

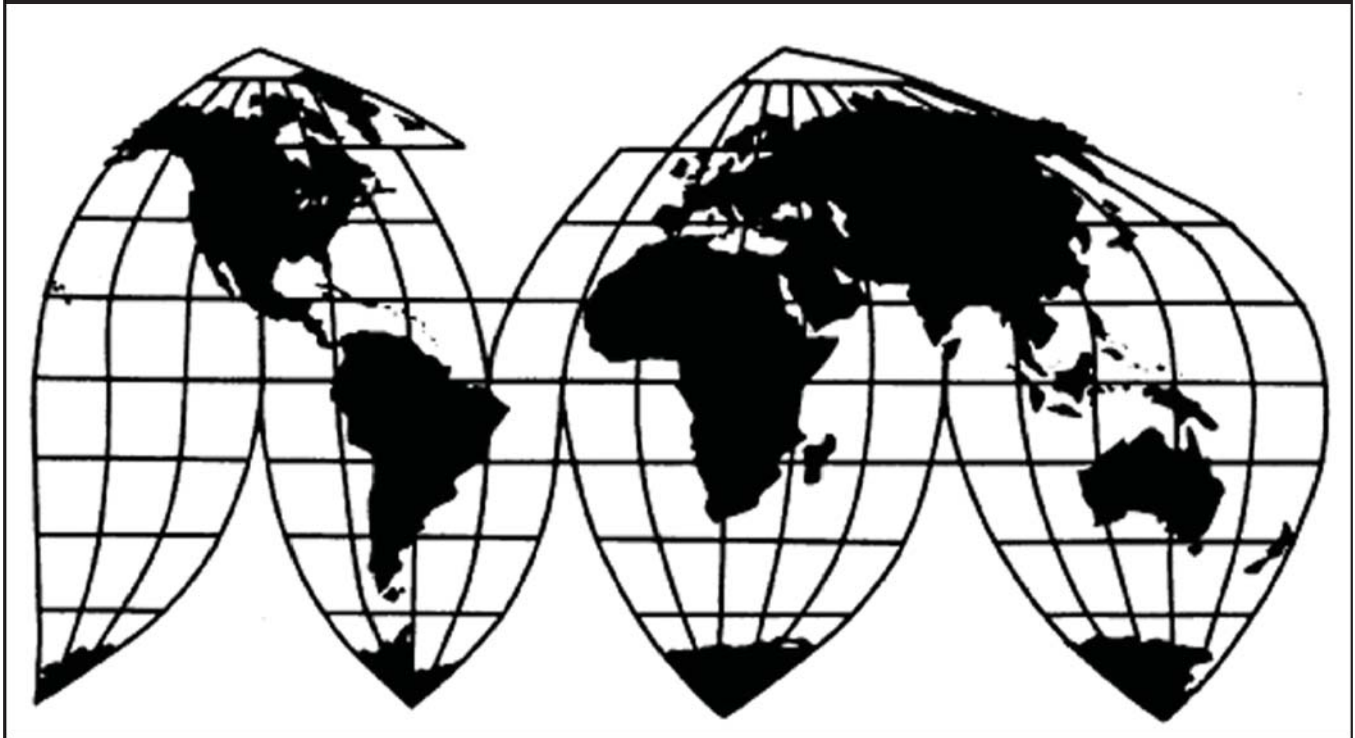
# Tapered Roller Bearings from Korea

Investigation No. 731-TA-1380 (Final)

Publication 4806

August 2018

**U.S. International Trade Commission**



Washington, DC 20436

# U.S. International Trade Commission

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Note.—Information that would reveal confidential operations of individual concerns may not be published.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-1380 (Final)  
Tapered Roller Bearings from Korea

### DETERMINATION

On the basis of the record<sup>1</sup> developed in the subject investigation, the United States International Trade Commission (“Commission”) determines, pursuant to the Tariff Act of 1930 (“the Act”), that an industry in the United States is not materially injured or threatened with material injury by reason of imports of tapered roller bearings from Korea that have been found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value (“LTFV”).<sup>2 3</sup>

### BACKGROUND

The Commission, pursuant to section 735(b) of the Act (19 U.S.C. 1673d(b)), instituted this investigation effective June 28, 2017, following receipt of a petition filed with the Commission and Commerce by The Timken Company, North Canton, Ohio. The Commission scheduled the final phase of the investigation following notification of a preliminary determination by Commerce that imports of tapered roller bearings from Korea were being sold at LTFV within the meaning of section 733(b) of the Act (19 U.S.C. 1673b(b)). Notice of the scheduling of the final phase of the Commission’s investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of February 27, 2018 (83 FR 8504). The hearing was held in Washington, DC, on June 5, 2018, and all persons who requested the opportunity were permitted to appear in person or by counsel.

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<sup>1</sup> The record is defined in sec. 207.2(f) of the Commission’s Rules of Practice and Procedure (19 CFR 207.2(f)).

<sup>2</sup> 83 FR 29092 (June 22, 2018). Whether establishment of an industry in the United States is materially retarded is not an issue in this investigation.

<sup>3</sup> Commissioner Rhonda K. Schmidlein dissenting. Commissioner Jason E. Kearns did not participate in the determination in this investigation.



## Views of the Commission

Based on the record in the final phase of this investigation, we determine that an industry in the United States is not materially injured or threatened with material injury by reason of imports of tapered roller bearings (“TRBs”) from Korea found by the U.S. Department of Commerce (“Commerce”) to be sold in the United States at less than fair value.<sup>1</sup>

### I. Background

The Timken Company (“Timken”), a U.S. producer of TRBs, filed the petition in this investigation on June 28, 2017. Timken appeared at the hearing with counsel and submitted prehearing and posthearing briefs, and final comments.

A number of respondent entities participated in this investigation. Bearing Art Corporation (“Bearing Art”), a producer of subject merchandise, its affiliated U.S. importer Iljin USA Corporation (collectively “Iljin”), Schaeffler Korea Corporation (“Schaeffler Korea”), a producer of subject merchandise, and its affiliated U.S. producer and importer Schaeffler Group U.S.A., Inc. (collectively “Schaeffler”) (together with Iljin, the “respondents”) each participated in the hearing with counsel and submitted joint prehearing and posthearing briefs (“Joint Prehearing Brief” and “Joint Posthearing Brief,” respectively), as well as final comments. Dana Incorporated and Superior Bearing and Supply, each a U.S. purchaser of TRBs, participated in the hearing.

U.S. industry data are based on the questionnaire responses of six firms that accounted for the majority of U.S. production of TRBs during 2017.<sup>2</sup> U.S. import data are based on official Commerce statistics and the questionnaire responses of 29 firms that account for virtually all subject imports from Korea and 66.1 percent of total U.S. imports during 2017, based on value.<sup>3</sup> Foreign industry data are based on questionnaire responses of three firms that accounted for virtually all U.S. imports of subject merchandise and approximately 77 percent of overall TRB production in Korea during 2017.<sup>4</sup>

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<sup>1</sup> Commissioner Schmidlein determines that an industry in the United States is threatened with material injury by reason of subject imports. See Dissenting Views of Commissioner Rhonda K. Schmidlein. Commissioner Schmidlein joins sections I through IV of this opinion, unless otherwise noted. Commissioner Kearns did not participate in this determination. Whether establishment of an industry is materially retarded by reason of subject imports is not at issue in this investigation.

<sup>2</sup> Confidential Report (“CR”) at I-3-4; Public Report (“PR”) at I-3; see section III below for the definition of the domestic industry.

<sup>3</sup> CR/PR at IV-1. The Commission issued importer questionnaires to 50 firms believed to be potential importers of TRBs. Usable questionnaire responses were received from 29 companies representing virtually all U.S. imports of subject merchandise and 66.1 percent of total imports of TRBs in 2017, based on value. CR/PR at IV-1 n.3. We explain in detail in section IV.B.1 below how we computed import data in this final phase investigation.

<sup>4</sup> CR at I-4; PR at I-3-4

## II. Domestic Like Product

### A. In General

In determining whether an industry in the United States is materially injured or threatened with material injury by reason of imports of subject merchandise, the Commission first defines the “domestic like product” and the “industry.”<sup>5</sup> Section 771(4)(A) of the Tariff Act of 1930, as amended (“the Tariff Act”), defines the relevant domestic industry as the “producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product.”<sup>6</sup> In turn, the Tariff Act defines “domestic like product” as “a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation.”<sup>7</sup>

The decision regarding the appropriate domestic like product in an investigation is a factual determination, and the Commission has applied the statutory standard of “like” or “most similar in characteristics and uses” on a case-by-case basis.<sup>8</sup> No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.<sup>9</sup> The Commission looks for clear dividing lines among possible like products and disregards minor variations.<sup>10</sup> Although the Commission must accept Commerce’s determination as to the scope of the imported merchandise that is subsidized or sold at less than fair value (LTFV),<sup>11</sup> the Commission determines what domestic product is like

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<sup>5</sup> 19 U.S.C. § 1677(4)(A).

<sup>6</sup> 19 U.S.C. § 1677(4)(A).

<sup>7</sup> 19 U.S.C. § 1677(10).

<sup>8</sup> See, e.g., *Cleo Inc. v. United States*, 501 F.3d 1291, 1299 (Fed. Cir. 2007); *NEC Corp. v. Department of Commerce*, 36 F. Supp. 2d 380, 383 (Ct. Int’l Trade 1998); *Nippon Steel Corp. v. United States*, 19 CIT 450, 455 (1995); *Torrington Co. v. United States*, 747 F. Supp. 744, 749 n.3 (Ct. Int’l Trade 1990), *aff’d*, 938 F.2d 1278 (Fed. Cir. 1991) (“every like product determination ‘must be made on the particular record at issue’ and the ‘unique facts of each case’”). The Commission generally considers a number of factors, including the following: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes, and production employees; and, where appropriate, (6) price. See *Nippon*, 19 CIT at 455 n.4; *Timken Co. v. United States*, 913 F. Supp. 580, 584 (Ct. Int’l Trade 1996).

<sup>9</sup> See, e.g., S. Rep. No. 96-249 at 90-91 (1979).

<sup>10</sup> *Nippon*, 19 CIT at 455; *Torrington*, 747 F. Supp. at 748-49; see also S. Rep. No. 96-249 at 90-91 (Congress has indicated that the like product standard should not be interpreted in “such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not ‘like’ each other, nor should the definition of ‘like product’ be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under consideration.”).

<sup>11</sup> See, e.g., *USEC, Inc. v. United States*, 34 Fed. Appx. 725, 730 (Fed. Cir. 2002) (“The ITC may not modify the class or kind of imported merchandise examined by Commerce.”); *Algoma Steel Corp. v.*

(Continued...)

the imported articles Commerce has identified.<sup>12</sup> The Commission may, where appropriate, include domestic articles in the domestic like product in addition to those described in the scope.<sup>13</sup>

## **B. Product Description**

In its final determination, Commerce defined the imported merchandise within the scope of this investigation as:

...certain tapered roller bearings. The scope covers all tapered roller bearings with a nominal outside cup diameter of eight inches and under, regardless of type of steel used to produce the bearing, whether of inch or metric size, and whether the tapered roller bearing is a thrust bearing or not. Certain tapered roller bearings include: finished cup and cone assemblies entering as a set, finished cone assemblies entering separately, and finished parts (cups, cones, and tapered rollers). Certain tapered roller bearings are sold individually as a set (cup and cone assembly), as a cone assembly, as a finished cup, or packaged as a kit with one or several tapered roller bearings, a seal, and grease. The scope of the investigation includes finished rollers and finished cones that have not been assembled with rollers and a cage. Certain tapered roller bearings can be a single row or multiple rows (e.g., two- or four-row), and a cup can handle a single cone assembly or multiple cone assemblies.

Finished cups, cones, and rollers differ from unfinished cups, cones, and rollers in that they have undergone further processing after heat treatment, including, but not limited to, final machining, grinding, and/or polishing. Mere heat treatment of a cup, cone, or roller (without any further processing after heat treatment) does not render the cup, cone, or roller a finished part for the purpose of this investigation. Finished tapered roller bearing parts are understood to mean parts which, at the time of importation, are ready for assembly (if further assembly is required) and require no further finishing or fabrication, such as grinding, lathing, machining, polishing, heat treatment, etc. Finished

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(...continued)

*United States*, 688 F. Supp. 639, 644 (Ct. Int'l Trade 1988), *aff'd*, 865 F.3d 240 (Fed. Cir.), *cert. denied*, 492 U.S. 919 (1989).

<sup>12</sup> *Hosiden Corp. v. Advanced Display Mfrs.*, 85 F.3d 1561, 1568 (Fed. Cir. 1996) (the Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); *Cleo*, 501 F.3d at 1298 n.1 (“Commerce’s {scope} finding does not control the Commission’s {like product} determination.”); *Torrington*, 747 F. Supp. at 748-52 (affirming the Commission’s determination defining six like products in investigations in which Commerce found five classes or kinds).

<sup>13</sup> See, e.g., *Pure Magnesium from China and Israel*, Inv. Nos. 701-TA-403 and 731-TA-895-96 (Final), USITC Pub. 3467 at 8 n.34 (Nov. 2001); *Torrington*, 747 F. Supp. at 748-49 (holding that the Commission is not legally required to limit the domestic like product to the product advocated by the petitioner, coextensive with the scope).

parts may require grease, bolting, and/or pressing as part of final assembly, and the requirement that these processes be performed, subsequent to importation, does not remove an otherwise finished tapered roller bearing from the scope.

Tapered roller bearings that have a nominal outer cup diameter of eight inches and under that may be used in wheel hub units, rail bearings, or other housed bearings, but entered separately, are included in the scope to the same extent as described above. All tapered roller bearings meeting the written description above, and not otherwise excluded, are included, regardless of coating.

Excluded from the scope of this investigation are: (1) unfinished parts of tapered roller bearings (cups, cones, and tapered rollers); (2) cages, whether finished or unfinished; (3) the non-tapered roller bearing components of subject kits (e.g., grease, seal); and (4) tapered roller bearing wheel hub units, rail bearings, and other housed tapered roller bearings (flange, take up cartridges, and hanger units incorporating tapered rollers).

Tapered roller bearings subject to this investigation are primarily classifiable under subheadings 8482.20.0040, 8482.20.0061, 8482.20.0070, 8482.20.0081, 8482.91.0050, 8482.99.1550, and 8482.99.1580 of the Harmonized Tariff Schedule of the United States (“HTSUS”). Parts may also enter under 8482.99.4500. While HTSUS subheadings are provided for convenience and for customs purposes, the written description of the subject merchandise is dispositive.<sup>14</sup>

TRBs are a type of antifriction bearing, which is a machine component that permits free motion between moving and fixed parts to minimize friction and wear. TRBs are used in applications to counteract friction while simultaneously offering moderate speed and heavy load capacity.<sup>15</sup> TRBs within the scope are used extensively in the automotive sector, heavy machinery sector (especially construction and agricultural equipment), and general industrial sectors, and the primary use for TRBs across these sectors are in transmissions and wheel applications.<sup>16</sup>

TRBs have four elements – an inner ring (the “cone”), an outer ring (the “cup”), tapered rollers that fit between the cone and cup, and a cage that aligns and spaces the rollers.<sup>17</sup> The cup is the largest part of the assembly with its inner surface tapered to conform to the angle of the roller assembly, and the numbers of rollers are determined by the end use of the TRB.<sup>18</sup> The cage, rollers, and cone are joined together to form a cone assembly, which when joined

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<sup>14</sup> *Certain Tapered Roller Bearings from the Republic of Korea: Final Determination of Sales at Less Than Fair Value*, 83 Fed. Reg. 29092, 29093-94 (June 22, 2018) (footnote omitted).

<sup>15</sup> CR at I-17; PR at I-14.

<sup>16</sup> CR at I-17-20; PR at I-14-16.

<sup>17</sup> CR at I-13; PR at I-11.

<sup>18</sup> CR at I-13; PR at I-11.

with a cup forms a roller bearing set.<sup>19</sup> Sets, cone assemblies, and cups are specified by part numbers that are based on standardized industry designations.<sup>20</sup>

### C. Domestic Like Product Analysis

In the preliminary determination, the Commission defined a single domestic like product consisting of TRBs of all diameter sizes, but not including housed bearings such as wheel hub units, cages entering separately, or unfinished parts. While acknowledging some differences in production facilities, uses, price, and producer and customer perceptions between TRBs of smaller and larger diameters, the Commission found that the record of the preliminary phase did not support an eight-inch diameter as a clear dividing line between such products.<sup>21</sup>

In the final phase of this investigation, Timken argues that the Commission should define a single domestic like product consisting of TRBs whose outside diameter is between zero and eight inches in outside diameter (“small-diameter TRBs”) that is coextensive with the scope of investigation.<sup>22</sup> Timken argues that the Commission applied an inappropriate legal standard in its preliminary determination when defining the domestic like product to include both small-diameter TRBs and those TRBs with outside diameters greater than eight inches (“large-diameter TRBs”). Timken asserts that the Commission must define the domestic like product to be coextensive with the scope of investigation because the domestic industry makes products directly “like” subject merchandise, and that the proper analysis is whether there is “no reasonable dividing line that could confine the domestic like product to merchandise coextensive with the scope.”<sup>23</sup> Even relying on the standard applied in the preliminary determination, Timken contends that the record of the final phase supports a finding that there is a clear dividing line between small- and large-diameter TRBs.<sup>24</sup>

Respondents argue that the Commission should define the domestic like product to include both small- and large-diameter TRBs, as it did in the preliminary determination. Respondents argue that Timken’s proffered presumption of a definition of domestic like product that is coextensive with the scope of investigation is contrary to the statute, legislative

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<sup>19</sup> CR at I-13-14; PR at I-11.

<sup>20</sup> CR at I-15-17; PR at I-12-14. Generally, part numbers will indicate traits such as outside and inside diameter, roller angle, and various interchange dimensions, but the internal geometries and tolerances may be different for the same part numbers across manufacturers. For a TRB to function properly, cups must be mated with corresponding assembled cones as indicated by part numbers. The two basic systems of standardization for TRBs are the Antifriction Bearing Manufacturers Association (“AFBMA”), which specifies dimensions in inches, and the International Standards Organization (“ISO”), which specifies dimensions in metric sizes. *Id.*

<sup>21</sup> *Tapered Roller Bearings from Korea*, Inv. No. 731-TA-1380 (Preliminary), USITC Pub. 4721 (Aug. 2017) at 12-13 (“*Preliminary Determination*”).

<sup>22</sup> Timken Prehearing Br. at 8.

<sup>23</sup> Timken Prehearing Br. at 8-13; Timken Posthearing Br. at 10 & Answer 1, 3-4.

<sup>24</sup> Timken Prehearing Br. at 8-45; Timken Posthearing Br. at 9-11 & Answer 1, 1-11.

history, court precedent, and Commission practice.<sup>25</sup> Respondents further assert that the Commission has consistently applied the same standard in defining the domestic like product in all investigations: the application of the six-factor test to determine whether there are clear dividing lines between products.<sup>26</sup> Applying this test, respondents contend that the record of this final phase supports that there is no clear dividing lines between small- and large-diameter TRBs.<sup>27</sup>

## 1. Appropriate Analysis in Defining the Domestic Like Product

In arguing that only small-diameter TRBs produced by the domestic industry are “like” subject imports, Timken in essence argues that the Commission must define its domestic like product to be coextensive with the scope of investigation where the domestic industry makes the identical product. Timken is incorrect. The Commission has the authority to define the domestic like product differently from the scope of investigation.<sup>28</sup> Such authority includes the ability to define the domestic like product more broadly than those products corresponding to the scope of investigation.<sup>29</sup> Indeed, the statute’s use of the term “like” indicates that the Commission need not restrict its definition only to those products that are identical to the scope of investigation.<sup>30</sup> As Timken has itself acknowledged, the Commission’s definition of the domestic like product must be based on the application of the six-factor test to the record of

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<sup>25</sup> Joint Prehearing Br. at 8; Joint Posthearing Br. at Resp. to Comm. Questions, 112-113.

<sup>26</sup> Joint Posthearing Br. at 2 & Resp. to Comm. Questions, 113-114.

<sup>27</sup> Joint Prehearing Br. at 13-22; Joint Posthearing Br. at Resp. to Comm. Questions, 124-131.

<sup>28</sup> *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) (finding that possibility of differences between the scope and the domestic like product determined by the Commission is “built into the law”); *see also Superalloy Degassed Chromium from Japan*, Inv. No. 731-TA-1090 (Preliminary), USITC Pub. 3768 (April 2005) at 6-7 (“*Chromium from Japan*”) (expressly rejecting argument that the definition of the domestic like product must be coextensive with the scope of investigation when petitioner domestically produces in-scope article).

<sup>29</sup> *See, e.g., Certain Iron Mechanical Transfer Drive Components from Canada and China*, Inv. Nos. 701-TA-550 and 731-TA-1304-1305 (Preliminary), USITC Pub. 4587 (Dec. 2015) (“*Certain IMTDCs from Canada and China*”) at 13-16 (defining domestic like product to include all sizes of product under investigation, not just those sizes corresponding to the scope of investigations).

<sup>30</sup> 19 U.S.C. § 1677(10); S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979) (“The requirement that a product be ‘like’ the imported article should not be interpreted in such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the \*\*\* product and \*\*\* article are not ‘like’ each other, nor should the definition of domestic like product be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under investigation.”); *Hosiden Corp. v. United States*, 810 F. Supp. 322, 332-333 (Ct. Int’l Trade 1992) (“...the Commission may interpret the term “like product” to include products other than those precisely identical to the article under investigation, provided its like product determination is reasonable and supported by the evidence.” (citations omitted)), *rev’d on other grounds*, 85 F.3d. 1561 (Fed. Cir. 1996).



each proceeding, not a *per se* rule that the like product be coextensive with the scope where the domestic industry makes the identical product.<sup>31</sup>

Timken further contends that the Commission applies a different standard in defining the domestic like product where “there is a continuum of products that extends beyond the scope,” which Timken argues requires that the Commission determine that there is “no reasonable dividing line” that could confine the domestic like product to merchandise coextensive with the scope.<sup>32</sup> Timken misconstrues the Commission’s practice. In each investigation, the Commission seeks to determine whether a clear dividing line exists between domestically produced products based on an examination of the six-factor test and the record, including where the question is whether to define the domestic like product more broadly than the scope of investigation.<sup>33</sup> The Commission will not include products outside the scope where a clear dividing line exists that confines products to the scope.<sup>34</sup> Conversely, the Commission will not confine its domestic like product definition to the scope where differences between products of different sizes would exist “regardless of the diameter used as the dividing line.”<sup>35</sup> While Timken highlights language from two investigations to argue for a distinct test

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<sup>31</sup> Hearing Tr. at 84-87 (Stewart). We note that Timken’s statements at the hearing appear to contradict the arguments made in its prehearing brief, which adopted arguments made by the petitioner in the *Chromium from Japan* investigation. Timken Prehearing Br. at 11-12. In *Chromium from Japan*, the petitioner of that investigation explicitly argued that the statute required that the Commission define a domestic like product to be coextensive with the scope of investigation where the domestic industry produces a product that is “like” subject merchandise, and the Commission rejected this proposition. *Chromium from Japan*, USITC Pub. 3768 at 6.

<sup>32</sup> Petitioners’ Prehearing Br. at 13 (citing *Chromium from Japan*, USITC Pub. 3768 at 7).

<sup>33</sup> *Large Residential Washers from China*, Inv. No. 731-TA-1306 (Preliminary), USITC Pub. 4591 (February 2016) at 9 (affirmed previous like product determination finding all different types of washers were a single domestic like product because there were no clear dividing lines between domestic washers of different types or capacities); *Large Residential Washers from Korea and Mexico*, Inv. Nos. 701-TA-488 and 731-TA-1199-1200 (Preliminary), USITC Pub. 4306 (Feb. 2012) at 7-9 (finding three different types of washers similar in terms of the six like product factors and that there were no clear dividing lines); *Certain IMTDCs from Canada and China*, USITC Pub. 4652 at 12-15 (no clear dividing line between out-of-scope small- and in-scope large-diameter products); *Certain Biaxial Integral Geogrid Products from China*, Inv. Nos. 701-TA-554 and 731-TA-1309 (Preliminary), USITC Pub. 4596 (March 2016) at 8-10 (no clear dividing line found between in-scope biaxial and out-of-scope triaxial geogrid products); *Polyvinyl Alcohol from Taiwan*, Inv. No. 731-TA-1088 (Final), USITC Pub. 4218 (March 2011) at 5-8 (similarities outweighing the differences to the extent that there was no clear dividing line to separate the products); *Coated Paper Suitable for High-Quality Print Graphics Using Sheet-Fed Presses from China and Indonesia*, Inv. No. 701-TA-470-471, Inv. No. 731-TA-1169-1170 (Final), USITC Pub. 4192 (October 2010) at 11-12 (finding clear dividing line between web rolls and coated paper).

<sup>34</sup> *Chromium from Japan*, USITC Pub. 3768 (April 2005) at 7-9 (evidence showing different physical characteristics, end uses, customer and producer perceptions, interchangeability and price did not warrant including out-of-scope articles in the like product).

<sup>35</sup> *Certain Iron Mechanical Transfer Drive Components from Canada and China*, Inv. Nos. 701-TA-550 and 731-TA-1304-1305 (Preliminary) USITC Pub. 4652 (December 2015) at 15-16 (noting that a lack  
(Continued...)

when considering whether to include out-of-scope articles in the domestic like product, these investigations also applied the Commission's six-factor test in determining whether there was a "clear dividing line" between products.<sup>36</sup> Indeed, Timken does not otherwise articulate how an analysis of a "reasonable dividing line" would differ from the Commission's consistent practice of looking for a "clear dividing line."<sup>37</sup>

Consequently, we apply in this investigation our consistent practice in ascertaining whether to include out-of-scope articles in the domestic like product: application of the six-factor analysis to determine whether a clear dividing line exists between small- and large-diameter TRBs.

## **2. Whether There Is a Clear Dividing Line Between Small- and Large-Diameter TRBs**

For the reasons explained below, we define a single domestic like product consisting of TRBs of all diameter sizes, but not including wheel hub units, cages entering separately, or unfinished parts.<sup>38</sup> Our analysis below focuses on whether there is a clear dividing line between domestically produced small- and large-diameter TRBs.

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(...continued)

of interchangeability and differences in price between small-diameter and large-diameter products would be expected "regardless of the diameter used as the dividing line").

<sup>36</sup> *Chromium from Japan*, USITC Pub. 3768 at 4 ("The Commission looks for *clear dividing lines* among possible like products, and disregards minor variations"); *Minivans from Japan*, Inv. No. 731-TA-522 (Preliminary), USITC Pub. 2402 (July 1991) at 8-9 (finding other vehicles provided "no *clearer dividing line*" for domestic like product than minivans coextensive with scope) (emphasis added).

<sup>37</sup> Timken further argues that each domestic like product determination is *sui generis*, and the Commission is thus not bound by prior investigations of TRBs, which defined a domestic like product coextensive with scopes of investigations and that included all sizes of TRBs. Timken Prehearing Br. at 8-10. Timken is correct that the Commission is not bound by prior determinations and that each determination must be based on the record before it. See, e.g., *Carbon and Alloy Seamless Standard Line, and Pressure Pipe from Japan and Romania*, Inv. Nos. 731-TA-847 and 849 (Third Review), USITC Pub. 4731 (October 2017) at 19 (finding that 4.5 inch diameter does not constitute a "clear dividing line" and including pipes up to 16 inches in diameter within definition of domestic like product, notwithstanding prior determinations defining the domestic like product to be coextensive with diameter sizes in the scope). Nonetheless, the Commission may draw upon previous determinations to inform its analysis. See, e.g., *Certain Steel Grating from China*, Inv. Nos. 701-TA-465 and 731-TA-1161 (Preliminary), USITC Pub. 4087 (July 2009) at 4 ("The Commission must base its domestic like product determination on the record in these investigations. The Commission is not bound by prior determinations, even those pertaining to the same imported products, but may draw upon previous determinations in addressing pertinent domestic like product issues").

<sup>38</sup> No party has requested that the Commission define its domestic like product to include wheel hub units, cages, or unfinished parts in either the preliminary phase or this final phase of the investigation. Accordingly, we do not include these articles in the domestic like product for the reasons stated in the preliminary determination. *Preliminary Determination*, USITC Pub. 4721 at 13 n.74.

*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 have the same exact physical characteristics or uses.<sup>39</sup> TRBs as a whole, however, generally share the same basic elements (*e.g.*, cups, cones, rolling elements, and cages) and the same basic function (to reduce friction).<sup>40</sup> In questionnaire responses, a majority of market participants reported that small- and large-diameter TRBs are “somewhat” or “not at all” similar with respect to physical characteristics and end uses.<sup>41</sup> Narrative responses indicate that while small- and large-diameter TRBs share basic characteristics, differences in size between TRBs result in different end uses and different physical characteristics related to load ratings.<sup>42</sup>

The final application of a TRB dictates its diameter and size, so TRBs of different diameter sizes will necessarily have different uses.<sup>43</sup> Timken and respondents generally agree that automotive applications constitute a prominent use for small-diameter TRBs, whereas agricultural and industrial applications constitute prominent uses for large-diameter TRBs.<sup>44</sup> The record indicates some overlap in end uses for small- and large-diameter TRBs in heavy equipment, industrial, and agricultural applications.<sup>45</sup> In automotive applications as well, respondents reported that TRBs in heavy trucks may range up to 10 inches in diameter, and

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<sup>39</sup> CR at I-27; PR at I-20.

<sup>40</sup> CR at I-27; PR at I-20; CR/PR at Table D-1 (responses of \*\*\* and \*\*\*); CR/PR at Table D-2 (responses of \*\*\* and \*\*\*; CR/PR at Table D-3 (responses of \*\*\*, \*\*\*, and \*\*\*).

<sup>41</sup> CR/PR at Table I-5. A majority of U.S. producers and U.S. purchasers reported that such products were “not at all” similar, and a plurality of U.S. importers reported that they were “somewhat” comparable. *Id.*

<sup>42</sup> CR/PR at Table D-1 (\*\*\*, \*\*\*); CR/PR at Table D-3 (\*\*\*, \*\*\*, and \*\*\*).

While Timken asserts that small-diameter TRBs may in some instances have different surface finishes and cage types from large-diameter TRBs, Timken Prehearing Br. at 19, it provides no technical evidence detailing such differences, and its proffered evidence nonetheless indicates that not all small-diameter TRBs have the same types of surface finishes or cage types. Timken Prehearing Br. at Exh. 15 (stating that small-diameter TRBs “*can have* a finer surface finish” or cages used “*can also be different*”) (emphasis added). TRBs come in many configurations that may vary in terms of surface finish and cage type, \*\*\*. CR at I-17; PR at I-13-14. Timken’s argument does not establish that these alleged differences in surface finish and cage type support a clear dividing line at an eight inch diameter, rather than merely reflecting the diversity of TRB configurations, regardless of size.

<sup>43</sup> CR at I-27; PR at I-20.

<sup>44</sup> Timken Posthearing Br. at Answer 23 (reporting that TRBs with automotive applications generally range from 0-8 inches in diameter); Joint Prehearing Br. at 14 & Joint Posthearing Br. at Resp. to Written Questions 10 (indicating TRBs for passenger vehicles, SUVs, and light trucks range from 2.5 to 5 inches in diameter).

<sup>45</sup> CR/PR at Table I-7 (showing U.S. producers with U.S. commercial shipments of both small- and large-diameter TRBs to end users in heavy equipment/industrial and agricultural sectors, albeit in differing concentrations); CR/PR at Table D-1 (response of \*\*\* indicating that either a small- or large-diameter TRB may be used in some applications, such as \*\*\*).

Timken's product catalogue advertises "automotive equipment" TRBs that range in size up to 12 inches in diameter.<sup>46</sup>

*Interchangeability.* The majority of market participants reported that small- and large-diameter TRBs are "not at all" interchangeable.<sup>47</sup> Narrative responses generally confirm that because specific applications require a particular size of TRB, TRBs of different sizes, whether less or greater than eight inches in diameter, are generally not interchangeable as a rule.<sup>48</sup> Timken, however, reported that limited interchangeability between TRBs of different sizes is possible at the design stage, where alterations to certain specifications of TRBs might allow for a TRB of a different size to be substituted, albeit within a limited range.<sup>49</sup>

*Channels of Distribution.* The vast majority of market participants reported that small-diameter and large-diameter TRBs "fully" or "mostly" share channels of distribution.<sup>50</sup> U.S. producers reported shipping the vast majority of small-diameter TRBs to end users, while shipments of large-diameter TRBs were more evenly split between shipments to end users and distributors.<sup>51</sup> Of U.S. producers' shipments to end users, the largest concentration of small-diameter TRBs was in the automotive market, and the largest concentration of large-diameter TRBs was in the agricultural market.<sup>52</sup> U.S. producers shipped both small- and large-diameter TRBs to end users in the heavy equipment/industrial and agricultural markets, albeit in different concentrations.<sup>53</sup>

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<sup>46</sup> Joint Posthearing Br. at Resp. to Written Questions 10; Timken Product Catalogue (2016), EDIS Doc. 648231, at 40, Table 27.

<sup>47</sup> CR/PR at Table I-5. All U.S. producers, 10 of 14 responding U.S. importers, and 14 of 19 U.S. purchasers reported that such products were "not at all" similar. *Id.*

<sup>48</sup> CR/PR at Table D-1 (\*\*\*, \*\*); CR/PR at Table D-2 (\*\*\*, \*\*, \*\*, \*\*, and \*\*); CR/PR at Table D-3 (responses of \*\*\*, \*\*\*, \*\*, \*\*, and \*\*).

<sup>49</sup> Timken Posthearing Br. at Answer 10, Exh 1 (showing applications where TRB with \*\*\* inch diameter was substituted for TRB with \*\*\* inch diameter, and where TRB with \*\*\* inch diameter was substituted for TRB with \*\*\* inch diameter). While Timken asserts that such interchangeability is true only of TRBs less than eight inches in diameter, it provides no technical evidence supporting this assertion, and its proffered examples instead suggest that such interchangeability may also exist for TRBs near or across an eight-inch diameter (*e.g.*, a TRB 7.85 inches in diameter and a TRB 8.15 inches in diameter).

<sup>50</sup> CR/PR at Table I-5. Four of six U.S. producers reported that such products "mostly" share channels of distribution, eight of 12 U.S. importers reported the channels of distribution as "fully" or "mostly" the same, and 12 of 16 U.S. purchasers reported the channels as being "fully" or "mostly" the same. *Id.*

<sup>51</sup> CR/PR at Table I-7. During the period of investigation, U.S. producers reported shipping between \*\*\* percent and \*\*\* percent of small-diameter TRBs to distributors and between \*\*\* percent and \*\*\* percent of shipments to end users. U.S. producers reported shipping between \*\*\* percent and \*\*\* percent of large-diameter TRBs to distributors and between \*\*\* percent and \*\*\* percent to end users. *Id.*

<sup>52</sup> CR/PR at Table I-7.

<sup>53</sup> CR/PR at Table I-7.

*Manufacturing Facilities, Production Processes and Employees.* Two U.S. producers (Timken and NTN-Bower) reported producing both small- and large-diameter TRBs, \*\*\* on the same equipment or with the same employees, while four firms reported producing only small- or large-diameter TRBs.<sup>54</sup> Timken specified that for its own production plants in the United States, \*\*\* plants produce only small-diameter TRBs, \*\*\* almost exclusively produce large-diameter TRBs, and \*\*\* plants produce a mixture of small- and large-diameter TRBs.<sup>55</sup> Timken reported in the preliminary phase that it produces \*\*\* percent by value (\*\*\* percent by volume) of its small-diameter TRBs at facilities making large-diameter TRBs.<sup>56</sup>

Majorities of market participants reported that manufacturing processes for small- and large-diameter TRBs are “mostly” or “somewhat” similar.<sup>57</sup> Narrative responses by several U.S. producers elaborated that while production processes and employees for small- and large-diameter TRBs are similar and that these products may be made within the same facilities, differences in size often require different production equipment.<sup>58</sup>

*Producer and Customer Perceptions.* The record provides some support that producers and customers perceive distinctions between TRBs of different diameters. A majority of U.S. producers reported that perceptions of small- and large-diameter TRBs were “not at all” or “somewhat” comparable.<sup>59</sup> Responses of U.S. importers and purchasers were more mixed, with a plurality of importers reporting that perceptions of such products were “not at all” comparable and a plurality of purchasers reporting that they were “mostly” comparable.<sup>60</sup> Narrative responses indicate that TRBs of different sizes have different designs and uses, often resulting in different perceptions by producers and customers.<sup>61</sup>

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<sup>54</sup> CR at I-27-28; PR at I-21; CR/PR at Table I-6.

<sup>55</sup> CR/PR at Table D-1. While Timken categorizes only \*\*\* of its plants, \*\*\*, as producing a mixture of small- and large-diameter TRBs, we note that \*\*\* other plants (the \*\*\* plants) produce not insignificant quantities of large-diameter TRBs in addition to small-diameter TRBs. *Id.*

<sup>56</sup> Timken Postconference Br. at 14-15.

<sup>57</sup> CR/PR at Table I-5. The majority of U.S. producers (4 of 6), U.S. importers (10 of 12), and U.S. purchasers (12 of 16) reported that the manufacturing process for these products were “mostly” or “somewhat” similar. *Id.*

<sup>58</sup> CR/PR at Table D-1 (\*\*\*).

Timken argues that small-diameter TRBs are manufactured on automated equipment designed to maximize speed, whereas large-diameter TRBs are produced on less automated equipment that allow for shorter production runs and frequent retooling for different sizes. Timken Prehearing Br. at 35-36 & Exh. 6. While such differences may be true of Timken’s own manufacturing processes, narrative responses from other U.S. producers, including \*\*\*, indicate that the manufacturing processes for these products are similar or generally the same. CR/PR at Table D-1.

<sup>59</sup> CR/PR at Table I-5. Four of six U.S. producers reported such products were “somewhat” or “not at all” comparable. *Id.*

<sup>60</sup> CR/PR at Table I-5. Four U.S. importers reported such products were “fully,” two “mostly,” and five “not at all” comparable. Two U.S. purchasers reported that such products were “fully,” six “mostly,” five “somewhat,” and two “not at all” comparable. *Id.*

<sup>61</sup> CR/PR at Table D-1 (\*\*\*, \*\*\*, \*\*\*, and \*\*\*); CR/PR at Table D-2 (\*\*\*); CR/PR at Table D-3 (\*\*\*, \*\*\*).

As in the preliminary phase, however, the record does not support that producers and customers perceive an eight-inch diameter as the distinction between smaller and larger TRBs. In the preliminary phase, Timken submitted samples of TRB-related equipment (a bearing packer) that could be used for TRBs of diameters no greater than 200 millimeters (7.87 inches), but also examples of grinders and finishing equipment compatible with TRBs across an eight-inch dividing line and a catalogue of “large TRBs” showing numerous models with possible diameters that crossed an eight-inch dividing line.<sup>62</sup> Timken’s 2016 TRB product catalogue does not present small- and large-diameter TRBs as distinct categories. Rather, it presents TRB models in various ranges of sizes, and the breakouts for smaller sizes generally do not correspond with zero to eight inches in diameter.<sup>63</sup> While Timken submitted an internal report in the final phase that \*\*\*, Timken has acknowledged that it maintains its sales records of TRBs “in a number of size ranges,” not just using an eight-inch diameter as a dividing line.<sup>64</sup>

*Price.* The vast majority of market participants reported that small- and large-diameter TRBs were “somewhat” or “not at all” comparable with respect to price.<sup>65</sup> Raw materials accounted for between \*\*\* and \*\*\* percent of the cost of goods sold during the POI, and because large-diameter TRBs necessarily require more raw materials than small-diameter TRBs,

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<sup>62</sup> Timken Postconference Br., Answer to Staff Questions 2, Exh. 2 (showing various models of TRB grinders, some models of which may grind TRBs with diameters of 300 millimeters and less), Exh. 3 (showing examples of finishing equipment designed for TRBs of diameters between 180 millimeters and 320 millimeters), Exh. 5, and Exh. 6 (NTN’s “Large Bearing Catalogue” showing the minimum and maximum diameters for various TRB models, with some models indicating possible diameters ranging below and above 200 millimeters).

<sup>63</sup> See, e.g., Timken Product Catalogue (2016), EDIS Doc. 648231, at 13 (listing tolerances for TRBs by diameters ranging from 0.3937 inches to 78.7402 inches without any division for an eight-inch diameter), at 65 (describing Timken’s offerings of TRBs as ranging in size from 8mm (0.315 inch) to 3000mm (118 inch) without distinction between small- and large-diameter TRBs or mention of an eight-inch diameter), at 20, Figure 11 (illustrating tolerances for ranges of TRB sizes, with smallest range being 0-12 inches in outside diameter), at 36-37, Table 23 (listing ranges of TRBs sizes from 0.7087 inches to 39.3701 inches, with breakout for 7.08 inches to 7.87 inches but no breakout for zero to eight inches), at 39, Table 25 (providing breakout for TRBs with diameters of five inches to 12 inches); at 40, Table 27 (showing “automotive” TRBs with size ranges of zero to three inches, three to five inches, and five to 12 inches in diameter).

<sup>64</sup> Timken Prehearing Br. at Exh. 9; Timken Posthearing Br. at Answer 7, 4-5 (stating that sales records track sizes ranges such as 0-4 inches, 4-8 inches, 8-12, inches, 12-18 inches, etc.). As noted in the preliminary determination, witnesses for Timken in the staff conference also described sales of Timken’s TRBs in diameters of “zero to 12 inches” when discussing its sales of smaller TRBs. Conference Tr. at 53 (Coughlin) (stating: “Zero to 12 inch tapered roller bearings are about 50 percent of the company’s sales, and I’m sorry, that’s different than the petition on zero to eight, but just to give you a frame of reference”).

