors is discussed below.

In the original investigations, the Commission concluded that all TRBs constituted one like product regardless of individual sizes, dimensions, physical characteristics, or uses of TRBs because there were no clear dividing lines between the multitude of TRBs within the scope. The Commission concluded that certain machine parts incorporating TRBs, such as wheel hub units,[56] were also part of one like product.

---

[55] ***.

[56] In the original investigations, the Commission report described wheel hub units as follows:

> prelubricated, preset, double-row tapered roller bearings that have been sealed; however, instead of a cup, the cone assemblies are sealed into a cast, flanged housing with bolt holes for direct mounting onto the wheel hub. The flanged housing performs as the outer race of the bearing, taking the place of the typical tapered roller bearing cup. The useful life of both of these types of bearing units {wheel hub and cartridge bearing units which were both grouped under the heading self-contained tapered roller bearing packages} is the life of the automobile and the next generation of the self-contained units will have flanged inner and outer rings as

(*continued*...)

In the first five-year reviews, the Commission found TRBs to be a single domestic like product consistent with Commerce's scope definition. In the second five-year reviews, the Commission stated that no party to those reviews had taken issue with the Commission's domestic like product definition for TRBs from the first five-year reviews and that it did not find that the record contained any new information that would warrant a change in the Commission's definition of the domestic like product. Accordingly, the Commission continued to define TRBs as a single domestic like product, coextensive with Commerce's scope definition. In the third five-year review, the Commission again considered whether wheel hub assemblies were a separate domestic like product. It found that, given the "continuum" nature of TRBs, there was no clear dividing line between TRBs and wheel hub assemblies. Accordingly, the Commission defined a single domestic like product coextensive with the scope of the review.

In its notice of institution for this review, the Commission solicited comments from interested parties regarding what they deemed to be the appropriate definition of the domestic like product. According to its response to the notice of institution, Timken agreed with the Commission's definition of the domestic like product as stated in the Commission's notice of institution, which defined the domestic like product as all TRBs and parts thereof, co-extensive with Commerce's scope.[57] Respondent interested party Bosda argued that the Commission should define the domestic like product to exclude wheel hub units, consistent with the Commission's domestic like product determination in the recent preliminary phase investigation on imports of tapered roller bearings from Korea.[58] [59]

The Commission asked U.S. producers, importers, and purchasers to comment on the comparability of TRBs and wheel hub assemblies, based on the Commission's six like product factors. A tabulation of their responses is presented in table I-5.[60] As shown in table I-5, the majority of responding market participants reported "somewhat" or "never" for all six like product factors. For additional information on responses from U.S. producers, U.S. importers, and U.S. purchasers, see Appendix E.

(…*continued*)

part of the assembly. This will allow it to take over the functions of other usually separate components in the wheel hub system.

[57] *Domestic Interested Party's Response to the Notice of Institution,* August 2, 2017, p. 48. Timken also noted that the petition it filed with respect to TRBs from Korea has a narrower scope than the order on TRBs from China, as it excludes TRBs over eight inches in diameter, wheel hub units, railroad bearings, housed units, and unfinished parts. Timken argued that the Commission should define the domestic like product in the in the antidumping duty investigation on TRBs from Korea as co-extensive with the narrower scope of that case. Ibid.

[58] *Bosda's Cure Letter Response to the Notice of Institution*, August 28, 2017, pp. 5-6.

[59] In addition, CWD, a U.S. purchaser of wheel hub units believes wheel hub units should be a separate domestic like product and for which U.S. producers should be considered a separate domestic industry. *CWD's Statement to the Commission*, August 2, 2017, p. 1.

[60] Firms completing more than one of the questionnaire types were asked to respond to the alternative product comparisons questions in only one questionnaire type, and in general, in the questionnaire type that is most relevant to the firm's role in the market. Staff has removed duplicate answers wherever applicable.

Table I-5
TRBs: U.S. producers', U.S. importers', and U.S. purchasers' responses to the like product comparisons

Production comparison / factor	U.S. producers			
	Fully	Mostly	Somewhat	Never
U.S. producers: TRBs vs Wheel hub assemblies.-- Physical characteristics	---	---	3	1
Interchangeability	---	---	1	3
Manufacturing	---	---	1	3
Channels	---	---	2	2
Customer perceptions	---	---	2	1
Price	---	---	---	3
Production comparison / factor	**U.S. importers**			
	Fully	**Mostly**	**Somewhat**	**Never**
U.S. importers: TRBs vs Wheel hub assemblies.-- Physical characteristics	---	2	2	10
Interchangeability	---	1	2	11
Manufacturing	---	1	4	9
Channels	3	2	4	6
Customer perceptions	1	1	3	10
Price	---	---	4	11
Production comparison / factor	**U.S. purchasers**			
	Fully	**Mostly**	**Somewhat**	**Never**
U.S. purchasers: TRBs vs Wheel hub assemblies.-- Physical characteristics	2	2	2	11
Interchangeability	2	2	---	13
Manufacturing	2	1	5	7
Channels	3	2	6	5
Customer perceptions	---	3	5	6
Price	---	1	3	11

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

Physical characteristics and uses

The vast majority of responding market participants reported that TRBs and wheel hub assemblies are "never" similar with respect to physical characteristics and uses. Every TRB is designed for a particular application, which results in TRBs of many different sizes and configurations that do not share the same exact physical characteristics or uses. All TRBs, however, including wheel hub assemblies, share the same basic elements (i.e., cups, cones, rolling elements, and cages) and perform the same basic functions of reducing friction among moving parts, carrying loads, and handling radial and thrust forces.[61]

[61] *Tapered Roller Bearings from China, Inv. No. 731-TA-344 (Third Review)*, USITC Publication 4343, August 2012, p. I-23.

Manufacturing facilities, production process, and production employees

The majority of market participants responded that the manufacturing processes for TRBs and wheel hub assemblies are not similar. Nine firms reported domestic production of TRBs in this current review. Of the nine firms, six reported production of TRBs but not wheel hub assemblies; two produced both TRBs and wheel hub assemblies; and one produced only wheel hub assemblies. Table I-6 presents U.S. producers' 2017 shares of reported production of wheel hub assemblies and all other TRBs.

Table I-6
TRBs: U.S. producers share of reported wheel hub and all other TRB production, 2017

* * * * * * *

Table I-7 presents U.S. production of TRBs by product type. Wheel hub assemblies accounted for approximately *** percent of overall TRB production during the period for which data were collected. A summary of trade and financial data for wheel hub assemblies as collected in the review is presented in table C-2.

Table I-7
TRBs: U.S. producers' production by product type, 2015-17

Item	Calendar year		
	2015	2016	2017
	Quantity (1,000 bearings or bearing equivalents)		
Production:			
TRBs not including wheel hub assemblies	77,915	71,346	73,863
Wheel hub assemblies	3,671	4,299	4,229
Total production	81,586	75,644	78,092
	Share of production (percent)		
Production:			
TRBs not including wheel hub assemblies	95.5	94.3	94.6
Wheel hub assemblies	4.5	5.7	5.4
Total production	100.0	100.0	100.0

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

Interchangeability

The vast majority of responding market participants reported that TRBs and wheel hub assemblies are "never" interchangeable.

Channels of distribution

The majority of responding market participants reported that TRBs and wheel hub assemblies "somewhat" or "never" share channels of distribution. As presented in table I-8, domestic producers ship the large majority of TRBs as well as wheel hub assemblies to end users (69.5 percent and 88.2 percent in 2017, respectively).

Table I-8
TRBs: U.S. producers' U.S. commercial shipments, by product type and channels of distribution, 2015-17

* * * * * * *

Customer and producer perceptions

The large majority of responding market participants agreed that customers and producers perceive TRBs and wheel hub assemblies to be separate products.

Price

The vast majority of market participants reported that prices for TRBs and wheel hub assemblies were "never" comparable. As presented in table I-9, the average unit value of U.S. producers' U.S. shipments of TRBs not including wheel hub assemblies was $*** in 2017, while the average unit value of U.S. producers U.S. shipments of wheel hub assemblies was $*** in 2017.

Table I-9
TRBs: U.S. producers' average unit values, by product type, 2015-17

* * * * * * *

U.S. MARKET PARTICIPANTS

U.S. producers

At the time of the original investigations, there were nine U.S. producers of TRBs. During the period of the first five-year reviews, 12 firms reported producing TRBs in the United States that were believed to account for virtually all U.S. production of TRBs in 1998.[62] During the period of the second five-year reviews, seven firms reported producing TRBs in the United States, which were believed to account for the great majority of U.S. production of TRBs in 2005.[63] During the third five-year review, the Commission issued U.S. producers' questionnaires to 14 firms, seven of which provided the Commission with information on their TRBs operations. These firms were believed to account for the majority of U.S. production of TRBs in 2011.[64]

---

[62] First Review Confidential Staff Report INV-X-101, p. TRB-I-1.

[63] *Certain Bearings From China, France, Germany, Italy, Japan, Singapore, and the United Kingdom, Inv. Nos. 731-TA-344, 391-A, 392-A, 393-A, 394-A, 396, and 399-A (Second Review),* USITC Publication 3876 (August 2006), p. TRB-I-1.

[64] *Tapered Roller Bearings from China, Inv. No. 731-TA-344,* USITC Publication 4343, August 2012, p. I-30.

In this current proceeding, the Commission issued U.S. producers' questionnaires to 15 firms, nine of which provided the Commission with information on their TRB operations. These firms are believed to account for the vast majority of U.S. production of TRBs in 2017. Table I-10 lists of current domestic producers of TRBs, their production locations, positions on continuation of the order, and shares of reported production in 2017.

Table I-10
TRBs: U.S. producers, positions on order, U.S. production locations, and shares of 2017 reported U.S. production

Firm	Position on order	Production location(s)	Share of production (percent)
ABB	***	Marion, NC Rogersville, TN	***
American NTN	***	Elgin, IL	***
Amsted	***	Petersburg, VA	***
Koyo	***	Orangeburg, SC Telford, TN	***
NSK	***	Ann Arbor, MI	***
NTN-Bower	***	Macomb, IL Hamilton, AL	***
Regal Beloit	***	Monticello	***
Schaeffler	***	Fort Mill, SC Joplin, MO	***
Timken	Support	North Canton, OH Bucyrus, OH Iron Station, NC Honea Path, SC Gaffney, SC New Philadelphia, OH Union, SC Canton, OH Randleman, NC Altavista, VA[1] Mascot, TN Ferndale, WA Pulaski, TN[1]	***
Total			100.0

[1] Plant closed in 2017.

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

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

Table I-11 presents information on U.S. producers' ownership and related and/or affiliated firms.

Table I-11
TRBs: U.S. producers' ownership, related and/or affiliated firms

* * * * * * *

As indicated in table I-11, four U.S. producers are related to foreign producers of the subject merchandise and none are related to U.S. importers of the subject merchandise. In addition, as discussed in greater detail in Part III, three U.S. producers directly import the subject merchandise, while none purchase the subject merchandise from U.S. importers.

U.S. importers

During the last five-year review, the Commission received U.S. importer questionnaires from 18 firms, which accounted for approximately 114.0 percent[65] of total U.S. imports of TRBs from China during 2011.[66]

In the current proceeding, the Commission issued U.S. importers' questionnaires to 60 firms believed to be importers of TRBs, as well as to all U.S. producers of TRBs. Usable questionnaire responses were received from 34 firms, representing the majority of subject U.S. imports from China, based on value. Table I-12 lists all responding U.S. importers of TRBs from China and other sources, their locations, and their shares of U.S. imports in 2017.

[65] The coverage for importer questionnaire responses exceeded 100.0 percent because subject product were also covered by HTS basket subheadings.

[66] *Tapered Roller Bearings from China, Inv. No. 731-TA-344 (Third Review),* USITC Publication 4343, August 2012, p. I-31.

Table I-12
TRBs: U.S. importers, source(s) of imports, U.S. headquarters, and share of total imports in 2017

Firm	Headquarters	Share of imports by source (percent)			
		China subject	China nonsubject	All other sources	Total
Amsted Rail	Chicago, IL	***	***	***	***
Bearings 2000	Pomona, CA	***	***	***	***
Bosda	Lake Forest, CA	***	***	***	***
Caterpillar	Deerfield, IL	***	***	***	***
Consolidated Metco	Vancovuer, WA	***	***	***	***
Federal-Mogul	Southfield, MI	***	***	***	***
FERSA-NKE Bearings	Northwood, OH	***	***	***	***
Fremont International Trading	Fremont, CA	***	***	***	***
General Bearing	West Nyack, NY	***	***	***	***
HMS Industries	Westlake, OH	***	***	***	***
Honda	Marysville, OH	***	***	***	***
ILJIN USA	Novi, MI	***	***	***	***
Koyo Bearings	Greenville, SC	***	***	***	***
LYC	Geneva, IL	***	***	***	***
Mitsui	New York, NY	***	***	***	***
NTN	Mount Prospect, IL	***	***	***	***
Nova TCB	Powell, TN	***	***	***	***
NSK	Ann Arbor, MI	***	***	***	***
PBI Products	Linden, NJ	***	***	***	***
PEER Bearing	Waukegan, IL	***	***	***	***
Powertech America	West Point, GA	***	***	***	***
Progress Rail	Albertville, AL	***	***	***	***
Regal Beloit	Beloit, WI	***	***	***	***
Rotek	Aurora, OH	***	***	***	***
Schaeffler Group	Fort Mill, SC	***	***	***	***
Schaeffler Korea	Seoul,	***	***	***	***
SKF	Lansdale, PA	***	***	***	***
SST Bearing	Loveland, OH	***	***	***	***
Timken	North Canton, OH	***	***	***	***
Univance	Winchester, KY	***	***	***	***
Velonix	Nassau, NA	***	***	***	***
Volvo	Greensboro, NC	***	***	***	***
Wanxiang Automotive Components	Elgin, IL	***	***	***	***
ZWZ Bearing	City Of Industry, CA	***	***	***	***
Total		***	***	***	***

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

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

U.S. purchasers

The Commission received 36 usable questionnaire responses from firms that bought TRBs since January 1, 2012.[67] Fifteen responding purchasers are distributors, 23 are end users, and 5 are other, including auto parts retailers, aftermarket parts provider, and a ***. Purchasers were also asked to indicate the sector for which their firm purchases; 23 reported that they purchase TRBs for the automotive sector, 21 for the heavy equipment/industrial sector, 9 for the agricultural sector, and 12 for other sectors, including heavy truck, passenger railway/bus, commercial vehicle, oil and gas, mining, off road mobile equipment, paper and forest products, and wind energy.[68] Responding U.S. purchasers were located throughout the United States, with many firms reporting multiple locations nationwide. Large purchasers of TRBs include ***, accounting over half of the reported value of TRB purchases in 2017.

APPARENT U.S. CONSUMPTION AND MARKET SHARES

Data concerning apparent U.S. consumption of TRBs are shown in tables I-13 and I-14 and figure I-6. Apparent U.S. consumption decreased by 14.4 percent between 2015 and 2016 then increased by 4.4 percent in 2017, for an overall decrease of 10.7 percent, based on value.

[67] Of the 35 responding purchasers, 27 purchased the domestic TRBs, 16 purchased imports of the subject merchandise from China, and 22 purchased imports of TRBs from other sources. Twenty-three purchased TRBs but not wheel hub assemblies and 13 purchased both TRBs and wheel hub assemblies.

[68] Twelve purchasers indicated they purchase for multiple sectors.

Table I-13
TRBs: Apparent U.S. consumption, 2015-17

Item	Calendar year		
	2015	2016	2017
	Total value (bearings and parts) (1,000 dollars)		
U.S. producers' U.S. shipments	1,273,032	1,135,285	1,153,574
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
All other sources	777,745	610,901	660,815
Nonsubject sources	***	***	***
All import sources	1,011,315	819,196	886,130
Apparent consumption	2,284,347	1,954,481	2,039,704
	Quantity (1,000 bearing or bearing equivalents)		
U.S. producers' U.S. shipments	65,033	60,360	55,712
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
All other sources	67,615	59,273	62,611
Nonsubject sources	***	***	***
All import sources	***	***	***
Apparent consumption	172,942	161,966	164,517

Source: Compiled from data submitted in response to Commission questionnaires (U.S. producers' U.S. shipments and official U.S. import statistics, adjusted to exclude certain Chinese firms, using HTS statistical reporting numbers 8482.20.0040, 8482.20.0060, 8482.20.0061, 8482.20.0064, 8482.20.0067, 8482.20.0070, 8482.20.0080, 8482.20.0081, 8482.20.0090, 8482.91.0050, 8482.99.1540, 8482.99.1550, 8482.99.1570, 8482.99.1580, 8482.99.4500, 8483.20.4080, and 8483.20.8080, accessed May 17, 2018; and HTS statistical reporting numbers 8482.20.0020, 8482.20.0030, and 8708.99.8115, accessed August 17, 2018.

Table I-14
TRBs: Market shares, 2015-17

Item	Calendar year		
	2015	2016	2017
	Total value (bearings and parts) (1,000 dollars)		
Apparent consumption	2,284,347	1,954,481	2,039,704
	Share of value (percent)		
U.S. producers' U.S. shipments	55.7	58.1	56.6
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
All other sources	34.0	31.3	32.4
Nonsubject sources	***	***	***
All import sources	44.3	41.9	43.4
	Quantity (1,000 bearing or bearing equivalents)		
Apparent consumption	172,942	161,966	164,517
	Share of quantity (percent)		
U.S. producers' U.S. shipments	37.6	37.3	33.9
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
All other sources	39.1	36.6	38.1
Nonsubject sources	***	***	***
All import sources	62.4	62.7	66.1

Source: Compiled from data submitted in response to Commission questionnaires (U.S. producers' U.S. shipments and official U.S. import statistics, adjusted to exclude certain Chinese firms, using HTS statistical reporting numbers 8482.20.0040, 8482.20.0060, 8482.20.0061, 8482.20.0064, 8482.20.0067, 8482.20.0070, 8482.20.0080, 8482.20.0081, 8482.20.0090, 8482.91.0050, 8482.99.1540, 8482.99.1550, 8482.99.1570, 8482.99.1580, 8482.99.4500, 8483.20.4080, and 8483.20.8080, accessed May 17, 2018; and HTS statistical reporting numbers 8482.20.0020, 8482.20.0030, and 8708.99.8115, accessed August 17, 2018.

