ANTIFRICTION BEARINGS (OTHER THAN TAPERED ROLLER BEARINGS) AND PARTS THEREOF FROM THE FEDERAL REPUBLIC OF GERMANY, FRANCE, ITALY, JAPAN, ROMANIA, SINGAPORE, SWEDEN, THAILAND, AND THE UNITED KINGDOM

Determinations of the Commission in Investigations Nos. 303–TA–19 and 20 (Final) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigations

Determinations of the Commission in Investigations Nos. 731–TA–391–399 (Final) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigations

USITC PUBLICATION 2185

MAY 1989

United States International Trade Commission
Washington, DC 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

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UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigations Nos. 303-TA-19 and 20 (Final)
and
Investigations Nos. 731-TA-391-399 (Final)

ANTIFRICTION BEARINGS (OTHER THAN TAPERED ROLLER BEARINGS) AND PARTS THEREOF FROM THE FEDERAL REPUBLIC OF GERMANY, FRANCE, ITALY, JAPAN, ROMANIA, SINGAPORE, SWEDEN, THAILAND, AND THE UNITED KINGDOM

Determinations

On the basis of the record 1/ developed in its countervailing duty investigations, the Commission has made its determinations pursuant to section 303 of the Tariff Act of 1930 (19 U.S.C. § 1303) (the Act). In the tabulation of the Commission's determinations which follows, a determination of "affirmative" indicates that the Commission determines that an industry in the United States is materially injured by reason of imports of the following products 2/ which have been found by the Department of Commerce to be subsidized by the Governments of the cited countries:

Country	Investigation No.	Product	Determination
Singapore	303-TA-19 (Final)	Ball bearings and parts thereof 3/	Affirmative 4/
		Spherical roller bearings and parts thereof 5/	Negative
Thailand	303-TA-20 (Final)	Ball bearings and parts thereof	Affirmative 4/

1/ The record is defined in sec. 207.2(h) of the Commission's Rules of Practice and Procedure (19 CFR § 207.2(h)).
2/ A determination of "negative" indicates that the Commission determines that an industry in the United States is not materially injured, nor threatened with material injury, nor is the establishment of an industry in the United States materially retarded, by reason of imports of such products.
3/ Ball bearings and parts thereof from Singapore and Thailand subject to investigation include ball bearing type flange, take-up, cartridge, and hanger units, and parts thereof (Tariff Schedules of the United States Annotated (TSUSA) items 681.1010 and 681.1030); machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for (TSUSA item 681.3900); and parts of motor vehicles containing any the foregoing bearings and not specially provided for (TSUSA item 692.3295). Imports of these products are classified under the following Harmonized Tariff Schedule of the United States (HTS) subheadings: 8483.20.40, 8483.30.40, 8483.90.20, 8483.90.70, 8485.90.00, and 8708.99.50.
4/ Vice Chairman Cass dissenting. Chairman Brundsale did not participate in the consideration or determinations in Inv. Nos. 303-TA-19/20 (Final) or Inv. Nos. 731-TA-391/399 (Final).
5/ Spherical bearings and parts thereof from Singapore subject to investigation include roller bearing type flange, take-up, cartridge, and hanger units, and parts thereof (TSUSA items 681.1010 and 681.1030); machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for (TSUSA item 681.3900); and parts of motor vehicles containing any the foregoing bearings and not specially provided for (TSUSA item 692.3295). Imports of these products are classified under the following HTS subheadings: 8483.20.40, 8483.30.40, 8483.90.20, 8483.90.70, 8485.90.00, and 8708.99.50.

On the basis of the record developed in its antidumping investigations, the Commission has made its determinations pursuant to section 735(b) of the Act (19 U.S.C. § 1673d(b)). In the tabulation of the Commission's determinations which follows, a determination of "affirmative" indicates that the Commission determines that an industry in the United States is materially injured by reason of imports of the following products which have been found by the Department of Commerce to be sold in the United States at less than fair value (LTFV):

Country	Investigation No.	Product	Determination
Federal Republic of Germany	731-TA-391 (Final)	Ball bearings and parts thereof 1/	Affirmative 2/3/
		Spherical roller bearings and parts thereof 4/	Negative

1/ For purposes of these investigations, ball bearings and parts thereof include the following articles, whether mounted or unmounted: antifriction balls (TSUSA items 680.3025 and 680.3030); ball bearings with integral shafts (TSUSA item 680.3300); ball bearings (including radial ball bearings) and parts thereof (TSUSA items 680.3704, 680.3708, 680.3712, 680.3717, 680.3718, 680.3722, 680.3727, and 680.3728); ball bearing type pillow blocks and parts thereof (TSUSA items 681.0410 and 681.0430); ball bearing type flange, take-up, cartridge, and hanger units, and parts thereof (TSUSA items 681.1010 and 681.1030); and other bearings (except tapered roller bearings and parts thereof (TSUSA item 680.3960); and wheel hub units which employ balls as the rolling element entering under TSUSA item 692.3295; all other items entering under this item are not subject to investigation. Imports of these products are classified under the follow HTS subheadings: 8482.10.10, 8482.10.50, 8482.80.00, 8482.91.00, 8482.99.10, 8482.99.70, 8483.20.40, 8483.20.80, 8483.30.40, 8483.30.80, 8483.90.20, 8483.90.30, 8483.90.70, 8708.50.50, 8708.60.50, and 8708.99.50.

2/ Vice Chairman Cass dissenting. Vice Chairman Cass additionally made a negative determination regarding an industry producing wheel hub units. Although Commerce included wheel hub units in each of the "class or kinds" categories in its final determinations, data collected by the Commission with respect to wheel hub units showed that those produced in or imported into the United States employed ball bearings as the rolling element. The rest of the Commissioners did not treat wheel hub units as a separate like product.

3/ The Commission also determines, pursuant to section 735(b)(4)(a), that critical circumstances do not exist such that it is necessary to impose the duty retroactively.

4/ For purposes of these investigations, spherical bearings and parts thereof include the following articles, whether mounted or unmounted: antifriction rollers (TSUSA item 680.3040); spherical roller bearings and parts thereof (TSUSA items 680.3952); roller bearing type pillow blocks and parts thereof (TSUSA items 681.0410 and 681.0430); roller bearing type flange, take-up, cartridge, and hanger units, and parts thereof (TSUSA items 681.1010 and 681.1030); and other bearings (except tapered roller bearings and parts thereof (TSUSA item 680.3960) and wheel hub units which employ spherical rollers as the rolling element entering under TSUSA item 692.3295; all other items entering under this item are not subject to investigation. Imports of these products are classified under the following HTS subheadings: 8482.30.00, 8482.80.00, 8482.91.00, 8482.99.50, 8482.99.70, 8483.20.40, 8483.20.80, 8483.30.40, 8483.30.80, 8483.90.20, 8483.90.30, 8483.90.70, 8708.50.50, 8708.60.50, and 8708.99.50.

Country	Investigation No.	Product	Determination
Federal Republic of Germany	731-TA-391 (Final)	Cylindrical roller bearings and parts thereof 1/	Affirmative 2/3/4/
		Needle roller bearings and parts thereof 5/	Negative
		Spherical plain bearings and parts thereof 6/	Affirmative 4/
		Slewing rings 7/	Negative

1/ For purposes of these investigations, cylindrical bearings and parts thereof include the following articles, whether mounted or unmounted: antifriction rollers (TSUSA item 680.3040); roller bearing type pillow blocks and parts thereof (TSUSA items 681.0410 and 681.0430); roller bearing type flange, take-up, cartridge, and hanger units, and parts thereof (TSUSA items 681.1010 and 681.1030); and other bearings (except tapered roller bearings and parts thereof (TSUSA item 680.3960) and wheel hub units which employ cylindrical rollers as the rolling element entering under TSUSA item 692.3295; all other items entering under this item are not subject to investigation. Imports of these products are classified under the following HTS subheadings: 8482.50.00, 8482.80.00, 8482.91.00, 8482.99.70, 8483.20.40, 8483.20.80, 8483.30.40, 8483.30.80, 8483.90.20, 8483.90.30, 8483.90.70, 8708.50.50, 8708.60.50, and 8708.99.50.

2/ Vice Chairman Cass dissenting.

3/ Commissioner Lodwick dissenting.

4/ The Commission also determines, pursuant to section 735(b)(4)(a), that critical circumstances do not exist such that it is necessary to impose the duty retroactively.

5/ For purposes of these investigations, needle bearings and parts thereof include the following articles, whether mounted or unmounted: antifriction rollers (TSUSA item 680.3040); roller bearing type pillow blocks and parts thereof (TSUSA items 681.0410 and 681.0430); roller bearing type flange, take-up, cartridge, and hanger units, and parts thereof (TSUSA items 681.1010 and 681.1030); and other bearings (except tapered roller bearings and parts thereof (TSUSA item 680.3960) and wheel hub units which employ needle rollers as the rolling element entering under TSUSA item 692.3295; all other items entering under this item are not subject to investigation. Imports of these products are classified under the following HTS subheadings: 8482.40.00, 8482.80.00, 8482.91.00, 8482.99.70, 8483.20.40, 8483.20.80, 8483.30.40, 8483.30.80, 8483.90.20, 8483.90.30, 8483.90.70, 8708.50.50, 8708.60.50, and 8708.99.50.

6/ For purposes of these investigations, spherical plain bearings and parts thereof include the following articles, whether mounted or unmounted: all spherical plain bearings which do not employ rolling elements and include spherical plain rod ends. Spherical plain bearings entering under TSUSA items 681.3900 and 692.3295; all other items entering under these items are not subject to investigation. Imports of these products are classified under the following HTS subheadings: 8483.30.40, 8483.30.80, 8483.90.20, 8483.90.30, 8485.90.00, and 8708.99.50.

7/ For purposes of these investigations, slewing rings are large antifriction bearings employing either ball and/or roller bearings as rolling elements entering under TSUS items 664.08 and 664.10. Imports of these products are classified under the following HTS subheadings: 8431.39.00, 8431 49.10, and 8431.49.90.

Country	Investigation No.	Product	Determination
France	731-TA-392 (Final)	Ball bearings and parts thereof	Affirmative 1/
		Spherical roller bearings and parts thereof	Negative
		Cylindrical roller bearings and parts thereof	Affirmative 1/2/
		Needle roller bearings and parts thereof	Negative
		Spherical plain bearings and parts thereof	Affirmative
		Slewing rings	Negative
Italy	731-TA-393 (Final)	Ball bearings and parts thereof	Affirmative 1/3/
		Spherical roller bearings and parts thereof	Negative
		Cylindrical roller bearings and parts thereof	Affirmative 1/2/3/
		Needle roller bearings and parts thereof	Negative
		Slewing rings	Negative 4/
Japan	731-TA-394 (Final)	Ball bearings and parts thereof	Affirmative 1/3/
		Spherical roller bearings and parts thereof	Negative
		Cylindrical roller bearings and parts thereof	Affirmative 1/2/3/
		Needle roller bearings and parts thereof	Negative
		Spherical plain bearings and parts thereof	Affirmative 3/
		Slewing rings	Negative

1/ Vice Chairman Cass dissenting.
2/ Commissioner Lodwick dissenting.
3/ The Commission also determines, pursuant to section 735(b)(4)(a), that critical circumstances do not exist such that it is necessary to impose the duty retroactively.
4/ If applicable.

Country	Investigation No.	Product	Determination
Romania	731-TA-395 (Final)	Ball bearings and parts thereof	Affirmative 1/
		Spherical roller bearings and parts thereof	Negative
		Slewing rings	Negative 2/
Singapore	731-TA-396 (Final)	Ball bearings and parts thereof	Affirmative 1/
		Slewing rings	Negative 2/
Sweden	731-TA-397 (Final)	Ball bearings and parts thereof	Affirmative 1/3/
		Spherical roller bearings and parts thereof	Negative
		Cylindrical roller bearings and parts thereof	Affirmative 1/3/4/
		Slewing rings	Negative 2/
Thailand	731-TA-398 (Final)	Ball bearings and parts thereof	Affirmative 1/
		Slewing rings	Negative 2/
United Kingdom	731-TA-399 (Final)	Ball bearings and parts thereof	Affirmative 1/3/
		Spherical roller bearings and parts thereof	Negative
		Cylindrical roller bearings and parts thereof	Affirmative 1/3/4/
		Needle roller bearings and parts thereof	Negative
		Slewing rings	Negative 2/

1/ Vice Chairman Cass dissenting.
2/ If applicable.
3/ The Commission also determines, pursuant to section 735(b)(4)(a), that critical circumstances do not exist such that it is necessary to impose the duty retroactively.
4/ Commissioner Lodwick dissenting.

Background

On September 6, 1988, and November 9, 1988, respectively, the United States Department of Commerce published in the Federal Register (53 F.R. 34329) and (53 F.R. 45312) its preliminary determinations that imports from Singapore and Thailand of antifriction bearings (other than tapered roller bearings) and parts thereof are being subsidized by the governments of Singapore and Thailand and that imports of such merchandise from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom are being sold in the United States at less than fair value (LTFV). Accordingly, effective September 6, 1988, and November 9, 1988, respectively, the Commission instituted corresponding final countervailing duty and antidumping investigations under the applicable provisions of the Tariff Act of 1930 to determine whether an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded by reason of imports of such merchandise into the United States.

Notice of the institution of the Commission's final investigations 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 notices in the Federal Register of October 13, 1988 (53 F.R. 40137) and December 14, 1988 (53 F.R. 50304). The Commission's public hearing held in connection with these investigations took place in Washington, DC, on March 30, 1989, and all persons who requested the opportunity were permitted to appear in person or by counsel.

VIEWS OF COMMISSIONER ECKES, COMMISSIONER LODWICK, COMMISSIONER ROHR, AND COMMISSIONER NEWQUIST

We determine that the domestic industry producing ball bearings is materially injured by reason of LTFV and subsidized imports from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom. We determine that the domestic industry producing cylindrical roller bearings is materially injured by reason of LTFV imports from the Federal Republic of Germany, France, Italy, Japan, Sweden, and the United Kingdom. 1/ We also determine that the domestic industry producing spherical plain bearings is materially injured by reason of LTFV imports from the Federal Republic of Germany, France, Italy, and Japan. Further, we determine that critical circumstances do not exist as to any of the imports from any of the countries for which we have made an affirmative injury determination. Finally, we determine that the domestic industries producing spherical roller bearings, needle roller bearings, and slewing rings are not materially injured, nor threatened with material injury, by reason of the LTFV and subsidized imports from any of the subject countries.

I. The Scope of the Investigations

The subject investigations were conducted to determine whether any industries in the United States are materially injured or threatened with material injury by reason of dumped or subsidized imports of all antifriction bearings (other than tapered roller bearings), including ball and roller

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1/ Commissioner Lodwick does not join the majority with regard to cylindrical roller bearings. See his Additional Views, supra.

bearings, various housed bearing units, and parts and components thereof. The imports are from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand and the United Kingdom.

The following list, arranged by TSUSA numbers, provides some indication of the broad scope of the investigations:

1. Antifriction balls and rollers;
2. Ball bearings with integral shafts;
3. Ball bearings (including radial ball bearings) and parts thereof;
4. Spherical roller bearings and parts thereof;
5. Other roller bearings (except tapered roller bearings) and parts thereof;
6. Ball or roller bearings type pillow blocks and parts thereof;
7. Ball or roller bearing type flange, take-up, cartridge, and hanger units and parts of the foregoing;
8. Machinery parts containing any of the foregoing bearings, not containing electrical features and not specifically provided for; and
9. Parts of motor vehicles containing any of the foregoing bearings and not specifically provided for. 2/

Generally speaking, "the function of a bearing is to reduce friction between moving parts and thereby enable easier, faster motion. Bearings are high-precision products that operate in practically every industrial and military device." 3/

2/ See Report of the Commission (Report) at A-20. Finished but unground or semiground balls are not included in the scope of these investigations.

3/ Competitive Assessment of the U.S. Ball and Roller Bearing Industry, USITC Pub. 1797 at 8 (January 1986). The Commission and the Department of (continued...)

In the its final determinations in these investigations, the Department of Commerce modified the scope of the investigations significantly. 4/ The sixth like product category found in the Commission's preliminary investigations, other "antifriction devices," has been eliminated from the scope of the investigations. The items in this category were ball screws and linear motion guides and they were excluded during the Commerce Department investigations. Commerce also narrowed the plain bearing category by eliminating everything but spherical plain bearings (which includes rod

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3/ (...continued)
Commerce have conducted investigations of the antifriction bearings industry, or portions thereof, on several occasions. In January, 1986, the Commission issued a report in Investigation No. 332-211 entitled Competitive Assessment of the U.S. Ball and Roller Bearing Industry. That report contains a broad discussion of the various bearing products and uses, which is helpful for descriptive purposes. These investigations cover the same products as the section 332 Report, with the exception of tapered roller bearings. The Report discusses in detail the particular functional characteristics and uses of the various types of bearings.

In Tapered Roller Bearings and Parts Thereof, and Certain Housings Incorporating Tapered Rollers from Hungary, the People's Republic of China, and Romania, Inv. Nos. 731-TA-341, 344, and 345 (Final) USITC Pub. 1983 (June 1987) and 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), as well as in several other investigations in the mid-1970s and early 1980s, the Commission investigated the tapered roller bearing portion of the antifriction bearing industry. See Report at A-3, Table 1.

More recently, the Department of Commerce concluded a study, under section 232 of the Trade Expansion Act of 1962, entitled The Effects of Imports of Anti-Friction Bearings on the National Security. In the course of its investigation the Commerce Department characterized the antifriction bearing industry as experiencing increasing demand, high utilization rates, and long lead times for product delivery. Our investigations, however, have a completely different focus (material injury by reason of unfairly traded imports as opposed to a threat to national security). Further, the Commission has its own data base upon which to make its determination and has relied on its own data in making its determination.

4/ For a list of the findings regarding dumping and export subsidies, see Report at A-22, Table 2. For a list of its critical circumstances determinations, see Report at A-23, Table 3.

ends). Thus journal bearings, fluid film bearings, and bi- and tri-metallic plain bearings are no longer within the scope of the investigations.

In addition to narrowing the scope of the investigations with these exclusions, Commerce decided that "slewing rings" were within the scope of the petition, notwithstanding its preliminary determination that they were not. This rescission did not occur until immediately prior to the Commission's hearing and required the Commission staff to obtain additional data on slewing rings, since the Commission staff relied on Commerce's preliminary determination in constructing the questionnaires. 5/

II. Like product

In order to determine whether there is "material injury" or "threat of material injury," to a domestic industry, the Commission must first determine the parameters of the "domestic industry." Section 771(4)(A) of the Tariff Act of 1930 defines the relevant domestic industry as the "domestic producers as a whole of a like product, or those producers whose collective output of the like product constitutes a major proportion of the total domestic production of that product." 6/ "Like product" is defined as a "product that

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5/ Commerce's preliminary exclusion decisions occurred after the Commission's preliminary determination. Thus Commerce's decision did not affect the Commission's preliminary decision. Further, the Commission's preliminary determination contained a sixth like product category, referred to as other antifriction devices, and slewing rings were arguably subsumed in that category, if not in one of the other specific bearing categories. Finally, the lack of a specific reference to slewing rings does not mean that the Commission did not make an affirmative preliminary determination covering slewing rings. There are innumerable specific bearing types, some of which have only been brought to our attention in the final investigations, that are nonetheless included in the broader categories identified in the Commission preliminary determination.

6/ 19 U.S.C. § 1677(4)(A).

is like, or in the absence of like, most similar in characteristics and uses with the article subject to investigation." 7/

The Commission's decision regarding the appropriate like product(s) in an investigation is essentially 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. In analyzing like product issues, the Commission generally considers a number of factors relating to characteristics and uses including: (1) physical appearance, (2) interchangeability, (3) channels of distribution, (4) customer perception, (5) common manufacturing facilities and production employees, and where appropriate, (6) price. 8/ No single factor is necessarily dispositive, and the Commission may consider other factors it deems relevant based upon the facts of a particular investigation. Generally, the Commission disregards minor variations between the articles subject to an investigation, and requires "clear dividing lines among possible like products." 9/

The fundamental like product issues in these investigations are as follows:

> 1. Is there one like product consisting of most antifriction bearings, except tapered roller bearings, or should the like products be classified by the type of rolling element incorporated within the bearing?

7/ 19 U.S.C. § 1677(10).

8/ Asociacion Colombiana de Exportadores de Flores v. United States, 12 CIT ___, 693, F. Supp. 1165, 1168, n.4, 1180, n.7 (1988) (Asocoflores); 3.5" Microdisks and Media Therefor from Japan, Inv. No. 731-TA-389 (Final), USITC Pub. 2170 at 7-8 (March 1989); Certain Telephone Systems and Subassemblies Thereof from Japan, Korea, and Taiwan, Inv. Nos. 731-TA-426-428 (Preliminary), USITC Pub. 2156 at 3-4 (February 1989).

9/ Certain Telephone Systems and Subassemblies Thereof from Japan, Korea, and Taiwan, Inv. Nos. 731-TA-426-428 (Preliminary), USITC Pub. 2156 at 4 n.4 (February 1989)(citing Asocoflores, 692 F. Supp. at 1170 n.8).

2. Should the Commission treat wheel hub units and slewing rings as separate like products, primarily because they are not really bearings?

3. Should the Commission find major like product subdivisions of the bearing industries corresponding to (a) aerospace or superprecision bearings of all types or (b) miniature and instrument or commodity ball bearings?

4. Should the Commission further carve out like product categories for certain narrowly defined specialty bearings, such as Cooper bearings, tenter bearings, angular contact bearings, "special" roller bearings used in continuous casting mills, or crowned bearings? 10/

We note that most, if not all, of these like products arguments were made to the Department of Commerce in the form of exclusion arguments and were rejected.

In the preliminary investigations, the Commission determined that there were six separate like products and that the type of rolling element employed

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10/ In the preliminary investigations we discussed and resolved two additional like product issues. First, we determined that parts for antifriction bearings should not be considered separately, but should be considered together with the finished bearings. In these final investigations, none of the parties has challenged this finding, nor is there any information of record that warrants a departure from the Commission's preliminary determination regarding parts. Therefore, we have not reexamined this issue in detail, and we adopt the approach to this issue that we followed in the preliminary investigations. See Antifriction Bearings (Other than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom (Preliminary), USITC Pub. 2083 at 20-22 (May 1988) (Antifriction Bearings). Second, we determined that housed and mounted bearings (bearings that had been incorporated into a forging for attachment to a piece of machinery or equipment) should not be considered separately, but should be classified by the type of bearing incorporated within it. One respondent has argued for separate like product treatment for housed and mounted units. Prehearing Brief of HFH at 16-21. We do not believe that such treatment is warranted. Housed and mounted units merely incorporate forgings as outer raceways on a bearing to facilitate attachment to a piece of machinery. Such housed and mounted units perform the same function as other bearings of the same type, but are dedicated to incorporation in a particular piece of machinery. Other respondents have vigorously pursued separate like product treatment for wheel hub units, a specific type of housed or mounted bearing unit. This issue is discussed in detail below.

in the bearings provided a basis for clear dividing lines in terms of physical appearance, interchangeability, channels of distribution, end use, and production facilities and employees. The six like products were as follows:

1. Ball bearings;
2. Spherical roller bearings;
3. Cylindrical roller bearings;
4. Needle roller bearings;
5. Plain bearings; and
6. Other "antifriction devices, such as ball screws and linear guides. 11/

The subdivision by type of rolling element was also consistent with the Commission's decision in the Tapered Roller Bearings investigations, 12/ in

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11/ Antifriction Bearings (Other than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom, Inv. Nos. 303-TA-19 and 20, 731-TA-391-399 (Preliminary), USITC Pub. 2083 at 22 (May 1988). We also noted that "the information regarding the inclusion of parts and components within each type of bearing is relatively clear and well developed, as is the information regarding the propriety of like product distinctions based upon the type of rolling element. In order to conclude that further breakouts are warranted, principally for precision rating, and secondarily by size or for mounted and housed bearing units and wheel hub units, additional evidence must be developed showing clear dividing lines, distinct methods of production, lack of substitution and different end user markets." Id. at 22-23. Persuasive evidence of this sort did not arise in these final investigations.

12/ In the preliminary determinations in the current investigations, we noted the following with regard to the Tapered Roller Bearings investigations:

> Since Commission like product determinations are inherently factual determinations dependent upon the record developed in particular investigations, even apparently similar investigations such as Tapered Roller Bearings have limited precedential value. Several arguments, especially with respect to the inclusion of all anti-friction bearings within a single like product, were not presented to the Commission in Tapered Roller Bearings. Further, given the limited staff resources,

(continued...)

which the Commission implicitly determined that tapered roller bearings constituted a separate product from other types of antifriction bearings. Further, the Department of Commerce found separate classes or kinds or antifriction bearings based upon the rolling element employed. 13/

A. All antifriction bearings or classification by rolling element

Although we subdivided the like product by type of rolling element in the preliminary investigations, we did not foreclose the possibility of accepting petitioner's one like product argument in a final investigation if additional information arose that supported such a finding. Petitioner continues to urge that the Commission find a single like product in these final investigations.

12/ (...continued)
evidence regarding these issues was not collected by the staff or submitted by the parties to those investigations. In addition, in these investigations the parties and the staff have more fully developed the factual record and the legal arguments regarding the possible like product distinctions within each type of anti-friction bearing. Whether the different record developed in these investigations warrants like product conclusions that differ from those reached in Tapered Roller Bearings is ultimately a factual question for the Commission to resolve.

While even the Tapered Roller Bearings determinations have limited precedential value, the Commission's rationale in those investigations, assuming that the Commission finds a similar factual record, implicitly suggests that a single like product consisting of all anti-friction bearings would be overinclusive, and that it would be more appropriate to make like product distinctions by the type of bearing. Further, the conclusion reached regarding component and housed and mounted products suggests that they should not be treated as separate products, again assuming that the Commission does not find sufficient differences in the factual record.

Antifriction Bearings, USITC Pub. 2083 at 9-10.

13/ The Department of Commerce's final determination found five classes or kinds of antifriction bearings corresponding to the first five like product categories identified in our preliminary determination. The sixth category (other antifriction devices, such as ball screws and linear guides) was excluded from the scope of the investigations by Commerce. Commerce Department Notice, Appendix B at 1-28.

In the preliminary investigations petitioner argued a separate legal theory in support of its one like product argument. 14/ In these final investigations, petitioner apparently has abandoned that legal theory in favor of a single like product argument based solely on factual grounds. Essentially, petitioner argues that all items within the scope of the investigation should be classified as one like product because they have the same four physical characteristics, are subjected to the same basic manufacturing processes, and are put to the same end use--the reduction of friction between moving parts. Further, petitioner argues that all antifriction bearings, except of course tapered roller bearings, are interchangeable at the "design" stage. 15/

The four physical characteristics that all the products within the scope of the investigation allegedly share are: (1) an inner ring, (2) an outer ring, (3) rolling elements, and (4) a cage or separator holding the rolling elements in place. The use or function that all products allegedly share is the reduction of friction between moving parts. Finally, petitioner maintains that all antifriction products are subject to the same production steps--machining, heat treatment, grinding, inspection and assembly.

14/ Petitioner insisted that, as a matter of law, the Commission is required to find only one like product and one domestic industry in every investigation regardless of the facts revealed in each investigation. This one like product and one domestic industry, it argued, must be identical to the scope of the investigation stated by the petition and the notice of investigation issued by the Department of Commerce. We rejected petitioner's legal argument as contrary to Commission practice and Congressional intent. Antifriction Bearings, USITC Pub. 2083 at 10-11; see Badger-Powhatan v. United States, 10 CIT 241, 633 F. Supp. 1364 (1986).

15/ Interestingly, petitioner's own economist suggested that the statistical data compiled by the Commission did not support a single like product determination. Prehearing Brief of Petitioner at App. 20.

The rationale underlying these factual arguments leads to a conclusion contrary to that reached by the petitioner. Petitioner's one like product includes items (such as slewing rings and spherical plain bearings) that do not share the same characteristics and uses, while it excludes other items (such as tapered roller bearings) that do. Further, some ball and roller bearings do not contain all four of the alleged component parts. Applying petitioner's rationale consistently, all ball and roller bearings, including tapered roller bearings, would constitute a single like product, but separate products would exist for spherical plain bearings and slewing rings, individually or collectively.

Respondents all agree that there should be at least five like products corresponding to the Commission's preliminary determination and Commerce's final class or kind determination. Respondents' arguments, however, diverge greatly as each seeks additional like product breakouts generally corresponding to the items that it exports or purchases. Respondents point to the general rationalization of the production process which results in different bearing types being produced in different plants using different production processes. Further, the type of rolling element employed largely determines a bearing's different operating and performance characteristics, different end uses, and different customer expectations. 16/

We determine, consistent with our preliminary determination, that there are separate like products, within antifriction bearings generally, based upon the type of rolling element employed. The type of rolling element, or lack of a rolling element, is the key physical characteristic that determines

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16/ See, e.g., Prehearing Brief of SKF at 9-10; Prehearing Brief of Crandall Economics at 3-4; Prehearing Brief of FAG at 7-12; Prehearing Brief of Nippon Thompson at 9-24; Prehearing Brief of INA at 7-14.

the functional capability of the bearing and the use to which it is put. The interchangeability of bearings containing different rolling elements is extremely limited. Several purchasers and producers testified at the hearing that so-called "design" interchangeability was limited to significantly less than 10 percent of all bearings. 17/ Furthermore, many producers make only one type of bearing while those larger producers, who produce several types of bearings, routinely rationalize their production of antifriction bearings by the type of rolling element employed. 18/ For each rolling element, a separate manufacturing facility is generally utilized. 19/

The factual arguments and evidence in support of petitioner's one like product position in the final investigations are the same ones we rejected in the preliminary investigations. Thus we retain the separate breakouts found

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17/ Several testified that "design" interchangeability is limited to 1 to 2 percent of all bearings. Additionally, one purchaser testified that, despite problems with delivery from Torrington, her company did not seek bearings of another type, or even bearings of the same type from another producer, because Torrington bearings were designed into her company's products year ago. Given the relative insignificance of the cost of bearings relative to the cost of the machinery into which they are incorporated, it is not surprising that interchangeability at the design stage is virtually non-existent. Transcript of Commission Hearing at 240-49.

18/ Report at A-19-A-20. Petitioner's argument regarding the alleged similarity in the production processes for the various types of bearings and the ease in shifting production is inconsistent with its' decision to acquire an acknowledged problem producer, Fafnir, in order to enter the ball bearing market. If shifts in production were as easily implemented as petitioner suggests, then it surely could have expanded its existing needle roller bearing in order to enter the ball bearing market, and thus have avoided all the problems associated with its acquisition of Fafnir.

19/ Because of this rationalization of the production process, the Commission encountered no difficulty in obtaining data, including financial information, on a rolling element basis.

in the preliminary investigations. 20/ Our consideration of the feasibility and propriety of additional breakouts, beyond the five like products found in the preliminary investigations, is discussed below.

B. Secondary like product issues

1. Products that allegedly are not bearings

Several respondents have raised like product arguments based upon assertions that particular products, determined by Commerce to be within the scope of the investigations, are not really bearings. These products are slewing rings and wheel hub units, each of which is discussed in detail below.

a. Slewing rings

As noted previously, Commerce's final determination included slewing rings within the scope of the investigations for the first time, although they had been expressly excluded in the preliminary determination. 21/ Slewing rings are highly specialized products designed to allow smooth, intermittent and partial rotation between lower and upper structures of heavy equipment. They are antifriction devices and contain rolling elements, and, usually, gears cut on either the inner or outer ring. Slewing rings are used

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20/ In rejecting the petitioner's arguments regarding a single class or kind of merchandise, Commerce noted that:

> Petitioner's analysis fails to account for the fact that different rolling element and sliding surface geometries result in different functional capabilities of the AFBs and, thus, in different AFBs altogether. Furthermore, petitioner's definition of common function (to reduce friction and wear between moving and fixed parts, and thereby, permit easier and faster motion) applies to oil and other lubricants, non-stick surfaces such as teflon, and many other products as well as to the subject merchandise.

Commerce Department Notice, Appendix B at 6.

21/ Commerce Department Notice, Appendix B at 75-81.

primarily in heavy equipment and perform a "turntable" function in cranes, tank turrets, radio telescopes, hoisting equipment, and the like.

Slewing rings are designed to withstand very high static loads and perform at low speeds with oscillating motion, as opposed to high speed unidirectional rotation of ordinary bearings. They are usually made of a different raw material from other bearings, are much larger than most bearings, and much more expensive. In addition, there are no industry-wide standards (like the ABEC/RBEC ratings 22/ for ball and roller bearings) for slewing rings. 23/

There are currently only two major producers of slewing rings in the United States, Kaydon and Rotek. Rotek does not manufacture any other articles like those within the scope of these investigations. Kaydon does produce other products, but in a completely different facility. 24/ Petitioner, Torrington, does not produce slewing rings.

Rotek has entered its opposition to the petition, insofar as it applies to slewing rings. Rotek argues, that, at a minimum, the Commission should find slewing rings to comprise a separate like product. 25/ In their posthearing submissions, petitioner and others appearing in support of the petition did not address specifically the propriety of finding a separate like product for slewing rings. Torrington did comment on Commerce's scope

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22/ Precision ratings for antifriction bearings are compiled by the Annular Bearing Engineers Committee (ABEC) and the Roller Bearing Engineers Committee (RBEC). The ratings range from a low of one to a high of nine. See Report at A-7, n.2.

23/ Posthearing Brief of Rotek at 6-8 and App. B.

24/ Report at A-10.

25/ Posthearing Brief of Rotek at 6-8.

determination, however, maintaining that slewing rings were in fact included within Commerce's preliminary determination. 26/

We determine that slewing rings are a separate like product. Their physical characteristics and end uses are significantly different from any other product in these investigations. They are produced in completely separate facilities from all other products in these investigations. While Commerce included slewing rings in the same classes or kinds of bearings subject to these investigations, it is unclear in which class or kind they belong. Some slewing rings employ balls, others employ rollers, and some employ both.

b. Wheel hub units

Wheel hub units (specifically referred to as second and third generation wheel hub units) 27/ are prelubricated, preset, deep-groove ball bearings that have been sealed into a cast or forged flanged housing with bolt holes for direct mounting onto the wheel hub, in which the flanged housing performs as the outer race of the bearing. 28/ The only domestic producer of wheel

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26/ Petitioner's Answers to Commission Questions at 62-63.

27/ SKF refers to wheel hub units as second and third generation wheel hub units. Prehearing Brief of SKF at 136-142. FAG refers to them as only third generation wheel hub units. Prehearing Brief of FAG at 22-27; Posthearing Brief of FAG at 9-11. Both of these respondents agree that first generation wheel hub units should not be part of the separate like product. It is not clear, from their submissions, whether first generation wheel hub units are made in the United States. The Commerce Department described the difference between first generation wheel hub units and second and third generation wheel hub units as follows: "Wheel hub unit generation 1 is essentially a double-row ball bearing. (Generation 1 may also contain two rows of tapered rollers but such units are not within the scope of these investigations.) The races of wheel hub unit generations 2 and 3 have been expanded, flanged, drilled, and/or splined." Commerce Department Notice, Appendix B at 74.

28/ Report at A-8.

hub units is New Departure Hyatt and the vast majority of its production is captively consumed by General Motors, its parent corporation. 29/

Many respondents insist that wheel hub units should be considered a separate product, arguing that they are really automotive parts, not bearings. 30/ They note that the primary functions of a wheel hub unit are to attach a wheel to a vehicle, to link the wheel to the steering mechanism, and to aid in the braking process. The bearings in a wheel hub unit represent less than half of the value of the unit as a whole, but, if the bearing wears out, the entire unit must be replaced. Further, wheel hub units are not interchangeable with bearings and are dedicated to use in an automobile. Primarily for these reasons, the Customs Service classifies wheel hub units as auto parts, not as antifriction bearings. Neither the petitioner, nor other producers in support of the petition have addressed the wheel hub unit issue in any detail.

We determine that wheel hub units are not a separate like product. They are not significantly different from other ball bearings, especially other housed and mounted ball bearings, in terms of functional characteristics and applications. In addition, like other housed bearings, if the bearing in a wheel hub unit wears out, the entire unit must be replaced. Thus the unit itself is inseparable from its bearing functions. Moreover, none of the respondents agree as to the definition of this allegedly separate like product. Some make no distinction among the generations of wheel hub units,

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29/ Report at A-8.

30/ See, e.g., Prehearing Brief of FAG at 22-27; Prehearing Brief of NSK at 12-17; Prehearing Brief of NTN at 121-124; Prehearing Brief of Quick, Finan at 71-76; Prehearing Brief of SKF at 130-147; Prehearing Brief of JBIA at 7-10; Prehearing Brief of Koyo Seiko at 10-11.

others define the product as generations 2 and 3, and still others define it as just generation 3. 31/ Such definitional vagueness was fatal, in our view, to the evaluation of other candidates for separate like product treatment, such as "aerospace" bearings, and is similarly fatal here. As in Tapered Roller Bearings, we include wheel hub units in the like product category corresponding to the type of rolling element employed therein. Specifically, in these investigations, they are ball bearings.

2. Alleged major subdivisions of bearings

In addition to the major breakouts discussed above, several respondents have suggested that certain types of bearings should be further subdivided for purposes of the Commission's like product analysis. The suggested subdivisions are based primarily upon quality considerations (aerospace or superprecision bearings) or differences in size (commodity ball bearings or miniature and instrument ball bearings). Each of these two major subdivisions is considered in turn below.

a. Aerospace bearings/superprecision bearings

A number of purchasers and producers have suggested that "aerospace" bearings constitute a separate like product. 32/ Unfortunately, there is no generally accepted definition of an "aerospace" bearing. Some parties define the term narrowly, by limiting it to aerospace engine bearings; 33/

31/ Compare Prehearing Brief of NTN at 121-124 (no distinction) with Prehearing Brief of SKF at 136-142 (second and third generation) with Prehearing Brief of FAG at 22-27 (third generation only).

32/ Prehearing Brief of AIA at 4; Prehearing Brief of FAG at 12-22; Prehearing Brief of FTC at 23; Prehearing Brief of Quick, Finan at 67.

33/ Prehearing Brief of AIA at 1, 4-20.

others refer to aerospace bearings as any bearing used by the aerospace industry. 34/ Some parties suggest that aerospace bearings are a single like product that consists of ball, spherical roller, and cylindrical roller bearings; 35/ others suggest that aerospace ball and aerospace cylindrical roller bearings constitute separate like products. 36/ Some describe the precision rating of aerospace bearings as ABEC/RBEC 5 and over 37/; others maintain the rating should be ABEC/RBEC 7 and over. 38/ Finally, one respondent urges that, while aerospace bearings are clearly different in characteristics from other bearings, they really can only be defined in terms of their ultimate application. 39/

In terms of the Commission's traditional like product factors, respondents seeking separate treatment for aerospace bearings (however defined) insist that aerospace bearings are made of different, higher quality raw materials from other bearings. According to the respondents, none of the bearings are interchangeable; they can only be replaced with the identical part number. Further, respondents maintain that the production process is segregated from the production of other bearings, requires "traceability" throughout the production process to document quality and testing procedures, and is technologically more sophisticated than the production processes for

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34/ Posthearing Brief of SKF at 51-52.

35/ Prehearing Brief of FAG at 15.

36/ Posthearing Brief of AIA at 1.

37/ Prehearing Brief of AIA at 6; Posthearing Brief of SKF at 51-53.

38/ Prehearing Brief of FAG at 14.

39/ Posthearing Brief of FAG at 6-7.

other bearings. Finally, respondents point out that aerospace bearings are allegedly considerably more expensive than other bearings. 40/

We determine that "aerospace" bearings, however defined, do not constitute a separate like product. 41/ Like product distinctions based solely upon end use are suspect, 42/ at least in investigations involving intermediate products such as bearings, in which there are literally thousands of separate products, none of which can be substituted for another in their specific applications. The use of high quality raw materials, extensive documentation of the production process to facilitate traceability, and technologically advanced production methods are common to all superprecision bearings and, thus, does not distinguish aerospace bearings from other superprecision bearings that are not consumed by the aerospace industry. 43/ Further, the proposed inclusion of several bearings with different types of rolling elements within the single category of aerospace bearings is contrary to the Commission's rationale for finding like product

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40/ Prehearing Brief of FAG at 21.

41/ Commerce considered many of these same arguments prior to determining that aerospace bearings did not constitute a separate class or kind of merchandise from other bearings. They were concerned that the proposed definition of aerospace bearings would include ball, cylindrical roller, and spherical roller bearings in a single class or kind ran counter to the general division of antifriction bearings by the type of rolling element used. This definition "would elevate the final end use of a bearing as the sole distinguishing factor among all bearings, thereby ignoring important differences between the types of bearings." Commerce Department Notice, Appendix B at 65.

42/ See generally, Asocoflores, 693 F. Supp. at 1168 (1988).

43/ Report at A-8-A-9; see Prehearing Brief of GMN at 3.

distinctions by type of rolling element, which these same respondents assert is correct. 44/

Only one of the respondents seriously pursued the question of whether precision and superprecision bearings constitute separate like products. 45/ Commerce rejected respondents' arguments regarding this issue in considering the propriety of a separate class or kind for superprecision bearings. 46/ Similarly, we do not believe that such a distinction is warranted in our like product analysis.

Although a precision/superprecision breakout for each type of bearing avoids the multiple rolling element problem posed by the proposed breakout for aerospace bearings, it suffers from the other problems we have noted with regard to aerospace bearings. Superprecision bearings, defined as bearings with an ABEC/RBEC rating of 5 and above, are frequently produced in the same plant with the same equipment as precision bearings, but require tighter quality control. Moreover, their performance characteristics are similar to precision bearings. The difference in quality is not clear cut; there is no compelling rationale for finding a distinction between ABEC/RBEC 3 and 5, as opposed, for example, to ABEC/RBEC 5 and 7.

b. Commodity ball bearings/miniature and instrument ball bearings

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44/ Under the respondents' suggested approach, a 10mm spherical roller bearing rated RBEC 9 would not be "like" another 10mm spherical roller bearing rated RBEC 3, even though the two spherical roller bearings were produced on the identical equipment and possessed similar performance characteristics. But it would be "like" a ball bearing rated ABEC 7 that is 3 feet diameter, produced on different equipment and possessing different performance characteristics, if an aerospace purchaser bought them both.

45/ Prehearing Brief of GMN at 3 (GMN suggested superprecision is ABEC/RBEC 7, not 5 and above as determined by the Staff).

46/ Commerce Department Notice, Appendix B at 67-68.

A separate group of respondents suggested that a size and precision breakout is warranted for commodity or miniature and instrument ball bearings. 47/ As with the position of the aerospace group, however, this argument suffers from lack of definition. The American Manufacturers for Trade in Bearings (AMTB) argued that commodity ball bearings (ABEC 3 and under with outside diameter under 52mm) constitute a separate like product. 48/ NMB Thailand and NMB Singapore argued that miniature and instrument ball bearings (ABEC 3 and under with outside diameter under 30mm) constituted a separate like product. 49/ Another respondent argued in its posthearing submission that the definitions for miniature and instrument bearings and commodity bearings are coextensive. 50/

Definitional problems aside, various respondents insist that there are clear dividing lines between large and small bearings. These respondents disagree, however, as to whether the "clear" dividing line is at 30mm or 52mm. 51/ They argue that the production machinery for small ball bearings is different than for large bearings and that small ball bearings have different end uses than large ball bearings. AMTB argues that commodity ball bearings are produced on continuous production lines while "specialty" ball

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47/ Prehearing Brief of AMTB at 1-3; Posthearing Brief of AMTB at 6-10; Prehearing Brief of Airpax at 5-12; Prehearing Brief of NMB Thailand at 6-9; Posthearing Brief of NMB Thailand at 8-9.

48/ Prehearing Brief of AMTB at 7; Posthearing Brief of AMTB at Ex. 1.