<sup>65</sup> CR/PR at Table I-5. All five U.S. producers reported that such products were “not at all” similar with respect to price; 10 of 11 U.S. importers that such products were “somewhat” or “not at all” similar; and 11 of 14 U.S. purchasers that such products were “somewhat” or “not at all” similar. *Id.*

large-diameter TRBs would normally be higher priced than small-diameter TRBs.<sup>66</sup> Narrative responses confirm that the size and price of TRBs are closely correlated, such that larger TRBs will typically be higher priced than smaller TRBs.<sup>67</sup> Because of this correlation, several questionnaire respondents indicated that TRBs close in size to eight inches in diameter, whether smaller or larger, will have similar prices.<sup>68</sup> Available pricing data of several domestically produced small-diameter TRB products does indicate some correlation between outside diameter size and price.<sup>69 70</sup>

*Conclusion.* The record of this final phase investigation, as did the record of the preliminary phase, does not support a finding that there is a clear dividing line between small- and large-diameter TRBs at an eight-inch outside diameter. The record, including information that Timken has submitted, shows numerous instances of overlap between these products. Small- and large-diameter TRBs have overlapping end uses in the industrial and agricultural sectors, and Timken advertises automotive TRBs that may range in size up to 12 inches in diameter. Timken produces a non-trivial portion of its small-diameter TRBs at the same facilities where it manufactures large-diameter TRBs. Small- and large-diameter TRBs also have overlapping channels of distribution to end users in the heavy equipment/industrial and agricultural markets. Narrative responses to the Commission's questionnaires frequently indicate that the distinctions between small- and large-diameter TRBs reported by parties would be true of any TRBs with different sizes, whether or not the dividing line was set at an eight-inch diameter.

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<sup>66</sup> Calculated from CR/PR at Table VI-1 and U.S. Producer Questionnaire, EDIS Doc. 644524, at \*\*\* (removing data for Schaeffler from Table VI-1).

<sup>67</sup> CR/PR at Table D-1 (\*\*\*, \*\*\*, \*\*\*); CR/PR at Table D-2 (\*\*\*); CR/PR at Table D-3 (\*\*\*, \*\*\*, \*\*\*, \*\*\*, \*\*\*).

<sup>68</sup> CR/PR at Table D-2 (\*\*\*, \*\*\*); CR/PR at Table D-3 (\*\*\*, \*\*\*, \*\*\*).

<sup>69</sup> See CR/PR at Tables V-3, V-5, V-7, and V-9.

<sup>70</sup> Timken references average unit values ("AUVs") for small- and large-diameter TRBs to argue that such data support differences in prices between these products. The record indicates that AUVs are higher for large-diameter TRBs than for small-diameter TRBs. CR/PR at Table I-8. Timken has also provided information, however, indicating that AUVs within the size ranges for small- and large-diameter TRBs may vary significantly. Timken Posthearing Br. at Answer 4, 2 (showing that Timken's AUVs for 4-8 inch diameter TRBs are \*\*\* times greater than those for 0-4 inch diameter TRBs, and that AUVs for 12-18 inch diameter TRBs are \*\*\* times greater than those for 8-12 inch diameter TRBs). The record is thus mixed as to whether AUVs support an 8-inch dividing line. Regardless, the Commission has previously found that AUVs are of limited utility in examining products such as TRBs, which vary greatly in size, characteristics, application, and price, as changes in the AUV could merely reflect changes in product mix. See, e.g., *Certain IMTDCs from Canada and China*, USITC Pub. 4652 at 39 n.190. Indeed, Timken elsewhere acknowledges that AUVs do not provide a reliable measure of pricing trends for TRBs. Hearing Tr. at 128-129 & 150-151 (Stewart); Posthearing Br. at Answer 11, 1-2 (asserting that product mix renders AUVs an unreliable measure of whether the domestic product has experienced price suppression). Accordingly, we rely primarily on questionnaire responses and available pricing data when examining the price of TRBs.

The paucity of record evidence that producers and customers perceive an eight-inch diameter as a clear dividing line is particularly telling. A catalogue of “large” TRBs submitted by Timken in the preliminary phase has numerous examples of models whose possible diameters range above and below eight inches, and Timken’s own product catalogue neither distinguishes between small- and large-diameter TRBs more generally, nor categorizes TRBs in diameters ranging from zero to eight inches as proposed by Timken in this proceeding. Examples of TRB finishing equipment provided by Timken also include examples of equipment compatible with TRBs of diameters across an eight-inch dividing line. While Timken submitted an internal report \*\*\*, it has conceded that it maintains sales records based on a variety of size ranges, not simply divisions under and over eight inches in diameter. Consequently, the record indicates that Timken’s own internal records do not consistently recognize an eight-inch diameter as a clear dividing line.

We have stated in previous investigations and reviews of TRBs where the scope did not contain size limitations that “if \*\*\* were to make distinctions based on individual sizes, specifications, or uses of bearings, it is unclear what dividing line would be appropriate,”<sup>71</sup> and the record of this final phase supports a similar conclusion. Thus, we define the domestic like product to include TRBs of all diameter sizes.

### III. Domestic Industry

The domestic industry is defined as the domestic “producers as a whole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product.”<sup>72</sup> 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 this investigation, we must determine whether any producer of the domestic like product should be excluded from the domestic industry pursuant to Section 771(4)(B) of the Tariff Act. This provision allows the Commission, if appropriate circumstances exist, to exclude from the domestic industry producers that are related to an exporter or importer of subject merchandise or which are themselves importers.<sup>73</sup> Exclusion of such a producer is within the Commission’s discretion based upon the facts presented in each investigation.<sup>74</sup>

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<sup>71</sup> *Tapered Roller Bearings from China*, Inv. No. 731-TA-344 (Third Review), USITC Pub. 4343 (Aug. 2012) at 13; *Tapered Roller Bearings and Parts Thereof, and Certain Housings incorporating Tapered Rollers from Hungary, China, and Romania*, Inv. Nos. 731-TA-341, 344, and 345 (Final), USITC Pub. 1983 (June 1987) at 6-7; *Tapered Roller Bearings and Parts Thereof, and Certain Housings Incorporating Tapered Rollers from Italy and Yugoslavia*, Inv. Nos. 731-TA-342 and 346 (Final), USITC Pub. 1999 (August 1987) at 8-9.

<sup>72</sup> 19 U.S.C. § 1677(4)(A).

<sup>73</sup> 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

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Two domestic producers are related parties in this investigation. Timken contends that appropriate circumstances exist to exclude one of these related parties, Schaeffler, from the domestic industry.<sup>75</sup> Specifically, Timken argues that Schaeffler's domestic production is small and its interests are primarily those of an importer of subject merchandise.<sup>76</sup>

Schaeffler imported subject merchandise and is affiliated with a producer and exporter of subject merchandise in Korea (Schaeffler Korea).<sup>77</sup> Schaeffler produces \*\*\*, and it relies on imports of TRBs from subject and nonsubject sources for \*\*\* of its U.S. shipments.<sup>78</sup> Schaeffler reported imports of subject merchandise totaling \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017.<sup>79</sup> Its ratio of subject imports to domestic production was \*\*\* over the POI.<sup>80</sup> Because Schaeffler's imports of subject merchandise \*\*\* its domestic production, its primary interest appears to lie in importation rather than in domestic production. Thus, we find that appropriate circumstances exist to exclude Schaeffler from the domestic TRB industry.

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(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).

<sup>74</sup> 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.

<sup>75</sup> The other related party is NSK. In the preliminary determination, the Commission found that NSK was not a related party because its affiliate, NSK Korea Co. Ltd. ("NSK Korea"), \*\*\*. *Preliminary Determination*, USITC Pub. 4721 at 14 n.78. In the final phase, however, NSK Korea has reported that \*\*\*, making NSK Korea a producer and exporter of subject merchandise and NSK a related party. Foreign Producer Questionnaire, EDIS Doc. 646756, at II-10. NSK's production in the United States totaled \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. CR/PR at Table III-7. NSK reported that it \*\*\*. CR/PR at Table III-7. NSK Korea's exports to the United States totaled \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. Foreign Producer Questionnaire, EDIS Doc. 646756, at I-5 & II-10. Because NSK \*\*\*, and its affiliate's exports were \*\*\*, we do not find that appropriate circumstances exist to exclude NSK from the domestic TRB industry.

<sup>76</sup> Timken Prehearing Br. at 45-46. Respondents made no arguments on related party issues.

<sup>77</sup> CR/PR at Table III-2.

<sup>78</sup> CR at III-11 n.7; PR at III-8-9 n.7.

<sup>79</sup> CR/PR at Table III-7.

<sup>80</sup> CR/PR at Table III-7. \*\*\* ratio of subject imports to domestic production was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. *Id.*

In light of the foregoing, we define a single domestic industry encompassing producers of TRBs in accordance with our definition of the domestic like product, but excluding Schaeffler.

#### **IV. No Material Injury by Reason of Subject Imports<sup>81</sup>**

Based on the record in the final phase of this investigation, we find that an industry in the United States is not materially injured by reason of imports of TRBs from Korea that Commerce has found to be sold at less than fair value.

##### **A. Legal Standards**

In the final phase of antidumping and countervailing duty investigations, the Commission determines whether an industry in the United States is materially injured or threatened with material injury by reason of the imports under investigation.<sup>82</sup> In making this determination, the Commission must consider the volume of subject imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.<sup>83</sup> The statute defines “material injury” as “harm which is not inconsequential, immaterial, or unimportant.”<sup>84</sup> In assessing whether the domestic industry is materially injured by reason of subject imports, we consider all relevant economic factors that bear on the state of the industry in the United States.<sup>85</sup> No single factor is dispositive, and all relevant factors are considered “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”<sup>86</sup>

Although the statute requires the Commission to determine whether the domestic industry is “materially injured or threatened with material injury by reason of” unfairly traded

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<sup>81</sup> Pursuant to Section 771(24) of the Tariff Act, in an antidumping investigation imports from a subject country of merchandise corresponding to a domestic like product that account for less than 3 percent of all such merchandise imported into the United States during the most recent 12 months for which data are available preceding the filing of the petition shall be deemed negligible. 19 U.S.C. §§ 1673b(a), 1677(24)(A)(i). For June 2016-May 2017, the 12-month period preceding the filing of the petition, subject imports from Korea were 17.1 percent by value of total imports of TRBs corresponding to the scope of investigation (13.0 percent by quantity). CR/PR at Table IV-3. Accordingly, negligibility is not an issue in this investigation.

<sup>82</sup> 19 U.S.C. §§ 1671d(b), 1673d(b). The Trade Preferences Extension Act of 2015, Pub. L. 114-27, amended the provisions of the Tariff Act pertaining to Commission determinations of material injury and threat of material injury by reason of subject imports in certain respects.

<sup>83</sup> 19 U.S.C. § 1677(7)(B). The Commission “may consider such other economic factors as are relevant to the determination” but shall “identify each {such} factor ... and explain in full its relevance to the determination.” 19 U.S.C. § 1677(7)(B).

<sup>84</sup> 19 U.S.C. § 1677(7)(A).

<sup>85</sup> 19 U.S.C. § 1677(7)(C)(iii).

<sup>86</sup> 19 U.S.C. § 1677(7)(C)(iii).

imports,<sup>87</sup> it does not define the phrase “by reason of,” indicating that this aspect of the injury analysis is left to the Commission’s reasonable exercise of its discretion.<sup>88</sup> In identifying a causal link, if any, between subject imports and material injury to the domestic industry, the Commission examines the facts of record that relate to the significance of the volume and price effects of the subject imports and any impact of those imports on the condition of the domestic industry. This evaluation under the “by reason of” standard must ensure that subject imports are more than a minimal or tangential cause of injury and that there is a sufficient causal, not merely a temporal, nexus between subject imports and material injury.<sup>89</sup>

In many investigations, there are other economic factors at work, some or all of which may also be having adverse effects on the domestic industry. Such economic factors might include nonsubject imports; changes in technology, demand, or consumer tastes; competition among domestic producers; or management decisions by domestic producers. The legislative history explains that the Commission must examine factors other than subject imports to ensure that it is not attributing injury from other factors to the subject imports, thereby inflating an otherwise tangential cause of injury into one that satisfies the statutory material injury threshold.<sup>90</sup> In performing its examination, however, the Commission need not isolate the injury caused by other factors from injury caused by unfairly traded imports.<sup>91</sup> Nor does the

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<sup>87</sup> 19 U.S.C. §§ 1671d(a), 1673d(a).

<sup>88</sup> *Angus Chemical Co. v. United States*, 140 F.3d 1478, 1484-85 (Fed. Cir. 1998) (“{T}he statute does not ‘compel the commissioners’ to employ {a particular methodology}.”), *aff’g*, 944 F. Supp. 943, 951 (Ct. Int’l Trade 1996).

<sup>89</sup> The Federal Circuit, in addressing the causation standard of the statute, observed that “{a}s long as its effects are not merely incidental, tangential, or trivial, the foreign product sold at less than fair value meets the causation requirement.” *Nippon Steel Corp. v. USITC*, 345 F.3d 1379, 1384 (Fed. Cir. 2003). This was further ratified in *Mittal Steel Point Lisas Ltd. v. United States*, 542 F.3d 867, 873 (Fed. Cir. 2008), where the Federal Circuit, quoting *Gerald Metals, Inc. v. United States*, 132 F.3d 716, 722 (Fed. Cir. 1997), stated that “this court requires evidence in the record ‘to show that the harm occurred “by reason of” the LTFV imports, not by reason of a minimal or tangential contribution to material harm caused by LTFV goods.’” *See also Nippon Steel Corp. v. United States*, 458 F.3d 1345, 1357 (Fed. Cir. 2006); *Taiwan Semiconductor Industry Ass’n v. USITC*, 266 F.3d 1339, 1345 (Fed. Cir. 2001).

<sup>90</sup> Uruguay Round Agreements Act Statement of Administrative Action (SAA), H.R. Rep. 103-316, vol. I at 851-52 (1994) (“{T}he Commission must examine other factors to ensure that it is not attributing injury from other sources to the subject imports.”); S. Rep. 96-249 at 75 (1979) (the Commission “will consider information which indicates that harm is caused by factors other than less-than-fair-value imports.”); H.R. Rep. 96-317 at 47 (1979) (“in examining the overall injury being experienced by a domestic industry, the ITC will take into account evidence presented to it which demonstrates that the harm attributed by the petitioner to the subsidized or dumped imports is attributable to such other factors;” those factors include “the volume and prices of nonsubsidized imports or imports sold at fair value, contraction in demand or changes in patterns of consumption, trade restrictive practices of and competition between the foreign and domestic producers, developments in technology and the export performance and productivity of the domestic industry”); *accord Mittal Steel*, 542 F.3d at 877.

<sup>91</sup> SAA at 851-52 (“{T}he Commission need not isolate the injury caused by other factors from injury caused by unfair imports.”); *Taiwan Semiconductor Industry Ass’n*, 266 F.3d at 1345 (“{T}he

(Continued...)

“by reason of” standard require that unfairly traded imports be the “principal” cause of injury or contemplate that injury from unfairly traded imports be weighed against other factors, such as nonsubject imports, which may be contributing to overall injury to an industry.<sup>92</sup> It is clear that the existence of injury caused by other factors does not compel a negative determination.<sup>93</sup>

Assessment of whether material injury to the domestic industry is “by reason of” subject imports “does not require the Commission to address the causation issue in any particular way” as long as “the injury to the domestic industry can reasonably be attributed to the subject imports” and the Commission “ensure{s} that it is not attributing injury from other sources to the subject imports.”<sup>94</sup> Indeed, the Federal Circuit has examined and affirmed various Commission methodologies and has disavowed “rigid adherence to a specific formula.”<sup>95</sup>

The Federal Circuit’s decisions in *Gerald Metals*, *Bratsk*, and *Mittal Steel* all involved cases where the relevant “other factor” was the presence in the market of significant volumes of price-competitive nonsubject imports. The Commission interpreted the Federal Circuit’s guidance in *Bratsk* as requiring it to apply a particular additional methodology following its finding of material injury in cases involving commodity products and a significant market

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

<sup>92</sup> S. Rep. 96-249 at 74-75; H.R. Rep. 96-317 at 47.

<sup>93</sup> See *Nippon Steel Corp.*, 345 F.3d at 1381 (“an affirmative material-injury determination under the statute requires no more than a substantial-factor showing. That is, the ‘dumping’ need not be the sole or principal cause of injury.”).

<sup>94</sup> *Mittal Steel*, 542 F.3d at 877-78; see also *id.* at 873 (“While the Commission may not enter an affirmative determination unless it finds that a domestic industry is materially injured ‘by reason of’ subject imports, the Commission is not required to follow a single methodology for making that determination ... {and has} broad discretion with respect to its choice of methodology.”) citing *United States Steel Group v. United States*, 96 F.3d 1352, 1362 (Fed. Cir. 1996) and S. Rep. 96-249 at 75. In its decision in *Swift-Train v. United States*, 793 F.3d 1355 (Fed. Cir. 2015), the Federal Circuit affirmed the Commission’s causation analysis as comports with the Court’s guidance in *Mittal*.

<sup>95</sup> *Nucor Corp. v. United States*, 414 F.3d 1331, 1336, 1341 (Fed. Cir. 2005); see also *Mittal Steel*, 542 F.3d at 879 (“*Bratsk* did not read into the antidumping statute a Procrustean formula for determining whether a domestic injury was ‘by reason’ of subject imports.”).

presence of price-competitive nonsubject imports.<sup>96</sup> The additional “replacement/benefit” test looked at whether nonsubject imports might have replaced subject imports without any benefit to the U.S. industry. The Commission applied that specific additional test in subsequent cases, including the *Carbon and Certain Alloy Steel Wire Rod from Trinidad and Tobago* determination that underlies the *Mittal Steel* litigation.

*Mittal Steel* clarifies that the Commission’s interpretation of *Bratsk* was too rigid and makes clear that the Federal Circuit does not require the Commission to apply an additional test nor any one specific methodology; instead, the court requires the Commission to have “evidence in the record” to “show that the harm occurred ‘by reason of’ the LTFV imports,” and requires that the Commission not attribute injury from nonsubject imports or other factors to subject imports.<sup>97</sup> Accordingly, we do not consider ourselves required to apply the replacement/benefit test that was included in Commission opinions subsequent to *Bratsk*.

The progression of *Gerald Metals*, *Bratsk*, and *Mittal Steel* clarifies that, in cases involving commodity products where price-competitive nonsubject imports are a significant factor in the U.S. market, the Court will require the Commission to give full consideration, with adequate explanation, to non-attribution issues when it performs its causation analysis.<sup>98</sup>

The question of whether the material injury threshold for subject imports is satisfied notwithstanding any injury from other factors is factual, subject to review under the substantial evidence standard.<sup>99</sup> Congress has delegated this factual finding to the Commission because of the agency’s institutional expertise in resolving injury issues.<sup>100</sup>

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<sup>96</sup> *Mittal Steel*, 542 F.3d at 875-79.

<sup>97</sup> *Mittal Steel*, 542 F.3d at 873 (quoting from *Gerald Metals*, 132 F.3d at 722), 875-79 & n.2 (recognizing the Commission’s alternative interpretation of *Bratsk* as a reminder to conduct a non-attribution analysis).

<sup>98</sup> To that end, after the Federal Circuit issued its decision in *Bratsk*, the Commission began to present published information or send out information requests in the final phase of investigations to producers in nonsubject countries that accounted for substantial shares of U.S. imports of nonsubject merchandise (if, in fact, there were large nonsubject import suppliers). In order to provide a more complete record for the Commission’s causation analysis, these requests typically seek information on capacity, production, and shipments of the product under investigation in the major source countries that export to the United States. The Commission plans to continue utilizing published or requested information in the final phase of investigations in which there are substantial levels of nonsubject imports.

<sup>99</sup> We provide in our discussion below a full analysis of other factors alleged to have caused any material injury experienced by the domestic industry.

<sup>100</sup> *Mittal Steel*, 542 F.3d at 873; *Nippon Steel Corp.*, 458 F.3d at 1350, citing *U.S. Steel Group*, 96 F.3d at 1357; S. Rep. 96-249 at 75 (“The determination of the ITC with respect to causation is ... complex and difficult, and is a matter for the judgment of the ITC.”).

## B. Conditions of Competition and the Business Cycle

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

### 1. Data Considerations

We rely primarily on value-based indicators as the best measure for the product in an investigation such as this, which involves a large grouping of items differing greatly in size, applications, and price.<sup>101</sup> 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, based on bearings or bearing equivalents, where appropriate.

In its preliminary determination, the Commission relied on official import data to measure subject import volumes and apparent U.S. consumption.<sup>102</sup> Timken argues in its prehearing brief that official import data for subject imports are unreliable.<sup>103</sup> The data in the Commission report on which we rely, however, contains various adjustments to account for inconsistencies noted by Timken. Because respondents reported that they are “not aware of any” exports of large-diameter TRBs from Korea to the United States, the Commission reclassified as subject imports reported volumes of TRBs from Korea entered under HTS subheadings for large-diameter TRBs.<sup>104</sup> \*\*\*, and the Commission report has accordingly

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<sup>101</sup> 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). In the preliminary phase, both Timken and respondents agreed that value-based indicators provided the best measure for TRBs. Conference Tr. at 57 (Drake) (discussing subject import volumes by value) and 116 (Dougan). In the final phase, Timken has suggested that the Commission instead rely on quantity-based indicators. Hearing Tr. at 92-98 (Stewart); Timken Posthearing Br. at Answer 7. The large range in sizes and prices of TRBs encompassed by the domestic like product that we have defined, however, make value-based indicators a better measure. Indeed, Timken has conceded that the reliance on quantity-based indicators would be “harder to justify” for a domestic like product including TRBs of all sizes. Timken Posthearing Br. at Answer 7, 2.

<sup>102</sup> *Preliminary Determination*, USITC Pub. 4721 at 4.

<sup>103</sup> Timken Prehearing Br. at 63-66.

<sup>104</sup> CR/PR at IV-1 n.3; Joint Posthearing Br. at Resp. to Comm. Questions, 2. Effective July 2016, HTS subheadings 8482.20.0061, 8482.20.0081, and 8482.99.1550 were introduced to cover TRBs corresponding to the diameter sizes within the scope of investigation. Timken, however, noted that imports from Korea reported under subheadings for large-diameter TRBs had AUVs and average unit weights less than those imports reported under HTS subheadings for small-diameter TRBs. Timken Prehearing Br. at 63-64 & Exh. 4. In light of respondent’s representation that there were no exports of large-diameter TRBs from Korea to the United States, imports under HTS subheadings corresponding to large-diameter TRBs after July 2016 have been included as subject imports, and imports from Korea prior to July 2016 have not otherwise been adjusted to account for differences in small- and large-diameter TRBs. *Id.*

included imports from this subheading within subject import data.<sup>105</sup> The Commission also excluded imports under certain HTS subheadings that did not correspond with the description of merchandise in the scope of investigation (with respect to subject imports) or did not correspond with the Commission's definition of domestic like product (with respect to nonsubject imports).<sup>106</sup>

Thus, the Commission has made revisions to official import data to account for issues Timken raised with respect to data used in the prehearing report. While there are some differences in reported volumes between adjusted official import data, U.S. importer questionnaires, and reported volumes of exports from foreign producers, we note that such differences are to be expected given differences in timing and reporting methodology from these sources. Further, these differences are not so large as either to call into question the validity of the adjusted official import data in the Commission report or to warrant deviation from our general practice of relying on official import data with appropriate adjustments when official import data correspond generally with the scope definition and questionnaire coverage is less than complete. Indeed, the value of subject imports in the adjusted official import data exceed the reported value of subject imports in U.S. importer questionnaires, notwithstanding Timken's claims that official import data undercount subject imports relative to other data sources.<sup>107</sup> While Timken advocates reliance on reported export volumes from foreign producers, the Commission's practice is to rely on import volumes unless the record indicates that such data are unreliable.<sup>108</sup>

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<sup>105</sup> Joint Posthearing Br. at Resp. to Comm. Questions, 3-4; CR/PR at IV-1 n.3. \*\*\* appeared to account for nearly all imports under this HTS subheading. *Id.*

<sup>106</sup> Timken argues that the Commission should not include imports from HTS subheadings 8482.99.1580 and 8482.99.4500 in nonsubject import data because these data include products that do not correspond with the definition of domestic like product. Timken Posthearing Br. at 12. Notwithstanding that such subheadings are included in the scope of investigation, available information indicates that the large majority of imports under these subheadings consist of unfinished parts, which are outside both the scope of investigation and the definition of domestic like product. CR/PR at Table I-2 (note to table). Accordingly, imports from HTS subheadings 8482.99.1580 and 8482.99.4500 have not been included in the data for subject imports or nonsubject imports. *Id.*

<sup>107</sup> CR/PR at Table IV-2 n.1.

<sup>108</sup> See, e.g., *Polyethylene Terephthalate (PET) Resin from India, Indonesia, Taiwan, and Thailand*, Inv. Nos. 701-TA-439-440 and 731-TA-1077-1080 (Final), USITC Pub 3769 (May 2005) at 18-19 & IV-1. In the preliminary determination of those investigations, the Commission had relied on foreign producer questionnaires to measure volumes for subject imports from India, Indonesia, and Thailand because the record indicated that imported product may have been incorrectly reported in HTS reporting numbers. In the final determination, however, the Commission made adjustments to official import data to account for such discrepancies with respect to subject imports from India and Thailand and accordingly relied on official import data for these countries. The Commission relied on foreign producer questionnaires to measure only subject imports from Indonesia.

Additionally, we note that foreign producer questionnaires collected export data only by quantity, and not value. Blank Questionnaires, EDIC Doc 637101, Foreign Producer Questionnaire at II-10; see also Timken Comments on Questionnaires, EDIS Doc. 628813 (proposing no changes to foreign

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Accordingly, for purposes of the final phase of this investigation, we rely on revised official import data to measure subject import volumes, apparent U.S. consumption, and market shares.<sup>109</sup>

## 2. Demand Considerations

TRBs are a type of antifriction bearing that permits free motion between moving and fixed parts to minimize friction and wear. TRBs are incorporated into transmission and wheel applications and are used extensively in the automotive industry, heavy machinery sector (primarily in agricultural and construction equipment), and the general industrial sector.<sup>110</sup> U.S. demand for TRBs depends on the demand for U.S.-produced downstream products.<sup>111</sup>

Demand for TRBs may fluctuate depending on trends in individual markets using TRBs, such as automotive, agriculture, and heavy equipment.<sup>112</sup> During the 2015-2017 period of investigation (POI), U.S. automobile production declined seven percent.<sup>113</sup> U.S. production of farm machinery and equipment increased 20 percent, and U.S. production of construction machinery declined by 34 percent.<sup>114</sup> Reported U.S. commercial shipments to end users in these sectors indicate similar trends, with total shipments to end users in the automotive and heavy equipment/industrial sectors declining, and shipments to end users in the agricultural sector increasing.<sup>115</sup> Questionnaire responses were mixed as to demand trends during the POI.<sup>116</sup>

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producer questionnaire). As stated above, however, we rely primarily on value-based data for products such as TRBs, which involves a large grouping of items differing greatly in size, applications, and price.

<sup>109</sup> Timken proposes numerous alternative methodologies for the Commission to calculate apparent U.S. consumption and subject import volumes, adopting different combinations of U.S. importer questionnaire data, foreign producer export data, or revisions to official import data. Timken Posthearing Br. at 12 & Exh. 1. In light of our revisions to official import data, we find these data accurately reflect subject import volumes and we do not adopt Timken's proposed alternatives.

<sup>110</sup> CR at I-17; PR at I-14.

<sup>111</sup> CR at II-11; PR at II-9.

<sup>112</sup> CR at II-12-13; PR at II-10.

<sup>113</sup> CR/PR at Figure II-3.

<sup>114</sup> CR/PR at Figure II-4.

<sup>115</sup> CR/PR at Table II-1. Total reported U.S. commercial shipments to end users in the automotive sector were \$\*\*\* in 2015, \$\*\*\* in 2016, and \$\*\*\* in 2017; reported shipments to end users in the heavy equipment/industrial sector were \$\*\*\* in 2015, \$\*\*\* in 2016, and \$\*\*\* in 2017; reported shipments to end users in the agricultural sector were \$\*\*\* in 2015, \$\*\*\* in 2016, and \$\*\*\* in 2017. *Id.*

<sup>116</sup> CR/PR at Table II-4. U.S. producers reported that overall demand, and demand within each reported end use sector, decreased or fluctuated during the POI. U.S. importers most frequently reported that overall U.S. demand and demand in the automotive sector increased, but that demand in the heavy equipment/industry and agricultural sectors decreased. U.S. purchasers most frequently reported that overall U.S. demand and demand in the automotive sector increased, that demand in the agricultural sector either decreased or fluctuated, and that demand for heavy equipment/industrial fluctuated. *Id.*



As measured by apparent U.S. consumption, demand declined between 2015 and 2016 before increasing in 2017 to a lower level than in 2015. Apparent U.S. consumption of TRBs of all sizes was \$1.6 billion in 2015, \$1.4 billion in 2016, and \$1.5 billion in 2017.<sup>117</sup>

### 3. Supply Considerations

The domestic industry, subject imports, and imports from nonsubject sources each supplied the U.S. market over the POI.<sup>118</sup> Global production of TRBs is dominated by large multinational firms with manufacturing operations in numerous countries, including producers in the United States such as NSK and Timken.<sup>119</sup>

The domestic industry accounted for the largest share of apparent U.S. consumption by value over the POI; this share was steady notwithstanding minor annual fluctuations. The domestic industry's market share was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017.<sup>120</sup> Its annual capacity decreased slightly over the POI, from \*\*\* bearings or bearing equivalents in 2015 to \*\*\* in 2016 and \*\*\* in 2017.<sup>121</sup> The domestic industry's annual capacity remained below apparent U.S. consumption throughout the POI.<sup>122</sup>

Imports from nonsubject sources, which include imports of large-diameter TRBs, accounted for the second largest market share by value over the POI. Their market share by value decreased over the POI, from 37.4 percent in 2015 to 36.0 percent in 2016 and 2017.<sup>123</sup> The largest nonsubject sources during the POI were China and Japan, each of which accounted for greater market share by value than subject imports.<sup>124</sup> TRBs of all sizes from China are currently subject to an antidumping duty order.<sup>125</sup>

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<sup>117</sup> CR/PR at Table C-3. Apparent U.S. consumption by quantity followed similar trends to value during the POI, decreasing between 2015 and 2016 before increasing in 2017, but to a lower level than in 2015. By quantity, apparent U.S. consumption was 160.1 million bearings or bearing equivalents in 2015, 152.7 million in 2016, and 155.3 million in 2017. *Id.*

<sup>118</sup> As previously stated, during the POI there were minimal imports of large-diameter TRBs from Korea. CR/PR at IV-1 n.3.

<sup>119</sup> CR at VII-11; PR at VII-7.

<sup>120</sup> CR/PR at Table C-3. By quantity, the domestic industry accounted for the second largest market share (after nonsubject imports), at \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. *Id.*

<sup>121</sup> CR/PR at Table C-3.

<sup>122</sup> CR/PR at Table C-3.

<sup>123</sup> CR/PR at Table C-3. By quantity, nonsubject imports accounted for the largest market share and finished the POI with a higher market share than in the beginning, initially decreasing from 55.0 percent in 2015 to 54.1 percent in 2016, and increasing to 56.9 percent in 2017, the highest level of the POI. *Id.*

<sup>124</sup> CR/PR at Table C-3. By quantity as well, imports from China and Japan were the largest sources of nonsubject imports and individually accounted for greater market share than subject imports. *Id.*

<sup>125</sup> CR at I-5; PR at I-4.

Subject imports accounted for the smallest market share during the POI, with their market share increasing from an initial low base. Their market share, by value, was 3.9 percent in 2015, 5.1 percent in 2016, and 5.3 percent in 2017.<sup>126</sup>

#### 4. Substitutability and Other Conditions

For the reasons discussed below, we find that there is a moderate degree of substitutability between subject imports and the domestic like product, and we further find that price is of moderate importance in purchasing decisions.

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.<sup>127</sup> TRBs are classified according to a parts numbering system based around roller size and internal geometry, yet TRBs of the same part number, even those produced by a single manufacturer, may vary in terms of physical characteristics and price based on particular customer specifications.<sup>128</sup> Accordingly, TRBs of the same part number from different manufacturers may be interchangeable, but differences in certain specifications may nonetheless limit interchangeability between such products.<sup>129</sup>

Additionally, 30 of 39 responding U.S. purchasers require that suppliers undertake a certification process for the provision of TRBs, which may impact the interchangeability of TRBs between different sources if producers have not undertaken such certification requirements.<sup>130</sup> The majority of sales of TRBs are to original equipment manufacturers (“OEMs”), and sales to OEMs are primarily under long-term contracts.<sup>131</sup> Thus, while questionnaire responses

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<sup>126</sup> CR/PR at Table C-3. By quantity as well, subject imports accounted for the smallest market share although this share increased during the POI, at 5.3 percent in 2015, 7.4 percent in 2016, and 8.2 percent in 2017. *Id.*

<sup>127</sup> CR at I-16; PR at I-13.

<sup>128</sup> CR at I-16-17; PR at I-13-14. Timken asserts that TRBs of the same part number are interchangeable, even when made by different manufacturers. Timken Prehearing Br. at 56. Timken reported, however, that TRBs of the same part number may vary with respect to certain specifications to reflect different customer specifications. Timken Posthearing Br. at Answer 10, 1-2 & 5-6 (arguing that changes in price for certain domestic products within the Commission pricing data were the result of product variations of the same model number). This acknowledgement by Timken supports a finding that TRBs of the same part number, even when made by the same manufacturer, may have differences that limit interchangeability due to specifications that reflect particular customer requirements.

<sup>129</sup> CR at II-28-29; PR at II-22.

<sup>130</sup> CR at II-23; PR at II-17. U.S. purchasers indicated that supplier certification processes may vary in time from a few months to more than a year, and such processes may involve quality control tests, supplies of samples, field testing, and on-site audits. *Id.*

<sup>131</sup> CR/PR at II-1. U.S. producers reported that \*\*\* percent of their U.S. commercial shipments in 2017 were under long-term contracts, and U.S. importers of subject merchandise reported that \*\*\* percent of their U.S. commercial shipments were under such contracts in 2017. CR/PR at Table V-2. Parties reported that such contracts are normally two to five years in duration. CR at V-4; PR at V-3.

reported some degree of interchangeability between domestically produced TRBs and subject imports,<sup>132</sup> the prevalence of TRBs sold to OEMs under long-term contracts and which often require a certification process, as well as the production of variations of TRB part numbers for a specific application, may limit interchangeability between such products. Accordingly, we find that there is a moderate degree of substitutability between domestically produced TRBs and subject imports.

While a clear majority of purchasers reported that price was a very important factor in purchasing decisions, a large number of purchasers named four other factors (product consistency, reliability of supply, quality meets industry standards, and availability) to be very important as well.<sup>133</sup> Responding parties generally confirmed that differences other than price have at least some importance in purchasing decisions between domestically produced TRBs and subject imports, with all U.S. producers and most U.S. importers (15 of 17) reporting that there were “frequently” or “sometimes” such differences, and a majority of U.S. purchasers (11 of 21) that there were “always” or “frequently” such differences.<sup>134</sup> We find that price is of moderate importance in purchasing decision for TRBs.

U.S. producers and importers of subject merchandise sold their merchandise in similar channels of distribution, to distributors and end users, with overlap particularly in shipments to end users in the automotive sector. The majority of both U.S. producer and importer shipments were to end users, although U.S. producers ship a greater percentage of TRBs to distributors than do importers of subject merchandise.<sup>135</sup> In their shipments to end users, the greatest concentration of U.S. producer shipments were to automotive users, followed by agricultural users and heavy equipment/industrial users.<sup>136</sup> The vast majority of shipments of

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<sup>132</sup> Most responding U.S. producers (four of five) reported that domestically produced TRBs are either “always” or “frequently” interchangeable, while a plurality of U.S. importers (seven of 16) reported that such products are “sometimes” interchangeable, and a majority of U.S. purchasers (14 of 21) that such products were “always” or “frequently” interchangeable. CR/PR at Table II-10.

<sup>133</sup> CR/PR at Table II-7. Similarly, more purchasers listed quality than price as the first most important factor in purchasing decisions, and more purchasers named availability/supply than price as the second most important factor. Price was most frequently named as the third most important purchasing factor. CR/PR at Table II-6.

<sup>134</sup> CR/PR at Table II-12.

<sup>135</sup> CR/PR at Table II-1. U.S. producers’ percentage of U.S. commercial shipments to end users was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017, and their percentage of commercial shipments to distributors was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. U.S. importers of subject merchandise shipped \*\*\* commercial shipments to end users each year of the POI. *Id.*

<sup>136</sup> CR/PR at Table II-1. U.S. producers’ percentage of commercial shipments to automotive end users was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017; their percentage of shipments to agricultural users was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017; their percentage of shipments to heavy equipment and industrial end users was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. *Id.*

subject merchandise were to automotive end users, with very small percentages of shipments to heavy equipment and industrial end users, and none to agricultural users.<sup>137</sup>

TRBs are manufactured from bearing-grade alloy steel bar or seamless tubing.<sup>138</sup> Raw materials, as a percentage of cost of goods sold (“COGS”), ranged on an annual basis from \*\*\* percent to \*\*\* percent during the POI.<sup>139</sup> Available information indicates that raw material prices fluctuated during the POI. Three responding U.S. producers and 12 importers reported that raw material prices increased, while two U.S. producers and nine importers that such prices fluctuated.<sup>140</sup> The average price of scrap metal fluctuated over the POI and decreased overall by \*\*\* percent.<sup>141</sup> Both Timken and respondents reported that many contracts contain clauses that automatically adjust TRB prices in response to changes in raw material costs.<sup>142</sup>

### C. Volume of Subject Imports

Section 771(7)(C)(i) of the Tariff Act provides that the “Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant.”<sup>143</sup>

Subject import volume increased from \$61.0 million in 2015 to \$69.4 million in 2016 and \$78.3 million in 2017.<sup>144</sup> While subject imports remained the smallest source of supply in the U.S. market during the POI, their market share increased during a time of declining apparent U.S. consumption. Subject imports increased their share of apparent U.S. consumption by value from 3.9 percent in 2015 to 5.1 percent in 2016 and 5.3 percent in 2017.<sup>145</sup> The increase in subject import market share was concurrent with a decline in nonsubject import market share, while the domestic industry maintained a steady market share by value during the POI.<sup>146</sup>

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<sup>137</sup> CR/PR at Table II-1. The percentage of commercial shipments of subject merchandise to automotive end users was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017; the percentage of these shipments to heavy equipment and industrial end users was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. *Id.*

<sup>138</sup> CR/PR at V-1.

<sup>139</sup> *Calculated from* CR/PR at Table VI-1 *and* U.S. Producer Questionnaire, EDIS Doc. 644524, at \*\*\* (excluding data for Schaeffler).

<sup>140</sup> CR/PR at V-1.

<sup>141</sup> CR/PR at Figure V-1.

<sup>142</sup> CR at V-2; PR at V-1.

<sup>143</sup> 19 U.S.C. § 1677(7)(C)(i).

<sup>144</sup> CR/PR at Table C-3. By quantity as well, subject import volumes increased over the POI. Subject import volumes were 8.5 million bearings or bearing equivalents in 2015, 11.4 million in 2016, and 12.7 million in 2017. *Id.*

<sup>145</sup> CR/PR at Table C-3. By quantity, subject import market share also increased during the POI from 5.3 percent in 2015 to 7.4 percent in 2016 and 8.2 percent in 2017. *Id.*

<sup>146</sup> CR/PR at Table C-3. By value, subject import market share increased by 1.4 percentage points during the POI, nonsubject import market share decreased by 1.4 percentage points, and domestic industry market share decreased by \*\*\* percentage points. While we are aware that use of

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We find the increase in volume of subject imports from Korea is significant absolutely and relative to apparent consumption in the United States. As discussed below, however, we do not find that subject imports had either significant price effects or impact on the domestic industry.<sup>147</sup>

#### **D. Price Effects of the Subject Imports**

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

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

(II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.<sup>148</sup>

As stated above, we find a moderate degree of substitutability between subject imports and the domestic like product. The record also indicates that price is of moderate importance in purchasing decisions.

The Commission requested that U.S. producers and importers provide quarterly pricing data for eight TRB products shipped to unrelated U.S. customers between January 2015 and December 2017.<sup>149</sup> Two U.S. producers and two importers submitted usable pricing data on

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quantity-based measurements yields different trends, *see id.*, we explained above that we are relying principally on value-based measurements as the best measure in this investigation.

<sup>147</sup> Commissioner Schmidlein recognizes that the automotive end use sector is where the vast majority of subject imports from Korea are shipped and where the increase in the subject import volume can be seen; thus, she finds that the absolute volume of subject imports of TRBs from Korea in and of itself is significant. Commissioner Schmidlein does not join the remainder of the opinion on price effects, impact, or threat of material injury.

<sup>148</sup> 19 U.S.C. § 1677(7)(C)(ii).

<sup>149</sup> The pricing products were: **Product 1.**—55437, TRB Cup (single row, outer diameter (“OD”) 4.375 inches, width 0.813 inch); **Product 2.**—55200C, TRB Cone Assemblies (single row, 2 inch bore, width 1.0594 inch); **Product 3.**—72487, TRB Cup (single row, OD 4.8750 inches, width 1.0000 inch); **Product 4.**—72212C, TRB Cone Assemblies (single row, bore 2.1250 inches); **Product 5.**—JLM704610, TRB Cup (single row, OD 3.3071 inches, width 0.6890 inch); **Product 6.**—LM501349, TRB Cone Assemblies (single row, bore 1.6250 inches); **Product 7.**—LM501314, TRB Cup (single row, OD 2.8910 inches, width 0.6537 inch); **Product 8.**—M804049, TRB Cone Assemblies (single row, bore 1.8750 inches). CR at V-8; PR at V-5.

sales of the requested products, although not all firms reported pricing for all products for all quarters.<sup>150</sup>

These pricing data yielded a total of 84 quarterly price comparisons, with subject imports underselling the domestic like product in 47 of 84 instances (involving 11.6 million units) at margins ranging from 0.5 percent to 47.7 percent.<sup>151</sup> Subject imports oversold the domestic like product in 37 of 84 instances (involving 1.6 million units) at margins ranging from 0.05 percent to 132.7 percent.<sup>152</sup> We note that the vast majority of subject imported units in underselling comparisons were concentrated in just two pricing products, products 6 and 7, which are parts for a single model of TRB.<sup>153</sup> Pricing comparisons demonstrate that underselling by subject imports was predominant, but as explained below, the record indicates no significant price effects from such underselling.