Figure I-6
TRBs: Apparent U.S. consumption, 2015-17

* * * * * * *

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

U.S. MARKET CHARACTERISTICS

As discussed in Part I, a standard TRB is made up of four elements: an inner ring (or cone), an outer ring (or cup), tapered rollers that fit between the cup and the cone, and a cage that aligns and spaces the rollers. TRBs are sold as sets (cup and cone assembly), as a cone assembly, as a finished cup, or as part of a kit. TRBs are made to ISO and ANSI/ABMA standards. TRBs are used in the automotive industry, in agricultural and construction equipment, and in general industrial applications.[1] The TRB market has been characterized as having two segments: original equipment manufacturers ("OEMs") and the aftermarket, in which TRBs are sold for repair or replacement in original equipment. TRBs sold to OEMs are produced to customer specifications. Eventually, these parts will also be produced for the aftermarket for replacement parts.[2] In order to provide the full product range to their aftermarket customers, U.S. producers may purchase TRBs from each other.[3]

All U.S. producers, 28 of 32 responding importers, and 7 of 8 foreign producers reported that there have not been any significant changes to the product range, product mix, or marketing of TRBs. Three importers and three foreign producers anticipate changes, particularly in innovation for wheel hub assemblies as self-parking and self-driving cars become more prevalent.

Apparent U.S. consumption of TRBs, by value, decreased irregularly during 2015-17. Overall, apparent U.S. consumption in 2017 was 10.7 percent lower than in 2015, with a 14.4 percent decrease from 2015 to 2016 and a 4.4 percent increase from 2016 to 2017.

CHANNELS OF DISTRIBUTION

U.S. producers and importers of nonsubject TRBs sold mainly to end users while imports of Chinese TRBs were sold mainly to distributors, as shown in table II-1. Of sales to end users, sales to the automotive sector accounted for nearly *** percent of U.S. producers' sales and *** percent of importers' sales of subject TRBs. Importers' sales of subject TRBs to end users grew markedly during 2015-17, particularly automotive end users.

---

[1] *Tapered Roller Bearings from Korea, Investigation No. 731-TA-1380 (Final)*, USITC Publication 4808, August 2018, p. II-1.

[2] Hearing transcript, pp. 100-102 (Ruel), p. 183 (Hughes).

[3] Hearing transcript, p. 100 (Stewart), pp. 101-102 (Ruel).

Table II-1
TRBs: U.S. producers' and importers' U.S. commercial shipments, by sources and channels of distribution, 2015-17

Item	Period		
	Calendar year		
	2015	2016	2017
	Value of reported shipments ($1,000)		
U.S. producers' U.S. commercial shipments of TRBs:			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total, all channels	***	***	***
U.S. importers' U.S. commercial shipments of subject TRBs from China:			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total, all channels	***	***	***
U.S. importers' U.S. commercial shipments of nonsubject TRBs from China:[1]			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total, all channels	***	***	***
U.S. commercial shipments of TRBs from all other sources:			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total, all channels	***	***	***
U.S. commercial shipments of TRBs from all sources:			
Distributors	243,914	270,446	281,164
End users	564,590	489,134	516,676
Automotive	403,329	359,758	378,114
Heavy equipment/industrial	80,187	68,346	64,226
Agricultural	53,273	42,516	54,395
Other	27,801	18,514	19,941
Total, all channels	808,504	759,580	797,840

Table continued on next page.

Table II-1--Continued
TRBs: U.S. producers' and importers' U.S. commercial shipments, by sources and channels of distribution, 2015-17

Item	Period		
	Calendar year		
	2015	2016	2017
	Share of reported shipments (percent)		
U.S. producers' U.S. commercial shipments of TRBs:			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total, all channels	***	***	***
U.S. importers' U.S. commercial shipments of subject TRBs from China:			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total, all channels	***	***	***
U.S. importers' U.S. commercial shipments of nonsubject TRBs from nonsubject China:			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total, all channels	***	***	***
U.S. commercial shipments of TRBs from all other sources:			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total, all channels	***	***	***
U.S. commercial shipments of TRBs from all sources:			
Distributors	30.2	35.6	35.2
End users	69.8	64.4	64.8
Automotive	49.9	47.4	47.4
Heavy equipment/industrial	9.9	9.0	8.0
Agricultural	6.6	5.6	6.8
Other	3.4	2.4	2.5
Total, all channels	100.0	100.0	100.0

Note – U.S. producers' U.S. commercial shipments of wheel hub units were shipped *** during 2015-17. U.S. commercial shipments of wheel hub units imported from subject Chinese sources were shipped *** during 2015-17.

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

GEOGRAPHIC DISTRIBUTION

U.S. producers and importers reported selling TRBs to all regions in the United States (table II-2). For U.S. producers, 28.2 percent of sales were within 100 miles of their production facility, 47.1 percent were between 101 and 1,000 miles, and 24.8 percent were over 1,000 miles. Importers of Chinese TRBs sold 7.8 percent within 100 miles of their U.S. point of shipment, 58.3 percent between 101 and 1,000 miles, and 33.9 percent over 1,000 miles.

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

Region	U.S. producers	U.S. importers (China)
Northeast	5	10
Midwest	7	17
Southeast	6	12
Central Southwest	6	11
Mountain	3	7
Pacific Coast	5	9
Other[1]	3	2
All regions (except Other)	3	5
Reporting firms	7	18

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

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

SUPPLY AND DEMAND CONSIDERATIONS

U.S. supply

Table II-3 provides a summary of the supply factors regarding TRBs from U.S. producers and from China.

Table II-3
TRBs: Supply factors that affect the ability to increase shipments to the U.S. market

Country	Capacity (1,000 bearings or bearing equivalents)		Capacity utilization (percent)		Ratio of inventories to total shipments (percent)		Shipments by market, 2017 (percent)		Able to shift to alternate products
	2015	2017	2015	2017	2015	2017	Home market shipments	Exports to non-U.S. markets	No. of firms reporting "yes"
United States	123,474	121,869	66.1	64.1	***	***	***	***	2 of 9
China	29,360	38,597	75.1	88.0	***	***	23.8	***	3 of 8

Note.—The nine responding U.S. producers accounted for the vast majority of U.S. production of TRBs in 2017. The eight responding foreign producer/exporter firms accounted for less than half of U.S. imports of TRBs from China during 2017. For additional data on the number of responding firms and their share of U.S. production and of U.S. imports from China, please refer to Part I, "Summary Data and Data Sources."

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

Domestic production

Based on available information, U.S. producers of TRBs have the ability to respond to changes in demand with large changes in the quantity of shipments of U.S.-produced TRBs to the U.S. market. The main contributing factors to this degree of responsiveness of supply are the availability of unused capacity, availability of inventories, and the ability to shift shipments from alternate markets. The inability to shift production to or from alternate products somewhat mitigates responsiveness.

Domestic capacity utilization decreased as declines in production outpaced declines in capacity between 2015 and 2017. The relatively low level of capacity utilization suggests that U.S. producers may have substantial ability to increase production of TRBs in response to an increase in prices.

U.S. producers' exports, as a percentage of total shipments, increased from 2015 to 2017, but remained at a level that would indicate that U.S. producers may have some ability to shift shipments between the U.S. market and other markets in response to price changes. *** reported that it exports to *** and *** reported that it exports to ***. *** stated that shifting sales between markets is limited by the ability to meet lead-time requirements. *** stated that value-added taxes in other countries, as well as logistics, supply chain issues, and responsiveness to clients have led it to focus on supplying regionally. It also reported high tariff and non-tariff barriers in Argentina, Venezuela, and Russia. *** added that it has a "local for local" production strategy.

U.S. producers' inventory levels increased, relative to total shipments, from 2015 to 2017. 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.

U.S. producers *** reported they can shift production to alternate products using the same equipment as TRBs; *** reported it can also produce mounted spherical bearings. Factors

affecting U.S. producers' ability to shift production include dedicated equipment to TRB production, customized production lines that require extensive set up and retooling efforts, and size range.

Subject imports from China

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

Chinese producers' reported capacity and production increased during 2015 to 2017. Chinese producers' home market shipments increased while shipments to Asia remained stable and shipments to Europe and other markets decreased. Chinese producers reported exporting to Australia, Brazil, Canada, Colombia, France, Germany, India, Italy, Japan, Mexico, Korea, Thailand, and the United Kingdom. Chinese producers' inventories declined during 2015 to 2017.

Three Chinese producers reported they can shift production to produce other products on the same equipment as TRBs, including ball-structured wheel hub assemblies, and cylindrical and spherical bearings. They also reported that equipment used to produce large-diameter TRBs can be used to produce other types of large-diameter bearings. Factors affecting foreign producers' ability to shift production include investment in equipment, material supply, production plant arrangement, technology research development, equipment resetting, and dedicated equipment to TRBs or wheel hub assemblies.

Six responding Chinese producers reported that the TRBs produced and sold in the home market are not interchangeable with the TRBs sold to the United States and third-country markets. They stated that wheel hub assemblies are make- and model-specific and that TRBs sold in the United States are sold in inch dimensions and TRBs sold in China are in metric dimensions.

Imports from nonsubject sources

Nonsubject imports, including nonsubject imports from China, accounted for *** percent of total U.S. imports, by value, in 2017. The largest sources of nonsubject imports were Japan and India. Combined, these countries accounted for half of nonsubject imports in 2017.

Supply constraints

Most U.S. producers and importers reported no supply constraints. One U.S. producer/importer (***) reported a limited ability to deliver TRBs on-time for a 6-to-9 month period during 2014-15 because of a sudden increase in TRBs demand coupled with a major raw material quality issue. Three other importers also reported facing supply constraints: ***. ***

stated that it had limited capacity to accept new customers and *** stated that it refused to quote TRBs due to difficulty in acquiring them.

Ten of 35 responding purchasers reported experiencing supply constraints since January 1, 2012. Purchasers *** cited issues with supply from Timken, noting backorders, late deliveries, and production moving between plants. Purchaser *** stated that it was notified by LYC North America in August 2017 that it would no longer be importing TRBs. Purchaser *** stated that it was notified of capacity constraints on multiple occasions, primarily in 2012 and 2013, by various suppliers, noting NTN, Koyo, and Timken, in which it experienced exceptionally long lead times and required expedited freight and daily communication with the plants to ensure supply. *** continued that these constraints led it to add suppliers Fersa (Europe) and Iljin (Korea) to its list of approved suppliers in 2014-16. *** stated that it has experienced sporadic supply shortages for most TRBs it purchases.

Most responding U.S. producers, importers, and purchasers reported that the availability of TRBs in the U.S. market has not changed from any source since January 1, 2012 and do not anticipate any changes. However, some importers and purchasers cited long lead times, backorders, and capacity constraints from U.S. producers and increased availability of TRBs imported from China, particularly TRBs offered by distributors. Foreign producers reported increased labor, shipping, and energy costs in China, and also that automation has increased product quality and production stability. Most responding foreign producers (6 of 7) reported that they do not expect any changes in terms of the availability of Chinese-produced TRBs in the U.S. market, although one firm (***) reported that it expects a decrease due to declining U.S. vehicle sales.

New suppliers

Five of 36 purchasers indicated that new suppliers entered the U.S. market since January 1, 2012, and six expect additional entrants. Purchasers cited ZWZ (subject China), C&U Group (subject China), NBR India, Iljin (Korea), and New Torch.

U.S. demand

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

End uses and cost share

U.S. demand for TRBs depends on the demand for U.S.-produced downstream products. TRBs are utilized primarily in trucks and agricultural equipment in which load carrying capacity is more important than rotational speed. Reported end uses include axles, transmissions, wheel hub assemblies, class 8 truck rebuild kits, gearboxes, industrial equipment, and locomotives. TRBs are also sold in the aftermarket for service parts. TRBs generally account for a small share of the cost of the end-use products in which they are used. Some reported end uses and cost shares were as follows:

- Transmissions (0.1-7 percent)
- Wheels (5-30 percent)
- Axles (3-15 percent)
- TWC transfer cases (6 percent)
- Lawn/garden (15 percent)
- Wheel hub assemblies (1-15 percent)
- Power transfer units (2-20 percent)
- Gear boxes (1-25 percent)
- Conveyor rollers (60 percent)

Most firms (8 U.S. producers, 27 importers, 20 purchasers, and 6 foreign producers) reported no changes in end uses since 2012. Eight U.S. producers, 28 importers, 19 purchasers, and 7 foreign producers reported no anticipated changes in end uses.

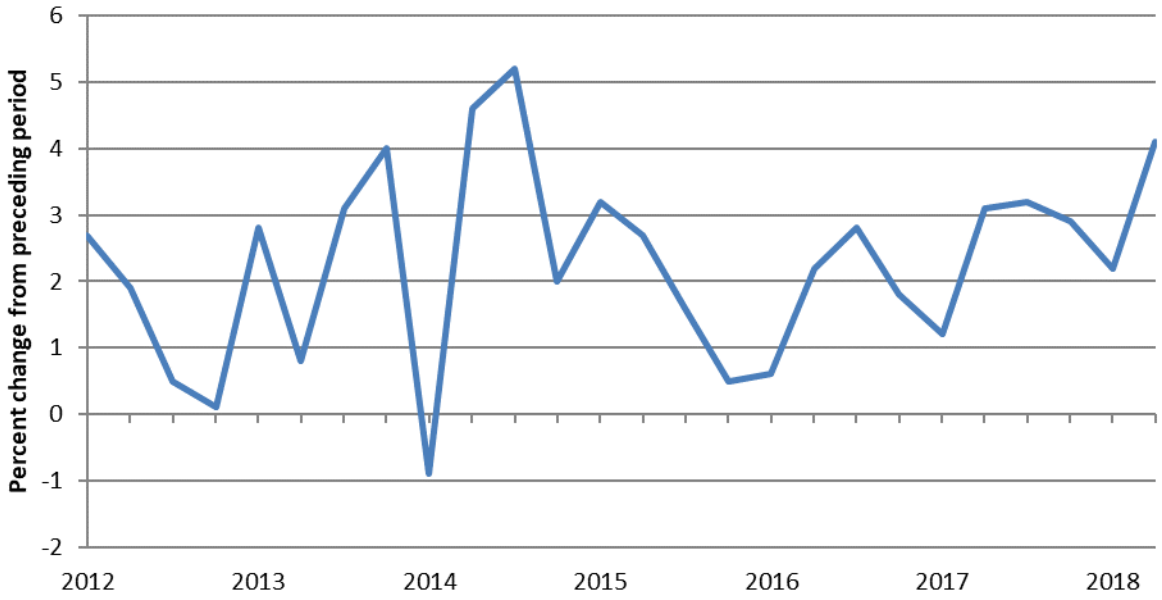
Business cycles

One of 33 importers and 4 of 36 purchasers indicated that the market was subject to business cycles, and 1 of 8 U.S. producers, 4 importers, and 2 purchasers indicated that the market was subject to other conditions of competition. Generally, firms stated that demand for TRBs follows demand fluctuations within the end markets in which they are used, such as automotive, industrial, construction, agriculture, and heavy-duty truck. Specifically, U.S. producer/importer *** stated that demand is driven by industrial production. Purchaser *** stated that the market is seasonal based on damage or wear incurred in the winter months, typically leading to an increase in sales in the spring.

One U.S. producer, four importers, and five purchasers indicated that there have been changes in the conditions of competition since January 1, 2012. Importer *** stated that the economy was somewhat depressed in 2016 and has recently rebounded and that most end-use markets followed this trend, except for the automotive market which strengthened from 2014-17. Importer *** stated that the automotive sector has been expanding while the agricultural and industrial sectors expanded through 2013 but have stagnated in recent years. Purchaser *** stated that auto demand has increased and industrial demand has declined. Purchaser *** stated that mining equipment demand “plunged” after 2012 but is “surging” again and that rail demand has “plunged.”

As TRBs are used in many and varied industries, overall GDP growth generally influences overall demand. Real GDP growth fluctuated between January 2012 and June 2018; annual growth peaked at 5.2 percent in the third quarter of 2014 (figure II-1).

Figure II-1
Real U.S. gross domestic product, seasonally adjusted annual rates, January 2012-June 2018



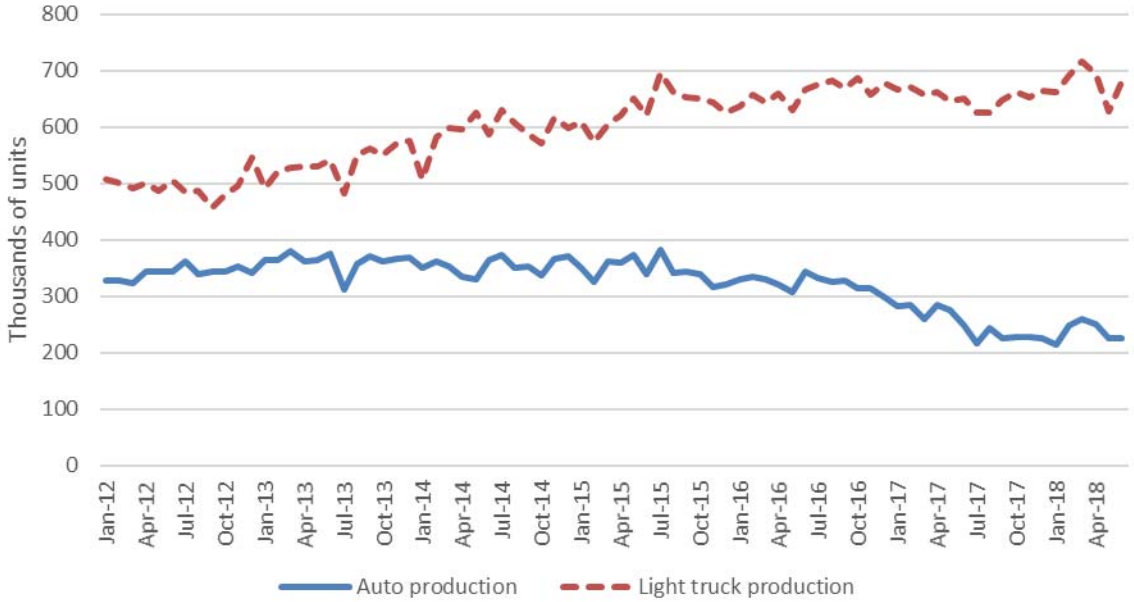
Source: Bureau of Economic Analysis, https://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm, accessed August 16, 2018

.