49/ Prehearing Brief of NMB Singapore at 6-9; Posthearing Brief of NMB Singapore at 2.

50/ Posthearing Brief of Airpax at 4.

51/ The suggested size breaks correspond to two of the five standard size breaks contained in the Tariff Schedules of the United States and the Harmonized Tariff Schedule. See Report at A-20.

bearings, apparently defined as all other ball bearings, are produced in lower volume "batch" production lines. 52/

We do not believe that a separate like product within ball bearings, based upon size and precision ratings, is warranted. The suggested breakout suffers from the same definitional ambiguity as aerospace bearings, an ambiguity that belies the existence of clear dividing lines. Distinctions based upon precision ratings and specific end use have already been addressed as to aerospace bearings and need not be repeated here. 53/ While there is a wide variety of ball bearings, both in terms of size and precision, there are no clear dividing lines among them. When presented with the absence of clear dividing lines in previous investigations, the Commission "has usually concluded that there is one like product, viewing the product in terms of a continuum." 54/ Therefore, we believe that ball bearings, regardless of their size or precision rating, constitute a single like product.

While some domestic producers manufacture small ball bearings using continuous production lines, it is far from clear that those production lines are limited to ball bearings under 30mm or 52mm. Further, many domestic producers manufacture all size ranges of ball bearings in the same plant using the batch production process. 55/ Finally, other domestic producers produce commodity bearings using the continuous production methods, most

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52/ Prehearing Brief of AMTB at 2-3.

53/ See infra p. 22-26.

54/ 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 at 9 (Aug. 1987).

55/ Report at A-18-A-19.

notably the respondents' U.S. subsidiaries that respondents correctly insist are part of the domestic industry. 56/

C. Tertiary like product issues, specialty divisions

1. Cooper bearings

Cooper bearings, also referred to as mid-shaft mounted bearings, are split cylindrical roller bearings in which all bearing components are produced in mating halves to be assembled around a mid-portion of a shaft. 57/ Typical applications include conveyor head shafts where a bearing is trapped between speed reduction gears and a conveyor head pulley. Cooper bearings are allegedly much more expensive than other cylindrical bearings of the same size, but are more economical to apply because of the ease in mounting allowed by its design. Use of other cylindrical bearings would necessitate more costly shut down and disassembly of machinery. Cooper bearings are not produced in the United States. 58/

Cooper bearings are not significantly different from other cylindrical roller bearings and, since they are replacements for domestic cylindrical roller bearings, they are interchangeable with the domestic product. While Cooper bearings are split, this merely facilitates installation; it does not affect the operation of the bearing, once installed. The Cooper design does make the bearing especially attractive to the aftermarket because, although

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56/ We note that, even if we had subdivided the ball bearing industry into its component parts, as suggested by various respondents, it would not have had a significant impact on our analysis of injury and causation. Nor would it have led to any negative determinations, especially with regard to commodity ball bearings.

57/ Report at A-10; Posthearing Brief of Cooper at 3-5.

58/ Prehearing Brief of Cooper at App. A.

it costs much more than similarly sized cylindrical roller bearings, the total cost savings in installation renders it more desirable as a replacement. Thus Cooper bearings are merely a design variation on a common cylindrical roller bearing theme. Based on the record before the Commission, we have decided to include Cooper bearings in the cylindrical roller bearing industry.

2. Tenter bearings

Tenter bearings are specially-designed ball bearings containing a two piece interlocking steel shield, in addition to a steel snap ring, all of which are designed to prevent lubrication loss. They are made of heat stressed metal which can withstand the extreme tenter conditions, and are used in the production of specialty film products (substrates). Tenter is a key component in the substrate continuous production line in which film is stretched at high temperatures, widthwise, to give it shape. Tenter bearings are not produced in the United States. 59/

Minnesota Mining and Manufacturing (3M) contends that tenter bearings should be considered a separate like product and that the impact of tenter bearings should be assessed separately from other ball bearings. 60/ They maintain that 3M has made "every conceivable effort over a ten year period to obtain tenter bearings from U.S. producers, but has been unable to do so." 61/ This is allegedly because the small volume needed by 3M is not

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59/ Prehearing Brief of 3M at 2-6.

60/ See Sodium Nitrate from Chile, Inv. No. 731-TA-91 (Final), USITC Pub. 1357 (March 1983).

61/ Posthearing Brief of 3M at 10.

adequate incentive for domestic producers to dedicate a separate production line to tenter bearings.

Federal-Mogul, a domestic producer of ball bearings that supports the petition, objects to this additional attempt to "balkanize" the ball bearing market. They insist that they are fully capable of producing tenter bearings in their ball bearing facilities. 62/ They note that 3M is only interested in obtaining replacement tenter bearings for the tenter machines that it imports. However, they argue that 3M is not sufficiently interested in obtaining even replacement tenter bearings by soliciting long term contracts that would allow domestic producers to be assured of recouping the fixed costs necessary to dedicate a line of production to tenter bearings.

We determine that tenter bearings are not a separate like product from ball bearings generally. Tenter bearings are, more appropriately, a subset of ball bearings not significantly different from the hundreds of other specially engineered ball bearings that meet particular end users' needs. We agree generally that domestic producers can and do produce a variety of ball bearings in the same plant with the same equipment and distribute them in the same manner. We note that each time a domestic ball bearing producer changes its production mix to make a ball bearing that is dedicated to use in a particular purchaser's machinery, it is not leaving one industry and entering a different one.

3. Angular contact bearings

Angular contact bearings are ball bearings that, in addition to combined thrust and radial load capabilities common to all ball bearings, have highly configured double and triple lip seals of specially developed materials.

62/ Posthearing Brief of Federal-Mogul at 8 and Ex. 6.

They have special angular contact (less than 90 degree angles) and misalignment capabilities needed for minimum clearances required in clutch assemblies. Dana Corp., a domestic purchaser, uses them in the production of, among other things, automotive electromagnetic air conditioning compressor clutches. 63/ Angular contact bearings are produced in the United States by a number of ball bearing manufacturers in their ball bearing facilities.

Dana Corp. insists that angular contact bearings should be treated as a separate like product because they are custom made bearings that the domestic industry is unable to supply within a reasonable time frame, if at all. 64/ Several domestic producers have responded that angular contact bearings are merely a subset of ball bearings dedicated to a particular function. 65/ Commerce determined that angular contact ball bearings do not constitute a separate class or kind of merchandise, but, instead are a subset of ball bearings. 66/

Torrington and Federal-Mogul produce angular contact ball bearings in the United States using the same machinery, equipment, and employees as are used in the production of other ball bearings. 67/ Angular contact ball bearings are merely another in a long line of ball bearings with a dedicated end use market. They perform similar functions as other ball bearings, although they have an angle of application with a shaft that makes them

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63/ Prehearing Brief of Dana Corp. at 3-5.

64/ Posthearing Brief of Dana Corp. at 1-3.

65/ E.g., Posthearing Brief of Federal Mogul at 8-10.

66/ Commerce Department Notice, Appendix B at 98-99.

67/ Report at A-10.

ideally suited for particular purposes. Further, angular contact bearings are composed of virtually the identical basic components as all other ball bearings. Therefore we determine that angular contact ball bearings not be treated as a separate like product.

4. "Special" roller bearings used in continuous casters

SNFA argued, for the first time, in its prehearing brief in the final investigation that a like product distinction was warranted for certain "special" roller bearings used in continuous casters. These roller bearings are allegedly "special" because they use spring bushings, instead of the inner and outer raceways that are common in other bearings. SNFA insists that there is no domestic production of these "special" bearings, primarily because the U.S. steel industry has been slow to adopt the continuous casting process. Thus demand is extremely limited. Further, these "special" bearings are a made-to-order product, with no comparable substitute. 68/

Given the delay in raising this issue and the lack of specific information from SNFA relating to it, there is little information in the record concerning these "special" bearings, other than the general, broad allegation that they are not made in the U.S. and that there is little demand for them. SNFA has provided no details or documentation, and no other evidence arose in the course of these investigations, to support their argument. Nonetheless, even if true, the custom-made nature of these bearings does not distinguish them from the hundreds of other custom-made bearings that we have included in like product categories according to the rolling element employed. Unfortunately, SNFA did not even reveal what type of rolling element was employed in these "special" bearings. However, we

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68/ Prehearing Brief of SNFA at 15-17.

include these bearings in the category corresponding to the rolling element employed in them.

5. Crowned bearings

Crowned bearings are brass caged cylindrical roller bearings, with crowned roller ends and raceway faces capable of accepting radial and thrust loads. Eaton Corp. uses these bearings in its production of medium-duty synchronized transmissions. Eaton argues that crowned bearings should be treated as a separate like product. 69/ However, Eaton first raised this argument in its posthearing "letter." Given the delay in raising this argument, there was little opportunity to develop information on it. There is no information in the record, other than Eaton's allegations, to support separate treatment of crowned bearings. Eaton has provided no information that would demonstrate differing production processes for crowned bearings, as opposed to all other cylindrical roller bearings. Moreover, there is no indication that the functional characteristics of crown bearings are significantly different from all other cylindrical roller bearings. Thus we determine that separate treatment for crowned bearings is not warranted.

D. Like product conclusions

In summary, we determine that there are six separate like products: (1) ball bearings, (2) spherical roller bearings, (3) cylindrical roller bearings, (4) needle roller bearings, (5) spherical plain bearings, and (6) slewing rings. We reject all other arguments for separate like product treatment, specifically those for separate treatment of wheel hub units, separate like products according to size or precision-rating, and separate like products for the "specialty" carve-outs discussed above.

69/ Posthearing Letter of Eaton at 1-2.

III. Exclusion of Certain Imports

A number of respondents insist that certain imports be "excluded" from the investigation, or from any affirmative determination, by the Commission. Their arguments are premised either on the alleged lack of domestic production of the particular product in question (Cooper bearings, tenter bearings, angular contact bearings, "special" roller bearings, and crown bearings), or Torrington's failure to produce a particular product (slewing rings and wheel hub units). The Commission, on several occasions in the early 1980s, indicated that it could "exclude" particular imports from an affirmative determination. 70/ In each instance, "exclusion" was achieved or urged upon the Commission based upon a different theory. More recently, the Commission has consistently rejected exclusion arguments. 71/

Exclusion arguments generally rely on one of three different theories: (1) the "market niche" theory, (2) the "no like product" theory, or (3) the "two like products/no domestic industry" theory.

According to the "market niche" theory, the Commission can exclude certain imports from an affirmative determination if it determines that those

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70/ See, Color Television Receivers from the Republic of Korea and Taiwan, Inv. Nos. 731-TA-134 and 135 (Final), USITC Pub. 1514 at 16-18 (April 1984); Sodium Nitrate from Chile, Inv. No. 731-TA-91 (Final), USITC Pub. 1357 at 3-6 (March 1983); Motorcycle Batteries from Taiwan, Inv. No. 731-TA-42 (Final), USITC Pub. 1228 at 3-7(March 1982); see also, Synthetic L-Methionine from Japan, Inv. No. 751-TA-4, USITC Pub. 1167 at 5-9 (July 1981); cf. Digital Readout Systems and Subassemblies Thereof from Japan, Inv. No. 731-TA-390 (Final), USITC Pub. at 62-66 (Additional Views of Commissioner Cass) (January 1989).

71/ Certain All-Terrain Vehicles from Japan, Inv. No. 731-TA-388 (Preliminary), USITC Pub. 2071 at 9 n.30 (March 1988); see also Certain Brass Sheet and Strip from Japan and the Netherlands, Inv. Nos. 731-TA-379 and 380 (Final), USITC Pub. 2099 at 6 n.9 (July 1988).

imports, although "like" the domestic product, do not compete with the domestic like product. Such imports would occupy a discrete and insular "market niche." Those imports could then be excluded from any affirmative determination since they have no impact on the domestic industry. 72/ The "market niche" has been specifically rejected by the Court of International Trade in its recent decision in Sony Corp. of America v. United States, Slip op. 89-55 at 13-14 (CIT April 26, 1989) (Trinitron picture tube could not be excluded from the Commission determination based upon "market niche" theory).

72/ See, Color Television Receivers from the Republic of Korea and Taiwan, wherein the Commission stated that:

> [W]e do accept the proposition that in certain narrowly-drawn circumstances, certain merchandise may be excluded where it can be demonstrated that the merchandise occupies a "discrete and insular" segment of the market and that there would be no impact on the domestic industry if the particular merchandise were not included in the affirmative determination.
>
> The disaggregation which allows exemption of certain merchandise from an affirmative determination may appear to be contrary to our like product determination. However, our like product analysis includes consideration of an array of factors ranging from actual physical attributes to the ultimate use of the product. Although market factors are taken into consideration in our like product analysis, it is upon reaching our injury analysis that market factors alone become paramount. At that point, it may become clear that a product which is properly within the scope of the investigation is so qualitatively different that it would be inequitable to include it in the Commission's affirmative determination.

Color Television Receivers from the Republic of Korea and Taiwan, Inv. No. 731-TA-134 and 135 (Final), USITC Pub. 1514 at 17 (April 1984) (emphasis added). However, in Color Television Receivers, the Commission determined that, while exclusion was possible as a legal matter, it would not exclude any imports in that case because it determined, as a factual matter, that all the imports were competitive. Although similar exclusion arguments have been made in subsequent investigations and were not rejected on legal grounds, we are not aware of any case where we have actually excluded certain imports using the "market niche" theory of exclusion.

The "no like product" theory of exclusion begins by dividing the subject imports into several groups, some of which have a domestic counterpart or like product, while others do not. Those imports without a domestic counterpart are then excluded from further analysis and from any affirmative determination. 73/ This "no domestic like product" form of exclusion was rejected by the Commission in Lime Oil from Peru, Inv. No. 303-TA-16 (Preliminary), USITC Pub. 1723 at 5 (July 1985). Therein the Commission determined that, although domestic lime oil was not "like" the imported lime oil from Peru, it was the product that is "most similar in characteristics and uses." The Commission determined that there cannot be a finding of "no like product" as such a finding "runs counter to the statute's definition of 'like product' as 'a product like, or in the absence of like, most similar in characteristics and uses with, the article subject to investigation." 74/

The third exclusion theory is the "two like products/one domestic industry" method and is related to the "no like product" theory in approach. According to this theory, allegedly different imported products would be

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73/ This exclusion method was used in Motorcycle Batteries from Taiwan when the Commission found no domestic like product corresponding to a particular subset of the subject imports. Specifically, the scope of the Commission investigation included both 6-volt and 12-volt batteries. The Commission found that domestically-produced 12-volt batteries were "like" the imported 12-volt batteries, but that there was no domestic product "like" or "most similar" to the imported 6-volt batteries. The Commission then excluded 6-volt batteries from its injury and causation analysis. Motorcycle Batteries from Taiwan, Inv. No. 731-TA-42 (Final), USITC Pub. 1228 at 3-7 (March 1982). See also Synthetic L-Methionine from Japan, Inv. No. 751-TA-4, USITC Pub. 1167 (July 1981).

74/ Lime Oil, USITC Pub. 1723 at 5. Although the Commission determined that there was a domestic like product, the lack of competition between the domestic and imported products played a crucial role in finding no causal connection between the imports and the condition of the domestic industry. Thus, in any Commission investigation there is always a "like product," even if that product is not directly competitive with the imported product and even though the imports may have had no impact on the domestic industry.

divided into two or more groups, as in the "no like product" theory, but for those groups of imports with no "like" product there would nonetheless be a corresponding domestic product "most similar in characteristics and uses." This "most similar" domestic product would also be "like" one of the other imported product groups, thus leaving the Commission with two or more groups of imported products, but only one domestic industry. 75/ Then the Commission's causation analysis would separately consider the impact of the different groups of imports on the single domestic industry. 76/

More recently the Commission majority has rejected all exclusion arguments because they should more appropriately be addressed to the Department of Commerce, which has jurisdiction over determinations as to the scope of antidumping and countervailing duty orders. In particular, the Commission, in both All-Terrain Vehicles from Japan and Certain Brass Sheet and Strip from Japan and the Netherlands, specifically stated that it has no statutory authority to exclude certain imports from the scope of the

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75/ Since the multiple groups of products are on the import side and like product analysis focuses on the domestic product(s), the "two like product/one domestic industry" label is a misnomer. There really is only one like product and one most similar product, and they are identical.

76/ The Commission applied this form of "exclusion" in Sodium Nitrate from Chile, Inv. No. 731-TA-91 (Final), USITC Pub. 1357 at 3-6 (March 1983). In that case, both agricultural and industrial grade sodium nitrate were within the scope of the investigation. Only industrial grade sodium nitrate was produced domestically. The Commission split the imports into the two groups (industrial and agricultural), determined that the domestic product "like" imported industrial grade sodium nitrate was domestic industrial grade sodium nitrate, and determined that, although there was no domestic product like agricultural grade sodium nitrate, domestic industrial grade sodium nitrate was "most similar." The Commission went on to determine that imports of industrial grade sodium nitrate were a cause of material injury to the domestic industry, but that imports of agricultural grade sodium nitrate were not.

investigation, as defined by the Department of Commerce. The Commission's position is explained thus:

> The justification for not excluding imports is the statutory scheme: The imports are included within the scope of the investigation defined by the Commerce Department, which controls the Commission's scope of investigation. See 19 U.S.C. § 1673b(a); Sprague Electric Co. v. United States, 84 Cust. Ct. 260, 262 (1980) (the "Commission has no authority to refine or modify the class or kind of merchandise found to be, or likely to be, sold at LTFV."). Our task under that statute is to determine whether there is a reasonable indication of material injury to the domestic industry producing products "like" the imports under investigation. 77/

The absence of statutory authority for the Commission to exclude certain imports from the scope of an investigation was recently confirmed by the Court of International Trade. Sony Corp. of America v. United States, Slip op. 89-55 at 12-16 (appeal of Color Picture Tubes from Canada, Japan, the Republic of Korea, and Singapore, Inv. Nos. 731-TA-367-370 (Final), USITC Pub. 2046 (December 1987)). In the underlying Color Picture Tubes investigation, the Commission declined to exclude the "Trinitron" picture tube, which allegedly occupied a "discrete and insular market segment," from the affirmative determination. On appeal, the CIT held that there is no statutory basis for exclusion, absent separate like product determinations. Slip op. at 14, 16.

Those respondents who argue for exclusion of certain imports rely solely on those earlier Commission determinations, noted above. None of the respondents, however, addressed the more recent Commission determinations

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77/ Certain All-Terrain Vehicles from Japan, Inv. No. 731-TA-388 (Preliminary), USITC Pub. 2071 at 9 n.30 (March 1988); see also Certain Brass Sheet and Strip from Japan and the Netherlands, Inv. Nos. 731-TA-379 and 380 (Final), USITC Pub. 2099 at 6 n.9 (July 1988).

that explicitly reject exclusion arguments. Also, none of the respondents articulated a statutory basis for the Commission's alleged authority to exclude certain imports from an affirmative determination.

We do not believe that parties to the Commission investigation should be allowed to effectively seek Commission review of Commerce Department determinations regarding the scope of the investigation through "exclusion" arguments. Review of Commerce determinations is more appropriately within the jurisdiction of the Court of International Trade. The Commission's role in the statutory scheme is to define the relevant domestic industries and evaluate the impact of imports on them.

The Commission, however, may affect indirectly the scope of any antidumping or countervailing duty order through its like product analysis by finding multiple products and industries and reaching negative determinations as to some of those industries. 78/ But we do not believe that results sought via "exclusion" can be achieved in any other manner that is consistent with the statute. In addition, we believe that the Commission must, in title VII investigations, find a product "like or most similar in characteristics and uses" to the imported products in every investigation. Further, we do not believe that there is a statutory basis for dividing imports into several groups, while separately assessing the impact of each group of imports on the producers of a single domestic product. This effectively and obviously allows for undue fragmentation of the causation analysis.

78/ Badger-Powhatan v. United States, 10 CIT 241, 633 F. Supp. 1364 (1986). If the Commission determines as a factual matter that a certain groups of imports would constitute a separate like product group, but that there is no domestic production of that product group, then the Commission may adopt a material retardation analysis. Cf. Thin Sheet Glass from Switzerland, Belgium, and the Federal Republic of Germany, Inv. Nos. 731-TA-127-129 (Preliminary), USITC Pub. 1376 at 4-7 (May 1983).

IV. Related parties

The related parties provision, 19 U.S.C. § 1677(4)(B), allows for the exclusion of certain domestic producers from the domestic industry if the requirements stated therein are met, and if the Commission, in the exercise of its discretion, determines that exclusion is appropriate. That provision provides that, when a producer is related to exporters or importers of the product under investigation, or is itself an importer of that product, the Commission may exclude that producer from the domestic industry "in appropriate circumstances." 79/ Application of the related parties provision is within the Commission's discretion based upon the facts presented in each case. 80/

The Commission generally applies a two-step analysis in applying the related parties provision. The Commission considers (1) whether the company is solely a domestic producer or whether it is also a "related party" within the meaning of section 771(4)(B); and (2) whether, in view of the producer's "related" status, there are appropriate circumstances for excluding the producer in question from the domestic industry. 81/

79/ Since all foreign-owned domestic producers also import the same types of bearings that they produce domestically, with the sole exception of NTN for spherical roller bearings, the related party discussion that follows will not separately consider the nature of each producer's related party status. In other words, all foreign-owned domestic producers are related parties both because of their foreign ownership and because they import the subject merchandise.

80/ Empire Plow Co. v. United States, 11 CIT ___, 675 F. Supp. 1348, 1352 (1987).

81/ See, e.g., Certain Telephone Systems and Subassemblies Thereof from Japan, Korea, and Taiwan, Inv. Nos. 731-TA-426-428 (Preliminary), USITC Pub. 2156 at 25, n.47 (February 1989).

After determining that the company in question is a domestic producer and is "related" within the meaning of the statute, the Commission has examined three factors in deciding whether appropriate circumstances exist to exclude the related parties. Those factors include:

> (1) the percentage of domestic production attributable to the importing producer;
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> (2) the reasons the U.S. producer has decided to import the product subject to investigation, i.e., whether to benefit from the LTFV sales or subsidies or whether to enable it to continue production and compete in the U.S. market, and
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> (3) the position of the related producers vis-a-vis the rest of the industry, i.e., whether inclusion or exclusion of the related party will skew the data for the rest of the industry. 82/

Application of the related parties provision in these investigations becomes extremely complicated because of the number of industries involved and because virtually every producer is either owned by an exporter of the subject merchandise or is itself an importer. The statute does not treat foreign-owned related parties differently from domestically-owned related parties. Indeed, the related parties provision includes both types within a single definition.

Petitioner and others in support of the petition argue that all foreign-owned producers should be excluded from the domestic industry, but that all other producers should be included even though they import the subject merchandise. 83/ Although questioned at the hearing regarding the justification for treating foreign-owned related parties differently from

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82/ See, e.g., Certain All-Terrain Vehicles from Japan, Inv. No. 731-TA-388 (Final), USITC Pub. 2163 at 17-18 (March 1989).

83/ Prehearing Brief of Petitioner at 18-27; Prehearing Brief of Federal-Mogul at 3-17.

domestically-owned related parties, no meaningful rationale has been provided. Petitioner merely seeks to exclude all related parties that oppose the petition.

Respondents insist that no domestic producers should be excluded from the domestic industry. 84/ They note that the foreign-owned producers operate "ground-up" facilities, not mere assembly operations, and they have been producing in the United States for years. Respondents maintain that the foreign-owned producers import antifriction bearings to supplement their domestic production line and that this is consistent with the rationalization of their world-wide operations. They insist that foreign-owned producers do not benefit from unfairly traded imports and are not shielded from their effects. Finally, respondents assert that inclusion of all domestic producers in the domestic industry will not skew the data regarding the condition of the relevant industry.

The Commission's analysis of the related parties issue is on a producer-by-producer basis for each separate industry. As a general matter, we note that SKF, a multinational producer with plants in virtually every country subject to these investigations including the United States, is by far the world's largest producer and is the largest foreign-owned domestic producer of ball, spherical roller, and cylindrical roller bearings. 85/ SKF has been producing in the United States for over 73 years. Also, as a general matter,

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84/ Prehearing Brief of the Ad Hoc Bearing Group at 7-8; Prehearing Brief of Aerospace Industries at 20-21; Prehearing Brief of Caterpillar at 27-29; Prehearing Brief of FAG at 27-39; Prehearing Brief of INA at 28-39; Prehearing Brief of NSK at 20-23; Prehearing Brief of NTN at 124-128; Prehearing Brief of Quick Finan at 6-8; Prehearing Brief of Romania at 2; Prehearing Brief of SKF at 3-6; Prehearing Brief of JBIA at 10-12; Prehearing Brief of NMB Singapore at 2-6; Prehearing Brief of Minebea at 9-12.

85/ See Report at A-25, Table 4.

the production, shipment, and capacity utilization data for foreign-owned domestic producers are at higher levels than for their U.S.-owned counterparts, but the trends over time are the same. 86/

Discussion of the "skewing" effect of including related parties is somewhat problematic in these investigations as almost all the major domestic producers, whether foreign- or U.S.-owned, are related parties. 87/ Thus consideration of data for domestic producers who are not related parties is often meaningless for many of the subject industries. The "skewing" effect analysis is essentially a comparison of data for individual related parties to the data for all related parties, since there is no significant "unrelated" domestic industry to use for purposes of a comparison.

While we have considered the propriety of exclusion for each related producer for each of the six domestic industries, we cannot set forth this analysis in this public opinion in detail because it would, of necessity, reveal business proprietary information regarding each company. It is sufficient for purposes of this opinion to note generally that the larger related parties have relatively insignificant import to domestic shipment ratios, while the smaller related parties have little or no effect on the aggregate data. Moreover, for certain industries there are only two or three major producers, all of whom are related parties. Exclusion in such a case is not feasible, especially when there is no evidence that such producers are "shielded" from the impact of unfairly traded imports. Further, there is no evidence that any of the related parties have benefitted significantly from unfairly trade imports or that their inclusion results in any "skewing" of

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86/ See Report at A-34-A-35, Table 8.

87/ See Report at A-26, Table 5.

the industry data. Therefore we have not excluded any related parties from any of the domestic industries. 88/

V. The domestic industry

Since we determine that there are six like products, there concomitantly are six separate domestic industries. These six industries are as follows: (1) the ball bearing industry, (2) the spherical roller bearing industry, (3) the cylindrical roller bearing industry, (4) the needle roller bearing industry, (5) the spherical plain bearing industry, and (6) the slewing ring industry. Further, since we do not, in the exercise of our discretion, exclude any related parties from any of the relevant domestic industries, those industries consist of all domestic producers, both foreign-owned and U.S.-owned.

VI. Condition of the domestic industries

In considering the question of material injury, we will conduct an industry-by-industry analysis corresponding to the six like products that we found to exist as a result of our like product analysis. Further, we note that the relevant inquiry must concern the condition of the industry as a whole, not the condition of individual producers. 89/ In determining the

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88/ Compare Report at A-25, Table 4 with A-26, Table 5. See generally Report at A-53-A-61 and App. B-42, Table B-33.

89/ Our injury analysis must focus on the producers as a whole of the relevant like products. In this regard, the Commission is not authorized to consider the effects of an affirmative determination on consuming industries. In these investigations the impact of relief on purchasing groups is simply irrelevant to an evaluation of the impact of unfairly traded imports on the domestic industries producing products like the imported products. While these groups have provided relevant information regarding the nature of

(continued...)

condition of the domestic industries, the Commission considers, among other factors, domestic consumption, domestic production, capacity, capacity utilization, shipments, inventories, employment, and profitability. 90/

A. The ball bearing industry

Apparent domestic consumption of ball bearings, in terms of value, declined steadily from $1.7 billion in 1985 to $1.6 billion in 1987, or by 5.6 percent. Consumption then increased by 13.4 percent during January-September 1988 (interim 1988). 91/ Domestic production of finished ball bearings dropped from 215 million units in 1985 to 195 million units in 1986, then increased to 199 million units in 1987. Production increased by 6.8 percent in interim 1988, compared with the corresponding period of 1987. 92/ The recent increases failed, however, to restore production to 1985 levels. Domestic capacity declined from 296 million units in 1985 to 259 million units in 1987, or by 12.4 percent, before increasing by 2.5 percent in interim 1988. 93/ Capacity utilization rates increased throughout the period, primarily due to the decline in available capacity in the domestic

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89/ (...continued)
competition and the problems being experienced by the domestic industry that shed some light relevant to our like product, cumulation, and causation analysis, their arguments relating to the impact of antidumping duties on their ability to be competitive are not probative of any injury issue within the Commission's jurisdiction. See, e.g., Prehearing Brief of Sullair at 1-3; Prehearing Brief of Deere at 5-14; Prehearing Brief of Airpax at 3-4; Prehearing Brief of Alcoa at 2-9.

90/ 19 U.S.C. § 1677(3)(C)(iii).

91/ Report at A-28 and A-29, Table 6.

92/ Report at A-33 and A-34-A-35, Table 8.

93/ Report at A-33 and A-34-A-35, Table 8. Changes in capacity levels reflect corporate reorganization and rationalization within the domestic industry during the period of investigation.

industry. Utilization rates increased from 72.8 percent in 1985, to 73.4 percent in 1986, and then to 76.7 percent in 1987. In interim 1988, capacity utilization increased further to 77.7 percent. 94/

Domestic shipments by U.S. producers, in both value and unit terms, generally followed the same pattern throughout the period of investigation. In value terms, domestic shipments declined steadily from $1.3 billion in 1985 to $1.2 billion in 1987, or by 10.2 percent. The value of domestic shipments then increased by 5.9 percent in interim 1988. 95/ In unit terms, domestic shipments declined from 209 million finished units in 1985 to 183 million finished units in 1986, before increasing to 189 million finished units in 1987. In interim 1988, shipments increased to 138 million finished units, compared with 129 million finished units for interim 1987. 96/ The ratio of domestic inventories to domestic shipments increased slightly from 12.8 percent in 1985 to 13.0 percent in 1986, then declined to 10.9 percent in 1987. In interim 1988, the ratio of inventories declined again to 11.7 percent compared with 12.4 percent in interim 1987. 97/

94/ Report at A-34-A-35, Table 8. New Departure Hyatt's status as essentially a captive producer for General Motors has been considered by the Commission in its analysis of both the ball bearing and the cylindrical roller bearing industry. Unfortunately, discussion of the New Departure Hyatt's effect on industry-wide data necessitates the use of confidential information and cannot be undertaken in this public opinion. It is sufficient to note that the Commission's Report fully sets forth information regarding the industry as a whole, New Departure Hyatt in particular, and, where warranted, all producers with the exception of New Departure Hyatt. This does not suggest that captive producers are not part of the domestic industry, but that analysis of the condition of the domestic industry may take into account aberrations brought about by unique circumstances when they are apparent in the record.

95/ Report at A-38 and A-39-A-41, Table 9.

96/ Report at A-39-A-41, Table 9.

97/ Report at A-45 and A-46-A-47, Table 11.

Domestic employment in the ball bearing industry declined from 12,937 workers in 1985 to 12,029 in 1986, and then to 11,681 in 1987, or by 9.7 percent from 1985 to 1987. Employment then increased to 11,411 workers in interim 1988 compared with 10,850 in interim 1987, but remained below 1985 levels. 98/ Hours worked followed a similar pattern, as did total wages paid to domestic workers. Hourly wages, however, increased from $11.78 in 1985 to $12.42 in 1986, then declined to $12.18 in 1987. In interim 1988, hourly wages again increased to $12.42 compared with $12.36 in interim 1987. 99/

Financial trends for the ball bearing industry registered declines throughout the period. Net sales for the ball bearing industry declined from $1.455 billion in 1985 to $1.333 billion in 1986, and then to $1.328 billion in 1987. In interim 1988, net sales increased to $1.039 billion compared with $1.012 billion for the corresponding period of 1987. Operating income, as a percentage of net sales, declined steadily from 8.7 percent in 1985 to 7.1 percent in 1986, and then to 6.7 percent in 1987. Even in interim 1988, as net sales increased, operating income declined to 6.7 percent compared with 7.2 percent for interim 1987. 100/

Investment in the form of capital expenditures for machinery and equipment and for research and development generally increased over the period. Investment in ball bearing machinery and equipment increased from $61.8 million in 1985 to $96.7 million in 1986, and then to $102.0 million in

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98/ Report at A-47 and A-48-A-51, Table 12. The vast majority of the reduction of the work force was accounted for by one producer, with employment essentially stable for the remainder of the domestic industry. Report at A-52.

99/ Report at A-47 and A-48-A-51, Table 12.

100/ Report at A-57, Table 15.

1987. In interim 1988 investment in machinery and equipment dropped to $45.0 million compared with $71.7 million for interim 1987. 101/ Research and development expenses also increased from $18.4 million in 1985 to $19.6 million in 1986, and then to $20.4 million in 1987. In interim 1988, research and development expenses stood at $17.8 million compared with $15.2 million for interim 1987. 102/

The generally declining trends in domestic production, capacity, shipments, employment, net sales and profitability lead us to conclude that the domestic ball bearing industry is experiencing material injury. Although these trends are not as dramatic as for other industries subject to these investigations, such as the spherical plain bearing industry, they are consistent and undeniable. Further, even considering the recent upturn in most indicators in interim 1988, which we believe is primarily the result of the institution of these investigations, operating profits continued to decline.

B. The spherical roller bearing industry

Apparent domestic consumption of spherical roller bearings declined, in value terms, from $227 million in 1985 to $217 million in 1986, and then increased to $222 million in 1987. Consumption increased further to $207 in interim 1988 compared with $172 million in interim 1987. 103/ Domestic production of spherical roller bearings declined from 2.8 million units in 1985 to 2.4 million units in 1986 and 1987, or by 11.9 percent from 1985 to 1987. In interim 1988, production increased by 24.4 percent, to 2.3 million

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101/ Report at A-67 and A-67-A-68, Table 22.

102/ Report at A-69 and Table 23.

103/ Report at A-27 and A-28-A-29, Table 6.

units, compared with 1.8 million units in interim 1987. 104/ Domestic capacity increased steadily from 3.5 million units in 1985 to 3.6 million units in 1986, and then to 3.7 million units in 1987. In interim 1988, capacity increased again to 2.81 million units compared with 2.75 million units for the corresponding period of 1987. 105/ Capacity utilization declined during most of the period from 79.2 percent in 1985 to 67.2 percent in 1986, and then to 66.3 percent in 1987, primarily because of added capacity. Utilization rates then surged in interim 1988 to 80.1 percent compared with 65.8 percent for interim 1987. 106/

Domestic shipments of spherical roller bearings, both in unit and value terms, remained essentially stable throughout the period before increasing significantly in interim 1988. In unit terms, domestic shipments declined from 2.4 million finished units in 1985 to 2.2 million finished units in 1986, and then increased back to 2.4 million finished units in 1987. In interim 1988, shipments increased further to 1.9 million finished units compared with 1.7 million finished units in interim 1987. 107/ In value terms, domestic shipments of spherical roller bearings dropped from $192 million in 1985 to $185 million in 1986, then increased to $192 million in 1987. In interim 1988, shipments increased by 21.6 percent to $180 million compared with $148 million in interim 1987. 108/ The ratio of inventories to domestic shipments declined irregularly from 48.9 percent in 1985 to 39.0

104/ Report at A-36 and A-34-A-35, Table 8.

105/ Report at A-36 and A-34-A-35, Table 8.

106/ Report at A-36 and A-34-A-35, Table 8.

107/ Report at A-38 and A-39-A-41, Table 9.

108/ Report at A-38 and A-39-A-41, Table 9.

percent in 1987 and declined further in interim 1988 to 36.0 percent, compared with 45.1 percent in interim 1987. 109/

The number of workers employed by the spherical roller bearing industry declined by 21.9 percent from 1985 to 1987, before increasing by 10.4 percent in interim 1988. Hours worked and total wages followed similar trends. 110/ Hourly wages increased from $12.87 in 1985 to $14.10 in 1987 and remained essentially stable in interim 1988. 111/

The financial condition of the spherical roller bearing industry improved over the period. Net sales dropped initially from $198 million in 1985 to $190 million in 1986, before increasing to $211 million in 1987. In interim 1988, net sales increased to $152 million compared with $127 million in interim 1987. 112/ Operating income, as a percent of net sales, increased dramatically from 13.3 percent in 1985 to 20.1 percent in 1986, and then to 21.5 percent in 1987. In interim 1988, operating income stood at 19.0 percent compared with 16.8 in interim 1987. 113/

Investment in the spherical roller bearing industry declined irregularly during the period of investigation. Expenditures on machinery and equipment initially increased from $7.4 million in 1985 to $9.3 million in 1986, but then declined to $6.6 million in 1987. Expenditures remained essentially stable during interim 1988 compared with interim 1987. 114/ Research and

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109/ Report at A-45 and A-46-A-47, Table 11.

110/ Report at A-47 and A-48-A-51, Table 12.

111/ Report at A-47 and A-51, Table 12.

112/ Report at A-58 and A-59, Table 16.

113/ Report at A-58 and A-59, Table 16.

114/ Report at A-67 and Table 22.

development expenses dropped from $2.4 million in 1985 to $1.7 million in 1986, and then to $1.6 million in 1987. Research and development expenses increased to $1.7 million in interim 1988, compared with $1.2 million in interim 1987. 115/

Given the relative stability of domestic shipments and the recovery in domestic production in interim 1988, together with increasing net sales and the virtual doubling of operating profits to levels in excess of 20 percent of net sales, we conclude that the domestic spherical roller bearing industry is not suffering material injury. While there were some indications of injury, namely declining employment and production from 1985 to 1987, all other indicators increased significantly over the period of investigation. 116/

C. The cylindrical roller bearing industry

Apparent domestic consumption of cylindrical roller bearings declined from $208 million in 1985 to $191 million in 1986, but then increased to $205 million in 1987. Consumption increased to $161 million in interim 1988, compared with $151 million in interim 1987. 117/ Domestic production declined from 12.8 million units in 1985 to 11.4 million units in 1986, and then to 10.7 million units in 1987. In interim 1988, production increased to

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115/ Report at A-69 and Table 23.

116/ Although we conclude that the spherical roller bearing industry is not materially injured, and, thus, discussion of causation is unnecessary, we note that the declines in production and employment cannot be attributed to the unfairly traded imports subject to these investigations as those imports dropped during the period of investigation, both in terms of volume and market share. Report at A-115, Table 38. Rather, the declines in production and employment are attributable to domestic producers selling off inventories that they had accumulated before the period of investigation.

117/ Report at A-27 and A-28-A-29, Table 6.

8.5 million units, compared with 8.0 million units in interim 1987. 118/ Capacity also declined steadily throughout the period, declining from 52.9 million units in 1985 to 51.8 million units in 1986, and then to 51.1 million units in 1987. Capacity continued to decline to 33.6 million units in interim 1988, compared with 39.0 million units in interim 1987. 119/ Capacity utilization rates were extremely low and declining throughout the period, notwithstanding the declines in available capacity, dropping from 24.2 percent in 1985 to 22.0 percent in 1986, and then to 21.0 percent in 1987. In interim 1988, utilization rates increased to 25.3 percent, compared with 20.5 percent in interim 1987. 120/

Domestic shipments of cylindrical roller bearings declined irregularly, both in terms of units and value. The value of domestic shipments of cylindrical roller bearings dropped from $189 million in 1985 to $172 million in 1986, but then increased to $183 million in 1987. The value of shipments increased to $140 million in interim 1988, compared with $133 million in interim 1987. 121/ In quantity terms, shipments rose slightly from 10.6 million finished units in 1985 to 10.7 million finished units in 1986, then dropped to 10.1 million finished units in 1987. Shipments increased in interim 1988 to 8.0 million finished units compared with 7.6 million finished

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118/ Report at A-36-A-37 and A-34-A-35, Table 8.

119/ Report at A-36-A-37 and A-34-A-35, Table 8.

120/ Report at A-36-A-37 and A-34-A-37, Table 8. As was the case with certain data regarding the ball bearing industry, the unique position of New Departure Hyatt seriously affects the overall industry data regarding capacity utilization rates. Even adjusting for the effect of New Departure Hyatt, however, the capacity utilization rates for the rest of the domestic industry was still generally lower than for all the other industries subject to these investigations. Report at A-36.

121/ Report at A-42 and A-39-A-41, Table 9.

units for the corresponding period of 1987. 122/ The ratio of domestic inventories to shipments declined dramatically from 19.2 percent in 1985 to 11.8 percent in 1986, and then to 11.0 percent in 1987. Inventory ratios declined further in interim 1988 to 10.3 percent, compared with 10.8 percent for interim 1987. 123/

Employment in the cylindrical roller bearing industry increased slightly from 1,803 workers in 1985 to 1,850 workers in 1986, and then to 1,931 workers in 1987. In interim 1988, employment increased to 1,925 workers compared with 1,867 in interim 1987. 124/ Hours worked followed a similar trend, while total wages increased by almost 20 percent. 125/ Hourly wages increased steadily from 1985 to 1987, before declining in interim 1988. 126/

The financial condition of the cylindrical roller bearing industry fluctuated irregularly, but remained at low levels throughout the period. Net sales declined from $193 million to $178 million in 1986, but then rose to $196 million in 1987. Net sales increased to $151 million in interim 1988 compared with $147 million in interim 1987. 127/ Operating income, as a percent of net sales, dropped from a profit of 0.8 percent in 1985 to a loss of 0.4 percent in 1986, and then increased to 1.4 percent profit in 1987. In

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122/ Report at A-42 and A-39-A-41, Table 9.

123/ Report at A-45 and A-46-A-47, Table 11.

124/ Report at A-47 and A-48, Table 12.

125/ Report at A-49-A-50, Table 12.

126/ Report at A-51, Table 12.

127/ Report at A-58 and A-60, Table 17. Trends in net sales and profitability for individual producers varied widely due to shifts in market share. Report at A-58, A-60.

interim 1988, operating income increased to a profit of 4.9 percent, compared with a profit of 0.6 percent in interim 1987. 128/

Capital expenditures on machinery and equipment increased steadily from $6.5 million in 1985 to $7.7 million in 1986, and then to $8.5 million in 1987. In interim 1988, machinery and equipment expenditures increased further to $5.6 million compared with $4.3 million in interim 1987. 129/ Research and development expenses also increased from $1.9 million in 1985 to $2.0 million, and then to $2.2 million in 1987. Research and development expenses remained essentially stable in interim 1988. 130/

We are persuaded that the declines in domestic production and shipments, together with the depressed levels of profitability and extremely low capacity utilization rates reflect a domestic industry that is experiencing material injury.

128/ Report at A-60, Table 17.

129/ Report at A-67, Table 22.

130/ Report at A-69, Table 23.

D. The needle roller bearing industry

Apparent domestic consumption of needle roller bearings increased steadily between 1985 and 1987. Consumption increased further in interim 1988 compared with interim 1987. 131/ Domestic production increased irregularly, dropping between 1985 and 1986, and then increasing in 1987. In interim 1988, production increased further compared with interim 1987. 132/ Capacity to produce needle roller bearings increased from 1985 to 1987, before dropping slightly in interim 1988. 133/ Capacity utilization dropped from 1985 to 1987, but then increased in interim 1988. 134/

Domestic shipments of needle roller bearings increased during the period, both in terms of quantity and value. The quantity of domestic shipments increased irregularly, first dropping between 1985 and 1986 and then increasing in 1987. In interim 1988, the quantity of shipments increased further, compared with interim 1987. 135/ The value of domestic shipments of needle roller bearings increased steadily from 1985 to 1987. In interim 1988, the value of domestic shipments continued to increase. 136/

131/ Report at A-27 and A-28-A-29, Table 6. Given the limited number of firms in the needle roller bearing industry, virtually all data are confidential. Therefore the discussion of the various indicators of industry performance in this public opinion is necessarily general. For those who have obtained access to the confidential record under an Administrative Protective Order, references are made to the Commission Report for the specific information which forms the basis of the general characterizations in this opinion.