As discussed in section IV.C above, the record does not show any significant market share shift from the domestic industry to subject imports during the POI, with the domestic industry maintaining a steady market share by value.<sup>154</sup> Indeed, the prevalence of long-term contracts for sales of TRBs for both subject imports and the domestic like product, as well as the importance of non-price factors in purchasing decisions, would tend to mitigate shifts in purchasing patterns due to low-priced subject imports. U.S. purchaser responses confirm that the domestic industry lost few sales due to subject import underselling, but rather that non-price factors predominated when purchasers bought subject merchandise rather than the domestic like product.<sup>155</sup> Prominent U.S. purchasers also reported that the “Fix It or Exit”

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<sup>150</sup> CR at V-8, PR at V-5. The pricing data accounted for less than 1 percent of the value of U.S. producers’ commercial shipments of small-diameter TRBs, and \*\*\* percent of the value of U.S. commercial shipments of TRBs from Korea in 2017. CR at V- 8-9, PR at V-5. We note that TRBs encompass many distinct models with a large variety of dimensions and specifications, and we consequently would expect relatively limited product coverage for the pricing products. *See, e.g., Kern-Liebers USA, Inc. v. United States*, 19 CIT 87, 114-15 (1995). The pricing products are all ones Timken suggested; it proposed six new pricing products in the final phase that were included as products 3 through 8, and pricing products 1 and 2 were retained from the preliminary phase, as Timken supported. CR at V-8 n.11; PR at V-5; Comments on Draft Questionnaires, EDIS Doc. 628813, at 5.

<sup>151</sup> CR/PR at Table V-12. U.S. importers reported no pricing data for product 5. *Id.*

<sup>152</sup> CR/PR at Table V-12.

<sup>153</sup> CR/PR at Table V-12. Of the 11.6 million units involved in instances of underselling, \*\*\* units involved products 6 and 7. *Id.*

<sup>154</sup> By quantity, the domestic industry’s market share decreased by \*\*\* percentage points during the POI. CR/PR at Table C-3. However, the other considerations discussed below mitigate against any conclusions that the loss in quantity-based market share is due to lower-priced subject imports.

<sup>155</sup> CR/PR at Table V-14. We note that only two domestic producers, \*\*\*, reported lost sales to subject imports, and that \*\*\* reported no commercial U.S. shipments during the POI. CR at V-25; PR at V-10; CR at III-8; PR at III-6. Of 39 responding U.S. purchasers, nine reported purchasing subject imports instead of the domestic like product. Of these firms, seven reported that subject imports were lower priced than the domestic like product, and only one reported that price was the primary reason for purchasing subject imports. This single purchaser reported that purchases of such imports totaled \$\*\*\*, whereas apparent U.S. consumption exceeded \$1 billion each year of the POI. Rather than price,

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strategy Timken implemented well before the POI, in which Timken sought to restructure its automotive business, resulted in these purchasers perceiving Timken as an unreliable supplier and spurred them to diversify their supply, including by purchasing subject imports, during the POI.<sup>156</sup>

We find that subject imports did not depress prices of the domestic like product to a significant degree. Pricing data indicate that domestically produced TRBs experienced a mix of price increases and price decreases.<sup>157</sup> Moreover, these pricing trends do not appear to be related to subject import pricing, as prices increased for some domestically produced products notwithstanding cheaper subject imports being present in the market.<sup>158</sup> By the same token,

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purchasers reported that their reasons for purchasing subject imports rather than the domestic like product included availability, quality and performance, familiarity with supplier, a desire to diversify supply away from U.S. producers, or that a purchasing decision was between subject imports and nonsubject imports. *Id.* Similarly, only one U.S. purchaser reported that domestic producers had reduced prices to compete with subject imports, whereas 18 reported that domestic producers had not reduced prices and 20 reported that they did not know. CR at V-30; PR at V-11.

<sup>156</sup> See, e.g., Joint Prehearing Br. at Exh. 1 (declaration of \*\*\*, indicating that Timken demanded price increases in 2008 on TRB products sold to \*\*\*, and these price increases “forced \*\*\* to look elsewhere for its supply of some of the bearings previously purchased from Timken,” including to \*\*\*; declaration of \*\*\*, indicating that Timken “severely raised prices” on certain TRB products in 2008 and 2009 and that these increases forced it to look elsewhere for supply, including to \*\*\*).

We are sensitive to arguments that Timken’s “Fix It or Exit” strategy predates the POI. Timken Prehearing Br. at 51; Timken Posthearing Br. at Answer 19. U.S. purchasers, however, have indicated that decisions to source certain TRBs during the POI, such as long-term contracts for pricing products 6 and 7 awarded to \*\*\*, were awarded partly because purchasers perceived Timken to be an unreliable source following its “Fix It or Exit” strategy. See, e.g., Joint Prehearing Br. at Exh. 1 (declaration of \*\*\* indicating that when awarding long-term contracts for pricing products 6 and 7 in 2013, it “did not consider Timken a viable option”). Accordingly, Timken’s “Fix It or Exit” strategy resulted in important non-price factors influencing purchaser decisions during the POI.

<sup>157</sup> CR/PR at Table V-11. Prices for domestically produced TRBs increased for pricing products 3, 6, and 8, while prices decreased for pricing products 1, 2, 4, 5, and 7. *Id.*

<sup>158</sup> CR/PR at Table V-11 (indicating prices increased over POI for domestically produced product 6 notwithstanding that this product had the largest volume of underselling by subject imports during the POI); see also CR/PR at Figures V-4, V-5, V-7 and V-8 (showing quarterly price increases for domestically produced pricing products notwithstanding presence of cheaper subject imports).

Timken argues that variations in price for the domestically produced product represent variations in the pricing products, in which additional features for the same model may require a higher price. Timken Posthearing Br. at Answer 10. We note that Timken itself selected the pricing products and argued that they are “representative of the TRB market.” Comments on Draft Questionnaires, EDIS Doc. 628813 at 5. Indeed, Timken provides no evidence that such variations within TRB models would not be true of all producers and thus representative of pricing in the TRB market. We note that Timken elsewhere argues that the pricing data are the best measure of TRB pricing on the record of this investigation given the unreliability of AUVs for TRBs. Timken Posthearing Br. at Answer 11. We consequently reject Timken’s attempts to attack the probative value of the pricing data.

prices for domestically produced product 1 declined notwithstanding prevalent overselling by subject imports.<sup>159</sup>

We have also considered whether subject imports prevented increases in prices of the domestic like product, which otherwise would have occurred, to a significant degree. The domestic industry's ratio of COGS to net sales showed minor fluctuations over the POI, at \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017.<sup>160</sup> There is no clear correlation between the presence of subject imports and changes in the COGS to net sales ratio; when subject import volume and market penetration peaked in 2017, the domestic industry's COGS to net sales ratio improved from the previous year.<sup>161</sup> While Timken argues that increases in raw material costs during the POI are evidence of pricing pressures, Timken also concedes that many long-term contracts for TRBs contain clauses that automatically adjust TRB prices in response to changes in raw material costs.<sup>162</sup> Furthermore, price increases generally would not be expected in a period of overall declines in apparent U.S. consumption. For these reasons, we do not find that subject imports prevented increases of domestic like product prices that otherwise would have occurred to a significant degree.

In sum, we find that subject imports from Korea did not have significant price effects on the domestic like product during the POI.

#### **E. Impact of the Subject Imports<sup>163</sup>**

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission "shall evaluate all relevant economic factors which have a bearing on the state of the industry."<sup>164</sup> These factors include output, sales, inventories, capacity

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<sup>159</sup> CR/PR at Table V-11 (showing prices decreased \*\*\* percent for domestically produced product 1 over POI); CR/PR at Table V-12 (indicating that subject imports oversold the domestic like product in 10 of 12 comparisons for product 1 at margins averaging \*\*\* percent).

<sup>160</sup> CR/PR at Table C-3.

<sup>161</sup> CR/PR at Table C-3.

<sup>162</sup> CR at V-2; PR at V-1.

<sup>163</sup> The statute instructs the Commission to consider the "magnitude of the dumping margin" in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). We take into account in our analysis that in its final determinations of sales at less value, Commerce assigned antidumping duty margins of 8.21 percent for Bearing Art/Iljin, 52.44 percent for Schaeffler Korea, and 30.25 percent for all others. 83 Fed. Reg. 29092 (June 22, 2018). We take into account for our analysis that Commerce has found that all subject producers are selling subject imports in the United States at less than fair value. Our analysis of pricing of the subject imports, and the lack of significant price effects by those imports, described in the price effects discussion and below, is particularly probative to our assessment of the impact of subject imports on the domestic industry's condition.

<sup>164</sup> 19 U.S.C. § 1677(7)(C)(iii); *see also* SAA at 851 and 885 ("In material injury determinations, the Commission considers, in addition to imports, other factors that may be contributing to overall injury. While these factors, in some cases, may account for the injury to the domestic industry, they also  
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utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”<sup>165</sup>

We find that subject imports did not have a significant impact on the domestic industry during the POI. Many of the indicators of the domestic industry’s performance fluctuated in concert with changes in apparent consumption, declining from 2015 to 2016 and increasing from 2016 to 2017.

This was true of the domestic industry’s production,<sup>166</sup> capacity utilization,<sup>167</sup> and value of U.S. shipments,<sup>168</sup> each of which declined from 2015 to 2016, and increased in 2017 to lower levels than in 2015. The domestic industry’s capacity declined \*\*\* over the POI.<sup>169</sup> The domestic industry’s end of period inventories increased over the POI.<sup>170</sup> As discussed above, the domestic industry’s market share by value was steady, at \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017.<sup>171</sup>

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may demonstrate that an industry is facing difficulties from a variety of sources and is vulnerable to dumped or subsidized imports.”).

<sup>165</sup> 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

<sup>166</sup> The domestic industry’s production by quantity was \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. CR/PR at Table C-3.

<sup>167</sup> The domestic industry’s capacity utilization rate was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. CR/PR at Table C-3.

<sup>168</sup> By value, the domestic industry’s U.S. shipments were \$\*\*\* in 2015, \$\*\*\* in 2016, and \$\*\*\* in 2017. By quantity, the domestic industry’s U.S. shipments were \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. The domestic industry’s export shipments by value increased over the POI, declining from \$\*\*\* in 2015 to \$\*\*\* in 2016 before increasing to \$\*\*\* in 2017, the highest level of the POI. By quantity as well, export shipments increased overall, declining from \*\*\* bearings or bearing equivalents in 2015 to \*\*\* in 2016, and then increasing to \*\*\* in 2017. CR/PR at Table C-3.

<sup>169</sup> The domestic industry’s average capacity utilization declined from \*\*\* bearings or bearing equivalents in 2015 to \*\*\* in 2016 and \*\*\* in 2017. CR/PR at Table C-3.

<sup>170</sup> End of year inventories for the domestic industry were \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. As a ratio of U.S. shipments, end of period inventories also increased, from \*\*\* percent in 2015 to \*\*\* percent in 2016 and \*\*\* percent in 2017. CR/PR at Table C-3.

<sup>171</sup> CR/PR at Table C-3. Timken argues that the domestic industry’s shipments declined more than apparent U.S. consumption, indicating that the domestic industry lost market share to subject imports. Timken Prehearing Br. at 97. The record indicates that this is not correct for a value-based measure of apparent consumption. As we acknowledged above, market share trends by quantity are different, *see* CR/PR at Table C-3, but we accord these less weight for a product such as TRBs, which can vary tremendously in terms of size, physical characteristics, and price.

The domestic industry's number of production related workers ("PRWs") declined \*\*\* over the POI.<sup>172</sup> By contrast, wages paid<sup>173</sup> and hourly wages<sup>174</sup> increased between 2015 and 2017.

The domestic industry's financial indicators followed trends in apparent U.S. consumption, decreasing between 2015 and 2016 before improving in 2017, albeit to lower levels than in 2015. Net sales,<sup>175</sup> gross profit,<sup>176</sup> operating income,<sup>177</sup> operating income as a share of net sales,<sup>178</sup> and net income<sup>179</sup> all followed this pattern. Domestic producers' capital expenditures fluctuated over the POI but increased overall.<sup>180 181</sup> The majority of domestic producers reported no negative effects on investment or on growth and development due to subject imports.<sup>182</sup>

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<sup>172</sup> The domestic industry's PRWs declined from \*\*\* in 2015 to \*\*\* in 2016, and increased to \*\*\* in 2017, a \*\*\* lower level than in 2015. CR/PR at Table C-3.

<sup>173</sup> The domestic industry's wages paid declined from \$\*\*\* in 2015 to \$\*\*\* in 2016, before increasing to \$\*\*\* in 2017, the highest level of the POI. CR/PR at Table C-3.

<sup>174</sup> The domestic industry's hourly wages declined from \$\*\*\* in 2015 to \$\*\*\* in 2016, and then increased to \$\*\*\* in 2017, the highest level of the POI. CR/PR at Table C-3. Productivity fluctuated but declined over the POI, increasing from \*\*\* bearings or bearing equivalents per hour in 2015 to \*\*\* in 2016, and then declining to \*\*\* in 2017, the lowest level of the POI. *Id.*

<sup>175</sup> The domestic industry's net sales by value declined from \$\*\*\* in 2015 to \$\*\*\* in 2016, and increased to \$\*\*\* in 2017. CR/PR at Table C-3.

<sup>176</sup> The domestic industry's gross profit declined from \$\*\*\* in 2015 to \$\*\*\* in 2016 and then increased to \$\*\*\* in 2017. CR/PR at Table C-3.

<sup>177</sup> The domestic industry's operating income was \$\*\*\* in 2015, \$\*\*\* in 2016, and \$\*\*\* in 2017. CR/PR at Table C-3.

<sup>178</sup> The domestic industry's operating income as a share of net sales decreased from \*\*\* percent in 2015 to \*\*\* percent in 2016 and then increased to \*\*\* percent in 2017. CR/PR at Table C-3.

<sup>179</sup> The domestic industry's net income declined from \$\*\*\* in 2015 to \$\*\*\* in 2016 and then increased to \$\*\*\* in 2017. CR/PR at Table C-3.

<sup>180</sup> Capital expenditures declined from \$\*\*\* in 2015 to \$\*\*\* in 2016, and increased to \$\*\*\* in 2017, the highest level of the POI. CR/PR at Table C-3. Research and development expenses increased throughout the POI, from \$\*\*\* in 2015 to \$\*\*\* in 2016 and \$\*\*\* in 2017. CR/PR at Table VI-3.

<sup>181</sup> Timken categorizes the domestic industry's levels of capital expenditures as insufficient and indicative of material injury, and it argues that the domestic industry's returns on capital, while positive, were not sufficient to justify the higher levels of capital expenditures necessary in a capital-intensive industry such as TRBs. Timken Posthearing Br. at 13 & Answer 17. Timken's assertion cannot be reconciled with other information in the record. While Timken asserts that it requires a return on capital of at least \*\*\* percent to justify further capital investments, Timken Posthearing Br. at Answer 17, Exh. 1, its operating return on assets was well in excess of this level throughout the POI, at \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. CR/PR at Table VI-4.

<sup>182</sup> CR/PR at Table VI-5. \*\*\* firms reported that subject imports had not negatively impacted investment, while \*\*\* firms reported that subject imports did have a negative impact. Only \*\*\* firm reported that subject imports had negative effects on growth and development. *Id.* \*\*\* accounted for most reported negative effects on investment, growth and development, including that subject imports

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Although subject import volumes and market share increased during the POI, this increase did not result in an appreciable loss of market share or reduced shipments for the domestic industry. Instead, the domestic industry's production and shipments closely tracked changes in apparent U.S. consumption. Because of this and the lack of significant price effects from the subject imports, the domestic industry's revenues were not significantly adversely impacted by subject imports; instead, changes in the domestic industry's financial performance mirrored the changes in output, which generally tracked changes in apparent U.S. consumption. As a result, we find that subject imports did not have a significant impact on the domestic industry during the POI.

Timken argues that subject imports took sales and market share from the domestic industry in the automotive segment, and that the loss of these high-volume sales to subject imports was particularly harmful to the domestic industry.<sup>183</sup> However, most of the decline in the domestic industry's commercial U.S. shipments to the automotive sector were from \*\*\* and \*\*\*, neither of which reported having lost sales to subject imports during the POI.<sup>184</sup> Timken's commercial U.S. shipments in the automotive sector were relatively steady during the POI.<sup>185</sup> Even to the degree that Timken may have lost sales in the automotive market to \*\*\* prior to the POI, these firms' purchasing patterns during the POI were not a function of subject import pricing; instead, they were attributable to pre-existing long-term contracts and a desire to purchase imports generally – from either subject or nonsubject sources – in an effort to diversify supply in light of their prior dealings with Timken.<sup>186</sup>

For the reasons discussed above, we find that that subject imports did not have an adverse impact on the domestic industry.

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had caused a reduction in capital investments and had negatively impacted returns on investments. CR/PR at Table VI-6. \*\*\*.

Given that we cannot accord weight to Timken's claim of \*\*\*, and that Timken was \*\*\* firm supporting the petition that indicated that \*\*\*, we give little credence to Timken's contention that adverse financial results reported by other domestic producers are indicative of adverse impact by reason of subject imports to the industry as a whole. Timken Posthearing Br. at Answer 18.

<sup>183</sup> Timken Prehearing Br. at 88-90; Timken Posthearing Br. at 13-14.

<sup>184</sup> See, e.g., Timken Posthearing Br. at 7 (relying on Commission questionnaires to break out commercial U.S. shipments to the automotive sector for individual U.S. producers). U.S. Producer Questionnaire, EDIS Doc. \*\*\*, at IV-21(b); U.S. Producer Questionnaire, EDIS Doc. \*\*\*, at IV-21(b). \*\*\* reported having lost future sales to "competitors," but did not specify the source of such competitors, whether subject imports or otherwise, and the firm did not otherwise specify instances of lost sales during the POI. CR at V-25 n.13; PR at V-10.

<sup>185</sup> Timken Posthearing Br. at 7. While \*\*\* also reported losing sales to subject imports during the POI, it did not report any commercial U.S. shipments during this time, to the automotive sector or otherwise. CR at III-8; PR at III-6.

<sup>186</sup> See, e.g., Joint Prehearing Br. at Exh 1.

## V. No Threat of Material Injury by Reason of Subject Imports

### A. Legal Standard

Section 771(7)(F) of the Tariff Act directs the Commission to determine whether the domestic industry is threatened with material injury by reason of subject imports by analyzing whether “further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted.”<sup>187</sup> The Commission may not make such a determination “on the basis of mere conjecture or supposition,” and considers the threat factors “as a whole” in making its determination whether dumped or subsidized imports are imminent and whether material injury by reason of subject imports would occur unless an order is issued.<sup>188</sup> In making our determinations, we consider all statutory threat factors that are relevant to these investigations.<sup>189</sup>

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<sup>187</sup> 19 U.S.C. § 1677(7)(F)(ii).

<sup>188</sup> 19 U.S.C. § 1677(7)(F)(ii).

<sup>189</sup> These factors are as follows: (II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports; (III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports; (IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices and are likely to increase demand for further imports; (V) inventories of the subject merchandise; (VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products; (VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and (IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time). 19 U.S.C. § 1677(7)(F)(i). To organize our analysis, we discuss the applicable statutory threat factors using the same volume, price, and impact framework that applies to our material injury analysis. Statutory threat factors (II), (III), (V), and (VI) are discussed in the analysis of subject import volume. Statutory threat factor (IV) is discussed in the analysis of subject import price effects. Statutory factors (VIII) and (IX) are discussed in the analysis of impact. Statutory factors (I) concerning countervailable subsidies and (VII) concerning agricultural products are inapplicable in this investigation.

## B. Likely Volume of Subject Imports from Korea

Imports of subject merchandise increased by both value and quantity during the POI, resulting in an increased market share for subject imports, and these trends would indicate that subject import volumes may continue to increase in the imminent future.<sup>190</sup> Nonetheless, the record indicates several considerations why there is not a likelihood of substantially increased subject imports. As an initial matter, the increase in subject imports in the U.S. market began from a small base, with subject imports remaining the smallest source of supply in the U.S. market throughout the POI.<sup>191</sup> U.S. importers reported arranging for declining levels of subject merchandise in the imminent future, with such arranged imports remaining below those from nonsubject sources.<sup>192</sup> Both foreign producers' and U.S. importers' inventories of subject merchandise increased, but these inventory levels are not likely to result in the domestic industry losing sales to subject imports.<sup>193</sup>

Information regarding subject producers in Korea further mitigates the magnitude of any likely imminent increase in subject import volumes. As a share of shipments, exports to the United States by subject producers in Korea were below the industry's home market shipments and exports to other markets throughout the POI.<sup>194</sup> Additionally, although the United States was the largest single export market for subject producers in Korea during the POI, Korean subject producers' exports to other markets increased by a greater amount during the POI than their exports to the United States.<sup>195</sup> The trend in increased exports to other markets is likely

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<sup>190</sup> CR/PR at Table C-3.

<sup>191</sup> CR/PR at Table C-3. Nonsubject imports from China and Japan, individually, accounted for a larger market share than subject imports throughout the POI. *Id.*

<sup>192</sup> CR/PR at Table VII-6. U.S. importers' arranged imports of subject merchandise were \$\*\*\* in the first quarter of 2018, \$\*\*\* in the second quarter, \$\*\*\* in the third quarter, and \$\*\*\* in the fourth quarter. Arranged imports from nonsubject sources totaled \$\*\*\* in the first quarter of 2018, \$\*\*\* in the second quarter, \$\*\*\* in the third quarter, and \$\*\*\* in the fourth quarter. *Id.*

<sup>193</sup> U.S. importers reported that they sell TRBs from inventory, and that these inventory are specialized TRBs made for particular customers under long-term contracts with OEMs. CR at II-20 n.18; PR at II-15 n.18. End-of-period inventories of subject merchandise increased in both Korea and among U.S. importers. End-of-period inventories in Korea were \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. CR/PR at Table VII-3. U.S. importers' reported end-of-period inventories were \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. CR/PR at Table VII-5. The increase in importer inventories reflected increases in imports; indeed, U.S. importers' ratio of inventories to both U.S. imports and U.S. shipments declined between 2016 and 2017, from \*\*\* percent to \*\*\* percent and from \*\*\* percent to \*\*\* percent, respectively. CR/PR at Table VII-5.

<sup>194</sup> CR/PR at Table VII-3. The home market shipments of subject producers in Korea accounted for \*\*\* percent of total shipments in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. Exports to markets other than the United States accounted for \*\*\* percent of total shipments in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. Exports to the United States accounted for \*\*\* of total shipments in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. *Id.*

<sup>195</sup> Between 2015 and 2017, subject producers' exports to the United States increased by \*\*\* units, and their exports to other markets increased by \*\*\* units. CR/PR at Table VII-3.

to continue: subject producers projected that exports to other markets will increase in 2018 and 2019 on both an absolute and relative basis while exports to the United States will decline.<sup>196</sup> Additionally, there are no known trade barriers in third country markets that might otherwise restrict the ability of subject producers to increase exports to such markets.<sup>197</sup>

Subject producers in Korea increased their production capacity only \*\*\* during the POI,<sup>198</sup> which resulted in increasing rates of capacity utilization that are projected further to increase in 2018 and 2019.<sup>199</sup> Indeed, subject producers indicated that planned investments to increase production capacity have already taken place and are reflected in data for the POI, while \*\*\*.<sup>200</sup> Subject producers reported only a limited ability to shift production from other products to subject merchandise.<sup>201</sup>

The prevalence of subject import shipments to automotive customers under long-term contracts further requires that producers maintain some level of excess capacity in the event larger volumes under these contracts are required to address production spikes with automotive customers, further mitigating the ability of subject producers in Korea to utilize any of their projected decreasing levels of excess capacity significantly to take sales from the domestic industry.<sup>202</sup> This is consistent with the experience during the POI when, notwithstanding the increasing quantity and market share of subject imports, the domestic industry lost neither market share on a value basis nor appreciable individual sales to the subject imports.<sup>203</sup>

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<sup>196</sup> CR/PR at Table VII-3. In 2018 and 2019, subject producers project that exports to the United States will account for \*\*\* percent and \*\*\* percent, respectively, of their total shipments, and that exports to other markets will account for \*\*\* percent and \*\*\* percent, respectively of their total shipments. *Id.*

<sup>197</sup> CR at VII-11; PR at VII-7. Nevertheless, producers in Korea accounted for a small portion of global exports of TRBs. CR/PR at Table VII-7.

<sup>198</sup> CR/PR at Table VII-3. Subject producers' reported production capacity increased from \*\*\* bearings or bearing equivalents in 2015 to \*\*\* in 2016, before decreasing to \*\*\* in 2017, a higher level than in 2015. Production capacity was projected to remain steady in 2018 and 2019, at \*\*\* bearings or bearing equivalents in 2018 and \*\*\* in 2019. *Id.*

<sup>199</sup> CR/PR at Table VII-3. Subject producers' capacity utilization rates increased throughout the POI, from \*\*\* percent in 2015 to \*\*\* percent in 2016 and \*\*\* percent in 2017. Capacity utilization rates are projected to continue increasing to \*\*\* percent in 2018 and \*\*\* percent in 2019. *Id.*

<sup>200</sup> CR/PR at Table VII-2.

<sup>201</sup> CR at VII-7; PR at VII-4. Only \*\*\* reported being able "to a very moderate degree" shift production from subject merchandise to that of nonsubject large-diameter TRBs. In 2017, \*\*\* produced only \*\*\* units of large-diameter TRBs. Thus, even this limited ability to shift production would not support a significant increase in production or exports to the United States by \*\*\*. *Id.*

<sup>202</sup> CR/PR at Table V-2 (indicating \*\*\* percent of commercial U.S. shipment of subject imports in 2017 were under long-term contracts). CR at V-4-5; PR at V-3 (describing U.S. importers contract terms with automotive customers in the United States).

<sup>203</sup> CR/PR at Table V-14 (purchasers reporting that subject imports took sales worth \$\*\*\* during the POI). During the POI, domestic producers' commercial U.S. shipments to end users in the automotive segment declined while those of subject imports increased. CR/PR at Table II-1. As

(Continued...)

Accordingly, we find that any increase in the volume of subject imports from Korea is likely to be modest and, similar to the increase during the POI, is unlikely to take significant market share from the domestic industry. Subject producers' substantial home market shipments, projected growth in exports to other markets, long-term contractual commitments, and limited ability to increase production substantially will all serve to constrain any imminent likely increase in subject imports.<sup>204</sup>

### C. Likely Price Effects of Subject Imports from Korea

As explained in section IV.D. above, there was predominant underselling by subject imports from Korea during the POI.<sup>205</sup> We nevertheless found that notwithstanding this underselling, the subject imports did not cause significant price effects because the domestic industry did not lose appreciable market share to subject imports, prices for the domestic like product neither declined consistently nor showed movements corresponding with observed underselling, and the subject imports did not prevent price increases that otherwise would have occurred.

Given our finding that any likely increased volume of subject imports will be modest and will be unlikely to take significant market share from the domestic industry, we further find that the lack of significant price effects observed during the POI will continue in the imminent future. Thus, any likely underselling by the subject imports in the imminent future will likely have the same lack of adverse price effects on the domestic industry observed during the POI. Consequently, the record indicates that subject imports from Korea are not likely to enter the U.S. market at prices that are likely to have significant price depressing or suppressing effects on prices of the domestic like product or that are likely to increase demand for further imports.<sup>206</sup>

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(...continued)

previously discussed in sections IV.D. and IV.E., however, those domestic producers primarily responsible for this decline did not report losing sales to subject imports during the POI, and purchasers reported numerous non-price factors in electing to source from subject imports. See, e.g., U.S. Producer Questionnaire, EDIS Doc. \*\*\*, at IV-21(b); U.S. Producer Questionnaire, EDIS Doc. \*\*\*, at IV-21(b); CR/PR at Table V-14. Furthermore, domestic producers' commercial shipments were more diversified than those of subject imports, with increasing commercial shipments to distributors, agricultural end users, and other end users during the POI resulting in a steady market share by value for the domestic industry. CR/PR at Table II-1; CR/PR at Table C-3.

<sup>204</sup> We also note that Timken and respondents agreed that proposed section 232 tariffs on steel or automotive parts, and their possible impact on future volumes of subject imports, were too speculative at this time to be given weight in this determination. Hearing Tr. at 118-121 (Coughlin); Joint Posthearing Br. at Resp. to Comm. Questions, 52-53.

<sup>205</sup> CR/PR at Table V-12.

<sup>206</sup> Timken argues that because subject import underselling will continue, and domestic producers' raw material costs are projected to increase in 2018 and 2019, subject imports will prevent increases in prices for the domestic like product that might otherwise occur. Timken Prehearing Br. at 109-110. As we note above, however, the presence of cheaper subject imports in the U.S. market did not prevent quarterly price increases in the domestic like product for several pricing products during

(Continued...)

#### D. Likely Impact of Subject Imports from Korea

As outlined above, the domestic industry's fluctuations in production, shipments, net sales, operating income, and net income all tracked changes in apparent U.S. consumption during the POI.<sup>207</sup> Between 2016 and 2017, particularly, these indicators each increased along with increases in apparent U.S. consumption, and these increases occurred notwithstanding that subject imports reached their highest volumes and market share during 2017.<sup>208</sup>

We find no evidence that subject imports are likely to have a significant impact on the domestic industry in the imminent future. Indeed, global demand is projected to grow in the immediate future, and Timken acknowledges that demand within the United States is likely to grow as well so long as the overall U.S. economy continues to improve, which would support further improvements in the domestic industry's performance based on trends during the POI.<sup>209</sup> Further, given the domestic industry's profitable performance throughout the POI, and improvements in most indicators between 2016 and 2017, we do not find the domestic industry to be vulnerable.<sup>210</sup> Therefore, we do not find that material injury by reason of subject imports from Korea would occur absent the issuance of an antidumping duty order.

Accordingly, we conclude that the domestic industry is not threatened with material injury by reason of subject imports from Korea.

#### VI. Conclusion

For the reasons stated above, we determine that an industry in the United States is not materially injured or threatened with material injury by reason of subject imports of TRBs from Korea that Commerce has found are sold at less than fair value.

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(...continued)

portions of the POI. *See, e.g.*, Figure V-4, V-5, V-7, and V-8. Additionally, Timken has acknowledged that many long-term contracts for TRBs contain provisions that permit price increases in the event of increased costs for raw materials. CR at V-2; PR at V-1. Accordingly, we do not find that these factors support a finding that subject imports are likely to suppress prices of the domestic like product in the imminent future.

<sup>207</sup> CR/PR at Table-C-3. Each of these indicators declined from 2015 to 2016, before increasing in 2017 to lower levels than in 2015. *Id.*

<sup>208</sup> CR/PR at Table C-3.

<sup>209</sup> CR at VII-11; PR at VII-7. Global demand for TRBs is projected to increase \*\*\* percent annually through 2021. *Id.* In discussing increased U.S. demand between 2016 and 2017, Timken stated that such growth "wouldn't be surprising" when the economy grows and unemployment is low. Hearing Tr. at 148-149 (Stewart).

<sup>210</sup> CR/PR at Table C-3. The domestic industry's ratio of operating income and net income to net sales was \*\*\* throughout the POI and followed trends in apparent U.S. consumption. *Id.*



## Separate and Dissenting Views of Commissioner Rhonda K. Schmittlein

I join my colleagues in determining that the domestic industry producing tapered roller bearings (TRBs) is not presently materially injured by reason of subject imports from Korea that the Commerce Department has found are sold at less than fair value. I join the majority in its findings regarding the definitions of the domestic like product and the domestic industry, conditions of competition and volume effects of the subject imports.<sup>1</sup> I offer below my separate views as to price effects and impact of the subject imports for my determination that the domestic industry is not presently materially injured. In addition, I provide my dissenting views in which I find that the domestic industry producing TRBs is threatened with material injury by reason of the subject imports from Korea that the Commerce Department has found are sold at less than fair value.

### I. No Present Material Injury

#### A. Price Effects of the Subject Imports

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

- (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
- (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.<sup>2</sup>

I agree with my colleagues in finding a moderate degree of substitutability between subject imports and the domestic like product. With regard to the importance of price in purchasing decisions, price was the most often cited factor which firms considered in their purchase decisions and second only to quality as the most important factor. The overwhelming majority of purchasers (30 of 39) also reported that they usually or sometimes purchase the lowest-priced product.<sup>3</sup> Thus, in my view, price is important in purchasing decisions

The Commission collected quarterly pricing data from U.S. producers and importers for eight TRB products shipped to unrelated U.S. customers between January 2015 and December 2017.<sup>4</sup> Two U.S. producers (which together account for 80 percent of 2017 total U.S. shipment

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<sup>1</sup> Sections I through IV.D of the Views of the Commission, except where noted in footnotes.

<sup>2</sup> 19 U.S.C. § 1677(7)(C)(ii).

<sup>3</sup> CR at II-22; PR at II-16.

<sup>4</sup> The pricing products were: **Product 1.**—55437, TRB Cup (single row, outer diameter (“OD”) 4.375 inches, width 0.813 inch); **Product 2.**—55200C, TRB Cone Assemblies (single row, 2 inch bore, width 1.0594 inch); **Product 3.**—72487, TRB Cup (single row, OD 4.8750 inches, width 1.0000 inch); **Product 4.**—72212C, TRB Cone Assemblies (single row, bore 2.1250 inches); **Product 5.**—JLM704610, TRB Cup (single row, OD 3.3071 inches, width 0.6890 inch); **Product 6.**—LM501349, TRB Cone

value)<sup>5</sup> and two importers submitted usable pricing data on sales of the requested products, although not all firms reported pricing for all products for all quarters.<sup>6</sup> These data allowed for 84 quarterly price comparisons between domestic TRBs and the subject imports from Korea. Subject imports undersold the domestic like product in 47 of 84 instances, involving 11.6 million units, with margins ranging from 0.5 percent to 47.7 percent.<sup>7</sup> Subject imports were priced above the domestic like product in 37 of 84 instances, involving 1.6 million units, at margins ranging from 0.05 percent to 132.7 percent.<sup>8</sup>

Each of the eight products for which price data were collected, and which petitioner Timken selected for comparisons, is sold in the automotive segment of the TRB market which is the largest section of the market and the market sector in which the subject product is overwhelming focused.<sup>9</sup> Thus, these data provide a window through which to view the competition between the domestic like product and subject Korean TRBs in that market. Pricing products 6 and 7, which are parts of a single model of tapered roller bearing, comprise the largest volume pricing products for both the domestic industry and Korean producers. About half of the quarterly instances, but the vast majority in terms of quantity of subject imported units, undersold the domestic product in those two pricing products.<sup>10</sup>

With regard to lost sales and lost revenue, in the final phase of this investigation, three of seven responding producers reported reducing prices and two reported lost sales. The purchasers named in these allegations accounted for a not insignificant total value of the TRB market during 2015-2017, reporting purchases and imports totaling \$\*\*\*<sup>11</sup> Of the 39 purchasers who responded to Commission inquiries, nine reported purchasing the Korean TRBs instead of the domestic product, seven reported that prices were lower for the subject product, but only one reported that price was the primary reason for purchasing the Korean TRBs. An additional purchaser reported that a U.S. producer reduced its price by 20 percent to compete

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Assemblies (single row, bore 1.6250 inches); **Product 7**.—LM501314, TRB Cup (single row, OD 2.8910 inches, width 0.6537 inch); **Product 8**.—M804049, TRB Cone Assemblies (single row, bore 1.8750 inches). CR at V-8; PR at V-5.

<sup>5</sup> CR/PR at Table III-1.

<sup>6</sup> As is common in industries with a broad range of product sizes and specifications, the pricing data covered less than 1 percent of the value of U.S. producers' commercial shipments of small-diameter TRBs, and \*\*\* percent of the value of U.S. commercial shipments of TRBs from Korea in 2017. CR at V- 8-9, PR at V-5. See, e.g., *Kern-Liebers USA, Inc. v. United States*, 19 CIT 87, 114-15 (1995).

<sup>7</sup> CR/PR at Table V-12. U.S. importers reported no pricing data for product 5. *Id.*

<sup>8</sup> CR/PR at Table V-12.

<sup>9</sup> CR/PR at Table II-1.

<sup>10</sup> CR/PR at Table V-12. Of the 11.6 million units involved in instances of underselling, \*\*\* million units involved products 6 and 7. Respondents argue that the Commission should consider this data to be "essentially duplicative" as these are two parts of the same bearing and that the total value of these sales is very small. Prehearing Brief of Joint Respondents at 64. As stated above, it is not unexpected in industries with a broad range of sizes and specifications to have price data account for only a small sample of total shipments. This does not negate the relevance of these data in my consideration of the price data. Further, even if these two products were to be collapsed into a single TRB for purposes of the underselling 'count,' underselling counted by units would still far exceed the overselling results. CR/PR at Table V-12.

<sup>11</sup> CR at V-24-25, PR at V-10; CR/PR at Table V-13.

for a sale.<sup>12</sup> Several purchasers reported not knowing at the time of order the country of origin of the bearings purchased given the global nature of the TRB producers, while others listed non-price reasons for purchase decisions, including better performance and technology and trusted sources.<sup>13</sup>

Price trends show that prices for domestically produced TRBs fluctuated irregularly over the period of investigation. The margins by which the subject Korean products oversold the domestic TRBs for several of the products do not support that the subject imports were driving domestic prices down, particularly in a period when consumption fell overall by 7.3 percent.<sup>14</sup> As well, prices increased for some domestic TRBs notwithstanding lower-priced subject imports being present in the market.<sup>15</sup> Thus, I do not find that subject imports depressed prices of the domestic like product to as significant degree.

I also do not find that subject imports prevented increases in prices of the domestic like product, which otherwise would have occurred, to a significant degree. Consumption was decreasing overall for the period, and the domestic industry's ratio of COGS to net sales showed a small change over the investigation period at \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017.<sup>16</sup> Price increases generally would not be expected in a period of overall declines in apparent U.S. consumption. Further, while raw material costs increased for the domestic industry over the period, Timken reported that many long-term contracts for TRBs contain clauses that automatically adjust TRB prices in response to changes in raw material costs.<sup>17</sup>

In sum, I find that the pricing comparisons, particularly in the largest volume pricing products, and the evidence of lost sales and revenue demonstrate that underselling by subject imports was predominant, and is occurring in the important automotive sector. However, as

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<sup>12</sup> CR at V-24-31; PR at V-10-11; CR/PR at Table V-14.

<sup>13</sup> CR at V-30-31; PR at V-10-11.

<sup>14</sup> CR/PR at Table V-11. Prices for domestically produced TRBs increased for pricing products 3, 6, and 8, while prices decreased for pricing products 1, 2, 4, 5, and 7. *Id.* See also, e.g., CR/PR at Table V-3, where prices for domestically produced product 1 declined notwithstanding prevalent overselling by subject imports.

<sup>15</sup> CR/PR at Figures V-4, V-5, V-7 and V-8 (showing quarterly price increases for domestically produced pricing products notwithstanding presence of lower-priced subject imports). I recognize that in some instances, such as for products 6 and 7, higher prices may be tied to lower volumes sold in those quarters. CR/PR at Table V-8.

Timken argues that variations in price for the domestically produced product represent variations in the pricing products, in which additional features for the same model may require a higher price. Timken Posthearing Br. at Answer 10. Timken selected these products as "representative of the TRB market." Comments on Draft Questionnaires, EDIS Doc. 628813 at 5. Timken provides no evidence that such variations within TRB models would not be true of all producers and thus representative of pricing in the TRB market. Timken also stated that the pricing data are the best measure the best measure of TRB pricing on the record of this investigation given the unreliability of average unit values for TRBs. Timken Posthearing Br. at Answer 11.

<sup>16</sup> CR/PR at Table C-3.

<sup>17</sup> Calculated from CR/PR at Table VI-1 and U.S. Producer Questionnaire, EDIS Doc. 644524, at \*\*\* (removing data for Schaeffler from Table VI-1.)

explained more fully below, I do not find, that this underselling resulted during the investigation period in a significant adverse impact on the domestic industry.

## **B. Impact of the Subject Imports<sup>18</sup>**

Section 771(7)(C)(iii) of the Tariff Act provides that examining the impact of subject imports, the Commission “shall evaluate all relevant economic factors which have a bearing on the state of the industry.”<sup>19</sup> These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, gross profits, net profits, operating profits, cash flow, return on investment, return on capital, ability to raise capital, ability to service debts, research and development, and factors affecting domestic prices. No single factor is dispositive and all relevant factors are considered “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”<sup>20</sup>

Like my colleagues, I find that subject imports did not have a significant impact on the domestic industry during the period of investigation. Many of the indicators of the domestic industry’s performance fluctuated during 2015 to 2017, reflecting the changes in apparent consumption in the TRB market which declined \*\*\* percent from 2015 to 2016 before increasing by \*\*\* percent from 2016 to 2017.

This was true of the domestic industry’s production,<sup>21</sup> capacity utilization,<sup>22</sup> and value of U.S. shipments,<sup>23</sup> each of which declined from 2015 to 2016, and increased in 2017 but to lower

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<sup>18</sup> The statute instructs the Commission to consider the “magnitude of the dumping margin” in an antidumping proceeding as part of its consideration of the impact of imports. 19 U.S.C. § 1677(7)(C)(iii)(V). I take into account in my analysis that in its final determinations of sales at less than fair value with respect to imports of subject TRBs from Korea, Commerce assigned antidumping duty margins of 8.21 percent for Bearing Art/Iljin, 52.44 percent for Schaeffler Korea, and 30.25 percent for all others. 83 Fed. Reg. 29092 (June 22, 2018).