During January 2012-December 2017, seasonally adjusted domestic auto production declined by 31 percent while light truck production increased by 30 percent (figure II-2).[4] Overall, U.S. auto and light truck production increased by 6 percent from January 2012-December 2017. Domestic auto and light truck production fluctuated during the first half of 2018; from December 2017 to June 2018, auto production decreased 1 percent and light truck production increased by 3 percent.

[4] Wheel hub units are primarily used in light trucks and SUVs. Hearing p. 95 (Ruel), pp. 188, 226 (Vander Schaaf).

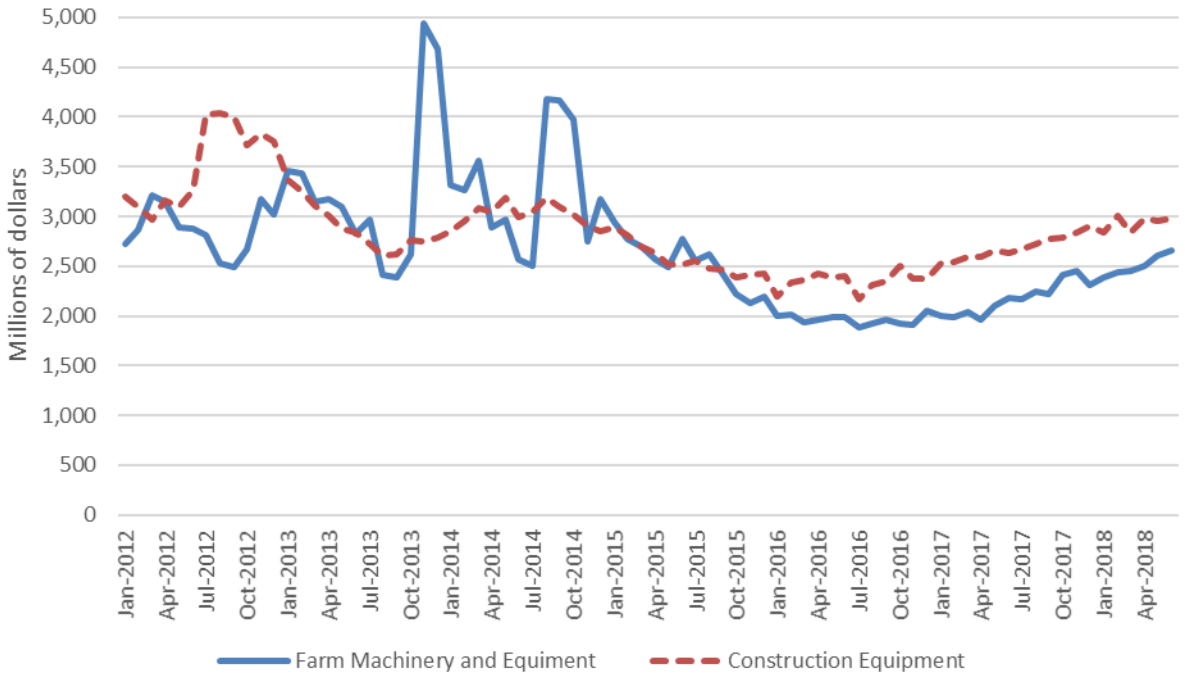
Figure II-2
U.S. auto and light truck production, seasonally adjusted, January 2012-June 2018



Sources: Bureau of Economic Analysis, https://www.bea.gov/national/xls/gap_hist.xlsx, Federal Reserve Board, https://www.federalreserve.gov/releases/g17/mvsf.htm, accessed August 16, 2018; Ward's Automotive Yearbook, accessed August 22, 2018.

U.S. farm machinery and equipment manufacturing fell by 15 percent and construction machinery manufacturing declined by 9 percent during January 2012-December 2017 (figure II-3). During the first half of 2018, U.S. farm machinery and equipment manufacturing and construction machinery manufacturing increased by 15 percent and 3 percent, respectively.

Figure II-3
U.S. total farm machinery and equipment and construction machinery manufacturing, seasonally adjusted value of shipments, millions of dollars, January 2012-June 2018



Source: U.S. Census Bureau, Manufacturers' Shipments, Inventories, and Orders, https://www.census.gov/manufacturing/m3/index.html, accessed August 16, 2018.

Demand trends

Most firms reported an increase or fluctuation in overall U.S. demand for TRBs since January 1, 2012 (table II-4). Most firms reported an increase or fluctuation in demand for TRBs in the automotive and heavy equipment/industrial sectors but that demand fluctuated or was stable in the agricultural sector. Twelve of 26 responding purchasers reported that demand for their end-use products using TRBs had increased since January 1, 2012. In particular, purchasers reported that although demand for vehicles has increased, newer transmissions do not require TRBs. Purchasers reported that increased truck demand has increased the demand for wheel hubs. Firms generally expect demand to fluctuate over the next two years.

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

Item	Increase	No change	Decrease	Fluctuate
Overall demand in the United States				
U.S. producers	1	---	2	3
Importers	13	3	3	9
Purchasers	11	3	1	9
Foreign producers	2	1	---	3
Automotive demand in the United States				
U.S. producers	1	---	1	3
Importers	9	4	2	7
Purchasers	13	7	---	4
Foreign producers	4	---	---	2
Agricultural demand in the United States				
U.S. producers	---	---	2	3
Importers	1	6	6	8
Purchasers	1	6	3	5
Foreign producers	---	---	---	5
Heavy equipment/industrial demand in the United States				
U.S. producers	1	---	2	4
Importers	4	4	5	12
Purchasers	10	2	4	9
Foreign producers	1	---	---	4
Demand outside the United States				
U.S. producers	---	2	1	4
Importers	9	3	2	8
Purchasers	7	5	---	7
Foreign producers	6	---	---	2
Demand for purchasers' final products since 2012				
Purchasers	12	2	2	10

Table continued on next page.

Table II-4 -- Continued
TRBs: Firms' responses regarding anticipated U.S. demand

Item	Increase	No change	Decrease	Fluctuate
Overall anticipated demand in the United States				
U.S. producers	1	---	2	3
Importers	9	6	2	9
Purchasers	10	5	---	9
Foreign producers	2	1	---	3
Automotive anticipated demand in the United States				
U.S. producers	---	1	1	3
Importers	7	6	2	6
Purchasers	8	10	---	4
Foreign producers	3	1	---	2
Agricultural anticipated demand in the United States				
U.S. producers	---	1	2	2
Importers	4	7	3	5
Purchasers	2	8	---	5
Foreign producers	1	---	1	3
Heavy equipment/industrial anticipated demand in the United States				
U.S. producers	2	---	2	3
Importers	6	3	4	11
Purchasers	12	3	---	8
Foreign producers	1	---	1	3
Anticipated demand outside the United States				
U.S. producers	---	3	1	3
Importers	8	6	1	8
Purchasers	7	7	---	3
Foreign producers	5	---	---	3

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

Substitute products

Most U.S. producers (4 of 8), importers (28 of 34), purchasers (31 of 36), and foreign producers (7 of 8) reported that there were no substitutes and nearly all do not anticipate any future changes in substitutes. Reported substitutes for TRBs are limited and include ball, cylindrical, and spherical roller bearings for use in axle, transmission, wheels, and spindles.

SUBSTITUTABILITY ISSUES

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

Lead times

TRBs are primarily produced-to-order. U.S. producers reported that 65 percent of their commercial shipments were produced-to-order, with lead times averaging 95 days. The remaining 35 percent of their commercial shipments came from inventories, with lead times averaging almost 40 days. Importers of Chinese TRBs reported that 71 percent of their commercial shipments were produced-to-order, with lead times averaging 112 days. Twenty-eight percent of their commercial shipments came from U.S. inventories, with lead times averaging 13 days, and 1 percent were from foreign inventories, with lead times averaging 42 days. Foreign producers reported that *** of their sales are produced-to-order, with an average lead time of 75 days, and *** are from inventory, with an average lead time of 16 days.

Knowledge of country sources

Thirty-four purchasers indicated they had marketing/pricing knowledge of domestic product, 22 of China product, and 28 of product from nonsubject countries.

As shown in table II-5, purchasers reported mixed responses as to how often they ord their customers make purchasing decisions based on the producer, but a plurality of purchasers reported that they and their customers never make purchasing decisions based on country of origin. Of the 21 purchasers that reported that they always or usually make decisions based on the manufacturer, 8 firms cited quality as the reason; other reasons include supply chain, cost, technical capability, reliability, long-established relationships, and prior approval of the producer.

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

Purchaser/Customer Decision	Always	Usually	Sometimes	Never
Purchaser makes decision based on producer	10	11	6	9
Purchaser's customers make decision based on producer	1	8	11	10
Purchaser makes decision based on country	1	3	13	18
Purchaser's customers make decision based on country	---	4	10	13

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 TRBs were price (33 firms), quality (31 firms), and delivery/lead times (18 firms), as shown in table II-6. Quality was the most frequently cited first-most important factor (cited by 22 firms), followed by price (4 firms); price was the most frequently reported second- and third-most important factor (14 and 15 firms, respectively).

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

Factor	First	Second	Third	Total
Price/cost	4	14	15	33
Quality	22	7	2	31
Delivery/lead times	1	6	11	18
Availability/supply	1	7	5	13
Other[1]	9	2	4	15

[1] Other factors include customer preference, approved supplier, technical competence, meeting product specifications, brand equity, product range, contracts, and payment terms.

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

A plurality of purchasers (15 of 35) reported that they sometimes purchase the lowest-priced product, and 13 purchasers reported that they usually do. When asked if they purchased TRBs from one source although a comparable product was available at a lower price from another source, 6 purchasers reported reasons including quality and "perceived" better quality of domestically produced TRBs, customer specification, supplier performance, a strong preference for products produced in the country or regions in which it assembles its vehicles, and application requirements.

Importance of specified purchase factors

Purchasers were asked to rate the importance of 15 factors in their purchasing decisions (table II-7). The factors rated as very important by more than half of responding purchasers were product consistency (reported by 34 firms), availability (33), quality meets industry standards (33), reliability of supply (33), delivery time (30), price (30), delivery terms (21), and technical support/service (19).

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

Factor	Very important	Somewhat important	Not important
Availability	33	3	---
Delivery terms	21	13	2
Delivery time	30	5	1
Discounts offered	13	17	5
Extension of credit	8	13	14
Minimum quantity requirements	10	16	9
Packaging	8	20	7
Price	30	6	---
Product consistency	34	2	---
Product range	11	18	7
Quality meets industry standards	33	2	1
Quality exceeds industry standards	23	12	---
Reliability of supply	33	3	---
Technical support/service	19	13	3
U.S. transportation costs	12	16	8

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

Supplier certification

Twenty-seven of 36 responding purchasers require their suppliers to become certified or qualified to sell TRBs to their firm. Fifteen purchasers reported that the time to qualify a new supplier was one year or less while seven reported times of more than one year. Generally, purchasers reported that supplier qualification includes extensive quality control tests, including providing samples and dynamic load testing, as well as financial audits.

Specifically, purchaser *** reported that its *** timeline to certify is based on an end-to-end process which includes a standard on-site quality audit, and review of performance, financials, and ISO certifications, and that the timeline can be extended depending on extent of sample and production trial requirements. Purchaser *** stated that after satisfactory initial testing, it conducts 2,000 hours of accelerated life testing and parts are torn down to inspect for excessive wear or fatigue. Purchaser *** stated that it has a substantial certification process to qualify a new supplier which involves submittal of design recommendations and analysis of bearing life expectancy, application testing, site audits to ensure that robust quality operating systems are in place, and a "Product Submission Warrant" proving that the parts meet all required characteristics and that the manufacturing process is capable of producing quality parts. *** added that, in some cases, it also requires 6-12 month field testing to ensure that bearings will perform as anticipated.

Three 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, 2012. *** stated that it failed to qualify Timken because of quality, as well as reduced payment terms and increased prices. *** failed to qualify Fujian Yongan (subject China) and C&U (subject China) due to substandard analysis. *** stated that Iljin (Korea) failed to qualify due to insufficient quality. In addition, *** stated that it had bearings planned for production with *** in India but the design proposals were rejected for not meeting all requirements, although *** is working on alternate design options so it will likely eventually be approved. It also stated that *** had production planned in Japan, but design proposals for off-highway vehicle rim TRBs were rejected for not meeting all requirements.

Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since 2012 (table II-8). Reasons cited for increased purchases from China include lower comparative costs, increased availability, and increased purchases in the aftermarket as lead times from U.S. producers increased. Reasons reported for decreased or fluctuating purchases from the United States included availability, pricing, customer demand, backorders, and the phase out of TRBs in transmissions.

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

Source of purchases	Did not purchase	Decreased	Increased	Constant	Fluctuated
United States	3	9	5	10	8
China	10	1	9	9	2
Other	4	1	7	10	9
Sources unknown	12	1	2	5	3

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

Sixteen of 35 responding purchasers reported that they had changed suppliers since January 1, 2012. Specifically, firms dropped or reduced purchases from U.S. producer Timken and NSK (Japan) and added or increased purchases from Iljin (Korea), Fersa (Europe), NTN (Japan, U.S.), Schaeffler (Korea), and Peer (subject China) because of pricing, availability, and general business relationships. Firms also reported that LYC North America notified firms in August 2017 that it would not import additional TRBs. *** reported that Kyklos Bearing International (KBI) closed during the period of review.

Importance of purchasing domestic product

Nearly all responding purchasers (27 of 34) reported that most or all of their purchases did not require U.S.-produced product. Three firms reported that domestic product was required by law (for 1 to 10 percent of their purchases), six reported it was required by their customers (for 1 to 100 percent of their purchases), and one reported other preferences for domestic product (i.e., available capacity and current production).

Comparisons of domestic products, subject imports, and nonsubject imports

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

Most purchasers reported that domestically produced TRBs and TRBs imported from China were comparable on nearly all factors, including the “very important” factors of product consistency, availability, quality meets industry standards, reliability of supply, delivery time, and delivery terms. The exception was price, for which 11 of 23 firms indicated that the Chinese product was priced lower. Most purchasers reported that U.S. and nonsubject product were comparable on all factors. Most responding purchasers reported that TRBs from China and from other countries were comparable on all factors except price, in which China was rated as superior (i.e., priced lower).

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

Factor	U.S. vs. China			U.S. vs. nonsubject			China vs. nonsubject		
	S	C	I	S	C	I	S	C	I
Availability	3	18	1	5	20	1	1	19	3
Delivery terms	4	17	---	4	22	---	---	21	2
Delivery time	10	11	1	9	17	---	1	19	3
Discounts offered	2	16	4	2	21	2	2	20	---
Extension of credit	2	15	2	2	20	2	1	18	1
Minimum quantity requirements	3	18	1	4	22	---	2	19	1
Packaging	3	19	1	2	24	---	1	19	2
Price[1]	4	8	11	2	16	8	12	9	2
Product consistency	5	16	1	3	22	---	---	19	3
Product range	6	14	2	5	18	3	---	19	3
Quality exceeds industry standards	6	15	1	3	22	1	---	18	4
Quality meets industry standards	7	12	2	4	20	---	---	16	5
Reliability of supply	4	17	1	3	23	---	2	17	3
Technical support/service	10	11	1	4	22	---	---	15	8
U.S. transportation costs[1]	6	16	---	6	20	---	1	17	3

[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 TRBs

In order to determine whether U.S.-produced TRBs can generally be used in the same applications as imports from 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-10, 4 of 6 responding U.S. producers, 14 of 27 importers, and 11 of 26 purchasers reported that domestically produced TRBs and TRBs imported from China are frequently interchangeable and 2 U.S. producers, 9 importers, and 8 purchasers reported that they are sometimes interchangeable. Firms generally cited quality differences and customer dictated specifications as factors limiting interchangeability. U.S. producer/importer *** stated that Chinese TRBs are usually made with less stringent specifications to fit the Chinese market. Purchaser *** stated that while TRBs imported from China can be physically used in the same application, the performance and life of the bearings can differ substantially from bearings produced by other well-qualified manufacturers. Purchaser *** stated that producers in the United States and in some other countries make premium heat-treated bearings while Chinese producers do not.

Table II-10
TRBs: Interchangeability between TRBs produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject countries:												
U.S. vs. China	---	4	2	---	3	14	9	1	6	11	8	1
Nonsubject countries comparisons:												
U.S. vs. nonsubject	1	3	3	---	2	12	10	1	10	13	5	1
China vs. nonsubject	---	4	2	---	1	12	8	1	5	10	7	2

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

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

As can be seen from table II-11, all responding purchasers reported that domestic and nonsubject TRBs always or usually met specifications, and 17 of 22 purchasers reported that Chinese TRBs always or usually met specifications. Nineteen of 29 responding purchasers reported that domestically produced product always met minimum quality specifications and 11 of 22 responding purchasers reported that Chinese TRBs always met minimum quality specifications. Purchasers reported that quality characteristics include durability, OEM fit, form and function, consistency with specifications, load requirements, noise, vibration, engineering, product life, testing results, and hardness. Purchasers reported that quality leaders include Timken (identified by 18 firms), NTN (Japan) (6), SKF (5), Schaeffler (Korea) (4), Iljin (Korea) (3), NSK (Japan) (4), and Koyo (Japan, U.S.) (2). One firm each identified Peer, General Bearings, Nachi, ZWZ Bearing, Signal Flame, and Federal Mogul.