132/ Report at A-36 and A-35, Table 8.

133/ Report at A-36 and A-35, Table 8.

134/ Report at A-36 and A-35, Table 8.

135/ Report at A-39-A-41, Table 9.

136/ Report at A-42 and A-39-A-41, Table 9.

The ratio of inventories to domestic shipments increased irregularly from 1985 to 1987. In interim 1988 the ratio increased compared with interim 1987. 137/

The number of workers employed by the domestic needle roller bearing industry declined slightly between 1985 and 1987. Employment increased in interim 1988, compared with interim 1987. 138/ Hours worked followed the same pattern, declining slightly from 1985 to 1987, then increasing in interim 1988. Total compensation and hourly compensation increased irregularly from 1985 to 1987. In interim 1988, total compensation continued to increase, but hourly compensation declined slightly. 139/

The condition of the domestic needle roller bearing industry improved during the period of investigation. Net sales increased by 5.2 percent over the period. Further, operating income, as a percentage of net sales, increased irregularly while remaining at high absolute levels. 140/ Investment in machinery and equipment and research and development expenses followed similar patterns of irregular increases during the period of the investigation. 141/

Virtually every indicator of the condition of the domestic needle roller bearing industry has shown improvement during the period of investigation. The only decline was in capacity utilization, but that is attributable solely to the increase in domestic capacity, since production increased steadily.

137/ Report at A-45 and A-46, Table 11.

138/ Report at A-52 and A-48, Table 12.

139/ Report at A-52 and A-49-A-51, Table 12.

140/ Report at A-58 and A-61, Table 18.

141/ Report at A-67, Table 22 and A-69, Table 23.

Further, operating profits increased over the period and were at consistently high levels. Given the overwhelming evidence steady improvement from a strong base in this industry, we determine that the needle roller bearing industry is not suffering material injury.

E. The spherical plain bearing industry

Apparent domestic consumption of spherical plain bearings declined slightly and irregularly from 1985 to 1987 percent. 142/ Domestic production declined steadily from 1985 to 1987, before stabilizing in interim 1988. 143/ Capacity was essentially unchanged during the period, while capacity utilization dropped significantly, reflecting production declines. 144/

Domestic shipments of finished spherical plain bearings declined in both quantity and value terms. The value of shipments dropped between 1985 and 1987. 145/ Quantity also declined, but at a faster rate. 146/ The ratio of inventories to domestic shipments increased irregularly from 1985 to 1987. 147/

142/ Report at A-30 and A-28-A-29, Table 6. Given the limited number of firms in the spherical plain bearing industry, virtually all data are confidential. Therefore the discussion of the various indicators of industry performance in this public opinion is necessarily general. For those who have obtained access to the confidential record under an Administrative Protective Order, references are made to the Commission Report for the specific information which forms the basis of the general characterizations in this opinion.

143/ Report at A-37 and A-35, Table 8.

144/ Report at A-37 and A-35, Table 8.

145/ Report at A-42 and A-40-A-41, Table 9.

146/ Report at A-40, Table 9.

147/ Report at A-45 and A-46-A-47, Table 11.

The number of workers employed by the domestic industry was essentially stable throughout the period of investigation. 148/ Hours worked, total compensation, and hourly compensation, however, increased. 149/

The financial condition of the spherical plain bearing industry deteriorated dramatically over the course of the investigative period, dropping from a small profit in 1985 to significant losses in 1987 and interim 1988. 150/ Net sales also declined from 1985 to 1987, although they recovered somewhat in interim 1988. 151/ Research and development expenses dropped steadily during the period. Investment in machinery and equipment increased irregularly. 152/

The drastically declining trends in production, capacity utilization, shipments, net sales, and, especially, profitability, together with the significant increases in inventory ratios, lead us to conclude that the domestic industry producing spherical plain bearings is suffering material injury. We further note that, in addition to the declining trends, the losses sustained by the domestic industry are extraordinary when compared with other industries subject to these investigations.

148/ Report at A-48, Table 12.

149/ Report at A-49-A-51, Table 12.

150/ Report at A-61, Table 19.

151/ Report at A-61, Table 19.

152/ Report at A-67-A-69, Tables 22 and 23.

F. The slewing ring industry

Apparent domestic consumption of slewing rings increased consistently throughout the period. 153/ Domestic production increased irregularly, as did domestic capacity. 154/ Capacity utilization rates fluctuated during the period, but increased to its highest levels in interim 1988. 155/

Domestic shipments of slewing rings increased steadily throughout the period, both in value and quantity terms. 156/ Domestic inventories as percentage of domestic shipments declined significantly between 1985 and 1987, before increasing slightly in interim 1988. 157/ Domestic employment also increased, although irregularly, from 1985 through interim 1988. 158/

The financial condition of the slewing ring industry generally improved

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153/ Report at App. B-42, Table B-28. Since slewing rings were added to the scope of the investigation by the Department of Commerce the day before the Commission's hearing in these final investigations, the data regarding the slewing ring industry are less complete than if the Commission had been provided with the proper notice and had the opportunity to use the full investigative period to seek information. Given the unusual circumstances surrounding slewing rings, the Commission attempted to collect as much information as possible in the little time remaining in the investigations. Thus, the data presented in the Report constitute the best information available to the Commission.

154/ Report at App. B-42, Table B-29. As is the case for the needle roller bearing industry and the spherical plain bearing industry, the limited number of firms producing slewing rings renders most of the industry data confidential. Therefore, discussion of the relevant data is necessarily general. Again, reference to the Commission Report is provided for review of specific data.

155/ Report at App. B-42, Table B-29.

156/ Report at App. B-42, Table B-30.

157/ Report at App. B-42, Table B-31.

158/ Report at App. B-42, Table B-32. Given the short notice provided to the Commission regarding the inclusion of slewing rings in these investigations the Commission was unable to obtain other employment data.

between 1985 and interim 1988. Net sales increased steadily. 159/ Operating profit, as a percent of net sales, increased irregularly during the period and was at consistently high levels. 160/

The generally improving trends in production, capacity, shipments, employment, net sales, and profitability, as well as the relatively high profits registered by the domestic slewing ring industry, compared to the other industries subject to investigation, lead us to conclude that it is not suffering material injury. 161/

It should be noted that the petitioner does not produce slewing rings and no party to these investigations made any specific arguments or presented any evidence regarding the slewing ring industry, much less any evidence suggesting that the industry was suffering material injury.

IX. Cumulation

The provisions of the Tariff and Trade Act of 1984 amended title VII of the Tariff Act of 1930 (the Act) to require that the impact of imports be cumulatively assessed when certain criteria are met. Section 771(7)(C)(iv) of the Act now provides in pertinent part:

> [T]he Commission shall cumulatively assess the volume and effect of imports from two or more countries of like products subject to investigation if such imports compete

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159/ Report at App. B-42, Table 33.

160/ Report at App. B-42, Table 33. No data were available regarding investment in the domestic industry, despite the best efforts of the Commission staff, given the limited time available to conduct an investigation.

161/ Since we determine that the slewing ring industry is not suffering material injury, discussion of causation is not relevant.

with each other and with like products of the domestic industry in the United States market. 162/

Although Congress specifically rejected a "contributing effects" test, which would have precluded cumulation of imports from countries responsible for only minimal imports, 163/ the decision to cumulate imports must be based upon more than the fact that several countries subject to investigation produce imports like the domestic product. 164/

Imports are to be cumulated if they meet three criteria: (1) they must compete with other imported products and with the domestic like product; (2) they must be marketed within a reasonably coincidental period; 165/ and (3) they must be subject to investigation. In these investigations, the only cumulation factor in dispute is whether the subject imports compete with each other and with the domestic like products. All candidates for cumulation have been marketed throughout the period and are subject to the same investigations.

In determining whether the competition requirement of the cumulation provision is satisfied, the Commission has considered the following factors:

162/ Section 612(a)(2)(A) of the Trade and Tariff Act of 1984, amending the Tariff Act of 1930, as section 771(7)(C)(iv), 19 U.S.C. § 1677(7)(C)(iv).

163/ See H.R. Rep. No. 725, 98th Cong., 2d Sess. 37 (1984). The amendments contained in the Omnibus Trade and Tariff Act of 1988, which include, among other things, a negligible imports provision, are not applicable since these investigations were initiated prior to the effective date of that Act.

164/ H.R. Rep. No. 725, 98th Cong., 2d Sess. 36-37 (1984).

165/ The Court of International Trade recently rejected the ITC's cumulation analysis, noting that reasonably coincident marketing of imported products merely relates to the statutory requirement that the products potentially subject to cumulation compete with like products in the domestic industry, and does not provide an additional basis for refusing to cumulate imports covered by two or three year old orders. Chaparral Steel Co. v. United States, 698 F. Supp. 254 (CIT 1988). This decision has been appealed to the Court of Appeals for the Federal Circuit (Ct. No. 89-1338, 89-1339).

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

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

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

(4) whether the imports are simultaneously present in the market. 166/

While no single factor is determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the imports compete with each other and with the domestic like product.

We have considered whether cumulation is appropriate with respect to the relevant imports from each country for each separate industry. Unfairly traded imports of the various products and the countries from which they originate, are as follows: 167/

166/ Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea and Taiwan, Inv. Nos. 731-TA-278-280 (Final), USITC Pub. No. 1845 (May 1986), aff'd, Fundicao Tupy S.A. v. United States, Slip op. 88-1233 (Fed. Cir. Oct. 19, 1988); see also Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany, France, Italy, Romania, Singapore, Sweden, Thailand, and the United Kingdom, Inv. Nos. 303-TA-19 and 20 and Inv. Nos. 731-TA-391-399 (Preliminary), USITC Pub. No. 2083 (May 1988) at 30-31.

167/ See Report at A-22, Table 2.

1. Ball Bearings

   West Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom;

2. Spherical Roller Bearings

   West Germany, France, Italy, Japan, Romania, Singapore, Sweden, and the United Kingdom;

3. Cylindrical Roller Bearings

   West Germany, France, Italy, Japan, Sweden, and the United Kingdom;

4. Needle Roller Bearings

   West Germany, France, Italy, Japan, and the United Kingdom;

5. Plain Bearings

   West Germany, France, Italy, and Japan.

Petitioner has argued that the Commission should cumulate all bearings imports from all countries subject to these investigations. Petitioner maintains that all antifriction bearings compete with each other and are highly interchangeable, especially at the design stage, and are distributed through common channels of distribution. 168/ Petitioner's interchangeability argument focuses upon all subject antifriction bearings. For purposes of cumulation analysis, however, the relevant inquiry is whether there is competition between imports and the domestic product within each like product category.

Only one respondent addressed the cumulation issue in any detail. Respondent Techno Import/Export of the Socialist Republic of Romania contends that cumulating its imports of ball and spherical roller is inappropriate because such imports do not compete with either the domestic like product or

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168/ See Petitioner's Prehearing Brief at 17.

imports from other countries subject to investigation. 169/ Respondent argues that Romanian bearings are not designed to compete with bearings from industry giants, and are commonly known to be of a lower quality than most other bearings subject to investigation (indeed, they were referred to as the "Yugo" of antifriction bearings). 170/

Mere quality differences of this magnitude do not warrant excluding from cumulation the Romanian product imports. 171/ Romanian bearings have been marketed domestically throughout the entire period of investigation, 172/ and appear to have competed with other commodity-type bearings, although at the low end of the quality spectrum. Finally, the Romanian importer points to its regional marketing as evidence that it does not compete with other producers of the like products. This argument is similarly unpersuasive. Although respondent's products may not compete with domestic industries' ball and spherical roller bearings, or with products of other importers in all parts of the country, that they compete with all these products in various parts of the country is sufficient to warrant cumulating their volumes when assessing the impact of imports on the domestic industry.

As noted previously, competition between the imported products is the

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169/ Transcript at 230.

170/ Transcript at 231.

171/ See Certain Welded Carbon Steel Pipes and Tubes from the People's Republic of China, Inv. No. 731-TA-292 (Final), USITC Pub. 1985 at 8-11 (August 1986) (Chinese imports not cumulated because they were "grossly substandard", failed to conform to industry standards, had value only as scrap and, therefore, were not competitive).

172/ Report at A-111.

only cumulation requirement at issue here. 173/ Within each like product category, imports are competitive, they are sold within the same geographical markets, and they are similarly marketed and distributed. While competition between large and small, and precision and superprecision, bearings may be limited, there is competition among all imports and the domestic like product for each type, size, and precision rating. We therefore determine that, for each separate like product, cumulation of the price and volume effects of imports from all countries subject to investigation is required.

VIII. Material injury by reason of LTFV and subsidized imports

In addition to finding material injury to a domestic industry, we must also determine whether such injury is "by reason of the less than fair value or subsidized imports." 174/ In making this determination, the Commission is required to consider, inter alia, the volume of the imports subject to investigation, the effect of such imports on domestic prices, and the impact of such imports on the domestic industry. 175/ Evaluation of these factors involves a consideration of: (1) whether the volume of imports, or increase in volume is significant, (2) whether there has been significant price underselling by the imported products, and (3) whether imports have otherwise depressed prices to a significant degree, or have prevented price

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173/ The remaining requirements, that all products be coincidentally marketed, and that all imports are under investigation, are satisfied here. All products for which Commerce reached affirmative determinations were marketed throughout the entire investigative period, and all imports are subject to these same investigations simultaneously.

174/ 19 U.S.C. § 1673d(b)(1).

175/ 19 U.S.C. § 1677(7)(B).

increases. 176/ In addition, the Commission must evaluate relevant economic factors bearing on the industry, such as actual and potential changes in profits, productivity, capacity utilization, and investment. 177/

The Commission may not weigh the various causes of material injury, 178/ nor must we determine that LTFV or subsidized imports are the principal, a substantial, or a significant cause of material injury. 179/ However, we may consider any information demonstrating possible alternative causes of injury to the domestic industry. 180/

Since we have already determined that the domestic industries producing spherical roller bearings, needle roller bearings, and slewing rings are not experiencing material injury, our causation analysis is limited to the ball bearing, cylindrical roller bearing, and spherical plain bearing industries. Our analysis of the causal connection between the subject imports and the condition of each of these industries is set forth below.

176/ 19 U.S.C. § 1677(7)(C)(i-ii).

177/ 19 U.S.C. § 1677(7)(C)(iii).

178/ La Metalli Industriale, S.p.A. v. United States, Slip op. 89-46 at 31, (CIT April 11, 1989). See also, Citrosuco Paulista v. United States, Slip op. 88-176 at 64 (CIT 1988); Hercules, Inc. v. United States, 673 F. Supp. 454, 481 (CIT 1987); British Steel Corp. v. United States, 593 F. Supp. 405, 413 (CIT 1984); S. Rep. No. 249, 96th Cong., 1st Sess. 74 (1979).

179/ S. Rep. No. 249, 96th Cong., 1st Sess. at 74.

180/ S. Rep. No. 249, 96th Cong., 1st Sess. 75 (1979). Such alternative causes may include "the volume and prices of imports sold at fair value, contraction in demand or changes in patterns of consumption, trade, restrictive practices of competition between the foreign and domestic producers, developments in technology, and the export performance and productivity of the domestic industry." Id. at 74.

A. The ball bearing industry

The volume of imports of ball bearings was high and increased significantly during the period of investigation. The value of cumulated imports increased from $340 million in 1985 to $366 million in 1986, and then to $378 million in 1987, or by 11.9 percent from 1985 to 1987. Imports of ball bearings surged dramatically in interim 1988 to $373 million, compared with $280 million in interim 1987, an increase in excess of 30 percent. 181/

The market share of imported ball bearings also increased steadily during the period, and at all times exceeded 20 percent of domestic consumption. Market share rose from 20.2 percent in 1985 to 23.0 percent in 1986, and then to 23.8 percent in 1987. Consistent with the surge in import volume in interim 1988, market share also increased dramatically to 27 percent, compared with 23 percent in interim 1987. 182/

The pricing data collected by the Commission on 19 products was generally inconclusive with regard to the other industries subject to these investigations, but was relatively well developed for ball bearings as 10 of the 19 specific products selected were ball bearings and the response rate for these products was relatively good. The pricing data obtained for ball bearings indicate significant underselling by imports. 183/ Investigation of lost sales and lost revenue allegations provides further support for the conclusion that imported ball bearings generally undersold the domestic product. 184/

181/ Report at A-111, Table 37.

182/ Report at A-115, Table 38.

183/ See Report at A-130-A-132.

184/ See Report at A-133-A-134.

The characteristics of the market for ball bearings suggest that the increase in import volume did cause prices to decline, or suppressed price increases, over the period of investigation. Because the demand for ball bearings is relatively price inelastic, 185/ the increase in the subject imports was not absorbed by increased demand. Rather, increased imports displaced domestic shipments and put downward pressure on domestic prices. This is apparent in the market share shift that took place between 1985 and 1987. The subject imports gained 3.6 percent of the U.S. market for ball bearings, while domestic producers lost 3.8 percent. 186/

The respondents suggested a number of alternative causes for the decline in the performance of the domestic industry, most notably the unique situation of New Departure Hyatt and its distorting effect on industry indicators, and the internal problems at Torrington's Fafnir Division. 187/

While we acknowledge that New Departure Hyatt is primarily a captive producer for General Motors, it is apparent that they have not been insulated from foreign competition. Indeed, General Motors has adopted a policy of forcing New Departure Hyatt to offer prices competitive with those of outside suppliers. The inability of New Departure Hyatt to compete with outside suppliers in terms of price has led General Motors to shift purchases to imports and to severely reduce New Departure Hyatt's lines of production. 188/

185/ See Memorandum EC-M-151 at 22-23 (April 26, 1989). See also Prehearing Brief of Quick Finan at B.7-8.

186/ Report at A-115, Table 38. See also Prehearing Brief of Pacomar Kubar at 2-18; Prehearing of King Bearings at 3-9.

187/ See, e.g., Prehearing Brief of Capital Economics at 8-11.

188/ Report at A-56.

Regarding Torrington's problems related to its acquisition of Fafnir, internal problems have contributed to the decline in Torrington's financial performance. However, the Commission's causation analysis is focused on the domestic industry as a whole, not individual producers, and internal problems at Fafnir have no relevance to the deterioration of the rest of the domestic industry. Further, those problems do not fully account for Torrington's financial condition. As we noted previously, the Commission does not weigh causes or determine which factors are primarily responsible for material injury to the domestic industry. It is sufficient that the subject "imports contribute, even minimally, to material injury." 189/

Given the significant and increasing volume of the subject imports, their increasing market penetration, the price suppressing effect of the subject imports, the evidence of underselling of the domestic product by those imports, and the consistent decline in the profitability of the domestic industry, we conclude that the subject imports are a cause of material injury to the domestic ball bearing industry.

B. The cylindrical roller bearing industry

The volume of the subject imports of cylindrical roller bearings increased steadily throughout the period of investigation, although the levels were not as high as those for ball bearings. The subject imports increased from $18.9 million in 1985 to $19.0 million in 1986, and then to $21.1 million in 1987. In interim 1988 the subject imports continued to

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189/ La Metalli Industriale, S.p.A. v. United States, Slip op. 89-46 at 31, (CIT April 11, 1989).

increase to $20.2 million, compared with $17.9 million for the corresponding period of 1987. 190/

The market share of the subject imports also increased steadily during the period. Market penetration rose from 9.0 percent in 1985 to 9.9 percent in 1986, and then to 10.3 percent in 1987. In interim 1988, market penetration increased further to 12.6 percent, compared with 11.8 percent for interim 1987. 191/

Pricing data obtained in response to the specific requests in the Commission questionnaires was generally inconclusive. 192/ However, a critical review of the aggregate data supports an inference of a price depressing impact attributable to the subject imports of cylindrical roller bearings. Specifically, the subject imports have increased both absolutely and relative to domestic shipments, while domestic consumption actually declined. At the same time, the value of domestic shipments declined, especially between 1985 and 1986 when the quantity of domestic shipments was essentially stable. 193/

As is the case with ball bearings, the characteristics of the market for cylindrical roller bearings suggest that the increase in import volume did cause prices to decline, or suppressed price increases, over the period of investigation. Because the demand for cylindrical roller bearings is relatively price inelastic, 194/ the increase in the subject imports was not

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190/ Report at A-111, Table 37.

191/ Report at A-115, Table 38.

192/ See Report at A-130.

193/ See Report at A-28, Table 6, A-39-A-41, Table 9, and A-112, Table 37.

194/ See Memorandum EC-M-151 at 22-23 (April 26, 1989).

absorbed by increased demand. Rather, increased imports displaced domestic shipments and put downward pressure on domestic prices. This is apparent in the market share shift that took place between 1985 and 1987. The subject imports gained 1.3 percent of the U.S. market for cylindrical roller bearings, while domestic producers lost 1.3 percent. 195/

In light of the significant and increasing volume and market penetration of the subject imports, together with some evidence of a price depressing effect of those imports on the domestic product, and the continued anemic profitability of the domestic industry, we conclude that the subject imports are a cause of material injury to the domestic cylindrical roller bearing industry.

C. The spherical plain bearing industry

The volume of the subject imports of spherical plain bearings increased dramatically throughout the period of investigation. Import value increased by more than 78 percent from 1985 to 1987 and continued to increase in interim 1988. 196/

Market penetration by the subject imports was equally dramatic, capturing in excess of one quarter of domestic consumption by interim 1988. Import market share nearly doubled from 1985 to 1987. In interim 1988, import market share rose in comparison with interim 1987. 197/

While specific pricing data regarding spherical plain bearings was generally inconclusive, the dramatic surge in import volume and market share

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195/ Report at A-116, Table 38.

196/ Report at A-112, Table 37.

197/ Report at A-116, Table 38.

for a product whose demand is relatively unresponsive to price declines, 198/ the high absolute level of market penetration, in combination with the severe decline in the financial condition of the domestic industry, provides sufficient evidence of a causal connection between the subject imports and the material injury being experienced by the domestic industry.

IX. No threat of material injury to the domestic industries producing spherical roller bearings, needle roller bearings, and slewing rings

When we reach affirmative material injury determinations, we need not consider the question of threat of material injury. However, for those industries for which we make negative material injury determinations, we must then consider the statutorily enumerated threat criteria. Section 771(7)(F), as amended by the Trade and Tariff Act of 1984, requires that, in assessing a threat of material injury, the Commission consider, inter alia, increases in production capacity or existing unused capacity in the exporting country likely to result in significant increases in imports, rapid increases in U.S. market penetration likely to rise to an injurious level, the probability of price suppression or depression due to import prices, substantial increases in inventories of the imported products in the United States, the potential for production shifting, and the effect of imports on efforts to develop future generation or derivative products. 199/ The statute also cautions that an affirmative threat determination "shall be made on the basis of

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198/ See Memorandum EC-M-151 at 22-23 (April 26, 1989).

199/ See Citrosuco Paulista v. United States, Slip op. 88-176 at 43 (CIT December 30, 1989).

evidence that the threat of material injury is real and that actual injury is imminent" and not on the basis of mere conjecture or supposition. 200/

Since we have determined that the domestic industries producing ball bearings, cylindrical roller bearings, and spherical plain bearings are experiencing material injury, a threat determination as to those imports is unnecessary. Accordingly, our threat analysis is limited to those industries which we determined were not materially injured. Specifically, we will conduct a threat analysis for the industries producing spherical roller bearings, needle roller bearings, and slewing rings. 201/ For the purposes of our consideration of the threat factors specified in the statute, we do not distinguish among the three industries since the data are similar with respect to each. Thus, the discussion that follows applies generally to each of the three relevant industries. Further, we note that the petitioner did not put forth a significant threat case in its presentations to the Commission but, instead, focused almost exclusively on a material injury case.

The first factor in a threat analysis is the nature of the subsidy, if applicable. This factor is relevant only with regard to spherical roller bearings. For that product and industry, only Singapore was subject to an affirmative countervailing duty determination. The subsidy at issue is

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200/ 19 U.S.C. § 1677(7)(F)(ii).

201/ For the purposes of these threat analyses, we have cumulatively assessed imports from the subject countries. We note that the Court of International Trade, in Asocoflores, suggested that cumulation may be feasible under certain circumstances and, in any event was committed to the discretion of the Commission. Asocoflores, Slip op. 88-172 at 7-8 (CIT December 27, 1988). Since cumulation provides the most favorable case for the petitioner and greatly simplifies our threat analysis, we have cumulated the threat from the subject imports for each of the relevant industries.

minimal, as is the significance of imports from Singapore. 202/ Therefore, this factor carries little weight in our threat determination.

With regard to production capacity, any increase in that capacity, and underutilization of capacity in the relevant countries, it is sufficient to note that capacity utilization rates are extremely high in all countries for each of the relevant products and there is no evidence of any increase in that capacity. 203/

Market penetration is increasing, but not rapidly, for needle roller bearings and slewing rings, and actually declined over the period for spherical roller bearings. 204/ While inventories of imports have increased in interim 1988, the increase is insufficient, standing alone, to constitute a threat of material injury to the domestic industry. 205/ Further, there is no evidence of a significant price depressing or suppressing effect of the subject imports, especially considering the trends in their market share and the high profitability of the relevant domestic industries. Finally, given the prevalence of long-term contracts, the dedication of production lines to particular products, and the significant costs necessary to switch between the production of the various like products, there is no likelihood of any imminent product-shifting by foreign producers. 206/

Given the lack of evidence that the statutory criteria have been substantially satisfied, together with the lack of any threat presentation by

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202/ See Report at A-19 and A-115, Table 38.

203/ See generally Report at A-70-A-104, Tables 27-33 and 35.

204/ Report at A-115-A-116, Table 38 and App. B-42, Table B-28.

205/ Report at A-106-A-109, Table 36.

206/ See Memorandum EC-M-151 at 8-18.

the petitioner, we determine that the domestic industries producing spherical roller bearings, needle roller bearings, and slewing rings are not threatened with material injury by the subject imports.

X. Critical Circumstances

Petitioners have alleged that "critical circumstances" exist as the result of massive importations of certain antifriction bearings from the United Kingdom, Sweden, Romania, Thailand, Japan, West Germany, and Italy. 207/ The Commerce Department made affirmative critical circumstances determinations on a company-specific basis with respect to certain antifriction bearings from the subject countries. 208/

Given Commerce's affirmative critical circumstances findings in these final investigations, the Commission is required to determine, for each domestic industry for which it has made an affirmative injury determination, "whether the material injury is by reason of massive imports to an extent that, in order to prevent such material injury from recurring, it is necessary to impose [antidumping duties] retroactively on these imports." 209/ If the Commission finds either no material injury, or only a

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207/ See 53 F.R. 45312-45367 (Nov. 9, 1988). Petitioner did not allege the existence of critical circumstances with respect to imports from either France or Singapore. Id.

208/ Report at A-23, Table 3. Commerce made a negative determination with respect to imports from Thailand and Romania. Consequently, only the United Kingdom, Sweden, Japan, West Germany, and Italy are subject to final critical circumstances determinations.

209/ 19 U.S.C. § 1673d(b)(4)(A).

threat of material injury, the issue of critical circumstances is irrelevant. 210/

An affirmative critical circumstances determination is a finding that, absent retroactive relief, the surge of imports that occurred after the case was filed, but before Commerce issued its preliminary determinations, will prolong or will cause a recurrence of material injury to the domestic industry. 211/ The purpose of the provision is to provide relief from effects of the massive imports, and to deter importers from attempting to circumvent the antidumping laws by making massive shipments immediately after the filing of an antidumping petition. 212/ The Commission's application of the critical circumstances provision, as described above, has been upheld by the Court of International Trade in ICC Industries, Inc. v. United States, 632 F. Supp. 36 (CIT 1986), aff'd, 812 F.2d 694 (Fed Cir. 1987).

210/ See In-Shell Pistachio Nuts from Iran, Inv. No. 731-TA-287 (Final), USITC Pub. No. 1875 (July 1986); Natural Bristle Paint Brushes from the People's Republic of China, Inv. No. 731-TA-244 (Final), USITC Pub. No. 1805 (Jan. 1986).

211/ In rejecting an argument that the ITC must find a separate causal link between the massive imports and material injury, the Court of International Trade stated:

> [T]he ITC is not required by law or considerations of fairness to isolate the massive quantities [of imports] and make them the separate subject of an injury determination.
>
> In those circumstances it is sufficient if the ITC concentrates on the capacity of these massive imports to render ineffectual the normal imposition of duties (prospectively from the date of publication of the preliminary determination) and thereby bring about a recurrence of material injury primarily caused by normal levels of importation.

ICC Industries, Inc. v. United States, 632 F. Supp. 36, 40 (CIT 1986), aff'd, 812 F.2d 694 (Fed. Cir. 1987).

212/ See H.R. Rep. No. 317, 96th Cong., 1st Sess. 63 (1979).

In its final investigations in these cases, Commerce made determinations on a company-specific basis for each product, from each subject country. 213/ Although Commerce has made its determinations with respect to specific companies, the statute speaks in terms of aggregate imports and total import volumes. 214/ Furthermore, in the past, the Commission has chosen to analyze the combined imports for which Commerce has made affirmative determinations. 215/ Consequently, in the present case, where Commerce made negative critical circumstances determinations with respect to particular companies' imports, we have adjusted country-aggregated data to exclude such companies' import data. 216/

Commerce found critical circumstances to exist for the following

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213/ Report at A-23, Table 3.

214/ 19 U.S.C. § 1673d(b)(4)(A). See also 19 U.S.C. § 1677(7)(C)(i).

215/ See Internal Combustion Engine Forklift Trucks from Japan, Inv. No. 731-TA-337, USITC Pub. No. 1936 at 151 (May 1988) (Final) ("The Commission's precedents regarding critical circumstances, though nonbinding, clearly support analyzing the combined imports as to which Commerce has made an affirmative determination")(Views of Chairman Liebeler, Vice Chairman Brunsdale, Commissioners Lodwick, Rohr, and Cass on Critical Circumstances). See also Top-of-the-Stove Stainless Steel Cooking Ware from Korea and Taiwan (Final), Inv. Nos. 731-TA-304 and 305, USITC Pub. No. 1936 (Jan. 1987); Tapered Roller Bearings and Parts Thereof and Certain Housings Incorporating Tapered Rollers from Italy and Yugoslavia (Final), Inv. Nos. 731-TA-342 and 346, USITC Pub. No. 1999 (Aug. 1987).

216/ Although this is a case of first impression, in that the Commission has not, to date, made an affirmative critical circumstances determination in a case where Commerce has made both affirmative and negative company-specific findings for a product category from a particular country, the situation is analogous to that in Algoma Steel Corp., Ltd. v. United States and the U.S.I.T.C., 688 F. Supp. 639 (CIT 1988), aff'd, No. 88-1491, Slip op. (Fed. Cir. Jan. 4, 1989). In that case the Court of International Trade upheld, and the Federal Circuit affirmed, the ITC's practice of excluding from its material injury determinations volumes of imports from those companies ITA had excluded from its LTFV determinations, based on its findings of either non-LTFV sales or only de minimis margins.

products for which we have also made an affirmative material injury determination: 217/

1. Ball Bearings

West Germany:	INA, SKF
Italy:	SKF
Japan:	Koyo, Minebea
Sweden:	SKF
United Kingdom:	SKF

2. Cylindrical Roller Bearings

West Germany:	FAG, INA, SKF, "All Others"
Italy:	SKF
Japan:	Koyo
United Kingdom:	RHP, "All Others"

3. Plain Bearings

West Germany:	SKF
Japan:	Minebea, NTN, "All Others"

The Commission's finding on a critical circumstances allegation is a factual determination based upon an evaluation of recent import trends and their effects on the domestic industry. In previous investigations the Commission has examined factors such as importers' inventories, the volume of the massive imports both in relation to domestic demand and to historical import levels, and the margin of underselling. 218/ It is also appropriate to analyze any other factors which may bear on the ability of the massive imports to postpone prompt and effective relief to the domestic industry.

217/ Report at A-23, Table 3. Because Commerce did not separately consider slewing rings in its critical circumstances determinations, there is no affirmative determination as to them.

218/ Certain Silica Filament Fabric from Japan, Inv. No. 731-TA-355 (Final), USITC Pub. 2015 at 10-13 (September 1985).

Based upon our evaluation of the relevant data, we determine that critical circumstances do not exist as to any of the relevant imports. With respect to the subject imports of ball bearings and spherical plain bearings, import volume and market share have either been stable or have actually declined subsequent to the filing of the petition. 219/ Such a trend belies any attempt to circumvent the antidumping laws. For cylindrical roller bearings, there has been an increase in shipments, but inventory ratios have declined. 220/ Further, given the predominance of annual contracts, long lead times, and increased demand, it appears that such an increase was the result of normal market factors and was not an attempt to avoid the payment of antidumping duties. Finally, the increase in volume was not significant enough to establish a "recurrence" of material injury.

219/ Report at A-119 and A-123.

220/ Report at A-121.

CONCURRING AND DISSENTING VIEWS OF VICE CHAIRMAN RONALD A. CASS

Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom, Inv. Nos. 303-TA-19-20 & 731-TA-391-399 (Final)

I concur with the majority of the Commission to the extent that it finds that a domestic industry is materially injured by reason of less than fair value ("LTFV") imports of spherical plain bearings from France, the Federal Republic of Germany, Italy, and Japan. I also concur with the majority's conclusion that no domestic industry is materially injured or threatened with material injury by reason of LTFV or subsidized imports of spherical roller bearings, needle roller bearings, and slewing rings. I dissent, however, from the majority's determinations that domestic industries have suffered material injury from LTFV or subsidized imports of ball bearings and cylindrical roller bearings. I also find that the evidence of record supports separate analysis of the effects of eleven categories of imports on United States industries producing, or contemplating production of, eleven types of antifriction bearings. These Views explain the reasons for my determinations.

I. LIKE PRODUCTS AND DOMESTIC INDUSTRIES

A. Introduction and Summary of Conclusions

In final investigations under the antidumping and countervailing duty laws, the Commission must assess the effects of LTFV imports on the industry in the United States comprised of "the domestic producers as a whole of a like product or those producers whose collective output of the like product constitutes a major proportion of the total domestic production of that product."1/ The key term in that definition is, of course, "like product," which Congress has defined 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."2/

In the preliminary investigations that preceded these final investigations, the Commission determined that there were six,

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1/ 19 U.S.C. § 1677(4). These investigations are conducted pursuant to the Tariff Act of 1930, ch. 497, title III, § 303, 46 Stat. 687 (codified as amended at 19 U.S.C. § 1303); and id., title VII, § 735, as added by the Trade Agreements Act of 1979, Pub. L. No. 96-39, § 101, 93 Stat. 150, 169 (codified as amended at 19 U.S.C. §§ 1673d(b)-1677j). See Staff Report to the Commission, Antifriction Bearings and Parts Thereof (Other Than Tapered Roller Bearings) from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand and the United Kingdom, Inv. Nos. 303-TA-19-20 & 731-TA-391-399 (Final) at A-1-2 & A-1 n.2 (Apr. 24, 1989) (hereinafter "Report"). The standards the Commission applies in Section 303 investigations are identical to those applied in countervailing duty investigations conducted pursuant to Title VII. See, e.g., Certain Fresh Cut Flowers from Peru, Kenya, and Mexico, USITC Pub. 1968, Inv. Nos. 303-TA-18 & 731-TA-332-333 (Final) (Apr. 1987); Lime Oil from Peru, USITC Pub. 1723, Inv. No. 303-TA-16 (Preliminary) (July 1985).

2/ 19 U.S.C. § 1677(10).

separate groups of like products: (1) ball bearings, (2) spherical roller bearings, (3) cylindrical roller bearings, (4) needle roller bearings, (5) plain bearings, and (6) "other 'antifriction devices', such as ball screws and linear guides."3/ Acknowledging that the like product issues were "extraordinarily complicated" and that they "pervade all the remaining issues,"4/ we stated that we were making the like product findings only "[f]or purposes of these preliminary investigations,"5/ and that we would "reexamine" the like product issues if any final investigations were to follow.6/

After careful reconsideration of the like product issues in light of the more developed record before us in these final investigations, I now conclude that the products at issue here should be divided into eleven like product categories:

(1) ball bearings of ABEC ratings less than 5;7/

3/ Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom, USITC Pub. 2083 at 22, Inv. Nos. 303-TA-19-20 & 731-TA-391-399 (May 1988) (hereinafter "Bearings Preliminary"). The Commerce Department has since determined that ball screws and linear guides are outside the scope of the investigation.

4/ Id. at 16.

5/ Id. at 22.

6/ Id.

7/ Producers and consumers of antifriction bearings both recognize the ratings set by the Annular Bearing Engineers Committee (ABEC) and the Roller Bearing Engineers Committee (RBEC). ABEC/RBEC ratings range from one to nine in ascending order of precision of dimensions and load tolerances, i.e., the higher the rating, the greater the precision in the dimension and load tolerance of the bearing.

(2) superprecision ball bearings;8/
(3) spherical roller bearings of RBEC ratings less than 5;
(4) superprecision spherical roller bearings;
(5) cylindrical roller bearings of RBEC ratings less than 5;
(6) superprecision cylindrical roller bearings;
(7) needle roller bearings of RBEC ratings less than 5;
(8) superprecision needle roller bearings;
(9) spherical plain bearings;
(10) slewing rings;9/ and
(11) wheel hub units.

These eleven categories include the five bearing groups identified in the preliminary investigations that are distinguished primarily by rolling element: (1) ball bearings, (2) spherical roller bearings, (3) cylindrical roller bearings, (4) needle roller bearings, and (5) spherical plain bearings.10/ In addition, a sixth like product, slewing rings, essentially replaces the sixth category found in the preliminary investigation. The Commerce Department in its final determination eliminated from the scope of the investigation the other devices we had treated as a sixth product category. These now-excluded devices were not susceptible to categorization by rolling element, and the Department decided that they were too

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8/ "Superprecision" bearings are defined as bearings having ABEC/RBEC ratings of 5 or greater.

9/ There are no ABEC/RBEC or other industry-wide ratings for slewing rings. See Posthearing Brief of Rotek at 6-8.

10/ See Bearings Preliminary, USITC Pub. 2083 at 22. Although in the preliminary investigations the Commission found the broader category of plain bearings to be a separate like product, the Department of Commerce since has narrowed the plain bearings category by excluding from the scope of the investigations all plain bearings other than spherical plain bearings. See Letter from Timothy N. Bergan, Acting Assistant Secretary for Import Administration, Department of Commerce, to Anne E. Brunsdale, Chairman of the ITC (Apr. 12, 1989). See also Report at A-2 & n.1.

dissimilar to the other products to be included within the investigation. At the same time, Commerce determined that slewing rings were within the scope of its investigation. These products were previously thought (by the Commission and the various parties) to be outside the investigation.11/ They cannot be categorized on the basis of their rolling element, as they use various types of these elements and principally perform functions other than those characteristic of bearings. Essentially, Commerce appears to have substituted one class of products that are not readily assimilable to the larger group of products under investigation for another such class.

One of the product categories identified here, wheel hub units, covers products that, while not so difficult a fit as slewing rings, differ significantly from simple antifriction bearings. The Commission recognized this possibility in the preliminary investigations. For that reason, we stated that should any final investigations occur, we would seek additional information concerning housed and mounted units, "in particular, whether wheel hub units should be treated separately from other types of housed and mounted units."12/ On the basis of the additional information obtained in these investigations, I have concluded that wheel hub units are separate like products, while

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11/ See, e.g., Official Transcript of Proceedings, Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom (hereinafter "Tr.") at 315-19, 328 (Mar. 30, 1989).

12/ Bearings Preliminary, USITC Pub. 2083 at 20.

other housed and mounted units should not be broken out as separate like products from other bearings having the same rolling element.13/

Finally, four of the like product categories distinguish qualitatively distinctive classes of bearings, essentially dividing four of the classes defined by rolling element into "off-the-rack" and "tailor made" classes. This division also follows from observations made in our Preliminary Determination. In the preliminary investigations we noted that there was "some evidence" of a "clear dividing line" between "precision" and "superprecision" for many types of bearings.14/ Although on the basis of that less developed record we preliminarily thought that the dividing line for superprecision bearings was at ABEC/RBEC 7 and above,15/ the more fully developed record in these final investigations supports the inference that a clear dividing line exists at ABEC/RBEC 5, and that domestically produced ball bearings, spherical roller bearings, cylindrical roller bearings, and needle roller bearings of ABEC/RBEC rating 5 and above constitute "superprecision" products that are each separate like products from lower-rated bearings having the same rolling element.16/

13/ See, e.g., Report at A-8.

14/ Bearings Preliminary, USITC Pub. 2083 at 19.

15/ Id. Note 7, supra, explains ABEC and RBEC ratings.

16/ See, e.g., Report at A-7 n.2, A-8-11, & A-18-19.

Although the majority and I have reached somewhat different conclusions on definitions of certain like products, we have reviewed the same record and generally applied the same standards. Our like product definitions differ more in degree than in kind. Still, those differences are significant, and merit closer examination.

B. Statutory Instruction and Purpose

The Commission's inquiry into like product issues derives from its responsibility to assess the effects of dumped or countervailable imports on "an industry" in the United States.17/ The term "industry" is commonly used and understood as comprehending the producers of a group of products, such as "the automobile industry" or "the aerospace industry," but generally not including the "upstream" businesses that supply inputs to the final producers, for instance the companies that make tires for cars and planes. Common usage, thus, defines an industry principally by its output but also distinguishes among the contributors to that output, including as industry members only those whose production is continuous, integrated, and dedicated to the relevant end-product.

17/ 19 U.S.C. § 1673d(b). See Asociacion Colombiana de Exportadores de Flores v. United States, 12 Ct. Int'l Trade ___, 693 F. Supp. 1165, 1167 (1988) (hereinafter "Asocolflores"); Digital Readout Systems and Subassemblies Thereof from Japan, USITC Pub. 2150 at 61-67, Inv. No. 731-TA-390 (Final) (Jan. 1989) (Concurring and Dissenting Views of Commissioner Cass).

By defining the relevant domestic industry as the producers of "like products," Title VII signals an intent to delimit the scope of our inquiry into the effects of unfairly traded imports in a fashion generally in accord with the common understanding of "industry."18/ Both the statute and its legislative history, however, suggest that the Commission's definition of industry in Title VII investigations should not be coterminous with the common usage of that term.

The statutory definition of like product, "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation,"19/ distinguishes the scope of an industry for Title VII purposes from the common usage of that term in two ways. First, the juxtaposition of "like" with "most similar in characteristics and uses" indicates that the statute contemplates a very narrow product category as the basis for industry definitions. We commonly think of products that differ significantly but are broadly similar in characteristics and uses -- Cadillacs and Chevettes, for example -- as outputs of a single industry. The array of outputs within a like product category must be substantially narrower if the alternative definition, to which we resort only in the absence of a product that is "like" the article under investigation, is the product most similar in

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18/ S. Rep. No. 249, 96th Cong., 1st Sess. 90 (1979).

19/ 19 U.S.C. § 1677(10).

characteristics and uses. The legislative history supports this more cabined view of the appropriate industry definition.20/

Second, the industry definition under Title VII refers back to the article under investigation, requiring some antecedent delineation of the imports subject to investigation. In the simple case, the Commission's investigation would focus on a single, discrete, imported product and the like product would be defined narrowly as the domestic product that, if not identical, most closely competes with the imported product (i.e., is most similar in characteristics and uses).

Where, as here, the investigation covers an enormous array of disparate products, the Commission faces a choice. It can treat the statutory definition's reference back to the scope of the investigation as controlling, defining the like product as the entire range of products that are like the entire range of imports.21/ Or, the Commission can treat the directive to identify relatively narrow product categories, manifest in the statutory language and history, as mandating a division of the imports under investigation into narrow product categories with separate domestic like products and domestic industries determined for each such category. The Commission has chosen to

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20/ See S. Rep. No. 249, supra note 18, at 82-83, 90-91.