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

<sup>20</sup> 19 U.S.C. § 1677(7)(C)(iii). This provision was amended by the Trade Preferences Extension Act of 2015, Pub. L. 114-27.

<sup>21</sup> The domestic industry’s production by quantity was \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. CR/PR at Table C-3.

<sup>22</sup> The domestic industry’s capacity utilization rate was \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. CR/PR at Table C-3.

<sup>23</sup> By value, the domestic industry’s U.S. shipments were \$\*\*\* in 2015, \$\*\*\* in 2016, and \$\*\*\* in 2017. By quantity, the domestic industry’s U.S. shipments were \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. The domestic industry’s export shipments by value increased over the POI, declining from \$\*\*\* in 2015 to \$\*\*\* in 2016 before increasing to \$\*\*\* in 2017, the highest level of the POI. By quantity as well, export shipments increased overall, declining from \*\*\* bearings or bearing equivalents in 2015 to \*\*\* in 2016, and then increasing to \*\*\* in 2017. CR/PR at Table C-3.

levels than in 2015. The domestic industry's capacity declined \*\*\* over the period.<sup>24</sup> The domestic industry's end of period inventories increased.<sup>25</sup> As discussed in the majority views the domestic industry's market share by value was steady, at \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017.<sup>26</sup>

The domestic industry's number of production related workers ("PRWs") was \*\*\* lower over the period.<sup>27</sup> By contrast, wages paid<sup>28</sup> and hourly wages<sup>29</sup> increased between 2015 and 2017.

The domestic industry's financial indicators followed trends in apparent U.S. consumption, decreasing between 2015 and 2016 before improving in 2017, albeit to lower levels than in 2015. Net sales,<sup>30</sup> gross profit,<sup>31</sup> operating income,<sup>32</sup> operating income as a share of net sales,<sup>33</sup> and net income<sup>34</sup> all followed this pattern. Domestic producers' capital expenditures fluctuated over the POI but increased overall.<sup>35 36</sup> Several companies accounting

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<sup>24</sup> The domestic industry's average capacity utilization declined from \*\*\* bearings or bearing equivalents in 2015 to \*\*\* in 2016 and \*\*\* in 2017. CR/PR at Table C-3.

<sup>25</sup> Ending inventories for the domestic industry were \*\*\* bearings or bearing equivalents in 2015, \*\*\* in 2016, and \*\*\* in 2017. As a ratio of total U.S. shipments, ending inventories also increased, from \*\*\* percent in 2015 to \*\*\* percent in 2016 and \*\*\* percent in 2017. CR/PR at Table C-3.

<sup>26</sup> CR/PR at Table C-3. Timken argues that the domestic industry's shipments declined more than apparent U.S. consumption, indicating that the domestic industry lost market share to subject imports. Timken Prehearing Br. at 97. The record indicates that this is not correct for a value-based measure of apparent consumption. As addressed above, market share trends by quantity are different, see CR/PR at Table C-3, but I accord these less weight for a product such as TRBs, which can vary tremendously in terms of size, physical characteristics, and price.

<sup>27</sup> The domestic industry's PRWs declined from \*\*\* in 2015 to \*\*\* in 2016, and increased to \*\*\* in 2017, a \*\*\* lower level than in 2015. CR/PR at Table C-3.

<sup>28</sup> The domestic industry's wages paid declined from \$\*\*\* in 2015 to \$\*\*\* in 2016, before increasing to \$\*\*\* in 2017, the highest level of the POI. CR/PR at Table C-3.

<sup>29</sup> The domestic industry's hourly wages declined from \$\*\*\* in 2015 to \$\*\*\* in 2016, and then increased to \$\*\*\* in 2017, the highest level of the POI. CR/PR at Table C-3. Productivity fluctuated but declined over the POI, increasing from \*\*\* bearings or bearing equivalents per hour in 2015 to \*\*\* in 2016, and then declining to \*\*\* in 2017, the lowest level of the POI. *Id.*

<sup>30</sup> The domestic industry's net sales by value declined from \$\*\*\* in 2015 to \$\*\*\* in 2016, and increased to \$\*\*\* in 2017. CR/PR at Table C-3.

<sup>31</sup> The domestic industry's gross profit declined from \$\*\*\* in 2015 to \$\*\*\* in 2016 and then increased to \$\*\*\* in 2017. CR/PR at Table C-3.

<sup>32</sup> The domestic industry's operating income was \$\*\*\* in 2015, \$\*\*\* in 2016, and \$\*\*\* in 2017. CR/PR at Table C-3.

<sup>33</sup> The domestic industry's operating income as a share of net sales decreased from \*\*\* percent in 2015 to \*\*\* percent in 2016 and then increased to \*\*\* percent in 2017. CR/PR at Table C-3.

<sup>34</sup> The domestic industry's net income declined from \$\*\*\* in 2015 to \$\*\*\* in 2016 and then increased to \$\*\*\* in 2017. CR/PR at Table C-3.

<sup>35</sup> Capital expenditures declined from \$\*\*\* in 2015 to \$\*\*\* in 2016, and increased to \$\*\*\* in 2017, the highest level of the POI. CR/PR at Table C-3. Research and development expenses increased throughout the POI, from \$\*\*\* in 2015 to \$\*\*\* in 2016 and \$\*\*\* in 2017. CR/PR at Table VI-3.

<sup>36</sup> Timken argues that the domestic industry's returns on capital, while positive, were not sufficient to justify the higher levels of capital expenditures necessary in a capital-intensive industry such

for a majority of domestic production, \*\*\*, reported negative or anticipated negative effects on investment or on growth and development due to subject imports.<sup>37</sup>

Although subject import volumes and market share increased during the POI, this increase did not result in an appreciable loss of overall market share or overall reduction in shipments for the domestic industry during the investigation period. Instead, as a whole, the domestic industry's production and shipments closely tracked changes in apparent U.S. consumption. Because of this and the lack of significant price effects from the subject imports, the domestic industry's revenues were not significantly adversely impacted by subject imports; instead, changes in the domestic industry's financial performance mirrored the changes in output, which generally tracked changes in apparent U.S. consumption. As a result, like my colleagues, I find that subject imports did not have a significant impact on the domestic industry during the investigation period.

Timken argues that subject imports took sales and market share from the domestic industry in the automotive segment, and that the loss of these high-volume sales to subject imports was harmful to the domestic industry.<sup>38</sup> In 2015, the U.S. producers shipped \$\*\*\* of TRBs to the automotive sector, a value that decreased to \$\*\*\* in 2016 and more sharply to \$\*\*\* in 2017. As a share of U.S. producers' commercial shipments, the automotive sector fell from \*\*\* percent in 2015 to \*\*\* percent in 2017.<sup>39</sup> \*\*\*<sup>40</sup> \*\*\*.<sup>41</sup> I agree that the subject imports took market share from the domestic industry but do not find for purposes of a present material injury analysis that this harm rises to the level of material injury when viewed in context of the overall condition of the domestic industry.

Respondents point to the financial results posted by the domestic industry during the investigation period to argue that it is thriving, based on its \*\*\* operating margin and the improved picture in 2017 compared to 2016.<sup>42</sup> Respondents further focus on Timken's performance as the sole Petitioner and only domestic producer to appear at the hearing. I disagree with Respondents' focus on a single company. The Commission is tasked with assessing the performance of the domestic industry as a whole and whether a company indicated its support of the petition or participated in the Commission hearing is not necessarily indicative of a lack of interest in the proceedings. In this case in fact, questionnaires were received from domestic producers accounting for the vast majority of TRB production.<sup>43</sup>

Respondents also place significant weight on Timken's decision in 2008 to introduce its strategy for reducing its participation in the then-declining automotive market in what is

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as TRBs. Timken Posthearing Br. at 13 & Answer 17. Timken's assertion cannot be reconciled with other information in the record. While Timken asserts that it requires a return on capital of at least \*\*\* percent to justify further capital investments, Timken Posthearing Br. at Answer 17, Exh. 1, its operating return on assets was well in excess of this level throughout the POI, at \*\*\* percent in 2015, \*\*\* percent in 2016, and \*\*\* percent in 2017. CR/PR at Table VI-4.

<sup>37</sup> CR/PR at Tables VI-5-6. \*\*\*.

<sup>38</sup> Timken Prehearing Br. at 88-90; Timken Posthearing Br. at 13-14.

<sup>39</sup> CR/PR at Table II-1.

<sup>40</sup> Timken Posthearing Br. at 7.

<sup>41</sup> CR/PR at Table II-1.

<sup>42</sup> Posthearing Br. Of Joint Respondents at p. 3.

<sup>43</sup> CR/PR at III-1. Table III-1 shows that \*\*\*.

referred to as the “Fix It/Exit” policy. Timken disputes this, arguing that \*\*\* and thus this policy could not be what drove the shifts to subject imports during the period.<sup>44</sup>

I find that the record in this investigation shows a shift away from domestic TRBs to the subject imports from Korea in the automotive sector. And, as I explained above, I find that the volume of subject imports during the period was significant but that the subject imports did not have significant price effects, including no evidence of price depression or suppression, and did not have a significant adverse impact on the domestic industry. The industry’s production and financial indicators showed some ability to recover in 2017 compared to 2016 when the market regained some volume. Accordingly, for the reasons discussed above, I find that that subject imports did not have a significant adverse impact on the domestic industry during the period of investigation.

## **II. Threat of Material Injury by Reason of the Subject Imports**

### **A. Legal Standard**

Section 771(7)(F) of the Tariff Act directs the Commission to determine whether the domestic industry is threatened with material injury by reason of the subject imports by analyzing whether “further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement accepted.”<sup>45</sup>

Section 771(7)(F)(i) of the Act provides that in determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission should consider, among other relevant economic factors existing unused production capacity or increases in capacity; a significant rate of increase of the volume or market penetration of imports of the subject merchandise and the country’s export orientation; the price effects of the subject imports; inventories; and any other demonstrable adverse trends that indicate the probability of material injury by the subject imports.<sup>46</sup>

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<sup>44</sup> Joint Posthearing Br. at 8 and Petitioners’ Posthearing Br. at 7.

<sup>45</sup> Section 771(7)(F)(ii) of the Act (19 U.S.C. § 1677(7)(F)(ii)) provides that “The Commission shall consider {these factors} . . . as a whole in making a determination of whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted under this title. The presence or absence of any factor which the Commission is required to consider . . . shall not necessarily give decisive guidance with respect to the determination. Such a determination may not be made on the basis of mere conjecture or supposition.”

<sup>46</sup> 19 U.S.C. § 1677(7)(F)(i). No countervailable subsidy was alleged in the petition nor is the subject product a raw agricultural product, thus these factors are not relevant in this investigation.

## B. Conditions of Competition

As discussed in the Commission's negative present material injury views, demand for tapered roller bearings is driven largely by trends in the automotive, agriculture, and heavy equipment industries. Data on the record show that during the 2015-17 investigation period, U.S. automotive production declined by seven percent and U.S. production of construction machinery declined by 34 percent; only U.S. production of farm machinery and equipment increased over the three-year period, by 20 percent.<sup>47</sup> Of these three channels, automotive original equipment manufacturing (OEM) was the single most important for the domestic TRB producers, accounting for nearly half of total commercial shipments during 2015-17 (\*\*\*) percent), while heavy equipment accounted for under \*\*\* percent (\*\*\*) percent), and agriculture equipment well under \*\*\* percent (\*\*\*) percent).<sup>48</sup> For the automotive and heavy equipment channels U.S. shipments declined overall for the period.<sup>49</sup>

U.S. importers' U.S. commercial shipments of Korean subject TRBs were destined almost exclusively to the automotive sector, ranging from \*\*\* percent in 2015 to \*\*\* percent in 2017. Most remaining subject TRBs were shipped to the heavy equipment sector, ranging from \*\*\* percent in 2015 to \*\*\* percent in 2017. Thus, domestic producers of TRBs competed most directly with subject imports in the sectors that were most vitally important to them.

As discussed in the Commission views and my separate views, domestic and subject Korean TRBs are moderately substitutable and price is important in purchase decisions. This ability to compete on both price and quality allowed the subject imports over the period to increase market share overall during a period of falling apparent U.S. consumption. While the Commission found this volume to be significant absolutely and relative to apparent consumption, for purposes of assessing present material injury we did not find that the volume had either significant price effects or a significant adverse impact on the domestic industry. Unlike my colleagues, I find that given the conditions of competition present in the TRB industry and its principal end use markets, the subject Korean TRBs threaten to cause material injury in the imminent future.

## C. Likely Volume of Subject Imports from Korea

Subject imports of TRBs from Korea increased by value from \$61.0 million in 2015 to \$69.4 million in 2016 and further to \$78.3 million in 2017, capturing 5.3 percent of the market in 2017, a gain from the 3.9 percent share in 2015. Notably, the gain in subject TRB market share was limited almost exclusively to the automotive market where domestic TRBs are also concentrated. The volume of likely imports from Korea is not expected to decline in the imminent future. Capacity to produce the subject TRBs in Korea increased over the period by \*\*\* percent and production grew by a bigger percentage, \*\*\* percent. The Korean industry's capacity utilization increased over the POI but remained appreciably below 100 percent giving the Korean producers the ability to produce and ship additional volumes to the United States.

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<sup>47</sup> CR at II-15-16; PR at II-11-12 and Figures II-3 and II-4.

<sup>48</sup> CR at Tables I-7, II-1, and II-2.

<sup>49</sup> CR at Table II-1.



Despite the increased production, shipments to the Korean home market are projected to remain below or near the 2017 level of \*\*\*.

Data suggest that the Korean industry will remain export-oriented and in fact is projected to increase this orientation, with exports reaching \*\*\* percent of total shipments in 2019, up from \*\*\* percent in 2015 and \*\*\* percent in 2017. The United States is projected to remain an important export market, with the projected absolute volume exported in 2019 estimated at \*\*\* bearings; this compares to 2017 U.S. imports from Korea that totaled 12.7 million bearings.<sup>50</sup> The record also shows that U.S. importers' inventories of subject TRBs from Korea increased \*\*\* percent during 2015-17; this rate of increase demonstrates importers' increasing interest in the subject imports and the importers' ability to maintain product in the U.S. market to meet ongoing and desired shipment volumes on a just in time basis.

Further, the U.S. is an attractive export destination given the significant size of its TRB market and especially its automotive sector. U.S. motor vehicle production in 2015 reached \*\*\*<sup>51</sup> Neither of the Korean producers faces barriers to their participation in the U.S. market, as they already supply significant automotive and auto parts manufacturers with high quality and substitutable bearings.

Given the increasing volume of subject imports during the POI, the excess capacity in the Korean industry, the U.S. importers' demonstrated interest in the subject imports, and the attractiveness of the U.S. market to the subject producers, I find that the volume of subject imports from Korea will likely increase in the imminent future. This increasing volume of subject imports will be targeted to the automotive end-use market in the United States, which is the single most important sector for the U.S. industry. As explained below, due to likely significant price effects, this increased volume will likely capture additional market share from domestic producers.

#### **D. Likely Price Effects of Subject Imports from Korea**

As discussed above, the subject imports predominantly undersold the domestic like product, both in terms of instances and, more importantly, volume during 2015-2017. I find that this pattern of predominant underselling is likely to continue and become significant as an increasing volume of subject Korean TRBs fill current contracts and compete for additional volume or new programs in the U.S. automotive market. The U.S. market is projected to increase through 2020 as noted above while the Korean automotive market is substantially smaller.

Given the importance of price to purchasers of TRBs, the increasing volume of low-priced imports from Korea, which are likely to be concentrated in the important automotive segment of the market along with the majority of the domestic industry's shipments, will force U.S. producers to either lower prices or forego necessary price increases, or risk losing sales. Indeed, Timken reported that despite raw material index clauses in many long term contracts that should lead to an increase in prices when costs increase, this did not happen over the POI,

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<sup>50</sup> CR/PR at Tables VII-3 and C-3.

<sup>51</sup> Petitioners' Prehearing Br. at 106.

and therefore the domestic industry was already starting to experience a cost/price squeeze.<sup>52</sup> Additionally, the domestic industry had already started to lose volume to the subject imports in the automotive sector as a result of predominant underselling during the POI. Increased volumes of low-priced subject imports will only exacerbate these trends, resulting in significant adverse price effects on the domestic industry.

#### **E. Likely Impact of Subject Imports from Korea**

As discussed above, I did not find that the domestic industry suffered present material injury as a result of the subject imports of TRBs from Korea. Production, capacity utilization, net sales and shipment value, and operating and net income as a ratio to sales improved in 2017 compared to 2016. For most indicators however, these improvements did not return the domestic industry to its results in 2015. And, the subject imports from Korea have continued to capture increased market share overall and more importantly, a significant and increased share of these subject imports are shipped to the automotive end-use sector.<sup>53</sup>

\*\*\*<sup>54</sup> reported actual negative effects on investment and/or anticipated negative effects, of the subject imports. \*\*\*<sup>55</sup>

I find that the impact of increased subject imports from Korea will be concentrated in the important automotive end-use sector. Continued price competition for sales in that market against the lower priced subject imports will allow the subject TRBs to continue to gain market share in that sector and capture an increasing share of the overall TRB market. This competition in the automotive sector will continue price pressure across the industry as the domestic and subject TRBs compete for the long-term contracts that are the predominant type of sale in this market.<sup>56</sup> Even maintaining its current market share will not provide the industry with the operating or net income levels needed to fund future development and production and research efforts.

#### **F. Conclusion**

For the reasons stated above, I determine that an industry in the United States is threatened with material injury by reason of subject imports of TRBs from Korea that Commerce has found are sold at less than fair value.

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<sup>52</sup> Petitioners Posthearing Br. at Answer to Question 12, p.2. Timken argues that even in industries with declining demand, a cost-price squeeze can result as prices decline, volume is lost in the automotive/heavy truck sector, and COGS \*\*\*

<sup>53</sup> CR/PR at Table II-1.

<sup>54</sup> CR/PR at Table III-1.

<sup>55</sup> CR/PR at Table VI-6.

<sup>56</sup> CR at V-4; PR at V-3.

## PART I: INTRODUCTION

### BACKGROUND

This investigation results from petitions filed with the U.S. Department of Commerce (“Commerce”) and the U.S. International Trade Commission (“USITC” or “Commission”) by The Timken Company (“Timken”), North Canton, Ohio, on June 28, 2017, alleging that an industry in the United States is materially injured and threatened with material injury by reason of less-than-fair-value (“LTFV”) imports of certain tapered roller bearings (“TRBs”)<sup>1</sup> from Korea. The following tabulation provides information relating to the background of this investigation.<sup>2 3</sup>

Effective date	Action
June 28, 2017	Petitions filed with Commerce and the Commission; institution of Commission investigation (82 FR 31067, July 5, 2017)
July 18, 2017	Commerce’s notice of initiation (82 FR 34477, July 25, 2017)
August 14, 2017	Commission’s preliminary determination (82 FR 39455, August 18, 2017)
February 2, 2018	Commerce’s preliminary determination (83 FR 4901, February 2, 2018); scheduling of final phase of Commission investigation (83 FR 8504, February 27, 2018)
June 5, 2018	Commission’s hearing
June 22, 2018	Commerce’s final determination (83 FR 29092, June 22, 2018)
July 13, 2018	Commission’s vote
August 6, 2018	Commission’s views

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<sup>1</sup> See the section entitled “The Subject Merchandise” in *Part I* of this report for a complete description of the merchandise subject in this proceeding (“subject TRBs”).

<sup>2</sup> Pertinent *Federal Register* notices are referenced in appendix A, and may be found at the Commission’s website ([www.usitc.gov](http://www.usitc.gov)).

<sup>3</sup> A list of witnesses appearing at the hearing is presented in appendix B of this report.

## STATUTORY CRITERIA AND ORGANIZATION OF THE REPORT

### Statutory criteria

Section 771(7)(B) of the Tariff Act of 1930 (the “Act”) (19 U.S.C. § 1677(7)(B)) provides that in making its determinations of injury to an industry in the United States, the Commission--  
*shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . . may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.*

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--<sup>4</sup>  
*In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant. . . In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . . (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree. . . In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to. . . (I) actual and potential decline in output, sales, market share, gross profits, operating profits, net profits, ability to service debt, productivity, return on investments, return on assets, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more*

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<sup>4</sup> Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

*advanced version of the domestic like product, and (V) in {an antidumping investigation}, the magnitude of the margin of dumping.*

In addition, Section 771(7)(J) of the Act (19 U.S.C. § 1677(7)(J)) provides that—<sup>5</sup>

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

### **Organization of report**

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

### **SUMMARY DATA AND DATA SOURCES**

A summary of data collected in this investigation is presented in appendix C.<sup>6 7</sup> Except as noted, U.S. industry data are based on questionnaire responses of seven firms that accounted for the vast majority of U.S. production of TRBs during 2017. U.S. imports are based on official Commerce statistics<sup>8</sup> and the questionnaire responses of 29 firms, representing virtually all subject U.S. imports from Korea and 66.1 percent of total U.S. imports during 2017, based on value. Foreign industry data are based on the questionnaire responses of three firms whose

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<sup>5</sup> Amended by PL 114-27 (as signed, June 29, 2015), Trade Preferences Extension Act of 2015.

<sup>6</sup> In the preliminary phase of this investigation, the Commission defined the domestic like product to include TRBs of all sizes, but not further manufactured TRBs such as wheel hub units, cages entering separately, or unfinished parts. The aggregate data for TRBs, consistent with the Commission’s domestic like product determination, are presented in table C-1. The aggregate data for certain (i.e., in-scope) TRBs are presented in table C-2.

<sup>7</sup> TRBs are produced in a wide range of sizes, are available in finished form or as parts, and are sold for a variety of applications. Accordingly, and consistent with the preliminary determination, in preparing this report, Staff placed value-based indicators before quantity-based indicators, and presented certain data (e.g., channels of distribution) exclusively on the basis of value.

<sup>8</sup> Please see *Part IV* for more information regarding the import data presented in this report.

exports accounted for virtually all U.S. imports of TRBs from Korea and whose production accounted for approximately 77 percent of overall Korean TRB production during 2017.

## MARKET SUMMARY

TRBs are classified under the larger product category of antifriction bearings and are generally used in automotive, heavy machinery, and railroad applications where it is necessary to counteract friction caused by both radial and thrust loads. The leading U.S. producer of TRBs is Timken, while leading Korean producers of TRBs include Bearing Art Corp. (“Bearing Art”), NSK Korea Co., Ltd. (“NSK”), and Schaeffler Korea Corporation (“Schaeffler”). The leading U.S. importers of subject TRBs from Korea are \*\*\* while leading importers of product from nonsubject countries (primarily China and Japan) include \*\*. U.S. purchasers of TRBs are distributors and end users in the automotive, agricultural, and heavy equipment/industrial sectors; leading purchasers include \*\*\*.

Apparent U.S. consumption of TRBs<sup>9</sup> totaled approximately \$1.5 billion (155.3 million units) in 2017. Currently, seven firms are known to produce TRBs in the United States. U.S. producers’ U.S. shipments of TRBs totaled \$861.9 million (54.2 million units) in 2017, and accounted for 58.7 percent of apparent U.S. consumption by value and 34.9 percent by quantity. Subject U.S. imports from Korea totaled \$78.3 million (12.7 million units) in 2017 and accounted for 5.3 percent of apparent U.S. consumption by value and 8.2 percent by quantity. U.S. imports from nonsubject sources totaled \$529.2 million (88.4 million units) in 2017 and accounted for 36.0 percent of apparent U.S. consumption by value and 56.9 percent by quantity.

## PREVIOUS AND RELATED INVESTIGATIONS

Tapered roller bearings have been the subject of several prior import relief investigations in the United States. There is currently an antidumping duty order in effect covering imports of tapered roller bearings from China.<sup>10</sup>

On October 31, 1973, a complaint was filed at the Treasury Department (“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

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<sup>9</sup> Apparent U.S. consumption includes U.S. producers’ U.S. shipments for TRBs of all sizes, imports of TRBs less than or equal to eight inches in outside diameter (subject TRBs) from Korea, and imports of TRBs of all sizes from nonsubject sources.

<sup>10</sup> 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.

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.<sup>11</sup> 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.<sup>12</sup>

On August 25, 1986, petitions were 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 tapered roller bearings from China, Hungary, Italy, Japan,<sup>13</sup> Romania, and Yugoslavia. Following affirmative final determinations by Commerce and injury 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 on October 6, 1987. Commerce also issued orders on tapered roller bearings from Italy and Yugoslavia, but the orders were ultimately revoked on October 9, 1996 and November 24, 1995, respectively.<sup>14</sup>

On June 22, 2000, the Commission found 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.<sup>15</sup> It also found that revocation of the antidumping duty orders on tapered roller bearings 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.<sup>16</sup> In August 2006 and August 2012, the Commission completed full second and third five-year reviews on tapered roller bearings from China, in which it determined 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

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<sup>11</sup> *Tapered Roller Bearings and Certain Components Thereof from Japan; Clarification of Scope of Antidumping Finding*, 46 FR 40,550, August 10, 1981.

<sup>12</sup> *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.

<sup>13</sup> The petition, as it related to Japan, was filed to cover those tapered roller bearings that were not subject to the 1976 finding by Treasury. The 1987 order on Japan pertained to finished tapered roller bearings and components greater than four inches in outside diameter as well as tapered roller bearings of all sizes produced and sold by NTN.

<sup>14</sup> *Tapered Roller Bearings From Italy, Revocation of the Antidumping Duty Order*, 61 FR 52920, October 9, 1996 and *Tapered Roller Bearings From Yugoslavia, Revocation of the Antidumping Duty Order*, 60 FR 58046, November 24, 1995

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

<sup>16</sup> *Ibid.*

foreseeable time.<sup>17</sup> The Commission instituted the fourth five-year review on tapered roller bearings from China on July 3, 2017, and determined to conduct a full review on October 13, 2017.<sup>18</sup> At the time of this report's issuance, the Commission's review was ongoing.<sup>19</sup>

In addition to Title VII investigations, on June 9, 1993, following receipt of a request from the Office of the United States Trade Representative, 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.<sup>20</sup>

### NATURE AND EXTENT OF SALES AT LTFV

On June 22, 2018, Commerce published a notice in the *Federal Register* of its final determination of sales at LTFV with respect to imports of subject TRBs from Korea.<sup>21</sup> Table I-1 presents Commerce's dumping margins with respect to imports of subject merchandise from Korea.

**Table I-1**  
**TRBs: Commerce's final weighted-average LTFV margins with respect to subject imports from Korea**

Exporter/Producer	Final dumping margin (percent)
Bearing Art Corporation/Iijin Bearing Corporation / Iijin Global Corporation	8.21
Schaeffler Korea Corporation	52.44
All others	30.25

Source: *Certain Tapered Roller Bearings From the Republic of Korea: Final Determination of Sales at Less Than Fair Value*, 83 FR 29092, June 22, 2018.

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<sup>17</sup> *Certain Bearings From China, France, Germany, Italy, Japan, Singapore, and the United Kingdom*, 71 FR 51850, August 31, 2006; *Tapered Roller Bearings from China, Determination*, 77 FR 50716, August 22, 2012.

<sup>18</sup> *Tapered Roller Bearings From China; Institution of a Five-Year Review*, 82 FR 30898, July 3, 2017; and *Tapered Roller Bearings From China; Notice of Commission Determination To Conduct a Full Five-Year Review*, 82 FR 48527, October 18, 2017.

<sup>19</sup> *Tapered Roller Bearings From China; Scheduling of a Full Five-Year Review*, 83 FR 8297, February 26, 2018.

<sup>20</sup> 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.

<sup>21</sup> *Certain Tapered Roller Bearings From the Republic of Korea: Final Determination of Sales at Less Than Fair Value*, 83 FR 29092, June 22, 2018.



## THE SUBJECT MERCHANDISE

### Commerce's scope

Commerce has defined the scope of this investigation as follows:<sup>22</sup>

The scope of this investigation is certain tapered roller bearings. The scope covers all tapered roller bearings with a nominal outside cup diameter of eight inches and under, regardless of type of steel used to produce the bearing, whether of inch or metric size, and whether the tapered roller bearing is a thrust bearing or not. Certain tapered roller bearings include: Finished cup and cone assemblies entering as a set, finished cone assemblies entering separately, and finished parts (cups, cones, and tapered rollers). Certain tapered roller bearings are sold individually as a set (cup and cone assembly), as a cone assembly, as a finished cup, or packaged as a kit with one or several tapered roller bearings, a seal, and grease. The scope of the investigation includes finished rollers and finished cones that have not been assembled with rollers and a cage. Certain tapered roller bearings can be a single row or multiple rows (e.g., two- or four-row), and a cup can handle a single cone assembly or multiple cone assemblies.

Finished cups, cones, and rollers differ from unfinished cups, cones, and rollers in that they have undergone further processing after heat treatment, including, but not limited to, final machining, grinding, and/or polishing. Mere heat treatment of a cup, cone, or roller (without any further processing after heat treatment) does not render the cup, cone, or roller a finished part for the purpose of this investigation. Finished tapered roller bearing parts are understood to mean parts which, at the time of importation, are ready for assembly (if further assembly is required) and require no further finishing or fabrication, such as grinding, lathing, machining, polishing, heat treatment, etc. Finished parts may require grease, bolting, and/or pressing as part of final assembly, and the requirement that these processes be performed, subsequent to importation, does not remove an otherwise finished tapered roller bearing from the scope.

Tapered roller bearings that have a nominal outer cup diameter of eight inches and under that may be used in wheel hub units, rail bearings, or

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<sup>22</sup> *Certain Tapered Roller Bearings From the Republic of Korea: Final Determination of Sales at Less Than Fair Value*, 83 FR 29092, June 22, 2018.

other housed bearings, but entered separately, are included in the scope to the same extent as described above. All tapered roller bearings meeting the written description above, and not otherwise excluded, are included, regardless of coating.

Excluded from the scope of this investigation are:

- (1) Unfinished parts of tapered roller bearings (cups, cones, and tapered rollers);
- (2) cages, whether finished or unfinished;
- (3) the non-tapered roller bearing components of subject kits (e.g., grease, seal); and
- (4) tapered roller bearing wheel hub units, rail bearings, and other housed tapered roller bearings (flange, take up cartridges, and hanger units incorporating tapered rollers).

Tapered roller bearings subject to this investigation are primarily classifiable under subheadings 8482.20.0040, 8482.20.0061, 8482.20.0070, 8482.20.0081, 8482.91.0050, 8482.99.1550, and 8482.99.1580 of the Harmonized Tariff Schedule of the United States (HTSUS).<sup>23</sup> Parts may also enter under 8482.99.4500. While the HTSUS subheadings are provided for convenience and for customs purposes, the written description of the subject merchandise is dispositive.

### **Tariff treatment**

Based upon the scope set forth by Commerce, information available to the Commission indicates that the merchandise subject to this investigation is imported under the following statistical reporting numbers of the Harmonized Tariff Schedule of the United States (“HTS”): 8482.20.0040, 8482.20.0061, 8482.20.0070, 8482.20.0081, 8482.91.0050, 8482.99.1550, and 8482.99.1580.<sup>24</sup> TRB parts may also be imported under HTS subheading 8482.99.4500.<sup>25</sup>

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<sup>23</sup> Prior to July 2016, products entering under 8482.20.0061 entered under 8482.20.0060, products entering under 8482.20.0081 entered under 8482.20.0080, and products entering under 8482.99.1550 entered under 8482.99.1540.

<sup>24</sup> Decisions on the tariff classification and treatment of imported goods are within the authority of U.S. Customs and Border Protection. 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.

<sup>25</sup> Large-diameter TRBs, which are outside of Commerce’s scope but included in the Commission’s preliminary domestic like product determination, are also imported under HTS statistical reporting numbers 8482.20.0064, 8482.20.0067, 8482.20.0090, and 8482.99.1570.

Merchandise imported under these HTS statistical reporting numbers cover only merchandise within the scope of this investigation, with the exception of HTS statistical reporting numbers 8482.99.1580 and 8482.99.4500, which include products outside of the scope of this investigation, such as unfinished parts.

The 2018 special rate of duty for goods originating from Korea under the United States-Korea Free Trade Agreement Implementation Act, upon importer claim, is 1.7 percent ad valorem for HTS subheadings 8482.20.00, 8482.99.15, and 8482.99.45 and 1.3 percent ad valorem for HTS subheading 8482.91.00. The 2018 column-1 general rate of duty is 5.8 percent ad valorem for HTS subheadings 8482.20.00, 8482.99.15, and 8482.99.45, and 4.4 percent for HTS subheading 8482.91.00.26. Table I-2 presents detailed information on the HTS statistical reporting numbers used to derive the import data in this report, which include small and large-diameter TRBs.

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<sup>26</sup> USITC, Chapter 84, HTSUS (2018), Revision 5, May 2018.

**Table I-2**

**TRBs: HTS statistical reporting number descriptions, 2017**

HTS short description	HTS statistical reporting number	Status	Unit of measure	Specific to in-scope TRBs	B&BE conversion
Tapered roller bearings, cup and cone assemblies entered as a set, with cup having outside diameter not exceeding 102 mm	8482.20.0040	Current	B&BE	X	1.0
Tapered roller bearings, cup and cone assemblies entered as a set, with cup having outside diameter exceeding 102mm	8482.20.0060	Historical	B&BE	X	1.0
Tapered roller bearings, cup and cone assemblies entered as a set, with cup having outside diameter exceeding 102mm but not exceeding 203mm	8482.20.0061	Current	B&BE	X	1.0
Tapered roller bearings, cup and cone assemblies entered as a set, with cup having outside diameter exceeding 203mm but not exceeding 305mm	8482.20.0064	Current	B&BE		1.0
Tapered roller bearings, cup and cone assemblies entered as a set, exceeding 305 mm	8482.20.0067	Current	B&BE		1.0
Tapered roller bearings, cone assemblies entered separately, for cups having outside diameter not exceeding 102 mm	8482.20.0070	Current	B&BE	X	0.5
Tapered roller bearings, cone assemblies entered separately, for cups having outside diameter exceeding 102 mm	8482.20.0080	Historical	B&BE	X	0.5
Tapered roller bearings, cone assemblies entered separately, for cups having outside diameter exceeding 102mm but not exceeding 203mm	8482.20.0081	Current	B&BE	X	0.5
Tapered roller bearings, cone assemblies entered separately, exceeding 203 mm	8482.20.0090	Current	B&BE		0.5
Tapered rollers for roller bearings	8482.91.0050	Current	Parts (value only)	X	0.0
Cups (an outer ring) for tapered roller bearings	8482.99.1540	Historical	B&BE	X	0.5
Cups (an outer ring) for tapered roller bearings, having an outside diameter not exceeding 203mm	8482.99.1550	Current	B&BE	X	0.5
Cups (an outer ring) for tapered roller bearings, exceeding 203 mm	8482.99.1570	Current	B&BE		0.5
Parts of bearings, nesoi <sup>1</sup>	8482.99.6595	Current	Parts (value only)		0.0

<sup>1</sup> Added to account for \*\*\* misclassification of imports of subject TRBs from Korea only.

Note.—“B&BE” are bearing and bearing equivalent units.

Note.—The large majority of imports entering under HTS statistical reporting numbers 8482.99.1580 and 8482.99.4500 is believed to consist of unfinished parts and/or cages, products that are outside of the scope of the investigation as well as the Commission’s preliminary domestic like product determination. Although these HTS statistical reporting numbers are listed in Commerce’s scope, such imports are not included in the import dataset presented in this report.

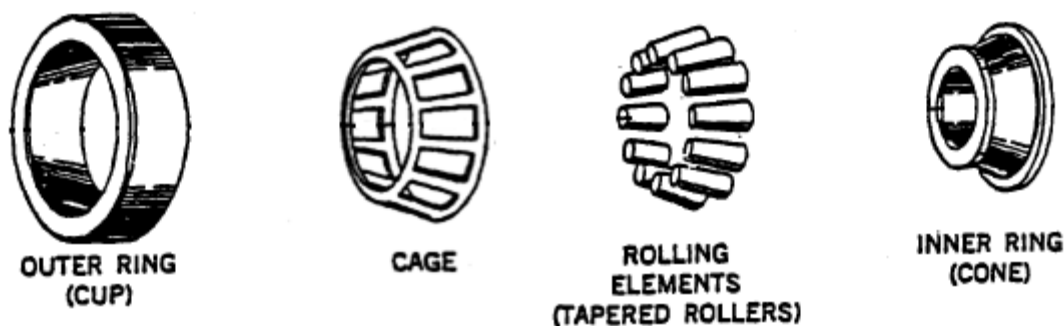
Source: Modified from Harmonized Tariff Schedule.

## THE PRODUCT

### Description and applications<sup>27</sup>

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: USITC, *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, USITC Publication 1983, June 1987, p. A-5.

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.<sup>28</sup> 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. See figure I-2 for partly assembled and cut-away views of assembled TRBs.

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<sup>27</sup> Unless otherwise noted, information presented is based on *Tapered Roller Bearings from China*, Inv. No. 731-TA-344 (Third Review), USITC Publication 4343, August 2012, pp. I-18-21.

<sup>28</sup> TRBs may also be fitted with seals or shields, which protect the bearing from contamination and extend bearing life.

**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*, 2016, pp. 5-7.

TRB sizes vary considerably, from a few millimeters to several meters in outside diameter.<sup>29</sup> 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.<sup>30</sup> Class 4 is considered the standard or most basic tolerance, and has the least restrictive tolerances for bearings made to inch dimensions.

By varying the number of rollers and the angle of the raceways in the cup and cone, different TRBs can be designed with either shallower angles to bear predominantly radial loads or with steeper angles to bear predominantly thrust loads. TRBs are classified according to a parts-numbering system, based on bearings designed around a common roller size and profile. TRBs having the same basic internal geometry— i.e., roller size and cup and cone raceway angles— belong to the same bearing series.<sup>31</sup> Likewise, the cups and cones from different series are not interchangeable.<sup>32</sup>

A manufacturer can sell several product versions of a TRB having the same part number but with different physical features and price points.<sup>33</sup> Variations are noted with suffixes<sup>34</sup> to the standard part number.<sup>35</sup> Moreover, TRBs with the same part numbers can also differ by \*\*\*.<sup>36</sup>

TRBs are available from manufacturers’ catalogs that meet ABMA standards for inner and outer diameters, widths, load ratings, etc.; or are specially designed to meet a customer’s design, load, friction, torque, weight, and other specification requirements. A hearing witness testified that 90 percent of TRBs for the automotive industry are customized. Moreover, another witness further testified that standard and customized TRBs are not interchangeable.

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<sup>29</sup> Among domestic TRB producers, Timken manufactures TRBs to both metric and inch dimensions. Hearing transcript, p. 132 (Coughlin).

<sup>30</sup> See: Engineering360, “Tapered Roller Bearings Specifications, Bearing Quality,” IEEE GlobalSpec, 2018.

<sup>31</sup> Timken, “Part-Numbering Systems for Radial tapered Roller Bearings, How to Identify Your Part Number,” *Timken Tapered Roller Bearing Catalog*, 2016, p. 66.

<sup>32</sup> As highly engineered products designed to fit and function together, cups and cones from one part number would “rarely, if ever,” be capable of being interchanged with those of another part number. The angles and outer diameters of the rollers, the angles and inner diameters of the cups, and the angles and outer diameters of the cones must exactly match to fit together. Moreover, the cup raceway length must fit over the entire roller. These angles, diameters, and lengths are all specific to a particular part series. Respondents’ Joint Posthearing Brief, “Joint Responses to the Commission’s Written Questions,” Question No. 3, pp. 1-2.

<sup>33</sup> Respondents’ Joint Posthearing Brief, “Joint Responses to the Commission’s Written Questions,” Question No. 2, p. 2.

<sup>34</sup> Timken, “Part-Numbering Systems for Radial Tapered Roller Bearings, How to Identify Your Part Number, Prefixes and Suffixes,” *Timken Tapered Roller Bearing Catalog*, 2016, pp. 74-79.

<sup>35</sup> *Ibid.*, pp. 66-73.

<sup>36</sup> Respondents’ Joint Posthearing Brief, “Joint Responses to the Commission’s Written Questions,” Question No. 2, p. 3.

Even when a standard or customized TRB could fit in the same space for the same application they would perform completely differently.<sup>37</sup>

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.

Timken provided a compilation of the number of TRBs contained in various drive-train components by types of motor vehicles (tables I-3 and I-4). TRBs in light vehicles (passenger cars and light trucks) are typically of smaller diameter than those in heavy trucks.<sup>38</sup>

**Table I-3**  
**TRBs: Number of TRBs in motor vehicle components, by vehicle type**

Vehicle component	Passenger cars	Sport utility vehicles ("SUVs")	Light trucks
Wheel end	0 <sup>1</sup>	2-4 <sup>2</sup>	4-6 <sup>3</sup>
Engine	0	0	0
Transmission	0-4 <sup>4</sup>	2-4	2-4
Drive axle (pinon head and tail)	2	2	2
Non-drive axle <sup>5</sup>	0	0	0
Differential (part of the drive axle)	2	2	2
Power transfer unit ("PTU") <sup>6</sup>	0-4	0-4	0-4
Accessories	0	0	0
Total	4-12	8-16	10-18
Average range of TRB cup diameters	up to 4"	up to 4"	up to 4"

<sup>1</sup> Passenger car wheel bearings are almost all ball bearings.

<sup>2</sup> Front wheel bearings are ball bearings in smaller cross-over SUVs, but there are four TRBs in larger SUVs.

<sup>3</sup> For a rear axle with an independent rear suspension system, there are two loose tapers per wheel or a complete two-row package bearing.

<sup>4</sup> Many newer passenger-car transmissions now have only needle and ball bearings.

<sup>5</sup> The non-drive axle has hub assemblies for the wheels.

<sup>6</sup> For high-performance vehicles, the PTU transmits drive torque to the non-driven axle, typically from a front axle to the rear axle of front-wheel drive vehicles.

Source: Petitioner's Posthearing Brief, "Answers to Commission Questions, Question No. 23," pp. 1-2.

<sup>37</sup> Hearing transcript, p. 262 (Schamp and Dix), pp. 235-236 (Schuster).