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

Source	Always	Usually	Sometimes	Rarely or never
United States	19	10	---	---
China	11	6	5	---
Other	13	8	---	---

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

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

In addition, producers, importers, and purchasers were asked to assess how often differences other than price were significant in sales of TRBs from the United States, China, or nonsubject countries. As seen in table II-12, 3 of 6 responding U.S. producers, 13 of 24 importers, and 12 of 26 purchasers reported that there are sometimes significant factors other than price, including quality, ability to satisfy specification requirements, availability, technological competence, lead time, supplier relationship, and technical support. Importer *** stated that while U.S.-produced TRBs may have better quality, Chinese-produced TRBs have a

wider application range and Chinese manufacturers provide better technical support compared to domestic producers.

Table II-12
TRBs: Significance of differences other than price between TRBs produced in the United States and in other countries, by country pair

Country pair	Number of U.S. producers reporting				Number of U.S. importers reporting				Number of purchasers reporting			
	A	F	S	N	A	F	S	N	A	F	S	N
U.S. vs. subject countries:												
U.S. vs. China	---	3	3	---	2	7	13	2	9	4	12	1
Nonsubject countries comparisons:												
U.S. vs. nonsubject	---	3	4	---	1	8	13	1	9	5	11	4
China vs. nonsubject	---	2	4	---	1	5	13	1	7	2	12	2

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; parties were encouraged to comment on these estimates. Timken stated that it generally agreed with these estimates.[5]

U.S. supply elasticity

The domestic supply elasticity[6] for TRBs measures the sensitivity of the quantity supplied by U.S. producers to changes in the U.S. market price of TRBs. The elasticity of domestic supply depends on several factors including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternate markets for U.S.-produced TRBs. Analysis of these factors above indicates that the U.S. industry is likely to be able to greatly increase or decrease shipments to the U.S. market; an estimate in the range of 4 to 6 is suggested.

[5] Timken's prehearing brief, p. 19.

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

U.S. demand elasticity

The U.S. demand elasticity for TRBs measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of TRBs. This estimate depends on factors discussed above such as the existence, availability, and commercial viability of substitute products, as well as the component share of the TRBs in the production of any downstream products. Based on the available information, the aggregate demand for TRBs is likely to be highly inelastic; a range of -0.2 to -0.4 is suggested.

Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[7] Product differentiation, in turn, depends upon such factors as quality (e.g., chemistry, appearance, etc.) and conditions of sale (e.g., availability, sales terms/discounts/promotions, etc.). Based on available information, the elasticity of substitution between U.S.-produced TRBs and imported TRBs is likely to be in the range of 2 to 4.

[7] 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

The information in this section of the report was compiled from responses to the Commission's questionnaires. Nine firms, which accounted for the vast majority of U.S. production of TRBs during 2017, supplied information on their operations in this review.

Recent developments in the industry

Table III-1 presents recent developments that have occurred in the TRB industry since the Commission's last five-year review.

Table III-1
TRBs: U.S. producers' reported changes in operations, since January 1, 2012

Date	Company	Event
2012	Timken	**Layoffs**: In November 2012, Timken announced layoffs affecting between 300-400 employees at its North Canton, Ohio plants.[1]
2013	Baldor Electric	**Expansion:** Began production of mounted roller bearings at its dodge plant in Marion, North Carolina.[2]
2014	Timken	**Layoffs:** Timken laid off 56 employees at Ball Ground, Georgia plant.[3]
2014	Timken	**Expansion:** In the second quarter of 2014, Timken announced a major investment to accelerate product development and production lines.[4]
2014	Koyo	**Expansion:** Announced a $10 million investment to overhaul its plant in Orangeburg, South Carolina.[5]
2015	Koyo	**Expansion:** JTEKT North America, a subsidiary of Koyo, announced a $130 million expansion to its plant in Blythewood, South Carolina.[6]
***	***	***.[7]
2016	Regal Beloit Corp.	**Layoffs:** Laid off 40 employees at its plant in Monticello, Indiana.[8]
2017	Timken	**Prolonged shutdown or curtailment:** In the first quarter of 2017, Timken closed its plant near Altavista, Virginia.[9]
2017	Timken	**Relocation:** From 2017 to 2018, assets from Timken's Altavista, Virginia plant will be relocated to another plant located at Lincolnton, North Carolina.[10]

Notes continued on next page.

[1] Hyser, Chris. "Layoffs coming to Timken." *Fox 8 Cleveland*, November 15, 2012. http://fox8.com/2012/11/15/layoffs-coming-to-timken/.
[2] McGroarty, J. Stanton. "Mounted roller bearings to the world." *Plant Services*, February 15, 2013. http://www.plantservices.com/articles/2013/02-plant-profile-baldor-electric/.
[3] "A market conditions and project evalution summary of Prominence Senior Village, Canton, Cherokee County, Georgia." *Novogradac & Company LLC*, June 8, 2015. https://www.dca.ga.gov/housing/HousingDevelopment/programs/documents/2015-042ProminenceSrVllgMktStudy.pdf.
[4] "Timken Announces Major Investment to Accelerate Product Development and Line Expansion," Timken Company. http://news.timken.com/2014-06-11-Timken-Announces-Major-Investment-to-Accelerate-Product-Development-and-Line-Expansion.
[5] Brown, Martha Rose. "Koyo investing $10M in Orangeburg plant." *T&D*, March 18, 2014. http://thetandd.com/news/koyo-investing-m-in-orangeburg-plant/article_be210a22-ae47-11e3-9269-001a4bcf887a.html.
[6] Poindexter, Jim. "JTEKT/Koyo expands its Blythewood facility to accommodate new business." *T&D*, December 26, 2015. http://thetandd.com/business/jtekt-koyo-expands-its-blythewood-facility-to-accommodate-new-business/article_b1b4d4ef-5d78-51c5-a15b-9891ba1b3efe.html.
[7] *Domestic interested party's response to the notice of institution*, August 2, 2017, exh. 5.
[8] Ea Ambrose, Emma. "Regal Beloit lays off staff amid outsourcing." *Journal & Courier*, October 6, 2016. http://www.jconline.com/story/money/business/2016/10/06/regal-beloit-lays-off-staff-amid-outsourcing/91677692/.
[9] Manch, Rob. "Timken plant near Altavista to close in 2017." *WSLS 10*, March 17, 2016 https://www.wsls.com/news/timken-plant-near-altavista-to-close-in-2017_2017033013042280.
[10] Manch, Rob. "Timken plant near Altavista to close in 2017." *WSLS 10*, March 17, 2016. https://www.wsls.com/news/timken-plant-near-altavista-to-close-in-2017_2017033013042280.

Source: Cited public sources and *Domestic interested party's response to the notice of institution,* August 2, 2017, exh. 5.

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 TRBs since 2012. Eight of the nine domestic producers which provided responses in this review indicated that they had experienced such changes; their responses are presented in table III-2.

Table III-2
TRBs: Changes in the character of U.S. operations since January 1, 2012

* * * * * * *

Anticipated changes in operations

The Commission asked domestic producers to report anticipated changes in the character of their operations relating to the production of TRBs. U.S. producer *** reported that ***.

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Table III-3 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. Domestic producers' TRB production decreased by 4.3 percent during 2015-17, reflecting declining production levels in 2016 and a partial recovery in 2017. The overall 1.3 percent reduction in capacity between 2015 and 2017 reflects *** lower level of allocated capacity after 2015.[1] Capacity utilization for the U.S. industry decreased by 2.0 percentage points during 2015-17.

[1] *** reported production greater than capacity, citing that its capacity is based on standard run times, not including overtime. It further reported that it occasionally runs overtime, but not as standard operating procedure, thus reported production was higher than capacity. Even with staff's adjustments to *** capacity to equal production, the company's allocated capacity declined during 2015-17. Staff correspondence with ***, April 24, 2018.

Table III-3
TRBs: U.S. producers' production, capacity, and capacity utilization, 2015-17

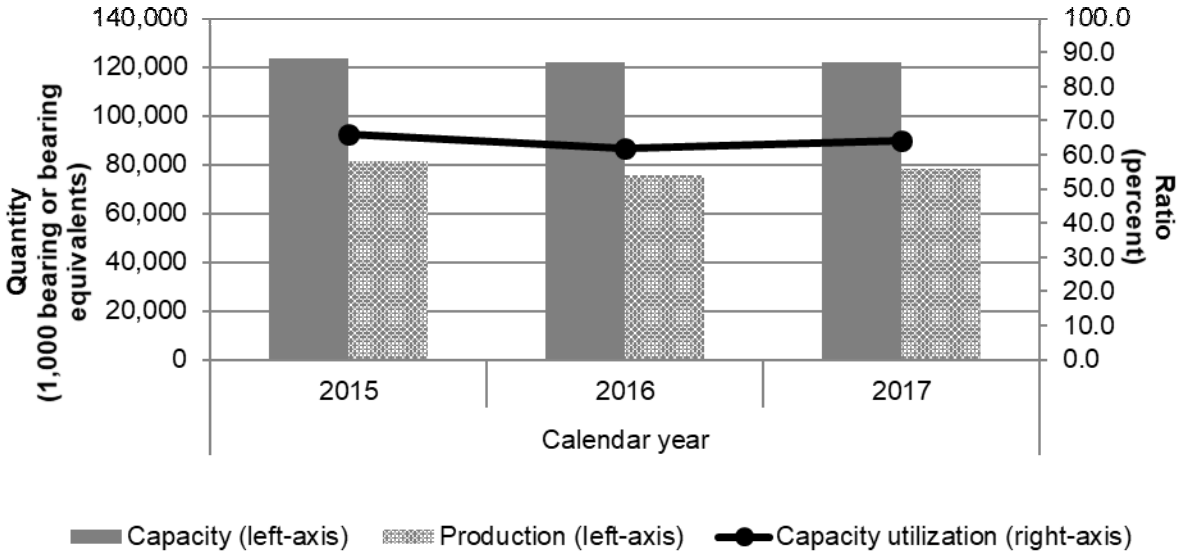
Item	Calendar year		
	2015	2016	2017
	Capacity 1,000 bearings or bearing equivalents)		
ABB	***	***	***
American NTN	***	***	***
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Total capacity	123,474	121,879	121,869
	Production (1,000 bearings or bearing equivalents)		
ABB	***	***	***
American NTN	***	***	***
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Total production	81,586	75,644	78,092
	Capacity utilization (percent)		
ABB	***	***	***
American NTN	***	***	***
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Average capacity utilization	66.1	62.1	64.1

Note.—Figures shown as "0" represent quantities greater than zero, but less than 500 units.

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

Figure III-1

TRBs: U.S. producers' capacity, production, and capacity utilization, 2015-17



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

Constraints on capacity

Eight of the nine responding U.S. producers reported constraints in the manufacturing process. Constraints in the manufacturing process include machinery and equipment capacity, including heat treatment, grinding, and assembly operations, as well as working days, preventative maintenance, and cycle time.

Alternative products

Three of nine responding U.S. producers reported producing alternative products on the same equipment and machinery.[2] *** and *** reported production of cylindrical roller bearings on the same equipment and machinery, while *** reported production of spherical roller bearings. Between 2015 and 2017, ***

***.[3] Production of other products accounted for *** percent, *** percent, and *** percent of *** total 2017 production on the same equipment and machinery, respectively.

Two producers *** reported the ability to switch production from TRBs to other products. *** reported its ability to switch production to mounted spherical roller bearings. *** reported its ability to switch production to cylindrical and needle roller bearings, but reported *** production of such products during 2015-17. *** reported that while the equipment is dedicated to TRB production, its employees have been cross-trained to produce other products.

[2] *** also reported using the same heat treating equipment and surface grinding equipment for the production of wheel hub assemblies using ball bearings. Staff correspondence with ***, July 3, 2018.

[3] Staff correspondence with ***, June 27, 2018; staff correspondence with ***, June 12, 2018; and staff correspondence with ***, June 14, 2018.

Two additional U.S. producers, ***, reported that machines cannot be easily modified to produce other product types. *** further reported that changing bearing types on designated production lines requires extensive setup and retooling efforts, as well as an overhaul of the machine itself to ensure bearing type production specification standards are met.

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

Table III-4 presents U.S. producers' U.S. shipments, export shipments, and total shipments.[4] Total U.S. shipments by value decreased by 9.4 percent during 2015-17, reflecting declining shipment levels in 2016 and a partial recovery in 2017. U.S. producers' U.S. shipments accounted for the majority of total shipments (*** percent based on value in 2017). Six of the nine responding firms reported export shipments, with ***. All transfers to related firms were reported by ***, and accounted for *** during 2015-17.[5] In addition, all shipments of parts were reported by ***, with *** accounting for the vast majority.

[4] U.S. producers were asked to report separately any other parts that cannot be converted into bearing equivalents (*e.g.,* parts other than assemblies and cups). These data are presented separately in table III-3 as "Value of parts."

[5] ***.

Table III-4
TRBs: U.S. producers' U.S. shipments, exports shipments, and total shipments, 2015-17

Item	Calendar year		
	2015	2016	2017
	Value of complete bearings or bearing equivalents (1,000 dollars)		
U.S. shipments	1,270,868	1,133,928	1,152,974
Export shipments	***	***	***
Total shipments	***	***	***
	Value of parts (1,000 dollars)		
U.S. shipments	2,164	1,357	600
Export shipments	***	***	***
Total shipments	***	***	***
	Total value (bearings and parts) (1,000 dollars)		
U.S. shipments	1,273,032	1,135,285	1,153,574
Export shipments	***	***	***
Total shipments	***	***	***
	Quantity (1,000 bearings or bearing equivalents)		
U.S. shipments	65,033	60,360	55,712
Export shipments	***	***	***
Total shipments	***	***	***
	Unit value (dollars per B&BE)		
U.S. shipments	19.54	18.79	20.70
Export shipments	***	***	***
Total shipments	***	***	***
	Share of value (percent)		
U.S. shipments	***	***	***
Export shipments	***	***	***
Total shipments	***	***	***
	Share of quantity (percent)		
U.S. shipments	***	***	***
Export shipments	***	***	***
Total shipments	***	***	***

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

U.S. PRODUCERS' INVENTORIES

Table III-5 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**.** The U.S. industry's inventories of TRBs increased by *** percent during 2015-17. *** accounted for the majority of ending inventories in each year.

Table III-5
TRBs: U.S. producers' inventories, 2015-17

* * * * * * *

U.S. PRODUCERS' IMPORTS AND PURCHASES

Eight of nine U.S. producers imported TRBs during the period for which data were collected. Three U.S. producers, *** directly imported the subject merchandise from China. Table III-6 presents data on individual U.S. producers' U.S. production and U.S imports of TRBs from China and all other sources. No U.S. producer reported purchases of subject TRBs from China, although *** reported purchases of TRBs from nonsubject sources.

Table III-6
TRBs: U.S. producers' U.S. production, imports, and import ratios to U.S. production, 2015-17

* * * * * * *

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-7 shows U.S. producers' employment-related data. The number of production and related workers ("PRWs") decreased by 6.5 percent during 2015-17, reflecting declining employment levels in 2016 and a partial recovery in 2017. Total hours worked and wages paid similarly decreased during 2015-17, by 3.6 and 1.6 percent respectively. Hourly wages increased by 2.1 percent between 2015 and 2017, while productivity declined slightly; as a result, unit labor costs increased by 2.8 percent during the same period.

Table III-7
TRBs: Average number of production and related workers, hours worked, wages paid to such employees, hourly wages, productivity, and unit labor costs, 2015-17

Item	Calendar year		
	2015	2016	2017
Production and related workers (PRWs) (number)	4,295	3,896	4,014
Total hours worked (1,000 hours)	8,333	7,795	8,034
Hours worked per PRW (hours)	1,940	2,001	2,001
Wages paid ($1,000)	195,023	175,967	191,942
Hourly wages (dollars per hour)	$23.40	$22.57	$23.89
Productivity (1,000 bearings or bearing equivalents per hour)	9.8	9.7	9.7
Unit labor costs (dollars per 1,000 bearings or bearing equivalents)	$2.39	$2.33	$2.46

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

FINANCIAL EXPERIENCE OF U.S. PRODUCERS

Background

U.S. producers ABB, Amsted, American NTN, Koyo, NSK, NTN-Bower, Regal Beloit, Schaeffler, and Timken provided usable financial data on their TRB operations.[6] This section of the report presents income-and-loss data for the TRB operations including commercial sales, internal consumption, and transfers to related firms. Of these, commercial sales represented approximately *** percent of the total sales value and *** percent of total sales quantity during 2015-17.

Operations on TRBs

Table III-8 presents aggregate data on U.S. producers' operations in relation to TRBs, including the value of parts sold, over the fiscal years 2015-17.[7] Total net sales quantity and value declined from 2015 to 2016 and rose in 2017 but did not reach the level in 2015. ***.

Table III-8
TRBs: Results of operations of U.S. producers, fiscal years 2015-17

* * * * * * *

Table III-9 presents selected company-specific financial data.

Table III-9
TRBs: Results of operations of U.S. producers, by firm, fiscal years 2015-17

* * * * * * *

Net sales quantity and value

Total net sales of TRBs consisted of commercial sales, internal consumption, and transfers to related firms, which accounted for approximately *** by value in 2017, respectively.[8] As shown in table III-8, aggregate TRB sales quantity and value declined from 2015 to 2016, and increased in 2017, but was less than in 2015.