21/ Petitioner advanced this argument in the preliminary investigations, but in these final investigations has instead pursued application of the Commission's "like product" factors to the facts before us.

follow the latter approach, and our reviewing courts have affirmed this reading of Title VII.22/

The decision to examine separately the number of product categories at issue in an investigation arguably is at odds with the statutory delegation to the Department of Commerce of responsibility for defining the scope of the investigation.23/ In doing so, Commerce must decide whether the articles of merchandise to be investigated are sufficiently similar to constitute a single class or kind of merchandise.24/ Commerce's principal tasks under Title VII, however, are to determine the prices for subject products sold to the exporter's home market (or to a third country market) and the comparable prices for sale to the United States and in some instances to assess the exporter's costs of production.25/ These inquiries do not involve such detailed investigation of other aspects of the markets in which products compete as the Commission's effects analysis requires. For that reason, the Commission and the Court of International Trade have found that the statutory scheme grants Commerce authority to determine the range of imports subject to any investigation but empowers the Commission to subdivide the class of imports into the narrower categories that

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22/ See, e.g., Badger-Powhatan v. United States, 10 Ct. Int'l Trade 241, 633 F. Supp. 1364 (1986).

23/ 19 U.S.C. §§ 1671(a)(1), 1673(1).

24/ Id. §§ 1671(a)(1), 1673(1).

25/ Id. §§ 1677a-1677b.

appear to have been contemplated for our analysis of imports' effects.26/

The decision to look at the effects of relatively narrow categories of imports on relatively narrow categories of closely competing domestic businesses by no means eliminates the difficulties of industry definition. Determining just which imported products are sufficiently similar to constitute a single product category and, concomitantly, which domestic products compete so closely with imports under investigation as to constitute a single like product category are tasks that have bedeviled the Commission for years. The Senate Report accompanying the Trade Agreements Act of 1979 illustrates the problem, delphically instructing the Commission neither to include within a like product definition products that do not compete closely nor to exclude from such definitions products that, while distinguishable, do compete closely with imports.27/

26/ See, e.g., Badger-Powhatan, supra note 22; Digital Readout Systems, supra note 17; Certain Valves, Nozzles, and Connectors of Brass from Italy for Use in Fire Protection Systems, USITC Pub. 1649, Inv. No. 731-TA-165 (Final) (Feb. 1985). The Commission may also define the like product to be broader than merchandise defined by Commerce to be within the scope of the investigation. See, e.g., Shock Absorbers and Parts, Components, and Subassemblies Thereof from Brazil, USITC Pub. 2128 at 13, Inv. No. 731-TA-421 (Preliminary) (Sept. 1988).

27/ As stated in the report of the Senate Finance Committee, S. Rep. No. 249, supra note 18, at 90-91:

> 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 "like product" be interpreted in such a fashion as to

Not surprisingly, the Commission has had difficulty implementing this charge, and like product definitions are frequently sources of dispute. Consequently, commentary, including a brief filed in the instant investigations, has been less than flattering in describing the consistency of various Commission like product determinations.28/

Notwithstanding the criticism directed at our results, I believe that the Commission traditionally has articulated criteria to guide like product determinations that fully reflect the factors apposite to the statutory task. The Commission considers several factors in making its like product determinations: (1) product characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer or producer perceptions of the relevant articles; and (5) common manufacturing equipment, facilities, and production employees.29/ In addition, the Commission increasingly has considered the

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prevent consideration of an industry adversely affected by the imports under investigation.

28/ See Prehearing Brief of the Federal Trade Commission, passim; Palmeter, Injury Determinations in Antidumping and Countervailing Duty Cases -- A Commentary on U.S. Practice, 21 J. World Trade L. 7 (1987); Note, Economically Meaningful Markets: An Alternative Approach to Defining "Like Product" and "Domestic Industry" Under the Trade Agreements Act of 1979, 73 Va. L. Rev. 1459 (1987).

29/ See, e.g., Fabric and Expanded Neoprene Laminate from Taiwan, USITC Pub. 2032 at 4 n.5, Inv. No. 731-TA-371 (Final) (Nov. 1987).

similarity (or disparity) of prices for imports and potential like domestic products.30/

These factors furnish information about two different aspects of our industry definition.31/ Five of the factors provide information about the domestic market for the imported products and for closely competing domestic products. This information is contained in descriptions of product characteristics and uses, interchangeability, channels of distribution, prices, and other indicia of customer perceptions of their similarity or dissimilarity. Assessment of the nature of the manufacturing facilities and employees for products informs us about the degree to which firms are integrated into the production of particular, identified end-products and also informs us about the degree to which differentiated end-products are produced by firms that compete with one another in a single market for productive inputs.

Evaluation of these factors should allow us to circumscribe our inquiry into imports' effects in the manner dictated by Title VII, isolating a coherent set of producers of highly similar products that compete closely with a narrowly defined group of imports under investigation. Congress, in adopting amendments to

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30/ See, e.g., 3.5" Microdisks and Media Therefor from Japan, USITC Pub. 2170 at 6-7, Inv. No. 371-Ta-389 (Final) (Mar. 1989). See also Asocolflores, supra note 17, at 1170 n.8 (citing use of comparative pricing data as a suitable factor in determining like product issues).

31/ See, e.g., Digital Readout Systems, supra note 17, at 64-65 (Concurring and Dissenting Views of Commissioner Cass).

Title VII, has indicated approval of this approach to defining the domestic industry.32/ This approach also has received judicial assent.33/

The traditional criteria, however, do not provide a basis for unified analysis of the industry definition. The Commission never has adopted any explicit basis for integrating these six criteria. The Commission has not required that all six factors support a given like product definition, nor has it provided a determinate basis for decision when the factors suggest divergent like product definitions. The six factors are not lexically ordered (so that higher-ordered factors "trump" lower-ordered factors), and there is no rule that a simple majority of factors inclined in one direction will suffice for a like product determination.

In the investigations now before us, the most glaring tension among the factors is highlighted. If one focuses only on the degree to which similar inputs to production are used, these investigations arguably all concern a single industry, a proposition advanced repeatedly by Petitioner.34/ A very different conclusion, however, is suggested by the factors that describe the markets in which end-products compete. These factors strongly indicate the existence of a series of markets

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32/ S. Rep. No. 249, supra note 18, at 83.

33/ See, e.g., Badger-Powhatan, supra note 22.

34/ E.g., Prehearing Brief of Petitioner at 18; Posthearing Brief at 4.

sufficiently different to mandate multiple like products and, hence, multiple domestic industries. This proposition has been advanced forcefully by various consumers of bearings and by Respondents, who argue that what Petitioner labels in the aggregate "antifriction bearings" in fact is comprised of numerous, different articles that are sold in distinct markets by separate industries.35/

As with the common usage of the term "industry," I believe that the industry definition under Title VII is to be informed mainly by a focus on the end-product of the industry rather than by the inputs to the industry's production. The statute's explicit choice of a product-oriented definition of domestic industry, rather than a production-oriented definition, is an important datum on this point. Of course, the remedy for unfairly traded goods provided by Title VII is designed to protect those who work in or invest in an industry from harmful effects of the practices covered by this title, and this design suggests that a focus on inputs to production (and particularly on specialized inputs that do not enjoy ready, alternative opportunities) might be more in keeping with the statute's overall goals. Those who drafted the statute, however, have not manifested an intent that the Commission make such assessments, perhaps in the belief that a narrower, product-focused definition

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35/ See, e.g., Posthearing Brief of the American Manufacturers for Trade in Bearings (AMTB) at 3, 8 (commodity ball bearings are a separate domestic industry); Posthearing Brief of Nippon Seiko K.K. (NSK) at 1 (five domestic industries); Prehearing Brief of SNFA at 12-13 (seven domestic industries).

of industry and an analysis of aggregate effects on that industry will be adequate to achieve the statutory goals. In the recent revision of the Tariff Act of 1930, various members of Congress have indicated considerable concern that this has not been the case, but, rather than seek changes in the Commission's industry definition, they sought to authorize subsequent determinations that products should be subject to antidumping duties as necessary to avoid "circumvention" or "diversionary dumping" by exporting firms.36/

Given both the text and history of the governing law, the considerations that principally should control our industry definition should focus on the markets in which the arguably like products compete. While Petitioner might prefer a different focus, Petitioner also has joined issue with Respondents on the degree to which the markets for products at issue here are segregable. I turn now to that argument.

C. Antifriction Bearings: Product Categories

1. Basic Issues

The essence of Petitioner's argument is that all antifriction bearings (other than tapered roller bearings) are characterized by interchangeability at the design stage and by similarity in physical characteristics and function in that all

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36/ S. Rep. No. 71, 100th Cong., 1st Sess. 96-101 (1987). See Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, §§ 1320-21, 102 Stat. 1107, 1189-95 (to be codified at 19 U.S.C. §§ 1677i-1677j).

types of bearings reduce friction.37/ This argument is contradicted by Respondents,38/ by customers,39/ by information collected by the Commission's staff,40/ and by evidence offered by Petitioner's own economic consultants.41/ The overwhelming weight of the evidence establishes that, at a minimum, the bearings identified by Petitioner as a single class differ appreciably by their use of different rolling elements. Even at the design stage for almost all products in which bearings are used, interchangeability among bearings with different types of rolling element (or, in plain bearings, without such an element) is slight or nonexistent. After the earliest design stages, there is no interchangeability among these five types of bearings. Moreover, these different types of bearings perform significantly different functions. Although all do reduce

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37/ Prehearing Brief of Petitioner at 17-18.

38/ See, e.g., Prehearing Brief of NTN at 82-83 (nine like products); Posthearing Brief of SKF, App. A at 15-17 (at least eight like products); Posthearing Brief of NSK, Responses to Questions at 4-6 (at least six like products); Prehearing Brief of FAG at 6-27 (seven like products).

39/ See, e.g., Posthearing Brief of Aerospace Industries Association at 3 (at least seven like products); Prehearing Brief of Ad Hoc Bearing Group at 2-8 (at least five like products); Posthearing Brief of American Manufacturers for Trade in Bearings at 1-3 ("commodity ball bearings" are a separate like product); Posthearing Brief of Minnesota Mining & Manufacturing Co. ("3M") at 2-10 (tenter bearings are a separate like product).

40/ See, e.g., Report at A-4-19.

41/ See, e.g., Prehearing Brief of Petitioner, Ex. 20 at 2, 8-16 (concluding, inter alia, that data obtained pursuant to Administrative Protective Order "fail to support a single product market definition").

friction, as the Department of Commerce observed, the category described by Petitioner by no means includes all products that perform the one function common to all of the bearings subject to investigation here.42/

I cannot understand the argument advanced by Petitioner as a serious effort to state the degree of similarity or difference in these products from the vantage of the product's consumers. Rather, Petitioner's argument for one like product must be understood either as a strategic argument designed for other ends or as a restatement of Petitioner's argument that similarities in production process link all types of bearing so closely from the manufacturers' vantage that they should all be considered part of a single industry. Unlike Petitioner's argument on "demand side" similarities, this "supply side" argument is supported by considerable evidence. While many of the different types of bearing are produced in different plants and with different equipment, there also is significant overlap in the firms and plants producing two or more of the basic types of bearings.43/

Even were this evidence more persuasive of the similarities in production processes, places and personnel across the five basic types of bearings, however, I do not believe Petitioner would have demonstrated a sufficient basis for finding a single like product. The separation of markets for bearings deserves greater weight in our definition of industry than would the

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42/ Commerce Department Notice, Appendix B at 6.

43/ See, e.g., Report at A-18-19.

integration of production. Any other conclusion would frequently lead to like product definitions much broader than those apparently contemplated by the Tariff Act, by our international agreements, or by Commission practice. I concur with the majority's determination that like products should continue to be distinguished primarily by type of rolling element (or its absence), and that the five like products defined in this fashion in the preliminary investigations are appropriately treated as separate like products in these investigations.

2. Slewing rings.

I also agree with the majority's determination that slewing rings comprise a separate like product. All of the evidence before us supports this determination.44/ As several parties point out, slewing rings differ from the other products subject to these investigations in virtually all of the factors that the Commission traditionally applies in defining like products.45/ Although physical differences are not of themselves probative of differences in the uses of products by their consumers, they are at least suggestive of such differences. Slewing rings are distinctive in several physical characteristics. First, they are

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44/ Although Petitioner supports the inclusion of slewing rings within the scope of the investigation, it offers no specific argument against finding slewing rings to be a separate like product.

45/ As indicated above, supra notes 29-30 and accompanying text, the factors the Commission considers in defining like products are (1) physical characteristics and uses, (2) interchangeability, (3) channels of distribution, (4) customer or producer perceptions, (5) common manufacturing equipment, facilities, and employees, and (6) price.

markedly larger than other bearings: slewing rings range in diameter from 500mm to 15 meters;46/ by comparison, the largest bearing used by the Commission staff for comparing prices of representative products subject to the investigations had a 12.75 inch outside diameter.47/ Second, unlike all other types of product under investigation, slewing rings have gear teeth and bolt holes in the inner and outer rings.48/ Third, slewing rings are made of a different steel alloy than that used in the manufacture of other bearings.49/

More important, slewing rings perform a function quite different from the other products under investigation. In contrast to all antifriction bearings, slewing rings are designed to permit intermittent, slow, and partial rotation between upper and lower structures of heavy equipment. They are employed for such uses as drag lines, shore cranes, conveyors, and tank turrets, and for cabs and boom arms in excavators.50/ The record supports the inference that slewing rings do not compete with

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46/ Posthearing Brief of SKF, App. A at 31; Posthearing Brief of RES and Rotek, App. B at 3.

47/ See Report at B-67.

48/ Posthearing Brief of SKF, App. A at 31; Posthearing Brief of Caterpillar at 6; Posthearing Brief of RES and Rotek at 7.

49/ Report at B-41. Slewing rings are made of the kind of medium carbon content steel that is found in the production of gears, but never used in the manufacture of bearings. Posthearing Brief of Caterpillar at 6.

50/ See, e.g., Posthearing Brief of RES and Rotek at 7; Posthearing Brief of Caterpillar at 6; Posthearing Brief of SKF at 29.

bearings in any product market: slewing rings are perceived by producers and consumers alike as parts for construction equipment, not as antifriction bearings; unlike the wide range of products under investigation here, most of which can be classed as "catalogue bearings," slewing rings are bought under special order for particular specifications and sold through slewing ring manufacturers, original equipment manufacturers ("OEMs"), and heavy equipment parts' distributors; and there is no evidence that slewing rings are interchangeable with any other products subject to these investigations.51/

The evidence relating to production similarly supports the inference that slewing rings do not compete with antifriction bearings for production inputs in any meaningful sense. Slewing rings are not produced in the same facilities as any other subject products; producers use different raw materials for slewing rings, and conduct several manufacturing steps -- such as forging, induction hardening, drilling of holes, and the manufacture of gears -- that are not used in the production of bearings.52/

In finding that slewing rings are a separate like product produced by a separate domestic industry, there is one point that should be noted that distinguishes this from the ordinary like

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51/ See, e.g., Posthearing Brief of SKF at 30-31; Posthearing Brief of Caterpillar at 7; Posthearing Brief of RES and Rotek at 7-8. The U.S. Customs Service classifies slewing rings as machinery parts, not bearings. Posthearing Brief of RES and Rotek at 8.

52/ Report at B-41.

product decision. Slewing rings do not merely differ from the other products subject to these investigations; they differ so markedly that it would be difficult to contemplate their inclusion in these investigations. Even though we do not always identify all the various, specific products covered by our determinations, and indeed could not do so in a case such as this covering literally tens of thousands of specific products, we do make our determinations on the understanding that all of the products in a given product category are sufficiently similar to be subject to the same market forces and, hence, the same effects from the LTFV imports at issue.

That manifestly is not an accurate understanding so far as slewing rings are concerned. I certainly did not understand them to have been within the scope of our preliminary investigations, nor apparently did our staff or any party to that proceeding. No information was gathered by the Commission in the preliminary investigations on the production or consumption of slewing rings, and no such information was introduced into evidence by parties to those investigations. Had an affirmative determination on slewing rings been reached by the Commission in its final investigations, I believe Respondent Rotek's argument that these products improperly were included in the final investigations without benefit of preliminary injury determinations would pose a serious impediment to the lawful imposition of antidumping duties.53/

53/ See Posthearing Brief of Rotek at 9-10.

3. Wheel hub units.

With respect to wheel hub units, I agree with much of the majority's description of the product, just as I do in the case of slewing rings. Where I differ from the majority, however, is in the analysis of the factors that the Commission considers in like product determinations. Specifically, I disagree with the majority's statement that wheel hub units are not sufficiently different from other subject products in functional characteristics and applications, and with its position that the inability of various Respondents to agree on a common product "definition" is "fatal" to a finding of a separate like product.54/

Respondents observe that there is little in the record to indicate that wheel hub units, however defined, should not be deemed to be a separate like product. Respondents note that the

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54/ In response to the issue of "definitional vagueness", it is appropriate to make two points. First, the Commission has always regarded antidumping and countervailing proceedings as investigations under Title VII, not strictly as adjudications between private parties. While the Commission should address carefully all significant arguments advanced by the parties whose interests do indeed largely capture the general public interest in these proceedings, we reach determinations on the basis of substantial evidence on the record, whether or not such determinations are consistent with arguments of the parties. Unlike strictly judicial proceedings, we operate without defined burdens of proof or persuasion. Second, the problem, as I understand it, arises only if one's like product definition for wheel hub units turns on whether to include certain "generations" of such products. Since the evidence supports the inference that all wheel hub units should be included within a separate like product determination, there is no "definitional vagueness." Some parties did in fact offer arguments directed to specific generations of wheel hub units, but the bulk of their arguments apply equally to all generations of wheel hub units from all producers.

Customs Service classifies wheel hub units as automotive parts, not as antifriction bearings, and that neither the Petitioner nor others supporting the petition have addressed this issue in any detail. This at least raises a serious question regarding inclusion of wheel hub units within a more general category of bearings. Further, the record contains substantial evidence that wheel hub units are in fact appreciably different from other products subject to these investigations, including other housed and mounted ball bearings. The evidence shows, convincingly I believe, that wheel hub units simply do not compete in the marketplace with antifriction bearings.

To begin with, the record indicates that wheel hub units differ physically from other products under investigation. They are made of a less expensive, low-carbon steel, have bolt holes drilled and tapped for wheel and suspension part attachment, and have a serrated inner member that transfers the torque of the driveline to the wheel.55/ Moreover, they are composed of (1) forged parts that incorporate rolling elements that are permanently sealed, and thus not visible, within the hub unit, and (2) a housing with flanges having bolts incorporated into the flanges.56/ In addition, they have two rolls of balls, two seals, and weigh substantially more than bearings.57/

55/ See, e.g., Posthearing Brief of NSK at Affidavit of R.E. Komasara, para. 5(a).

56/ See, e.g., Posthearing Brief of NSK at Affidavit of R.E. Komasara, para. 5(a); Prehearing Brief of FAG at 23-24..

57/ Prehearing Brief of SKF at 137-39.

More important, these physical differences reflect substantial differences between the uses for wheel hub units and for other antifriction bearings, including other housed and mounted units. Wheel hub units are dedicated for use in motor vehicles; they are not designed principally to reduce friction but, rather, to attach the wheel of a vehicle to the axle and suspension assembly.58/ Friction reduction remains the primary and only significant function of housed and mounted ball bearings, as well as all other bearings. The housing merely facilitates the positioning of the bearing at a particular location on a piece of machinery and dedicates the bearing to that particular use.

The channels of distribution for wheel hub units also are completely different from those for other bearings, including housed and mounted bearings. Imported wheel hub units are sold almost exclusively to automotive OEMs by special sales and engineering staffs that furnish specialized technical support to meet customer specifications; even in the small aftermarket, imported wheel hub units are distributed not through producers' bearings divisions or bearings distributors, but through automotive parts divisions and distributors.59/ The channels of distribution for domestically produced wheel hub units are

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58/ See Prehearing Brief of FAG at 24; Prehearing Brief of SKF at 140-41; Prehearing Brief of NTN at 122-23; Posthearing Brief of NSK at 5 & at Affidavit of R.E. Komasara, para. 4(a).

59/ See Posthearing Brief of NSK at Affidavit of R.E. Komasara, para. 5(c); Prehearing Brief of FAG at 26; Prehearing Brief of SKF at 141.

similarly distinctive: the only firm manufacturing wheel hub units in the United States, New Departure Hyatt, is owned by General Motors and distributes virtually all of its output directly to its parent.60/ Clearly, both producers and end-users perceive wheel hub units as automotive parts, not as bearings.61/ Furthermore, the evidence establishes that wheel hub units are not interchangeable with any other products.62/ Finally, the price of these units relative to other arguably somewhat similar units also supports treatment of wheel hub units as a separate like product: wheel hub units cost several times more than any bearings that might be considered most similar.63/

Wheel hub units also are distinguishable from the producers' vantage. The manufacturing process includes production of a large number of additional parts and forgings comprise wheel hub units, in addition to some bearing parts. Moreover, there is only one domestic producer of wheel hub units, and it manufactures them on a separate production line from its other bearings. In contrast, there are a variety of housed and mounted bearing producers that combine ball bearing components with a forging that serves as the outer raceway of the bearing.

60/ Report at A-8.

61/ Prehearing Brief of SKF at 142; Posthearing Brief of NSK at Affidavit of R.E. Komasara, para. 5(d).

62/ See Prehearing Brief of FAG at 27; Prehearing Brief of SKF at 139; Prehearing Brief of NTN at 123-24.

63/ See Prehearing Brief of SKF at 139; Posthearing Brief of NSK at 5.

In short, the evidence adduced in these investigations supports the inference that wheel hub units are, in the words of the Commission's staff, "radically different" from other ball bearings. The different production and consumption markets, both with regard to ball bearings generally and other housed and mounted ball bearing units in particular, warrant defining wheel hub units as a separate like product.

4. Superprecision bearings

In our preliminary investigations we indicated our intent to consider in any final investigations whether to define additional like products on the basis of precision ratings,64/ and several parties to these investigations have, in one form or another, urged us to do so.65/ While I agree with the majority opinion's distinction among bearings on the basis of the type of rolling (or plain) element used, I do not believe that this is the only distinction relevant to our like product determinations. I find that the record sustains the inference that each of four types of bearing with a different rolling element -- ball bearings, spherical roller bearings, cylindrical roller bearings, and needle roller bearings -- should be divided into two, separate product categories: (1) superprecision bearings, comprised of those bearings within each category having ABEC/RBEC ratings 5 or

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64/ See Bearings Preliminary, USITC Pub. 2083 at 23.

65/ See, e.g., Prehearing Brief of the Federal Trade Commission at 23; Posthearing Brief of SKF, App. A at 51; Prehearing Economic Brief of FAG et al. at 2.

greater, and (2) precision bearings, comprised of all other bearings having the same rolling element.

As I stated in the introduction to the like product section, the clear dividing line between superprecision and other bearings having the same rolling element can be characterized as the difference between bearings that are "tailor made" and those that are "off-the-shelf" bearings. Indeed, most of the Respondents and end-users argue that we should carve out special like product categories for particular bearings, largely on the basis that those bearings are specialized or "tailor made." Thus, for example, Respondent Cooper Bearings Company argues that "Cooper bearings" require separate like product treatment from generic cylindrical roller bearings because Cooper bearings are specially designed (they consist of eight separate pieces for assembly around the middle of the shaft, while cylindrical roller bearings are sold already assembled for sliding onto the end of the shaft);66/ are not interchangeable with any other type of antifriction bearing (other than cylindrical roller bearings);67/ are priced substantially higher than cylindrical bearings;68/ and are manufactured by different processes (unlike other bearings,

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66/ Prehearing Brief of Cooper Bearings Co. at 5-10, 13.

67/ Id. at 11-13, 17.

68/ Prehearing Brief of Cooper at 15-16.

which are produced as whole items, Cooper bearings are made in "halves" on different equipment).69/

Similarly, the Minnesota Mining & Manufacturing Company ("3M") argues that "tenter" bearings, which are produced by [***********], should be defined as a separate like product. According to 3M, tenter bearings are specially designed for use in tenter machines, which stretch film products at high temperatures and require that bearings have special shields to prevent lubrication loss of the very high temperature grease that is contained wholly within the bearing.70/ 3M also points out that tenter bearings are made of special materials in [**********], are perceived by producers and end-users as unique bearings, are not interchangeable with any domestically produced bearing, and are available only from [**********] source.71/

69/ Id. at 17-18. Cooper also argued that its bearings are sold almost exclusively in the replacement market, unlike cylindrical roller bearings, which are sold primarily to OEMs. See id. at 16; Tr. at 226-27.

70/ Prehearing Brief of 3M at 7-8; Posthearing Brief at 3.

71/ Prehearing Brief of 3M at 8-10; Posthearing Brief at 4. 3M's primary argument is that tenter bearings should be "excluded" from any injury determination because, despite their efforts to find a domestic supplier, there is no industry producing tenter bearings in the United States. Posthearing Brief of 3M at 1-6, 9-10. In the alternative, 3M argues, the Commission should determine that tenter bearings have not materially injured whatever domestic industry the Commission defines as producing the product most like tenter bearings. Since I conclude that the domestic industry producing the like product for tenter bearings -- ball bearings -- is neither materially injured, nor threatened with such injury, by reason of LTFV imports, I need not reach 3M's "exclusion" argument.

Even more producers and end-users argue that particular bearings should be defined as separate like products by virtue of their ABEC/RBEC rating and their special design and use.72/ Thus, for example, SKF posits that bearings with ABEC/RBEC ratings of 5 or higher, including those dedicated for use in the aerospace industry, should be defined as superprecision bearings, and categorized as separate like products.73/ Such treatment is warranted, SKF argues, because superprecision bearings are so much more expensive, costing up to [******] per bearing, are subject to much stricter quality controls, are not susceptible to substitution by lesser rated bearings, and are sold through a "clearly distinctive" channel of distribution.74/ Moreover, besides emphasizing the fact that manufacturing facilities for superprecision bearings are very different from those used for producing other bearings, SKF notes that:

> Often the customer has to become involved early in the production stage to ensure that the specifications are accurate. Thus, instead of the ordinary purchaser/seller relationship generally found when dealing with bearings in the other like product categories, the customers for... superprecision bearings are more in a contractor/subcontractor relationship.75/

72/ The Federal Trade Commission, pursuant to 19 U.S.C. § 1334, also suggests that aerospace and superprecision bearings of ABEC/RBEC 5 and above should be a separate like product on the basis of their use of specialized raw materials, dedicated production facilities, exacting manufacturing process, high quality standards, and lack of demand substitutability. See Prehearing Brief of the Federal Trade Commission at 23-24.

73/ Posthearing Brief of SKF, App. A at 16.

74/ Id., App. A at 51-52.

75/ Id., App. A at 52.

On behalf of a particular group of end-users, the Bearings Importers Group of the Aerospace Industries Association of America, Inc. ("AIA"), argues that, in addition to the five, core like products from the preliminary investigations, the Commission should determine that there are at least two more like products: aerospace engine bearings incorporating balls as the rolling element, and aerospace engine bearings incorporating cylindrical rollers.76/ Defining aerospace engine bearings as antifriction bearings of ABEC/RBEC 5 or higher that are manufactured from specified grade steel and designed for use in aerospace engines,77/ the AIA contends that such bearings merit separate like product breakouts because, inter alia, they have (1) customized design approved by the purchaser, with a separate design for each position in each engine model, and an average 3-year design process; (2) extremely rigorous quality control standards (documentation for tracing the entire manufacturing process and a serial number inscribed on each bearing, plus they are subject to FAA testing requirements for engines); (3) unique manufacturing processes involving several additional steps performed on dedicated equipment by specially skilled employees; (4) special channels of distribution (replacements, for example, are sold not by aftermarket distributors, but by engine

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76/ Posthearing Brief of AIA at 4.

77/ Id. at 1 n.1.

manufacturers); and (5) are regarded by end-users as distinctive products.78/

While Respondents FAG,79/ INA,80/ SNFA,81/ and SNR,82/ similarly focus on high-quality, high-cost, low-volume products, (arguing that, at a minimum, superprecision bearings tailor made for aerospace use should be defined as a separate like product), Airpax Corporation and the American Manufacturers for Trade in Bearings (AMTB) essentially urge us to carve out a separate like product category for bearings that are less precise, less costly, and higher-volume products. They identify a class of off-the-shelf commodity ball bearings, which they define as ball bearings that are 52mm and smaller and are rated ABEC 1 and 3.83/ Like the proponents of separate like products for aerospace bearings, Airpax and AMTB point out that commodity ball bearings are produced on dedicated lines for particular uses, and also differ from other types of antifriction bearings in (1) manufacturing process (commodity bearings are made on highly automated, continuous process production lines, as opposed to other bearings, which are made in batches according to special order);

78/ Id. at 8-9, App. A.

79/ See Prehearing Brief of FAG at 2, 14-20; Tr. at 218.

80/ See Prehearing Economic Brief of FAG, INA et al. at 68.

81/ See Prehearing Brief of SNFA et al. at 1, 13-15.

82/ See Posthearing Brief of SNR at 3-4.

83/ See Prehearing Brief of Airpax at 9, Posthearing Brief at 2-3; Prehearing Brief of AMTB at 8-10.

(2) end-use (commodity bearings are used by OEMs for high-volume applications such as household appliances, power tools, and office equipment); (3) channels of distribution (commodity ball bearings are sold in high volume directly to OEMs); (4) producer and end-user perceptions; and (5) price.84/

The foregoing does not exhaust the different like product arguments raised in these investigations. Given that there are approximately 80,000 different part numbers for bearings in use in the United States today, it is not surprising that many parties urge us to adopt like product categories that are distinguishable principally by end use as well as by variables such as physical characteristics and production method, including the bearings' size and degree of precision. Thus, we have been urged to define as separate like products, in addition to those set forth above: (1) angular contact bearings;85/ (2) "special" roller bearings used in continuous casters;86/ (3) "crowned" bearings;87/ (4) "miniature and instrument" ("M&I") ball bearings;88/ and (5) mounted units.89/

84/ See Prehearing Brief of Airpax at 9-12, Posthearing Brief of Airpax at 2; Prehearing Brief of AMTB at 5-10, Posthearing Brief of AMTB, Ex. I, at 1.

85/ See Prehearing Brief of Dana at 3-5, 7-10; Posthearing Brief at 1-3.

86/ See Prehearing Brief of SNFA at 15-17.

87/ See Letter from Eaton Corporation to Anne E. Brunsdale (Apr. 6, 1989).

88/ See Prehearing Brief of NMB Thai Ltd. and Pelmec Thai Ltd. at 6-8, Posthearing Brief of NMB Singapore Ltd. and Pelmec Industries Ltd. at 2.

We are urged to define each of these particular bearings as separate like products because they compete in separate user markets. Before we can define such bearings as separate like products, however, we have to find clear dividing lines. The dividing line that fits the evidence before us segregates the different types of bearings into additional classes based on the distinction between those bearings that are custom-designed bearings manufactured in limited batches from certain raw materials on special production lines that are dedicated for particular uses and sold on special order only after passing stringent quality controls -- bearings that are not readily substituted for others and that respond to different market forces than do other bearings90/ -- and bearings that are mass produced from cheaper quality raw materials in highly automated, continuous runs and are sold, often through distributors, after much less rigorous inspection. In other words, "tailor made" bearings are almost by definition separate and distinct from all other bearings, and thus should be defined as separate like products; the other side of that coin is that "off-the-shelf" bearings (or, as some witnesses to this proceeding have referred to them, "commodity bearings" or "catalogue bearings") are so

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89/ See Posthearing Brief of HFH at 4-5, 12-22.

90/ In addition to the testimony in these investigations directed to this point, there is substantial secondary literature to that effect. See, e.g., F. Scherer, Industrial Market Structure and Economic Performance 81-82 (2d ed. 1980) (ball bearings as example of different market forces according to type of production).

inherently different from tailor-made bearings that they, too, merit a separate like product category. Tailor-made bearings compete in markets that are distinctly different from all other bearings markets, and so do off-the-shelf bearings.

Viewing the record as a whole, I find that there is substantial evidence to support the inference that there is a clear dividing line that is congruent with this distinction between bearings having an ABEC/RBEC rating of 5 or more (superprecision bearings) and all other bearings having the same rolling element. This distinction generally separates bearings that are specially made to more exacting tolerances, using more costly production materials and processes, and sold through different channels at higher prices from bearings of the same general type that differ on each of these factors traditionally used in making our like product determinations. Stated differently, I distinguish, as separate like products (1) superprecision ball bearings from all other ball bearings; (2) superprecision spherical roller bearings from all other spherical roller bearings, (3) superprecision cylindrical bearings from all other cylindrical bearings, and (4) superprecision needle roller bearings from all other needle roller bearings.

In focusing on this generic tailor made/off-the-shelf dividing line, I have not defined as separate like products the various specific bearings that have been singled out by one or more of the parties. Although each of these may be distinguishable to some degree in the end-market, there is no

suitable dividing line other than that offered here that would prevent the division of the bearings categories into particular product categories too numerous to be analyzed here and too narrow to reflect the concerns pressed by Petitioner. Having found this one line within each rolling element-based category of bearings, I agree with the majority that other bearings, such as aerospace bearings, are not separate like products. The use of high quality raw materials, extensive documentation throughout the production process, and technologically advanced production methods are common to all superprecision bearings and, thus, these factors do not distinguish aerospace bearings from other superprecision bearings that are dedicated for other than aerospace applications. I also agree with the principle, articulated by the majority, that including bearings with different types of rolling element within a single aerospace like product category would be contrary to the Commission's rationale for finding that type of rolling element is the most practical and economically meaningful boundary for defining separate like products. By accepting the dividing line between superprecision and all other bearings having the same type of rolling element, on the one hand, and by rejecting an overly broad superprecision breakout encompassing different types of rolling element, on the other, I have fixed my separate like product definitions on dividing lines that the majority clearly recognizes, too.91/

91/ Application of these principles also leads me to agree with the majority that it would be inappropriate to determine that "special" roller bearings used in continuous casters comprise a

Although the Commission ultimately declined to accept this precision-based dividing line because it found no "compelling" rationale for distinguishing the line between ABEC/RBEC 3 and 5 from the line between ABEC/RBEC 5 and 7, I conclude that substantial evidence confirms the clarity of the line dividing bearings having ABEC/RBEC ratings of 5 or more from those having lower precision ratings. Not only is this dividing line clear for the end-users' market but, as the Commission staff observed, for the producers' market as well:

> In addition to size and type of bearing, producers reported segregating production on the basis of level of precision, i.e., precision bearings (ABEC/RBEC 1 and 3) and superprecision bearings (ABEC/RBEC 5 and up). In general, those who produce both...noted that the superprecision bearing requirements for more exacting tolerances (allowable variations in specifications), greater inspection, traceability, and the need for "white room technology" to control the environment of many aspects of the manufacturing process (e.g., dust, humidity, temperature) led to segregating that production. Some U.S. producers have specialized, exclusively, in the manufacture of

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separate like product. Although SNFA argues that special roller bearings have spring bushings instead of the inner and outer rings found in other antifriction bearings, and are dedicated for use only in continuous casters plants, where the ability to withstand high temperatures is essential, Prehearing Brief of SNFA at 15-17, such facts are inadequate to distinguish special roller bearings from hundreds of other bearings. I recognize that the fact that special roller bearings are sold only through special order, and not mass produced, is consistent with a factor I found critical in determining that we should find the line drawn for breaking out superprecision bearings from lower rated bearings having the same rolling element. The record is unclear, however, concerning either the rolling element or the precision rating for special roller bearings. Accordingly, I conclude that special roller bearings should be classified within a like product category that corresponds to their rolling element and ABEC/RBEC rating.

superprecision bearings, having retreated from the commercial market.92/

The obverse of the arguments highlighting the dividing line between superprecision and all other bearings having the same rolling element supports the determination by the majority, which I accept, that commodity ball bearings should not be defined as a separate like product. Under the definition advanced here, commodity ball bearings fall within the like product category for precision ball bearings (that is, ball bearings other than superprecision ball bearings), and would not be separated from that broader category merely on the basis of their size. While size is of course important to consumers, it rarely of itself provides a suitable basis for industry definition. The aspect of commodity ball bearings that has greater significance for the markets in which consumers and producers participate is the fact that these bearings are manufactured on highly automated production lines by a continuous process, as opposed to superprecision ball bearings, which are made in batches in accordance with special orders.93/ For similar reasons, I do not

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92/ Report at A-18-19 (quoting a Department of Defense, Joint Logistics Commanders study published in 1986 that reported that production of superprecision bearings "requires specialized manufacturing equipment, specialty material, and a highly skilled workforce") (other footnotes omitted).

93/ I also find, as does the majority, that "miniature and instrument" ball bearings are essentially a subset of commodity ball bearings and, as such, do not merit further consideration as candidates for a separate like product definition.

find that miniature and instrument ball bearings constitute a separate like product.

In large measure, the distinction I find appropriate here, between superprecision and precision bearings, is of no moment to the disposition of these investigations. Although parties have argued vigorously for separate analysis of various products that are distinguishable on this basis, the Commission has not been able to gather sufficient information to allow meaningful analysis of these separate categories. Instead, the data allow only analysis by general, rolling element categories. In this regard, the Commission may, perhaps, be faulted for failing to conduct a sufficiently detailed investigation.94/ I believe that criticism, however, would be misdirected. The Commission's staff has gathered an enormous body of information in a short time in investigations that cover imports from nine countries of products too numerous to come anywhere close to fitting the time and manpower constraints under which Title VII investigations are conducted. In separating out additional product categories, I have attempted faithfully to apply the statute's directions on industry and like product definitions. These determinations do not suggest that with only some additional effort by our staff information on those further categories could have been available at this time.

94/ In Borlem S.A.-Empreedimentos Industriais v. United States, No. 89-36, slip op. (Ct. Int'l Trade Mar. 22, 1989), our reviewing court criticized the Commission on this ground.

5. Other Types of Bearings

Having found separate like product dividing lines for slewing rings, wheel hub units, and superprecision bearings by rolling element, and having determined that it would be inappropriate to define separate like product categories for aerospace, commodity ball, miniature and instrument ball bearings, special roller bearings used in continuous casters, or mounted units other than wheel hub units, I turn to the additional like product categories that various Respondents and end-users have urged us to define: tenter, Cooper, angular contact, and "crowned" bearings.

With respect to tenter bearings, I agree with the majority that tenter bearings do not differ sufficiently from hundreds of other specially engineered bearings having ball bearing-type rolling elements that are dedicated to particular end-users' needs. In accordance with the like product definitions that I have found, I conclude that tenter bearings are included within the apposite ball bearings like product category.

I also agree with the majority's analysis concerning Cooper bearings. I, too, find that Cooper bearings are insufficiently different from other cylindrical roller bearings to warrant definition as a separate like product category. As the majority rightly notes, Cooper bearings are interchangeable with cylindrical roller bearings; indeed, they are marketed as replacement bearings. The fact that they are produced and sold as unassembled parts distinguishes them from other cylindrical

roller bearings, but is not dispositive. Even the argument that the more expensive Cooper bearings compete in separate markets is not persuasive because the difference in purchase price is largely offset by the inverse relationship of that price with installation costs.

Turning to angular contact bearings, here, too, I agree with the majority's analysis. Angular contact bearings are little more than one type out of many different ball bearings that are specially designed for a particular use. But for the angle of application with a shaft, angular contact bearings would be no different than other ball bearings. No persuasive reason has been offered for finding that this feature alone is an appropriate basis for defining a separate like product.

With respect to the last product category urged on us, I find, like the majority, that there is insufficient evidence to conclude that crowned bearings are sufficiently distinguishable to qualify for separate like product treatment. Eaton's eleventh-hour submission neither furnished enough information, nor provided the staff with an opportunity to obtain enough information, to justify carving out a like product category for crowned bearings separate from its cylindrical roller element. In the absence of substantial evidence to the contrary, I would include crowned bearings within the apposite like product category for cylindrical roller bearings.

D. Standing

Various parties have challenged the standing of Petitioner with respect to the products subject to these investigations that are not produced by Petitioner. The like product determinations that I have made in these investigations also raise squarely the issue of Petitioner's standing with respect to slewing rings and wheel hub units, neither one of which Torrington manufactures.

Under Title VII, antidumping and countervailing duty petitions must be filed "on behalf of an industry."95/ Our reviewing court has interpreted this requirement to mean that a Petition must be supported by producers representing a majority of the production of the domestic like product.96/ As I have stated elsewhere, given that Congress has bifurcated the authority to conduct Title VII investigations between the Commission and the Department of Commerce, that Commerce is empowered to initiate investigations sua sponte (suggesting that Commerce has the power to determine which investigations should be initiated, regardless of the positions advocated by domestic producers), and that the Court of International Trade has held that Commerce has authority to determine Title VII standing issues, it is not unforeseeable that inter-agency conflicts could arise if the Commission were also to make standing

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95/ 19 U.S.C. §§ 1671a(b)(1) & 1673a(b)(1).

96/ See Gilmore Steel Corp. v. United States, 7 Ct. Int'l Trade 219, 585 F. Supp. 670 (1984).

determinations.97/ In the interest of comity, I have concluded that it may be inappropriate for the Commission to pass on standing issues in investigations where Commerce has already considered and resolved the question.98/

In this case, in its final investigations, Commerce reaffirmed its preliminary determination that Torrington has the requisite standing to petition on behalf of the domestic industries producing ball bearings, spherical roller bearings, cylindrical roller bearings, needle roller bearings, and spherical plain bearings.99/ It does not appear, however, that Commerce expressly considered Torrington's standing to represent the domestic industries producing slewing rings or wheel hub units, and it is likely that such standing would be problematic. Although I do not believe that it generally is appropriate for us to rule on standing where possible conflicts with Commerce may result, I think the lack of standing with respect to these two industries is sufficiently plain in light of the fact that Torrington apparently manufactures neither slewing rings nor

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97/ See, e.g., Microdisks, supra note 30, USITC Pub. 2170 at 48-49 (Dissenting Views of Commissioner Cass); Certain Electrical Conductor Aluminum Redraw Rod from Venezuela, USITC Pub. 2103 at 20-22, Inv. Nos. 701-TA-287 & 731-TA-378 (Final) (Aug. 1988) (Additional Views of Commissioner Cass).

98/ Microdisks, USITC Pub. 2170 at 49.

99/ See Department of Commerce, International Trade Administration, Federal Register Notice at 4 & App. B, "Final Determinations of Sales at Less than Fair Value: Antifriction Bearings (Other than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany" (Mar. 24, 1989).

wheel hub units that Commerce should reconsider this issue and terminate investigations of these products.

E. Related Parties

An additional issue that is contested by the parties in these investigations is whether to exclude various foreign-owned companies producing bearings in the United States from the definitions of the respective domestic industries under the "related parties" provision of Title VII.100/ That provision authorizes the Commission, in "appropriate circumstances", to exclude from the definition of a domestic industry any producer that either is "related" to an exporter or importer, or is itself an importer of subject imports.101/ The Commission typically uses the term "related party" to describe both firms that import as well as produce the relevant product and firms that are otherwise linked to foreign producers.

The Commission assesses five factors to determine whether the circumstances are appropriate for excluding a company from a defined domestic industry:

100/ 19 U.S.C. § 1677(4)(B) provides:

> Related parties.--When some producers are related to the exporters or importers, or are themselves importers of the allegedly subsidized or dumped merchandise, the term 'industry' may be applied in appropriate circumstances by excluding such producers from those included in that industry.

101/ See Empire Plow Co. v. United States, 11 Ct. Int'l Trade ___, 675 F. Supp. 1348, 1352 (1987).