<sup>38</sup> Petitioner's Posthearing Brief, "Answers to Commission Questions, Question No. 23," p. 1.



**Table I-4**  
**TRBs: Number of TRBs in heavy-truck components**

Vehicle component	Number of TRBs	Comments
Wheel end	4 steer, 8 drive	
Engine (fan hub)	2 for specialty vehicles	
Transmission	0	Typically ball bearings rather than TRBs
Steering pivot	0	Typically bushings rather than TRBs.
Transfer case	6	For specialty vehicles only.
Drive axle (rear drive)	2 pinon, 2 differential	
Tandem drive (forward) axle	2 input, 2 through shaft, 2 pinon, 2 differential	
Trailer axle	8	
Differential	0	Part of forward and rear axles.
Accessories	0	
Total	24	On tandem-axle trucks.
Average range of TRB cup diameters	4"-8"	

Source: Petitioner’s Posthearing Brief, “Answers to Commission Questions, Question No. 23,” pp. 2-3.

According to Schaeffler, there are approximately six to eight TRBs in a passenger motor vehicle,<sup>39</sup> with the exact number varying by the specific vehicle drive-train configuration:

- Front-wheel drive (“FWD”) vehicles, typically sedans and smaller sport-utility vehicles (“SUVs”), contain TRBs in the transaxle to support the differential that supports the shafts to the drive wheels. The average FWD vehicle contains two TRBs, with a range of none (using ball bearings instead) to six TRBs.
- Rear-wheel drive (“RWD”) vehicles, typically higher-end sedans and sports cars, have a rear axle/ drive unit that usually contains four TRBs. Two TRBs support the pinion in the spiral bevel gearing set, and the other two TRBs support the differential unit to the wheels. RWD transmissions typically do not contain TRB’s. Hence, the average RWD vehicle contains four TRBs in their axles.
- All-wheel drive (“AWD”) vehicles, primarily sport-utility vehicles (“SUVs”) and less commonly sedans, utilize both a transaxle and rear axle/drive unit, with each axle containing the corresponding number of TRBs as in a RWD axle. In addition, a power transfer unit (“PTU”), that transfers torque between the wheels as needed, typically has four TRBs. Hence, the average AWD vehicle has a total of ten TRBs.
- Four-wheel drive (“4WD”) vehicles, typically pickup trucks, larger SUVs, and high-performance SUVs. 4WD vehicles use an axle to drive both the front and rear wheels of the vehicle. The axle

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<sup>39</sup> Respondents’ Joint Posthearing Brief, “Joint Responses to the Commission’s Written Questions,” Question No. 3, p. 5.

design is similar to that of an RWD vehicle where there are four TRBs per axle. Hence, the average 4WD vehicle contains eight tapered roller bearings.<sup>40</sup>

However, motor-vehicle engines, air-conditioning compressors, and other accessories do not contain any TRBs.<sup>41</sup>

Respondents provided information on the size of TRBs utilized by different motor vehicle types. TRB outer diameters range from 2.5 to 4 inches in passenger cars, from 2.5 to 4.5 inches in SUVs, and from 3 to 5 inches in pick-up trucks. Outer diameters are higher for TRBs in heavy commercial trucks (ranging from 5.5 to 10 inches) and for off-road construction and agricultural vehicles (ranging from 2.5 to 24 inches and even higher).<sup>42</sup>

Among major motor-vehicle components, outer diameters of TRBs range between 2 and 6 inches. For passenger cars and light or small SUVs, the TRBs are between 2 and 4 inches in the transmission and 3 to 4 inches in the differential. Full-size SUVs and light trucks contain TRBs with these same size ranges in their transmissions and differentials. Conversely, TRB outside diameters in differentials for heavy trucks range between 3 and 5 inches, and sometimes even reach 6 inches.<sup>43</sup>

### **Manufacturing processes<sup>44</sup>**

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.<sup>45</sup> TRBs are primarily of alloy (other than stainless) steel; however, some bearing types and certain components may be of other materials such as stainless steel, bronze, copper, ceramic, or certain plastics. Special bearing-grade alloy steel bar and seamless tubing are utilized in the production of most inner and outer rings. Alloy steel wire, in coils, is the input material for roller production. Cages can be composed of metal or a polymer compound depending upon customer specifications.<sup>46</sup> 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

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<sup>40</sup> Respondents' Joint Posthearing Brief, "Joint Responses to the Commission's Written Questions," Question No. 3, pp. 3-4.

<sup>41</sup> Ibid., p. 4.

<sup>42</sup> Respondents' Joint Posthearing Brief, "Joint Responses to the Commission's Written Questions," Question No. 7, p. 10.

<sup>43</sup> Ibid.

<sup>44</sup> Unless otherwise noted, information presented is based on *Tapered Roller Bearings from China, Inv. No. 731-TA-344 (Third Review)*, USITC Publication 4343, August 2012, pp. I-21-22.

<sup>45</sup> The Timken Company. "Our Story." About. <https://www.timken.com/about/our-story/>.

<sup>46</sup> \*\*\*.

of bearings without reconfiguring their production lines, which adds to costs.<sup>47</sup> Thus, firms cannot easily switch from producing one type of bearing to another.

### **Greening machining**

Green machining, the first step of the production process, refers to the operations performed on the input 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

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<sup>47</sup> Conference transcript, p. 24 (Coughlin).

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. \*\*\*.<sup>48</sup>

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.<sup>49</sup>

## **DOMESTIC LIKE PRODUCT ISSUES**

During the preliminary phase of the investigation, the petitioner proposed that the domestic like product in this investigation be defined as a single like product, co-extensive with the scope, which excludes TRBs greater than eight inches in outside diameter.<sup>50</sup> Respondents Iljin and Schaeffler argued that the Commission should define a single domestic like product that includes TRBs of all diameter sizes.<sup>51</sup> The Commission defined a single domestic like

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<sup>48</sup> \*\*\*.

<sup>49</sup> ISO standards related to tapered roller bearings used in automotive application require a production size range that does not match with the scope of the investigation. Timken, *Timken Tapered Roller Bearing Catalog*, 2016, p. 40 (table 27).

<sup>50</sup> Petition, p. I-2.

<sup>51</sup> Respondent Iljin's Postconference Brief, p. 5; Respondent Schaeffler's Postconference Brief, p. 6.

product consisting of TRBs of all diameter sizes, but not including wheel hub units, cages entering separately, or unfinished parts.<sup>52 53</sup>

During the final phase of the investigation, the petitioner maintained that the domestic like product in this investigation should be defined as a single like product, co-extensive with the scope, which excludes TRBs greater than eight inches in outside diameter.<sup>54</sup> Respondents Iljin and Schaeffler concurred with the Commission's finding, in the preliminary phase, of no clear dividing lines between various types and sizes of TRBs. They further noted that this conclusion was consistent with the Commission's definition of the domestic like product in prior investigations of TRBs and Timken's position in these proceedings.<sup>55</sup>

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

The Commission asked U.S. producers, importers, and purchasers to comment on the comparability of in-scope TRBs ("small-diameter TRBs") and TRBs with an outside diameter greater than eight inches ("large-diameter TRBs"), based on the Commission's six like product factors. A tabulation of their responses is presented in table I-5 and discussed further below.<sup>56</sup> For additional information on responses from U.S. producers, U.S. importers, and U.S. purchasers, see Appendix D.

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<sup>52</sup> *Tapered Roller Bearings from Korea, Investigation No. 731-TA-1380 (Preliminary)*, USITC Publication 4721, August 2017, p. 10.

<sup>53</sup> During the preliminary phase of the investigation, the Commission collected information and data regarding wheel hub units and other further manufactured TRBs. Timken argued, and respondents did not contest, that the Commission should define the domestic like product not to include wheel hub units. The Commission found that the record of the preliminary phase investigation did not support including wheel hub units in the domestic like product. *Tapered Roller Bearings from Korea, Investigation No. 731-TA-1380 (Preliminary)*, USITC Publication 4721, August 2017, p. 13 n.74.

<sup>54</sup> Petitioner's Posthearing Brief, p. 9.

<sup>55</sup> Respondents' Joint Posthearing Brief, p. 2.

<sup>56</sup> 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	Not at all
U.S. producers: Small-diameter vs large-diameter TRBs.-- Physical characteristics and end uses	---	1	1	4
Interchangeability	---	---	---	6
Manufacturing facilities and production employees	---	1	3	2
Channels of distribution	1	4	1	---
Customer and producer perceptions	---	2	1	3
Price	---	---	---	5
Production comparison / factor	U.S. importers			
	Fully	Mostly	Somewhat	Not at all
U.S. importers: Small-diameter vs large-diameter TRBs.-- Physical characteristics and end uses	1	3	5	4
Interchangeability	---	2	2	10
Manufacturing facilities and production employees	1	3	7	1
Channels of distribution	4	4	2	2
Customer and producer perceptions	4	2	---	5
Price	1	---	3	7
Production comparison / factor	U.S. purchasers			
	Fully	Mostly	Somewhat	Not at all
U.S. purchasers: Small-diameter vs large-diameter TRBs.-- Physical characteristics and end uses	2	3	4	10
Interchangeability	2	1	2	14
Manufacturing facilities and production employees	2	5	7	2
Channels of distribution	7	5	2	2
Customer and producer perceptions	2	6	5	2
Price	---	3	2	9

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

### Physical characteristics and uses

A majority of responding market participants reported that small-diameter and large-diameter TRBs are “somewhat” or “not at all” 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 have the same exact physical characteristics or uses. TRBs as a whole, however, generally share the same basic elements (e.g., cups, cones, rolling elements, and cages) and the same basic function (to reduce friction). The final application of a TRB dictates its diameter and size, so TRBs of different diameter sizes will necessarily have different uses. Both small-diameter and large-diameter TRBs have uses in various heavy industrial sectors, albeit with different specific applications.<sup>57</sup> During the preliminary phase of the investigation, Timken and respondents generally agreed that

<sup>57</sup> Petitioner’s Postconference Brief, p. 13; and conference transcript, pp. 131-132 (Dix and Schuster).

automotive applications constitute a prominent use for small-diameter TRBs, whereas large-diameter TRBs cannot be used in automotive applications.<sup>58</sup>

### Manufacturing facilities and production employees

The vast majority of market participants reported that manufacturing processes for small-diameter and large-diameter TRBs are “somewhat” or “mostly” similar. Seven firms reported domestic production of TRBs in this final phase investigation. Of the seven firms, two reported production of small-diameter TRBs only, three reported production of large-diameter TRBs only, and two reported production of both small and large-diameter TRBs. No producer reported production of both small and large-diameter TRBs on the same equipment with the same employees.<sup>59</sup> Table I-6 presents U.S. producers’ 2017 shares of reported small-diameter and large-diameter TRB production and shipments.

**Table I-6**  
**TRBs: U.S. producers, share of reported production, and share of total shipment value by size, 2017**

Firm	Share of small-diameter TRB production (percent)	Share of large-diameter TRB production (percent)	Share of small-diameter TRB total shipments value (percent)	Share of large-diameter TRB total shipments value (percent)
Amsted	***	***	***	***
Koyo	***	***	***	***
NSK	***	***	***	***
NTN-Bower	***	***	***	***
Regal Beloit	***	***	***	***
Schaeffler	***	***	***	***
Timken	***	***	***	***
Total	***	***	***	***

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

### Interchangeability

The vast majority of responding market participants reported that small-diameter and large-diameter TRBs are “not at all” interchangeable. In its preliminary determination, the Commission noted that such lack of interchangeability is true of any TRBs with different sizes and configurations, including small-diameter TRBs of different dimensions.<sup>60</sup>

<sup>58</sup> Ibid.

<sup>59</sup> A witness for Schaeffler testified that his Korean TRB firm “...manufactures above 8 and below 8 in the same plant on the same equipment.” Hearing transcript, pp. 268-269 (Ovendorf). However, the Petitioner noted that \*\*\*. Petitioner’s Posthearing Brief, p. 10 n. 19.

<sup>60</sup> *Tapered Roller Bearings from Korea, Investigation No. 731-TA-1380 (Preliminary)*, USITC Publication 4721, August 2017, p. 11; and conference transcript, p. 39 (Drake).

## Channels of distribution

The majority of responding market participants reported that small-diameter and large-diameter TRBs “fully” or “mostly” share channels of distribution. As presented in table I-7, domestic producers ship the majority of small-diameter TRBs to end users (\*\*\*) percent in 2017), primarily to automotive end users, while the majority of large-diameter TRBs was shipped to distributors (\*\*\*) percent in 2017). Large-diameter TRB shipments to distributors increased between 2015 and 2017, by \*\*\* percentage points. A majority of large-diameter TRBs sold to end users were in the agricultural sector.

**Table I-7**  
**TRBs: U.S. producers’ U.S. commercial shipments, by product type and channels of distribution, 2015-17**

Item	Calendar year		
	2015	2016	2017
	<b>Share of commercial U.S. shipments (percent)</b>		
U.S. producers: Small-diameter TRBs:			
to Distributors	***	***	***
to End users	***	***	***
of which, automotive	***	***	***
of which, heavy equipment / industrial	***	***	***
of which, agricultural	***	***	***
of which, other	***	***	***
U.S. producers: Large-diameter TRBs:			
to Distributors	***	***	***
to End users	***	***	***
of which, automotive	***	***	***
of which, heavy equipment / industrial	***	***	***
of which, agricultural	***	***	***
of which, other	***	***	***

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

## Customer and producer perceptions

Questionnaire responses indicate that producers and customers perceive distinctions between small-diameter and large-diameter TRBs, but responses were mixed. Three of six U.S. producers reported that the customer and producer perceptions for small-diameter TRBs were “not at all” comparable with large-diameter TRBs, while two of six U.S. producers reported “mostly” comparable. Similarly, five of 11 U.S. importers reported that customer and producer perceptions for small-diameter TRBs were “not at all” comparable with large-diameter TRBs, while six of 11 U.S. importers reported “fully” or “mostly” comparable. Eight of 15 U.S. purchasers reported “mostly” or “somewhat” comparable.



## Price

The vast majority of market participants reported that prices for small-diameter and large-diameter TRBs were “not at all” comparable. As presented in table I-8, the average unit value of U.S. producers’ U.S. shipments of small-diameter TRBs was \$11.02 in 2017, while the average unit value of U.S. producers’ U.S. shipments of large-diameter TRBs was \$344.83 in 2017.

**Table I-8**  
**TRBs: U.S. producers' average unit values, by product type, 2015-17**

Item	Calendar year		
	2015	2016	2017
	<b>Average unit value (dollars per bearing or bearing equivalent)</b>		
U.S. producers' U.S. shipments.-- Small-diameter TRBs	10.32	10.31	11.02
Large-diameter TRBs	283.57	306.56	344.83

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



## 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 packaged as a kit.<sup>1</sup> TRBs are made to ISO and ANSI/ABMA standards.<sup>2</sup> TRBs are used in the automotive industry, in agricultural and construction equipment, and in general industrial applications.<sup>3</sup> Respondent Iljin stated that the U.S. market for TRBs is best characterized by two primary and distinct markets: automotive and industrial.<sup>4</sup> It also stated that TRBs used in the automotive sector are highly engineered, precision products that must be designed to meet each customer's specifications for use in a particular automobile, and that it can take two to three years to test, design, sample, and obtain final customer approval for TRBs.<sup>5</sup> <sup>6</sup> Sales to OEMs are primarily under long-term contracts. As shown in figure II-1 and table II-1, the share of the value of U.S. commercial shipments of TRBs to the automotive sector declined, as did shipments to the heavy equipment and industrial sector, while shipments to distributors and the agricultural sector increased from 2015 to 2017.

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<sup>1</sup> Petition, pp. I-10-12.

<sup>2</sup> Petitioner's Postconference Brief, Answers to Staff Questions, #2, p. 1 and exhibits 1-3.

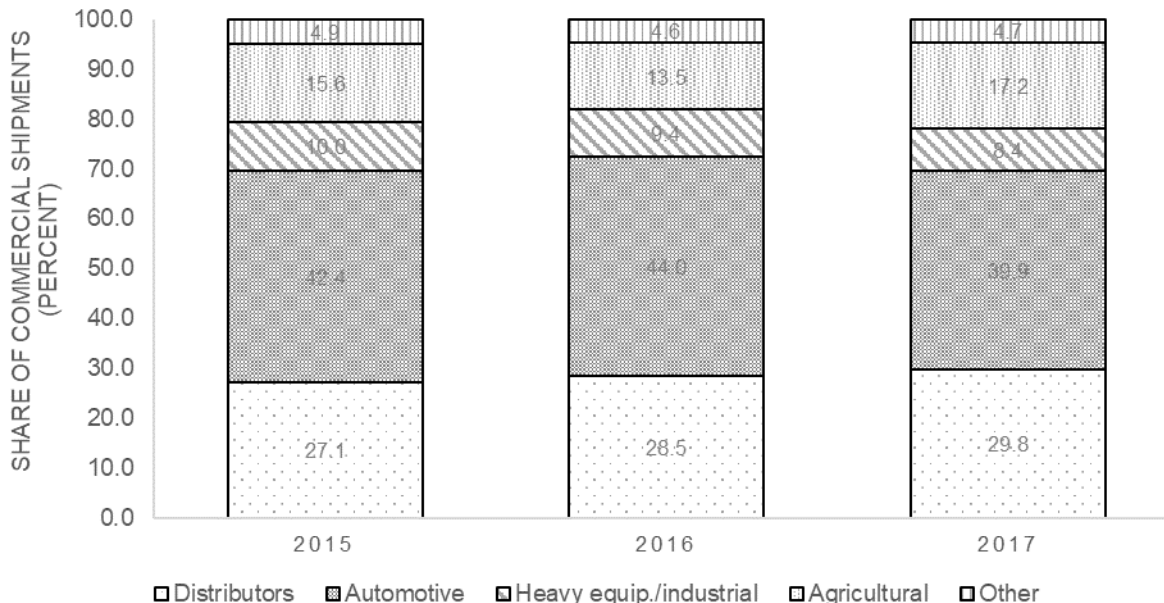
<sup>3</sup> Petition, p. I-13.

<sup>4</sup> Respondent Iljin's Postconference Brief, p. 6.

<sup>5</sup> Respondent Iljin's Postconference Brief, p. 14.

<sup>6</sup> Conference transcript, p. 104 (Dix) and respondent Schaeffler's Postconference Brief, p. 17.

**Figure II-1**  
**TRBs: Share of the value of U.S. commercial shipments from all sources, by channel, 2015-17**



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

Apparent U.S. consumption of TRBs, by value, decreased irregularly during 2015-17. Overall, the value of apparent U.S. consumption in 2017 was 7.3 percent lower than in 2015, with a 13.5 percent decline from 2015 to 2016 and 7.2 percent increase from 2016 to 2017.

### U.S. PURCHASERS

The Commission received 39 usable questionnaire responses from firms that bought TRBs during 2015-17.<sup>7</sup> Sixteen responding purchasers are distributors, 25 are end users, and 6 are other, including assembly operations and auto parts retailers. Purchasers were also asked to indicate the sector for which their firm purchases; 24 reported that they purchase TRBs for the automotive sector, 23 for the heavy equipment/industrial sector, 12 for the agricultural sector, and 13 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.<sup>8</sup> Responding U.S. purchasers were located throughout the United States, with many firms reporting multiple locations nationwide. The largest responding purchasers of TRBs in 2017 by value of purchases were \*\*\*, accounting for 56 percent of reported purchases and 29 percent of apparent U.S. consumption in 2017, by value.<sup>9</sup>

<sup>7</sup> Of the 36 responding purchasers, 28 purchased the domestic TRBs, 14 purchased imports of the subject merchandise from Korea, and 28 purchased imports of TRBs from other sources.

<sup>8</sup> Fourteen purchasers indicated they purchase for multiple sectors.

<sup>9</sup> Three purchasers, \*\*\*, were not able to break out their purchases in the manner requested in the questionnaire. \*\*\* stated that it is impossible to determine the country of origin because it receives

(continued...)

## CHANNELS OF DISTRIBUTION

U.S. producers and importers sold the majority of their TRBs to end users, as shown in table II-1. About two-thirds of U.S. producers' commercial shipments were to end users, and of that, half was sold to the automotive sector and a third was sold to the agricultural sector in 2017. Nearly \*\*\* subject imports from Korea were sold to the automotive sector.

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*(...continued)*

shipments by part number and quantity only. Also, domestic, European, and Japanese producers have numerous plants in other countries and some shipments have mixed countries of origin. It stated that it would need to check each shipment to determine country of origin.

Table II-1

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

Item	Period		
	Calendar year		
	2015	2016	2017
Value (\$1,000)			
<b>U.S. producers' U.S. commercial shipments of TRBs:</b>			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total commercial shipments	***	***	***
<b>U.S. importers' U.S. commercial shipments of certain TRBs from Korea:</b>			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total commercial shipments	***	***	***
<b>U.S. importers' U.S. commercial shipments of TRBs from nonsubject sources:</b>			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total commercial shipments	***	***	***
<b>U.S. commercial shipments of TRBs from all sources:</b>			
Distributors	293,144	277,138	304,350
End users	811,236	711,545	729,458
Automotive	479,627	443,581	419,721
Heavy equipment/industrial	109,874	92,033	85,977
Agricultural	168,685	130,870	176,000
Other	53,050	45,061	47,760
Total commercial shipments	1,104,380	988,683	1,033,808

Table continued on next page.

**Table II-1 – Continued**

**TRBs: U.S. producers' and importers' value and share of U.S. commercial shipments of TRBs, by sources and channels of distribution, 2015-17**

Item	Period		
	Calendar year		
	2015	2016	2017
<b>Share of commercial shipments (percent)</b>			
<b>U.S. producers' U.S. commercial shipments of TRBs:</b>			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total	***	***	***
<b>U.S. importers' U.S. commercial shipments of certain TRBs from Korea:</b>			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total	***	***	***
<b>U.S. importers' U.S. commercial shipments of TRBs from nonsubject sources:</b>			
Distributors	***	***	***
End users	***	***	***
Automotive	***	***	***
Heavy equipment/industrial	***	***	***
Agricultural	***	***	***
Other	***	***	***
Total	***	***	***
<b>U.S. commercial shipments of TRBs from all sources:</b>			
Distributors	26.5	28.0	29.4
End users	73.5	72.0	70.6
Automotive	43.4	44.9	40.6
Heavy equipment/industrial	9.9	9.3	8.3
Agricultural	15.3	13.2	17.0
Other	4.8	4.6	4.6
Total	100.0	100.0	100.0

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

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

### **GEOGRAPHIC DISTRIBUTION**

U.S. producers and subject importers reported selling TRBs to all regions (table II-2). For U.S. producers, 15.3 percent of sales were within 100 miles of their production facility, 71.7 percent were between 101 and 1,000 miles, and 13.0 percent were over 1,000 miles. Importers sold 39.5 percent within 100 miles of their U.S. point of shipment, 58.7 percent between 101 and 1,000 miles, and 1.8 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	Subject U.S. importers
Northeast	4	4
Midwest	6	6
Southeast	5	5
Central Southwest	5	4
Mountain	3	4
Pacific Coast	5	4
Other <sup>1</sup>	2	1
All regions (except Other)	3	4
Reporting firms	6	6

<sup>1</sup> 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 Korea.

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

Country	Capacity (1,000 complete 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	116,147	114,420	68.6	66.5	***	***	***	***	1 of 7
Korea	***	***	***	***	***	***	***	***	1 of 3

Note.—The seven responding U.S. producers accounted for the vast majority of U.S. production of TRBs in 2017. Two responding foreign producer/exporter firms, \*\*\*, accounted for virtually all of U.S. imports of TRBs from Korea during 2017. For additional data on the responding firms and their share of U.S. production and of U.S. imports from Korea, please refer to Part I, "Summary data and data sources."

Note.—Data reported for U.S production includes TRBs of all sizes and data reported for Korean production includes subject merchandise only.

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 capacity and production declined 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, indicating 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 \*\*\*. 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.

Six of seven responding U.S. producers stated that they could not switch production from TRBs to other products. \*\*\* stated that it could produce \*\*\*. The main factor limiting U.S. producers' ability to shift production is machinery configuration that cannot be easily modified to produce other products.

## **Subject imports from Korea**

Based on available information, producers of subject TRBs from Korea have the ability to respond to changes in demand with large 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, the 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.

Korean capacity utilization increased from 2015 to 2017 as increased production outpaced capacity growth. The relatively moderate level of capacity utilization suggests that Korean producers may have some ability to increase production of TRBs in response to an increase in prices. Korean shipments to markets other than the United States, as a percentage of total shipments, decreased. Korean exports indicate that producers may have ample ability to shift shipments between domestic or other markets and the U.S. market in response to price changes. Korean firms' inventories increased, relative to total shipments, from 2015 to 2017. Inventory levels suggest that responding Korean firms may have some ability to respond to changes in demand with changes in the quantity shipped from inventories.

Two Korean producers, \*\*\* stated that they could not switch production from TRBs to other products while \*\*\* stated that it could also produce \*\*\*.

## Supply constraints

All seven responding U.S. producers and 26 of 28 responding importers reported that they did not experience supply constraints since January 1, 2015. Importer \*\*\* stated that it experienced long lead times and sometimes refused orders due to lead time uncertainty since July 2017. Timken stated that an unanticipated expansion from the heavy truck market in January 2017 to September/October 2017 led to a rapid demand increase sometimes requiring air freight shipment.<sup>10</sup>

Eleven of 38 purchasers reported experiencing supply constraints with respect to domestically produced TRBs, one with respect to TRBs imported from Korea, and five with respect to TRBs imported from all other sources. For domestic TRBs, purchasers cited backorders, late shipments, and reduced capacity from Timken and long lead times in general from U.S. manufacturers. Purchaser \*\*\* stated that it experienced isolated delivery issues with imported product from Korea and other countries. Purchaser \*\*\* stated that in mid-August 2017 it was informed that LYC North America would not be importing additional TRBs. Purchaser \*\*\* stated that there were several occurrences in 2016 and 2017, where its European supplier could not deliver TRBs in a timely manner, and that it used Korean TRBs to avoid impacting its production schedule.

Sixteen purchasers reported that the availability of domestically produced TRBs had changed since January 1, 2015. Specifically, purchasers cited delivery issues with Timken, and an inability of U.S. producers to meet increasing demand. Two purchasers reported that the availability of TRBs imported from Korea and nine purchasers reported that the availability of TRBs imported from other countries in the U.S. market had changed since January 1, 2015. Purchaser \*\*\* stated that there is more available capacity in Korea. Three purchasers reported increased availability of TRB imports from China. Purchaser \*\*\* stated that imports from India and Europe have become more available as new producers in India have installed capacity and Timken expanded existing capacity in India, and as European-based manufacturers have offered attractive commercial terms and engineering expertise.

Nine purchasers reported that certain types of TRBs are available only from certain country sources. Purchaser \*\*\* stated that under 8-inch tapers of premium quality are available only from Korea. Purchaser \*\*\* stated that case carburized TRBs are mostly available in the United States although \*\*\* stated that case carburized TRBs are available only from Japan. Purchasers \*\*\* stated that metric sizes are not available from U.S. producers and that some metric size bearings are only produced in Japan.

Purchasers were asked if any suppliers had implemented policies that caused them to diversify suppliers; nine of 39 firms reported they had. Two purchasers, \*\*\*, identified a “massive” price increase (30-40 percent) from Timken in 2008-10 that caused them to diversify supply sources. Purchaser \*\*\* stated that it explored other sourcing options because of TRB price increases resulting from increased demand. Purchaser \*\*\* stated that inventories are one of many factors it considers for diversifying its suppliers, and that certain U.S. producers have

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<sup>10</sup> Hearing transcript, p. 106 (Coughlin).

refused to increase their inventories to hedge against the risk of supply disruptions, but that European and Korean suppliers have increased safety stocks by 50 percent in certain cases.

### **Imports from nonsubject sources**

Imports from nonsubject sources accounted for nearly 90 percent of the value of total U.S. imports in 2017. The largest sources of nonsubject imports were China and Japan. Imports, by value, from these two countries combined accounted for 44 percent of all TRB imports from nonsubject sources.

### **New suppliers**

Five of 39 purchasers indicated that new suppliers entered the U.S. market since January 1, 2015. Purchasers cited importers Schaeffler (Korea), NRB India, ZWZ (China), and Iljin (Korea).

### **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 of 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 where the 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)
- Axle (3-15 percent)
- Three-way catalytic converter (TWC) transfer case (6 percent)
- Lawn/Garden equipment (15 percent)
- Wheel hub assemblies (1-15 percent)
- Power transfer unit (PTU) (2-20 percent)
- Gear Boxes (1-25 percent)
- Conveyor roller (60 percent)

Petitioner Timken estimated that 4 to 12 TRBs are used in a typical passenger vehicle, 8 to 6 are used in an SUV, 10 to 18 are used in a light truck, and 24 are used on all tandem axle

trucks.<sup>11</sup> Respondents estimated that 2 TRBs are used in front-wheel drive vehicles (sedans and small SUVs), 4 are used in rear-wheel drive vehicles (higher-end sedans and sports cars), 10 are used in all-wheel drive vehicles (primarily SUVs), and 8 are used in four-wheel drive vehicles (pickup trucks, larger and performance SUVs).<sup>12</sup>

## **Business cycles**

Six of seven responding U.S. producers, 25 of 29 importers, and 34 of 38 responding purchasers indicated that the market was not subject to business cycles or conditions of competition. Importers \*\*\* and purchaser \*\*\* reported that the business cycle of TRBs is dependent on the business cycles in the end-use markets, such as construction, agriculture, and heavy-duty truck. Purchaser \*\*\* described the distinct conditions of competition as technical because TRBs require extensive design development, testing, and validation cycles which last one to three years.

One U.S. producer, four importers, and five purchasers reported that there have been changes in the business cycles or conditions of competition for TRBs since January, 1, 2015. Specifically, importer \*\*\* reported fluctuations in demand driven by specific applications, as well as the general economy, which it characterized as “somewhat depressed” in 2016. It continued that most end-use markets also followed this trend, except the automotive market, which strengthened from January 2014 until early 2017. Importer \*\*\* stated that the automotive market has been expanding while the agricultural and industrial equipment markets have stagnated. Importer \*\*\* stated that automotive light vehicle production has reached an all-time high in North America but that the industrial equipment sector is in decline. Purchaser \*\*\* stated that it has seen extended lead times from manufacturers as business conditions improved in large bore products. Purchaser \*\*\* stated that Korean, Polish, and Chinese suppliers have increased their market share since 2015. Purchaser \*\*\* stated that mining equipment demand has “surged” and rail demand has “plunged”. Petitioner stated that since 2014, automotive, light truck, and wind energy demand has increased, while heavy truck demand has declined, off-the-road truck demand has been in a period of soft demand, and general industrial equipment demand has experienced some recovery.<sup>13</sup>

As TRBs are used in many and varied industries, overall GDP growth generally influences overall demand. Real GDP growth was positive between January 2015 and December 2017; annual growth peaked at 3.2 percent in the first quarter of 2015 and the third quarter of 2017 (figure II-2).<sup>14</sup>

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<sup>11</sup> Petitioner’s Posthearing Brief, exh. 23

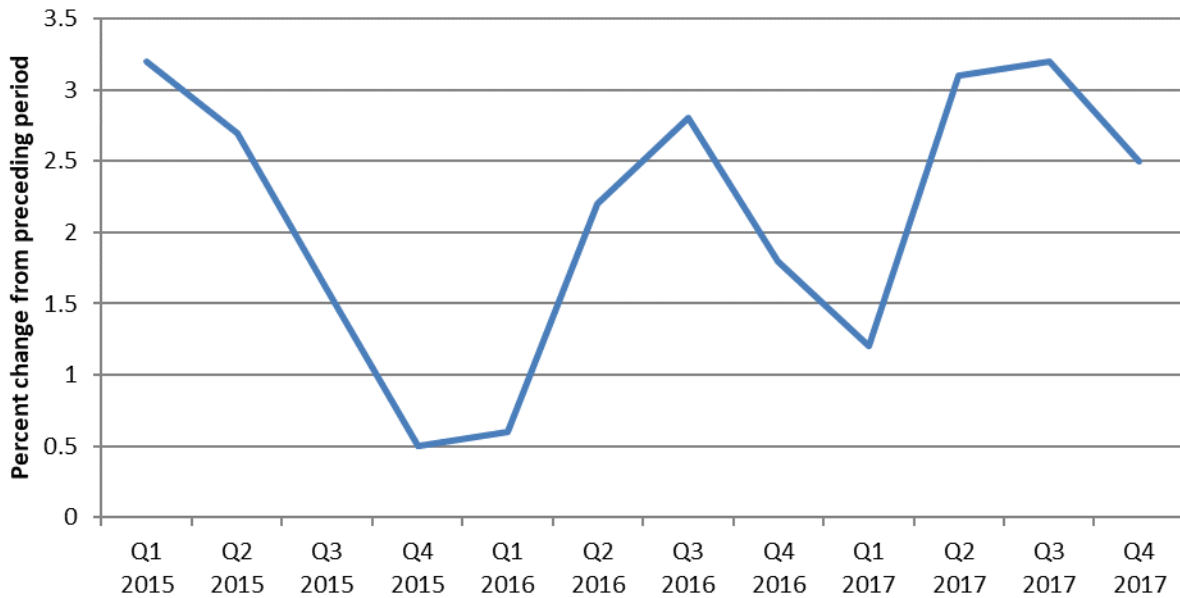
<sup>12</sup> Respondent’s Joint Posthearing Brief, Responses to the Commission’s written questions, pp. 3-4.

<sup>13</sup> Petitioner’s Postconference Brief, Answers to Staff Questions #11, p. 1.

<sup>14</sup> Real GDP increased at an annual rate of 2 percent in the first quarter of 2018.

**Figure II-2**

**Real gross domestic product, seasonally adjusted annual rates, January 2015-December 2017**



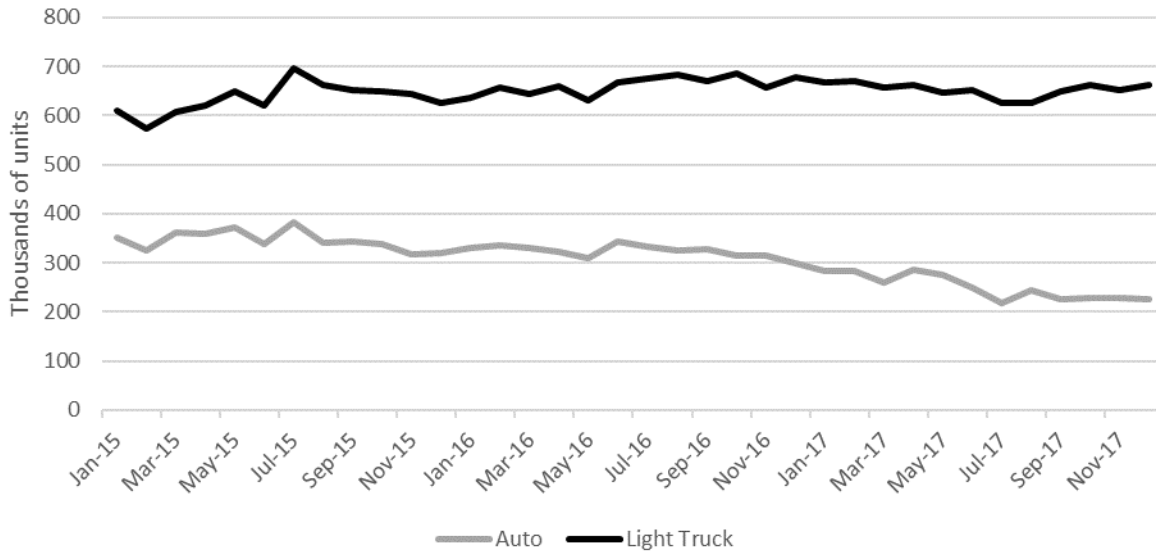
Source: Bureau of Economic Analysis, <https://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm>, accessed June 28, 2018.

During January 2015-December 2017, seasonally adjusted domestic auto production declined by 36 percent while light truck production increased by 9 percent (figure II-3).<sup>15</sup> Overall, production declined 7 percent from January 2015-December 2017.

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<sup>15</sup> Domestic auto production increased 14 percent and light truck production increased by 5 percent from December 2017 to April 2018.

**Figure II-3**  
**U.S. auto and light truck production, seasonally adjusted, January 2015-December 2017**



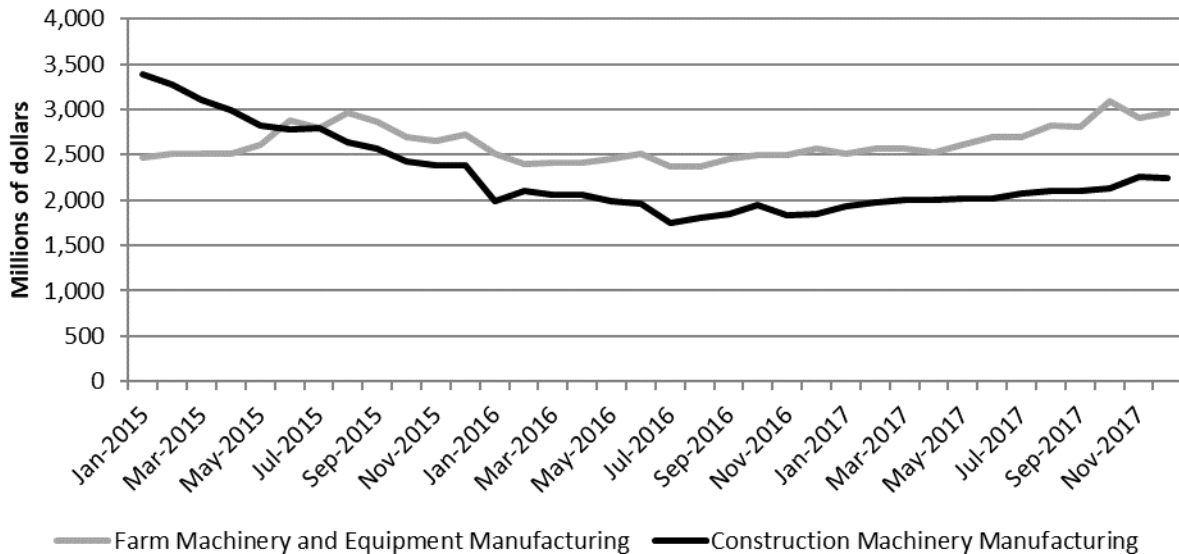
Sources: Bureau of Economic Analysis, [https://www.bea.gov/national/xls/gap\\_hist.xlsx](https://www.bea.gov/national/xls/gap_hist.xlsx). Ward's Automotive Yearbook. Federal Reserve Board, <https://www.federalreserve.gov/releases/g17/mvsf.htm>, accessed June 4, 2018.

U.S. farm machinery and equipment manufacturing grew by 20 percent while construction machinery manufacturing declined by 34 percent during January 2015-December 2017 (figure II-4).<sup>16</sup>

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<sup>16</sup> U.S. farm machinery and equipment manufacturing grew by 7 percent and construction machinery manufacturing grew by 1 percent during December 2017 to April 2018.

**Figure II-4**  
**U.S. total farm machinery and equipment and construction machinery manufacturing, seasonally adjusted value of shipments, millions of dollars, January 2015-December 2017**



Source: U.S. Census Bureau, Manufacturers' Shipments, Inventories, and Orders, <https://www.census.gov/manufacturing/m3/index.html>, accessed March 27, 2018.

### Demand trends

Firms reported mixed trends in U.S. demand for TRBs since January 1, 2015 (table II-4). With respect to overall demand changes, responding U.S. producers were split between declining and fluctuating demand, most responding importers were split between increasing demand and no change in demand, and most responding purchasers were split between increasing and fluctuating demand since January 1, 2015. Responding U.S. producers were also split between declining and fluctuating demand in the automotive sector, while a plurality of responding importers and purchasers reported that demand increased. Most responding firms reported that demand declined or fluctuated in the agricultural and heavy equipment/industrial sectors since January 1, 2015.

Generally, firms cited fluctuating demand due to economic cycles and varying trends in different end-use markets. Importers \*\*\* stated that the original equipment manufacturer (OEM) market continues to drive growth. Importer/purchaser \*\*\* stated that it anticipates that the TRB market will decline as the OEM market continues to move toward “bearings inside hub assemblies.”

**Table II-4**

**TRBs: Firms' responses regarding U.S. demand and demand outside the United States**

Item	Increase	No change	Decrease	Fluctuate
<b>Overall demand in the United States</b>				
U.S. producers	---	---	3	3
Importers	9	8	5	4
Purchasers	8	4	3	7
<b>Automotive demand in the United States</b>				
U.S. producers	---	---	2	2
Importers	7	5	4	5
Purchasers	11	6	1	6
<b>Agricultural demand in the United States</b>				
U.S. producers	---	---	2	2
Importers	2	4	7	3
Purchasers	---	4	5	5
<b>Heavy equipment/industrial demand in the United States</b>				
U.S. producers	---	---	2	2
Importers	3	3	6	4
Purchasers	6	3	5	8
<b>Demand outside the United States</b>				
U.S. producers	1	1	1	4
Importers	6	3	2	6
Purchasers	7	2	3	4
<b>Demand for end use products</b>				
Purchasers	13	3	4	11

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

With respect to changes in demand in the automotive sector, \*\*\* stated that demand trends for TRBs generally follow vehicle production rates, which have been down slightly since January 1, 2015. Purchaser \*\*\* stated that demand for TRBs in automotive and truck applications has grown since January 1, 2015 and that there has been a cyclical increase in truck purchasing. Purchaser \*\*\* stated that demand for new trucks and replacement parts have increased over the last three years. Importer \*\*\* stated that automotive vehicle builds in 2015 and 2016 were at record highs and 2017 build was also high but slightly lower. Importer \*\*\* stated that vehicle production volume has grown overall since January 1, 2015, despite year-over-year declines in 2016 and 2017. Importer \*\*\* stated that U.S. OEM customers, such as Ford, GM, FCA, and their Tier 1 suppliers expanded production and ramp-up projects, such as the Ford 10/12 speed transmission, in which TRBs are used.