---

[6] ABB, Regal Beloit, Schaeffler, and Timken have a fiscal year that ends ***; Amsted's fiscal year ends ***; American NTN, Koyo, NSK, and NTN-Bower have a fiscal year that ends ***. *** reported financial data based on their fiscal years, which account for the discrepancies between data reported in the trade and financial sections of the Commission's questionnaire. ***.

[7] Firms responding to the Commission's questionnaire reported data as follows: ***.

[8] Data on Internal consumption were reported ***. ***.

The aggregate net sales unit value (per complete bearing or bearing equivalent) for TRBs decreased from $*** in 2015 to $*** in 2016 and increased to $*** in 2017, but was less than in 2015. The firm-by-firm data in table III-9 shows a ***. ***.

Cost of goods sold and gross profit or (loss)

Raw materials accounted for the single largest component of overall COGS, accounting for between *** percent (in 2015) and *** percent (in 2017). The value of raw material costs fell between 2015 and 2016 (from $*** to $***) and was higher in 2017 ($***), but still lower than in 2015. Raw material costs represented *** percent of net sales value in 2015 and increased to *** percent of net sales value in 2017. One firm stated that raw material prices, such as iron ore, coke, scrap, and the alloying materials used to make bearing-quality steel, were higher in 2012, but declined thereafter and reached a low in 2016 but rose in 2017; another firm indicated it had experienced overall increases of ***.[9]

Other factory costs, which are composed of both variable and fixed facility overhead costs, are the second largest component of total COGS. These costs fell from 2015 to 2016 ($*** to $***) and were lower in 2017 ($***). Other factory costs declined on a per-unit basis and as a share of sales. The last component of COGS, direct labor, increased irregularly in value from 2015 to 2017. As a share of COGS, direct labor ranged between *** percent (in 2015) and *** percent (in 2017).[10]

The COGS to sales ratio increased from 2015 (*** percent) to 2016 (*** percent), but was lower in 2017 (*** percent), but greater than in 2015.

Gross profit fell from $*** in 2015 to $*** in 2016, and increased to $*** in 2017 but was less than in 2015. ***.

SG&A expenses and operating income or (loss)

As shown in table III-8, the industry's total SG&A expenses declined irregularly from 2015 to 2017 (from $*** to $***; the industry's SG&A expense ratios were approximately the same at *** percent in each of the three years. ***;[11] while ***. ***.[12] Operating income for the reporting firms together fell from $*** in 2015 to $*** in 2016 before increasing to $*** in 2017, but still below the amount in 2015. The ratio of operating income to total net sales declined irregularly from *** percent in 2015 to *** percent in 2017. As shown in table III-9, the change between 2016 and 2017 was mostly due to the data reported by ***. As the data

[9] U.S. producers' questionnaire response of ***. Each of the responding U.S. producers purchased bearing quality steel; Timken spun off its steelmaking operations effective June 30, 2014. ***. At the Commission's hearing, a witness for Timken testified that price increases from U.S. steel makers are passed through to OEMs and other firms, in part, because of contractual raw material surcharges based on indexes. Hearing transcript, p. 99 (Coughlin).

[10] ***.

[11] ***.

[12] ***.

depict in tables III-8 and III-9, the number of firms reporting operating losses increased from *** to *** from 2015 to 2016 and were *** in 2017.

Other expenses and net income or (loss)

Interest charges and other expenses, net of other income, declined from $*** in 2015 to $*** in 2016, and increased to $*** in 2017. Data reported by *** accounted for the majority of interest expense (which accounted for most of the data); data reported by *** accounted for the majority of other expenses and other income.

The industry's net income followed a trend similar to that of operating income: net income fell from $*** in 2015 to $*** in 2016 before increasing to $*** in 2017. The ratio of net income to total net sales followed a similar pattern, declining irregularly from *** percent to *** percent between 2015 and 2016 before increasing to *** percent in 2017, but still below the level in 2015. Cash flow (net income plus depreciation charges) declined from $*** in 2015 to $*** in 2016 and was $*** in 2017, equivalent to *** percent of sales in 2015 and *** percent of sales in 2017.

Variance analysis

A variance analysis is most useful for products that do not have substantial changes in product mix over the period investigated and the methodology is most sensitive at the plant or firm level, rather than the aggregated industry level. A variance analysis is not presented because of the wide variation in product mix and unit values between firms in this review. The discussion of COGS, gross profit, SG&A expenses, and operating income, which reflects differences in cost structures among the firms, as shown in tables III-8 and III-9, mirrors the results of a variance analysis in this review. That is, the decline in operating income from 2015 to 2016 reflects a larger decline in average revenue compared to average operating costs and expenses (total COGS and total SG&A expenses combined) with a decline in volume. The increase in operating income between 2016 and 2017 reflects a greater increase in revenue compared to costs and expenses and an increase in volume.

Capital expenditures and research and development ("R&D") expenses

Table III-10 presents capital expenditures and R&D expenses by firm. As shown in the table, total capital expenditures rose irregularly by 30.4 percent between 2015 and 2017, from $33.6 million to $43.8 million. R&D expenses increased by *** percent between the same two years, from $*** in 2015 to $*** in 2017.

Table III-10
TRBs: Capital expenditures and R&D expenses of U.S. producers, by firm, fiscal years 2015-17

Item	Fiscal year		
	2015	2016	2017
	Capital expenditures (1,000 dollars)		
ABB	***	***	***
American NTN	***	***	***
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit[1]	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Total	33,551	28,848	43,765
	Research and development expenses (1,000 dollars)		
ABB	***	***	***
American NTN	***	***	***
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit[1]	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Total	***	***	***

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

The Commission's questionnaire requested firms to describe the nature and focus of their capital expenditures and R&D expenses. Responding firms' narrative responses are shown in the following tabulation:[13]

Firm	Narrative responses regarding focus of capital expenditures and R&D expenses
*	* * * * * *

[13] U.S. producers' questionnaire responses, section III-13.

At the Commission's hearing, a witness for Timken stated that the firm was limiting its capital expenditures in the United States to maintenance and efficiency improvement projects.[14] The witness characterized Timken's U.S. TRB business as underperforming and not generating the profits to substantiate a return on investment. Witnesses stated that Timken has invested for growth, including adding production capacity, outside the United States in Eastern Europe, India, and China. Capital expenditures outside the United States were "roughly 3-1/2 percent of sales,"[15] compared to the ratio of U.S. capital expenditures to U.S. sales of *** during 2015-17.[16]

Assets and return on investment

Table III-11 presents data on the U.S. producers' total assets and their return on investment ("ROI"). Total net assets increased irregularly by 7.0 percent between 2015 and 2017, with most of the reported increase by *** offsetting reduced assets reported by ***. ***. The ratio of operating income or (loss) to total net assets fell from *** percent to *** percent between 2015 and 2017.

[14] Hearing transcript, p. 50 (Discenza), and statement of Michael A. Discenza, Timken, July 31, 2018.

[15] Hearing transcript, pp. 102-104 (Disenza and Coughlin).

[16] Calculated from data in ***. Also, see the ratio of operating income to total net assets in table III-11.

Table III-11
TRBs: U.S. producers' total assets and return on assets, by firm, fiscal years 2015-17

Firm	Fiscal year		
	2015	2016	2017
	Total net assets (1,000 dollars)		
ABB	***	***	***
American NTN	***	***	***
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit[1]	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Total	950,826	897,513	1,017,297
	Operating return on assets (percent)		
ABB	***	***	***
American NTN	***	***	***
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit[1]	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Average	***	***	***

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

PART IV: U.S. IMPORTS AND THE FOREIGN INDUSTRIES

U.S. IMPORTS

Overview

The Commission issued questionnaires to 60 potential importers of TRBs, as well as to all U.S. producers of TRBs. Thirty-four firms provided data and information in response to the questionnaires, while six firms indicated that they had not imported TRBs since January 1, 2015. Based on official Commerce statistics for imports of TRBs, importers' questionnaire data accounted for *** percent of subject imports and 90.4 percent of total U.S. imports during 2017, based on value.

In light of the data coverage by the Commission's questionnaires, import data in this report are based on official Commerce statistics, adjusted to subtract imports from manufacturers/exporters excluded from the antidumping duty order for TRBs from China.[1]

Imports from subject and nonsubject countries

Table IV-1 and figure IV-1 present information on U.S. imports of TRBs from China and all other sources. Total U.S. imports, by value, decreased overall by 12.4 percent during 2015-17. U.S. imports of subject TRBs from China increased by *** percent between 2015 and 2017, from $*** in 2015 to $*** in 2017. Average unit values from both subject and nonsubject sources decreased between 2015 and 2017, by *** percent and *** percent, respectively. The ratio of U.S. imports of subject TRBs to U.S. production increased during 2015-17, reaching *** percent of U.S. production in 2017.

The leading nonsubject sources of TRB imports were Japan and India, accounting for *** percent and *** percent of imports from nonsubject sources by value in 2017, respectively. As a share of total TRB imports, Japan and India accounted for 25.4 percent and 12.8 percent in 2017, respectively.

[1] Import data are based on official import statistics, adjusted to exclude SGBC (and reclassified as subject beginning August 2016), Hailin, and Wafangdian, using the following HTS statistical reporting numbers: 8482.20.0020, 8482.20.0030, 8482.20.0040, 8482.20.0060, 8482.20.0061, 8482.20.0064, 8482.20.0067, 8483.20.4080, 8483.20.8080, and 8708.99.8115 (complete bearing or set); 8482.20.0070, 8482.20.0080, 8482.20.0081, 8482.20.0090, 8482.99.1540, 8482.99.1550, and 8482.99.1570 (converted into bearing equivalents, which were typically cups or cones of a complete bearing representing approximately one half of a complete bearing); and 8482.91.0050, 8482.99.4500, and 8482.99.1580 (other parts that could not be converted into bearing equivalents and are presented as value only).

Table IV-1
TRBs: U.S. imports by source, 2015-17

Item	Calendar year		
	2015	2016	2017
	Value of complete bearings or bearing equivalents (1,000)		
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
Japan	193,250	161,689	176,481
India	81,487	76,957	101,383
All other sources	423,873	309,912	305,725
Nonsubject sources	***	***	***
All import sources	928,377	753,564	803,969
	Value of parts (1,000 dollars)		
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
Japan	48,733	38,871	48,649
India	21,088	10,634	12,343
All other sources	9,315	12,839	16,234
Nonsubject sources	***	***	***
All import sources	82,938	65,632	82,160
	Total value (bearings and parts) (1,000 dollars)		
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
Japan	241,983	200,560	225,130
India	102,575	87,591	113,726
All other sources	433,188	322,751	321,960
Nonsubject sources	***	***	***
All import sources	1,011,315	819,196	886,130
	Quantity (1,000 bearing or bearing equivalents)		
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
Japan	33,765	29,270	30,417
India	3,701	3,640	4,853
All other sources	30,149	26,363	27,341
Nonsubject sources	***	***	***
All import sources	107,909	101,606	108,804

Table continued on next page.

Table IV-1--Continued
TRBs: U.S. imports by source, 2015-17

Item	Calendar year		
	2015	2016	2017
	Unit value (dollars per BB&E)		
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
Japan	5.72	5.52	5.80
India	22.02	21.14	20.89
All other sources	14.06	11.76	11.18
Nonsubject sources	***	***	***
All import sources	8.60	7.42	7.39
	Share of value (percent)		
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
Japan	***	***	***
India	***	***	***
All other sources	***	***	***
Nonsubject sources	***	***	***
All import sources	100.0	100.0	100.0
	Share of quantity (percent)		
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
Japan	***	***	***
India	***	***	***
All other sources	***	***	***
Nonsubject sources	***	***	***
All import sources	100.0	100.0	100.0
	Ratio to U.S. production (percent)		
U.S. imports from.--			
China subject	***	***	***
China nonsubject	***	***	***
Japan	41.4	38.7	39.0
India	4.5	4.8	6.2
All other sources	37.0	34.9	35.0
Nonsubject sources	***	***	***
All import sources	132.3	134.3	139.3

Source: Official U.S. import statistics, adjusted to exclude certain Chinese firms, using HTS statistical reporting numbers 8482.20.0040, 8482.20.0060, 8482.20.0061, 8482.20.0064, 8482.20.0067, 8482.20.0070, 8482.20.0080, 8482.20.0081, 8482.20.0090, 8482.91.0050, 8482.99.1540, 8482.99.1550, 8482.99.1570, 8482.99.1580, 8482.99.4500, 8483.20.4080, and 8483.20.8080, accessed May 17, 2018; and HTS statistical reporting numbers 8482.20.0020, 8482.20.0030, and 8708.99.8115, accessed August 17, 2018.

Figure IV-1
TRBs: U.S. import value and average unit values, 2015-17

* * * * * * *

U.S. IMPORTERS' IMPORTS SUBSEQUENT TO DECEMBER 31, 2017

The Commission requested importers to indicate whether they had imported or arranged for the importation of TRBs for delivery after December 31, 2017. Thirty of 34 responding importers indicated that they had arranged such imports. These data are presented in table IV-2.

Table IV-2
TRBs: U.S. importers' arranged imports since December 31, 2017

Item	Period			
	Jan-Mar 2018	Apr-Jun 2018	Jul-Sep 2018	Oct-Dec 2018
	Value (1,000 dollars)			
Imports arranged from China	***	***	***	***
Imports arranged from all other sources	***	***	***	***
Total arranged imports	16,042	12,517	9,698	8,235

Note.--The U.S. importers' questionnaire did not gather arranged imports separately for China subject and China nonsubject.

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

U.S. IMPORTERS' INVENTORIES

Table IV-3 presents data for inventories of U.S. imports of TRBs from China and all other sources held in the United States. Inventories of subject imports increased by *** percent between 2015 and 2017. The ratio of importers' inventories to total shipments of subject imports ranged from *** percent and *** percent during the period for which data were collected, while the ratio of inventories to total shipments of imports from nonsubject sources ranged from *** percent and *** percent.

Table IV-3
TRBs: U.S. importers' end-of-period inventories of imports, by source, 2015-17

Item	Calendar year		
	2015	2016	2017
	Inventories (1,000 bearings or bearing equivalents); Ratios (percent)		
Imports from China subject: Inventories	***	***	***
Ratio to U.S. imports	***	***	***
Ratio to U.S. shipments of imports	***	***	***
Ratio to total shipments of imports	***	***	***
Imports from China nonsubject: Inventories	***	***	***
Ratio to U.S. imports	***	***	***
Ratio to U.S. shipments of imports	***	***	***
Ratio to total shipments of imports	***	***	***
Imports from all other sources: Inventories	***	***	***
Ratio to U.S. imports	***	***	***
Ratio to U.S. shipments of imports	***	***	***
Ratio to total shipments of imports	***	***	***
Imports from nonsubject sources: Inventories	***	***	***
Ratio to U.S. imports	***	***	***
Ratio to U.S. shipments of imports	***	***	***
Ratio to total shipments of imports	***	***	***
Imports from all import sources: Inventories	16,489	19,469	19,691
Ratio to U.S. imports	17.8	21.2	20.0
Ratio to U.S. shipments of imports	19.1	21.7	21.5
Ratio to total shipments of imports	18.6	21.2	20.7

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

THE INDUSTRY IN CHINA

Overview

Seven producers in China–CMC, Luoyang, Wanxiang, Xiangyang, Xibiei, Yantai Timken, and ZCCBC–submitted completed foreign producer/exporter questionnaires during the first five-year reviews. These firms were believed to account for substantially less than half of TRB production in China.[2] Timken at the time of the first five-year reviews reported that there were approximately *** major bearing producers in China, as well as an undetermined number of smaller producers.[3] During the second five-year reviews, 13 companies submitted completed

[2] Confidential staff report, INV-X-101, May 8, 2000, p. TRB-IV-6, n. 2.
[3] Ibid., n. 3.

foreign producer/exporter questionnaires, and their combined subject exports accounted for *** percent of U.S. imports of the subject bearings from China.[4] During the third five-year review, the Commission received foreign producer/exporter questionnaires from ten firms, which reported exports to the United States accounting for *** percent of subject imports.[5]

In this current review, the Commission issued foreign producers' or exporters' questionnaires to 39 firms believed to produce and/or export TRBs from China. Eight firms submitted usable responses to the Commission's questionnaire, whose exports were equivalent to *** percent of U.S. imports of TRBs from China. Table IV-4 presents information on the TRB operations of the responding producers and exporters in China.

Table IV-4
TRBs: Summary data for producers in China, 2017

Firm	Production (1,000 bearings or bearing equivalents)	Share of reported production (percent)	Exports to the United States (1,000 bearings or bearing equivalents)	Share of reported exports to the United States (percent)	Total shipments (1,000 bearings or bearing equivalents)	Share of firm's total shipments exported to the United States (percent)
CPZ	***	***	***	***	***	***
Schaeffler Holding	***	***	***	***	***	***
SGBC	***	***	***	***	***	***
SKF	***	***	***	***	***	***
Timken	***	***	***	***	***	***
Xinchang Kaiyuan Automotive Bearings	***	***	***	***	***	***
Zhejiang Sihe Machine	***	***	***	***	***	***
ZheJiang ZhaoFeng Mechanical and Electronic	***	***	***	***	***	***
Total	33,962	100.0	***	100.0	34,415	***

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

Recent developments

Table IV-5 presents events in the Chinese industry since the third five-year review.

[4] Confidential staff report, INV-DD-084, June 13, 2006, Table TRB-IV-3 and p. TRB-IV-9.
[5] Confidential staff report, INV-KK-073, July 17, 2012, p. IV-9.