(1) the position of the related producers to the rest of the domestic industry;

(2) the reasons why the domestic producers have chosen to import the product under investigation -- to benefit from the unfair trade practice, or to enable them to continue production and compete in the domestic market;

(3) the percentage of domestic production attributable to the related producers;

(4) whether the domestic company's records are maintained separately from those of the foreign firm from which it imports; and

(5) whether the primary interest of the domestic firm lies in domestic production or in importation.102/

The Commission directs special attention to the second of these factors, focussing on whether the related party imported the subject product primarily to take advantage of the unfair trade practice or, instead, simply to enable that party to compete better in the U.S. market.103/

As the Commission majority in these investigations notes, all of the foreign-owned domestic producers also import the same types of bearings that they produce domestically, with one exception.104/ Stated differently, save for that one exception, all foreign-owned firms producing in the United States antifriction bearings like the imports subject to these

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102/ See Electrolytic Manganese Dioxide from Greece and Japan, USITC Pub. 2177 at 33-34, Inv. Nos. 731-TA-406 & -408 (Final) (Apr. 1989) (Additional Views of Vice Chairman Cass) (citing Certain All-Terrain Vehicles from Japan, USITC Pub. 2163 at 17-18, Inv. No. 731-TA-388 (Final) (Mar. 1989) ("All-Terrain Vehicles")).

103/ The Court of International Trade has affirmed this approach. Empire Plow, 675 F. Supp. at 1353-54.

104/ The sole exception is [********] for spherical roller bearings.

investigations also import the subject products and, thus, are "related parties." Determining which, if any, of the numerous related parties should be excluded from one or more of the eleven, defined domestic industries, is complicated by the fact that virtually every domestic producer -- whether foreign- or U.S.-owned -- is also an importer. Neither the statute nor Commission practice distinguishes producers that meet the definition of related parties on the basis of their foreign ownership from those that qualify by virtue of the fact that they import the subject products. Thus, all U.S. producers but one are potentially excludable.

The Commission in the preliminary investigations did not exclude any related parties,105/ but here has reconsidered this issue in more detail on a product-specific basis. With respect to the issue of related parties for all ball bearings, spherical roller bearings, cylindrical roller bearings, needle roller bearings, spherical plain bearings, and slewing rings, I concur with the majority's analysis, and see no need to duplicate that portion of the majority opinion.106/

105/ Bearings Preliminary, USITC Pub. 2083 at 29.

106/ Although I differ from the majority in that I determine that the domestic industries producing ball bearings, spherical roller bearings, cylindrical roller bearings, and needle roller bearings should be further divided for each bearing type between the industry producing superprecision bearings from that producing all other bearings of that type, the difference in definitions of domestic industry does not alter the analysis presented in the majority opinion concerning ball and cylindrical roller bearings. Accordingly, I join that portion of the majority opinion. With respect to superprecision spherical roller and needle roller bearings, there is no domestic production by foreign-owned

The only like product remaining for consideration of the related parties issue is wheel hub units. As noted above, however, there is only one domestic producer of wheel hub units. That producer, New Departure Hyatt, is U.S.-owned, and it does not import wheel hub units. Accordingly, there is no producer that is eligible for exclusion from the definition of domestic industry for being a related party.

F. Exclusion

I believe, essentially for the reasons stated by the Commission majority, that the Commission may not exclude from our Title VII investigations imports that were the subject of an affirmative determination by the Commerce Department. I have little to add to the majority's discussion of this issue. I note, however, that I do not agree with the suggestion, contained in the majority's Views, that when we find multiple like products and multiple, but fewer, domestic industries corresponding to those products, this is a form of "exclusion".107/ In my view, when we find multiple, separate, imported products, such as would comprise separate domestic like products, we must analyze the effects of each of those groups of imported products on the domestic industry that makes the comparable product, that might

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producers and virtually none by U.S.-owned producers, Report at B-25, -36; hence, exclusion of "related parties" is a significant issue for those products.

107/ See Views of Commissioners Eckes, Lodwick, Rohr and Newquist, supra.

have made such a product but for the unfairly traded imports, or that makes the most similar product.108/ This analysis is very different from excluding products from our investigation. That is true even where there is not a one-to-one coincidence between imports and domestic production. The Commission has in prior cases found analysis of the effects of the imports on a different number of domestic industries appropriate so long as the effects of all imports within the scope of investigation are examined.109/

II. INJURY BY REASON OF UNFAIRLY TRADED IMPORTS

A. Framework for Analysis: The "Unitary" or "Comparative Approach"

1. Nature of the Inquiry Broadly Defined

In Title VII cases, in determining whether unfairly traded imports have caused material injury to a domestic industry, I have employed an approach that is often referred to as the "unitary" or "comparative" approach. This approach is "comparative" because it explicitly compares the domestic industry's actual performance with what the industry's performance would have been had there been no unfairly traded imports.110/ As I have explained in other opinions,111/ such a

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108/ See Digital Readout Systems, supra note 17 at 84-95.

109/ E.g., Sodium Nitrate from Chile, USITC Pub. 1357, Inv. No. 731-TA-91 (Final) (Mar. 1983).

110/ See, e.g., Internal Combustion Forklift Trucks from Japan, USITC Pub. 2082 at 113-18, Inv. No. 731-TA-377 (Final) (May 1988) (Additional Views of Commissioner Cass) ("Forklift Trucks");

comparison is the essential predicate of any causation analysis;112/ it is not unique to an analysis of the effects of unfairly traded imports on the domestic industry. To state the obvious, if no attempt is made to evaluate what the condition of the domestic industry would have been in the absence of unfairly traded imports, no meaningful conclusion respecting the effects of such imports is possible. The comparative approach differs from other approaches to the causation issue in that it makes the required comparison explicitly, rather than implicitly.

The approach that I use in Title VII cases is "unitary" because it does not conduct an independent inquiry into the existence of "material injury", defined simply as a change in the condition of the domestic industry, divorced from the effects of unfairly traded imports. As I have stated in other opinions, I believe that a unitary approach -- which asks the question whether unfairly traded imports have left the domestic industry in a materially worse position than it would have been in had the unfair trade practices not occurred -- is more in keeping with the statute we administer (and the international agreement it implements) than is the bifurcated approach that has been

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Certain Telephone Systems and Subassemblies Thereof from Japan, Korea and Taiwan, USITC Pub. 2156 at 64-67, Inv. Nos. 731-TA-426-428 (Preliminary) (Feb. 1989) (Additional Views of Commissioner Cass)

111/ See, e.g., Forklift Trucks, supra, at 113-18.

112/ See, e.g., W. Keeton, R. Keeton & D. Owen, Prosser & Keeton on the Law of Torts 265 (1984).

employed by other Commissioners.113/ The bifurcated approach asks first whether the domestic industry is experiencing some kind of difficulty, measured in terms of declining trends in production, employment, financial performance, or other performance indicators, that is said to constitute "material injury". In the usual case, if this question is not answered in the affirmative, no attempt is made to ascertain whether unfairly traded imports caused injury to the domestic industry. I have explained at length elsewhere why I believe that this approach is less faithful to the language and purpose of Title VII than the unitary approach.114/ I also have explained why the unitary approach is consistent with a considerable body of prior Commission practice and judicial precedent.115/ Those previous discussions provide the reasons for my conclusion that, even if it might be permissible for us to impose a threshold requirement that the domestic industry be in financial "ill health", that certainly is not the preferable interpretation of our governing

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113/ See, e.g., Digital Readout Systems, supra note 17, at 95-117 (Concurring and Dissenting Views of Commissioner Cass); 3.5" Microdisks and Media Therefor from Japan, USITC Pub. 2076 at 59-74, Inv. No. 731-TA-389 (Preliminary) (April 1988) (Additional Views of Commissioner Cass) ("Microdisks Preliminary").

114/ See Microdisks Preliminary.

115/ Digital Readout Systems, USITC Pub. 2150 at 108-117; Microdisks Preliminary, USITC Pub. 2076 at 64-70.

statute and does not comport well with the judicial decisions invoked as its most important sources of support.116/

I will not repeat here my earlier discussions of this issue. I will, however, add two brief observations. First, nothing in the language of the statute or in its legislative history even remotely approaches an explicit statement that the Commission is to deny relief to a domestic industry solely because we deem the industry sufficiently healthy. There are indications that supporters of the statute were especially concerned with industries whose fortunes are declining, but no indication that Title VII was directed solely to such industries. Indeed, there is considerable evidence to the contrary.

Second, the recently enacted Omnibus Trade and Competitiveness Act of 1988 underscores Congressional and executive concerns that disposition of our Title VII investigations not be guided by simplistic analysis of industry trends. The legislation pointedly requires the Commission to take account of business cycles and other effects on industry performance before reaching conclusions on the effect of LTFV or subsidized imports.117/ This instruction is at odds with the notion that relief is to be restricted to industries whose fortunes are in decline, for it makes clear that industries that

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116/ See American Spring Wire Corp. v. United States, 590 F. Supp. 1273 (Ct. Int'l Trade, 1984), aff'd sub nom., Armco, Inc. v United States, 760 F.2d 249 (Fed. Cir. 1985).

117/ Pub. L. No. 100-418, § 1328(2)(C), 102 Stat. 1107, 1205-06 (1988) (to be codified at 19 U.S.C. § 1677(7)(C)(iii)).

are on the upswing of their business cycle should not be denied relief for that reason alone. All this suggests that, even if the domestic industry appears to be performing relatively well, we are nevertheless required to determine whether unfair trade practices have resulted in some quantum of damage to the domestic industry that is not "inconsequential, immaterial or unimportant".118/

I note, however, as I have in other cases,119/ that this does not mean that I view the health of an industry as irrelevant. To the contrary, while applying a unitary analysis, I have expressed the view that the Commission may properly take the health of an industry into account in determining what, in a particular case, constitutes "material injury" to a domestic industry.120/ Although the Tariff Act of 1930 does not establish, and the Commission has never adopted, a litmus test for the materiality of injury, Congress has strongly suggested that the health of an industry is one factor that should be considered in defining "material injury". Specifically, the Senate Finance Committee has stated that

> An industry which is prospering can be injured by dumped imports just as surely as one which is foundering

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118/ 19 U.S.C. § 1677(7)(A).

119/ See, e.g., Digital Readout Systems, supra note 17, at 117-19.

120/ See id; Certain Brass Sheet and Strip from Japan and the Netherlands, USITC Pub. 2099, Inv. Nos. 731-TA-379-80 (Final) 57-58 (July 1988) (Dissenting Views of Commissioner Cass) ("Brass Sheet and Strip").

> although the same degree of dumping would have relatively different impacts depending upon the economic health of the industry.121/

Accordingly, in deciding what constitutes material injury in this case, I have, as in other cases, taken into account, among other things, the health of the domestic industry at issue.

The remaining and more difficult question is how we should translate our evaluation of the condition of the domestic industry into a materiality standard to be used in specific cases. Plainly, it is difficult, if not impossible, to formulate a precise verbal or quantitative description of this process. Moreover, different commissioners may, and almost certainly will, approach the issue in different ways.

This is not to say, however, that it is not possible to provide any meaningful explication of the meaning of the materiality standard. There are certain issues that arise in this context to which there are, in my view, clear answers. One such issue, suggested by Petitioner in this case, is whether the Commission must treat certain amounts of revenues lost to a domestic industry consequent to unfair trade practices as material (and, presumably, other amounts as immaterial), irrespective of the size of the domestic industry.122/ Put differently, the question is whether "material injury" connotes

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121/ S. Rep. No. 1385, 90th Cong., 2d Sess., pt. 2, at 11 (1968), reprinted in 1968 U.S. Code Cong. & Admin. News 4548 (emphasis added).

122/ See Petitioner's Posthearing Responses to Questions at Ex. 1 (memorandum from Robert S. Pindyck/Analysis Group, Inc.).

an absolute dollar standard, no matter how large or small an industry; if the unfair trade practices cause revenue losses above some given figure, material injury will be found, while revenue losses below that amount cannot satisfy the standard of materiality. I do not believe that there is any basis for this argument in the language or legislative history of the statute and none has in fact been cited to us. Indeed, I believe that all of the evidence points to a contrary conclusion. If the argument advanced by Petitioner were accepted, larger domestic industries would have a far easier time in obtaining relief under our trade laws than would smaller industries. It is, in my view, inconceivable that Congress could have intended that our trade laws be administered in such a discriminatory fashion.123/

2. Statutory Definition of the Inquiry

In analyzing the question of causation of material injury in these investigations, I have conducted the three-part inquiry suggested by the governing statute. Title VII directs the Commission, in assessing the causation of injury by dumped imports, to

> consider, among other factors --
> (i) the volume of imports of the merchandise which is the subject of the investigation,

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123/ This does not, of course, fully resolve the question of how to assess material injury under the law. Does the law, for example, conceive of such injury in terms of aggregate effects on industry revenues? Or does it conceive of material injury in terms of effects on the earnings of those who at a certain time were employed in the industry or had invested in it? These issues are less readily resolved, as the statute, after spelling out the factors to be considered, appears to leave the details of this definition to individual commissioners.

> (ii) the effect of imports of that merchandise on prices in the United States for like products, and
> (iii) the impact of imports of such merchandise on domestic producers of like products....124/

The statute goes on to spell out these three factors with greater particularity.

Although the statutory text does not identify, and does not purport to identify, all of the factors relevant to an assessment of whether dumped or subsidized imports have materially injured a domestic industry,125/ the factors that are listed in the statute and the order in which they are listed offer important guidance concerning the nature of the inquiry that must be carried out. Specifically, the statute suggests that Congress contemplated that the Commission would consider three related questions in evaluating the possible existence of injury by reason of LTFV imports. First, we are to examine the volumes of imports of the merchandise under investigation; the absolute volumes of imports, their magnitude relative to domestic sales of the competing "like product", and the extent to which import volumes changed as a result of dumping or subsidization are relevant to evaluation of the effect of dumped or subsidized imports on the domestic industry. The change in import volumes brought about by dumping or of subsidies will be closely related to, and in large part a function of, changes in the prices of the imports that occurred

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124/ See 19 U.S.C. § 1677(7)(B).

125/ The statute contemplates that the Commission will consider relevant economic factors in addition to those identified explicitly in the statute. See 19 U.S.C.A. § 1677(7)(C)(iii) (West Supp. 1989).

as a result of dumping. Second, we must attempt to determine how the subject imports affected prices, and concomitantly sales, of the domestic like product. Finally, we must evaluate the extent to which these changes in demand for the domestic like product caused by LTFV or subsidized imports affected such factors as return on investment and the level of employment and employment compensation in the domestic industry.126/

Title VII, as amended by the Omnibus Trade and Competitiveness Act of 1988, has further directed that the Commission explicitly consider and state its conclusions on the factors that form the basis for each of these three inquiries.127/ Moreover, as noted above, the statute as amended

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126/ Of course, the Commission must also evaluate whether these effects are "material" within the meaning of the statute. This assessment is, in some sense, a fourth part of our inquiry. See Digital Readout Systems, supra note 17, at 117-19.

127/ See Pub. L. No. 100-418, § 1328(1), 102 Stat. 1107, 1205 (to be codified at 19 U.S.C. § 1677(7)(B)(ii)). While the 1988 Trade Act is not technically applicable to these investigations, I believe that it is nevertheless relevant here to the extent that it reflects Congressional approval of the Commission's long-standing practice.

I have explained in detail in other opinions how the three-part inquiry that I employ considers the specific factors listed in the statute as well as certain other economic factors relevant to an assessment of the impact of unfairly traded imports on the domestic industry producing the like product. See, e.g, New Steel Rails from Canada, USITC Pub. 2135 at 35-37, Inv. Nos. 731-TA-422 and 701-TA-297 (Preliminary) (Nov. 1988) (Additional Views of Commissioner Cass); Generic Cephalexin Capsules from Canada, USITC Pub. 2142 at 56-58, Inv. No. 731-TA-423 (Preliminary) (Dec. 1988) (Dissenting Views of Commissioner Cass).

instructs the Commission, in making these inquiries, to consider the particular dynamics of the industries and markets.128/

In succeeding sections of these Views, the three inquiries outlined above are undertaken in light of these directions for each of the like products and corresponding domestic industries in these investigations. However, before my conclusions on these issues are discussed, it is necessary to resolve a threshold question concerning cumulation of imports from different countries covered by Commerce's investigation.

B. Cumulation

As the majority opinion explains, Title VII requires the Commission to analyze cumulatively the volume and effect of imports subject to investigation from two or more countries if such imports "compete with each other and with like products of the domestic industry in the United States market."129/ In accordance with Commission practice, the majority has assessed four factors in determining whether the statutory criteria are met,130/ and the evidence on record supports the majority's determination to cumulate from all countries all imports subject

128/ See new Section 771(7)(C)(iii) of the statute (to be codified at 19 U.S.C. § 1677(7)(C)(iii)). See also S. Rep. No. 71, 100th Cong., 1st Sess. 117 (1987).

129/ 19 U.S.C. § 1677(7)(C)(iv).

130/ I note that the four factors employed by the Commission do not add to or substitute for the two statutory factors -- that imports (1) are subject to investigation and (2) compete with each other and with the domestic like product -- but, instead, are used to assess the factors Title VII provides.

to these investigations. I concur with the majority's analysis, and join that portion of the majority opinion.131/

The majority, however, has not found wheel hub units to be a separate like product and, concomitantly, has not addressed separately the issue of cumulation with respect to wheel hub units. Unfortunately, the record is too fragmentary, especially in comparison with the evidence concerning most of the other bearings subject to investigation, to determine authoritatively whether it is appropriate to cumulate imports of LTFV wheel hub units from the Federal Republic of Germany, Italy, and Japan for purposes of our injury inquiry. Although the record indicates (1) that imported wheel hub units are subject to investigation,132/ and (2) that the subject imports are simultaneously present in the market,133/ we do not have sufficient information to determine whether imports of such wheel

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131/ I note that, although (1) I differ from the majority's like product definitions for ball bearings, spherical roller bearings, cylindrical roller bearings, and needle roller bearings by dividing each type of bearing into two like products, "superprecision" and "others", and (2) the data are not as comprehensive for the subject imports disaggregated by ABEC rating as the data on imports that correspond to the majority's like product definitions, the record as a whole supports the inference that cumulation on the basis of either set of like product definitions is appropriate.

132/ Report at B-38.

133/ Report at B-39.

hub units compete with each other or with the domestic like product.134/

Given that we are unable to determine with any substantial degree of confidence whether the subject imports of wheel hub units in fact compete with each other and with the domestic like product, I cannot conclude that the statute compels us to cumulate. In order to satisfy the spirit of the statute and, at the same time, to avoid subjecting Respondents to undue prejudice, I have resolved the problem by conducting the statutory inquiry into the effects of the subject imports from the respective countries both individually and cumulatively.

C. Injury by Reason of LTFV Imports: Antifriction Bearings

1. Spherical Plain Bearings

In these investigations, I have made an affirmative determination respecting the subject imports of spherical plain bearings from West Germany, France and Japan. I reach this conclusion because, for reasons explained below, the record evidence indicates that less than fair value sales of these products had a materially adverse effect on prices and sales of

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134/ For one thing, the record is too sparse to enable us to make an inference concerning the fungibility of imports between countries and between imports and the domestic like product; neither do we have specific information concerning sales or offers for sale in particular geographic markets. Given the primarily captive status of the sole domestic producer, channels of distribution for the imports certainly are not identical to those of the domestic like product. In short, even though none of the factors alone is dispositive, there is simply insufficient information on the record to determine whether the subject imports should be cumulated.

domestically-produced spherical plain bearings, with accompanying adverse consequences for the financial performance of the domestic industry.135/

a. Volumes and Prices of Subject Imports

Over the full period covered by our investigation, the volume of imports of spherical plain bearings from West Germany and Japan increased significantly. In 1985, [*******] such bearings were imported from West Germany,136/ and [*******] units from Japan.137/ Total imports of spherical plain bearings from the subject countries increased substantially in the succeeding years. In 1987, and during the first nine months of 1988, periods covering the six months during which the Commerce Department found that dumping of spherical plain bearings was occurring, imports of spherical plain bearings from West Germany were, respectively, [*******] units and [*******] units (compared to [******] units during the comparable nine-month period in

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135/ Subsidies were not at issue with respect to sales of bearings in this product category.

136/ Technically, these data, and the quantity data listed for the various other like products, represent exports from the subject countries to the United States that occurred immediately prior to the time of actual import. However, the level of exports corresponds very closely to the level of imports; accordingly, the export data provide a good measure of import volumes.

137/ Report at A-78, Table 27; A-92, Table 30.

A de minimis amount of parts and components for spherical plain bearings were imported from each country during 1985 and in subsequent years. These parts and components will not be further discussed in these Views; they are so small that they are inconsequential to an analysis of the effects of the subject imports on the domestic industry.

1987).138/ The situation was similar in the case of Japan: imports rose to [*******] units by 1987, and to 336,000 units for the nine months in interim 1988 (compared to 286,000 units during the comparable nine-month period in 1987).139/ Imports from France were very low throughout the period covered by our investigation, at no time amounting to significantly in excess of [*******] units.140/

The data on the value of the imports from the subject countries tell a similar story, although the increase in imports, measured by value, is both more consistent and greater in magnitude than the quantity-measured data might suggest. In 1985, the value of spherical plain bearings imported from Japan and West Germany amounted in total to approximately $[*****] million, with West Germany accounting for slightly over two-thirds of this figure and Japan the remainder.141/ The value of such imports increased in both 1986 and 1987, and again in interim 1988 compared to 1987.142/ During 1987 and interim 1988, periods during which Commerce found that dumping was occurring, the reported value of the subject imports exceeded $[****] million, with West Germany accounting for about [****]% of this figure, Japan [**********], and France [**********]

138/ Id. at A-78, Table 27.

139/ Id. at A-92, Table 30.

140/ Id. at A-83, Table 28.

141/ Id. at A-112, Table 37.

142/ Id.

of the total.143/

In examining the effects of the subject spherical plain bearings on the relevant domestic industry, it is apparent that the volumes of the LTFV imports were closely related to the prices at which those imports were sold.144/ The record evidence in these investigations indicates that dumping resulted in substantial decreases in the prices of the subject imports. Commerce determined that sales of the subject imports by each of the Respondent producers of spherical plain bearings were made at prices reflecting sizable margins of dumping. For the West German Respondents FAG and SKF, the dumping margins were 74.88% and 118.98%, respectively.145/ Similarly high margins were calculated for the Japanese Respondents: 84.26% for Minebea and 92% for NTN. A somewhat lower, but still substantial, margin of 39% was calculated for the French Respondent SKF.146/

Even where there are dumping margins of the magnitude presented in this investigation, it is not necessarily the case that the price of the subject imports will have declined by the full amount of the margins, or even by a figure near that amount. The fall in the price of LTFV imports that accompanies dumping will usually be less than the full amount of the dumping

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143/ Id. In 1987, the value of the French imports was approximately $[*]; in interim 1988, $[*] in French imports were reported. Id.

144/ See, e.g, Digital Readout Systems, supra note 17, at 25-26.

145/ Report at A-22, Table 2.

146/ Id.

margin.147/ In cases where the dumping margins reflect a finding by Commerce that the subject foreign producers/exporters have charged a lower price for their product in sales to the United States than the price that they have charged in sales to their home market (or another foreign market used as the surrogate for the home market), the actual decrease in the U.S. price of the subject imports that will have occurred consequent to dumping will be only a fractional percentage of the dumping margin. This percentage, in turn, will be in large measure a function of the proportion of the total sales of the subject foreign producer(s) in the U.S. and the exporter's home market that is accounted for by sales in the home market.148/ That is, the price decline will

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147/ See, e.g., Digital Readout Systems, supra note 17, at 125; All-Terrain Vehicles, supra note 102, at 53-54) (Additional Views of Commissioner Cass).

148/ See, e.g., All-Terrain Vehicles, supra note 102, at 58-60; Granular Polytetrafluoroethylene Resin from Japan and the Netherlands, USITC Pub. 2112, Inv, Nos. 731-TA-385 and 386 (Final) 74 (Aug. 1988) (Additional Views of Commissioner Cass); Certain Bimetallic Cylinders from Japan, USITC Pub. 2080, Inv. No. 731-TA-383 (Final) 44 (May 1988) (Additional Views of Commissioner Cass).

In reality, an estimate of the decrease in the price of the dumped product that is derived in this fashion will be somewhat overstated as it represents an approximate upper bound of that decrease. For a thorough explication of this subject, see Office of Economics, Assessing the Effects on the Domestic Industry of Price Dumping, USITC Memorandum EC-L-149, Part I at 1, n. 1, 13, 19-21 (May 10, 1988). A more accurate statement of the effects of dumping on import prices also may require some adjustment to reflect the fact that dumping margins are calculated on an ex-factory, rather than final sales price, basis. However, the information that would be necessary to make such an adjustment is not available in these investigations.

As previously noted, under certain circumstances, Commerce will use another foreign market as the surrogate for the foreign

be a fraction of the dumping margin that reflects the ratio of the sales made by the subject producers in their home market as a proportion of their combined U.S. and home market sales.149/

In these investigations, the dumping margins calculated by Commerce for the subject spherical plain bearings were, in fact, the product of a finding by Commerce that the subject foreign producers charged higher prices for their product in their home market than they charged in the United States.150/ For each of the subject foreign producers, home market sales accounted for a very large percentage of the sales made by that producer in its respective home market and in the United States.151/ Thus, for

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producer's home market. When that occurs, the relevant comparison is the proportion of the producer's combined third market and U.S. market sales that is accounted for by sales to the third market.

149/ See, e.g., Digital Readout Systems, supra note 17, at 125; Microdisks Preliminary, supra note 113, at 82. In cases where such differential pricing is the basis149/ for a dumping finding, this will generally be the case, irrespective of the motivation for dumping. For a thorough explication of this subject, see USITC Memorandum EC-L-149, supra note 148.

150/ It should be noted, however, that, in the case of West German Respondent SKF, Commerce used for SKF's final dumping margin the same margin that it assigned to SKF in the preliminary investigation. Because Commerce was unable to verify the data respecting home market sales that SKF provided to the Department in the final investigation, Commerce used as the best available information the margin that was calculated by Commerce for SKF in Commerce's preliminary investigation. See International Trade Administration's Final Determination of Sales at Less Than Fair Value; Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany ("Commerce FRG Determination"), Appendix B at 181-183 ("Appendix B of Commerce Determination").

151/ With one exception, for all of the producers from the subject countries, home market sales accounted for 80% or more of the reported value of the producers' sales in their respective

each producer, dumping caused the prices of its exports to the United States to decline by a percentage roughly corresponding to the full amount of the dumping margin assigned to that producer.

The evidence also indicates that dumping resulted in significantly increased sales of the subject imported spherical plain bearings. The extent to which decreases in subject import prices cause increases in subject import sales is, in large measure, a function of the degree to which the imported goods are substitutable for the domestically produced product. For reasons explained in more detail below, the evidence in these investigations indicates that there is a low to moderate degree of substitutability between the subject imported plain bearings and the domestically produced product. Given the large decreases in prices of the subject imports that resulted from dumping, this degree of substitutability would have been sufficient to produce significantly increased sales of the imported product.

b. Prices and Sales of the Domestic Like Product

In these investigations, the record evidence indicates that the changes in the demand for the subject imported plain bearings that resulted from dumping, as discussed above, produced significant adverse effects on prices and sales of the corresponding domestic like product. An assessment of the effects of subject imports on domestic prices and sales depends

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combined home/U.S. markets in both 1987 and 1988. See Foreign Producers' Responses to Commission's Request for Data. In the case of Japanese Respondent, Minebea, home market sales accounted for slightly over [**]% of its sales in its combined U.S./Japan market. Id.

on understanding the markets for the domestic and imported products, especially consumers' reactions to these products. In particular, the effect of imports on the domestic like product's prices and sales is critically affected by the evidence bearing on three issues: the share of the domestic market held by the subject imports; the degree to which consumers see the imported and domestic like products as similar (the substitutability of the subject imports and the domestic like product); and the degree to which domestic consumers change their purchasing decisions for these products based on variations in the prices of these products. The evidence bearing on each of these three issues is examined in turn.

During the period in which Commerce found that dumping was occurring, the subject imports accounted for a sizable percentage of total U.S. consumption of spherical plain bearings. Measured by value, in 1987 and the first nine months of 1988, the imports accounted, respectively, for [***]% and [***]% of all spherical plain bearings consumed in the United States.152/ On a quantity-measured basis, the subject imports also amounted to a substantial percentage of domestic production during the critical

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152/ Report at A-116, Table 38. The Japanese imports had a market share of [****]% in 1987 and [****]% in interim 1988. Id. West German imports held [****]% of the market in 1987 and [****]% in the first nine months of 1988. Id. Imports from France accounted for less than [****]% during both periods. Id. at A-116-117, Table 38.

periods: [*******]% in 1987 and [******]% in the first nine months of 1988.153/

A second body of record evidence suggesting that the subject imports had a significant adverse effect on prices and sales of domestically produced spherical plain bearings relates to the degree to which domestic consumers' purchasing decisions for spherical plain bearings (both imported and domestic) were affected by variations in the prices of those products. When consumer demand for these products as a group is highly responsive to changes in price, the effects of dumping on prices and sales of the domestic like product (other things being equal) is attenuated, for in that case the lower prices resulting from dumping will stimulate significantly increased domestic demand for the lower-priced product. On the other hand, much greater effects will be felt by U.S. producers when consumers perceive no difference between the imported and domestic product other than price but their overall purchases of these products are relatively unresponsive to price changes. In the latter case, consumers will simply switch their purchases from U.S.-made to lower-priced imported products, resulting in a quite detrimental impact on both the U.S. products' prices and their sales.

In these investigations, the record evidence indicates that domestic demand for the antifriction bearings that are the

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153/ Data derived from Report at A-35, Table 8; A-78, Table 27; A-92, Table 30. Quantity-measured market shares were not tabulated for spherical plain bearings, or for any of the other like products.

subject of these investigations, including spherical plain bearings, is in general quite unresponsive in the short-term or medium-term to changes in the price of those products. Demand for spherical plain bearings, like demand for other bearings, is a derived demand; demand for the bearings is wholly a function of demand for the products in which the bearings are incorporated.154/ With few exceptions (none of which are relevant for present purposes), antifriction bearings, including spherical plain bearings, account for only a small percentage of the cost of these finished products.155/ Furthermore, there is no record evidence indicating that other kinds of bearings, or products other than antifriction bearings, may serve to any appreciable degree as reasonably good substitutes in those applications for which spherical plain bearings are used.156/ For all of these reasons, it is evident that the availability of the subject, imported spherical plain bearings at reduced prices consequent to dumping did not stimulate significantly increased demand for the imported bearings.

The remaining issue relevant to an assessment of the effect of the subject imports on prices and sales of the domestic like product is the extent to which the imported and domestic like product are substitutable for each other. For reasons discussed

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154/ See Report at A-4-11; USITC Memorandum EC-M-151 (April 26, 1989) from the Office of Economics ("OE Posthearing Memorandum") at 22.

155/ OE Posthearing Memorandum at 22.

156/ See, e.g., OE Posthearing Memorandum at 22-23.

in greater detail below in my discussion of ball bearings,157/ I have concluded that there is, at most, a moderate degree of substitutability between imported antifriction bearings (including spherical plain bearings) and the corresponding domestic like products. Indeed, several features of particular importance to consumers of bearings are likely to keep the substitutability of domestic and imported bearings (in the quantities relevant to our determinations) rather low. However, the degree of substitutability is certainly not so limited as to obviate the other compelling record evidence indicating that the subject imports of plain bearings had significant adverse effects on prices and sales of domestically-produced spherical plain bearings.

The West German imports were responsible for the bulk of these effects, largely because of their relatively large market share and because the prices of those imports were most affected by dumping. The Japanese imports were responsible for smaller, but still significant effects. The effects of the French imports on domestic prices and sales were de minimis. However, because I believe, for the reasons previously stated, that we are required to cumulatively assess the effects of the imports from all three countries, there is, in my view, no basis upon which we might exclude the French imports from our material injury determination.

c. Investment and Employment

157/ See text at infra notes 205-07.

The third and final part of our inquiry concerns the evidence of record respecting the investment and employment performance of the domestic industry and its relationship to the other evidence of record respecting the impact of the subject imports on prices and sales of the domestic like product. The questions relevant to this inquiry are, given the conclusions reached regarding the market for the subject imports and the effect of LTFV imports on domestic prices and sales, to what extent have returns on investment declined as a result of the LTFV imports, and to what extent has employment in the domestic industry declined or become less remunerative due to the LTFV imports?

Title VII specifies a number of factors that can assist the Commission in answering these questions -- actual and potential negative effects on employment and wages, actual and potential negative effects on profits, return on investment, cash flow, the level of investment and so on. The record in these investigations, as in other Title VII investigations, contains considerable evidence of trends in employment, wages, profits, and so on, over the past several years. This evidence, however, by itself will rarely, if ever, form a sufficient basis for drawing any ultimate conclusions concerning the effects that LTFV imports have had on the domestic industry. Yet, that evidence, when viewed in conjunction with other evidence of record respecting the manner in which the subject imports affected

prices and sales of the domestic like product, may assist the Commission in arriving at its judgment on the ultimate issue.

In these investigations, for example, the data that the Commission has compiled on the financial performance of the domestic industry are especially revealing in several respects. They show that the domestic industry producing spherical plain bearings has been notably unprofitable over the period of our investigation and became significantly more so during 1987 and interim 1988, the periods during which Commerce found that dumping occurred.158/ Further, spherical plain bearings were the only one of the five broad product categories for which the Commission collected return-on-investment data for which a negative return was reported in 1987.159/ This evidence is certainly consistent with the other previously-discussed record evidence suggesting that the subject imports had a material harmful effect on the domestic industry.

The evidence respecting employment in the domestic industry is more ambiguous. Over the period covered by our investigation, total employment, hours worked and the average hourly wage either remained essentially stable or increased somewhat. These inconclusive data plainly do not counterbalance the other record evidence that the subject imports of plain bearings caused material injury to the domestic industry producing spherical plain bearings.

158/ See Report at A-61.

159/ Id. at A-65, Table 21.

2. Ball Bearings

In these investigations, I have made a negative determination respecting the subject less than fair value imports of both superprecision and non-superprecision ball bearings from West Germany, France, Italy, Japan, Rumania, Sweden and the United Kingdom, and subsidized and LTFV imports of such bearings from Singapore and Thailand. Although the issue is, in my view, a close one, I believe, for the reasons explained below, that the record evidence as a whole indicates that these imports did not cause material injury to the domestic industries producing these bearings.

Despite its best efforts, the Commission has been unable to compile certain key data necessary to perform separate and comprehensive analyses of the effects of unfairly traded imports of superprecision ball bearings on the domestic industry producing superprecision ball bearings and the effects of unfairly traded imports of non-superprecision ball bearings on the domestic industry producing non-superprecision ball bearings.160/ Accordingly, much of the discussion below is, of necessity, a discussion of the effects of the subject ball bearing imports on domestic production of all ball bearings, rather than of superprecision bearings and non-superprecision bearings treated separately. This treatment is consistent with

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160/ The most important data that we are missing are separate data on the volume of imports and, consequently, data on the domestic market share, of the subject imported superprecision ball bearings and non-superprecision ball bearings.

Congress' direction that we use data from the narrowest product line for which data are available when we do not have data on the like product per se.161/

a. Volumes and Prices of Subject Imports

The volume of imports of finished ball bearings from the subject countries increased over the period covered by our investigation. In 1985, such imports amounted to approximately 184 million units.162/ By 1987 and during the first nine months of 1988, periods encompassing the six-months during which Commerce determined dumping took place (and during which subsidies that Commerce found countervailable also were in effect), imports of finished ball bearings from these countries had increased, respectively, to about 241 million units and 202 million units (compared to about 154 million units in the first nine months of 1987).163/ The largest volume of imports came from Japan, Singapore and West Germany; France, Rumania, Sweden, Thailand and the United Kingdom accounted for relatively small amounts.

These data for finished ball bearings are not, however, the most reliable measure of the volume of ball bearing imports because they do not reflect imports of ball bearing parts and components, which were, in some cases -- notably in the case of

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161/ See 19 U.S.C. § 1677(4)(D).

162/ Data derived from Report at A-76, Table 27; A-81, Table 28; A-86, Table 29; A-90, Table 30; A-95, Table 31; A-97, Table 32; A-98, Table 33; A-100, Table 34; A-101, Table 35.

163/ Id.

Japan -- quite substantial throughout the period covered by our investigation. For that reason, imports measured by value tell a more meaningful story. The value data also indicate that imports increased, but not quite so dramatically in percentage terms as the quantity data might suggest. In 1985, the value of ball bearing imports from the subject countries was approximately $340 million.164/ By 1987, this figure had risen to about $421 million.165/ In the first nine months of 1988, the value of the subject ball bearing imports was also about $421 million, compared to approximately $312 million during the comparable nine-month period in 1987.166/ Japan consistently accounted for over half of the value of these imports, with West Germany a consistent and distant second.167/

In order to assess the extent to which unfair trade practices affected import volumes, it is necessary to examine the effects that these practices had on import prices. The record evidence in these investigations indicates that unfair trade practices resulted in significant decreases in the prices of the subject imports from some, but not all, of the countries subject to these investigations.

For certain producers in certain of the subject countries, Commerce calculated dumping margins that can only be described as

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164/ Id. at A-111, Table 37.

165/ Id.

166/ Id.

167/ Id.

enormous. For example, Italian Respondent SKF was assigned a margin of 155.99%; a margin of 132.25% was calculated for West German Respondent SKF; and a 106.61% margin was assigned to Japanese Respondent Minebea.168/ However, the dumping margins of many of the subject ball bearings producers were significantly lower.169/

Ball bearings from only two of the subject countries -- Singapore and Thailand -- were the subject of countervailing duty investigations. Subsidy margins totalling 2.34% were calculated for Singapore; in the case of Thailand, the total subsidy margin was 21.54%.170/

168/ See Report at A-22, Table 2.

169/ The dumping margins for each producer are as follows:

West Germany

FAG	70.41%
GMN	35.43%
INA	31.29%
SKF	132.25%
All Others	68.89%

Rumania

TIE	39.61%
All Others	39.61%

Sweden

SKF	180.00%
All Others	180.00%

France

INA	66.80%
SKF	66.42%
SNR	56.50%
All Others	65.13%

Singapore

NMB/Pelmec	25.08%
All Others	25.08%

United Kingdom

RHP	44.12%
SKF	61.14%
All Others	54.31%

Italy

FAG	68.29%
SKF	155.99%
All Others	155.57%

Japan

Koyo	73.55%
Minebea	106.61%
Nachi	48.69%
NSK	42.69%
NTN	21.36%
All Others	45.83%

Thailand

NMB/Pelmec	20.40%
All Others	20.40%

See Report at A-22, Table 2.

170/ Id. at A-19.

The analytical issues involved in determining how subsidization affects the prices of subject imports are somewhat different from those involved where dumping is at issue. As previously noted, the fall in the price of LTFV imports that accompanies dumping will usually be less than the full amount of the dumping margin.171/ If the dumping margins reflect a finding by Commerce that the subject foreign producers/exporters have charged a lower price for their product in the United States than the price that they have charged in their home market (or another foreign market used as the surrogate for the home market), the actual decrease in the U.S. price of the subject imports that occurred consequent to dumping will be only a fractional percentage of the dumping margin. This percentage, in turn, will be in large measure a function of the proportion of the total sales of the subject foreign producer in the U.S. and the exporter's home market that is accounted for by sales in the producer's home market.172/

However, when the dumping margins do not reflect a finding that the subject foreign producers have charged higher prices in their home market than in the United States, a different mode of analysis is required. In these investigations, for example, in many instances the dumping margin was based, in whole or in part, on a determination by Commerce that the producer in question

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171/ See, e.g., Digital Readout Systems, supra note 17, at 125; All-Terrain Vehicles, supra note 102, at 53-54.

172/ A more detailed discussion of this issue is set forth supra, text accompanying notes 147-49.

charged a price for its product in the United States that was lower than the constructed value of that merchandise, as calculated by Commerce.173/ In such cases, I have used the full amount of the relevant dumping margin as the measure of the extent to which dumping affected price of the subject imports. In doing so, however, I have kept in mind that this almost certainly overstated to some degree the extent to which dumping caused the prices of the subject imports to decline. Nevertheless, I believe that such treatment is appropriate in the absence of other credible evidence on that issue.

I shall, however, distinguish two related but different issues. In my view, we are constrained to accept the dumping margins that are provided to us by Commerce as the measure of the magnitude of dumping.174/ It is clear that the statutory scheme commits this determination to that agency, not to the Commission, and comity requires that we credit the decision by Commerce.

173/ See, e.g., International Trade Administration's Final Determinations of Sales at Less Than Fair Value: Antifriction Bearings (Other Than Spherical Plain and Tapered Roller Bearings) and Parts Thereof from Italy ("Commerce Italy Determination") at 13 (Italian Respondent FAG); International Trade Administration's Final Determinations of Sales at Less Than Fair Value: Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from Japan ("Commerce Japan Determination") at 19-27 (Japanese Respondents Nachi, NSK and NTN); International Trade Administration's Final Determinations of Sales at Less Than Fair Value: Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from France ("Commerce France Determination") at 12-16 (French Respondent SKF).

174/ See New Steel Rails, supra note 127, at 124; Digital Readout Systems, supra note 17, at 38-41.

The dumping margin calculated by Commerce is not, of course, a measure of actual price differences to consumers in the United States and the relevant foreign market, but merely one evidentiary datum. In this regard, I note that there may be cases where market conditions suggest that it is highly implausible to suppose that dumping actually caused the price of subject imports to decline by a percentage corresponding to the full amount of a constructed-value based dumping margin. For example, in these investigations, Commerce computed a constructed value dumping margin for Italian Respondent FAG because Commerce concluded that there were insufficient home market sales by FAG above FAG's cost of production to permit the use of FAG's home market sales prices as the measure of the foreign market value of the FAG imports under investigation.175/ Commerce therefore used the constructed value of that merchandise, as determined by Commerce, in arriving at a dumping margin of 68.29% for FAG. This information, if viewed in isolation, might suggest that FAG was not only pricing below cost in its home market, but was also, on average, pricing about 40% below its cost of production in the United States on a substantial volume of sales to various consumers of ball bearings over a six-month period. Given the rather small likelihood that profit-seeking entities such as FAG would engage in such behavior, it is important that we consider such margins with great care when assessing the impact that dumping had on domestic prices and sales. Needless to say, this

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175/ See Commerce Italy Determination at 13-15.

is especially true when we are faced with close cases such as this one.

As previously noted, where subsidy margins are at issue, the appropriate analysis is wholly different than that required for dumping. Subsidies can have quite different characteristics. Some subsidies may be direct payments for exports. Other subsidies may be payments for production regardless of the destination of the production. Still other subsidies may be payments for the use of particular inputs to production, including the location of production. The effect of these different subsidies will differ, and in each case a careful evaluation of the manner in which the subsidy operates is necessary to determine whether and by how much the subsidy lowered the price and altered the volume of imports.176/ In these investigations, however, a precise assessment of the degree to which the alleged subsidies have affected import volumes and prices is unnecessary because, for the reasons explained in the succeeding subsection of these Views, I have concluded that the subsidies in question in these investigations could not have had a material affect on the domestic industry even if the full amount of the subsidy margin is used as the measure of the extent to which the subsidies affected prices of the subject imports and

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176/ For a general discussion of this point, see Diamond, Toward an Economic Foundation for Countervailing Duty Law, Workshop Paper for Georgetown University Law Center Law and Economics Program, October 1988. In some instances, a foreign subsidy tied to use of particular production inputs actually can reduce the volume of U.S. imports from that country. See Silberberg, The Structure of Economics: A Mathematical Analysis 209-211 (1978).

even if the effects of the subsidies are assessed cumulatively with those associated with dumping.