Regarding demand changes in the agricultural sector, importer \*\*\* stated that demand was sluggish from 2015 to 2017 but rebounded in 2018. It further stated that John Deere's net sales declined substantially from 2013-16 and increased slightly in 2017.

Lastly, with respect to the heavy equipment/industrial sector, two purchasers (\*\*\*) cited increased demand for mining equipment while one purchaser (\*\*\*) stated that overall the mining industry is down. Purchaser \*\*\* stated that the U.S. commercial vehicle (Class 8) market "slumped" markedly in 2016 from high 2015 levels and recovered somewhat in 2017, and that the off-highway vehicle market surged by approximately 40 percent globally in 2017. Purchaser \*\*\* stated that rail requirements have "plunged". Purchaser \*\*\* cited a downturn in the oil and gas industry.



## **Substitute products**

Half of responding U.S. producers, 23 of 27 responding importers, and 35 of 39 responding purchasers reported that there are no substitutes for TRBs. Reported substitutes for TRBs include ball, cylindrical, and spherical roller bearings for use in axle, transmission, wheels, and spindles. Other bearings may be substituted for TRBs while an application is being engineered. However, once an application is engineered, other types of bearings can generally not be substituted for TRBs.<sup>17</sup> Importers \*\*\* reported that changes in ball bearing prices can affect the price for TRBs.

## **SUBSTITUTABILITY ISSUES**

The degree of substitution between domestic and imported TRBs depends upon such factors as relative prices, quality (e.g., grade standards, reliability of supply, defect rates, etc.), and conditions of sale (e.g., price discounts/rebates, lead times between order and delivery dates, payment terms, product services, etc.). TRBs sold to OEMs are produced to specific end-use applications and TRB suppliers must go through rigorous certification processes, particularly in the automotive sector. Based on available data, staff believes that there is a moderate degree of substitutability between domestically produced TRBs and subject TRBs imported from Korea.

### **Lead times**

U.S. producers reported that they sell produced-to-order TRBs or from TRBs inventory while importers reported that they sell TRBs from inventory. U.S. producers reported that \*\*\* of their commercial shipments were produced-to-order, with lead times averaging \*\*\* days. The remaining \*\*\* of their commercial shipments came from inventories. Four U.S. producers reported lead times from inventory between 1 and 7 days and one reported lead times of 90 days; one firm did not report shipments from inventory. Importers reported that \*\*\* percent of their commercial shipments were from U.S. inventories, with a lead time of \*\*\* days, and \*\*\* percent were from foreign inventories, with a lead time of \*\*\* days. The remaining \*\*\* percent of their commercial shipments were produced-to-order, with a lead time of \*\*\* days.<sup>18</sup>

### **Knowledge of country sources**

Thirty-seven purchasers indicated they had marketing/pricing knowledge of domestic product, 18 of TRB imports from Korea, 22 of TRB imports from China, 24 of TRB imports from Japan, and 27 of other nonsubject countries, including Brazil, Canada, Chad, Europe (Austria,

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<sup>17</sup> Conference transcript, p. 78 (Coughlin) and pp. 148-149 (Kreifels).

<sup>18</sup> TRBs imported from Korea are \*\*\* sold to OEMs, which purchase customized TRBs under long-term contracts. These reported sales from inventory are generally held for specific customers.

France, Germany, Hungary, Italy, Poland, Romania, Slovakia, Spain, and Ukraine), India, and Mexico.

As shown in table II-5, most purchasers always or usually make purchasing decisions based on the producer while their customers sometimes or never do. Most purchasers and their customers sometimes or never make purchasing decisions based on the country of origin. Of the 24 purchasers that reported that they always or usually make decisions based on the manufacturer, eight firms cited ability to meet specifications and technical performance. Other reasons cited include quality, cost, reliability, and supplier relationship.

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

<b>Purchaser/Customer decision</b>	<b>Always</b>	<b>Usually</b>	<b>Sometimes</b>	<b>Never</b>
Purchaser makes decision based on producer	12	12	4	11
Purchaser's customers make decision based on producer	1	6	14	12
Purchaser makes decision based on country	3	3	16	16
Purchaser's customers make decision based on country	---	4	12	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 (30 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 21 firms), followed by price (6 firms); availability/supply was the most frequently reported second-most important factor (12 firms), followed by price (10 firms); and price was the most frequently reported third-most important factor (17 firms), followed by delivery/lead times (10 firms). Ability to meet product specifications and technical capabilities were cited by 10 purchasers as important factors.

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

<b>Factor</b>	<b>First</b>	<b>Second</b>	<b>Third</b>	<b>Total</b>
Price/cost	6	10	17	33
Quality	21	8	1	30
Delivery/lead times	1	7	10	18
Availability/supply	---	12	4	16
Specification/performance/technology	3	3	4	10
Other <sup>1</sup>	8	---	2	10

<sup>1</sup> Other factors include customer preference, traditional supplier, brand, warranty, capacity, range of product line, and contracts.

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

The majority of purchasers (30 of 39) reported that they usually (16 firms) or sometimes (14) purchase the lowest-priced product.

Eleven of 38 responding purchasers reported purchasing TRBs from one source although a comparable product was available at a lower price from another source. Reported reasons include customer specification, quality, premium bearing suppliers are often located in the

United States, and TRBs with advanced technology are produced in the United States, Europe, and Korea.

### Importance of specified purchase factors

Purchasers were asked to rate the importance of 16 factors in their purchasing decisions (table II-7). The nine factors rated as very important by more than half of responding purchasers were product consistency (38), reliability of supply (36), quality meets industry standards (35), availability (34), price (31), delivery time (29), quality exceeds industry standards (26), technical support/service (26), and long-term business relationship (25).

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

Factor	Very important	Somewhat important	Not important
Availability	34	6	---
Delivery terms	20	17	2
Delivery time	29	8	2
Discounts offered	12	20	7
Extension of credit	10	15	14
Long term business relationship	25	13	1
Minimum quantity requirements	10	17	12
Packaging	8	25	7
Price	31	8	---
Product consistency	38	---	1
Product range	11	21	7
Quality meets industry standards	35	3	---
Quality exceeds industry standards	26	11	1
Reliability of supply	36	3	---
Technical support/service	26	11	2
U.S. transportation costs	11	22	5

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

### Supplier certification

Thirty of 39 responding purchasers require their suppliers to become certified or qualified to sell TRBs to their firm. Fourteen purchasers reported that the time to qualify a new supplier was one year or less while eight reported the time to qualify a new supplier was more than one year. Generally, purchasers conduct extensive quality control tests, including providing samples and dynamic load testing, as well as audits of the suppliers' financials.

Specifically, purchaser \*\*\* reported that its \*\*\* timeline to certify is based on end-to-end process which includes a standard on-site quality audit, review of performance, financials, ISO certifications, and other requirements and that timing can be extended depending on extent of sample and production trial requirements.

Purchaser \*\*\* stated that it has a substantial certification process to qualify a new supplier and that this process involves an application specification tender, in which the supplier will submit design recommendations and analysis of bearing life expectancy, application testing, site audits to ensure that robust quality operating systems are in place within the entire

product development and production processes, and a \*\*\* proving that the parts meet all required characteristics and that the manufacturing process is capable of producing quality parts. \*\*\* stated that, in some cases, field testing is also required for 6-12 months to ensure that bearings will perform as anticipated.

Purchaser \*\*\* stated that it must develop a general idea of a supplier’s technical ability to consistently meet its specifications and ensure it is commercially competitive in terms of delivery, payment terms, price, and other factors.<sup>19</sup>

Two purchasers (\*\*\*) reported that since 2015 suppliers \*\*\* had failed in their attempt to qualify TRBs, or had lost its approved status due to substandard quality. In addition, purchaser \*\*\* stated that it had bearings planned for production with \*\*\* but the design proposals were rejected for not meeting all requirements. According to \*\*\*, \*\*\* is working on alternate design options so it will likely eventually be approved. It also stated that \*\*\*, but design proposals for \*\*\* were rejected for not meeting all requirements. \*\*\* further noted that no TRB suppliers/developments have failed at the testing stage.

### Changes in purchasing patterns

Purchasers were asked about changes in their purchasing patterns from different sources since January 1, 2015 (table II-8); reasons reported for changes in sourcing included customer and market demand driven changes, volume, competitive sourcing, availability, product mix, and new product launches.

Fifteen of 39 responding purchasers reported that they had changed suppliers since January 1, 2015. Specifically, firms dropped or reduced purchases from Timken, NSK, SKF, and Federal Mogul and added purchases from ZWZ, Iljin, Schaeffler, NTN/BCA, and Timken because of cost, quality, delivery availability, and strategic diversification.

**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	7	7	12	8
Korea	13	1	6	9	3
China	12	---	6	10	4
Japan	11	2	7	8	4
Other	6	2	5	11	7
Sources unknown	12	1	1	5	3

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

<sup>19</sup> \*\*\* certification process includes: initial RFQ and terms discussion (\*\*\*) days), initial scout visit and further term discussion (\*\*\*) days), audits and audit actions to address (\*\*\*) days), engineering design work (\*\*\*) days), development and review of simulation tests (\*\*\*) days), technical review meeting and actions to address (\*\*\*) days), prototype order and delivery (\*\*\*) days), internal validation testing (\*\*\*) days), engineering review of validation results (\*\*\*) days), shipment of samples (\*\*\*) days), review of documents (\*\*\*) days), assembly trials (\*\*\*) days), and full approval and production release.

## Importance of purchasing domestic product

Most purchasers (34) reported that purchasing U.S.-produced product was not a requirement in their purchasing decisions. Six reported that domestic product was required by law (for 1 to 3 percent of their purchases), and six reported it was required by their customers (for 3 to 50 percent of their purchases).

### Comparisons of domestic products, subject imports, and nonsubject imports

Purchasers were asked a number of questions comparing TRBs produced in the United States, Korea, and nonsubject countries. First, purchasers were asked for a country-by-country comparison on the same 16 factors (table II-9) for which they were asked to rate the importance.

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

Factor	U.S. vs. Korea			U.S. vs. China			U.S. vs. Japan		
	S	C	I	S	C	I	S	C	I
Availability	1	12	2	5	17	1	2	20	1
Delivery terms	1	12	2	3	18	2	2	20	1
Delivery time	3	11	2	8	11	4	5	16	1
Discounts offered	1	12	2	3	16	4	---	21	1
Extension of credit	1	10	2	2	16	3	---	20	1
Long term business relationship	2	14	---	5	19	---	3	20	---
Minimum quantity requirements	1	14	---	2	21	---	---	23	---
Packaging	1	14	---	2	21	---	1	22	---
Price <sup>1</sup>	1	13	2	2	5	15	---	15	7
Product consistency	1	15	1	7	14	2	1	22	---
Product range	4	12	---	5	19	---	3	20	---
Quality meets industry standards	2	13	1	5	17	2	1	21	1
Quality exceeds industry standards	3	11	1	8	13	1	2	19	1
Reliability of supply	2	12	1	2	20	1	2	20	---
Technical support/service	3	13	---	8	14	2	3	19	---
U.S. transportation costs <sup>1</sup>	2	12	1	6	16	1	3	18	2

Table continued on next page.

**Table II-9--Continued**

**TRBs: Purchasers' comparisons between U.S.-produced and imported product**

Factor	Korea vs. China			Korea vs. Japan		
	S	C	I	S	C	I
Availability	1	11	---	---	9	1
Delivery terms	---	12	---	---	10	---
Delivery time	---	13	---	---	9	1
Discounts offered	---	10	2	1	9	---
Extension of credit	---	11	---	1	8	---
Long term business relationship	3	9	---	---	9	1
Minimum quantity requirements	2	10	---	---	10	---
Packaging	---	12	---	---	10	---
Price <sup>1</sup>	1	5	7	1	8	1
Product consistency	4	9	---	---	10	---
Product range	2	9	2	---	9	1
Quality meets industry standards	5	8	---	---	10	---
Quality exceeds industry standards	5	7	---	---	9	---
Reliability of supply	4	9	---	---	10	---
Technical support/service	6	7	---	---	10	---
U.S. transportation costs <sup>1</sup>	---	12	1	1	8	1
Factor	U.S. vs. other countries			Korea vs. other countries		
	S	C	I	S	C	I
Availability	3	17	1	1	10	---
Delivery terms	2	19	---	---	11	---
Delivery time	7	13	2	---	11	1
Discounts offered	2	14	4	1	9	1
Extension of credit	2	13	3	1	7	1
Long term business relationship	3	17	1	2	9	---
Minimum quantity requirements	3	18	---	---	11	---
Packaging	2	19	---	---	10	1
Price <sup>1</sup>	1	17	4	1	11	---
Product consistency	3	19	---	1	11	---
Product range	7	13	2	---	9	3
Quality meets industry standards	3	19	---	1	11	---
Quality exceeds industry standards	7	14	---	2	9	---
Reliability of supply	3	19	---	2	9	1
Technical support/service	6	16	---	2	10	---
U.S. transportation costs <sup>1</sup>	6	15	1	---	12	---

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

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

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

Most responding purchasers reported that U.S. TRBs and TRBs imported from Korea were comparable on all 16 factors. Most purchasers reported that U.S. TRBs and TRBs from nonsubject sources were comparable on all factors, except the United States was reported as inferior to China with respect to price.

## 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 Korea, U.S. producers, importers, and purchasers were asked whether the products can always, frequently, sometimes, or never be used interchangeably. Four of the 5 responding U.S. producers reported that domestically produced TRBs and TRBs imported from Korea are always or frequently interchangeable, and one, \*\*\*, indicated that they are sometimes interchangeable. A plurality of purchasers reported that these sources were frequently interchangeable and a plurality of responding importers reported they are sometimes interchangeable (table II-10).

**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	
<b>U.S. vs. subject countries:</b>													
U.S. vs. Korea	2	2	1	---	3	5	7	1	6	8	5	2	
<b>Nonsubject countries comparisons:</b>													
U.S. vs. China	1	2	2	---	3	8	9	2	8	10	8	2	
U.S. vs. Japan	2	3	2	---	4	4	7	1	13	12	3	1	
U.S. vs. other countries	2	1	3	---	3	6	8	2	8	14	4	2	
Korea vs. China	---	2	2	---	1	6	6	1	3	5	9	3	
Korea vs. Japan	1	1	2	---	3	4	6	1	6	8	4	2	
Korea vs. other countries	1	1	2	---	2	4	6	1	5	8	5	3	
China vs. Japan	---	2	2	---	1	6	6	1	7	7	8	2	
China vs. other countries	---	2	2	---	1	5	6	1	6	8	6	3	
Japan vs. other countries	1	1	3	---	2	4	7	1	9	12	3	1	

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

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

Factors affecting interchangeability include quality, design, delivery requirements, and ability to meet standards. Supplier certification requirements may also limit interchangeability. Firms noted that manufacturer approval based on the application in which the TRBs will be used makes TRBs from different producers not interchangeable. U.S. producer \*\*\* stated that TRB quality is typically a factor of raw material and/or manufacturing capability. Importer \*\*\* reported that Korean and Japanese TRBs are better quality than U.S.-produced TRBs and quality is a critical factor for use in auto transmissions. Importer \*\*\* stated that TRBs are mostly interchangeable for standardized items but not for some customized ones. Importer \*\*\* stated that TRBs sold to OEM or Tier 1 customers are not interchangeable once customized to customer requirements and that changing the TRB supplier takes 18-24 months. It continued that Chinese-made TRBs are somewhat interchangeable with other sources as they are usually made to lower specifications, fitting the local Chinese market. \*\*\* stated that the TRBs it

purchases are engineered parts which bear unique \*\*\* part numbers, that each part must go through a rigorous validation process before it may be purchased, and that, in some cases, the design is specific to one supplier.

Petitioner stated that major Korean producers such as Iljin and Schaeffler produce many of the same part numbers that Timken produces and that TRBs are completely interchangeable within part numbers.<sup>20</sup> Petitioner also stated that, for any given part number, there will be various iterations of the part to address different needs of different customers and these different iterations can result in different prices depending on the nature of the change.<sup>21</sup> Respondents stated that the cups and/or cones from one part number are rarely, if ever, capable of being used for another part number and that angles, diameters, and lengths are all specific to a part series. A series is a base part number that may have different cone bores and cup outer diameters to fit into a specific application, thereby making cups and cones from different series not interchangeable. Also, there can be several versions of the same ABMA part number with different physical features, such as surface finish, heat treatments, type of steel used, roller and raceway profiling, and other variations, contributing to different price points. Each producer can manufacture variations of the standard ABMA part number by using inspection codes or part number suffixes.<sup>22</sup> Respondents also stated that 90 percent of the TRBs for automotive brands are custom-made.<sup>23</sup>

As can be seen from table II-11, 17 responding purchasers reported that domestically produced TRBs always met minimum quality specifications and 11 responding purchasers reported that TRBs imported from Korea always met minimum quality specifications. Purchasers reported quality characteristics that include durability, OEM fit, form and function, consistency with specifications, load requirements, noise, vibration, engineering, product life, testing results, and hardness.

**Table II-11**  
**TRBs: Ability to meet minimum quality specifications, by source<sup>1</sup>**

Source	Always	Usually	Sometimes	Rarely or never
United States	17	15	---	---
Korea	11	6	---	---
China	9	11	3	---
Japan	15	13	---	---
Other	9	11	---	---

<sup>1</sup> 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.

<sup>20</sup> Conference transcript, p. 20 (Coughlin).

<sup>21</sup> Petitioner's posthearing brief, exh. 10 pp.4-5.

<sup>22</sup> Respondent's joint posthearing brief, responses to the Commission's written questions, pp. 1-3.

<sup>23</sup> Hearing transcript, p. 236 (Schuster).



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, Korea, or nonsubject countries. As seen in table II-12, all responding U.S. producers and most responding importers reported that there are sometimes or frequently significant differences other than price while most responding purchasers reported that there are always or sometimes significant differences that factor into sales of TRBs when comparing domestically produced TRBs and TRBs imported from Korea. Generally, these factors include availability, quality, design, engineering capability, product range, and technical support. Importer \*\*\* stated that quality is more important than price.

**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
<b>U.S. vs. subject countries:</b> U.S. vs. Korea	---	2	2	---	2	6	7	---	8	3	7	3
<b>Nonsubject countries comparisons:</b> U.S. vs. China	---	3	2	---	1	7	11	1	9	4	12	3
U.S. vs. Japan	---	2	5	---	1	6	9	---	8	5	10	6
U.S. vs. other countries	---	3	3	---	1	8	9	---	8	6	10	5
Korea vs. China	---	1	3	---	1	4	8	---	7	3	9	1
Korea vs. Japan	---	2	2	---	---	5	8	---	5	5	5	2
Korea vs. other countries	---	1	3	---	---	4	8	---	6	4	7	3
China vs. Japan	---	2	2	---	---	5	7	1	6	4	10	1
China vs. other countries	---	1	3	---	---	4	8	---	7	4	11	2
Japan vs. other countries	---	2	3	---	---	5	8	---	6	5	9	4

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 in their prehearing or posthearing brief. Party comments are presented and addressed below.

### **U.S. supply elasticity**

The domestic supply elasticity<sup>24</sup> 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 has the ability to greatly increase or decrease shipments to the U.S. market based on unused capacity and available inventories, as well as the ability to shift shipments from alternative markets; an estimate in the range of 4 to 6 is suggested.

### **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. Because of a lack of substitutes and low cost share, the aggregate demand for TRBs is likely to be highly inelastic; a range of -0.2 to -0.4 is suggested.

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<sup>24</sup> A supply function is not defined in the case of a non-competitive market.

## Substitution elasticity

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.<sup>25</sup> 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 from Korea is likely to be in the range of 2 to 4. Petitioner Timken stated that it believes that this estimate is low because of the “unusually high comparability ratings on all factors considered by purchasers.”<sup>26</sup> Staff notes that while purchasers rated purchase factors between the United States and Korea as comparable, TRBs sold to automotive end users are highly customized before production begins. Nearly \*\*\* TRBs imported from Korea are sold into this channel while about one-third of domestically produced TRBs are sold to automotive end users. Firms were mixed in their responses on interchangeability and factors other than price due to the certification and specification process. Lastly, nearly \*\*\* TRBs imported from Korea are sold under long-term contracts while domestically produced TRBs are sold under long-term contracts, short-term contracts and spot sales.<sup>27</sup> Taking these factors into consideration, staff continues to estimate the elasticity of substitution to be in the range of 2 to 4.

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<sup>25</sup> 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.

<sup>26</sup> Hearing transcript, p. 59 (Stewart).

<sup>27</sup> See Part V.



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

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the dumping margins was presented in *Part I* of this report and information on the volume and pricing of imports of the subject merchandise is presented in *Part IV* and *Part V*. Information on the other factors specified is presented in this section and/or *Part VI* and (except as noted) is based on the questionnaire responses of seven firms that accounted for the vast majority of U.S. production of TRBs during 2017.<sup>1</sup>

### **U.S. PRODUCERS**

The Commission issued a U.S. producer questionnaire to 15 firms based on information contained in the petition and industry research. Seven firms provided usable data on their productive operations.<sup>2</sup> Staff believes that these responses represent the vast majority of U.S. production of TRBs.

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

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<sup>1</sup> As discussed in Part I of this report, in the preliminary phase of this investigation, the Commission concluded that the appropriate domestic like product included TRBs of all sizes, but not further manufactured TRBs such as wheel hub units, cages entering separately, or unfinished parts. This report presents U.S. producers' operations for TRBs of all sizes, consistent with the Commission's domestic like product determination in the preliminary phase.

<sup>2</sup> Five companies, \*\*\*, certified that they had not produced TRBs since January 1, 2015. \*\*\*. Staff correspondence with \*\*\*, June 12, 2018. \*\*\*.

**Table III-1**

**TRBs: U.S. producers, their positions on the petition, production locations, and shares of total shipments and reported production, 2017**

<b>Firm</b>	<b>Position on petition</b>	<b>Production location(s)</b>	<b>Share of TRB total shipments value (percent)</b>	<b>Share of TRB production (percent)</b>
Amsted	***	Petersburg, VA	***	***
Koyo	***	Orangeburg, SC Telford, TN	***	***
NSK	***	Ann Arbor, MI	***	***
NTN-Bower	***	Macomb, IL Hamilton, AL	***	***
Regal Beloit	***	Monticello, IN	***	***
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	***	***
<b>Total</b>			<b>***</b>	<b>***</b>

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

**Table III-2**

**TRBs: U.S. producers' ownership, related and/or affiliated firms**

\* \* \* \* \*

As indicated in table III-2, U.S. producers \*\*\* and \*\*\* are related to foreign producers of subject TRBs from Korea and U.S. producer (\*\*\*) is related to U.S. importers of subject TRBs from Korea. In addition, as discussed in greater detail below, U.S. producer \*\*\* directly imports subject TRBs from Korea and U.S. producer \*\*\* purchases the subject TRBs from Korea from U.S. importers.

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

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

\* \* \* \* \*

**U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION**

Table III-4 and figure III-1 present U.S. producers' production, capacity, and capacity utilization. Domestic producers' TRB production decreased by 4.5 percent during 2015-17, reflecting declining production levels in 2016 and a partial recovery in 2017. An overall 1.5 percent reduction in TRB capacity between 2015 and 2017 reflects \*\*\* lower level of allocated capacity after 2015.<sup>3</sup> Capacity utilization for the U.S. industry decreased by 2.1 percentage points during 2015-17, with a similar decline in 2016 followed by an increase in 2017.

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<sup>3</sup> \*\*\* 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. In addition, \*\*\*. Staff correspondence with \*\*\*, May 15, 2018.

**Table III-4**  
**TRBs: U.S. producers' production, capacity, and capacity utilization, 2015-17**

Item	Calendar year		
	2015	2016	2017
	<b>Capacity (1,000 bearings or bearing equivalents)</b>		
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Total capacity	116,147	114,437	114,420
	<b>Production (1,000 bearings or bearing equivalents)</b>		
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Total production	79,673	73,714	76,112
	<b>Capacity utilization (percent)</b>		
Amsted	***	***	***
Koyo	***	***	***
NSK	***	***	***
NTN-Bower	***	***	***
Regal Beloit	***	***	***
Schaeffler	***	***	***
Timken	***	***	***
Average capacity utilization	68.6	64.4	66.5

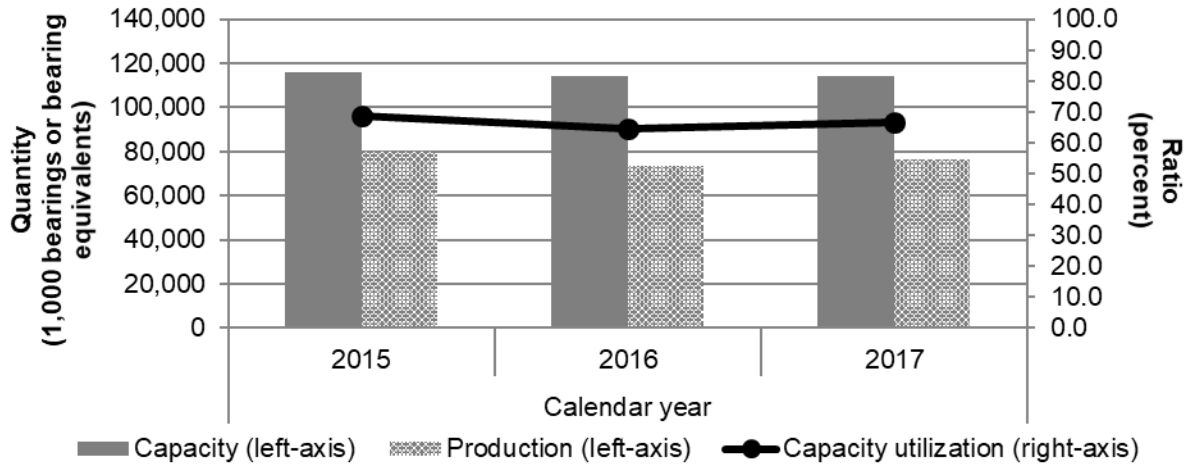
Note.—\*\*\* reported production greater than capacity in 2015 and 2016. Staff adjusted \*\*\* capacity to equal its production. In addition, staff allocated \*\*\* capacity based on a ratio of its total production and overall plant capacity.

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

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



**Figure III-1**  
**TRBs: U.S. producers' production, capacity, and capacity utilization, 2015-17**



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

### Alternative products

\*\*\* and \*\*\* reported production of cylindrical roller bearings on the same equipment and machinery. Between 2015 and 2017, \*\*\*. Production of other products accounted for \*\*\* percent and \*\*\* percent of \*\*\* total 2017 production on the same equipment and machinery, respectively. Only one producer \*\*\* reported the ability to switch production from TRBs to other products (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. Two additional U.S. producers, \*\*\* and \*\*\* 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-5 presents U.S. producers' U.S. shipments, export shipments, and total shipments.<sup>4</sup> Total U.S. shipments by value decreased by 7.4 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).<sup>5</sup>

Four of the seven responding firms reported export shipments, with \*\*. Exports increased by \*\* percent based on value. The vast majority of transfers to related firms were reported by \*\*, and accounted for \*\* during 2015-17.<sup>6</sup> \*\* reported all internally consumed product, which were used for the production of out-of-scope further manufactured TRBs (\*\*). In addition, all shipments of parts were reported by \*\*, with \*\* accounting for the vast majority.

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<sup>4</sup> U.S. producers were asked to report separately any other in-scope parts (finished parts only, not including finished cages) that cannot be converted into bearing equivalents (*e.g.*, parts other than assemblies and cups). These data are presented separately in table III-5 as "Value of parts."

<sup>5</sup> U.S. producers' U.S. shipments consist primarily of commercial shipments. Commercial shipments accounted for \*\* percent of the value of U.S. shipments and \*\* percent of the quantity of U.S. shipments during 2015-17.

<sup>6</sup> \*\*.

**Table III-5**  
**TRBs: U.S. producers' U.S. shipments, exports shipments, and total shipments, 2015-17**

Item	Calendar year		
	2015	2016	2017
	<b>Value of completed bearings or bearing equivalents (1,000 dollars)</b>		
Commercial U.S. shipments	***	***	***
Internal consumption	***	***	***
Transfers to related firms	***	***	***
U.S. shipments	***	***	***
Export shipments	***	***	***
Total shipments	***	***	***
	<b>Value of parts (1,000 dollars)</b>		
Commercial U.S. shipments	***	***	***
Internal consumption	***	***	***
Transfers to related firms	***	***	***
U.S. shipments	***	***	***
Export shipments	***	***	***
Total shipments	***	***	***
	<b>Total value (bearings and parts) (1,000 dollars)</b>		
Commercial U.S. shipments	***	***	***
Internal consumption	***	***	***
Transfers to related firms	***	***	***
U.S. shipments	931,232	807,993	861,869
Export shipments	***	***	***
Total shipments	***	***	***
	<b>Quantity (1,000 bearings or bearing equivalents)</b>		
Commercial U.S. shipments	***	***	***
Internal consumption	***	***	***
Transfers to related firms	***	***	***
U.S. shipments	63,587	58,784	54,151
Export shipments	***	***	***
Total shipments	***	***	***

Table continued on next page.

**Table III-5--Continued****TRBs: U.S. producers' U.S. shipments, exports shipments, and total shipments, 2015-17**

Item	Calendar year		
	2015	2016	2017
	<b>Unit value (dollars per completed bearing or bearing equivalent)</b>		
Commercial U.S. shipments	***	***	***
Internal consumption	***	***	***
Transfers to related firms	***	***	***
U.S. shipments	14.28	13.50	15.68
Export shipments	***	***	***
Total shipments	***	***	***
	<b>Share of value including parts (percent)</b>		
Commercial U.S. shipments	***	***	***
Internal consumption	***	***	***
Transfers to related firms	***	***	***
U.S. shipments	***	***	***
Export shipments	***	***	***
Total shipments	***	***	***
	<b>Share of quantity (percent)</b>		
Commercial U.S. shipments	***	***	***
Internal consumption	***	***	***
Transfers to related firms	***	***	***
U.S. shipments	***	***	***
Export shipments	***	***	***
Total shipments	***	***	***

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

**U.S. PRODUCERS' INVENTORIES**

Table III-6 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 15.1 percent during 2015-17. \*\*\* accounted for the majority of ending inventories in each year.

**Table III-6****TRBs: U.S. producers' inventories, 2015-17**

Item	Calendar year		
	2015	2016	2017
	<b>Quantity (1,000 bearings or bearing equivalents)</b>		
U.S. producers' end-of-period inventories	8,084	8,408	9,304
	<b>Ratio (percent)</b>		
Ratio of inventories to-- U.S. production	10.1	11.4	12.2
U.S. shipments	12.7	14.3	17.2
Total shipments	***	***	***

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

## U.S. PRODUCERS' IMPORTS AND PURCHASES

All seven U.S. producers imported TRBs during the period for which data were collected. U.S. producer \*\*\* directly imported subject TRBs from Korea.<sup>7</sup> U.S. producer \*\*\* also reported purchasing imports of TRBs, including \*\*\* of subject TRBs from Korea during 2015-17.

U.S. producers' imports of TRBs and their reasons for importing are presented in table III-7, while U.S. producers' purchases are presented in table III-8.

**Table III-7**  
**TRBs: U.S. producers' U.S. imports, 2015-17**

\* \* \* \* \*

**Table III-8**  
**TRBs: U.S. producers' U.S. purchases, 2015-17**

\* \* \* \* \*

## U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Table III-9 shows U.S. producers' employment-related data. The number of production and related workers ("PRWs") decreased by 0.8 percent during 2015-17, reflecting declining employment levels in 2016 and a partial recovery in 2017. Total hours worked and wages paid increased during 2015-17, by 2.4 percent and 4.0 percent respectively. Hourly wages also increased by 1.6 percent between 2015 and 2017, while productivity declined; as a result, unit labor costs increased by 8.9 percent during the same period.

**Table III-9**  
**TRBs: U.S. producers' employment related data, 2015-17**

Item	Calendar year		
	2015	2016	2017
Production and related workers (PRWs) (number)	3,205	2,953	3,180
Total hours worked (1,000 hours)	6,225	5,718	6,376
Hours worked per PRW (hours)	1,942	1,936	2,005
Wages paid (\$1,000)	147,742	133,827	153,714
Hourly wages (dollars per hour)	\$23.73	\$23.40	\$24.11
Productivity (bearings or bearing equivalents per hour)	12.8	12.9	11.9
Unit labor costs (dollars per bearings or bearing equivalents)	\$1.85	\$1.82	\$2.02

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

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<sup>7</sup> \*\*\*.



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

### **U.S. IMPORTERS**

The Commission issued importer questionnaires to 50 potential importers of TRBs, as well as to all U.S. producers of TRBs.<sup>1</sup> Usable questionnaire responses were received from 29 companies, representing virtually all U.S. imports of subject TRBs from Korea and 66.1 percent of total U.S. imports of TRBs during 2017, based on value.<sup>2</sup> In light of the data coverage by the Commission's questionnaires, U.S. imports are based on official Commerce statistics.<sup>3 4</sup>

Table IV-1 lists all responding U.S. importers of TRBs from Korea and other sources, their locations, and their shares of U.S. imports (based on value), in 2017.<sup>5</sup>

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<sup>1</sup> The Commission issued questionnaires to those firms identified in the petition, along with firms that, based on a review of data provided by U.S. Customs and Border Protection ("Customs"), may have accounted for more than one percent of total imports under HTS statistical reporting numbers 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, and 8482.99.4500 in 2017.

<sup>2</sup> Three additional firms, \*\*\*, certified that they had imported small quantities of TRBs since January 1, 2015, and provided partial and/or incomplete data.

<sup>3</sup> Imports of TRBs presented in this report are based on official import statistics for 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, and 8482.99.1570. Imports of TRBs from Korea also include products that U.S. importer \*\*\* misclassified under HTS statistical reporting number 8482.99.6595, a mixed category. Respondents' Posthearing Brief, Response to Commission's Questions from the June 5, 2018 hearing, pp. 3-4.

Imports of TRBs from Korea presented in this report were not adjusted to account for out-of-scope TRBs with an outside cup diameter of over eight inches (i.e., large-diameter TRBs), as record information indicates that minimal quantities of large-diameter TRBs from Korea are entering the United States. Petitioner's Prehearing Brief, pp. 64-65; and Respondents' Posthearing Brief, Response to Commission's Questions from the June 5, 2018 hearing, pp. 1-2.

<sup>4</sup> Bearing equivalents were calculated as one TRB cup and one TRB cone. The value of finished TRB parts (not including finished cages) entering under HTS statistical reporting number 8482.91.0050 are presented separately in the tables as "Value of parts."

<sup>5</sup> Five firms reported operations in a foreign trade zone, including \*\*\*.

**Table IV-1**  
**TRBs: U.S. importers, their headquarters, and share of total imports by source, 2017**

Firm	Headquarters	Share of imports by source (percent)					
		Korea subject	China	Japan	All other sources	Nonsubject sources	All import sources
Amsted	Chicago, IL	***	***	***	***	***	***
Bearing 2000	Pomona, CA	***	***	***	***	***	***
Federal Mogul	Southfield, MI	***	***	***	***	***	***
Fersa NKE	Northwood, OH	***	***	***	***	***	***
Fremont	Fremont, CA	***	***	***	***	***	***
General Bearing	West Nyack, NY	***	***	***	***	***	***
General Motors	Detroit, MI	***	***	***	***	***	***
HMS	Westlake, OH	***	***	***	***	***	***
Honda	Marysville, OH	***	***	***	***	***	***
Iljin	Novi, MI	***	***	***	***	***	***
Koyo	Greenville, SC	***	***	***	***	***	***
LYC Bearings	Geneva, IL	***	***	***	***	***	***
Metco	Vancouver, WA	***	***	***	***	***	***
Nova TCB	Powell, TN	***	***	***	***	***	***
NSK	Ann Arbor, MI	***	***	***	***	***	***
NTN Americas	Mount Prospect, IL	***	***	***	***	***	***
Peer	Waukegan, IL	***	***	***	***	***	***
Powertech	West Point, GA	***	***	***	***	***	***
Progress Rail	Albertville, AL	***	***	***	***	***	***
Regal Beloit	Beloit, WI	***	***	***	***	***	***
RTK	Aurora, IL	***	***	***	***	***	***
Schaeffler	Fort Mill, SC	***	***	***	***	***	***
Schaeffler Korea	Seoul, Korea	***	***	***	***	***	***
SKF	Lansdale, PA	***	***	***	***	***	***
Timken	North Canton, OH	***	***	***	***	***	***
Univance	Winchester, KY	***	***	***	***	***	***
Velonix	Nassau, Bahamas	***	***	***	***	***	***
Wanxiang	Elgin, IL	***	***	***	***	***	***
ZWZ	City Of Industry, CA	***	***	***	***	***	***
Total		***	***	***	***	***	***

Note.—Shares of imports are based on value. Shares or ratios shown as "0.0" represent values greater than zero but less than 0.05 percent.

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

## U.S. IMPORTS

Table IV-2 and figure IV-1 present data for U.S. imports of TRBs from Korea and all other sources. Total U.S. imports, by value, decreased overall by 7.1 percent during 2015-17. U.S. imports of subject TRBs from Korea, however, increased by 28.4 percent between 2015 and 2017, from \$61.0 million in 2015 to \$78.3 million in 2017. Average unit values from both subject and nonsubject sources decreased between 2015 and 2017, by 18.6 percent and 10.3 percent,



respectively. The ratio of U.S. imports of subject TRBs from Korea to U.S. production increased during 2015-17, reaching 16.7 percent of U.S. production in 2017.

The leading nonsubject sources of TRB imports were China and Japan, accounting for 19.5 percent and 31.1 percent of imports from nonsubject sources by value in 2017, respectively. As a share of total TRB imports, China and Japan accounted for 17.0 percent and 27.1 percent in 2017, respectively. By comparison, U.S. imports of subject TRBs from Korea accounted for 12.9 percent of the value of total TRB imports in 2017.

**Table IV-2**  
**TRBs: U.S. imports by source, 2015-17**

Item	Calendar year		
	2015	2016	2017
<b>Value of complete bearings or bearing equivalents (1,000 dollars)</b>			
U.S. imports from.-- Korea subject <sup>1</sup>	58,422	64,223	71,051
China	121,838	98,512	103,303
Japan	182,322	145,273	157,634
All other sources	274,498	239,846	259,938
Nonsubject sources	578,658	483,631	520,875
All import sources	637,080	547,854	591,926
<b>Value of parts (1,000 dollars)</b>			
U.S. imports from.-- Korea subject <sup>1</sup>	2,600	5,224	7,284
China	27	10	30
Japan	12,358	8,407	6,904
All other sources	1,546	1,595	1,378
Nonsubject sources	13,931	10,011	8,312
All import sources	16,531	15,236	15,596
<b>Total value (bearings and parts) (1,000 dollars)</b>			
U.S. imports from.-- Korea subject <sup>1</sup>	61,022	69,448	78,335
China	121,865	98,522	103,333
Japan	194,680	153,680	164,538
All other sources	276,044	241,440	261,316
Nonsubject sources	592,590	493,642	529,187
All import sources	653,612	563,090	607,522
<b>Quantity (1,000 bearings or bearing equivalents)</b>			
U.S. imports from.-- Korea subject <sup>1</sup>	8,495	11,352	12,689
China	36,258	38,115	41,858
Japan	32,915	28,334	29,332
All other sources	18,888	16,156	17,220
Nonsubject sources	88,061	82,605	88,410
All import sources	96,556	93,957	101,099

Table continued on next page.

**Table IV-2—Continued**  
**TRBs: U.S. imports by source, 2015-17**

Item	Calendar year		
	2015	2016	2017
	<b>Unit value (dollars per complete bearing or bearing equivalent)</b>		
U.S. imports from.-- Korea subject <sup>1</sup>	6.88	5.66	5.60
China	3.36	2.58	2.47
Japan	5.54	5.13	5.37
All other sources	14.53	14.85	15.10
Nonsubject sources	6.57	5.85	5.89
All import sources	6.60	5.83	5.85
	<b>Share of value (percent)</b>		
U.S. imports from.-- Korea subject <sup>1</sup>	9.3	12.3	12.9
China	18.6	17.5	17.0
Japan	29.8	27.3	27.1
All other sources	42.2	42.9	43.0
Nonsubject sources	90.7	87.7	87.1
All import sources	100.0	100.0	100.0
	<b>Share of quantity (percent)</b>		
U.S. imports from.-- Korea subject <sup>1</sup>	8.8	12.1	12.6
China	37.6	40.6	41.4
Japan	34.1	30.2	29.0
All other sources	19.6	17.2	17.0
Nonsubject sources	91.2	87.9	87.4
All import sources	100.0	100.0	100.0
	<b>Ratio to U.S. production</b>		
U.S. imports from.-- Korea subject <sup>1</sup>	10.7	15.4	16.7
China	45.5	51.7	55.0
Japan	41.3	38.4	38.5
All other sources	23.7	21.9	22.6
Nonsubject sources	110.5	112.1	116.2
All import sources	121.2	127.5	132.8

Notes continued on next page.