Table IV-5
TRBs: Recent developments in the Chinese industry

Item / Firm	Recent events
	Expansions:
C&U Group	In 2014, C&U Group announced an expansion of its taper roller bearing plant near Shanghai. The plant will be expected to operate 39 production lines and produce 2.25 million bearing units per month.[1]
Luoyang Bearing Science & Technology	LBST invested $24M in 2014 to construct a new production line for high-speed railway bearings, urban rail vehicle bearings, and locomotive & transmission bearings. The new line is expected to add 60,000 sets.[2]
Nanjing NTN Corp.	Nanjing NTN began operations in October 2012. Nanjing NTN produces bearings between 10 centimeters to 2 meters in outer diameter.[2]
Shenyang NSK Co., Ltd.	Began production operations in May 2012. The plant based in Shenyang, Liaoning Province, China will produce large diameter bearings.[3]
PEER Bearing	Opened their research and development facilities. The new facilities will allow PEER bearing to develop products for the larger diameter bearing market. [2]
Schaeffler Group	In 2016, the Schaeffler Group signed a cooperation agreement with a delegation from the Hunan provincial government. According to the agreement, the Schaeffler Group would create a new production facility in Xiangtan city, Hunan Province. [4]

[1] Jermann, Michael. "C&U's expanded facilities aim for 2.2 million bearings a month." Bearing Tips, August 28, 2014. Accessed August 24, 2017. http://www.bearingtips.com/cu-groups-expanded-facilities-aim-2-2-million-bearings-month/.
[2] Domestic Interested Parties' Response to the Notice of Institution, August 2, 2017, exh. 10.
[3] "NSK holds Opening Ceremony for Precision Machinery Plant and Industrial Machinery Large Size Bearings Plant in China" NSK Corporation, June 5, 2012. Accessed August 24, 2017. http://www.nsk.com/company/news/2012/press120605.html.
[4] Schaeffler establishes a new manufacturing location in China" the Schaeffler Group, September 8, 2016. Accessed August 24, 2017. http://www.schaeffler.de/content.schaeffler.de/en/press/press-releases/press-details.jsp?id=75673664. Accessed August 24, 2017.

Source: Cited sources.

Changes in operations

As presented in table IV-6 producers in China reported several operational and organizational changes since January 1, 2012.

Table IV-6
TRBs: China producers' reported changes in operations, since January 1, 2012

* * * * * * *

Operations on TRBs

Table IV-7 presents information on the TRB operations of the responding producers and exporters in China.

Table IV-7

TRBs: Data for producers in China, 2015-17

Item	Calendar year		
	2015	2016	2017
	Quantity (1,000 bearings or bearing equivalents)		
Capacity	29,360	32,924	38,597
Production	22,053	25,995	33,962
End-of-period inventories	***	***	***
Shipments:			
Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	3,903	4,751	8,200
Export shipments to:			
United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	18,913	20,975	26,215
Total shipments	22,816	25,726	34,415
	Value (1,000 dollars)		
Shipments:			
Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	105,257	115,104	168,783
Export shipments to:			
United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	121,104	115,403	151,787
Total shipments	226,361	230,507	320,570

Table continued on next page.

Table IV-7--Continued

TRBs: Data for producers in China, 2015-17

Item	Calendar year		
	2015	2016	2017
	Unit value (dollars per B&BE)		
Shipments: Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	26.97	24.23	20.58
Export shipments to: United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	6.40	5.50	5.79
Total shipments	9.92	8.96	9.31
	Ratios and shares (percent)		
Capacity utilization	75.1	79.0	88.0
Inventories/production	***	***	***
Inventories/total shipments	***	***	***
Share of total shipments: Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	17.1	18.5	23.8
Export shipments to: United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	82.9	81.5	76.2
Total shipments	100.0	100.0	100.0

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

Alternative products

Three of eight responding firms reported producing other products on the same equipment and machinery used to produce TRBs. *** reported that the equipment used to produce large-diameter TRBs is also used to produce other types of large-diameter bearings. *** reported that the same machinery can be used to produce ball structured wheel hub assemblies. *** reported production of cylindrical and spherical roller bearings on the same equipment used to produce TRBs.

Exports

Table IV-8 presents export data for tapered roller bearings, including cups and assemblies, from China.[6] During 2017, the United States was the top export market for such products from China, accounting for 15.3 percent, followed by Italy and India, each accounting for 6.8 percent.

Table IV-8
Tapered roller bearings, including cups and assemblies: Exports from China, 2015-17

Item	Calendar year		
	2015	2016	2017
	Value (1,000 dollars)		
Exports from China to the United States	236,370	210,654	232,893
Exports from China to other major destination markets.--			
Italy	78,839	79,379	103,841
India	90,219	101,759	103,466
Japan	112,249	103,665	102,963
South Korea	92,356	82,372	91,203
France	59,588	65,540	81,172
Germany	70,206	66,459	79,156
Brazil	50,976	51,008	58,875
Mexico	49,951	49,108	58,736
All other destination markets	567,712	573,914	614,466
Total exports from China	1,408,465	1,383,857	1,526,770
	Share of value (percent)		
Exports from China to the United States	16.8	15.2	15.3
Exports from China to other major destination markets.--			
Italy	5.6	5.7	6.8
India	6.4	7.4	6.8
Japan	8.0	7.5	6.7
South Korea	6.6	6.0	6.0
France	4.2	4.7	5.3
Germany	5.0	4.8	5.2
Brazil	3.6	3.7	3.9
Mexico	3.5	3.5	3.8
All other destination markets	40.3	41.5	40.2
Total exports from China	100.0	100.0	100.0

Source: Official Chinese exports statistics under HTS subheadings 8482.20, 8482.99, and 8483.20, as reported in the IHS/GTA database, accessed June 4, 2018.

[6] GTA data for HTS subheadings 8482.20, 8482.99, and 8483.20 may include products outside of the scope of this review and thus the data may be overstated.

ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS

Based on available information, TRBs from China has not been subject to other antidumping or countervailing duty investigations outside the United States.

GLOBAL MARKET

Global demand for all bearings is forecasted to grow by *** percent annually through 2021 to $***; this was driven by increased demand for bearings in automobiles and industrial manufacturing.[7] Production in the Asia-Pacific region is expected to post the strongest sales growth due to increasing demand for automobiles and industrial machinery.

The following six companies account for 60 percent of global bearing production: (1) SKF, Inc., a Swedish multinational corporation with over 48,500 employees and production facilities around the world; (2) Schaeffler, a German-based multinational corporation that operates several large Korean bearing producer brands (LUK, INA, FAG); (3) Timken, a multinational corporation which is based in the United States; (4) NSK, a Japan-based multinational corporation that as of 2009, operates a bearing plant in Changwon, Korea; (5) NTN, based in Japan, and launched a joint venture in 2010 with a Korean partner to form the Seohan-NTN Bearing Company, which reportedly produces bearings for wind turbines; and (6) JTEKT, based in Japan, and operates a plant in Korea which is known as Koyo Jico Korea Co. Ltd. An additional 20 percent of global production comes from Chinese producers. The last 20 percent are smaller regional producers.[8]

Table IV-9 presents global export data. The value of global exports of tapered roller bearings, including cups and assemblies, increased by 2.7 percent from 2015-2017.[9] The largest global exporters of these products, by value were, in descending order of value: Germany, China, Japan, the United States, and France.

---

[7] Kalyani, Darshan. *IBIS World Industry Report 33299b*. "Ball Bearing Manufacturing in the US." April 2018.

[8] SKF's investor website, accessed May 18, 2018, www.skf.com/group/investors/bearings-market.

[9] GTA data for HTS subheadings 8482.20, 8482.99, and 8483.20 may include products outside of the scope of this review and thus the data may be overstated.

Table IV-9
Tapered roller bearings, including cups and assemblies: Global exports by destination market, 2015-17

Item	Calendar year		
	2015	2016	2017
	Value (1,000 dollars)		
United States	971,245	892,773	935,486
China	1,408,465	1,383,857	1,526,770
All other major reporting exporters.-- Germany	1,347,756	1,360,309	1,637,516
Japan	1,378,323	1,337,482	1,449,925
France	570,420	515,142	569,115
Romania	391,740	414,384	550,804
South Korea	231,098	297,952	352,970
India	257,228	238,039	329,345
Italy	267,124	261,534	307,065
All other destination markets	2,384,964	2,190,295	2,307,749
Total global exports	9,208,362	8,891,766	9,966,744
	Share of value (percent)		
United States	10.5	10.0	9.4
China	15.3	15.6	15.3
All other major reporting exporters.-- Germany	14.6	15.3	16.4
Japan	15.0	15.0	14.5
France	6.2	5.8	5.7
Romania	4.3	4.7	5.5
South Korea	2.5	3.4	3.5
India	2.8	2.7	3.3
Italy	2.9	2.9	3.1
All other destination markets	25.9	24.6	23.2
Total global exports	100.0	100.0	100.0

Source: Official exports statistics under HTS subheadings 8482.20, 8482.99, and 8483.20, as reported by various national statistical authorities in the IHS/GTA database, accessed June 4, 2018.

Prices

Seven of 8 foreign producers reported that prices in China, the United States, and third-country markets are comparable and follow market demand. Foreign producer *** stated that prices in the OEM market are higher. U.S. producer/importer *** stated that the U.S., Canadian, and Mexican markets have very similar prices and that prices are currently lower in other global markets than those observed in the United States. *** stated that prices in China are generally much lower than prices in the United States or other markets.

PART V: PRICING DATA

FACTORS AFFECTING PRICES

Raw material costs

TRBs are manufactured from bearing-grade alloy steel bar or seamless tubing. U.S. producers' raw material costs, as a share of the cost of goods sold, increased slightly from *** percent in 2015 to *** percent in 2017.

Three responding U.S. producers, 15 responding importers, and four responding foreign producers reported that the price of raw materials have increased since January 1, 2012; and four U.S. producers, 13 importers, and four foreign producers reported that raw material prices fluctuated. U.S. producer *** stated that there have been overall raw material price increases of 1 to 3 percent per year due to the increase in steel and casting prices. Importer *** stated that global steel prices have increased significantly in the last two years. Several firms noted that changes in raw material prices can be passed on, either in part or in full, to the customer. Four U.S. producers, 14 responding importers, and 4 responding foreign producers anticipate raw material prices to increase while 3 U.S. producers, 14 importers, and 3 foreign producers expect these prices to fluctuate.

Steel scrap is an input for steel bar and tubing. The average price of scrap metal fluctuated during 2012-17, with sharp declines in 2015 and the second half of 2016 and sharp increases in the first half of 2016 and from December 2016 to January 2017. Overall, the average price of scrap metal decreased by 40 percent from January 2012-December 2017 (figure V-1). The price of scrap metal increased by nearly 30 percent from December 2017 to June 2018 but was 23 percent lower than January 2012.

Figure V-1
Steel scrap: Price index of Chicago No. 1 heavy melt scrap, monthly, January 2012-June 2018

* * * * * * *

As noted in Part I, tariffs applied under the section 232 investigation on steel and aluminum do not directly impact products under the scope of this review.[1] Timken stated that it uses domestic steel, so the 232 tariff does not directly impact it. It stated, however, that it is experiencing a secondary effect as U.S. steel makers have raised their prices since the announcement of the 232 tariffs. These increased raw materials prices would be captured in the raw materials surcharges in OEM contracts and annual price increases to distributors.[2]

[1] See Part I, pp. I-5-6.
[2] Hearing transcript, pp. 99, 111-112 (Coughlin).

Transportation costs to the U.S. market

Transportation costs for TRBs shipped from China to the United States averaged 3.4 percent during 2017. These estimates were derived from official import data and represent the transportation and other charges on imports.[3]

U.S. inland transportation costs

Four of 8 responding U.S. producers and 12 of 22 responding importers reported that they typically arrange transportation to their customers. All responding U.S. producers reported that their U.S. inland transportation costs ranged from 1 to 4 percent while responding importers reported costs of 1 to 12 percent.

PRICING PRACTICES

Pricing methods

As presented in table V-1, U.S. producers and importers sell TRBs via transaction-by-transaction negotiations, contracts, and set price lists. Some firms also reported using price lists as reference points for negotiations.

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

Method	U.S. producers	U.S. importers
Transaction-by-transaction	4	15
Contract	5	11
Set price list	4	9
Other	1	7
Responding firms	7	30

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

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

[3] The estimated transportation costs were obtained by subtracting the customs value from the c.i.f. value of the imports for 2017 and then dividing by the customs value based on the HTS statistical reporting numbers 8482.20.0020, 8482.20.0030, 8482.20.0040, 8482.20.0060, 8482.20.0061, 8482.20.0064, 8482.20.0067, 8482.20.0070, 8482.20.0080, 8482.20.0081, 8482.20.0090, 8482.91.0050, 8482.99.1540, 8482.99.1550, 8482.99.1570, 8482.99.1580, 8482.99.4500, 8483.20.4080, and 8483.20.8080.

U.S. producers reported selling their TRBs nearly proportionately in the spot market, under short-term contracts, annual contracts, and long-term contracts (table V-2). Importers and foreign producers reported selling most of their TRBs under long-term contracts.

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

* * * * * * *

U.S. producers' short-term contract lengths vary; two producers (***) reported that short-term contracts are six months long.[4] Three U.S. producers reported that short-term contracts can renegotiate prices, fix both price and quantity, and do not contain meet-or-release provisions. Of the four responding U.S. producers that reported annual contracts, one producer reported that its contracts include price renegotiation while two producers' annual contracts do not. Two of the responding producers' annual contracts fix price and two fix both price and quantity, and three producers reported that their annual contracts do not include meet-or-release provisions.

U.S. producers', importers', and foreign producers' long-term contracts generally last 2 to 5 years. Two responding U.S. producers reported that their long-term contracts include price renegotiation and meet-or-release provisions and three reported that these contracts fix both quantity and price. Four responding importers reported that their long-term contracts include price renegotiation and meet-or-release clauses and six importers reported that their long-term contracts fix prices.[5]

Most purchasers buy TRBs daily or weekly.[6] No responding purchasers reported that they expect their purchasing patterns to change in the next two years. Although purchasers reporting contacting up to 10 suppliers before making a purchase, most (17 of 32) purchasers contact 1 to 3 suppliers.

Sales terms and discounts

U.S. producers typically quote prices on an f.o.b. basis and responding importers quote prices on an f.o.b. or delivered basis. Four producers offer total volume discounts and three producers do not offer discounts. U.S. producer *** stated that discounts are applied by sales channel, such as distribution, OEM, or end user. U.S. producer/importer *** stated that its volume discounts are typically associated with total bearing purchases by aftermarket

[4] U.S. producer *** reported *** and *** reported "varies."

[5] Two responding foreign producers were mixed regarding contract provisions. *** reported that its long-term contracts include price renegotiation, fix quantities and price, and do not include meet-or-release provisions. *** reported that its contracts do not include price renegotiation, fix price, and do include meet-or-release provisions.

[6] Thirteen purchasers reported that they purchase product daily, 18 purchase weekly, and one purchases monthly.

customers. Fifteen responding importers do not offer discounts, seven offer total volume discounts, and two reported discounts in long-term agreements for productivity improvements as production lines become more efficient. Importer *** stated that volume discounts are already reflected in the prices it negotiates with each customer and that cash discounts for early payment may be granted to certain customers.

Five U.S. producers reported sales terms of net 30, one of net 60, and one of approximately 47 days. Importers reported sales terms of net 30, net 60, net 45, and net 90 days. ***.

Price leadership

Timken was most-often identified (12 of 27 purchasers) as a price leader, citing volume of market supply, advanced technologies, global manufacturing, quality, trusted brand, reputation, product range, and the use of Timken's prices has a benchmark. Purchasers also identified NTN (2), SKF Bearings (2), Koyo (1), PEER (1), Schaeffler (1), Consolidated Metco (1), and Federal Mogul (1) as price leaders.

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 TRBs products shipped to unrelated U.S. OEM customers during 2015-17. Importers were asked to provide data of commercial shipments of imported TRBs from Chinese firms subject to the antidumping duty order during 2015-17.

Product 1.—LM 11949 – Cone assemblies (TS single row, straight 0.75 inch bore)

Product 2.—25580 – Cone assemblies (TS single row, straight 1.75 inches bore)

Product 3.—LM 501349 – Cone assemblies (TS single row, 1.6250 inches bore)

Product 4.—LM 11910 – Cups (TS single row, outer diameter "OD" 1.7810 inches)

One U.S. producer (***) and three importers (***) provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.[7] Pricing data reported by these firms accounted for less than 1 percent of U.S.

[7] 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.

producers' shipments of TRBs and 1.4 percent of U.S. shipments of subject imports from China in 2017.

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

Table V-3
TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 1,[1] and margins of underselling/(overselling), by quarters, 2015-17

* * * * * * *

Table V-4
TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 2,[1] and margins of underselling/(overselling), by quarters, 2015-17

* * * * * * *

Table V-5
TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 3,[1] and margins of underselling/(overselling), by quarters, 2015-17

* * * * * * *

Table V-6
TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 4,[1] and margins of underselling/(overselling), by quarters, 2015-17

* * * * * * *

Figure V-2
TRBs: Weighted-average prices and quantities of domestic and imported product 1,[1] by quarters, 2015-17

* * * * * * *

Figure V-3
TRBs: Weighted-average prices and quantities of domestic and imported product 2,[1] by quarters, 2015-17

* * * * * * *

Figure V-4
TRBs: Weighted-average prices and quantities of domestic and imported product 3,[1] by quarters, 2015-17

* * * * * * *

Figure V-5
TRBs: Weighted-average prices and quantities of domestic and imported product 4,[1] by quarters, 2015-17

* * * * * * *

Price trends

Prices of products 1-4 fluctuated during 2015-17, with two products showing an overall price decline and two showing an overall increase. Table V-7 summarizes the price trends, by country and by product. As shown in the table, domestic prices for products 2 and 4 increased by *** and *** percent, respectively. Prices for product 1 declined by *** percent and prices for product 3 were essentially unchanged. Import prices for products 1 and 3 declined by *** and *** percent, respectively; prices for product 4 increased by *** percent.