In these investigations, dumping (and subsidization, where applicable) had disparate effects on the prices of the subject imported ball bearings from the various countries producing that merchandise. However, for most of the subject countries, it is clear that dumping produced sizable decreases in the prices of their U.S. exports. The critical evidence for each country is summarized below.177/

In the case of West Germany, dumping as found by Commerce can only be deemed to have caused a large decrease in the price of the ball bearing imports from that country. The dumping margins of the West German producers ranged from significant (e.g., 31.29% for INA and 35.43% for GMN) to enormous (132.25% for SKF).178/ For those West German producers for which Commerce calculated a dumping margin based on a finding that those producers charged a higher price in their home market than in the United States, the evidence indicates that a large portion of the applicable margin was passed along to domestic consumers in the form of a decrease in the price of the subject imports; this

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177/ In the interest of both clarity and brevity, for ball bearings, as well as for the other like products discussed below, I have discussed only the effects that dumping had on the prices of those imports from the foreign producers for whom Commerce calculated a specific dumping margin. To the extent that there were, in certain cases, imports from other minor producers covered by the "all other" importer dumping margins calculated by Commerce, these also must be, and have been, taken into account, although they are not specifically discussed in these Views.

178/ See Report at A-22, Table 2.

follows from the fact that home market sales by those producers far outweighed their sales in the United States.179/ The same is true for German Respondent FAG and, to some extent, GMN, whose margins was based in part on a constructed value calculation.180/ For the reasons previously suggested, I believe that it is appropriate to use the full amount of the dumping margin to arrive at an approximation of the effect that dumping had on the prices of merchandise produced by those firms that were assigned a margin based on a constructed value estimate, although it is necessary to be mindful of the bias this introduces into the injury evaluation. Recognition of that bias can be critical in evaluation of the materiality of the effects inferred from this and other evidence.

An analysis of the imports from France leads to roughly similar conclusions respecting import prices. The margins for the three French Respondents fell in a narrow range -- from 56.5% for SNR to 66.42% for SKF.181/ For each producer, dumping caused the price of the imports to decline by a percentage corresponding to a large fraction of the dumping margin. For all three producers, home market sales were substantially greater than

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179/ See Foreign Producers' Responses to Commission's Request for Data.

180/ See Commerce FRG Determination at 15-19; Foreign Producers' Responses to Commission's Request for Data. Although GMN's home market sales substantially outweighed its U.S. sales in 1987, in 1988, GMN's sales in its home market were roughly [*******] its sales in the United States. See Foreign Producers' Responses to Commission's Request for Data.

181/ Report at A-22, Table 2.

exports to the United States,182/ and the dumping margin of SKF was based, in part, on constructed value.183/

In Italy, as well, dumping caused substantial declines in the prices of the subject imports. As previously noted, Commerce calculated a 68.29% constructed value margin for Italian Respondent FAG. A whopping margin of 155.29% margin was assigned to Italian Respondent SKF based on the best information available, i.e., the margin estimated in Commerce's preliminary investigation based on prices of sales in a surrogate market, West Germany.184/

The prices of the Japanese imports likewise declined substantially consequent to dumping. Relatively moderate dumping margins, ranging from 21.36% to 48.69%, were calculated for three Japanese Respondents -- Nachi, NSK and NTN -- but in each case the margin was based in whole or part on constructed value calculations, suggesting that the price of the imports made by those firms declined by a fractional percentage corresponding to a large portion of their respective dumping margins.185/ Japanese Respondents Koyo and Minebea had higher margins: 73.55%

182/ See Foreign Producers' Responses to Commission's Request for Data.

183/ Commerce France Determination at 14-15.

184/ Report at A-22, Table 2; Appendix B of Commerce Determination at 184-85; Preliminary Commerce Italy Determination, 53 Fed. Reg. 45306 (Nov. 9, 1988).

185/ Report at A-22, Table 2.

and 106.61%, respectively.186/ For those Japanese producers, as well as for the other three, home market sales far outweighed sales in the United States.187/

In the case of Romania, Commerce calculated a dumping margin of 39.61%, based on a constructed value figure calculated by using the value in Portugal of the factors of production used by the Romanian producers.188/ As I noted in another recent Title VII case before the Commission, we must be especially careful in determining the weight that should be given in our investigations to dumping margins based upon constructed value calculated by using the value of factors of production from a country other than the one in which the subject imports were actually produced.189/ However, in these investigations, as in the other recent investigation, I have nevertheless used such margins as the measure of the extent to which dumping affected import prices

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186/ Id.

187/ See Foreign Producers' Responses to Commission's Request for Data.

188/ Report at A-22, Table 2; International Trade Administration's Final Determinations of Sales at Less Than Fair Value: Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from Romania ("Commerce Romania Determination") at 7.

189/ See Sewn Cloth Headwear from the People's Republic of China, USITC Pub. 2183 at 32-33, Inv. No. 731-TA-405 (Final) (May 1989) (Additional Views of Vice Chairman Cass).

with the knowledge that it may overstate that effect, but does not affect our ultimate disposition of the case.190/

Commerce calculated a dumping margin of 20.40% for the Singapore Respondent NMB/Palmec based on prices of charged for that producer's ball bearings in a surrogate third-country market, Japan.191/ However, this is not the end of the inquiry respecting the effects of unfair trade practices on prices of the Singapore imports for I have also concluded that we are required in these investigations to cumulatively assess the effects of subsidized imports with those resulting from dumping imports. For the reasons previously explained, I have also concluded that it is appropriate in this case to use the full amount of the subsidy margin as the measure of the extent to which subsidization affected the prices of the subject imports. Accordingly, for the purposes of analyzing the effects of the unfair trade practices subject to investigation on prices of the subject Singapore imports, I have concluded that subsidization caused the price of the Singapore imports to decline by an additional amount corresponding to the total subsidy margin of 2.34% that was calculated by Commerce for Singapore.

190/ Under other circumstances, different treatment of such margins might be appropriate. I need not address here, however, the issues that be germane in resolving that question.

191/ Report at A-22, Table 2; International Trade Administration's Final Determination of Sales at Less than Fair Value: Ball Bearings and Parts Thereof from Singapore at 6.

The dumping margin that Commerce calculated for Thailand -- 20.40% 192/-- was far lower than that calculated for most of the other Respondents in these investigations. However, this figure was the product of a constructed value calculation.193/ Moreover, as previously noted, Commerce concluded that the Thai imports were subsidized at a rate totalling 21.54% ad valorem.194/ For the reasons previously stated in my discussion of the subject Singapore imports, in analyzing the effects of the unfair trade practices subject to investigation on prices of the subject imports, I have concluded that subsidization caused the price of the subject Thai imports to decline by an additional amount corresponding to that subsidy margin.

The Swedish Respondent SKF was assigned the largest of all of the ball bearing dumping margins calculated by Commerce: 180%.195/ This is the same margin that was alleged in the Petition, and Commerce used this data as the "best available information" because it found insufficient home market sales by SKF for purposes of price-to-price comparisons, and the Department was unable to verify the information that Respondent

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192/ See Report at A-22, Table 2.

193/ See Final Determination of Sales at Less Than Fair Value: Ball Bearings and Parts Thereof from Thailand at 11.

194/ See Report at A-19.

195/ Report at A-22, Table 2.

provided to Commerce respecting sales by SKF in a third-country market, West Germany.196/

Finally, in the case of the United Kingdom, Respondents RHP and SKF had, respectively, dumping margins of 44.12% and 61.14%.197/ The SKF margin was a constructed value figure; the RHP margin was based in part on constructed value data.198/ For both producers, home market sales substantially outweighed sales in the United States.199/ Accordingly, in both cases, dumping caused the prices of the subject imports to decline by an amount corresponding to all or nearly all of the dumping margin.

Large decreases in the prices of subject imports do not, however, necessarily produce correspondingly large increases in sales of those imports. The extent to which decreases in subject import prices cause increases in subject import sales is, in large measure, a function of the degree to which the imported goods are substitutable for the domestically produced product. As explained in more detail below, the substitutability of the

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196/ See Final Determinations of Sales at Less than Fair Value: Antifriction Bearings (other than Needle Roller Bearings, Spherical Plain Bearings, and Tapered Roller Bearings and Parts Thereof from Sweden) ("Commerce Sweden Determination") at 8; Appendix B of Commerce Determination at 181-84.

197/ Report at A-22, Table 2.

198/ International Trade Administration's Final Determinations of Sales at Less Than Fair Value: Antifriction Bearings (Other Than Spherical Plain Bearings and Tapered Roller Bearings) and Parts Thereof from the United Kingdom ("Commerce U.K. Determination") at 11-14.

199/ See Foreign Producers' Responses to Commission's Request for Data.

subject imports for the domestic like product was even less than that for most other categories of bearings; together with other evidence respecting the markets for these products, including the change in imports prices, this evidence indicates that a relatively small change in the prices and sales of domestic like products resulted from the unfairly traded imports at issue. In other words, the other factors discussed below prevented the rather substantial decreases in import prices that resulted from the unfair trade practices from producing similarly large increases in import volumes.

b. Prices and Sales of the Domestic Like Product

As previously discussed, the effect of imports on the domestic like product's prices and sales is determined in large measure by the evidence bearing on three issues: the share of the domestic market held by the subject imports; the degree to which consumers see the imported and domestic like products as similar; and the degree to which domestic consumers change their purchasing decisions for these products based on variations in the prices of those products. The record evidence relating to these three issues is examined in turn.

During the period in which Commerce found that dumping was occurring, the subject imports accounted for a sizable percentage of total U.S. consumption of ball bearings and parts and components thereof. In 1987 and the first nine months of 1988, the imports accounted, respectively, for 23.8% and 27.0% of the

value200/ of ball bearings (and parts and components thereof) consumed in the United States.201/

As previously discussed, in these investigations, the record evidence indicates that domestic demand for the antifriction bearings that are the subject of these investigations, including ball bearings, is relatively unresponsive in the short-term or medium-term to changes in the price of those products. Demand for ball bearings, like demand for other bearings, is a derived demand; demand for the bearings is wholly a function of demand for the products of which the bearings are a part.202/ In general, the cost of antifriction bearings, including ball bearings, represents only a small percentage of the cost of those finished products.203/ Furthermore, the record evidence

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200/ Data on quantity-measured market shares would not be meaningful because, as previously noted, substantial amounts of ball bearing parts and components, which can not be readily integrated into such data, were imported from various subject countries during the period covered by our investigation.

201/ Report at A-115, Table 38. The market shares of the nine subject countries during these periods were as follows:

	1987	Interim 1988
France	1.0%	1.1%
Italy	1.4%	1.4%
Japan	12.4%	14.8%
Romania	.7%	.8%
Singapore	1.3%	1.4%
Sweden	.7%	.5%
Thailand	.9%	1.2%
United Kingdom	.8%	1.0%
West Germany	4.3%	4.7%

202/ See Report at A-4-11; OE Posthearing Memorandum at 22.

203/ OE Posthearing Memorandum at 22.

indicates for the most part that other kinds of bearings (and products other than antifriction bearings that serve to reduce friction) do not provide reasonably good substitutes in those applications for which ball bearings are used.204/

Much of the evidence adduced with respect to the effect of imported ball bearings on domestic bearings' prices and sales concerned the similarity or dissimilarity of the imported and domestic bearings. The weight of this evidence reveals that the substitutability of imported ball bearings for domestically produced ball bearings was limited for a number of reasons. First, for the reasons previously stated in my discussion of the like product issue, notwithstanding the fact that antifriction bearings are, with few exceptions, manufactured to meet industry standard specifications, ball bearings as a group are by no means a "commodity" product. As previously discussed, "ball bearings" in fact encompass two separate like products: superprecision ball bearings, and non-superprecision ball bearings.205/ Products included in one of these like product groups can not be substituted easily, if at all, for products in the other group. This substantially limits the substitutability of imported ball bearings for domestically produced ball bearings. For example, a domestically produced superprecision ball bearing used in

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204/ See, e.g., OE Posthearing Memorandum at 22-23.

205/ Indeed, the Commission majority found that this category includes a third like product, wheel hub units, which I believe requires treatment as a separate like product. See discussion at infra, text at notes 54-63.

aerospace applications is not at all substitutable for an imported precision ball bearing used in heavy construction equipment. Countless other examples could be given. Similarly, within these like product categories, there will be little substitution of one specific type of bearing for another. This is more true of ball bearings than other bearings because ball bearings is a far larger category, covering many more, disparate, specific bearings. These examples would be of far less significance if both domestic producers and exporters produced the same bearings; even if substitution within the class of domestic or imported bearings was limited dramatically by the heterogeneity of products in each class, the products would be substitutable readily between the class of domestic bearings and the class of imported bearings. This, however, is not the case. Specific bearings are sometimes made only in the United States or abroad,206/ and certainly there are substantial differences in the mix of products within each of these classes. Given these variations, the disparate uses, prices and dimensions of the various types of bearings included in the broad category of ball bearings significantly limit the extent to which imported "ball bearings" are substitutable for domestically produced "ball bearings".

Second, the very limited availability of many types of ball bearings from either domestic or imported sources in the period

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206/ See, e.g., Prehearing Brief of Cooper at Appendix A (explaining that tenter bearings are not made in the United States).

during which Commerce determined that dumping was occurring -- that is, in 1987 and the early part of 1988 -- served to limit substantially the ability of domestic consumers of ball bearings to substitute imported ball bearings for the domestic product or vice versa. During this period, virtually all domestic and foreign producers were reporting long lead times, often exceeding six months.207/ Furthermore, because antifriction bearings (including ball bearings) are, as previously noted, essentially indispensable in the uses to which they are put, late deliveries will often result in a slowdown or shutdown of production, with attendant, potentially dire financial and other consequences for the bearings user and its employees. Under these circumstances, the ability of domestic consumers of ball bearings to substitute imported bearings for domestically made bearings, or vice versa, in response to variations in the prices of those products was quite limited. Considering together all the evidence regarding the markets for these products, I find that the limited degree of substitutability prevented the availability of the subject bearings at reduced prices consequent to dumping and subsidies from having more than minimal effect on either prices or sales of the domestic like product.

207/ See OE Posthearing Memorandum at 20. There is substantial record evidence that suggests, however, that bearings consumers perceived that the delivery problems that they experienced with domestic bearings producers were substantially more prevalent and acute than those faced when purchasing the imported product. Id. at 21; Tr. at 170, 172-73, 187-88, 196, 238, 241, 243, 258 & 284. This served as an important, additional limit on the substitutability of the imported and domestic products.

c. Investment and Employment

As previously discussed, in Title VII investigations, the data on investment and employment trends that is compiled by the Commission, when viewed in conjunction with the other record evidence that has been developed, may assist the Commission in assessing the effects that unfairly traded imports have had on the domestic industry, but will rarely, if ever, by themselves form a sufficient basis for judgment on that ultimate issue. Our data on ball bearing-related investment and employment in these investigations provide a good illustration of that point. Domestic firms involved in the production of ball bearings were consistently profitable over the period covered by our investigation, but the total operating income reported by these companies declined significantly from 1985 to 1987, from approximately $126 million in 1985 to about $89 million in 1987.208/ However, a closer inspection of these data reveals that [* *].209/ [* * * * * * * * * *] has not supported the Petition initiating these investigations, and there is no evidence in the record suggesting that the decline in [* * * * * * * * * * * * * * *] was in any way related to the subject imports.

208/ See Report at A-56, Table 15. Operating income also fell slightly in the first nine months of 1988 relative to the same period in 1987. Id.

209/ [Footnote contains confidential information].

By other important measures, domestic firms involved in the production of ball bearings continued to perform quite well. Research and development expenditures rose significantly and consistently over the period covered by our investigation, increasing from approximately $18 million in 1985 to over $20 million in 1988 (and to about $17.8 million in the first nine months of 1988 compared to about $15.1 during the comparable period in 1987).210/ Capital expenditures increased dramatically from 1985 to 1987, before falling back in the first nine months of 1988 (compared to the same nine-month period in 1987).211/

The data on employment trends collected by the Commission are mixed. The number of production and related workers involved in the production of ball bearings decreased by about 9.7% from 1985 to 1987, but increased by about 5.1% in the first nine months of 1988 (when the LTFV and subsidized sales of ball bearings were found to have taken place) compared to the comparable period in 1987.212/ The hourly wage paid to such workers increased.213/ Thus, the employment data as a whole are not strikingly positive. Still, there is nothing in these data that would support the conclusion that the subject imports were responsible for any fall-off in employment that occurred, and

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210/ Id. at A-69.

211/ Id. at A-67, Table 22.

212/ Id. at A-48, Table 12.

213/ Id. at A-51, Table 12.

there is much record evidence, previously-discussed, that makes such an inference highly implausible.

The most difficult question in these investigations is whether the relatively slight effects of the LTFV and subsidized ball bearings on the domestic industry are sufficient to be material within the meaning of Title VII. The statute's negative definition of "material" as "not inconsequential, immaterial, or unimportant"214/ suggest that a low threshold for injury was contemplated. I have discussed before the factors that influence our judgment as to whether that threshold has been met.215/ In this instance, I do not believe the evidence indicates effects of the magnitude that has characterized affirmative determinations by the Commission.

3. Spherical Roller Bearings

In these investigations, I have also made a negative determination respecting the subject less than fair value imports of both superprecision and non-superprecision spherical roller bearings from West Germany, France, Italy, Japan, Rumania, Singapore, Sweden and the United Kingdom. As in the case of ball bearings, the Commission has been unable to compile certain key data necessary to perform separate, meaningful analyses of the effects of LTFV and subsidized imports of superprecision spherical roller bearings on the domestic industry producing superprecision spherical roller bearings, and the effects of

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214/ 19 U.S.C. § 1677(7)(A).

215/ See discussion, supra, text at notes 119-23.

unfairly traded imports of non-superprecision spherical roller bearings on the domestic industry producing non-superprecision spherical roller bearings.216/ As a result, the effects of the two types of spherical roller bearings must be considered by examining the effects of the subject spherical roller bearing imports on domestic production of all spherical roller bearings.217/

a. Volumes and Prices of Subject Imports

The volume of imports of finished spherical roller bearings from the subject countries increased over the period covered by our investigation. In 1985, such imports amounted to 196,000 units.218/ By 1987 and during the first nine months of 1988, periods encompassing the six-month period during which Commerce determined dumping took place, imports of finished spherical roller bearings from these countries had increased, respectively,

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216/ As with ball bearings, we do not have separate data on the volume of imports and, consequently, data on the domestic market share, of the subject imported superprecision spherical roller bearings and non-superprecision spherical roller bearings.

217/ This treatment is consistent with Congress' direction that we use data from the narrowest product line for which data are available when sufficient data on the like product per se are not available. See 19 U.S.C. § 1677(4)(D).

I note that the record evidence before us indicates that there may have been relatively little domestic production of superprecision spherical roller bearings. See Report at Table B-7. Petitioner did not argue, however, that the subject imports materially retarded the establishment of a domestic industry, and the record is, in my view, devoid of any evidence that would support a finding of material retardation.

218/ Data derived from Report at A-76, Table 27; A-81, Table 28; A-86, Table 29; A-90, Table 30; A-95, Table 31; A-98, Table 33; A-101, Table 35.

to 220,000 units in the full year and 187,000 units in the partial year (compared to about 162,000 units in the first nine months of 1987).219/ During 1987 and the first nine months of 1988, West Germany and France accounted for the largest volumes of imports.

The quantity data for finished spherical roller bearings are not, however, the most reliable measure of the volume of imports because they do not reflect imports of parts and components, which were quite large for many of the countries involved throughout the period covered by our investigation. The data that the Commission has collected on the value of the subject imports of spherical roller bearings (and parts and components thereof) are, therefore, more meaningful. These value data suggest that the volume of imports actually decreased over the period covered by our investigation: from approximately $32 million in 1985 to about $27 million in 1987.220/ The value of the subject imports increased slightly in the first nine months of 1988, however, compared to the same nine months in 1988 -- from approximately $21 million to about $24 million.221/ West Germany consistently accounted for the largest portion of the value of these imports, with Sweden and Japan a distant second and third, respectively, in the most recent years.222/

219/ Id.

220/ Id. at A-111, Table 37.

221/ Id.

222/ Id.

In our discussion of the other like products, I have noted that, in order to assess the extent to which dumping affected import volumes, it is necessary to examine the effects that dumping had on import prices. In these investigations, the record evidence indicates that dumping resulted in significant decreases in the prices of the subject imports from certain countries, but little or no change in the prices of the imports from several of the other countries.223/

The dumping margins calculated by Commerce for spherical roller bearings were, on the whole, substantially lower than those found for ball bearings (or for spherical plain bearings). For example, the margins found for the Italian, French and British Respondents were all relatively low, with none as high as 20%.224/ Moreover, as previously discussed, in most cases, the actual decrease in the price of subject imports that results from dumping will be less than that reflected by the full amount of the dumping margin. Accordingly, for several of the subject countries, dumping caused only a very small decrease in the price of their exports to the United States. The relevant evidence for each country is summarized below.

Commerce assigned a dumping margin of 36.41% to West German Respondent FAG for its imports of spherical roller bearings.225/

223/ The only spherical roller bearings that were the subject of an affirmative subsidy determination were a very small amount of imports from Singapore.

224/ See Report at A-22, Table 2.

225/ Id.

Because this margin was based upon a finding that FAG charged a higher price for sales in its home market than for sales that it made in the United States,226/ the price of FAG's imports decreased by only a fractional percentage of the dumping margin. However, this fractional percentage was relatively large, for FAG's home market sales of spherical roller bearings [* * * * * * * * *] its sales of such bearings in the United States.227/

A dumping margin of 8.89% was calculated for French Respondent SKF's imports of spherical roller bearings.228/ This margin was also based upon a finding that different prices were charged in the U.S. and France.229/ The actual price decrease resulting from dumping was, as explained earlier, less than that reflected in the full amount of the dumping margin. However, as SKF made [*********] sales in its home market than in the United States, the actual percentage decrease was a [*****] percentage of the full dumping margin.230/

The dumping margins found by Commerce for Italian Respondents FAG and ICSA were 18.51% and 5.09%, respectively.231/ FAG's margin was based in part on constructed value; ICSA's was

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226/ Commerce FRG Determination at 20-21.

227/ See Foreign Producers' Response to Commission's Request for Data.

228/ Report at A-22, table 2.

229/ Commerce France Determination at 16-17.

230/ See Foreign Producers' Responses to Commission's Request for Data.

231/ Report at A-22, Table 2.

based entirely on differences in actual sales prices.232/ Accordingly, dumping caused a decrease in the price of FAG's imports corresponding to the full amount of its dumping margin, while causing ICSA's prices to decline by only a fractional percentage of the amount reflected in its dumping margin.

The dumping margins calculated by Commerce for the Japanese Respondents varied widely, ranging from 5.81% for NTN, to 22.15% and 22.76%, respectively, for NSK and Nachi, to 40.18% for Koyo.233/ The NSK and NTN margins were calculated, in part, on the basis of constructed value.234/ The Koyo and Nachi margins were based on actual price comparisons.235/ Home market sales of spherical roller bearings by all four firms substantially outweighed their sales of such goods in the United States.236/ Accordingly, for each firm, the decrease in the price of their imports that resulted from dumping was a fractional percentage corresponding to a large portion of their respective dumping margins.

A dumping margin of 64.81% was assigned to the Romanian

232/ Commerce Italy Determination at 16-17.

233/ Report at A-22, Table 2.

234/ Commerce Japan Determination at 27-28.

235/ Id.. See Appendix B of Commerce Determination at 168-69; Preliminary Commerce Japan Determination, 53 Fed. Reg. 45350 (Nov. 9, 1988).

236/ See Foreign Producer's Responses to Commission's Request for Data.

Respondent.237/ As in the case of ball bearings, this margin was a constructed value margin computed on the basis of factors of production valued in Portugal.238/ Accordingly, I have assumed that dumping caused the price of the Romanian imports to decline by the full amount of the dumping margin.

Swedish Respondent SKF was assigned a huge dumping margin of 140%.239/ This margin was the margin alleged in the Petition and was used by Commerce as the best information available in light of the Department's inability to verify the data that SKF supplied for third-country sales in West Germany.240/

Finally, Commerce calculated a dumping margin of 7.69% for British Respondent SKF.241/ This margin was based on actual differences in prices of sales made by SKF in the United Kingdom and in the United States.242/ Accordingly, dumping caused the price of SKF's imports to decline by only a fractional percentage of the amount reflected in its dumping margin. Because SKF's sales in its home market were [**********] than its

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237/ Report at A-22, Table 2.

238/ Commerce Romania Determination at 10.

239/ Report at A-22, Table 2.

240/ Appendix B of Commerce Determinations at 187-88.

241/ Report at A-22, Table 2.

242/ Commerce U.K. Determination at 16.

sales in the United States, however, this percentage was [**********].243/

Accordingly, dumping caused decreases in the prices of the subject spherical roller bearing imports that were, on the whole, low to moderate.244/ The evidence suggests that these price changes did not produce significant increases in sales of those imports. The extent to which decreases in subject import prices cause increases in subject import sales is, in large measure, a function of the degree to which the imported goods are substitutable for the domestically produced product. Although not so limited as in the case of ball bearings, the substitutability of the subject imports for the domestic like product, in turn, was low for reasons similar to those explained above in the discussion of the effects of the subject imports of ball bearings on prices and sales of domestically produced ball bearings.

b. Prices and Sales of the Domestic Like Product

As previously discussed, the effect of imports on the domestic like product's prices and sales is determined in large part by the evidence bearing on three issues: the degree to which consumers see the imported and domestic like products as similar; the degree to which domestic consumers change their purchasing decisions for these products based on variations in the prices of

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243/ See Foreign Producers' Responses to Commission's Request for Data.

244/ A relatively large decrease occurred only for the imports from Sweden.

those products; and the share of the domestic market held by the subject imports.

The evidence relating to the first two of these three issues, discussed above in the context of ball bearings, is generally relevant here. The only issue on which the evidence relevant to an assessment of the effect of the subject imports on prices and sales of the domestically produced product is substantially different than that discussed in the context of ball bearings relates to the magnitude of the imports' market share. The evidence on that issue, together with the other evidence relevant to these bearings' price and sales effects, suggests that the imported spherical roller bearings had even less effect on prices and sales of domestically made spherical roller bearings than the subject imports of ball bearings had on prices and sales of the domestic like products corresponding to those imports. During the period in which Commerce found that dumping was occurring, the domestic market share of the subject imports of spherical roller bearings was far lower than was the domestic market share of the subject imported ball bearings. In 1987 and the first nine months of 1988, the imports accounted, respectively, for 12.2% and 11.5% of the value 245/ of spherical roller bearings (and parts and components thereof) consumed in

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245/ Data on quantity-measured market shares would not be meaningful because, as previously noted, substantial amounts of spherical rolling bearing parts and components, which cannot easily be integrated with other quantity data, were imported from various subject countries during the period covered by our investigation.

the United States, as compared to 23.8% in 1987 and 27.0% in interim 1988 in the case of ball bearings.246/ Even more than in the case of ball bearings, the relevant record evidence considered as a whole indicates that the subject imports did not have a significant effect on prices or sales of the corresponding domestic like products.

c. Investment and Employment

The data that the Commission has collected respecting the financial performance of the domestic industries producing spherical roller bearings are, on balance, consistent with the conclusion otherwise suggested by the record evidence -- that is, that the subject imports did not cause material injury to the domestic industry. Domestic producers of spherical roller bearings reported substantial increases in operating income throughout the entire period covered by our investigation. In 1985, operating income was about $26 million.247/ By 1987,

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246/ Report at A-115, Table 38. The market shares of the nine subject countries during these periods were as follows:

	1987	Interim 1988
France	.6%	.6%
Italy	.8%	.9%
Japan	1.7%	1.6%
Romania	1.3%	.4%
Sweden	2.1%	2.1%
Singapore	*/	*/
United Kingdom	.9%	.4%
West Germany	4.8%	5.5%

*/ Less than .05%.

Id.

247/ Report at A-59, Table 16.

operating income had grown to approximately $45 million.248/ In the first nine months of 1988, operating income was over $7 million higher than it was during the comparable nine-month period in 1987. Significantly, in 1987, the overall return on assets of domestic producers of spherical roller bearings was quite healthy -- in excess of 30%.249/

The employment data present more of a mixed picture. As in the case of ball bearings, the number of production and related workers declined somewhat (by about 16%) before increasing in interim 1988.250/ The average hourly wage increased significantly, however -- by about 11.5% from 1985 to interim 1988.251/ As in the case of ball bearings, this mixed evidence is by no means sufficient to outweigh the other record evidence indicating that the subject imports did not cause material injury to the domestic industries producing spherical roller bearings.

4. Cylindrical Roller Bearings

I have also made a negative determination respecting the subject less than fair value imports of both superprecision and non-superprecision cylindrical roller bearings from West Germany, France, Italy, Japan, Sweden and the United Kingdom. As in the case of ball bearings and spherical roller bearings, the Commission has, despite its best efforts, not been able to obtain

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248/ Id.

249/ Id. at A-65, Table 21.

250/ Id. at A-48, Table 12.

251/ Id. at A-51, Table 12.

certain important data that would be needed to analyze separately the effects of LTFV imports of superprecision cylindrical roller bearings on the domestic industry producing superprecision cylindrical roller bearings, and the effects of LTFV imports of non-superprecision cylindrical roller bearings on the domestic industry producing non-superprecision cylindrical roller bearings.252/ As a result, the effects of the two types of cylindrical roller bearings must be considered by examining the effects of the subject cylindrical roller bearing imports on domestic production of all cylindrical roller bearings.253/

a. Volume and Prices of the Subject Imports

The volume of imports of finished cylindrical roller bearings from the subject countries remained essentially stable over most of the period covered by our investigation, before rising in the first nine months of 1988. In 1985, such imports amounted to 966,000 units.254/ By 1987, imports had increased

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252/ As with ball and spherical roller bearings, we do not have separate data on the volume of imports and, consequently, data on the domestic market share, of the subject imported superprecision cylindrical roller bearings and precision cylindrical roller bearings.

253/ This treatment is consistent with Congress' direction that we use data from the narrowest product line for which data are available when sufficient data on the like product per se are not available. See 19 U.S.C. § 1677(4)(D).

254/ Data derived from Report at A-77, Table 27; A-82, Table 28; A-87, Table 29; A-91, Table 30; A-98, Table 33; A-102, Table 35. These figures exclude Italy, which reported less than 500 units of imports of cylindrical roller bearings throughout the period covered by our investigation.

only slightly, to 970,000 units.255/ In the first nine months of 1988, however, imports increased markedly, to a total of 1,298,000 units.256/ Throughout the period covered by the investigation, West Germany and Japan accounted for by far the largest volumes of imports.

As with many of the other types of bearings, these quantity data for finished spherical roller bearings are not the most reliable measure of the volume of imports because they do not reflect the large volume of imports of parts and components that occurred throughout the period covered by our investigation; the more meaningful data are those that the Commission has collected on the value of the subject imports (including parts and components). These data indicate more regular increases in the volume of imports: from approximately $19 million in 1985 to about $21 million in 1987, with a further increase in interim 1988 (to approximately $20 million, compared to about $18 million during the comparable nine-month period in 1987).257/ West Germany consistently accounted for [******] of the value of the imports from the subject countries, trailed by Japan and the United Kingdom.258/

As previously explained, in order to assess the extent to which dumping affected import volumes, it is necessary to examine

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255/ Id.

256/ Id.

257/ Id. at A-112, Table 37.

258/ Id.

the effects that dumping had on import prices. In these investigations, the record evidence indicates that dumping resulted in decreases in the prices of the subject imports that were, on the whole, greater than those that took place for spherical roller bearings, but significantly less than those experienced by ball bearings. The relevant data for the various subject countries are summarized below.

In the case of West Germany, the margins reported for the three subject producers were all relatively large: 52.43% for FAG and INA and 76.27% for SKF.259/ The FAG margin was based in part on constructed value, as was INA's, for INA was assigned FAG's margin as the best information available.260/ SKF was assigned as best information available its preliminary investigation margin, which was, in turn, based on differences in actual sales prices reported by Petitioner.261/ However, as all three of the West German producers made far more sales in their home market than in the United States, the prices of the imports of all three producers declined by an amount closely corresponding to the full amount of the dumping margin consequent to dumping.262/

259/ Report at A-22, Table 2.

260/ Commerce FRG Determination at 21; Appendix B of Commerce Determination at 183.

261/ App. B of Commerce Determination at 183; Preliminary Commerce FRG Determination, 53 Fed. Reg. 45,359 (1988).

262/ See Foreign Producer's Responses to Commission's Request for Data.

The dumping margins calculated for French Respondents INA and SNR were 11.02% and 18.37%, respectively.263/ In both cases, these figures were derived from differences in actual sales prices.264/ However, as was the case with the West German Respondents, home market sales by the French Respondents were far greater than their sales in the United States.265/ Consequently, dumping caused the prices of the French producers to decline by an amount closely corresponding to the full amount of the dumping margin.

Commerce assigned a huge 212.45% constructed value dumping margin to Italian Respondent SKF.266/ Accordingly, for the reasons previously indicated, I have analyzed the effects of dumping by assuming that the price of SKF's imports declined by the full amount of the dumping margin with the recognition that this probably overstates the actual effect that dumping had on the prices of the imports at issue.

The dumping margins calculated by Commerce for the Japanese Respondents varied widely, ranging from as low as 4% for Nachi, to as high as 51.21% for Koyo.267/ The margins for the other two Japanese Respondents, NSK and NTN, were 12.28% and 9.30%,

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263/ Report at A-22, Table 2.

264/ See Commerce France Determination at 17.

265/ See Foreign Producers' Responses to Commission's Request for Data.

266/ Report at A-22, Table 2; Commerce Italy Determination at 18.

267/ Report at A-22, Table 2.

respectively.268/ The NSK and NTN margins were calculated in part on the basis of constructed value.269/ The Koyo and Nachi margins were based on actual price comparisons.270/ Home market sales of cylindrical roller bearings by all four firms substantially outweighed their sales of such goods in the United States.271/ Accordingly, for each firm, the record supports an inference that the prices of their imports declined consequent to dumping by a percentage corresponding to a large portion of their respective dumping margins.

Swedish Respondent SKF was determined to have a dumping margin of 13.69%.272/ This margin calculation was based on differences in actual sales prices in the U.S. and Sweden.273/ Accordingly, the price of SKF's imports decreased consequent to dumping by only a fractional percentage of the dumping margin; however, because SKF's home market sales were [* *], this percentage was [**********].274/

268/ Id.

269/ Commerce Japan Determination at 29.

270/ Id. at 28-29. See Appendix B of Commerce Determination at 168-69; Preliminary Commerce Japan Determination, 53 Fed. Reg. 45350 (Nov. 9, 1988).

271/ See Foreign Producer's Responses to Commission's Request for Data.

272/ Report at A-22, Table 2.

273/ Commerce Sweden Determination at 8.

274/ See Foreign Producers' Responses to Commission's Request for Data.

Finally, a dumping margin of 43.44% was calculated for British Respondent RHP.275/ As in the case of Swedish Respondent SKF, this dumping margin was the product of a comparison of actual sales prices in the United States and in the home market.276/ Nevertheless, dumping produced a decline in the price of RHP's imports corresponding to almost the full amount of the dumping margin because RHP's home market sales accounted for [* *].277/

On balance, then, although dumping resulted in only small decreases in the prices of the subject imports from certain countries, in other instances dumping resulted in price decreases that were significant. Nevertheless, given my earlier conclusions respecting the substitutability of imported for domestically produced antifriction bearings -- which, for cylindrical roller bearings is no greater than for spherical roller bearings -- these price changes did not produce any correspondingly significant increases in the volumes of the subject imports.

b. Prices and Sales of the Domestic Like Product

The effects of the subject imports on the prices and sales of domestically produced cylindrical roller bearings were not

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275/ Report at A-22, Table 2.

276/ Commerce U.K. Determination at 18.

277/ See Foreign Producers' Responses to Commission's Request for Data.

substantially different than those experienced in the domestic market for spherical roller bearings. For the reasons previously stated, the evidence bearing on two of the three issues critical in making such an assessment -- the degree to which consumers see the imported and domestic like products as similar, and the degree to which domestic consumers change their purchasing decisions for these products based on variations in the prices of those products -- is equally relevant here. The remaining issue that requires additional consideration is the magnitude of the imports' market share. The evidence on that issue suggests that the imported cylindrical roller bearings did not have a significantly greater effect on prices and sales of domestically made cylindrical roller bearings than the subject imports of spherical roller bearings had on prices and sales of the domestic like products corresponding to those imports.278/ During the period in which Commerce found that dumping was occurring, the domestic market share of the subject imports of cylindrical roller bearings was more or less the same as in the case of the subject imported spherical roller bearings. In 1987 and the first nine months of 1988, the imports accounted, respectively, for 10.3% and 12.6% of the value 279/ of cylindrical roller

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278/ The effects were perhaps marginally greater, stemming in large part from the somewhat greater decreases in prices of cylindrical roller bearings that took place as a result of dumping.

279/ Data on quantity-measured market shares would not be meaningful because, as previously noted, substantial amounts of cylindrical rolling bearing parts and components, which cannot easily be integrated with other quantity data, were imported from

bearings (and parts and components thereof) consumed in the United States, as compared to 12.2% in 1987 and 11.5% in interim 1988 in the case of spherical roller bearings.280/ As in the case of spherical rolling bearings, the relevant record evidence considered as a whole indicates that the subject imports did not have a significant effect on prices or sales of the corresponding domestic like products.

c. Investment and Employment

The investment and employment data collected by the Commission for cylindrical roller bearings is, in many ways, even more positive than it is for ball bearings and for spherical roller bearings. While not independently probative, these data are in keeping with a conclusion that dumping did not materially injure a domestic industry. Domestic firms producing cylindrical roller bearings reported a $660,000 operating loss in 1986, but became increasingly profitable beginning the following year.

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various subject countries during the period covered by our investigation.

280/ Report at A-116, Table 38. The market shares of the nine subject countries during these periods were as follows:

	1987	Interim 1988
France Italy Japan Sweden United Kingdom West Germany	[Individual country data is confidential.]	

*/ Less than

Id.

Operating income of about $2.8 million was reported in 1987, followed by an increase to approximately $7.3 million in the first nine months of 1988 (compared to $825,000 during the comparable nine-month period in 1987).281/

The employment data, on balance, reveal similarly positive trends. Total employment of production and related workers rose by nearly 9% from 1985 to 1987, and was 8% higher in the first nine months of 1988 than in the comparable nine-month period in 1987.282/ The average hourly wage fell somewhat in the first nine months of 1988, but remained above 1985 levels.283/

In short, there is, in my view, simply no record evidence that would support a finding that the domestic industries producing cylindrical roller bearings have been materially injured by reason of the subject LTFV imports.

5. Needle Roller Bearings

In these investigations, I have made a negative determination respecting the subject less than fair value imports of both superprecision and non-superprecision needle roller bearings from West Germany, France, Italy, Japan, and the United Kingdom. As in the case of certain other products discussed above, we do not have available to us certain important information that would be required in order to analyze meaningfully the effects of LTFV imports of superprecision needle

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281/ Report at A-60, Table 17.

282/ See Report at A-48, Table 12.

283/ Id. at A-51, Table 12.

roller bearings on the domestic industry producing superprecision needle roller bearings, and the effects of LTFV imports of precision needle roller bearings on the domestic industry producing precision needle roller bearings.284/ As a result, the effects of the two types of needle roller bearings must be considered by examining the effects of the subject needle roller bearing imports on domestic production of all needle roller bearings.285/

a. Volume and Prices of the Subject Imports

The volume of imports of finished needle roller bearings from the subject countries increased significantly over the period covered by our investigation. In 1985, such imports amounted to almost [***] million units.286/ By 1987, imports had increased to about [***] million units.287/ In the first nine

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284/ As with many of the other types of bearing previously discussed, we do not have separate data on the volume of imports and, consequently, data on the domestic market share, of the subject imported superprecision needle roller bearings and precision needle roller bearings.

285/ This treatment is consistent with Congress' direction that we use data from the narrowest product line for which data are available when sufficient data on the like product per se are not available. See 19 U.S.C. § 1677(4)(D).

I note that the record evidence before us does not clearly indicate where there is domestic production of superprecision needle roller bearings. See Report at Table B-17. Petitioner did not argue, however, that the subject imports materially retarded the establishment of a domestic industry producing such bearings, and the record is, in my view, devoid of any evidence that would support a finding of material retardation.

286/ Data derived from Report at A-77, Table 27; A-82, Table 28; A-87, Table 29; A-91, Table 30; A-102, Table 35.

287/ Id.

months of 1988, imports increased again, relative to the comparable nine-month period the year before, to a total of approximately [***] million units, compared to about [***] million units in interim 1987.288/ During the latter part of the period covered by the investigation, Japan accounted for the largest volume of imports, trailed by West Germany and France.

As with other types of bearings previously discussed, value data, rather than the quantity data for finished bearings, provide a truer picture of the volume of imports because they reflect the large volume of imports of parts and components that occurred throughout the period covered by our investigation. These data also reveal substantial increases in the volumes of imports. The value of the subject imports of needle roller bearings (and parts and components thereof) increased from approximately $[***] million in 1985 to about $[***] million in 1987, before levelling off in interim 1988 (with a value of about $[***] million compared to roughly $[***] million during the comparable nine-month period in 1987).289/ During the most recent period covered by the investigation, Japan and West Germany each accounted for about one-third of the value of the imports from the subject countries.

As previously noted, in order to assess the extent to which dumping affected import volumes, it is necessary to examine the effects that dumping had on import prices. In these

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288/ Id.

289/ Id. at A-112, Table 37.

investigations, the record evidence indicates that dumping resulted in significant decreases in the prices of the subject imports of needle roller bearings. The relevant data for the various subject countries are summarized below.

Commerce calculated a dumping margin of 107.50% for West German Respondent FAG;290/ this margin was based in part on constructed value.291/ West German Respondent SKF was assigned a similarly large margin of 105.05%,292/ using FAG's calculated margin as the best information available.293/ West German Respondent INA's 41.82% dumping margin was based on differences in actual sales prices in the U.S. and West German markets.294/ Because all three West German producers made far more sales in their home market than in the U.S. market,295/ the prices of the imports of all three firms decreased consequent to dumping by a percentage closely corresponding to the full amount of their respective dumping margins.

A very small dumping margin of .65% was calculated for

290/ Report at A-22, Table 2.

291/ Commerce FRG Determination at 22.

292/ Report at A-22, Table 2.

293/ Appendix B of Commerce Determination at 183.

294/ Report at A-22, Table 2; Commerce FRG Determination at 22.

295/ See Foreign Producers' Responses to Commission's Request for Data.

French Respondent INA.296/ Accordingly, dumping caused only a de minimis decrease in the price of that producer's imports.

Italian Respondent SKF had a 73.97% constructed value dumping margin.297/ Dumping therefore caused SKF's imports to decline by a percentage corresponding to the full amount of its dumping margin.

Substantial dumping margins based on differences in actual sales prices were assigned to Japanese Respondents Koyo and NTN; in each case, the calculated margin was 163.35%.298/ The prices of the imports of both of these producers declined by a percentage closely corresponding to the full amount of their dumping margins because home market sales accounted for [* * * * * * * * * * * *] of the sales made by these producers in their respective, combined U.S. and Japanese markets.299/

Finally, British Respondent INA was assigned as best information available the 174.17% dumping margin that Commerce calculated for INA in the preliminary investigation.300/ This margin was based on differences in actual sales prices in the

296/ Report at A-22, Table 2.

297/ Report at A-22, Table 2; Commerce Italy Determination at 19.

298/ Report at A-22, Table 2; Commerce Japan Determination at 30-31.

299/ Foreign Producers' Responses to Commission's Request for Data.

300/ Report at A-22, Table 2; Appendix B of Commerce Determination at 168; Preliminary Commerce U.K. Determination 53 Fed. Reg. 45,316 (Nov. 9, 1988).