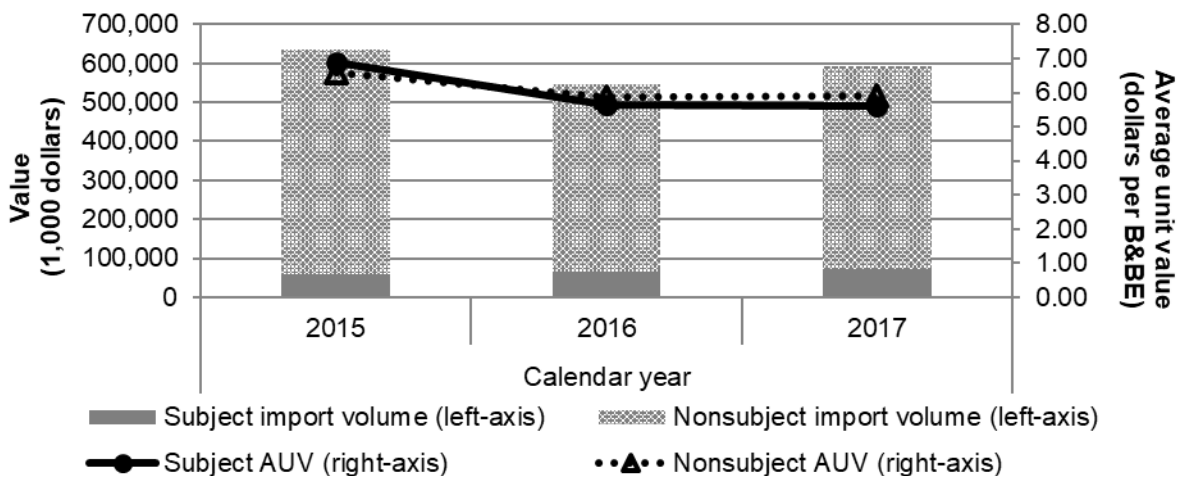
<sup>1</sup> The value of U.S. imports of subject TRBs from Korea during 2015-17 is higher when compared to questionnaire responses (\$\*\*\* in 2015; \$\*\*\* in 2016; and \$\*\*\* in 2017, in 1,000 dollars). The quantity of subject U.S. imports of TRBs from Korea is lower when compared to questionnaire responses (\*\*\*) units in 2015; \*\*\* units in 2016; and \*\*\* units in 2017, in 1,000 units).

Note.—“Nonsubject sources” include large-diameter TRBs.

Note.--Values are landed, duty-paid; quantities are derived from the HTS items that are believed to measure only complete bearings or bearing equivalents. Unit values are calculated on the basis of complete bearings (and bearing equivalents) only. Ratio of imports to U.S. production are based on complete bearings or bearing equivalents only.

Source: 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, and 8482.99.1570, accessed April 23, 2018, and adding in value data reported under HTS statistical reporting number 8482.99.6595 for Korea only, accessed June 14, 2018.

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



Note.--Unit values are calculated on the basis of complete bearings (and bearing equivalents) only.

Source: 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, and 8482.99.1570, accessed April 23, 2018, and adding in value data reported under HTS statistical reporting number 8482.99.6595 for Korea only, accessed June 14, 2018.

## NEGLIGENCE

The statute requires that an investigation be terminated without an injury determination if imports of the subject merchandise are found to be negligible.<sup>6</sup> Negligible imports are generally defined in the Tariff Act of 1930, as amended, as imports from a country of merchandise corresponding to a domestic like product where such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or the initiation of the investigation. However, if there are imports of such merchandise from a number of countries subject to investigations initiated on the same day that individually account for less than 3 percent of the total volume of the subject merchandise, and if the imports from those countries collectively account for more than 7 percent of the volume of all such merchandise imported into the United States during the applicable 12-month period, then imports from such countries are deemed not to be negligible.<sup>7</sup>

The petitions in this investigation were filed on June 28, 2017. Table IV-3 presents U.S. imports of in-scope TRBs in the twelve months preceding the filing of the petitions.<sup>8</sup>

**Table IV-3**  
**TRBs: U.S. imports of in-scope TRBs in the twelve months preceding the filing of the petitions**

Item	June 2016 through May 2017			
	Value (1,000 dollars)	Share of value (percent)	Quantity (1,000 bearings or bearing equivalents)	Share of quantity (percent)
U.S. imports from.-- Korea subject	76,103	17.1	12,119	13.0
Nonsubject sources <sup>1</sup>	367,968	82.9	81,200	87.0
All import sources	444,071	100.0	93,318	100.0

<sup>1</sup> Imports in June 2016 adjusted to exclude out-of-scope large-diameter TRBs.

Note.—Data presented are for in-scope small-diameter TRBs only.

Source: Adjusted 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, and 8482.99.1570, accessed April 23, 2018, and adding in value data reported under HTS statistical reporting number 8482.99.6595 for Korea only, accessed June 14, 2018.

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<sup>6</sup> Sections 703(a)(1), 705(b)(1), 733(a)(1), and 735(b)(1) of the Act (19 U.S.C. §§ 1671b(a)(1), 1671d(b)(1), 1673b(a)(1), and 1673d(b)(1)).

<sup>7</sup> Section 771 (24) of the Act (19 U.S.C § 1677(24)).

<sup>8</sup> Official Commerce statistics for nonsubject sources were adjusted for June 2016. For a more detailed discussion of staff adjustments to in-scope merchandise, see table C-2.

## APPARENT U.S. CONSUMPTION

Table IV-4 and figure IV-2 present data on apparent U.S. consumption for TRBs. Apparent U.S. consumption decreased by 7.3 percent and 3.1 percent from 2015 to 2017 based on value and quantity respectively.

**Table IV-4**  
**TRBs: U.S. shipments of domestic product, U.S. imports, and apparent U.S. consumption, 2015-17**

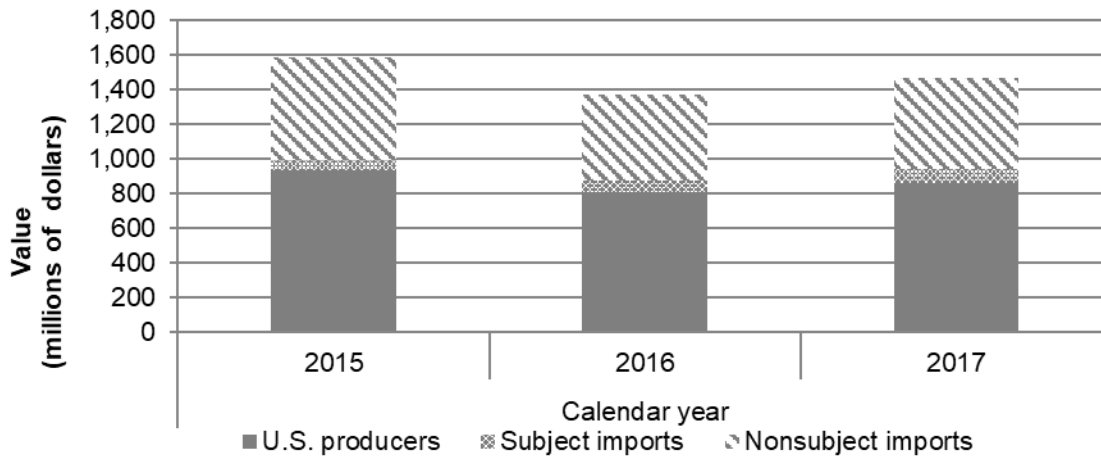
Item	Calendar year		
	2015	2016	2017
	<b>Value (1,000 dollars)</b>		
U.S. producers' U.S. shipments	931,232	807,993	861,869
U.S. imports from.--			
Korea subject	61,022	69,448	78,335
China	121,865	98,522	103,333
Japan	194,680	153,680	164,538
All other sources	276,044	241,440	261,316
Nonsubject sources	592,590	493,642	529,187
All import sources	653,612	563,090	607,522
Apparent U.S. consumption	1,584,844	1,371,083	1,469,391
	<b>Quantity (1,000 bearings or bearing equivalents)</b>		
U.S. producers' U.S. shipments	63,587	58,784	54,151
U.S. imports from.--			
Korea subject	8,495	11,352	12,689
China	36,258	38,115	41,858
Japan	32,915	28,334	29,332
All other sources	18,888	16,156	17,220
Nonsubject sources	88,061	82,605	88,410
All import sources	96,556	93,957	101,099
Apparent U.S. consumption	160,143	152,741	155,250

Note.—Values include parts.

Note.--Apparent U.S. consumption includes U.S. producers' U.S. shipments for small and large-diameter TRBs, small-diameter TRB imports from Korea (subject), and small and large-diameter TRB imports from all other sources (nonsubject).

Source: Compiled from data submitted in response to Commission questionnaires; and 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, and 8482.99.1570, accessed April 23, 2018, and adding in value data reported under HTS statistical reporting number 8482.99.6595 for Korea only, accessed June 14, 2018.

**Figure IV-2**  
**TRBs: Apparent U.S. consumption, 2015-17**



Source: Compiled from data submitted in response to Commission questionnaires; and 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, and 8482.99.1570, accessed April 23, 2018, and adding in value data reported under HTS statistical reporting number 8482.99.6595 for Korea only, accessed June 14, 2018.

### **U.S. MARKET SHARES**

U.S. market share data are presented in table IV-5. On a value basis, the market shares of subject TRB imports from Korea exhibited a net increase, while those from nonsubject sources exhibited a net decrease during 2015-17. The share of U.S. producers' TRB shipments decreased slightly by 0.1 percentage points between 2015 and 2017.

**Table IV-5**  
**TRBs: Market shares, 2015-17**

Item	Calendar year		
	2015	2016	2017
	<b>Value (1,000 dollars)</b>		
Apparent U.S. consumption	1,584,844	1,371,083	1,469,391
	<b>Share of value (percent)</b>		
U.S. producers' U.S. shipments	58.8	58.9	58.7
U.S. imports from.--			
Korea subject	3.9	5.1	5.3
China	7.7	7.2	7.0
Japan	12.3	11.2	11.2
All other sources	17.4	17.6	17.8
Nonsubject sources	37.4	36.0	36.0
All import sources	41.2	41.1	41.3
	<b>Quantity (1,000 bearings or bearing equivalents)</b>		
Apparent U.S. consumption	160,143	152,741	155,250
	<b>Share of quantity (percent)</b>		
U.S. producers' U.S. shipments	39.7	38.5	34.9
U.S. imports from.--			
Korea subject	5.3	7.4	8.2
China	22.6	25.0	27.0
Japan	20.6	18.6	18.9
All other sources	11.8	10.6	11.1
Nonsubject sources	55.0	54.1	56.9
All import sources	60.3	61.5	65.1

Note.—Values include parts.

Note.--Apparent U.S. consumption includes U.S. producers' U.S. shipments for small and large-diameter TRBs, small-diameter TRB imports from Korea (subject), and large-diameter TRB imports from all other sources (nonsubject).

Source: Compiled from data submitted in response to Commission questionnaires; and 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, and 8482.99.1570, accessed April 23, 2018, and adding in value data reported under HTS statistical reporting number 8482.99.6595 for Korea only, accessed June 14, 2018.





## 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 from \*\*\* percent in 2015 to \*\*\* percent in 2017.

Three responding U.S. producers and twelve responding importers reported that raw material prices increased since January 1, 2015 while three U.S. producers and nine importers reported that they fluctuated. Producer and importer \*\*\* stated that raw material prices such as iron ore, coke, scrap, and alloys used to make steel, are significantly higher relative to 2015. Importer \*\*\* stated that the scrap steel costs fell in 2015 and then increased in 2016 and 2017. It stated that bearing prices tend to follow scrap steel prices as some agreements also adjust prices based on a scrap steel material index each quarter or semi-annually. Importer \*\*\* stated that the metal market index clause in contracts allow for price increases to adjust with steel price fluctuations. Importer \*\*\* stated that raw material price increases are passed to its customers. Importer \*\*\* stated that raw material prices fluctuate with demand for steel and that global exchange rates also impact raw material pricing, if raw materials originate in a different country than where the TRBs are produced. It continued that, generally, small fluctuations are absorbed by producers while larger fluctuations are at least partly, if not fully, passed on to the customer.

Petitioners and respondents stated that contracts contain clauses that automatically adjust prices in response to changes in raw material costs.<sup>1</sup> Respondents stated that the indexes generally used for TRB contracts are global steel scrap indexes, such as the Chicago Number One Bundle.<sup>2</sup>

The average price of scrap metal fluctuated over the period 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 20 percent from January 2015-December 2017 (figure V-1).<sup>3</sup>

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<sup>1</sup> Conference transcript, p. 77 and p. 81 (Ruel), p. 146 (Schuster), and Petitioner Timken's postconference brief, Answers to Staff questions, #3, p. 1.

<sup>2</sup> Hearing transcript, p. 249 (Dix), Respondents' Joint Posthearing Brief, responses to Commissioners questions, p. 42.

<sup>3</sup> The price of scrap metal increased nearly 20 percent from December 2017 to March 2018.

**Figure V-1**

**Steel scrap: Price index of Chicago No. 1 heavy melt scrap, monthly, January 2015-December 2017**

\* \* \* \* \*

**Transportation costs to the U.S. market**

Transportation costs for TRBs shipped from Korea to the United States averaged 1.2 percent during 2017. These estimates were derived from official import data and represent transportation and other charges on imports.<sup>4</sup>

**U.S. inland transportation costs**

Most responding U.S. producers (4 of 6) and some responding importers (3 of 7) reported that their customers typically arrange transportation. U.S. producers reported that their U.S. inland transportation costs are between 1 and 3 percent while four importers reported costs of 2 to 14 percent.

**PRICING PRACTICES**

**Pricing methods**

As presented in table V-1, most U.S. producers and importers sell primarily through transaction-by-transaction negotiations and on a contract basis. U.S. producers and importers also reported using price lists and other methods.

**Table V-1**

**TRBs: U.S. producers' and importers' reported price setting methods, by number of responding firms<sup>1</sup>**

<b>Method</b>	<b>U.S. producers</b>	<b>Importers</b>
<b>Transaction-by-transaction</b>	4	12
<b>Contract</b>	5	11
<b>Set price list</b>	3	7
<b>Other</b>	2	7
<b>Responding firms</b>	6	25

<sup>1</sup> 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.

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<sup>4</sup> 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 HTS statistical reporting numbers 8482.20.0040, 8482.20.0061, 8482.20.0070, 8482.20.0081, 8482.91.0050, and 8482.99.1550.

As shown in table V-2, U.S. producers and importers reported selling most of their TRBs under long-term contracts in 2017, although U.S. producers sold a substantial share through short-term contracts and spot sales.

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

\* \* \* \* \*

U.S. producers' and importers' 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 two importers reported that their long-term contracts include meet-or-release provisions and fix price.

Respondents stated that automotive supply contracts are typically negotiated in two forms: by program and long-term agreements (LTAs). Program contracts are program-specific, specify the program, ship-to location, parts used, pricing, delivery terms, and payment terms. These contracts generally last the life of the program and are not renegotiated or resourced unless there are unexpected supplier delivery or quality issues, or an engineering change occurs on the program. Long-term agreements outline broader relationships between the customer and supplier and generally contain a master agreement that can initially specify any number of programs and normally establish supply terms for a 3-to-5 year period. LTAs and/or program contracts generally fix prices over the life of the contracts, but can include terms for additional adjustments such as material surcharges and productivity discounts.<sup>5</sup> Petitioners and respondents stated that contracts may have "resourcing" clauses that allow the customer to change suppliers based on the inability to meet lower prices.<sup>6</sup> These clauses are uniquely negotiated with each customer.<sup>7</sup>

Petitioners stated that agreement durations are typically aligned with the end of the calendar year and/or aligned with the end of the customer's fiscal year.<sup>8</sup> Respondents stated that there are no specific contract cycles for TRBs.<sup>9</sup>

Seventeen purchasers reported that they purchase product daily, 20 purchase weekly, and one each purchase monthly and quarterly.<sup>10</sup> Purchaser \*\*\* stated that it has daily releases

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<sup>5</sup> Respondents' joint posthearing brief, responses to the Commission's written questions, p. 8.

<sup>6</sup> Conference transcript, p. 43 (Drake), p. 146 (Schuster), pp. 146-147 (Dix), and p. 147 (Kreifels).

<sup>7</sup> Conference transcript, p. 77 (Ruel).

<sup>8</sup> Petitioner's posthearing brief, exh. 24.

<sup>9</sup> Respondents' joint posthearing brief, responses to the Commission's written questions, p. 8.

<sup>10</sup> Purchaser \*\*\* reported both daily and weekly purchases, stating that because multiple locations place orders and that each location typically orders on a weekly basis, its order frequency is closer to daily on an overall company basis, though orders are not likely placed every day. Purchaser \*\*\* purchases three times per week.

based on long-term agreements and blanket purchase orders. Nearly all responding purchasers reported that their purchasing frequency had not changed since 2015. Most (32 of 38) purchasers contact six or fewer suppliers before making a purchase; the remaining 6 contact up to 10 suppliers. Negotiation factors include total cost of ownership, transportation and payment terms, testing responsibility, minimum order quantity, contract length, lead time, capacity, technology, availability, production validation, specification requirements, tooling requirements, Incoterms, and warranty.

### **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, while three producers reported not offering discounts. U.S. producer \*\*\* stated that discounts are applied by sales channel, such as distribution, OEM, or end user. U.S. producer \*\*\* stated that its volume discounts are typically associated with total bearing purchases by aftermarket customers. Fifteen responding importers do not offer discounts, five offer total volume discounts, and two reported discounts in long-term agreements for productivity. \*\*\*. \*\*\*.

Four 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, and net 47 days. \*\*\*.

### **Price leadership**

Purchasers reported that Timken (cited by 16 responding purchasers), SKF Bearings (4), Koyo (3), NTN (2), Schaeffler (2), and Iljin (1) were price leaders, generally because of their size and global manufacturing capabilities. \*\*\* stated that Timken is the highest-priced producer in the market and that Timken's loss of automotive business is not due to any other supplier but rather Timken's own pricing decisions. It continued that Timken can be competitive when it deems appropriate, but not always in the best interests of customer long-term relationships.

\*\*\* stated that Timken was awarded most of its new TRB product launches between 2015 and 2017 because of its technical expertise, reliability and, in most cases, the fact that it offered lower pricing than its competition. It continued that Timken has maintained its majority share of \*\*\* business because it is a leader in several categories, including low price, commitment of capacity, high quality, and technical expertise. \*\*\* stated that importer Iljin's price leadership is derived from its willingness to take the necessary actions to ensure continuity of supply and in its ability to efficiently design, develop, and manufacture high-quality TRBs in state-of-the-art manufacturing facilities. It stated that Iljin has significantly lower scrap rates than other TRB producers due to fewer internal rejects, which is a direct result of its efficient, well-controlled and highly automated manufacturing processes.

\*\*\* stated that based on the global RFQ placed at its supplier panel in 2015, SKF and Timken were quite aggressive on pricing and that others follow their pricing. \*\*\* stated that Timken, Koyo, SKF, Schaeffler, and NTN initiate price changes by driving manufacturing efficiencies, consolidating to industry-standard parts, and producing TRBs that meet or exceed product specifications.

## 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. customers during January 2015-December 2017.<sup>11</sup>

**Product 1.**— 55437 – TRB Cup (single row, outer diameter OD 4.375 inches, width 0.813 inch).

**Product 2.**— 55200C – TRB Cone Assemblies (single row, 2 inch bore, width 1.0594 inch).

**Product 3.**— 72487 – TRB Cup (single row, OD 4.8750 inches, width 1.0000 inch).

**Product 4.**— 72212C – TRB Cone Assemblies (single row, bore 2.1250 inches).

**Product 5.**— JLM704610 – TRB Cup (single row, OD 3.3071 inches, width 0.6890 inch).

**Product 6.**— LM501349 – TRB Cone Assemblies (single row, bore 1.6250 inches).

**Product 7.**— LM501314 – TRB Cup (single row, OD 2.8910 inches, width 0.6537 inch).

**Product 8.**— M804049 – TRB Cone Assemblies (single row, bore 1.8750 inches).

Two U.S. producers, \*\*\*, and two importers, \*\*\*, provided usable pricing data for sales of the requested products, although not all firms reported pricing for all products for all quarters.<sup>12</sup> Pricing data for the eight small-diameter TRB products reported by these firms accounted for less than 1 percent of the value of U.S. producers' commercial shipments of small-diameter TRBs and \*\*\* percent of the value of U.S. commercial shipments of subject imports from Korea in 2017.

Price data for products 1-8 are presented in tables V-3 to V-10 and figures V-2 to V-9. Nonsubject country prices are presented in Appendix E.

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<sup>11</sup> Timken provided six new pricing product definitions to include products it believed would result in broader product coverage in the final phase, and these are included as pricing products 3 through 8. In addition, pricing products 1 and 2 are retained from those pricing products used in the preliminary phase. Petitioner's Comments on Draft Questionnaires, pp. 4-5.

<sup>12</sup> 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.

**Table V-3**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 1, and margins of underselling/(overselling), by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table V-4**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 2, and margins of underselling/(overselling), by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table V-5**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 3, and margins of underselling/(overselling), by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table V-6**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 4, and margins of underselling/(overselling), by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table V-7**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic product 5, and margins of underselling/(overselling), by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table V-8**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 6, and margins of underselling/(overselling), by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table V-9**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 7, and margins of underselling/(overselling), by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table V-10**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 8, and margins of underselling/(overselling), by quarters, January 2015-December 2017**

\* \* \* \* \*

**Figure V-2**  
TRBs: Weighted-average prices and quantities of domestic and imported product 1, by quarters, January 2015-December 2017

\* \* \* \* \*

**Figure V-3**  
TRBs: Weighted-average prices and quantities of domestic and imported product 2, by quarters, January 2015-December 2017

\* \* \* \* \*

**Figure V-4**  
TRBs: Weighted-average prices and quantities of domestic and imported product 3, by quarters, January 2015-December 2017

\* \* \* \* \*

**Figure V-5**  
TRBs: Weighted-average prices and quantities of domestic and imported product 4, by quarters, January 2015-December 2017

\* \* \* \* \*

**Figure V-6**  
TRBs: Weighted-average prices and quantities of domestic product 5, by quarters, January 2015-December 2017

\* \* \* \* \*

**Figure V-7**  
TRBs: Weighted-average prices and quantities of domestic and imported product 6, by quarters, January 2015-December 2017

\* \* \* \* \*

**Figure V-8**  
TRBs: Weighted-average prices and quantities of domestic and imported product 7, by quarters, January 2015-December 2017

\* \* \* \* \*

**Figure V-9**  
TRBs: Weighted-average prices and quantities of domestic and imported product 8, by quarters, January 2015-December 2017

\* \* \* \* \*

### Price trends

In general, prices decreased during January 2015-December 2017. Table V-11 summarizes the price trends, by product and by country. As shown in the table, domestic prices decreased for products 1, 2, 4, 5, and 7, ranging from \*\*\* percent to \*\*\* percent during January 2015-December 2017 while import price decreases ranged from \*\*\* percent to \*\*\* percent. Domestic prices increased for products 3, 6, and 8, ranging from \*\*\* percent to \*\*\* percent and prices of subject imports from Korea increased by \*\*\* percent for product 7.

**Table V-11**

**TRBs: Summary of weighted-average f.o.b. prices for products 1-8 from the United States and Korea**

\* \* \* \* \*

### Price comparisons

As shown in table V-12, prices for subject product imported from Korea were below those for U.S.-produced product in 47 of 84 instances (11.6 million units); margins of underselling ranged from 0.5 to 47.7 percent. In the remaining 37 instances (1.6 million units), prices for product from Korea were between less than 0.05 percent to 132.7 percent above prices for the domestic product. Overselling is primarily in products 1 and 8.



**Table V-12**

**TRBs: Instances of underselling/overselling and the range and average of margins, by product, January 2015-December 2017**

Source	Underselling				
	Number of quarters	Quantity <sup>1</sup> (units)	Average margin (percent)	Margin range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	***	***	***
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Product 5	***	***	---	---	---
Product 6	***	***	***	***	***
Product 7	***	***	***	***	***
Product 8	***	***	---	---	---
Total	47	11,595,416	20.6	0.5	47.7
Source	(Overselling)				
	Number of quarters	Quantity <sup>1</sup> (units)	Average margin (percent)	Margin range (percent)	
				Min	Max
Product 1	***	***	***	***	***
Product 2	***	***	---	---	---
Product 3	***	***	***	***	***
Product 4	***	***	***	***	***
Product 5	***	***	---	---	---
Product 6	***	***	---	---	---
Product 7	***	***	---	---	---
Product 8	***	***	***	***	***
Total	37	1,644,592	(31.3)	(0.0)	(132.7)

<sup>1</sup> These data include only quarters in which there is a comparison between the U.S. and subject product. No price data was reported for imports from Korea for product 5.

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

## LOST SALES AND LOST REVENUE

In the preliminary phase of the investigation, the Commission requested that U.S. producers of TRBs report purchasers where they experienced instances of lost sales or revenue due to competition from imports of TRBs from Korea during January 2014-March 2017. Two of three responding producers reported that they had to reduce prices, and one firm reported that it lost sales. One firm, \*\*\*, submitted lost sales and lost revenue allegations, identifying 5 firms where \*\*\* lost sales with respect to \*\*\* TRBs in 2016 and 2017.<sup>13</sup> Four of these allegations were during contract negotiations and one was with respect to \*\*\*.

In the final phase of the investigation, three of the seven responding U.S. producers reported that they had to reduce prices, and two firms reported that they had lost sales.

Staff contacted 61 purchasers and received responses from 39 purchasers.<sup>14</sup> Responding purchasers reported purchasing and importing \$\*\*\* of TRBs during January 2015-December 2017 (table V-13).

**Table V-13**  
**TRBs: Purchasers' purchases and imports of TRBs, 2015-17**

\*       \*       \*       \*       \*       \*       \*

Of the 39 responding purchasers, nine reported that, since 2015, they had purchased subject TRB imports from Korea instead of U.S.-produced product. Seven of these purchasers reported that subject import prices were lower than U.S.-produced product, and one of these purchasers reported that price was a primary reason for the decision to purchase imported product rather than U.S.-produced product. This purchaser, \*\*\*, estimated the value of subject TRBs from Korea it had purchased instead of domestic product at \$\*\*\* (table V-14). Purchasers reported not knowing the country of origin at the time of order, buying bearings from Korea as a “backup” to domestic product, better performance and technology, requirements for “technologically advanced” product, best “total value,” and “trusted source” as non-price reasons for purchasing imported rather than U.S.-produced product.

**Table V-14**  
**TRBs: Purchasers' responses to purchasing subject imports instead of domestic product**

\*       \*       \*       \*       \*       \*       \*

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<sup>13</sup> Producer \*\*\* stated that it reduced prices to avoid losing sales on current programs and has lost business on future models that have been awarded to competitors, but did not complete the lost sale lost revenue allegations worksheet.

<sup>14</sup> All purchasers that submitted lost sales lost revenue survey responses in the preliminary phase submitted purchaser questionnaire responses in the final phase.

Of the 39 responding purchasers, one reported that U.S. producers had reduced prices in order to compete with lower-priced imports from Korea (18 reported “no” and 20 reported that they did not know). \*\*\* estimated price reduction was 20 percent.

\*\*\* stated that there is overcapacity in the North American automotive bearing market which is driving pricing and profitability problems. It also stated that increased production capacity for TRBs in Mexico has negatively impacted Timken’s U.S. sales.

In responding to the lost sales and lost revenue survey, some purchasers provided additional information on purchases and market dynamics. \*\*\* stated that it does not consider a purchase from a supplier of Korean-manufactured TRBs to be a “lost sale” for a U.S. manufacturer. It stated that it operates within a global marketplace and that if it did not purchase from a supplier of a Korean-manufactured TRB, the purchase likely would go to any number of suppliers around the world. \*\*\* continued that it is a significant purchaser of TRBs from \*\*\*. It stated that it often purchases TRBs for a particular vehicle and application from a chosen supplier for the life of a program since it takes an average of 18 months to conduct validation analysis and testing for a TRB supplier. \*\*\* stated that the supplier for its next generation transmission program has a production location in \*\*\* with production starting at the beginning of 2018.



## PART VI: FINANCIAL EXPERIENCE OF U.S. PRODUCERS

### BACKGROUND

U.S. producers Amsted, Koyo, NSK, NTN-Bower, Regal Beloit, Schaeffler, and Timken provided usable financial data on their TRB operations.<sup>1</sup> This section of the report presents 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 VI-1 presents aggregate data on U.S. producers' operations in relation to TRBs, including the value of parts sold, over the fiscal years 2015-17.<sup>2</sup> Total sales quantity and value declined from 2015 to 2016 and rose in 2017 but did not reach the level in 2015. \*\*\*.

**Table VI-1**  
**TRBs: Results of operations of U.S. producers, fiscal years 2015-17**

\* \* \* \* \*

Table VI-2 presents data on a firm-by-firm basis.

**Table VI-2**  
**TRBs: Results of operations of U.S. producers, by firm, 2015-17**

\* \* \* \* \*

### Net sales quantity and value

Net sales of TRBs consisted of commercial sales, internal consumption, and transfers to related firms, which accounted for approximately \*\*\* by value in 2017, respectively. As shown

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<sup>1</sup> Regal Beloit, Schaeffler, and Timken have a fiscal year that ends \*\*\*; Amsted's fiscal year ends \*\*\*; Koyo, NSK, and NTN-Bower have fiscal years that end \*\*\*. \*\*\* 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. Schaeffler \*\*\*.

<sup>2</sup> The Commission's questionnaire requested firms to report income-and-loss data for the domestic like product as determined in the preliminary phase of this investigation. Information is presented that aggregates data for TRBs 8 inches in outside cup diameter and smaller (small-diameter TRBs), parts for small-diameter TRBs, TRBs over 8 inches in outside cup diameter (large-diameter TRBs), and parts for large-diameter TRBs. Responding firms presented data as follows: \*\*\*. Information on small-diameter (measuring 8 inches and less in diameter) TRBs is presented in appendix C, table C-2.

in table VI-1, aggregate TRB sales quantity and value declined from 2015 to 2016, and increased in 2017.

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. The firm-by-firm data shows a \*\*\*. Data reported by \*\*\*.

### **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 2016). The value of raw material costs fell between 2015 and 2016 (from \*\*\*) but were higher in 2017 (\*\*\*). Raw material costs represented \*\*\* percent of net sales value in 2015 and increased irregularly 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 are significantly higher relative to 2015.<sup>3</sup> This reflected changes in steel input costs as \*\*\*.<sup>4</sup>

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 (\*\*\*) but increased in 2017 (\*\*\*). Other factory costs declined irregularly 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 was between \*\*\* percent (in 2015) and \*\*\* percent (in 2017).<sup>5</sup>

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

Gross profit fell from \$\*\*\* in 2015 to \$\*\*\* in 2016, and increased to \$\*\*\* in 2017. \*\*\*.

### **SG&A expenses and operating income or (loss)**

As shown in table VI-1, the industry's SG&A expense declined irregularly from 2015 to 2017; the industry's SG&A expense ratios were the same at \*\*\* percent in each of the three years. \*\*\*,<sup>6</sup> \*\*\*.<sup>7</sup> Operating income for the reporting firms together fell from \$\*\*\* in 2015 to \$\*\*\* in 2016 before increasing to \$\*\*\* in 2017. As shown in table VI-2, the change between 2016 and 2017 was mostly due to the data reported by \*\*\*. As the data depict in table VI-2, the

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<sup>3</sup> 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. Postconference brief of Timken, Staff question-4, p. 1 and exh. 1. \*\*\*.

<sup>4</sup> Petitioners' postconference brief, exh. 1 \*\*\*, attachment K \*\*\*. A witness for petitioners testified at the hearing that many of Timken's long-term agreements have indexes that are tied to steel in different forms. Hearing transcript, pp. 100 and 117 (Ruel).

<sup>5</sup> \*\*\*.

<sup>6</sup> \*\*\*.

<sup>7</sup> \*\*\*.

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, fell from \$\*\*\* in 2015 to \$\*\*\* in 2016, and increased to \$\*\*\* in 2017, a higher level than in 2015. 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, a lesser level than in 2015. 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. Cash flow (net income plus depreciation charges) declined from \$\*\*\* in 2015 to \$\*\*\* in 2016 and was \$\*\*\* in 2017. After deducting capital expenditures from cash flow (in effect, calculating a proxy for free cash flow), "free cash flow" followed a similar pattern—irregularly declining from \$\*\*\* in 2015 to \$\*\*\* 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. Because of the wide variation in product mix and unit values between firms in this investigation, a variance analysis is not presented. 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 VI-1 and VI-2, mirrors the results of a variance analysis in this investigation. 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, and volume declined while 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 VI-3 presents capital expenditures and R&D expenses by firm. As shown in the table, total capital expenditures rose irregularly by \*\*\* percent between 2015 and 2017. R&D expenses increased by \*\*\* percent between the same two years, with the increase accounted for by \*\*\*.

**Table VI-3**

**TRBs: Capital expenditures and R&D expenses of U.S. producers, fiscal years 2015-17**

\* \* \* \* \*

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:<sup>8</sup>

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

A witness for petitioner Timken testified at the staff conference that the company has been unable to justify capital investments in its domestic TRB plants due to the significant stress that its TRB operations are under, while at the Commission’s hearing a Timken witness testified that “disinvestment has been across the entire TRB spectrum in the U.S.”<sup>9</sup>

### ASSETS AND RETURN ON ASSETS

Table VI-4 presents data on the U.S. producers’ total assets and the ratio of operating income or (loss) to total assets. Total net assets increased irregularly by \*\*\* percent between 2015 and 2017, with most of the reported increase by \*\*\* offsetting reduced assets reported by \*\*\*. \*\*\*.

**Table VI-4**  
**TRBs: U.S. producers’ total assets and return on assets, fiscal years 2015-17**

\* \* \* \* \*

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<sup>8</sup> U.S. producers’ questionnaire responses, section III-13.

<sup>9</sup> Conference transcript, pp. 27-28 (Fracassa, Timken) cited in Petitioners’ Prehearing Brief, p. 86. Hearing transcript, p. 107 (Discenza). Petitioner Timken differentiated between investment in the United States and abroad, stating that when using the same criterion of return on investment, investment abroad in India, China, or Romania, for example, generated a return greater than the cost of capital while investment in the United States did not. Hearing transcript, p. 111 (Discenza).



## CAPITAL AND INVESTMENT

The Commission requested U.S. producers of TRBs to describe any actual or potential negative effects of subject imports of TRBs from Korea on their firms' growth, investment, ability to raise capital, development and production efforts, or the scale of capital investments. Table VI-5 presents a tally of U.S. producers' responses and table VI-6 provides the firms' narrative responses.

**Table VI-5**  
**TRBs: Actual and anticipated negative effects of imports on investment and growth and development since January 1, 2015**

Item	No	Yes
Negative effects on investment <sup>1</sup>	5	2
Cancellation, postponement, or rejection of expansion projects		***
Denial or rejection of investment proposal		***
Reduction in the size of capital investments		***
Return on specific investments negatively impacted		***
Other		***
Negative effects on growth and development <sup>2</sup>		6
Rejection of bank loans		***
Lowering of credit rating		***
Problem related to the issue of stocks or bonds		***
Ability to service debt		***
Other		***
Anticipated negative effects of imports <sup>3</sup>	4	3

1 \*\*\*  
2 \*\*\*  
3 \*\*\*

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

**Table VI-6**  
**TRBs: Narrative responses by U.S. producers regarding actual and anticipated negative effects of imports from Korea on investment, growth, and development since January 1, 2015**

\* \* \* \* \*



## PART VII: THREAT CONSIDERATIONS AND INFORMATION ON NONSUBJECT COUNTRIES

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

*In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors<sup>1</sup>--*

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

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

- (VI) *the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,*
- (VII) *in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),*
- (VIII) *the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and*
- (IX) *any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).<sup>2</sup>*

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

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<sup>2</sup> Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

## THE INDUSTRY IN KOREA

The Commission issued foreign producers' or exporters' questionnaires to 30 firms believed to produce and/or export TRBs from Korea.<sup>3</sup> Three firms submitted usable responses to the Commission's questionnaire, whose exports to the United States accounted for virtually all U.S. imports of subject TRBs from Korea in 2017. According to estimates requested of the responding Korean producers, the production of TRBs in Korea reported in Part VII accounts for approximately 77 percent of overall production of TRBs in Korea. Table VII-1 presents information on the TRB operations of the responding producers and exporters in Korea.

**Table VII-1**  
**TRBs: Summary data on firms in Korea, 2017**

\* \* \* \* \*

### Changes in operations

As presented in table VII-2, producers in Korea reported several operational and organizational changes since January 1, 2015.

**Table VII-2**  
**TRBs: Korean producers' reported changes in operations, since January 1, 2015**

\* \* \* \* \*

### Operations on TRBs

The Commission asked Korean producers to identify any production constraints. \*\*\* reported that production capacity is constrained by the availability of raw materials, company finances, and customers' requirement that it maintain levels of surplus production to respond to possible short-term increases to orders. \*\*\* reported that production capacity is constrained by sales volume, hours of line operation, and manpower. \*\*\* reported that production capacity is constrained by the machinery used for TRB production. Responding producers did not report any anticipated changes in the character of their operations.

Table VII-3 presents information on the TRB operations of the responding producers and exporters in Korea. Reported capacity and production increased by \*\*\* percent and \*\*\* percent from 2015 to 2017, respectively. Exports to the United States increased by \*\*\* percent between 2015 and 2017, while exports to other markets increased by \*\*\* percent during 2015-17. Korean producers' total home market shipments as a share of total shipments decreased in each year between 2015 and 2017, declining from \*\*\* percent of total shipments to \*\*\*

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<sup>3</sup> These firms were identified through a review of information submitted in the petition and contained in proprietary Customs records. Throughout Part VII, references to the Korean industry's TRB operations are limited to subject merchandise, unless otherwise indicated.

percent, and are projected to decrease in 2018 and 2019. Conversely, Korean producers' total exports as a share of total shipments increased in each full year between 2015 and 2017, increasing from \*\*\* percent to \*\*\* percent, and are projected to increase in 2018 and 2019.

**Table VII-3**  
**TRBs: Data for producers in Korea, 2015-17, and projected 2018 and 2019**

\* \* \* \* \*

### Alternative products

\*\*\* reported producing other products on the same equipment and machinery used to produce subject TRBs. The firm reported that “to a very moderate degree,” it can produce nonsubject large-diameter TRBs on the same equipment.<sup>4</sup>

\*\*\* reported that their machinery is set up specifically for the production of TRBs. \*\*\* also reported that changing bearing types on designated production lines requires extensive setup and retooling efforts as well as an overhaul of the machine itself. In addition, \*\*\*. \*\*\*.

### Exports

Table VII-4 presents global exports from Korea for HS subheading 8482.20, “tapered roller bearings, including cups and assemblies,” which includes subject TRBs, as reported in Global Trade Atlas (“GTA”).<sup>5</sup> According to GTA, the United States was the top export market for these products from Korea in 2017, accounting for 36.5 percent, followed by China and Germany, accounting for 20.5 percent and 8.5 percent, respectively, in terms of value.

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<sup>4</sup> \*\*\*.

<sup>5</sup> GTA data for HTS subheading 8482.20 may include products outside of the scope of this investigation and thus the data may be overstated.

**Table VII-4**  
**Tapered roller bearings, including cups and assemblies: Exports from Korea by destination market, 2015-17**

Destination market	Calendar year		
	2015	2016	2017
	<b>Quantity (1,000 units)</b>		
Exports from Korea to the United States	10,721	16,496	17,400
Exports from Korea to other major destination markets.--			
China	4,189	11,108	12,756
Germany	4,383	5,091	4,336
Japan	4,175	4,316	4,283
Sweden	746	922	2,062
India	1,281	1,655	1,760
Mexico	261	2,064	1,730
United Arab Emirates	1,279	1,586	1,463
Thailand	459	887	1,190
All other destination markets	3,131	3,517	3,058
Total exports from Korea	30,626	47,642	50,037
	<b>Value (1,000 dollars)</b>		
Exports from Korea to the United States	59,645	60,605	71,115
Exports from Korea to other major destination markets.--			
China	12,428	32,398	40,062
Germany	18,657	18,236	16,566
Japan	9,906	10,379	10,636
Sweden	1,550	1,976	4,097
India	4,554	5,404	5,891
Mexico	1,566	5,788	4,167
United Arab Emirates	3,181	3,788	3,228
Thailand	1,302	5,909	8,770
All other destination markets	21,571	28,465	30,525
Total exports from Korea	134,359	172,949	195,058
	<b>Unit value (dollars per unit)</b>		
Exports from Korea to the United States	5.56	3.67	4.09
Exports from Korea to other major destination markets.--			
China	2.97	2.92	3.14
Germany	4.26	3.58	3.82
Japan	2.37	2.40	2.48
Sweden	2.08	2.14	1.99
India	3.55	3.27	3.35
Mexico	6.00	2.80	2.41
United Arab Emirates	2.49	2.39	2.21
Thailand	2.84	6.66	7.37
All other destination markets	6.89	8.09	9.98
Total exports from Korea	4.39	3.63	3.90

Table continued on next page.

**Table VII-4--Continued**  
**Tapered roller bearings, including cups and assemblies: Exports from Korea by destination market, 2015-17**

Destination market	Calendar year		
	2015	2016	2017
	<b>Share of quantity (percent)</b>		
Exports from Korea to the United States	35.0	34.6	34.8
Exports from Korea to other major destination markets.-- China	13.7	23.3	25.5
Germany	14.3	10.7	8.7
Japan	13.6	9.1	8.6
Sweden	2.4	1.9	4.1
India	4.2	3.5	3.5
Mexico	0.9	4.3	3.5
United Arab Emirates	4.2	3.3	2.9
Thailand	1.5	1.9	2.4
All other destination markets	10.2	7.4	6.1
Total exports from Korea	100.0	100.0	100.0
	<b>Share of value (percent)</b>		
Exports from Korea to the United States	44.4	35.0	36.5
Exports from Korea to other major destination markets.-- China	9.2	18.7	20.5
Germany	13.9	10.5	8.5
Japan	7.4	6.0	5.5
Sweden	1.2	1.1	2.1
India	3.4	3.1	3.0
Mexico	1.2	3.3	2.1
United Arab Emirates	2.4	2.2	1.7
Thailand	1.0	3.4	4.5
All other destination markets	16.1	16.5	15.6
Total exports from Korea	100.0	100.0	100.0

Note.—Quantity data are reported in units, not complete bearing or bearing equivalents. For example, one cup is one unit, as opposed to 0.5 of a bearing equivalent.

Source: Official exports statistics under HS subheading 8482.20 as reported by Korea Customs and Trade Development Institution in the IHS/GTA database, accessed April 23, 2018.

### U.S. INVENTORIES OF IMPORTED MERCHANDISE

Table VII-5 presents data on U.S. importers' reported inventories of TRBs. Inventories of subject imports from Korea 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.<sup>6</sup>

<sup>6</sup> "Nonsubject sources" include large-diameter TRBs.