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

* * * * * * *

Price comparisons

As shown in table V-8, prices for TRBs imported from China were below those for U.S.-produced product in 42 of 43 instances; margins of underselling ranged from 0.6 to 72.6 percent. In the remaining instance, prices for TRBs from China were 4.2 percent above prices for the domestic product.

Table V-8
TRBs: Instances of underselling/overselling and the range and average of margins, by product, 2015-17

Source	Underselling				
	Number of quarters	Quantity (units)	Average margin (percent)	Margin range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total	42	3,367,332	45.5	0.6	72.6
Source	**(Overselling)**				
	Number of quarters	Quantity (units)	Average margin (percent)	Margin range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Total	1	29,349	(4.2)	(4.2)	(4.2)

Note.-- In the original investigations, subject imports from China were priced lower than domestic product in all 17 comparisons, with underselling margins ranging from 22 to 54 percent. Final Staff Report to the Commission, Tapered Roller Bearings and Parts Thereof, and Certain Housing Incorporating Tapered Rollers from Hungary, The People's Republic of China, and Romania, Inv. Nos. 731-TA-341, 344, 345 (Final), p. A-96.

In the first review, subject imports from China were priced lower than domestic product in all 66 comparisons, with underselling margins averaging 65.4 percent in 1997, 57.4 percent in 1998, and 64.7 percent in January-September 1999. Final Staff Report to the Commission, Certain Bearings from China, France, Germany, Hungary, Italy, Japan, Romania, Singapore, Sweden, and the United Kingdom, Inv. Nos. AA1921-143, 731-TA-341, 731-TA-343-345, 731-TA-391-397, and 731-TA-399 (Review). Purchaser prices were also collected and subject imports from China were priced lower than domestic product in *** comparisons. Ibid, pp. TRB-V-29-34.

In the second review, subject imports from China were priced lower than domestic product in 222 of 227 comparisons. Certain Bearings from China, France, Italy, Japan, Singapore, and the United Kingdom, Inv. Nos. 731-TA-344, 391-A, 392-A and C, 393-A, 394-A, and 399-A (Second Review), USITC Publication 3876, p. TRB-V-7.

In the third review, subject imports from China were priced lower than domestic product in 462 of 484 comparisons, with underselling margins ranging from 2.1 to 87.2 percent. Final Staff Report to the Commission, Tapered Roller Bearings from China, Inv. Nos. 731-TA-344 (Third Review), p. V-53. Data was collected on wheel hub assemblies under two pricing products. Subject imports from China were priced lower than domestic product for these two products in *** comparisons, with underselling margins ranging from *** percent. Ibid, pp. V-26-27.

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

Purchasers' perceptions of relative price trends

Purchasers were asked how the prices of TRBs from the United States had changed relative to the prices of product from China since January 1, 2012. Of the 28 responding purchasers, 8 reported no change in price, 14 reported that prices had changed by the same amount, 6 reported that the U.S. price was higher relative to China, and 1 reported that the U.S. price was relatively lower.

APPENDIX A

FEDERAL REGISTER NOTICES

The Commission makes available notices relevant to its investigations and reviews on its website, www.usitc.gov. In addition, the following tabulation presents, in chronological order, *Federal Register* notices issued by the Commission and Commerce during the current proceeding.

Citation	Title	Link
82 FR 30898 July 3, 2017	*Tapered Roller Bearings From China; Institution of a Five-Year Review*	https://www.gpo.gov/fdsys/pkg/FR-2017-07-03/pdf/2017-13713.pdf
82 FR 30844 July 3, 2017	*Initiation of Five-Year (Sunset) Reviews*	https://www.gpo.gov/fdsys/pkg/FR-2017-07-03/pdf/2017-13938.pdf
82 FR 48527 October 18, 2017	*Tapered Roller Bearings From China; Notice of Commission Determination To Conduct a Full Five-Year Review*	https://www.gpo.gov/fdsys/pkg/FR-2017-10-18/pdf/2017-22551.pdf
82 FR 51389 November 6, 2017	*Tapered Roller Bearings and Parts Thereof, Finished and Unfinished, From the People's Republic of China: Final Results of the Expedited Fourth Sunset Review of the Antidumping Duty Order*	https://www.gpo.gov/fdsys/pkg/FR-2017-11-06/pdf/2017-24075.pdf
83 FR 8297 February 20, 2018	*Tapered Roller Bearings From China; Scheduling of a Full Five-Year Review*	https://www.gpo.gov/fdsys/pkg/FR-2018-02-26/pdf/2018-03795.pdf

APPENDIX B

LIST OF HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

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

Subject: Tapered Roller Bearings from China

Inv. No.: 731-TA-344 (Fourth Review)

Date and Time: July 31, 2018 - 9:30 a.m.

Sessions were held in connection with this investigation in the Main Hearing Room (Room 101), 500 E Street, SW., Washington, DC.

CONGRESSIONAL APPEARANCES:

The Honorable Sherrod Brown, United States Senator, Ohio

OPENING REMARKS:

In Support of the Continuation of Order (**Terence P. Stewart**, Stewart & Stewart**)**
In Opposition to the Continuation of Order (**Lyle Vander Schaaf,** Brinks Gilson & Lione)

In Support of the Continuation of Antidumping Duty Order:

Stewart & Stewart
Washington, DC
on behalf of

The Timken Company ("Timken")

Christopher A. Coughlin, Executive Vice President and Group President, Timken

Brian J. Ruel, Vice President for the Americas, Timken

Marcus W. Propst, Plant Manager – Controller – Operations, Supply Chain, Latin America, Timken

Michael A. Disenza, Vice President and Group Controller, Timken

In Support of the Continuation of
Antidumping Order (continued):

Steven P. Russell, Business Manager – Americas, Timken

Monica L. Janiak, General Manager, Controller, Operations, Supply Chain, and Latin America, Timken

S. Ryan Hartong, Attorney, Timken

Robert Harper, President, Local 1123, United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union

Joseph Plott, Chair for Bearings, Local 1123, United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union

Terence P. Stewart)
Nicholas J. Birch) – OF COUNSEL
Mark D. Beatty)

In Opposition to the Continuation of
Antidumping Duty Order:

Trade Pacific PLLC
Washington, D.C.
on behalf of

Bosda, Inc. ("Bosda")

Steven Chang, General Manager, Bosda

Grace Chang, Marketing Director, Bosda

Anna Zhang, Operations Manager, Bosda

Jonathan M. Freed) – OF COUNSEL

In Opposition to the Continuation of
Antidumping Order (continued):

Brinks Gilson & Lione
Washington, D.C.
on behalf of

Dana Incorporated
Xinchang Kaiyuan Automotive Bearings Co., Ltd.

Tom Valenti, Senior Executive Account Manager, North America Operations, Xinchang Kaiyuan Automotive Bearings Co., Ltd.

Steve Hughes, Owner, HCS International

Rebecca Gentner, Trade Compliance Manager, Dana Incorporated

Gordon Paton, Manager, Technical Services and Field Support, Mevotech L.P.

Lyle Vander Schaaf)
Fei Hu) – OF COUNSEL
Jieun Lee)

REBUTTAL/CLOSING REMARKS:

In Support of the Continuation of Order (**Terence P. Stewart**, Stewart & Stewart)
In Opposition to the Continuation of Order (**Lyle Vander Schaaf,** Brinks Gilson & Lione)

-END-

APPENDIX C

SUMMARY DATA

All TRBs

Table C-1
TRBs: Summary data concerning the U.S. market, 2015-17

(Quantity=1,000 bearings or bearing equivalents; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per B&BE; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2015	2016	2017	2015-17	2015-16	2016-17
U.S. consumption value:						
Amount	2,284,347	1,954,481	2,039,704	(10.7)	(14.4)	4.4
Producers' share (fn1)	55.7	58.1	56.6	0.8	2.4	(1.5)
Importers' share (fn1):						
China subject	***	***	***	***	***	***
China nonsubject	***	***	***	***	***	***
All other sources	34.0	31.3	32.4	(1.6)	(2.8)	1.1
Nonsubject sources	***	***	***	***	***	***
All import sources	44.3	41.9	43.4	(0.8)	(2.4)	1.5
U.S. consumption quantity:						
Amount	172,942	161,966	164,517	(4.9)	(6.3)	1.6
Producers' share (fn1)	37.6	37.3	33.9	(3.7)	(0.3)	(3.4)
Importers' share (fn1):						
China subject	***	***	***	***	***	***
China nonsubject	***	***	***	***	***	***
All other sources	39.1	36.6	38.1	(1.0)	(2.5)	1.5
Nonsubject sources	***	***	***	***	***	***
All import sources	62.4	62.7	66.1	3.7	0.3	3.4
U.S. imports from:						
China subject						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value (fn2)	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
China nonsubject						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value (fn2)	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
All other sources:						
Value	777,745	610,901	660,815	(15.0)	(21.5)	8.2
Quantity	67,615	59,273	62,611	(7.4)	(12.3)	5.6
Unit value (fn2)	$10.33	$9.25	$9.32	(9.8)	(10.4)	0.7
Ending inventory quantity	***	***	***	***	***	***
Nonsubject sources:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value (fn2)	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
All import sources:						
Value	1,011,315	819,196	886,130	(12.4)	(19.0)	8.2
Quantity	107,909	101,606	108,804	0.8	(5.8)	7.1
Unit value (fn2)	$8.60	$7.42	$7.39	(14.1)	(13.8)	(0.4)
Ending inventory quantity	16,489	19,469	19,691	19.4	18.1	1.1

Table continued on next page.

Table C-1--Continued
TRBs: Summary data concerning the U.S. market, 2015-17

(Quantity=1,000 bearings or bearing equivalents; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per B&BE; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2015	2016	2017	2015-17	2015-16	2016-17
U.S. producers':						
Average capacity quantity	123,474	121,879	121,869	(1.3)	(1.3)	(0.0)
Production quantity	81,586	75,644	78,092	(4.3)	(7.3)	3.2
Capacity utilization (fn1)	66.1	62.1	64.1	(2.0)	(4.0)	2.0
U.S. shipments:						
Value	1,273,032	1,135,285	1,153,574	(9.4)	(10.8)	1.6
Quantity	65,033	60,360	55,712	(14.3)	(7.2)	(7.7)
Unit value (fn2)	$19.54	$18.79	$20.70	5.9	(3.9)	10.2
Export shipments:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value (fn2)	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***
Production workers	4,295	3,896	4,014	(6.5)	(9.3)	3.0
Hours worked (1,000s)	8,333	7,795	8,034	(3.6)	(6.5)	3.1
Wages paid ($1,000)	195,023	175,967	191,942	(1.6)	(9.8)	9.1
Hourly wages	$23.40	$22.57	$23.89	2.1	(3.5)	5.8
Productivity (B&BE per hour)	9.8	9.7	9.7	(0.7)	(0.9)	0.2
Unit labor costs	$2.39	$2.33	$2.46	2.8	(2.7)	5.7
Net sales:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***
Gross profit of (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)	***	***	***	***	***	***

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

fn1.--Reported data are in percent and period changes are in percentage points.
fn2--Unit value calculated excluding value of parts for which there was no bearing or bearing equivalent quantiy measurement.

Source: Compiled from data submitted in response to Commission questionnaires, and from official U.S. import statistics using HTS statistical reporting numbers 8482.20.0040, 8482.20.0060, 8482.20.0061, 8482.20.0064, 8482.20.0067, 8482.20.0070, 8482.20.0080, 8482.20.0081, 8482.20.0090, 8482.91.0050, 8482.99.1540, 8482.99.1550, 8482.99.1570, 8482.99.1580, 8482.99.4500, 8483.20.4080, 8483.20.8080 accessed May 17, 2018; and HTS statistical reporting numbers 8482.20.0020, 8482.20.0030, and 8708.99.8115, accessed August 17, 2018.

Wheel hub assemblies

Table C-2
Wheel hub assemblies: Summary data concerning the U.S. market, 2015-17

(Quantity=1,000 bearings or bearing equivalents; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per B&BE; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2015	2016	2017	2015-17	2015-16	2016-17
U.S. consumption value:						
Amount	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***
Importers' share (fn1):						
China subject	***	***	***	***	***	***
China nonsubject	***	***	***	***	***	***
All other sources	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***
All import sources	***	***	***	***	***	***
U.S. consumption quantity:						
Amount	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***
Importers' share (fn1):						
China subject	***	***	***	***	***	***
China nonsubject	***	***	***	***	***	***
All other sources	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***
All import sources	***	***	***	***	***	***
U.S. imports from:						
China subject						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
China nonsubject						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
All other sources:						
Value	171,958	89,867	82,728	(51.9)	(47.7)	(7.9)
Quantity	6,877	2,892	2,669	(61.2)	(57.9)	(7.7)
Unit value	$25.00	$31.07	$30.99	24.0	24.3	(0.2)
Ending inventory quantity	***	***	***	***	***	***
Nonsubject sources:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
All import sources:						
Value	277,416	194,848	197,198	(28.9)	(29.8)	1.2
Quantity	10,680	7,037	6,817	(36.2)	(34.1)	(3.1)
Unit value	$25.98	$27.69	$28.93	11.4	6.6	4.5
Ending inventory quantity	1,281	1,055	1,212	(5.4)	(17.7)	14.9

Table continued on next page.

Table C-2--Continued
Wheel hub assemblies: Summary data concerning the U.S. market, 2015-17

(Quantity=1,000 bearings or bearing equivalents; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per B&BE; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2015	2016	2017	2015-17	2015-16	2016-17
U.S. producers':						
Average capacity quantity	***	***	***	***	***	***
Production quantity	3,671	4,299	4,229	15.2	17.1	(1.6)
Capacity utilization (fn1)	***	***	***	***	***	***
U.S. shipments:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Export shipments:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***
Production workers	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***
Hourly wages	***	***	***	***	***	***
Productivity (B&BE per hour)	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***
Net sales:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***
Gross profit of (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)	***	***	***	***	***	***

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

fn1.--Reported data are in percent and period changes are in percentage points.

Source: Compiled from data submitted in response to Commission questionnaires, and from official U.S. import statistics using HTS statistical reporting numbers 8482.20.0020, 8482.20.0030, and 8708.99.8115, accessed August 17, 2018.

TRBs excluding wheel hub assemblies

Table C-3
TRBs excluding wheel hub assemblies: Summary data concerning the U.S. market, 2015-17

(Quantity=1,000 bearings or bearing equivalents; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per B&BE; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2015	2016	2017	2015-17	2015-16	2016-17
U.S. consumption value:						
Amount	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***
Importers' share (fn1):						
China subject	***	***	***	***	***	***
China nonsubject	***	***	***	***	***	***
All other sources	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***
All import sources	***	***	***	***	***	***
U.S. consumption quantity:						
Amount	***	***	***	***	***	***
Producers' share (fn1)	***	***	***	***	***	***
Importers' share (fn1):						
China subject	***	***	***	***	***	***
China nonsubject	***	***	***	***	***	***
All other sources	***	***	***	***	***	***
Nonsubject sources	***	***	***	***	***	***
All import sources	***	***	***	***	***	***
U.S. imports from:						
China subject						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value (fn2)	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
China nonsubject						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value (fn2)	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
All other sources:						
Value	605,787	521,035	578,087	(4.6)	(14.0)	10.9
Quantity	60,738	56,381	59,942	(1.3)	(7.2)	6.3
Unit value (fn2)	$9.97	$9.24	$9.64	(3.3)	(7.3)	4.4
Ending inventory quantity	***	***	***	***	***	***
Nonsubject sources:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value (fn2)	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
All import sources:						
Value	733,900	624,348	688,932	(6.1)	(14.9)	10.3
Quantity	97,229	94,568	101,987	4.9	(2.7)	7.8
Unit value (fn2)	$7.55	$6.60	$6.76	(10.5)	(12.5)	2.3
Ending inventory quantity	15,207	18,415	18,480	21.5	21.1	0.4

Table continued on next page.

Table C-3--Continued
TRBs excluding wheel hub assemblies: Summary data concerning the U.S. market, 2015-17

(Quantity=1,000 bearings or bearing equivalents; Value=1,000 dollars; Unit values, unit labor costs, and unit expenses=dollars per B&BE; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Comparison years		
	2015	2016	2017	2015-17	2015-16	2016-17
U.S. producers':						
Average capacity quantity	***	***	***	***	***	***
Production quantity	77,915	71,346	73,863	(5.2)	(8.4)	3.5
Capacity utilization (fn1)	***	***	***	***	***	***
U.S. shipments:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value (fn2)	***	***	***	***	***	***
Export shipments:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value (fn2)	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***
Inventories/total shipments (fn1)	***	***	***	***	***	***
Production workers	***	***	***	***	***	***
Hours worked (1,000s)	***	***	***	***	***	***
Wages paid ($1,000)	***	***	***	***	***	***
Hourly wages	***	***	***	***	***	***
Productivity (B&BE per hour)	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***
Net sales:						
Value	***	***	***	***	***	***
Quantity	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***
Gross profit of (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)	***	***	***	***	***	***

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

fn1.--Reported data are in percent and period changes are in percentage points.
fn2--Unit values not calculated excluding the value of parts.

Source: Compiled from data submitted in response to Commission questionnaires, and from official U.S. import statistics using HTS statistical reporting numbers 8482.20.0040, 8482.20.0060, 8482.20.0061, 8482.20.0064, 8482.20.0067, 8482.20.0070, 8482.20.0080, 8482.20.0081, 8482.20.0090, 8482.91.0050, 8482.99.1540, 8482.99.1550, 8482.99.1570, 8482.99.1580, 8482.99.4500, 8483.20.4080, and 8483.20.8080, accessed May 17, 2018.