U.K. and U.S. markets.301/ Because INA's sales in its home market were approximately [* * * * * * * *] its sales in the United States, however, the record suggest that dumping caused the prices of INA's imports to decline by a percentage corresponding to [* * * * * *] of its dumping margin.302/

Thus, for most of the producers of the subject needle roller bearings, dumping caused relatively large decreases in the prices of their imports. However, as previously noted, large decreases in the prices of subject imports do not necessarily produce correspondingly large increases in sales of those imports. The extent to which decreases in subject import prices cause increases in subject import sales is, in large measure, a function of the degree to which the imported goods are substitutable for the domestically produced product. Although imported needle roller bearings may be marginally more substitutable for domestic needle roller bearings than is the case with respect to other types of bearings, for reasons similar to those explained above, the substitutability of the subject imports for the domestic like product was quite limited. This fact, together with other evidence discussed below respecting the markets for these products, indicates that a relatively small change in the prices and sales of domestic like products resulted from the unfairly traded imports at issue. In other words, these

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301/ Preliminary Commerce U.K. Determination 53 Fed. Reg. 45,316 (Nov. 9, 1988)

302/ See Foreign Producer's Responses to Commission's Request for Data.

other factors prevented the rather substantial decreases in import prices that resulted from the unfair trade practices from producing similarly large increases in import volumes.

b. Prices and Sales of the Domestic Like Product

The effects of the subject imports on the prices and sales of domestically produced needle roller bearings were not substantially different than those experienced in the domestic markets for spherical roller bearings or cylindrical roller bearings. For the reasons previously indicated, the evidence bearing on two of the three issues critical in assessing those effects -- the degree to which consumers see the imported and domestic like products as similar, and the degree to which domestic consumers change their purchasing decisions for these products based on variations in the prices of those products -- is relevant here as well. The remaining issue requiring additional consideration is the imports' market share. The record evidence on that point indicates that, even taking account of slightly greater substitutability, the imported needle roller bearings had even less significant effects on prices and sales of domestically made needle roller bearings than the subject imports of spherical roller bearings and cylindrical roller bearings had on prices and sales of the domestic like products corresponding to those imports.303/ In 1987 and during

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303/ The effects were perhaps marginally greater, stemming in large part from the somewhat greater decreases in prices of cylindrical roller bearings that took place as a result of dumping.

the first nine months of 1988, periods encompassing the six-month period in which Commerce found that dumping was occurring, the domestic market share of the subject imports of needle roller bearings was even less than it was for spherical roller bearings and cylindrical roller bearings. In 1987, the imports accounted for [***]% of the value 304/ of needle roller bearings (and parts and components thereof) consumed in the United States; during the first nine months of 1988, the import market share declined to [***]%.305/ Thus, as in the case of spherical rolling bearings and cylindrical roller bearings, the relevant record evidence considered as a whole indicates that the subject imports did not have a significant effect on prices or sales of the corresponding domestic like products.

c. Investment and Employment

The investment and employment data collected by the Commission, if not especially probative, are consistent with the conclusion that the subject needle roller bearing imports did not cause material injury to the domestic industries producing such products. The operating income of domestic firms producing needle roller bearings increased from about $[***] million in

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304/ Data on quantity-measured market shares would not be meaningful because, as previously noted, substantial amounts of needle rolling bearing parts and components, which cannot easily be integrated with the other quantity data, were imported from various subject countries during the period covered by our investigation.

305/ Report at A-116, Table 38.

1985 to almost $[***] million in 1987.306/ During the first nine months of 1988, operating income increased substantially relative to the comparable nine-month period in 1987, rising from approximately $[***] million to over $[***] million.307/ The employment data do not reveal any meaningful trends. The number of production and related workers remained virtually unchanged over the period covered by our investigation.308/ Over that same period, the average hourly wage rose by approximately [***]%, however.309/ There is nothing in these data suggesting that the subject imports of needle roller bearings caused material injury to the relevant domestic industries.

6. Wheel Hub Units

There is a notable paucity of record evidence respecting many issues that would be important in assessing the effects of the subject imports of wheel hub units on the domestic industry producing that product. Among other things, we do not have data on employment, capacity utilization or the margins of dumping, if any, applicable to that product. Accordingly, it is not possible to carry out an independent three-part assessment of the impact of the subject wheel hub unit imports on the domestic industry comparable to that set forth for the other like products previously discussed. However, because wheel hub units contain

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306/ Report at A-61, Table 18.

307/ Id.

308/ Id. at A-48, Table 12.

309/ Id. at A-51, Table 12.

ball bearings,310/ consistent with Congress' direction that we use data from the narrowest product line for which data are available when we do not have data on the like product per se, the only real alternative left to us is to analyze the subject imports on the basis of the conclusions that we have reached respecting ball bearings, supplemented where appropriate by the data that is available for wheel hub units.311/

As previously indicated, I have, in fact, made a negative injury determination respecting the subject ball bearing imports. I will not recapitulate my discussion of the effects of ball bearing imports but will limit discussion here to the potential areas of difference between ball bearings and imported wheel hub units' effect on the domestic industry.

There is reason to believe that the effects of the subject imports of wheel hub units on prices and sales of domestically produced wheel hub units were, if anything, less significant than those evident for ball bearings. This is so principally because the domestic share of these imports was appreciably less than that of the subject imports of ball bearings. Specifically, in 1987 and during the first nine months of 1988, the periods encompassing the six-month period when Commerce determined that dumping occurred, imports of wheel hub units from the subject countries accounted, respectively, for only [***]% and [***]% of

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310/ Report at A-8.

311/ See 19 U.S.C. § 1677(4)(D).

the value of domestic wheel hub consumption.312/ By contrast, as previously discussed, the domestic market share of the subject imports of ball bearings was far greater: 23.8% in 1987 and 27.0% in the first nine months of 1988.313/

As previously noted, employment data for wheel hub units are not available. The available financial data indicate that, although domestic production of wheel hub units has remained essentially stable,314/ the profitability of domestic production wheel hub units has [**********]. However, [* *]. While its profitability has [* * * * * * * * * * * * * * * * * *] to the effect of the imports at issue here. As previously discussed, it is apparent that [* * * * * * * * * * *] in profitability is, in large measure if not entirely, the product of [* *]. Accordingly, those data cannot be given great weight. It certainly does not outweigh the other evidence of record -- particularly the various evidence discussed above respecting ball bearings -- suggesting that it is most unlikely that the subject imports of wheel hub units caused injury to the domestic industry producing the corresponding like product.

312/ Report at B-39.

313/ Report at A-115, Table 38.

314/ Report at Table B-22.

7. Slewing Rings

The Commission has been faced with a difficult task in assessing the impact of the subject slewing rings on the domestic industry producing slewing rings, in large part because, as previously noted, slewing rings were included in our investigation by Commerce very late in the day. As with wheel hub units, a three-part analysis of the kind conducted for the various other like products is impossible on the basis of the record evidence before us. Indeed, analysis of slewing rings is even more problematic than in the case of wheel hub units because, unlike wheel hub units, slewing rings do not contain a single type of bearing otherwise subject to these investigations, such as ball bearings. Accordingly, no truly meaningful analysis of the impact of the subject imported slewing risks is possible.

However, I note that the data that is available to us contain, in my view, no evidence upon which we might make an affirmative determination of material injury respecting the subject slewing rings. The limited data that we have on production, total employment, and profitability of the domestic firms that produce slewing rings indicate [* * * * *] by those firms up to, and including, the periods during which Commerce determined that dumping occurred. Although I do not believe that such data can be said to demonstrate the absence of material injury by reason of the subject imports, they certainly do not form the basis for an affirmative finding on that issue.

8. Application of the CADIC Model

In assessing the impact of the subject imports on the various domestic industries, in addition to the evidence previously discussed, I considered information that was presented to us by the parties and by Commission staff relating to the use of the computable market-simulation "Comparative Analysis of the Domestic Industry's Condition Lotus Template System", otherwise known as the "CADIC model".315/ The CADIC model is used to derive estimates of changes in the prices and quantities sold of a domestic industry's like product that occurred, given certain specified data relating to import volumes, dumping margins, and the markets for the imports and the domestic like product. A comprehensive description of the CADIC model is contained in publicly available documents,316/ and copies of the computer

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315/ The analytical framework underlying the CADIC model is explained in detail in Office of Economics, Assessing the Effects on the Domestic Industry of Price Dumping, USITC Memorandum EC-L-149 (May 10 & 18, 1988). The Office of Economics also provided us with certain materials reflecting the staff's application of the model to the facts of this case. Although I found these materials helpful, I have also performed certain independent assessments of the record evidence through use of the model. In using the model, I adjusted the model's parameters in accord with my evaluation of the evidence; as the inferences that I find best fit the evidence do not fully duplicate inferences suggested by Commission staff, the results of these applications of the model do not correspond in every respect to those produced by the staff.

316/ See Office of Economics, Assessing the Effects on the Domestic Industry of Price Dumping, USITC Memorandum EC-L-149 (May 10 & 18, 1988).

program have been available for some time to interested members of the public, including the parties to these investigations.317/

The CADIC model is not intended to, and does not, obviate the need for Commissioners to evaluate evidence respecting the variety of factual issues relevant to our determination. Rather, the CADIC model is designed to provide information that can assist the Commission in assessing the significance of different judgments respecting issues that critically affect our evaluation of injury causation under the criteria set forth in Title VII, such as the substitutability of imported and domestic products and consumers' reactions to changes in prices of the relevant products. Needless to say, each commissioner must ultimately decide what factual inferences should be drawn from the record in a given investigation respecting these and other relevant issues, and each commissioner must also decide what weight to give to the estimates generated through application of the model.

As with all models designed to assist analyses of complex factual settings -- indeed, all efforts to assess in any fashion complex and interrelated evidence -- CADIC incorporates some initial premises about the nature of the markets to be evaluated. Unlike more intuitive forms of analysis, models generally are explicit about these premises. We always must consider whether the premises are close enough to the facts of the instant investigation for the model to yield useful information in the

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317/ An updated version of the program will be made available to the public shortly. Among other things, the updated version is designed to be more "user-friendly" than the existing version.

particular case. When I do not believe that the information generated by the model is useful -- that is, when I find that the premises upon which the model is based are unrealistic in light of the other evidence of record in a particular investigation or that the information necessary to employ the model cannot be reliably inferred from the other evidence of record -- I do not give weight to the estimates that the model produces.318/

In these investigations, various parties questioned whether the CADIC model can assist the Commission in evaluating the facts presented here. I have carefully considered these arguments, along with the analysis of these arguments that has been provided to the Commission by our Office of Economics.319/ For a number of reasons, I have concluded that the arguments challenging the usefulness of the model are not at all well-founded. My evaluation of the major arguments respecting the CADIC model advanced by the parties is set forth below.320/

318/ See, e.g., Certain Granite from Italy and Spain, USITC Pub. 2110, Inv. Nos. 701-TA-289 and 731-TA-381 and 382 (Final) (Aug. 1988).

319/ This analysis is set forth in USITC Memorandum EC-M-145 (April 26, 1989). This document has not been made available to the public because it is a pre-decisional document protected from disclosure under the deliberative-process privilege. Although I am, therefore, not free to comment on the substance of that document here, I note that I believe that the memorandum contains a cogent, well-reasoned analysis by the Commission's professional staff that I found very useful in assessing the record evidence in these investigations.

320/ In the interests of brevity, I will not discuss here certain technical arguments made by the parties that are not central to the question whether the model yields useful information in this case. In so doing, however, I note that I also found these arguments unpersuasive; with few, if any, exceptions, these

First, Petitioner's principal economic consultant, Dr. Robert Pindyck of Analysis Group, Inc., asserted that the CADIC model is not an appropriate tool for analyzing the bearings industry(s) because it "fails to account for the competitive structure of the industry, assuming instead that foreign and domestic producers set prices like monopolists".321/ This argument is premised on a fundamental misconception of the model. The model quite plainly does not assume that domestic producers set prices like monopolists in the United States. To the contrary, the model assumes that the domestic industry is competitive. The supply and demand functions for the domestic industry reflect this competitive premise. Professor Pindyck is correct in describing the CADIC model as treating foreign producers whose goods are under investigation as monopolists insofar as, to economists, that description connotes the presence of some degree of power to affect prices. This does not, however, mean that the foreign producer is in a position that non-economists would describe as monopoly. The model does not assume that foreign producers face no competition in their home markets (although it can accommodate that possibility). Instead

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arguments, like the major arguments raised by the parties, appear to be the product of a misunderstanding of the manner in which the CADIC model actually functions.

321/ Petitioner's Prehearing Brief, submission dated March 22, 1989 by Robert S. Pindyck/Analysis Group, Inc. captioned "Findings to Date on Issues Related to ITC Investigation of Antifriction Bearings (Other than Tapered) ("Petitioner's Prehearing Economic Submission") at 43. Similar arguments were made at the March 30 hearing. See Tr. 101.

the model simply incorporates as a premise the postulate that each firm that is dumping "enjoys more market power at home than in the United States".322/ That premise, like the premise that the domestic market is competitive, appears consistent with the evidence in these investigations.

It is important, in this regard, to note that the CADIC model does not incorporate an assumption that the foreign products are perfectly fungible for one another or for the domestic like product. Thus, there need be no coordination among foreign exporters from different countries for the model to yield useful information; products from each foreign source can be sold to the U.S. market in the manner contemplated by CADIC without assuming cartel behavior. Further, with differentiated products, the competition among domestic and foreign products in the U.S. market need not be identical for each imported product.323/ This observation focuses attention directly on an issue that long has been recognized as critical to assessment of imports' effects on domestic producers: the degree to which U.S. consumers view the imported and domestic products as close substitutes. The CADIC model makes no assumption on this score, and commissioners can employ CADIC using different assessments of the relationship

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322/ See Office of Economics, Assessing the Effects on the Domestic Industry of Price Dumping, USITC Memorandum EC-L-149 (May 10, 1988) at 4-5.

323/ While the differentiated products compete with one another, they do not face identical demand from consumers and other competitors will not impose identical effects on the producers of these products. See, e.g., F. Scherer, supra note 90 at 11, 157-59.

between these products. Moreover, the model can be used with different factual assessments for products from each country involved in an investigation or even for each individual company. So, too, in providing for different parameters for the various products, the model also effectively accommodates various degrees of competition.

Although Dr. Pindyck apparently did not have the opportunity to familiarize himself fully with the CADIC model, his testimony before the Commission at the March 30 hearing in these investigations made it plain that his own view of the manner in which the domestic and foreign markets for bearings function is not, in reality, fundamentally at odds with the premises upon which the model actually operates. As the following exchange at the hearing indicated, Dr. Pindyck does not at all take issue with the notion that the subject foreign bearings producers enjoy a degree of market power in their home market that has enabled them to engage in international price discrimination of the kind posited by the model:

> Vice Chairman Cass: Does the description of the behavior of the foreign enterprises that was given here this morning suggest that some sort of price discrimination is being engaged in that would be necessarily associated with some market power in the foreign market?
>
> Mr. Pindyck: Well, there doesn't have to be market power in the foreign market in the sense that you could simply have a different elasticity of demand. In other words, the nature of demand in the foreign market could be different. It seems, however, to me that there is probably some market power, although I have not tried to determine that.324/

324/ Tr. 106.

Similarly, as Dr. Pindyck indicated in testimony elicited by Commissioner Rohr, Dr. Pindyck's suggested alternative to use of the CADIC is consistent, rather than inconsistent, with the model's actual treatment of the domestic market as competitive:

> Commissioner Rohr: You're a well known name, sir. It's a pleasure to have you here in this room with us. Now, I believe, starting on Page 102 of Petitioner's brief, I'm going to attribute this to you. If it's not you, tell me. Someone has addressed what you've noted here as the Boltuck model. Of course, this is the CADIC model that is used to some extent in this Commission. And I wonder if you could for us summarize the applicability of that economic model to the particular case before us today.
>
> Mr. Pindyck: Well, what we've tried to explain in the report that's attached to the brief is that the model has an implicit assumption that may not be realistic, and that is that producers, foreign producers or domestic producers, act in a kind of monolithic or monopolistic manner. In other words, they face some elasticity of demand and set price accordingly, set some price above cost based on that elasticity.
>
> Given the large number of producers that exist, it seems that that's an extreme assumption that may not be warranted. At the other extreme, we've suggested that one could look at this as a perfectly competitive market in which there are perfectly competitive domestic producers, a very large number, and then just use a simple supply and demand analysis to analyze the impact of dumping.325/

Although the statements by Professor Pindyck do not accurately characterize the CADIC model, the analysis he proposes comes close to the premises actually employed in CADIC. In fact, the alternative analysis he proposed would not fit the facts of these

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325/ Tr. 100-101 (emphasis added). The CADIC model is sometimes referred to by the name of its principal creator, Richard D. Boltuck.

investigations so well as CADIC,326/ and Professor Pindyck acknowledged at the hearing that the analysis he proposed did not fully accord with the factual record here.327/

The arguments made by Respondents' economic witnesses suffer from misperceptions of the CADIC model similar to those evident in Petitioner's submissions. On behalf of Respondent SKF, Dr. Peter Linneman argued that the usefulness of the model in these investigations is "limited" because, inter alia, the model purportedly is a "simple single product, perfect cartel model" that "assumes that all importers operate under the same decision function and thereby, set prices as if they were operating as a perfectly coordinated cartel".328/ In a similar vein, he indicated that the model is of limited utility because it assumes that the products at issue are "commodity like" and, in the case of the domestic industry, are made by a "single domestic

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326/ Dr. Pindyck's proposed alternative to the CADIC model -- the use of supply and demand curves and an import price equal to the domestic price -- is not appropriate in this case because, unlike the CADIC model, Dr. Pindyck's proposed analysis assumes that the imported goods and the domestic like product are perfect substitutes. Such an assumption is at odds not only with Dr. Pindyck's failure to find that the imported and domestic goods are close substitutes (see Petitioner's Prehearing Economic Submission at 29-30), but also with his argument that the elasticity of substitution between the domestic and imported product is, at most, moderate (see Post-Hearing Report on Issues Related to ITC Investigation of Antifriction Bearings (Other than Tapered) prepared by Robert S. Pindyck/Analysis Group, Inc. and submitted on behalf of Petitioner, at 16).

327/ Tr. 101-102.

328/ Economic Analysis of the U.S. Antifriction Bearings Industries, Assessment of Material Injury and Threat of Material Injury, Submitted on Behalf of SKF Group Companies ("SKF Prehearing Economic Submission") at 12.

company".329/ All of these characterizations of the CADIC model are incorrect. As previously noted, the model assumes a competitive domestic industry, not one in which there is but a "single domestic company". Moreover, as previously discussed, although the model assumes that the subject foreign producers enjoy more market power in their home market than in the United States, it does not require that they all act together as a unified, global cartel. Finally, the model does not assume that the imported product and the domestic like product are essentially a commodity. To the contrary, because it explicitly takes into account the elasticity of substitution between the imported and domestic like product, the model contemplates, and is designed to accommodate, situations in which the imported and domestic like product are not perfect substitutes.

Interestingly, when Dr. Linneman was asked at the March 30 hearing how he would go about estimating the effects of the subject imports on domestic prices and sales in these investigations, he, too, recommended an approach that is, in important respects, like the one actually embodied in the CADIC model:

> Vice Chairman Cass: If we . . . ask for some estimate of what the effect is, do you have in mind any construct that would enable us to do that?
>
> Dr. Linneman: Yes. I think you should basically analyze this in the context that you traditionally analyze these cases, which is essentially generally stated a competitive model framework. In the home country -- excuse me -- in the U.S., with non-competitive possibilities in the home

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329/ Tr. 165.

> country, and do a sort of robustness analysis. Namely, don't look to one thing.330/

In his prehearing submission to the Commission, Dr. Linneman also challenged the use of the CADIC model in these investigations on the ground that it supposedly is "designed to analyze the impact of very minor changes in price and quantity resulting from imports" and "falls further from reality" in "the presence of large dumping margins".331/ To support this assertion, Dr. Linneman cited certain results of the effects of dumping on domestic prices and sales that he generated from using the CADIC model, given certain estimates of data on the various factors taken into account by the model. In the case of one type of ball bearing, Dr. Linneman's estimates indicated that dumping resulted in a 27.1% decrease in the price of the domestic like product and a 1.4% in sales of that product.332/ Dr. Linneman asserted that such results are "primarily due to the exceptionally high dumping margin and the high cross-elasticity of demand" that Dr. Linneman factored into the model.333/ According to Dr. Linneman, such results "seriously overstate material injury" and "are inconsistent with the strong health of the domestic ball bearing industry".334/

330/ Tr. 166.

331/ SKF Prehearing Economic Submission at 13.

332/ Id. at 14.

333/ Id. at 14-15.

334/ Id. at 15.

There are several problems with this argument. First, Dr. Linneman's suggestion that the CADIC model is inappropriate in this case because it takes into account the large dumping margins that were calculated for many foreign producers by the Department of Commerce is difficult to square with his testimony at the March 30 hearing that the margins are one key factor that we ought to consider.335/ Second, the fact that Dr. Linneman was able to use the CADIC model to generate large estimates of the effects that dumping had on domestic prices and sales is neither surprising nor especially revealing. It certainly is not, of itself, ground for rejecting the model. Dr. Linneman's real objection is not that large effects can be suggested by the model but that the estimated effects appear larger than he believes accurate. It is, however, plain that the accuracy of the results produced by the model depend critically upon the accuracy of the information that is developed respecting the various factors that the model considers; if that information is inaccurate, the model's estimated effects on prices and sales will also be inaccurate.336/ The estimates discussed by Dr. Linneman are substantially higher than any estimates that may be thought

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335/ See Tr. 166.

336/ Dr. Linneman is correct that when large shifts in domestic demand are implicated, the information required to analyze such shifts will be different from that apposite to analysis of small changes. That does not, however, mean that a fundamentally different type of analysis is called for. Rather, the information used for such analysis must be evaluated in regard to the possible magnitude of the changes; for example, elasticities of supply or of substitution must be assessed in the context of large rather than small potential changes.

reasonable precisely because they are, as noted by Dr. Linneman, premised upon an "exceptionally high dumping margin and . . . high cross-elasticity of demand" both of which are substantially in excess of that supported by the record evidence.337/

Finally, on behalf of numerous Respondents, Dr. William Finan of Quick, Finan & Associates argued that the CADIC model is inappropriate for use in this case for a variety of reasons.338/ First, Dr. Finan stated that "the seven bearings industries are too broadly defined for treatment by a simple model" and that "[t]he model excessively simplifies or deals with the bearings

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337/ In more concrete terms, Dr. Linneman's estimates used a single weighted average dumping margin of 75.98% for his ball bearing estimates, based on the preliminary dumping margins calculated by Commerce. Id. at 13-14. However, a proper use of the model requires that the effects of dumping on domestic prices and sales be estimated on a country-by-country basis, using the specific numbers assigned to each individual producer by the Commerce Department. Use of a single weighted average dumping margin in the CADIC model in a case involving imports from many producers in nine different countries is inappropriate and will not produce reliable estimates. Similarly, I also note that Dr. Linneman's estimates assume a cross-price elasticity of demand between the domestic like product and the subject imports that is, in my view, far in excess of what is supported by the record evidence developed in these investigations. For a further explication of my views on the substitutability of the imported and domestic like products, see text at supra notes 205-07.

338/ See Pre-Hearing Economic Brief Submitted on Behalf of Federal Republic of Germany Respondents FAG Kugelfischer Georg Schaefer KGaA, GMN Georg Muller Nurnberg AG, INA Walzlager Schaeffler KG, Maschinenfabrik Joseph Eich KG und Partner GmbH, GRW Reinfurt GmbH & Co. KG, Deutsch Star GmbH, French Respondents INA Roulements, S.A., SNFA France, SNR Roulements, United Kingdom Respondents INA Bearing Co., Ltd., RHP Bearings Co., Inc., RHP Bearings, Ltd., SNFA Bearings, Ltd., and Italian Respondents FAG Cuscinetti S.p.A., ICSA Industria Cuscinetti S.p.A., Somecat S.p.A., United States Respondents FAG Bearings Corp., INA Bearings Co., Inc., SNR Bearings USA, Inc. by Quick, Finan & Associates ("Prehearing Economic Submission of Respondents FAG, et al.").

industries at too high a level of abstraction to capture reliably the institutional aspects of marketing and price discrimination in this type of setting".339/ I am not certain what Dr. Finan meant by this comment for he did not identify the institutional aspects of marketing and price discrimination that are thought to be important, but which he believes the CADIC model fails to capture. Undoubtedly, the CADIC model, like all other economic models, abstracts from reality based upon our knowledge of the manner in which markets operate; like other models, it does not capture, and does not purport to capture, each and every dimension of a market or industry that might have some relevance, however small, to the issues that the model is designed to assist us in evaluating. Without some identification of the matters that Respondents' consultant believes that the model fails to take into account, and without any description of a model that would consider the key data that are alleged to be ignored, there is no justification for concluding that it is inappropriate to use the model in this case.

Dr. Finan also asserted that the model should not be used in these investigations because it is "directed at analyzing conditions in a final goods market -- not an intermediate market such as bearings".340/ This claim is simply incorrect. The model is equally applicable to both final and intermediate goods. The effect of unfair trade practices will not, of course, be

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339/ Id. at 89.

340/ Id. at 89-90.

unaffected by the use of goods as final or intermediate goods. The CADIC model allows the differences between final goods markets and intermediate goods markets to be considered in evaluating imports' effects on prices and sales of domestic like products. One of the major factors taken into account by the model is the elasticity of demand for the group of products in which the subject imports and the domestic like product are included -- that is, the degree to which consumer demand for such products is affected by changes in the price of the product. And one factor that is relevant in assessing the way in which consumers of a product react to changes in its price is whether the product in question is a final product or, as in this case, an intermediate good.341/ In short, there is no basis for the assertion that the CADIC model is only to be used in assessing the effects of finished products on domestic prices and sales.

Another reason cited by Dr. Finan to support his claim that the CADIC model is unsuited for use in these investigations was that "the bearings industries has (sic) a complex dynamical structure with the supply disruption caused by rationalization" that the model is said to fail to reflect.342/ Again, I am not certain what thought Dr. Finan meant to convey by this comment. If Dr. Finan is arguing that the CADIC model cannot be used to assess the effects of dumping in this case because so many other

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341/ See OE Posthearing Memorandum at 22-23.

342/ See Prehearing Economic Submission of Respondents FAG, et al., at 90.

things in the industry have been rapidly changing, this reflects a fundamental misapprehension of the purpose of the model; the CADIC model is useful precisely because it provides the Commission with assistance in separating out the effects of LTFV imports from other factors that may be affecting the domestic industry, thereby allowing the Commission to determine whether the subject imports have caused material injury. If Dr. Finan meant to suggest that a dynamic model might allow for a more precise measurement of the effects of dumping, this is, of course, a possibility. However, no such model has, to my knowledge, been developed, and no such model was suggested to the Commission by Dr. Finan. Moreover, it should be noted that the CADIC model could be used, in appropriate cases, to approximate the estimates that might be produced through use of a "dynamic" model.343/ This can be done by performing runs of the model with varying time frames for the period over which certain changes in market conditions are expected to occur.344/

Dr. Finan also claimed that the CADIC model is not compatible with the facts presented in these investigations because, according to Dr. Finan, "the CADIC model's assumptions

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343/ Such an exercise was not, however, performed in these investigations, for there is no reason to believe, on the basis of the record before us, that it would have materially affected the price and sales effects estimated through use of the model.

344/ In general, the Commission staff estimates elasticity ranges by using a one-year time frame in measuring demand and supply responses to changes in price. See OE Posthearing Memorandum at 3 n. 1.

are based on a single market price".345/ This comment, too, may reflect some misunderstanding of the model, which, as discussed above, contemplates that the prices of the imported and domestic like products may differ. Moreover, the model is set up to accommodate different prices for different imported products. Perhaps the point intended by Dr. Finan's comment is that the model treats each domestic like product as sold in a competitive market under competitive pricing conditions. If the implicit contention advanced by Dr. Finan is that such treatment is objectionable, his argument must be that, contrary to the view offered by Professor Pindyck, the domestic markets for the like products in these investigations are not competitive. Alternatively, Dr. Finan may be suggesting that the market for bearings in the United States should be divided into numerous sub-markets. In this regard, Dr. Finan is undoubtedly correct, although his point is not so much an objection to the CADIC model as to the use of that model -- or any other model of analysis -- at the wrong level of aggregation.

Finally, Dr. Finan questioned whether the dumping margins calculated by Commerce in these investigations reflect real international price discrimination; he suggests that "a large portion of the LTFV margin was due to simple exchange rate volatility temporarily creating differences in prices measured in a single currency over time for the domestic and foreign

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345/ Prehearing Economic Submission of Respondents FAG, et al., at 90.

products".346/ If Dr. Finan is correct (and no record evidence has been presented to us that suggests that he is)347/, this would, if anything, merely argue in favor of using the data generated by the model under the estimates based on a "full pass-through" of the dumping margin -- that is, based on the conclusion that dumping caused the price of the subject imports to decline by a percentage reflecting the full amount of the dumping margin. The argument does not support a conclusion that no use of the model is appropriate.

In sum, while each of the parties has reason for concern that its case may be adversely affected by the information that a given use of the model might suggest is most significant or most probative, none of the objections advanced in these investigations indicates that the CADIC model cannot usefully assist our deliberations.

III. THREAT OF MATERIAL INJURY BY REASON OF LTFV IMPORTS

Having found that a domestic industry is materially injured by reason of LTFV imports of spherical plain bearings, but that no other domestic industry has been so injured by reason of the remaining LTFV imports subject to these investigations, I am required by Title VII to determine whether any of the industries

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346/ Id. at 90-91.

347/ To the contrary, Dr. Finan himself asserted that the subject importers had "sufficient opportunity" to engage in price discrimination between their respective home markets and the U.S. market. Id. at 91.

for which I have found no material injury is faced with a threat of material injury.348/ In assessing the issue whether a threat of material injury by reason of LTFV imports exists, we begin with the statutory command that the Commission make an affirmative determination only "on the basis of evidence that the threat of material injury is real and that actual injury is imminent."349/ Such a determination may not be made on the basis of mere conjecture or supposition.350/

Under Title VII, the Commission is directed to consider a number of specifically enumerated factors in analyzing whether there is the requisite threat of material injury. Where, as here, both dumped and subsidized imports are under investigation, the statute directs us to assess the following factors:

> (1) information as to the nature of the subsidies, particularly whether they are export subsidies;
>
> (2) the ability and likelihood of the foreign producers to increase the level of exports to the United States due to increased production capacity or unused capacity;
>
> (3) any rapid increase in penetration of the domestic market by imports, and the probability that the penetration will increase to injurious levels;
>
> (4) the likelihood that imports will enter this country at prices that will have a depressing or suppressing effect on domestic prices of the merchandise;

348/ See 19 U.S.C. §§ 1671d(b)(1)(A)(ii), 1673d(b)(1)(A)(ii). Petitioner has not argued that the establishment of any domestic industry has been materially retarded by reason of the subject imports, and no record evidence was developed in these investigations that would support such a finding by the Commission.

349/ Id., § 1677(7)(F)(ii).

350/ Id.

(5) any substantial rise in inventories of the merchandise in the United States;

(6) underutilized capacity for producing the merchandise in the exporting country;

(7) "any other demonstrable adverse trends" that indicate that the LTFV imports will be the cause of actual injury; and

(8) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop derivatives or more advanced versions of the like products.351/

Having reviewed the record before us, I cannot conclude that there is a colorable basis -- other than speculation of the kind in which Congress has forbidden us to engage -- on which we might find that any of these factors suggests the existence of a threat of material injury to the domestic industries producing ball bearings, spherical roller bearings, cylindrical roller bearings, needle roller bearings, slewing rings, and wheel hub units.352/

351/ See id., § 1677(7)(F)(i).

352/ I note first that, although I have found that there are separate like products divided by ABEC/RBEC rating for (1) ball bearings, (2) spherical roller bearings, (3) cylindrical roller bearings, and (4) needle roller bearings, there is insufficient evidence on record to make separate threat determinations according to ABEC/RBEC ratings within each of those four, rolling element-based, like product categories. Accordingly, I have assessed the issue of threat of material injury on the basis of the four rolling element-based categories without distinction by ABEC/RBEC rating.

I note also that, to the extent possible and in accordance with the guidance of our reviewing court, I have exercised discretion and assessed cumulatively the effects of the subject imports for purposes of determining the existence of a threat of injury. See Asociacion Colombiana de Exportadores de Flores v. United States, 12 Ct. Int'l Trade ___, 704 F. Supp. 1068 (1988), aff'g Certain Fresh Cut Flowers from Canada, Chile, Colombia, Costa Rica, Ecuador, Israel, Kenya, Mexico, the Netherlands, and Peru, USITC Pub. 2119, Inv. Nos. 303-TA-18, 701-TA-275-278 & 731-

To begin with, I agree with the determination of the majority insofar as it finds no threat of material injury to the domestic industries producing spherical roller bearings, needle roller bearings, or slewing rings.353/ I also adopt much of the majority's analysis with respect to these three industries. The data obtained in these investigations with respect to the statutory criteria for determining whether a threat exists are sufficiently similar with respect to the three industries discussed by the majority that it is unnecessary to recite the considerations separately for each industry. Similarly, upon review of the entire record before us, I find that the data concerning the issue of threat of material injury with respect to the domestic industries producing ball bearings, cylindrical roller bearings, and wheel hub units are sufficiently alike across industries to obviate the need to recite the considerations separately for each of those industries. Although the specific data differ, the general nature of those data concerning the factors critical to our disposition of the threat issue here are similar for each class of imports at issue and for each country under consideration. Because I believe that there is not sufficient evidence of a threat to any domestic industry from the imports taken individually or cumulatively for each

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TA-327-333 (remand determinations) (Aug. 1988).

353/ I also agree with Commissioner Lodwick in finding that the domestic industry producing cylindrical roller bearings is not threatened with material injury.

product category, I do not separately address the question whether cumulation would be proper for these determinations.

As the majority notes with respect to three of the classes of imports at issue, the prevalence of long-term contracts, the dedication of production lines to particular products, and the significant costs associated with any changes in product mix (assuming that such changes are even economically feasible), all suggest that the likelihood of substantial product shifting by foreign manufacturers is minimal. This is true also with respect to the other product classes identified above but not addressed in the majority's threat determination. Indeed, after reviewing the record as a whole, I conclude that the evidence indicates sufficiently high capacity utilization, sufficiently significant sales to other markets, and sufficiently long lead times required to change the mix of production substantially or to increase capacity significantly that there is no realistic, imminent threat that increased imports will so change the present effects as to inflict material injury on any of the relevant domestic industries. Nothing in the record pertaining to the specific factors that the statute directs us to consider in analyzing the threat of material injury, suggests a contrary conclusion. I therefore determine that LTFV or subsidized imports from the countries covered by these investigations of ball bearings, spherical roller bearings, cylindrical roller bearings, needle roller bearings, slewing rings, and wheel hub units do not

present a sufficient threat of imminent, material injury to the domestic industries producing like products.

IV. CRITICAL CIRCUMSTANCES

I have made an affirmative determination with respect to only one of the domestic like products and corresponding domestic industry in these investigations: spherical plain bearings. For the reasons stated in the Views of the Commission majority, I join my colleagues in finding that critical circumstances do not exist with respect to the subject imports of that product.

V. CONCLUSION

For all of the foregoing reasons, I determine that the domestic industry producing spherical plain bearings has been materially injured by reason of the subject imports of that product. I determine that no other domestic industry has been materially injured, or is threatened with such injury, by reason of the LTFV and subsidized imports that are the subject of these investigations, and that no domestic industry has been materially retarded by reason of those imports.

ADDITIONAL VIEWS OF COMMISSIONER SEELEY G. LODWICK REGARDING CYLINDRICAL ROLLER BEARINGS

I determine that the domestic industry producing cylindrical roller bearings is not materially injured, nor threatened with material injury, by reason of the LTFV and subsidized imports from any of the subject countries.

In 1985 the U.S. producers of cylindrical roller bearings had 90.7% of the $208 million U.S. market; fair imports held a 0.2% market share and the unfair imports that are the subject of these investigations held the balance, 9.0%. Using only 24.2% of its capacity, the U.S. industry that year produced 12.8 million units, shipped 10.6 million finished bearings valued at $186 million, and at the end of that year its inventory (as a % share of domestic shipments) stood at 19.2%. On net sales of $193 million of bearings and parts, the U.S. industry showed a low operating income of 0.8%.

In 1986 domestic consumption dropped drastically, 8.3%, or $17,362,000. U.S. sales generally reflected this drop, but showed strength in decreasing by only 7.9%. Domestic shipments of finished cylindrical roller bearings similarly decreased by 9.9% in value, while quantities increased by 0.8%. A large part of these shipments were made out of inventory; 1986 end-of-year inventories were 11.8% compared with 19.2% in 1985. In the presence of declining consumption, and with ample inventories, it is not surprising that production decreased by 11% or 1,407,000 units. The unfair imports in this drastically reduced U.S. market of 1986 increased in value $147,000, i.e., from $18,855,000 in 1985 to $19,002,000 in 1986 which represented a 9.9% market share. Operating income of the U.S. industry dropped to a minus 0.4%.

In 1987 the U.S. market did a turn-around with consumption rebounding to $204,635,000, down only 1.8% from 1985's performance of $208,460,000. Consumption in 1987 was up 7.08% over 1986. U.S. sales bettered that performance, exceeding 1985 sales by 1.7% and 1986 sales by 10.4%. The value of U.S. shipments of finished cylindrical roller bearings increased similar to consumption, 6.4% over 1986, while quantity dropped 5.2% End-of-year inventories in 1987 stood at 11%. Although production decreased by 5.7% from 1986, U.S domestic producers realized operating income of 1.4%, which, while quite low, was a 75% increase over the first year of the period covered by these investigations.

In the 1988 interim period, being January through September, consumption continued to increase, 6.3% as compared with the like period of 1987. U.S. sales increased 2.6% and shipments of finished bearings increased in value 6.1% and in quantity 5.5%.

The pattern of decreasing production was reversed in interim 1988, increasing 6.3%. While increasing unfair imports (12.9%) took an increased market share (12.6% as compared with 11.8 in interim 1987), the U.S. industry realized an operating income of 4.9% as compared with 0.6% in interim 1987.

In summary, the domestic industry does not appear to have suffered material injury. Assuming arguendo that the domestic industry did experience material injury, it was not by reason of the unfair imports which are the subject of these investigations. The volume and market share of such imports remained relatively stable over the period of investigation and did not reach the higher levels of market penetration achieved by imports of ball bearings and spherical plain bearings.

Finally, none of the relevant threat factors indicate that there is any real and iminent threat of material injury. The same rationale set forth in the majority opinion regarding threat to the other bearings industries is applicable to the domestic cylindrical roller bearings industry.

INFORMATION OBTAINED IN THE INVESTIGATIONS

Introduction

On September 6, 1988, and November 9, 1988, respectively, the United States Department of Commerce (Commerce) published in the Federal Register (53 F.R. 34329) and (53 F.R. 45312) its preliminary determinations that imports from Singapore and Thailand of antifriction bearings (other than tapered roller bearings) and parts thereof 1/ are being subsidized by the governments of Singapore and Thailand and that imports of such merchandise from the Federal Republic of Germany (FRG), France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom (UK) are being sold in the United States at less than fair value (LTFV). Accordingly, effective September 6, 1988, and November 9, 1988, respectively, the Commission instituted the following final countervailing duty 2/ and antidumping investigations under the applicable provisions of the Tariff Act of 1930 to determine whether an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded by reason of imports of such merchandise into the United States:

1/ For purposes of these investigations, the subject bearings and parts thereof include the following articles, whether finished or unfinished: antifriction balls and rollers (TSUSA items 680.3025, 680.3030, and 680.3040, and HTS subheadings 8482.91.00 and 8482.91.10); ball bearings with integral shafts and parts thereof (TSUSA item 680.3300 and HTS subheading 8482.10.10); ball bearings (including radial ball bearings) and parts thereof (TSUSA items 680.3704, 680.3708, 680.3712, 680.3717, 680.3718, 680.3722, 680.3727, and 680.3728, and HTS subheadings 8482.10.50 and 8482.99.10); spherical roller bearings and parts thereof (TSUSA items 680.3952 and 680.3956, and HTS subheadings 8482.30.00 and 8482.99.50); other roller bearings (except tapered roller bearings) and parts thereof (TSUSA item 680.3960 and HTS subheadings 8482.40.00, 8482.50.00, 8482.80.00, 8482.91.00, and 8482.99.70); ball or roller bearing type pillow blocks and parts thereof (TSUSA items 681.0410 and 681.0430, and HTS subheadings 8483.20.80, 8483.30.80, 8483.90.30, and 8483.90.70); ball or roller bearing type flange, take-up, cartridge, and hanger units, and parts of the foregoing (TSUSA items 681.1010 and 681.1030, and HTS subheadings 8483.20.40, 8483.30.40, 8483.90.20, and 8483.90.30); machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for (TSUSA item 681.3900 and HTS subheading 8485.90.00); and parts of motor vehicles containing any of the foregoing bearings and not specially provided for (TSUSA item 692.3295 and HTS subheadings 8708.50.50, 8708.60.50, and 8708.99.50). Finished but unground or semiground balls are not included in the scope of these investigations.

2/ Singapore and Thailand are not signatories of the General Agreement on Tariffs and Trade (GATT) subsidies code and thus are not "under the Agreement" pursuant to section 701(b) of the Act. However, these countries have been accorded an injury investigation under section 303 of the Act for those articles that are duty free under the Generalized System of Preferences (GSP).

Country	Countervailing duty investigation No.	Antidumping investigation No.
FRG	1/	731-TA-391 (Final)
France	1/	731-TA-392 (Final)
Italy	1/	731-TA-393 (Final)
Japan	1/	731-TA-394 (Final)
Romania	1/	731-TA-395 (Final)
Singapore	303-TA-19 (Final)	731-TA-396 (Final)
Sweden	1/	731-TA-397 (Final)
Thailand	303-TA-20 (Final)	731-TA-398 (Final)
UK	1/	731-TA-399 (Final)

1/ Not applicable.

On March 24, 1989, Commerce issued final determinations that imports from the aforementioned countries are being subsidized and/or sold in the United States at LTFV. 1/

Notice of the institution of the Commission's final investigations 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 notices in the Federal Register of October 13, 1988 (53 F.R. 40137) and December 14, 1988 (53 F.R. 50304). 2/ The Commission's public hearing held in connection with these investigations took place in Washington, DC, on March 30, 1989. The Commission voted on these investigations on May 2, 1989, and transmitted its determinations to Commerce on May 8, 1989.

These investigations commenced on March 31, 1988, as a result of petitions filed with the Commission and Commerce by counsel on behalf of the Torrington Co., Torrington, CT.

Previous and Related Investigations

Antifriction bearings, including tapered roller bearings, have been the subject of a number of investigations by the Commission and other U.S. Government agencies since the early 1970's. A listing of the Commission's investigations is presented in table 1.

Commerce investigations.--In addition to the subject investigations, Commerce completed a section 232 investigation in July 1988 on the effects of imports of antifriction bearings on the national security. The investigation,

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1/ Letter from Timothy N. Bergan, Acting Assistant Secretary for Import Administration, Department of Commerce, to Chairman Anne E. Brunsdale, U.S. International Trade Commission, Apr. 12, 1989.
2/ Copies of the Commission's notices are presented in app. A. Although it is the normal policy of the Commission to include copies of Commerce's notices as well, the size of those notices (in excess of 400 pages) precludes including them in this report.