**Table VII-5**  
**TRBs: U.S. importers' inventories, 2015-17**

\* \* \* \* \*

### **U.S. IMPORTERS' OUTSTANDING ORDERS**

The Commission requested importers to indicate whether they imported or arranged for the importation of in-scope TRBs (i.e. small-diameter TRBs) after December 31, 2017. Twenty of 27 responding importers indicated that they had arranged such imports. These data are presented in table VII-6.

**Table VII-6**  
**TRBs: Arranged imports of in-scope TRBs, January 2018 through December 2018**

\* \* \* \* \*

### **ANTIDUMPING OR COUNTERVAILING DUTY ORDERS IN THIRD-COUNTRY MARKETS**

There are no known antidumping or countervailing duty orders on TRBs in third-country markets.

### **INFORMATION ON NONSUBJECT COUNTRIES**

Global demand for all bearings is forecasted to grow by \*\*\* percent annually through 2021 to \$\*\*\*; this is driven by increased demand for bearings in automobiles and industrial manufacturing.<sup>7</sup> 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 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 (who sell 80 percent of their merchandise in Asia; 10 percent in Europe; 7 percent in the Americas). The last remaining 20 percent are smaller regional producers.<sup>8</sup>

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<sup>7</sup> Kalyani, Darshan. *IBIS World Industry Report 33299b*. "Ball Bearing Manufacturing in the US." April 2018.

<sup>8</sup> SKF's investor website, accessed May 18, 2018, [www.skf.com/group/investors/bearings-market](http://www.skf.com/group/investors/bearings-market).

Tables VII-7, VII-8, and VII-9 present global exports of tapered roller bearings, including cups and assemblies, as well as such exports from China and Japan, which were the largest nonsubject sources of TRBs in the United States. The value of global exports of tapered roller bearings, including cups and assemblies, increased by 2.7 percent from 2015-2017 (table VII-7).<sup>9</sup> Korea was the seventh-largest global exporter of these products, which include subject TRBs, and accounted for 4.4 percent of such exports globally in 2017 (table VII-7). The largest sources of global exports of these products, by value were, in descending order of value: Germany, Japan, the United States, China, and France.

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<sup>9</sup> GTA data for HTS subheading 8482.20 may include products outside of the scope of this investigation and thus the data may be overstated.

**Table VII-7**  
**Tapered roller bearings, including cups and assemblies: Global exports by exporter, 2015-17**

Exporter	Calendar year		
	2015	2016	2017
	<b>Value (1,000 dollars)</b>		
United States	541,621	466,872	522,554
Korea	134,359	172,949	195,058
All other major reporting exporters.--			
Germany	598,920	583,581	727,500
Japan	621,763	600,215	639,411
China	462,439	450,096	483,745
France	354,404	324,493	350,879
Romania	187,984	209,048	207,909
Austria	176,424	177,762	197,074
South Korea	134,359	172,949	195,058
India	134,425	123,851	151,623
Italy	96,609	97,423	104,976
Poland	93,152	96,814	104,669
All other exporters	779,485	577,321	552,964
Total global exports	4,315,944	4,053,374	4,433,418
	<b>Share of value (percent)</b>		
United States	12.5	11.5	11.8
Korea	3.1	4.3	4.4
All other major reporting exporters.--			
Germany	13.9	14.4	16.4
Japan	14.4	14.8	14.4
China	10.7	11.1	10.9
France	8.2	8.0	7.9
Romania	4.4	5.2	4.7
Austria	4.1	4.4	4.4
South Korea	3.1	4.3	4.4
India	3.1	3.1	3.4
Italy	2.2	2.4	2.4
Poland	2.2	2.4	2.4
All other exporters	18.1	14.2	12.5
Total global exports	100.0	100.0	100.0

Source: Official exports statistics under HS subheading 8482.20 as reported by various national statistical authorities in the IHS/GTA database, accessed April 23, 2018.

### INDUSTRY IN CHINA

Global exports from China of tapered roller bearings, including cups and assemblies increased from \$462.4 million to \$483.7 million from 2015 to 2017 (table VII-8). The leading export markets for these products from China in 2017 were, in descending order of value: the United States (\$76 million), Brazil (\$31.3 million), Mexico (\$24.6 million), India (\$24.4 million), and Italy (\$24.2).

**Table VII-8**  
**Tapered roller bearings, including cups and assemblies: Exports from China by destination market, 2015-17**

Destination market	Calendar year		
	2015	2016	2017
	<b>Quantity (1,000 units)</b>		
Exports from China to the United States	46,295	48,224	58,999
Exports from China to other major destination markets.--			
Brazil	10,319	11,279	12,117
Iran	7,286	9,559	9,243
India	6,413	6,658	9,161
United Arab Emirates	7,445	7,912	8,931
Netherlands	6,697	7,118	8,655
Mexico	8,103	8,401	8,639
Italy	5,788	5,762	7,392
Germany	7,829	6,123	5,895
All other destination markets	63,310	68,756	64,887
Total exports from China	169,485	179,793	193,919
	<b>Value (1,000 dollars)</b>		
Exports from China to the United States	84,537	71,285	76,077
Exports from China to other major destination markets.--			
Brazil	27,226	28,567	31,303
Iran	12,184	15,941	16,960
India	23,697	20,923	24,441
United Arab Emirates	13,394	13,709	12,311
Netherlands	11,890	13,119	15,620
Mexico	23,311	22,758	24,617
Italy	21,081	20,195	24,185
Germany	22,938	18,952	21,593
All other destination markets	222,180	224,648	236,637
Total exports from China	462,439	450,096	483,745
	<b>2015</b>	<b>2016</b>	<b>2017</b>
	<b>Unit value (dollars per unit)</b>		
Exports from China to the United States	1.83	1.48	1.29
Exports from China to other major destination markets.--			
Brazil	2.64	2.53	2.58
Iran	1.67	1.67	1.83
India	3.70	3.14	2.67
United Arab Emirates	1.80	1.73	1.38
Netherlands	1.78	1.84	1.80
Mexico	2.88	2.71	2.85
Italy	3.64	3.50	3.27
Germany	2.93	3.09	3.66
All other destination markets	3.51	3.27	3.65
Total exports from China	2.73	2.50	2.49

Table continued on next page.

**Table VII-8--Continued**  
**Tapered roller bearings, including cups and assemblies: Exports from China by destination market, 2015-17**

Destination market	Calendar year		
	2015	2016	2017
	<b>Share of quantity (percent)</b>		
Exports from China to the United States	27.3	26.8	30.4
Exports from China to other major destination markets.--			
Brazil	6.1	6.3	6.2
Iran	4.3	5.3	4.8
India	3.8	3.7	4.7
United Arab Emirates	4.4	4.4	4.6
Netherlands	4.0	4.0	4.5
Mexico	4.8	4.7	4.5
Italy	3.4	3.2	3.8
Germany	4.6	3.4	3.0
All other destination markets	37.4	38.2	33.5
Total exports from China	100.0	100.0	100.0
	<b>Share of value (percent)</b>		
Exports from China to the United States	18.3	15.8	15.7
Exports from China to other major destination markets.--			
Brazil	5.9	6.3	6.5
Iran	2.6	3.5	3.5
India	5.1	4.6	5.1
United Arab Emirates	2.9	3.0	2.5
Netherlands	2.6	2.9	3.2
Mexico	5.0	5.1	5.1
Italy	4.6	4.5	5.0
Germany	5.0	4.2	4.5
All other destination markets	48.0	49.9	48.9
Total exports from China	100.0	100.0	100.0

Note.—Quantity data are reported in units, not complete bearing or bearing equivalents. For example, one cup is one unit, as opposed to 0.5 of a bearing equivalent.

Source: Official exports statistics under HS subheading 8482.20 as reported by China Customs in the IHS/GTA database, accessed May 2, 2018.

## INDUSTRY IN JAPAN

Global exports from Japan of tapered roller bearings, including cups and assemblies increased from \$621.8 million to \$639.4 million from 2015 to 2017 (table VII-9). The leading export markets for these products from Japan in 2017 were, in descending order of value: the United States (\$108.7 million), China (\$105.2 million), Germany (\$70.8 million), the Netherlands (\$48.7 million), and Indonesia (\$48.6 million).

**Table VII-9**  
**Tapered roller bearings, including cups and assemblies: Exports from Japan by destination market, 2015-17**

Destination market	Calendar year		
	2015	2016	2017
	<b>Quantity (1,000 units)</b>		
Exports from Japan to the United States	25,570	23,576	22,616
Exports from Japan to other major destination markets.--			
China	11,045	11,795	12,450
Germany	14,895	12,586	11,791
Indonesia	9,471	10,084	11,404
Netherlands	8,193	8,820	9,002
Singapore	7,212	5,195	7,192
Thailand	5,679	6,582	7,081
Mexico	3,209	5,069	5,363
Panama	4,241	3,799	4,484
All other destination markets	25,555	21,722	20,227
Total exports from Japan	115,070	109,228	111,609
	<b>Value (1,000 dollars)</b>		
Exports from Japan to the United States	115,070	103,093	108,739
Exports from Japan to other major destination markets.--			
China	111,086	113,160	105,242
Germany	73,860	67,312	70,778
Indonesia	30,580	33,344	48,589
Netherlands	46,684	43,784	48,701
Singapore	32,675	26,619	34,020
Thailand	30,255	34,391	35,776
Mexico	10,157	12,721	15,032
Panama	19,704	18,427	21,156
All other destination markets	151,691	147,364	151,378
Total exports from Japan	621,763	600,215	639,411
	<b>Unit value (dollars per unit)</b>		
Exports from Japan to the United States	4.50	4.37	4.81
Exports from Japan to other major destination markets.--			
China	10.06	9.59	8.45
Germany	4.96	5.35	6.00
Indonesia	3.23	3.31	4.26
Netherlands	5.70	4.96	5.41
Singapore	4.53	5.12	4.73
Thailand	5.33	5.22	5.05
Mexico	3.17	2.51	2.80
Panama	4.65	4.85	4.72
All other destination markets	5.94	6.78	7.48
Total exports from Japan	5.40	5.50	5.73

Table continued on next page.

**Table VII-9--Continued**  
**Tapered roller bearings, including cups and assemblies: Exports from Japan by destination market, 2015-17**

Destination market	Calendar year		
	2015	2016	2017
	<b>Share of quantity (percent)</b>		
Exports from Japan to the United States	22.2	21.6	20.3
Exports from Japan to other major destination markets.--			
China	9.6	10.8	11.2
Germany	12.9	11.5	10.6
Indonesia	8.2	9.2	10.2
Netherlands	7.1	8.1	8.1
Singapore	6.3	4.8	6.4
Thailand	4.9	6.0	6.3
Mexico	2.8	4.6	4.8
Panama	3.7	3.5	4.0
All other destination markets	22.2	19.9	18.1
Total exports from Japan	100.0	100.0	100.0
	<b>Share of value (percent)</b>		
Exports from Japan to the United States	18.5	17.2	17.0
Exports from Japan to other major destination markets.--			
China	17.9	18.9	16.5
Germany	11.9	11.2	11.1
Indonesia	4.9	5.6	7.6
Netherlands	7.5	7.3	7.6
Singapore	5.3	4.4	5.3
Thailand	4.9	5.7	5.6
Mexico	1.6	2.1	2.4
Panama	3.2	3.1	3.3
All other destination markets	24.4	24.6	23.7
Total exports from Japan	100.0	100.0	100.0

Note.—Quantity data are reported in units, not complete bearing or bearing equivalents. For example, one cup is one unit, as opposed to 0.5 of a bearing equivalent.

Source: Official exports statistics under HS subheading 8482.20 as reported by Japan Ministry of Finance in the IHS/GTA database, accessed May 2, 2018.





**APPENDIX A**

***FEDERAL REGISTER* NOTICES**



The Commission makes available notices relevant to its investigations and reviews on its website, [www.usitc.gov](http://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 31067, July 5, 2017	<i>Tapered Roller Bearings From Korea; Institution of Antidumping Duty Investigation and Scheduling of Preliminary Phase Investigation</i>	<a href="https://www.gpo.gov/fdsys/pkg/FR-2017-07-05/pdf/2017-14058.pdf">https://www.gpo.gov/fdsys/pkg/FR-2017-07-05/pdf/2017-14058.pdf</a>
82 FR 34477, July 25, 2017	<i>Certain Tapered Roller Bearings From the Republic of Korea: Initiation of Less-Than-Fair-Value Investigation</i>	<a href="https://www.gpo.gov/fdsys/pkg/FR-2017-07-25/pdf/2017-15563.pdf">https://www.gpo.gov/fdsys/pkg/FR-2017-07-25/pdf/2017-15563.pdf</a>
82 FR 39455, August 18, 2017	<i>Tapered Roller Bearings From Korea; Determination</i>	<a href="https://www.gpo.gov/fdsys/pkg/FR-2017-08-18/pdf/2017-17467.pdf">https://www.gpo.gov/fdsys/pkg/FR-2017-08-18/pdf/2017-17467.pdf</a>
83 FR 4901, February 2, 2018	<i>Certain Tapered Roller Bearings From the Republic of Korea: Preliminary Affirmative Determination of Sales at Less-Than-Fair-Value, Postponement of Final Determination, and Extension of Provisional Measures</i>	<a href="https://www.gpo.gov/fdsys/pkg/FR-2018-02-02/pdf/2018-02104.pdf">https://www.gpo.gov/fdsys/pkg/FR-2018-02-02/pdf/2018-02104.pdf</a>
83 FR 8504, February 27, 2018	<i>Tapered Roller Bearings From Korea; Scheduling of the Final Phase of an Antidumping Duty Investigation</i>	<a href="https://www.gpo.gov/fdsys/pkg/FR-2018-02-27/pdf/2018-03902.pdf">https://www.gpo.gov/fdsys/pkg/FR-2018-02-27/pdf/2018-03902.pdf</a>
83 FR 29092, June 22, 2018	<i>Certain Tapered Roller Bearings From the Republic of Korea: Final Determination of Sales at Less Than Fair Value</i>	<a href="https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-13447.pdf">https://www.gpo.gov/fdsys/pkg/FR-2018-06-22/pdf/2018-13447.pdf</a>



**APPENDIX B**

**LIST OF HEARING WITNESSES**



## CALENDAR OF PUBLIC HEARING

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

**Subject:** Tapered Roller Bearings from Korea  
**Inv. No.:** 731-TA-1380 (Final)  
**Date and Time:** June 5, 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 WITNESSES:**

**The Honorable Sherrod Brown, United States Senator, Ohio**

**The Honorable Rob Portman, United States Senator, Ohio**

**The Honorable James B. Renacci, U.S. Representative, 16<sup>th</sup> District, Ohio**

### **OPENING REMARKS:**

Petitioner (**Terence P. Stewart**, Stewart and Stewart)

Respondents (**Ned H. Marshak**, Grunfeld Desiderio Lebowitz Silverman & Klestadt LLP)

### **In Support of the Imposition of Antidumping Duty Order:**

Stewart and Stewart  
Washington, DC  
on behalf of

The Timken Company

**Christopher A. Coughlin**, Executive Vice President and Group President,  
The Timken Company

**Brian J. Ruel**, Vice President for the Americas, The Timken Company

**In Support of the Imposition of  
Antidumping Duty Order (continued):**

**Michael A. Discenza**, Vice President and Group Controller,  
The Timken Company

**Brian T. Strunck**, General Manager, Sales, Global Commercial Vehicle,  
The Timken Company

**S. Ryan Hartong**, Attorney, The Timken Company

**Terence P. Stewart** )  
**Nicholas J. Birch** )  
 ) – OF COUNSEL  
**Mark D. Beatty** )  
**Stephanie T. Rosenberg** )

**In Opposition to the Imposition of  
Antidumping Duty Order:**

Grunfeld Desiderio Lebowitz Silverman & Klestadt LLP  
Washington, DC  
on behalf of

Schaeffler Korea Corporation  
Schaeffler Group USA, Inc.

**Eric Ovendorf**, Senior Vice President – Regional Business Unit  
Industrial OE Sales & Fields Americas, Schaeffler Group USA, Inc.

**Harry Schuster**, Automotive Sales - Director Transmission Applications &  
Chassis Systems, Schaeffler Group USA, Inc.

**Robert Wick**, General Counsel – North American Divisions,  
Schaeffler Group USA, Inc.

**Sebastian Brand**, Director – Finance Strategy, Processes & Infrastructure,  
Schaeffler Group USA, Inc.

**James P. Dougan**, Vice President, Economic Consulting Services, LLC

**Max F. Schutzman** )  
**Ned H. Marshak** ) – OF COUNSEL  
**Kavita Mohan** )



**In Opposition to the Imposition of  
Antidumping Duty Order (continued):**

Hogan Lovells US LLP  
Washington, DC  
on behalf of

Bearing Art Corporation  
Iljin USA, Inc.

**John Dix**, President, Iljin USA Corporation

**Don Cooperrider**, Executive Director of Sales and Engineering,  
Iljin USA Corporation

**Wes Ripperger III**, Vice President, Superior Bearing & Supply

**James P. Dougan**, Vice President, Economic Consulting Services, LLC

**Craig A. Lewis** )  
**Jonathan T. Stoel** ) – OF COUNSEL  
**Michael G. Jacobson** )

Brinks Gilson & Lione  
Washington, DC  
on behalf of

Dana Incorporated

**Steve Schamp**, Senior Purchasing Manager, Dana Incorporated

**Lyle Vander Schaaf** ) – OF COUNSEL

**REBUTTAL/CLOSING REMARKS:**

Petitioner (**Terence P. Stewart**, Stewart and Stewart)  
Respondents (**Craig A. Lewis**, Hogan Lovells US LLP)

**-END-**



**APPENDIX C**  
**SUMMARY DATA**

Table C-1: TRBs: Summary data concerning the U.S. market.....	C-3
Table C-2: Small-diameter TRBs: Summary data concerning the U.S. market .....	C-5
Table C-3: TRBs: Summary data concerning the U.S. market excluding U.S. producer Schaeffler .....	C-5

**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&E; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	2015	2016	2017	2015-17	2015-16	2016-17
<b>U.S. consumption value:</b>						
Amount.....	1,584,844	1,371,083	1,469,391	(7.3)	(13.5)	7.2
Producers' share (fn1).....	58.8	58.9	58.7	(0.1)	0.2	(0.3)
Importers' share (fn1):						
Korea.....	3.9	5.1	5.3	1.5	1.2	0.3
China.....	7.7	7.2	7.0	(0.7)	(0.5)	(0.2)
Japan.....	12.3	11.2	11.2	(1.1)	(1.1)	(0.0)
All other sources.....	17.4	17.6	17.8	0.4	0.2	0.2
Nonsubject sources.....	37.4	36.0	36.0	(1.4)	(1.4)	0.0
All import sources.....	41.2	41.1	41.3	0.1	(0.2)	0.3
<b>U.S. consumption quantity:</b>						
Amount.....	160,143	152,741	155,250	(3.1)	(4.6)	1.6
Producers' share (fn1).....	39.7	38.5	34.9	(4.8)	(1.2)	(3.6)
Importers' share (fn1):						
Korea.....	5.3	7.4	8.2	2.9	2.1	0.7
China.....	22.6	25.0	27.0	4.3	2.3	2.0
Japan.....	20.6	18.6	18.9	(1.7)	(2.0)	0.3
All other sources.....	11.8	10.6	11.1	(0.7)	(1.2)	0.5
Nonsubject sources.....	55.0	54.1	56.9	2.0	(0.9)	2.9
All import sources.....	60.3	61.5	65.1	4.8	1.2	3.6
<b>U.S. imports from:</b>						
<b>Korea:</b>						
Quantity.....	8,495	11,352	12,689	49.4	33.6	11.8
Value.....	61,022	69,448	78,335	28.4	13.8	12.8
Unit value (fn3).....	\$6.88	\$5.66	\$5.60	(18.6)	(17.7)	(1.0)
Ending inventory quantity.....	***	***	***	***	***	***
<b>China:</b>						
Quantity.....	36,258	38,115	41,858	15.4	5.1	9.8
Value.....	121,865	98,522	103,333	(15.2)	(19.2)	4.9
Unit value (fn3).....	\$3.36	\$2.58	\$2.47	(26.6)	(23.1)	(4.5)
Ending inventory quantity.....	***	***	***	***	***	***
<b>Japan:</b>						
Quantity.....	32,915	28,334	29,332	(10.9)	(13.9)	3.5
Value.....	194,680	153,680	164,538	(15.5)	(21.1)	7.1
Unit value (fn3).....	\$5.54	\$5.13	\$5.37	(3.0)	(7.4)	4.8
Ending inventory quantity.....	***	***	***	***	***	***
<b>All other sources:</b>						
Quantity.....	18,888	16,156	17,220	(8.8)	(14.5)	6.6
Value.....	276,044	241,440	261,316	(5.3)	(12.5)	8.2
Unit value (fn3).....	\$14.53	\$14.85	\$15.10	3.9	2.2	1.7
Ending inventory quantity.....	***	***	***	***	***	***
<b>Nonsubject sources:</b>						
Quantity.....	88,061	82,605	88,410	0.4	(6.2)	7.0
Value.....	592,590	493,642	529,187	(10.7)	(16.7)	7.2
Unit value (fn3).....	\$6.57	\$5.85	\$5.89	(10.3)	(10.9)	0.6
Ending inventory quantity.....	***	***	***	***	***	***
<b>All import sources:</b>						
Quantity.....	96,556	93,957	101,099	4.7	(2.7)	7.6
Value.....	653,612	563,090	607,522	(7.1)	(13.8)	7.9
Unit value (fn3).....	\$6.60	\$5.83	\$5.85	(11.3)	(11.6)	0.4
Ending inventory quantity.....	***	***	***	***	***	***

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&E; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	Calendar year			Calendar year		
	2015	2016	2017	2015-17	2015-16	2016-17
U.S. producers:						
Average capacity quantity.....	116,147	114,437	114,420	(1.5)	(1.5)	(0.0)
Production quantity.....	79,673	73,714	76,112	(4.5)	(7.5)	3.3
Capacity utilization (fn1).....	68.6	64.4	66.5	(2.1)	(4.2)	2.1
U.S. shipments:						
Quantity.....	63,587	58,784	54,151	(14.8)	(7.6)	(7.9)
Value.....	931,232	807,993	861,869	(7.4)	(13.2)	6.7
Unit value (fn3).....	\$14.28	\$13.50	\$15.68	9.8	(5.5)	16.1
Export shipments:						
Quantity.....	***	***	***	***	***	***
Value.....	***	***	***	***	***	***
Unit value (fn3).....	***	***	***	***	***	***
Ending inventory quantity.....	8,084	8,408	9,304	15.1	4.0	10.7
Inventories/total shipments (fn1).....	***	***	***	***	***	***
Production workers.....	3,205	2,953	3,180	(0.8)	(7.9)	7.7
Hours worked (1,000s).....	6,225	5,718	6,376	2.4	(8.1)	11.5
Wages paid (\$1,000).....	147,742	133,827	153,714	4.0	(9.4)	14.9
Hourly wages (dollars per hour).....	\$23.73	\$23.40	\$24.11	1.6	(1.4)	3.0
Productivity (B&E per hour).....	12.8	12.9	11.9	(6.7)	0.7	(7.4)
Unit labor costs.....	\$1.85	\$1.82	\$2.02	8.9	(2.1)	11.2
Net sales:						
Quantity.....	***	***	***	***	***	***
Value.....	***	***	***	***	***	***
Unit value.....	***	***	***	***	***	***
Cost of goods sold (COGS).....	***	***	***	***	***	***
Gross profit or (loss).....	***	***	***	***	***	***
SG&A expenses.....	***	***	***	***	***	***
Operating income or (loss).....	***	***	***	***	***	***
Net income or (loss).....	***	***	***	***	***	***
Capital expenditures.....	***	***	***	***	***	***
Unit COGS.....	***	***	***	***	***	***
Unit SG&A expenses.....	***	***	***	***	***	***
Unit operating income or (loss).....	***	***	***	***	***	***
Unit net income or (loss).....	***	***	***	***	***	***
COGS/sales (fn1).....	***	***	***	***	***	***
Operating income or (loss)/sales (fn1).....	***	***	***	***	***	***
Net income or (loss)/sales (fn1).....	***	***	***	***	***	***

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--Undefined.

fn3.--These unit values exclude the value of parts for which there are no reported bearing or bearing equivalent units of measure.

Source: Compiled from data submitted in response to Commission questionnaires and 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, and 8482.99.1570, accessed April 23, 2018, and adding in data reported under statistical reporting number 8482.99.6595 Korea only, accessed June 14, 2018.

**Table C-2**

**Small-diameter 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&E; Period changes=percent--exceptions noted)

	Reported data			Period changes		
	2015	2016	2017	2015-17	2015-16	2016-17
<b>U.S. consumption value:</b>						
Amount.....	1,154,329	1,040,625	1,064,317	(7.8)	(9.9)	2.3
Producers' share (fn1).....	56.0	57.7	55.3	(0.7)	1.6	(2.3)
Importers' share (fn1):						
Korea.....	5.3	6.7	7.4	2.1	1.4	0.7
China.....	8.6	8.2	9.3	0.7	(0.4)	1.1
Japan.....	14.0	12.5	13.7	(0.3)	(1.5)	1.2
All other sources.....	16.1	14.9	14.3	(1.8)	(1.2)	(0.6)
Nonsubject sources.....	38.7	35.7	37.3	(1.4)	(3.0)	1.6
All import sources.....	44.0	42.3	44.7	0.7	(1.6)	2.3
<b>U.S. consumption quantity:</b>						
Amount.....	155,127	147,226	151,054	(2.6)	(5.1)	2.6
Producers' share (fn1).....	40.4	39.5	35.3	(5.0)	(0.9)	(4.1)
Importers' share (fn1):						
Korea.....	5.5	7.7	8.4	2.9	2.2	0.7
China.....	22.1	24.4	26.7	4.5	2.3	2.3
Japan.....	20.4	18.3	19.0	(1.4)	(2.2)	0.8
All other sources.....	11.6	10.1	10.6	(1.0)	(1.5)	0.4
Nonsubject sources.....	54.1	52.8	56.3	2.1	(1.3)	3.5
All import sources.....	59.6	60.5	64.7	5.0	0.9	4.1
<b>U.S. imports from:</b>						
<b>Korea:</b>						
Quantity.....	8,495	11,352	12,689	49.4	33.6	11.8
Value.....	61,022	69,448	78,335	28.4	13.8	12.8
Unit value (fn3).....	\$6.88	\$5.66	\$5.60	(18.6)	(17.7)	(1.0)
Ending inventory quantity.....	***	***	***	***	***	***
<b>China:</b>						
Quantity.....	34,315	35,930	40,284	17.4	4.7	12.1
Value.....	99,353	85,475	98,828	(0.5)	(14.0)	15.6
Unit value (fn3).....	\$2.89	\$2.38	\$2.45	(15.3)	(17.8)	3.1
Ending inventory quantity.....	***	***	***	***	***	***
<b>Japan:</b>						
Quantity.....	31,674	26,883	28,742	(9.3)	(15.1)	6.9
Value.....	161,088	130,086	145,841	(9.5)	(19.2)	12.1
Unit value (fn3).....	\$4.70	\$4.53	\$4.83	2.9	(3.6)	6.8
Ending inventory quantity.....	***	***	***	***	***	***
<b>All other sources:</b>						
Quantity.....	17,980	14,909	15,943	(11.3)	(17.1)	6.9
Value.....	186,281	155,568	152,463	(18.2)	(16.5)	(2.0)
Unit value (fn3).....	\$10.27	\$10.33	\$9.48	(7.8)	0.5	(8.2)
Ending inventory quantity.....	***	***	***	***	***	***
<b>Nonsubject sources:</b>						
Quantity.....	83,968	77,722	84,968	1.2	(7.4)	9.3
Value.....	446,722	371,130	397,133	(11.1)	(16.9)	7.0
Unit value (fn3).....	\$5.15	\$4.65	\$4.58	(11.2)	(9.9)	(1.5)
Ending inventory quantity.....	***	***	***	***	***	***
<b>All import sources:</b>						
Quantity.....	92,463	89,074	97,657	5.6	(3.7)	9.6
Value.....	507,744	440,578	475,468	(6.4)	(13.2)	7.9
Unit value (fn3).....	\$5.31	\$4.78	\$4.71	(11.4)	(10.1)	(1.4)
Ending inventory quantity.....	***	***	***	***	***	***

Table continued on next page.

**Table C-2--Continued**

**Small-diameter 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		
	2015	2016	2017	2015-17	2015-16	2016-17
U.S. producers':						
Average capacity quantity.....	114,440	112,724	112,710	(1.5)	(1.5)	(0.0)
Production quantity.....	78,687	73,085	75,238	(4.4)	(7.1)	2.9
Capacity utilization (fn1).....	68.8	64.8	66.8	(2.0)	(3.9)	1.9
U.S. shipments:						
Quantity.....	62,663	58,152	53,397	(14.8)	(7.2)	(8.2)
Value.....	646,585	600,047	588,849	(8.9)	(7.2)	(1.9)
Unit value (fn3).....	\$10.32	\$10.31	\$11.02	6.9	(0.0)	6.9
Export shipments:						
Quantity.....	***	***	***	***	***	***
Value.....	***	***	***	***	***	***
Unit value (fn3).....	***	***	***	***	***	***
Ending inventory quantity.....	8,018	8,375	9,207	14.8	4.5	9.9
Inventories/total shipments (fn1).....	***	***	***	***	***	***
Production workers.....	2,252	2,131	2,252	---	(5.4)	5.7
Hours worked (1,000s).....	4,426	4,130	4,548	2.8	(6.7)	10.1
Wages paid (\$1,000).....	97,575	92,277	103,326	5.9	(5.4)	12.0
Hourly wages (dollars per hour).....	\$22.05	\$22.34	\$22.72	3.1	1.3	1.7
Productivity (B&BE per hour).....	17.8	17.7	16.5	(6.9)	(0.5)	(6.5)
Unit labor costs.....	\$1.24	\$1.26	\$1.37	10.7	1.8	8.8
Net sales:						
Quantity.....	***	***	***	***	***	***
Value.....	***	***	***	***	***	***
Unit value.....	***	***	***	***	***	***
Cost of goods sold (COGS).....	***	***	***	***	***	***
Gross profit or (loss).....	***	***	***	***	***	***
SG&A expenses.....	***	***	***	***	***	***
Operating income or (loss).....	***	***	***	***	***	***
Net income or (loss).....	***	***	***	***	***	***
Capital expenditures.....	***	***	***	***	***	***
Unit COGS.....	***	***	***	***	***	***
Unit SG&A expenses.....	***	***	***	***	***	***
Unit operating income or (loss).....	***	***	***	***	***	***
Unit net income or (loss).....	***	***	***	***	***	***
COGS/sales (fn1).....	***	***	***	***	***	***
Operating income or (loss)/sales (fn1).....	***	***	***	***	***	***
Net income or (loss)/sales (fn1).....	***	***	***	***	***	***

Notes:

Prior to July 2016, in-scope TRBs were imported under HTS statistical reporting numbers 8482.20.0060, 8482.20.0080, and 8482.99.1540, which covered product outside the scope of this investigation. Effective July 2016, HTS statistical reporting numbers 8482.20.0061, 8482.20.0081, and 8482.99.1550 were introduced to cover in-scope TRBs only, specifically TRBs with an outside cup diameter of eight inches or less (small-diameter TRBs). To make the data comparable, staff applied ratios to the quantity and value of small-diameter TRB imports that entered prior to July 2016 under the broader HTS statistical reporting numbers, based on imports entering under the new HTS statistical reporting numbers for July 2016 to December 2017.

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--Undefined.

fn3.--These unit values exclude the value of parts for which there are no reported bearing or bearing equivalent units of measure.

Source: Compiled from data submitted in response to Commission questionnaires and adjusted official U.S. import statistics using HTS statistical reporting numbers 8482.20.0040, 8482.20.0060, 8482.20.0061, 8482.20.0070, 8482.20.0080, 8482.20.0081, 8482.91.0050, 8482.99.1540, and 8482.99.1550, accessed April 23, 2018, and adding in data reported under statistical reporting number 8482.99.6595 Korea only, accessed June 14, 2018.



**Table C-3**

**TRBs: Summary data concerning the U.S. market excluding U.S. producer Schaeffler, 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			Calendar year		
	2015	2016	2017	2015-17	2015-16	2016-17
<b>U.S. consumption value:</b>						
Amount.....	1,584,844	1,371,083	1,469,391	(7.3)	(13.5)	7.2
Producers' share (fn1):						
Included firms.....	***	***	***	***	***	***
Excluded firms (fn4).....	***	***	***	***	***	***
All U.S. producers.....	56.0	57.7	55.3	(0.7)	1.6	(2.3)
Importers' share (fn1):						
Korea.....	5.3	6.7	7.4	2.1	1.4	0.7
China.....	8.6	8.2	9.3	0.7	(0.4)	1.1
Japan.....	14.0	12.5	13.7	(0.3)	(1.5)	1.2
All other sources.....	16.1	14.9	14.3	(1.8)	(1.2)	(0.6)
Nonsubject sources.....	38.7	35.7	37.3	(1.4)	(3.0)	1.6
All import sources.....	44.0	42.3	44.7	0.7	(1.6)	2.3
<b>U.S. consumption quantity:</b>						
Amount.....	155,127	147,226	151,054	(2.6)	(5.1)	2.6
Producers' share (fn1):						
Included firms.....	***	***	***	***	***	***
Excluded firms (fn4).....	***	***	***	***	***	***
All U.S. producers.....	40.4	39.5	35.3	(5.0)	(0.9)	(4.1)
Importers' share (fn1):						
Korea.....	5.5	7.7	8.4	2.9	2.2	0.7
China.....	22.1	24.4	26.7	4.5	2.3	2.3
Japan.....	20.4	18.3	19.0	(1.4)	(2.2)	0.8
All other sources.....	11.6	10.1	10.6	(1.0)	(1.5)	0.4
Nonsubject sources.....	54.1	52.8	56.3	2.1	(1.3)	3.5
All import sources.....	59.6	60.5	64.7	5.0	0.9	4.1
<b>U.S. imports from:</b>						
Korea:						
Quantity.....	8,495	11,352	12,689	49.4	33.6	11.8
Value.....	61,022	69,448	78,335	28.4	13.8	12.8
Unit value (fn3).....	\$6.88	\$5.66	\$5.60	(18.6)	(17.7)	(1.0)
Ending inventory quantity.....	***	***	***	***	***	***
China:						
Quantity.....	36,258	38,115	41,858	15.4	5.1	9.8
Value.....	121,865	98,522	103,333	(15.2)	(19.2)	4.9
Unit value (fn3).....	\$3.36	\$2.58	\$2.47	(26.6)	(23.1)	(4.5)
Ending inventory quantity.....	***	***	***	***	***	***
Japan:						
Quantity.....	32,915	28,334	29,332	(10.9)	(13.9)	3.5
Value.....	194,680	153,680	164,538	(15.5)	(21.1)	7.1
Unit value (fn3).....	\$5.54	\$5.13	\$5.37	(3.0)	(7.4)	4.8
Ending inventory quantity.....	***	***	***	***	***	***
All other sources:						
Quantity.....	18,888	16,156	17,220	(8.8)	(14.5)	6.6
Value.....	276,044	241,440	261,316	(5.3)	(12.5)	8.2
Unit value (fn3).....	\$14.53	\$14.85	\$15.10	3.9	2.2	1.7
Ending inventory quantity.....	***	***	***	***	***	***
Nonsubject sources:						
Quantity.....	88,061	82,605	88,410	0.4	(6.2)	7.0
Value.....	592,590	493,642	529,187	(10.7)	(16.7)	7.2
Unit value (fn3).....	\$6.57	\$5.85	\$5.89	(10.3)	(10.9)	0.6
Ending inventory quantity.....	***	***	***	***	***	***
All import sources:						
Quantity.....	96,556	93,957	101,099	4.7	(2.7)	7.6
Value.....	653,612	563,090	607,522	(7.1)	(13.8)	7.9
Unit value (fn3).....	\$6.60	\$5.83	\$5.85	(11.3)	(11.6)	0.4
Ending inventory quantity.....	***	***	***	***	***	***

Table continued on next page.

**Table C-3--Continued**

**TRBs: Summary data concerning the U.S. market excluding U.S. producer Schaeffler, 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--)

	Reported data			Period changes		
	Calendar year			Calendar year		
	2015	2016	2017	2015-17	2015-16	2016-17
U.S. producers:						
Average capacity quantity.....	***	***	***	***	***	***
Production quantity.....	***	***	***	***	***	***
Capacity utilization (fn1).....	***	***	***	***	***	***
U.S. shipments:						
Quantity.....	***	***	***	***	***	***
Value.....	***	***	***	***	***	***
Unit value (fn3).....	***	***	***	***	***	***
Export shipments:						
Quantity.....	***	***	***	***	***	***
Value.....	***	***	***	***	***	***
Unit value (fn3).....	***	***	***	***	***	***
Ending inventory quantity.....	***	***	***	***	***	***
Inventories/total shipments (fn1).....	***	***	***	***	***	***
Production workers.....	***	***	***	***	***	***
Hours worked (1,000s).....	***	***	***	***	***	***
Wages paid (\$1,000).....	***	***	***	***	***	***
Hourly wages (dollars per hour).....	***	***	***	***	***	***
Productivity (B&BE per hour).....	***	***	***	***	***	***
Unit labor costs.....	***	***	***	***	***	***
Net sales:						
Quantity.....	***	***	***	***	***	***
Value.....	***	***	***	***	***	***
Unit value.....	***	***	***	***	***	***
Cost of goods sold (COGS).....	***	***	***	***	***	***
Gross profit or (loss).....	***	***	***	***	***	***
SG&A expenses.....	***	***	***	***	***	***
Operating income or (loss).....	***	***	***	***	***	***
Net income or (loss).....	***	***	***	***	***	***
Capital expenditures.....	***	***	***	***	***	***
Unit COGS.....	***	***	***	***	***	***
Unit SG&A expenses.....	***	***	***	***	***	***
Unit operating income or (loss).....	***	***	***	***	***	***
Unit net income or (loss).....	***	***	***	***	***	***
COGS/sales (fn1).....	***	***	***	***	***	***
Operating income or (loss)/sales (fn1).....	***	***	***	***	***	***
Net income or (loss)/sales (fn1).....	***	***	***	***	***	***

Notes:

fn1.--Reported data are in percent and period changes are in percentage points.

fn2.--Undefined.

fn3.--These unit values exclude the value of parts for which there are no reported bearing or bearing equivalent units of measure.

fn4.--The excluded producer reported \*\*\*.

Source: Compiled from data submitted in response to Commission questionnaires and adjusted 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, and 8482.99.1570, accessed April 23, 2018, and adding in data reported under statistical reporting number 8482.99.6595 Korea only, accessed June 14, 2018.

## **APPENDIX D**

### **COMPARABILITY OF SMALL-DIAMETER AND LARGE-DIAMETER TRBs**



**Table D-1**  
**TRBs: U.S. producers' narrative responses regarding the comparability of small-diameter and large-diameter TRBs**

\* \* \* \* \*

**Table D-2**  
**TRBs: U.S. importers' narrative responses regarding the comparability of small-diameter and large-diameter TRBs**

\* \* \* \* \*

**Table D-3**  
**TRBs: U.S. purchasers' narrative responses regarding the comparability of small-diameter and large-diameter TRBs**

\* \* \* \* \*



**APPENDIX E**  
**NONSUBJECT COUNTRY PRICE DATA**





Four importers (\*\*\*) reported price data for TRBs imported from China for products 4, 6, 7, and 8 and one importer (\*\*\*) reported price data for TRBs imported from Japan for product 6.<sup>1</sup> Price data reported by these firms accounted for \*\*\* percent of the value of U.S. commercial shipments from China and \*\*\* percent of the value of U.S. commercial shipments from Japan in 2017. These price items and accompanying data are comparable to those presented in tables V-5 to V-10. Price and quantity data for China and Japan are shown in tables E-1 to E-5 and in figures E-1 to E-5 (with domestic and subject sources).

In comparing nonsubject country pricing data with U.S. producer pricing data, prices for product imported from China were lower than prices for U.S.-produced product in 28 of 32 instances. In comparing nonsubject country pricing data with U.S. producer pricing data, prices for product imported from Japan were lower than prices for U.S.-produced product in 5 of 10 instances. In comparing nonsubject country pricing data with prices for product imported from Korea, prices for product imported from China were lower than prices for Korean produced product in 20 of 32 instances; there were no instances in which prices for product imported from Japan were lower than prices for Korean produced product. A summary of price differentials is presented in table E-6.

**Table E-1**

**TRBs: Weighted-average f.o.b. prices and quantities of imported product 4, by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table E-3**

**TRBs: Weighted-average f.o.b. prices and quantities of imported product 6, by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table E-4**

**TRBs: Weighted-average f.o.b. prices and quantities of imported product 7, by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table E-5**

**TRBs: Weighted-average f.o.b. prices and quantities of imported product 8, by quarters, January 2015-December 2017**

\* \* \* \* \*

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<sup>1</sup> \*\*\*.

**Figure E-1**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 4, by quarters, January 2015-December 2017**

\* \* \* \* \*

**Figure E-3**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 6, by quarters, January 2015-December 2017**

\* \* \* \* \*

**Figure E-4**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 7, by quarters, January 2015-December 2017**

\* \* \* \* \*

**Figure E-5**

**TRBs: Weighted-average f.o.b. prices and quantities of domestic and imported product 8, by quarters, January 2015-December 2017**

\* \* \* \* \*

**Table E-6**

**TRBs: Summary of underselling/(overselling), by country, January 2015-December 2017**

Comparison	Total number of comparisons	Nonsubject lower than the comparison source		Nonsubject higher than the comparison source	
		Number of quarters	Quantity (units)	Number of quarters	Quantity (units)
<b>Nonsubject vs United States:</b>					
China vs. United States	32	28	***	4	***
Japan vs. United States	10	5	***	5	***
<b>Nonsubject vs subject countries:</b>					
China vs. Korea	32	28	***	4	***
Japan vs. Korea	10	---	---	10	***

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