HISTORICAL DATA

Table I-1
TRBs: Comparative data from the original investigations and the first, second, and third reviews, 1983-86, 1997-98 and 2000-2011

(Quantity in 1,000 units, value in 1,000 dollars, shares/ratios in percent)

Item	1983	1984	1985	1986	1997	1998	2000	2001	2002
U.S. consumption:									
Value	***	***	***	***	1,322,281	1,418,791	***	***	***
U.S. producers' share	***	***	***	***	82.3	80.2	***	***	***
U.S. importers' share:									
China[2]	***	***	***	***	2.1	1.7	***	***	***
All other sources[3]	***	***	***	***	15.7	18.1	***	***	***
Total imports	***	***	***	***	17.7	19.8	***	***	***
Value of U.S. imports from:									
China (subject)	989	1,751	955	830	27,242	23,837	***	***	***
All other sources:	91,574	157,830	148,081	141,711	206,617	257,060	***	***	***
Total	92,563	159,581	149,036	142,541	233,859	280,896	266,065	219,703	262,777
U.S. producers:									
Capacity quantity[4 5]	182,831	178,753	182,602	176,109	146,503	154,931	***	***	***
Production quantity[4 5]	110,200	132,708	118,419	102,531	145,267	146,863	***	***	***
Capacity Utilization[4 5]	52.9	66.1	57.6	51.3	94.5	90.3	***	***	***
U.S. shipments:									
Quantity	***	***	***	***	***	***	***	***	***
Value	***	***	***	***	***	***	***	***	***
Unit Value	([1])	([1])	([1])	([1])	***	***	***	***	***
Ending inventory quantity[6]	***	***	***	***	***	***	***	***	***
Inventory/total shipments	***	***	***	***	***	***	***	***	***
Production workers	7,506	9,149	7,694	6,792	***	***	***	***	***
Hours worked (*1,000*)	14,509	18,678	15,163	12,973	***	***	***	***	***
Wages paid (*1,000 dollars*)	([1])	([1])	([1])	([1])	***	***	***	***	***
Hourly wages	([1])	([1])	([1])	([1])	***	***	***	***	***
Productivity (*bearings per hour*)[7]	([1])	([1])	([1])	([1])	***	***	***	***	***
Net sales	***	***	***	***	***	***	***	***	***
Cost of goods sold	***	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***	***
Operating income or (loss) (*value*)	***	***	***	***	***	***	***	***	***
Cost of goods sold/sales (percent)	***	***	***	***	***	***	***	***	***
Operating income or (loss)/sales	***	***	***	***	***	***	***	***	***

Table I-1—*Continued*
TRBs: Comparative data from the original investigations, and the first, second, and third reviews, 1983-86, 1997-98 and 2000-2011

(Quantity in 1,000 pounds, value in 1,000 dollars, shares/ratios in percent)

2003	2004	2005	2006	2007	2008	2009	2010	2011
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
341,748	439,414	583,024	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***
***	***	***	***	***	***	***	***	***

Notes continued on next page.

Continued from table I-1

[1] Not Available.
[2] ***.
[3] Includes imports from countries that were subject to the original investigations and/or the first five-year reviews (Hungary, Japan, and Romania) but which are not currently subject to antidumping duty orders.
[4] Capacity and production data exclude parts other than cups, cone assemblies, and sets (which are considered to be complete bearings). For the period 1983-86, capacity was calculated by using a simple average of cups and cone assemblies. Production was calculated using a simple average of cups and cone assemblies and then adding sets. Capacity utilization was determined by using a simple average of data presented for cups and cone assemblies.
[5] For the period 1983-86, the capacity and production data do not include *** because of statistical discrepancies in its questionnaire response.
[6] Inventories were calculated for 1983-86 using a simple average of cups and cone assemblies and then adding sets. Inventory data for 1997-98 and 2000-05 are for complete bearings, and exclude parts other than cups, cone assemblies, and sets of TRBs, which are treated as complete bearings.
[7] Productivity calculated on the basis of complete bearings only.

Note.–Value-based and employment data include parts of TRBs. Unit values are calculated based on those eight HTS items for which number of bearings is reported. Ten U.S. TRB producers provided data during the original 1985-87 investigation; the 7 reporting U.S. producers for 2000-05, and the 7 reporting U.S. producers for 2006-11 are believed to account for the "majority" of TRB production in the United States. U.S. import data are derived from official Commerce statistics that were adjusted for specified years within the 2000-11 period to reflect the revocations of the TRB order for Shanghai General Bearing, Tianshui Hailin, and Wafangdian.

Source: Data for 1983-86 compiled or derived from confidential staff report INV-K-061 (May 21, 1987); data for 1997-98 compiled or derived from confidential staff report, INV-X-101, May 8, 2000; data for 2000-05 compiled or derived from confidential staff report, INV-DD-084, June 16, 2006; and data for 2006-11 compiled from responses to Commission questionnaires and official Commerce statistics, adjusted to exclude companies for which the order has been revoked.

PREVIOUS AND RELATED INVESTIGATIONS

On October 31, 1973, a complaint was filed at Treasury on behalf of domestic producers alleging that TRBs from Japan were being sold at LTFV. Treasury instituted an antidumping investigation on December 4, 1973, and on October 24, 1974, the then Tariff Commission instituted investigation No. AA 1921-143. On August 18, 1976, Treasury published a finding with respect to TRBs and certain components thereof from Japan.[19]

[19] Treasury's finding covered "tapered roller bearings, including inner race or cone assemblies and outer races or cups, exported to and sold in the United States, either as a unit or separately, from Japan" (41 FR 34975, August 18, 1976). On August 10, 1981, Commerce published two clarifications to Treasury's finding. The first clarification applied to the size of the TRBs covered by the finding. Commerce found no evidence in the record of the investigation that indicated that Treasury or the Commission investigated any bearings over four inches in diameter. As a result, Commerce included the term "four inches or less in outside diameter" in the definition of TRBs to describe more accurately the scope of the investigation and the administrative determination (46 FR 40550, August 10, 1981). The second clarification applied to the degree of completion of imported TRBs. According to Commerce, neither the petition nor the investigation was directed at transactions involving partially manufactured merchandise. Commerce found that extensive transformation must take place before unfinished TRBs can be sold for use, and that manufacturing rather than assembly or final stage processing is required before the unfinished TRB is considered an essentially finished article. In its clarification, Commerce stated that there are major differences in physical characteristics, manner of sale, and use between finished and unfinished TRBs and, therefore, unfinished TRBs are not the same class of merchandise as finished TRBs. As a result, Commerce excluded the unfinished components of TRBs as described above from the finding of dumping (46 FR 40550, August 10, 1981). On June 15, 1982, Commerce published a revocation of the antidumping finding on TRBs, 4 inches or less in outside diameter when assembled, including inner race or cone assemblies and outer races or cups, exported to and sold in

Table C-1
TRBs: Summary data concerning the U.S. market, 2006-11

* * * * * * *

Table C-2
Wheel hub assemblies: Summary data concerning the U.S. market, 2006-11

* * * * * * *

Table C-3
TRBs (excluding wheel hub assemblies): Summary data concerning the U.S. market, 2006-11

* * * * * * *

Table C-1
Tapered roller bearings: Summary data concerning the U.S. market, 2000-05

* * * * * * *

Table C-1
Tapered roller bearings: Summary data concerning the U.S. market, 1997-98, January-September 1998, and January-September 1999

(Quantity=*1,000 bearings*; value=*1,000 dollars*; unit values, unit labor costs, and unit expenses are *per bearing*; and period changes=*percent*, except where noted)

Item	Reported data				Period changes	
	Calendar year		January-September		1997-98	Jan.-Sept. 1998-99
	1997	1998	1998	1999		
U.S. consumption quantity:						
Amount	233,482	240,053	180,742	190,266	2.8	5.3
Producers' share[1]	52.8	51.9	52.5	50.1	-1.0	-2.4
Importers' share:[1]						
China	15.6	14.4	15.1	16.4	-1.3	1.3
Hungary	0.0	0.0	0.0	0.0	0.0	0.0
Japan	10.3	12.4	11.9	10.3	2.2	-1.6
Romania	1.2	1.0	0.7	3.0	-0.2	2.3
Subtotal	27.0	27.8	27.7	29.7	0.7	2.0
Canada	10.8	9.7	9.7	8.9	-1.2	-0.8
Germany	0.3	0.8	0.8	0.9	0.5	0.1
United Kingdom	1.0	1.0	1.1	0.8	0.1	-0.3
Other sources	8.0	8.8	8.3	9.7	0.9	1.4
Total imports	47.2	48.1	47.5	49.9	1.0	2.4
U.S. consumption value:						
Amount	1,322,281	1,418,791	1,064,646	1,081,615	7.3	1.6
Producers' share[1]	82.3	80.2	79.8	82.1	-2.1	2.4
Importers' share:[1]						
China	2.1	1.7	1.7	1.8	-0.4	0.0
Hungary	0.0	0.0	0.0	0.0	0.0	0.0
Japan	4.4	4.7	4.7	4.2	0.3	-0.5
Romania	0.2	0.1	0.1	0.3	-0.1	0.2
Subtotal	6.6	6.5	6.5	6.3	-0.1	-0.2
Canada	3.9	3.8	3.9	3.7	0.0	-0.2
Germany	1.5	2.0	2.1	1.7	0.5	-0.4
United Kingdom	1.6	2.1	2.2	1.2	0.5	-1.0
Other sources	4.1	5.3	5.5	4.9	1.3	-0.6
Total imports	17.7	19.8	20.2	17.9	2.1	-2.4
U.S. imports from--						
China:						
Quantity	36,480	34,493	27,263	31,163	-5.4	14.3
Value	27,242	23,837	18,431	19,158	-12.5	3.9
Unit value	$0.71	$0.61	$0.59	$0.56	-15.0	-5.2
Ending inventory	***	***	***	***	***	***
Hungary:						
Quantity	0	1	1	12.1	243.8	(2)
Value	3	8	4	148	154.6	(2)
Unit value	$11.39	$8.44	$4.61	$12.25	-25.9	165.5
Ending inventory	***	***	***	***	***	***

Table continued on next page.

(Quantity=*1,000 bearings*; value=*1,000 dollars*; unit values, unit labor costs, and unit expenses are *per bearing*; and period changes=*percent*, except where noted)

Item	Reported data				Period changes	
	Calendar year		January-September		1997-98	Jan.-Sept. 1998-99
	1997	1998	1998	1999		
Japan:						
Quantity	23,953	29,858	21,524	19,625	24.7	-8.8
Value	57,639	66,483	50,059	45,520	15.3	-9.1
Unit value	$2.24	$2.10	$2.17	$2.28	-6.3	4.9
Ending inventory	***	***	***	***	***	***
Romania:						
Quantity	2,703	2,349	1,296	5,747	-13.1	343.5
Value	2,695	1,909	1,139	3,627	-29.2	218.3
Unit value	$1.00	$0.81	$0.88	$0.63	-18.5	-28.2
Ending inventory	***	***	***	***	***	***
Subtotal:						
Quantity	63,136	66,701	50,083	56,547	5.6	12.9
Value	87,579	92,237	69,634	68,453	5.3	-1.7
Unit value	$1.36	$1.42	$1.41	$1.32	4.5	-6.3
Ending inventory	13,093	13,265	11,718	12,146	1.3	3.7
Canada:						
Quantity	25,332	23,198	17,500	16,908	-8.4	-3.4
Value	51,089	54,323	41,688	40,459	6.3	-2.9
Unit value	$2.00	$2.33	$2.37	$2.36	16.1	-0.1
Ending inventory	(3)	(3)	(3)	(3)	(4)	(4)
Germany:						
Quantity	755	1,889	1,436	1,630	150.1	(2)
Value	19,934	28,935	22,122	18,486	45.2	(2)
Unit value	$25.36	$14.76	$14.94	$10.22	-41.8	-31.6
Ending inventory	(3)	(3)	(3)	(3)	(4)	(4)
United Kingdom:						
Quantity	2,308	2,501	1,934	1,445	8.4	-25.3
Value	21,392	29,664	23,524	13,360	38.7	-43.2
Unit value	$8.93	$11.44	$11.64	$9.03	28.0	-22.4
Ending inventory	(3)	(3)	(3)	(3)	(4)	(4)
Other sources:						
Quantity	18,572	21,230	14,922	18,464	14.3	23.7
Value	53,865	75,738	58,528	52,698	40.6	-10.0
Unit value	$2.79	$3.39	$3.73	$2.67	21.7	-28.4
Ending inventory	487	957	848	724	96.7	-14.6
All sources:						
Quantity	110,103	115,518	85,876	94,994	4.9	10.6
Value	233,859	280,896	215,496	193,456	20.1	-10.2
Unit value	$2.04	$2.32	$2.39	$1.95	13.7	-18.5
Ending inventory	13,580	14,223	12,566	12,870	4.7	2.4

Table continued on next page.

(Quantity=*1,000 bearings*; value=*1,000 dollars*; unit values, unit labor costs, and unit expenses are *per bearing*; and period changes=*percent*, except where noted)

Item	Reported data				Period changes	
	Calendar year		January-September		1997-98	Jan.-Sept. 1998-99
	1997	1998	1998	1999		
U.S. producers'--						
Average capacity quantity	146,503	154,931	115,865	119,627	5.8	3.2
Production quantity	145,267	146,862	114,105	112,283	1.1	-1.6
Capacity utilization[1]	94.5	90.3	93.7	90.5	-4.2	-3.1
U.S. shipments:						
Quantity	123,380	124,534	94,867	95,272	0.9	0.4
Value	1,088,422	1,137,894	849,150	888,159	4.5	4.6
Unit value	$8.54	$8.86	$8.67	$9.03	3.8	4.2
Export shipments:						
Quantity	***	***	***	***	***	***
Value	***	***	***	***	***	***
Unit value	***	***	***	***	***	***
Ending inventory quantity	16,864	17,033	19,817	18,262	1.0	-7.8
Inventories/total shipments[1]	11.6	11.8	13.5	12.3	0.1	-1.2
Production workers	***	***	***	***	***	***
Hours worked (*1,000 hours*)	***	***	***	***	***	***
Wages paid (*1,000 dollars*)	***	***	***	***	***	***
Hourly wages	***	***	***	***	***	***
Productivity (bearings per hour)	***	***	***	***	***	***
Unit labor costs	***	***	***	***	***	***
Net sales value	***	***	***	***	***	***
COGS	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***
Capital expenditures	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***
Operating income or (loss)/sales[1]	***	***	***	***	***	***

[1] "Reported data" are in percent and "period changes" are in percentage points.
[2] Increase greater than 1,000 percent.
[3] Included in "Other sources."
[4] Not applicable.

Note.–Financial data are reported on a fiscal year basis and may not necessarily be comparable to data reported on a calendar year basis. Values include parts; unit values calculated based on whole bearings only.

Source: Compiled from data submitted in response to Commission questionnaires and from official Commerce statistics.

APPENDIX D

COMMENTS REGARDING THE EFFECT OF THE ORDER AND THE LIKELY EFFECTS OF REVOCATION

Table D-1
TRBs: Firms' narratives on the impact of the order and the likely impact of revocation

* * * * * * *

APPENDIX E

COMPARABILITY OF TRBs AND WHEEL HUB ASSEMBLIES

Table E-1
TRBs: U.S. producers' narrative responses regarding the comparability of TRBs vs wheel hub assemblies, by factor

* * * * * * *

Table E-2
TRBs: U.S. importers' narrative responses regarding the comparability of TRBs vs wheel hub assemblies, by factor

* * * * * * *

Table E-3
TRBs: U.S. purchasers' narrative responses regarding the comparability of TRBs vs wheel hub assemblies, by factor

* * * * * * *

APPENDIX F

ADDITIONAL FOREIGN INDUSTRY DATA

Table F-1

Wheel hub assemblies: Data on industry in China, 2015-17

Item	Calendar year		
	2015	2016	2017
	Quantity (1,000 bearings or bearing equivalents)		
Capacity	2,113	2,891	3,492
Production	1,995	2,620	3,152
End-of-period inventories	***	***	***
Shipments: Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to: United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	1,209	1,476	1,915
Total shipments	***	***	***
	Value (1,000 dollars)		
Shipments: Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to: United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	19,834	25,704	36,720
Total shipments	***	***	***

Table continued on next page.

Table F-1--Continued

Wheel hub assemblies: Data on industry in China, 2015-17

Item	Calendar year		
	2015	2016	2017
	Unit value (dollars per B&BE)		
Shipments:			
Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to:			
United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	16.40	17.42	19.18
Total shipments	***	***	***
	Ratios and shares (percent)		
Capacity utilization	94.4	90.6	90.3
Inventories/production	***	***	***
Inventories/total shipments	***	***	***
Share of total shipments:			
Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to:			
United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	***	***	***
Total shipments	***	***	***

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

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

Table F-2

TRBs excluding wheel hub assemblies: Data on industry in China, 2015-17

Item	Calendar year		
	2015	2016	2017
	Quantity (1,000 bearings or bearing equivalents)		
Capacity	27,247	30,033	35,105
Production	20,058	23,375	30,809
End-of-period inventories	***	***	***
Shipments: Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to: United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	17,704	19,499	24,301
Total shipments	***	***	***
	Value (1,000 dollars)		
Shipments: Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to: United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	101,270	89,699	115,067
Total shipments	***	***	***

Table continued on next page.

Table F-2--Continued

TRBs excluding wheel hub assemblies: Data on industry in China, 2015-17

Item	Calendar year		
	2015	2016	2017
	Unit value (dollars per B&BE)		
Shipments:			
Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to:			
United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	5.72	4.60	4.74
Total shipments	***	***	***
	Ratios and shares (percent)		
Capacity utilization	73.6	77.8	87.8
Inventories/production	***	***	***
Inventories/total shipments	***	***	***
Share of total shipments:			
Internal consumption/ transfers	***	***	***
Commercial home market shipments	***	***	***
Total home market shipments	***	***	***
Export shipments to:			
United States	***	***	***
European Union	***	***	***
Asia	***	***	***
All other markets	***	***	***
Total exports	***	***	***
Total shipments	***	***	***

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

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