Table 1
Antifriction bearings: Previous and related investigations, and outstanding dumping and/or countervailing duty orders, since 1973

Item	Weighted-average margins	Investigation number	Date of issue	Report No.
Antifriction bearings		TEA-I-27	1973	TC 597
Antifriction bearings		TEA-I-27(s)	1974	TC 649
Antifriction bearings		TEA-F-56	1974	TC 636
Tapered roller bearings		AA1921-142	9-4-74	N.A.
Tapered roller bearings:				
Japan		AD-143	1975	USITC 714
Spherical roller bearings		337-TA-179	1-4-84	N.A.
Tapered roller bearings:				
Federal Republic of Germany	Negative prelim.	731-TA-121	1984	N.A.
Italy	Negative final	731-TA-122	1984	USITC 1497
Japan	Negative final	731-TA-120	1984	USITC 1497
U.S. ball & roller bearing industry		332-211	1986	USITC 1797
Tapered roller bearings:				
Hungary	7.42	731-TA-341	1987	USITC 1983
Italy	124.75	731-TA-342	1987	USITC 1999
Japan:		731-TA-343	1987	USITC 2020
Koyo Seiko Co., Ltd.	70.44			
NTN Toyo Bearing Co.	47.05			
All others	47.57			
People's Rep. of China	0.97	731-TA-344	1987	USITC 1983
Romania	8.70	731-TA-345	1987	USITC 1983
Yugoslavia	33.61	731-TA-346	1987	USITC 1999
U.S. automotive parts industry		332-232	1987	USITC 2037

instituted in response to a petition filed by the Antifriction Bearing Manufacturers Association (AFBMA), resulted in a Presidential decision in January 1989 that no action was necessary to adjust imports of antifriction bearings under the authority of section 232 of the Trade Expansion Act of 1962, as amended. 1/

Department of Defense investigations.--In response to a request from Congress in 1985, the Joint Logistics Commanders (JLC) conducted a study of the antifriction bearing industry. The JLC prepared recommendations, and the Department of Defense (DoD) developed a "Bearing Action Plan" of proposed solutions to problems identified in the report, which was sent to Congress in March 1987. Congress indicated that DoD should implement the plan expeditiously. A federal acquistion regulation (FAR) to restrict the

1/ 54 F.R. 1974, Jan. 18, 1989.

procurement of all antifriction bearings for DoD use to domestic sources was issued by DoD in January 1989 for a 3 to 5 year period. 1/ 2/

The Products

Description and uses

Product description.--The petition in these investigations states that "The merchandise covered by this petition consists of all ground antifriction bearings and all parts thereof both finished and unfinished with the exception of tapered roller bearings. Included within the scope of the petition are ball bearings, cylindrical roller bearings, spherical roller bearings, spherical plain bearings, needle roller bearings, thrust bearings, tappet bearings, and all mounted bearings such as set screw housed units, bushings, pillow block units, flange, cartridge and take-up units; and parts including balls, rollers, cages or retainers, cups, shields and seals."

Virtually every industry that manufactures machines uses one or more of the types of bearings subject to these investigations. For example, the transportation, mining, construction, manufacturing, and defense-related industries all use bearings extensively. 3/ Worldwide production of antifriction bearings involves approximately 200,000 part numbers; such bearings range in diameter from one-eighth of an inch to 16 feet.

Physical characteristics.--The function of a bearing is to reduce friction between moving and fixed parts and thereby enable easier, faster motion. Most of the bearings included in these investigations are classified as "rolling-element" bearings. These bearings consist of a few major components: an outer ring or outer race; an inner ring or inner race; a series of rolling elements, either balls or rollers, that fit into the opening in a separator or cage; and a separator or cage which keeps the balls or rollers equally distributed around the races. The inner and outer rings rotate with respect to each other, separated by the rolling elements, which support the load.

Spherical plain bearings are also included in these investigations. Unlike rolling element bearings, spherical plain bearings do not contain balls or rollers. These bearings primarily consist of a spherically shaped inner ring that is self-aligning in an outer ring. Such bearings support loads through a relative sliding motion between interactive surfaces. They can facilitate oscillatory motion and can support heavy loads at relatively low speeds. Figure 1 provides a graphic presentation of some of the different types of bearings.

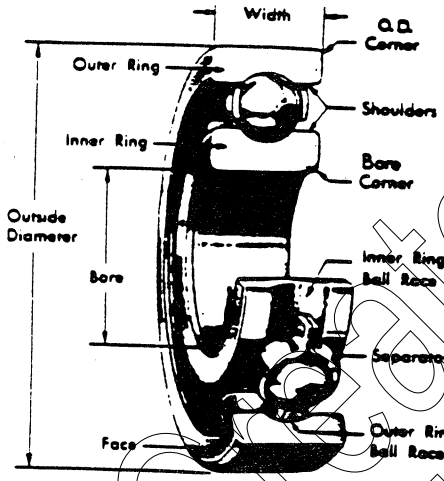
1/ A FAR concerning ball bearings with an outside diameter of less than 30 mm. has been in effect since 1971.
2/ 54 F.R. 1974, Jan. 18, 1989.
3/ An automobile will use 40 to 50 bearings in each vehicle.

Figure 1.-Bearing Parts and Their Names

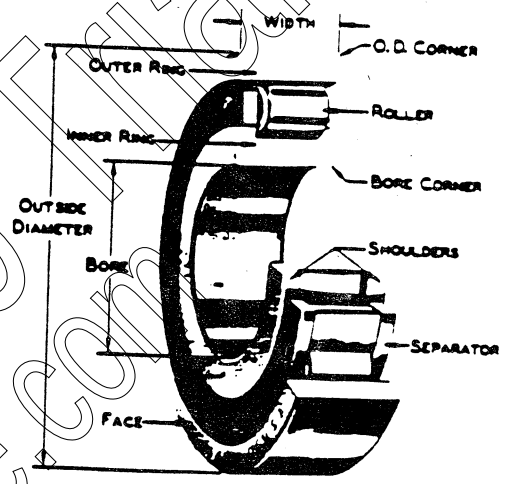
The parts common to all standard ball and roller bearings have, for the purpose of this manual, been given names as shown below.

Basically all anti-friction bearings consist of two hardened steel rings, the hardened balls or rollers and separator. A number of variations of these types are in use. Some types, such as Needle roller bearings may be used without an inner ring, the rollers fitting directly upon the hardened shaft. Needle bearings have no separator.

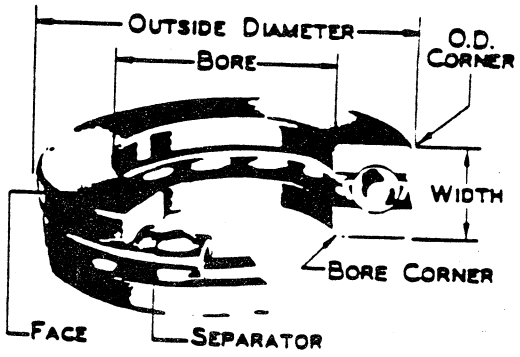
Ball Bearing



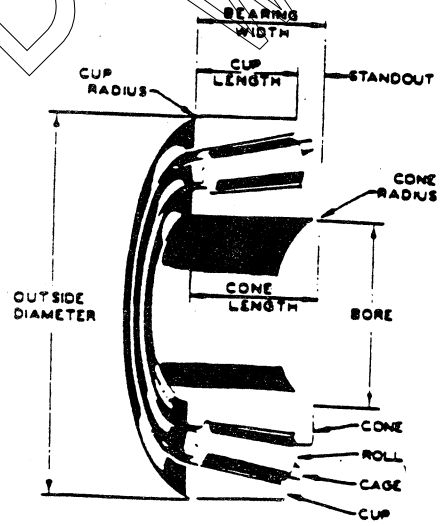
Straight Roller Bearing



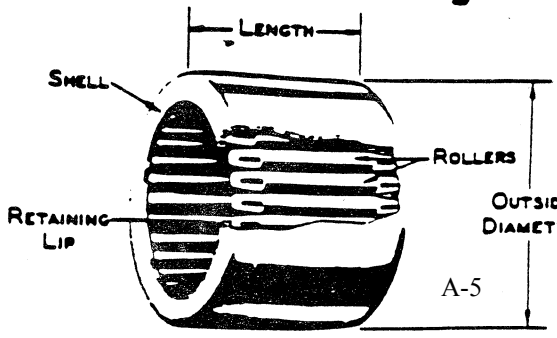
Ball Thrust Bearing



Tapered Roller Bearing



Needle Roller Bearing



Scope of investigations and like product.--In arriving at its preliminary and final countervailing/antidumping determinations, Commerce heard testimony and received comments from petitioner, respondents, and other interested parties on whether the subject merchandise constituted one or more classes or kinds of merchandise. After considering those views and based on discussions with product experts at the U.S. Customs Service, at the Commission, and within the Department itself, Commerce determined that the products under investigation constituted five separate classes or kinds of merchandise. Those five categories are:

1. Ball Bearings, Mounted or Unmounted, and Parts Thereof.--These products include all antifriction bearings which employ balls as the rolling element. Finished but unground or semiground balls are not included in these investigations.

2. Spherical Roller Bearings, Mounted or Unmounted, and Parts Thereof.--These products include all antifriction bearings which employ spherical rollers as the rolling element.

3. Cylindrical Roller Bearings, Mounted or Unmounted, and Parts Thereof.--These products include all antifriction bearings which employ cylindrical rollers as the rolling element.

4. Needle Roller Bearings, Mounted or Unmounted, and Parts Thereof.--These products include all antifriction bearings which employ needle rollers as the rolling element.

5. Spherical Plain Bearings, Mounted and Unmounted, and Parts Thereof.--These products include spherical plain bearings. Plain bearings, other than spherical plain bearings, are not included in these investigations. 1/

These five major product categories essentially track the Commission's determination in the preliminary investigations. In addition to these five categories, the Commission also determined that there was a sixth "like product" category consisting of other "antifriction devices", such as ball screws 2/ and linear guides. 3/ The effect of Commerce's approach was to essentially fold the elements of the Commission's sixth group into the other five based on the rolling element employed. 4/ The Commission's questionnaires

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1/ In its preliminary determinations, Commerce had determined that plain bearings and parts thereof consisted of all plain bearings, not just spherical plain bearings. Hence, the data reflected in the Commission's prehearing report concerning plain bearings included all plain bearings. The data in this report have been adjusted to reflect only spherical plain bearings and parts thereof.

2/ As a result of specific questions raised by parties to Commerce's investigations, ball screws were among a number of products listed as not subject to investigation.

3/ In its final determinations, Commerce excluded linear motion bearings and guides from the scope of these investigations.

4/ Within each of the 5 product categories, Commerce included all finished parts (inner race, outer race, cage, rollers, balls, seals, shields, and so forth). Additionally, unfinished parts are included if: (1) they have been heat treated; or (2) heat treatment is not required to manufacture the part.

in these final investigations requested, and producers and importers were readily able to provide, trade, financial, and pricing information among the various of the five product categories in which they conducted business. 1/2/

Ball bearings.--Ball bearings are often preferred over roller bearings when speed is a more important factor than load-carrying capacity. Ball bearings can withstand fairly high speeds because there is less contact between the rolling balls and the inner and outer rings than there would be with a roller bearing. Ball bearings are designed to carry radial or thrust loads, or a combination of the two. Radial loads are applied perpendicularly to the shaft axis, whereas thrust loads are applied parallel to this axis. Ball bearings can also be classified by a number of geometric configurations, including single row, double row, self-aligning, and angular contact.

Spherical roller bearings.--Spherical roller bearings combine the heavy load-carrying ability of roller bearings with the advantages of self-alignment. Spherical roller bearings utilize spherical or barrel-shaped rolling elements. The shape of these rollers allows the bearing to withstand substantial radial loads as well as thrust loads applied in either direction, or a combination of radial and thrust loads. This flexibility in load carrying ability allows the bearing to adjust its alignment to match that of a shifting axis of rotation.

Cylindrical roller bearings.--Cylindrical roller bearings utilize straight cylinder-shaped rollers which are approximately equal in length and diameter. These bearings are designed primarily for carrying heavy radial loads--loads that exceed the capacities of radial ball bearings of comparable sizes. These bearings also have the highest speed capability of any type of roller bearing.

Needle roller bearings.--Needle roller bearings are similar in appearance to cylindrical roller bearings. However, needle roller bearings

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1/ Throughout these investigations, petitioner has argued that there is a single like product and a single industry producing all the subject bearings. The argument is based on the following considerations: (1) common physical characteristics; (2) interchangeability; (3) common channels of distribution; and (4) common manufacturing facilities. In order to facilitate the Commission's consideration of this argument, the information in this report is provided in the aggregate for all subject bearings as well as along the five product lines previously discussed.

2/ In adddition to requesting information in the 5 major product categories subject to these investigations, the Commission requested information on producer operations within the ball, spherical, cylindrical, and needle categories along precision and superprecision bearing lines as well as information with regard to wheel hub unit operations. Those data are presented in app. B. For purposes of the Commission's questionnaires, precision bearings were defined as having Annular Bearing Engineers Committee (ABEC) ratings of 1 and 3 or Roller Bearing Engineers Committee (RBEC) ratings 1 and 3, while superprecision bearings were defined as having ABEC or RBEC ratings of 5 and above. Many of the producers were not able to respond to the data request at all and others were able to respond only in part, with data on shipments being the most common information provided.

have a much smaller diameter-to-length ratio. Often the length of a needle roller bearing is at least four times greater than its diameter. Since these bearings are fairly thin, they are very useful when space conservation is of primary importance. These bearings are also useful in slow speed applications.

Spherical plain bearings.--Spherical plain bearings have some of the same components as rolling-element bearings. For instance, these bearings have a spherically shaped inner ring that is self-aligning in an outer ring. The inner and outer rings roll against each other. These bearings are often used to facilitate oscillatory or realignment motion. They can support very heavy loads, but usually at relatively low speeds. Plain bearings, in general, are primarily used to reduce friction, to hold or guide a shaft, or to facilitate oscillatory or realignment motion between fixed and moving parts. They may be run dry without lubricant in some instances where the load is low and motion is slow or intermittent. However, a lubricant usually improves performance, even in these cases.

Mounted bearing units covered within these five product categories are flange, cartridge, and take-up units. These assemblies are premounted bearings and may incorporate any of the five types of antifriction bearings. Mounted bearing units consist of a bearing element that is set and sealed into a housing, which is then mounted onto a machine frame. Mounted bearing units allow the movement of a shaft through the housing itself, with flange, take-up, and cartridge units each providing for a different positioning of a shaft within or on a machine frame. A typical application of such units is in the wheel hub system of an automobile, an item a number of parties have argued should be treated as a separate like product in these investigations.

Wheel hub units are prelubricated, preset, deep-groove ball bearings that have been sealed into a cast or forged flanged housing with bolt holes for direct mounting onto the wheel hub, in which the flanged housing performs as the outer race of the bearing. As determined in the tapered roller bearing investigations, cartridge bearing units incorporating ball bearings are directly substitutable with tapered roller cartridge units for certain part numbers, at the initial design stage of the automobile. 1/ Presently, there is only one U.S. producer of wheel hub units, New Departure Hyatt (NDH), a division of the General Motors Corporation. Throughout the period of investigation the vast majority of NDH's production was captively consumed. The Commission sought data with regard to NDH's wheel hub unit operations in its questionnaire and those data are presented as a portion of appendix B.

A number of parties have also called for the Commission to treat "aerospace" bearings as a separate like product and offered a number of definitions of the product. Counsel for the Aerospace Industries Association (AIA) argued that there are two separate categories of aerospace bearings: (1) aerospace engine ball bearings, and (2) aerospace engine cylindrical bearings. 2/ Counsel for FAG Kugelfischer Georg Schaefer KGaA (FAG) stated that aerospace

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1/ Tapered roller bearings, USITC 1983, p. 7.
2/ AIA further defined aerospace engine bearings as "antifriction bearings of ABEC/RBEC 5 or higher precision level, manufacturered from M-50 or M-50 NIL steel, and designed as components in gas turbine aerospace engines, including gearboxes and auxiliary power units. Posthearing brief of AIA at p. 1.

bearings "can only be simply defined by their ultimate application." 1/2/ Staff contacted all the U.S. producers that had responded to Commission questionnaires to determine if separate information concerning their operations on aerospace bearings was available. In general, most producers of "aerospace" bearings tended to view such operations as facilities producing products for use in the aerospace industry, a somewhat broader view than discussed earlier. Further, they indicated any attempt to provide separate data on those operations would necessarily include other "high or superprecision" products for use in other industries produced on the same equipment by the same workers and that any separable data other than shipments was generally not available on such a narrow basis. * * *. 3/

Counsel for the American Manufacturers for Trade in Bearings (AMTB) argued for separate like products defined as "commodity" and "specialty" ball bearings with the former defined, in general, as ball bearings ABEC 1 and 3, 52mm outside diameter (OD) and under. 4/ The Commission collected data in four ball

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1/ Counsel for FAG, in response to questions from Commissioner Ronald Cass and Mr. Stephen McLaughlin of the Commission staff, concerning the difference, if any, between aerospace bearings and superprecision bearings as well as a request for a precise definition of the product, stated that "Aerospace bearings, as FAG has utilized that term for purposes of requesting separate like product treatment, consists of those entirely custom-made bearings produced by FAG in its separate, dedicated production facility in Schweinfurt, Federal Republic of Germany, that are destined for application in specific aircraft engines and auxiliary power components. In other words, although these bearings bear little physical resemblance or relation to non-aerospace bearings, they can only be simply defined by their ultimate application. While, generally, aerospace bearings do share some common characteristics with one another, such as the high-grade alloy steel from which they are made, it is essentially impossible to blanket them with a cozy definition because they are all different, made exclusively-to-order products." Posthearing brief of FAG at pp. 6-7.

2/ In its response to the questions of Commissioner Cass and Mr. McLaughlin, counsel for AB SKF; SKF USA, Inc.; SKF France; RIV-SKF Industrie S.p.A.; SKF (UK) Ltd.; SKF GmbH and SKF Gleitlager GmbH (SKF) responded "The only proper way to define aerospace components is to identify them as part of the high and superprecision category of bearings. These are bearings with an ABEC/RBEC rating of 5, 7, and 9, and they are separately identifiable from standard ball and roller bearings. Since most of the bearings used for aerospace applications fall into the high and superprecision classes, SKF suggests that the Commission carve out bearings with ABEC/RBEC ratings of 5, 7, and 9, including aerospace components, and treat them as constituting one separate like product category." Counsel for SKF goes on to state "Moreover, the Commission staff have gathered more than adequate data upon which the Commission can base a no injury determination as to these specific products. See Prehearing Staff Report at B-119 through B-136." Posthearing brief of SKF at pp. 51 and 53. The information referred to is presented in app. B of this report.

3/ * * *.

4/ Prehearing brief of AMTB at p. 4, fn. 1. Specialty bearings were otherwise defined as "superprecision bearings, all conrad bearings 52mm OD and over, and other special purpose ball bearings such as double row ball bearings, thrust

bearing categories, 1/ including ABEC 1 and 3, 52mm OD and under, and those data are presented in appendix B. Additionally, in the ball bearing category, counsel for Minebea, Ltd., NMB Singapore, and NMB Thailand, argued for a separate like product consisting of miniature and instrument (M&I) bearings. Such ball bearings are generally defined as ABEC 1 and 3, 30mm OD and under. 2/ Data that would include these bearings are presented in appendix B under the information relating to ABEC 1 and 3, 52mm OD and under.

Counsel for Hoesch Rothe Erde-Schmiedag AG (RES) and Rotek, Inc. argued that "slewing rings" should be treated as a separate like product in these investigations. Slewing rings were included in Commerce's scope of investigation in its final determinations, after having been excluded in its preliminary investigations. There are two major producers of slewing rings, Rotek and Kaydon Corp. Rotek is believed to produce only slewing rings, while Kaydon produces other antifriction bearings subject to these investigations. Prior to Commerce's final determinations, the Commission had not collected data with regard to slewing ring operations. Such data were subsequently requested of these two producers by Commission staff and were furnished to the Commission in a supplement to this report.

In addition to the aforementioned suggested "like product" categories, others such as split cylindrical bearings, angular contact bearings, tenter bearings, and split pillow block housings were urged on the Commission.

Counsel for Cooper Bearings, Ltd. argues that split cylindrical bearings are unlike the other products in these investigations in that they are manufactured to yield halved components which are assembled around a shaft, rather than slid onto a shaft. Cooper sought exclusion from Commerce's scope of investigation, which was denied in the final determination.

Counsel for Dana Corporation, a purchaser of angular contact bearings, argues that such bearings should be treated as a separate like product. Angular contact bearings are a subgroup of ball bearings and are commonly used in clutch releases, machine tool spindles, air compressors and a variety of other applications. Information with regard to operations producing angular contact bearings would be subsumed in the data concerning operations on ball bearings and parts thereof. Torrington and Federal Mogul, among others, produce angular contact ball bearings in the United States.

Minnesota Mining and Manufacturing (3M), a purchaser of "tenter" bearings, through its counsel has requested that such bearings be dealt with as a separate like product. Tenter bearings, according to 3M, are specially

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ball bearings, angular contact ball bearings, and the like." Prehearing brief at p. 7.

1/ Data were collected on operations producing ball bearings, ABEC 1 and 3, 52mm OD and under; ball bearings, ABEC 1 and 3, over 52mm OD; ball bearings, ABEC 5 and over, 52mm OD and under; and, ball bearings, ABEC 5 and over, over 52mm OD.

2/ Posthearing brief of Minebea, Ltd., at pp. 8-9.

designed, employing balls as a rolling element, for use in tenter machines which are used to stretch a variety of 3M film or filmlike products at high temperatures widthwise to give them shape. According to 3M, their tenter machines are built in Germany, with each unit employing up to 10,000 bearings.

Counsel for Hugo Finkenrath OHG (Finkenrath), a German producer of housings 1/ for bearings, urges that the Commission find that housings imported in the form of mounted bearing units 2/ are not like bearings, and should be excluded from any finding of injury that results from these investigations that have been limited to an analysis of the impact of imports on U.S. producers of bearings. Finkenrath states that the majority of its housings are exported to the United States without bearings, with a lesser portion consisting of mounted units where bearings purchased from unrelated suppliers are inserted in its housings. 3/ In short, Finkenrath would have any additional duties assessed only against the value of the bearing portion of a mounted unit.

Characteristics and applications

All of the various types of antifriction bearings have specific characteristics associated with them, and in general, are not functionally interchangeable. However, the original determination of which type of bearing to use is sometimes an engineering choice at the initial design phase of the product incorporating the bearing. The following tabulation lists the characteristics and applications associated with the various types of bearings:

	Characteristics	Applications
Ball bearings.....	High speed and light load capabilities; low friction; carry radial and thrust loads.	Used in the automotive, agricultural, mining, construction, and oil industries.
Roller bearings:		
Spherical.....	Heavy load and moderate speed capability; correct misalignment; have a higher amount of friction than ball bearings; withstand radial as well as thrust loads.	Used in heavy equipment industries, construction, paper, rudder stock, etc.

1/ Commerce, in its final determinations, excluded housings imported without bearings from the scope of these investigations.
2/ Mounted bearing units in all the bearing categories are included in the scope of these investigations.
3/ Posthearing brief of Finkenrath at p. 2.

	Characteristics	Applications
Roller bearings:		
Cylindrical.....	Moderate load and moderate to high speed capability; no correction for misalignment; do not carry thrust loads.	Used in heavy equiment, mining, steel, construction, and aerospace industries.
Needle.....	High load and fairly high speed capability; do not correct misalignment; can be used in areas where there is little space; needle thrust bearings carry thrust loads and needle radial bearings carry radial loads.	Used in automotive, machine tool, and home appliance industries. Also used in outboard engines.
Tapered 1/.....	Heavy load and moderate speed capability. Do not correct misalignment; carry radial and thrust loads.	Used in the automotive, steel, construction, and mining industries. Normally not used in smaller equipment.
Plain bearings:		
Spherical plain bearings.....	Heavy load and low speed capabilities; correct misalignment.	Used in heavy equipment, such as hydraulic cylinders and construction.
Other plain bearings.....	Generally carry a lighter load and have higher speed capabilities than spherical plain bearings; do not correct for misalignment; will accept radial or axial loads, but not a combination of the two.	Used in automotive, shipbuilding, mining, heavy equipment, and construction industries.

1/ These bearings are not subject to these investigations.

Interchangeability

The petitioner argues that when products into which bearings are incorporated are at the design stage there is a certain, although limited, degree of interchangeability among the antifriction bearings subject to investigation. Importer responses also indicate that there is limited interchangeability at the design stage.

In order to determine which bearing to use, engineers calculate the dynamic or static capacity of a bearing with an NLD ratio (i.e., number, length, and diameter of rolling elements), which is then cross-checked against load and speed factors. The same solution can be provided by different types of bearings having the same dynamic capacity. 1/

According to the petitioner, companies began to promote interchangeability in the 1920s and 1930s, with the metric design plan originated by SKF, 2/ wherein all types of metric bearings are designed by cross-sectional series. The ISO standards were based on these series. Bearings are grouped by bore and outer diameter (OD) size, and series may include ball, cylindrical roller, spherical roller, and spherical plain bearings. Examples of two such series are presented in appendix C. 3/

An example of such interchangeability cited by petitioner includes substitution between deep-groove ball bearing and tapered roller bearing wheel hub units, as they both are capable of radial, axial, or combined loads. 4/ In addition, the petitioner cites its 1985 competition with Koyo Seiko of Japan for bearings in Ford rear axles; Torrington offered a needle roller bearing product, but Ford selected Koyo's offer of tapered roller bearings. 5/

The petitioner provided examples of products designed to use different bearings or combinations thereof in the same end product. In one instance, needle and cylindrical roller bearings were commonly used in chain saw engines throughout the early 1980s, but then a shift occurred and manufacturers of chain saws began using ball bearings in place of needle and cylindrical bearings, reportedly due to their lower cost. * * *. 6/ According to petitioner, various types of bearings or combinations thereof meet required life, load, and speed requirements and serve the same function, but at different costs. Examples of different combinations of bearings that might be used in chain saw engines are presented in appendix C, along with chain saw bearing life calculations. Additional examples cited by petitioner involved

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1/ Transcript of conference (Conference TR) in Invs. Nos. 303-TA-19/20 and 731-TA-391/399 (Preliminary) at p. 16.
2/ In its prehearing brief, SKF states that as an industry leader in the bearing industry worldwide, it did develop the metric design plan. However, SKF states that "Contrary to petitioner's assertion, the plan was developed to promote manufacturing consistency and avoid confusion at that stage, not to promote interchangeability in the marketplace."
3/ Based on information submitted by Torrington Co.
4/ Petition, p. 139.
5/ Ibid; confirmed by counsel for Koyo Seiko (Conference TR, p. 199).
6/ * * *.

automotive alternators and electric motors, cycle lawn mower engines, automatic transmission sprocket positions, and outboard engine main shaft bearings.

Substitution of bearings at the replacement stage is rare. However, petitioner indicates it has had a number of recent inquiries requesting quotes on bearings different from those currently in use, but able to serve the same purpose in the final product. Petitioner contends only minor modifications would be needed to shift to the different bearing.

On the other side of the interchangeability issue, respondents and a number of purchasers, in questionnaire responses, written submissions and testimony at the public hearing in these investigations argued that what interchangeability there may be across the product lines is very limited. 1/

In response to petitioner's previously mentioned example of interchangeability of bearings in a chainsaw application, SKF contends that such a decision to change bearings would require significant redesign of the product within which the bearing is being used, further adding to the cost of the end product and thereby reducing the economic feasibility of such a change. 2/ In general, other respondents reflected the view of INA concerning the issue of interchangeability that "although substitution of one bearing type for another at the design stage may be theoretically possible, the ability to do so is illusory and not grounded in commercial reality. The ability to substitute one bearing for another in the replacement market is suspect even as a theoretical matter." INA further went on to state a view generally held by respondents and purchasers:

> ". . . it is the intrinsic character of the type of bearing that militates against interchangeability -- that is, its suitability for use in a particular application, including size, weight, configuration, durability, and similar factors - which is dispositive in the selection of a bearing type at the design stage. Once having been selected, the selected bearing type ordinarily must be used if a replacement is required. Petitioner, on the other hand, indicates that price is a determining factor, and that if, at the design stage, the manufacturer of the product of which the bearing is to form a part may select from more than one type of bearing, that selection may be made on the basis of price. However, in ordinary circumstances, for example, in the manufacture of an automobile, an aircraft, or even consumer products such as lawn mowers, vacuum cleaners and others too numerous to mention, bearings, although essential to the operation of the product, constitute only a minor fraction of overall cost. Thus, the contention that the product will be designed to incorporate a particular configuration of a bearing is

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1/ Mr. William Hayes, President, NTN Corp. of America, testified in the public hearing in these investigations that interchangeability among bearing types was limited to "one or two percent" and that the application itself dictates that "a ball bearing or a roller bearing because of the load speeds, whatever else the application defines, requires that one type of bearing is much preferred, performs better, and therefore substitutability is not easily achieved." Hearing transcript at pp. 199-200.

2/ * * *.

misplaced; to the contrary, the selected bearing will be that which most fits the needs of the end users of the product." 1/2/

A number of purchasers indicated that other factors, such as costs related to qualifying a bearing producer as an acceptable supplier and related product testing and engineering associated with new bearing designs, limit the amount of interchangeability among bearing types. Once bearings are designed for a particular product purchasers reported staying with a particular bearing type and producer, notwithstanding problems such as timeliness of delivery from that producer. 3/

In its final determinations, Commerce stated that while petitioner's arguments with respect to interchangeability at the design stage may have "limited validity in a theoretical sense, it has little practical application because antifriction bearings are almost 'design followers.'" 4/ Commerce further stated ". . ., while examples of interchangeability at the design stage may be found, they are comparatively rare. Interchangeability at the replacement stage is almost nil." This view of interchangeability was also reflected in Commerce's section 232 investigation on the effects of imports of antifriction bearings on the national security.

Manufacturing process

There are four major steps in the production of all the bearings subject to investigation: green machining, heat treating, finishing, and assembly and inspection. Special bearing grade alloy steel in the form of 12 to 15 foot seamless tubing is the raw material utilized in the production of most outer and inner rings, and alloy wire, in the form of coils, is the base material for roller manufacture. There is a generally accepted minimum industry standard for the steel utilized in bearing production; however, the raw material used by most bearing manufacturers exceeds this standard in quality.

Green machining.--Green machining is an industry term that relates to the machining operations performed on the raw material prior to heat treatment. For outer and inner rings, the steel tubing is machined on single or multiple screw machines. When the desired contour and shape is achieved, the outer or inner ring is sheared off the end of the tube. Green machining the inner ring, however, involves more steps because of the complexity of the design and function of this component. These components are then inspected and

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1/ Posthearing brief on behalf of INA Bearing Co., Inc.; INA Walzlager Schaeffler, K.G.; INA Roulements, S.A.; and INA Bearing Co., Ltd. (INA) at app. A.

2/ * * *.

3/ Ms. Jackie Doxey of Stowe Manufacturing Co. stated that although her company has experienced repeated delivery problems with the petitioner, it continues to purchase from them due to the fact that "several of the Torrington products we (Stowe) continue to buy were engineered into our products 20, 30 years ago and we do not have an engineered-approved equivalent at this time. So we are forced to purchase from Torrington, even though we have problems getting the product." Hearing transcript at pp. 240, 249.

4/ Commerce final determinations, app. B, at p. 21.

function of this component. These components are then inspected and electronically gauged to ensure adherence to the prescribed specifications. The green machining of rollers begins with coil wire drawn into a cold header machine where the rollers are sheared in rapid succession and are "headed" or butted in a die to form the desired shape.

Heat treatment.--The bearing components are then heat treated to ensure durability, hardness, and shock resistance. Some bearings, such as tapered roller bearings, have components made from a carburizing-grade steel that is soft in the middle. The initial heat treatment stage for these components begins with carburization. During this process the green-machined components are heated in a carbon-rich atmosphere to impregnate carbon into the surface of the product. After quenching (emersion in an oil bath), the high-carbon case becomes very hard, whereas the lower carbon core remains comparatively soft. The high carbon of the 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 easily.

The next stage of heat treatment is applicable in the manufacture of all steel bearing parts, with the exception of cages. The parts are placed in a hardening furnace and heated to very high temperatures (about 1,550°F) for an extended period of time. These components are then placed in a stamping die to reshape them, as the heating process distorts their size, and then quenched in an oil bath.

Finishing.--The third phase of production is finishing. This process consists of either just grinding or grinding and honing. The steps involved in the grinding operation differ depending on the type of component. Grinding inner and outer rings is done in the following steps:

Grinding steps	Inner ring	Outer ring
1st	Width grind	Width grind
2nd	Bore grind (inside of inner ring)	Outside diameter grind
3rd	Outside diameter grind	Bore grind (inside side of ring)

Honing involves polishing the inside diameter of the outer ring and the outside diameter of the inner ring. This process is often performed only on smaller bearings. A honing machine utilizing a very fine grade of sandpaper performs these operations.

Rollers are finished somewhat differently than inner and outer rings. The basic steps involve rough grinding the roller body, grinding the roller end, finish grinding the roller body, and roller honing. Rollers initially pass through a number of grinding machines that remove steel from their outside diameter in order to obtain a specified size. During end grinding, steel is removed from the large end of the roller, leaving a slightly convex shape. Final grinding and honing then take place, and 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.

Cages are often produced from cold-rolled strip steel. The steel is fed into a "cut-and-carry press" that performs the blanking, bottoming, perforation, and winging operations that produce a finished cage. The cut-and-carry press has multiple stations within it, and an internal conveyor that moves the material along through the various processes. Blanking involves forming the strip steel into a dish shape; bottoming involves punching out the bottom of the cage. The cage is then perforated with holes around its diameter. A winging operation removes any sharp corners on the perforations and spreads the large end of the cage for installation of the rolling elements. Cages are then annealed to relieve any stresses. Annealing involves heating a cage to a specific temperature for a specified time and then cooling the cage to increase its hardness. This is followed by shot blasting to remove scale on the cage and to improve the finish.

Assembly.--In the assembly stage, cages are mounted on an assembly nest and the balls or 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. This process is often automated for the smaller bearings.

Certain bearing components, such as inner and outer rings, may be green-machined only or green-machined and heat-treated, and then sent to another bearing producer to be finished. U.S. producers sometimes purchase these unfinished components from foreign manufacturers and then finish and assemble them here.

Machinery and equipment

Bearing production involves a high degree of mechanization because, in large part, of the very close tolerances required of the products. Computer-aided manufacturing, microprocessors, laser-gauging equipment, and highly automated material-handling equipment are often employed in the production of bearings. Employees perform very little of the actual production; they are primarily machine operators and quality control inspectors. Each worker is responsible for the product coming out of his or her station; consequently, there is a high percentage of gauging and inspection. All components are tested several times throughout the production process.

The components of several different types of bearings may be manufactured using the same green machining equipment. The two key factors that determine the type of machine to be used are size and form of the raw material, not the type of bearing. For example, the machinery used to machine bar stock is normally not the same machinery used to machine steel tubing. Likewise, the machinery used in heat treatment does not differ between various types of bearings, with the exception of tapered roller bearings. The components used in the manufacture of a tapered roller bearing undergo carburization, which is an additional heat-treatment process. In grinding, however, most machines are specifically designed for one or two types of bearings, although certain machines can be used to grind a wider variety of bearing types.

Manufacturing facilities

Many companies rationalize their production by size, precision, and/or type of rolling element. Bearings come in a wide variety of sizes from approximately one-eighth of an inch in diameter to over 16 feet in diameter. These items also vary according to the precision of their dimensions and the load tolerances they can hold. Strict standards for these measures are developed by the Annular Bearing Engineers Committee (ABEC) and the Roller Bearing Engineers Committee (RBEC) of the Anti-Friction Bearing Manufacturers Association, Inc. (AFBMA).

In its questionnaire in these investigations, the Commission asked producers to indicate if their production was rationalized and, if so, to describe how such rationalization was carried out (i.e., by type of rolling element, ABEC/RBEC rating, size). For a number of the producers, the question was moot because they produced only one of the product categories in question, produced only precision or superprecision product, or produced in a very limited size range. A number of the larger producers, both U.S. and foreign-owned, reported that production was rationalized by rolling element and size of bearing, with certain production lines and facilities dedicated to particular products, especially in the high volume products, to achieve maximum machinery utilization and related economies of scale. In addition to size and type of bearing, producers reported segregating production on the basis of level of precision, i.e., precision bearings (ABEC/RBEC 1 and 3) and superprecision bearings (ABEC/RBEC 5 and up). In general, those who produce both found a number of aspects of the production process to be similar, but noted that the superprecision bearing requirements for more exacting tolerances (allowable variations in specifications), greater inspection, traceability, and the need for a "white room technology" to control the environment of many aspects of the manufacturing process (e.g., dust, humidity, temperature) 1/ led to segregating that production. 2/ Some U.S. producers have specialized, exclusively, in the manufacture of superprecision bearings, having retreated from the commercial market. 3/

The petitioner, in responding to this question, has argued that although rationalization occurs, the different types of bearings can be and, indeed, are manufactured at common manufacturing facilities, often on identical or similar machinery and equipment, employing labor skills that are often interchangeable. 4/ Torrington provided a list of each of its manufacturing facilities with respect to the product(s) produced, the applications of those products, and the principal customers for those products. 5/

With respect to the nature of their production process, the producers described themselves as having a "ground up" manufacturing process rather than being finishing and assembly operations. Virtually all of the firms responding

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1/ The JLC study has noted that the production of superprecision bearings "requires specialized manufacturing equipment, specialty material, and a highly skilled workforce." JLC Bearing Study, June 18, 1986, p. 4.
2/ * * *.
3/ * * *.
4/ * * *.
5/ * * *.

to the questionnaire are members of the AFBMA. Membership in the AFBMA is limited to manufacturers of antifriction bearings, but the association considers grinding operations manufacturing, and only excludes "clearing houses". 1/

U.S. tariff treatment

Antifriction bearings (other than tapered roller bearings) and parts thereof, whether finished or unfinished, previously classified in schedule 6 of the Tariff Schedules of the United States (TSUS), are now provided for in Chapter 84 of the Harmonized Tariff Schedule of the United States (HTS), as noted on the following page.

The Nature and Extent of Subsidies and Sales at Less Than Fair Value

The determinations regarding subsidies and sales at LTFV are summarized in the following sections.

Subsidies

Singapore.--Based on its investigation, Commerce determined that producers or exporters of antifriction bearings (other than tapered roller bearings) in Singapore receive benefits that constitute subsidies within the meaning of the countervailing duty law under the following programs:

	Amount (percent ad valorem)
Monetary Authority of Singapore (MAS) Rediscount Facility	0.08
Production for Export Under Part VI of the Economic Expansion Incentives Act (EEIA)	2.02

Thailand.--Commerce also determined that producers or exporters of antifriction bearings (other than tapered roller bearings) in Thailand 2/ receive benefits that constitute subsidies within the meaning of the countervailing duty law under the following programs:

	Amount (percent ad valorem)
Short-Term Loans Provided Under the Export Packing Credits Program	1.42
Tax Certificates for Exports	0.49
Electricity Discounts for Exporters	0.25
Tax and Duty Exemptions Under the Investment Promotion Act (IPA)	19.38

1/ May 2, 1988, telephone interview with Michael Payne, President, AFBMA.
2/ The subsidy finding with respect to Thailand applied only to ball bearings and parts thereof.

TSUSA item number	HTS statistical reporting number	Description	Rates of duty Column 1 General	Special	Column 2
			(Percent ad valorem)		
680.30		Antifriction balls and rollers:	4.9	Free	45
680.3025	8482.91.0010	Alloy steel antifriction balls			
680.3030	91.0020	AF balls of other than alloy steel			
680.3040	91.0040	Antifriction rollers			
	91.0060				
680.3300	10.1000	Ball bearings with integral shafts	4.2	Free	35
680.37		Ball bearings, and parts thereof:	11	Free	67
		Radial ball bearings:		6.6	
680.3704	10.5010	Outside diameter under 9 mm			
680.3708	10.5020	9 mm and over but not over 30 mm			
680.3712	10.5030	Over 30 mm but not over 52 mm			
680.3717	10.5040	Over 52 mm but not over 100 mm			
680.3718	10.5050	Over 100 mm			
680.3722	10.5090	Ball bearings, other than radial			
680.3727	99.1010	Parts of ball bearings, inner races and other races of integral shaft bearings			
680.3728	99.1050	Other parts			
680.39		Nonenumerated roller bearings and parts:	6.5	Free	67
680.3952	30.0000	Spherical roller bearings			
680.3956	99.5000	Parts of spherical bearings			
680.3960	40.0000	Other roller bearings (including			
	50.0000	combination roller and ball			
	80.0000	bearings) and parts			
	99.7000				
681.04		Pillow blocks and parts thereof:	5.7	Free	45
		Ball or roller bearing type--			
681.0410	8483.20.8040	Pillow block units			
	20.8080				
681.0430	30.8020	Parts			
	30.8040				
	30.8060				
	30.8080				
	90.3000				
	90.7000				
681.10		Flange, take-up, cartridge, and hanger units, and parts thereof:	5.7	Free	45
		Ball or roller bearing type--			
681.1010	20.4040	Complete units			
	20.4080				
681.1030	30.4040	Parts			
	30.4080				
	90.2000				
	90.3000				
681.3900	8485.90.0000	Machinery parts not containing electrical features and not specially provided for	5.7	Free	45
692.32		Chassis, bodies (including cabs), and parts of the foregoing motor vehicles:	3.1	Free	25
692.3295	8708.99.5090	Other motor vehicle parts			

As noted earlier, although neither Singapore nor Thailand is a "country under the agreement" pursuant to section 701(b) of the Act, the Commission is conducting these countervailing duty investigations on those antifriction bearings from Singapore and Thailand that are duty free under the GSP, pursuant to section 303 of the Act. The subject bearings in both of these investigations include ball- or roller-bearing-type flange, take-up, cartridge, and hanger units, and parts of the foregoing; machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for; and parts of motor vehicles containing any of the foregoing bearings and not specially provided for.

Sales at LTFV

Table 2 on the following page provides the results of Commerce's final antidumping determinations on antifriction bearings for each of the countries subject to these investigations.

Table 3 sets forth Commerce's final determinations with respect to the existence of critical circumstances for each company and each class or kind of merchandise subject to these investigations. In making these determinations, Commerce found that there is a reasonable basis to believe that imports have been massive over a relatively short time period; this period, running from April through October 1988, represents the months from the beginning of the investigations until the preliminary determinations. Commerce states that this time period was chosen because it was a period in which respondents could take advantage of their knowledge of the dumping investigations to increase exports to the United States without being subject to antidumping duties. The affirmative critical circumstances rulings direct Customs to suspend liquidation of those affected imports for the period 90 days prior to the date of publication of Commerce's preliminary determinations in the Federal Register. Commerce's preliminary notice was published November 9, 1988; accordingly, those suppliers affected by the critical circumstances rulings are subject to LTFV penalties retroactive to August 11, 1988.

Table 2
Antifriction bearings (other than tapered roller bearings) and parts thereof: Commerce's final LTFV margins, by country and company

(In percent)

Country and company	Ball bearings and parts	Spherical bearings and parts	Cylindrical bearings and parts	Needle bearings and parts	Spherical plain bearings and parts
Federal Republic of Germany:					
FAG	70.41	36.41	52.43	107.05	74.88
GMN	35.43	1/	1/	1/	1/
INA	31.29	1/	52.43	41.82	1/
SKF	132.25	1/	76.27	105.05	118.98
All others	68.89	36.61	55.65	47.83	114.52
France:					
INA	66.18	1/	11.02	0.65	1/
SKF	66.42	8.89	1/	1/	39.00
SNR	56.50	1/	18.37	1/	1/
All others	65.13	8.89	17.31	0.65	39.00
Italy:					
FAG	68.29	18.51	1/	1/	1/
ICSA	1/	5.09	1/	1/	1/
SKF	155.99	1/	212.45	73.97	1/
All others	155.57	8.76	212.45	73.97	2/ 0.00
Japan:					
Koyo	73.55	40.18	51.21	163.35	1/
Minebea	106.61	1/	1/	1/	84.26
Nachi	48.69	22.76	4.00	1/	1/
NSK	42.99	22.15	12.28	1/	1/
NTN	21.36	5.81	9.30	163.35	92.00
All others	45.83	14.94	25.80	163.35	92.00
Romania:					
TIE	39.61	64.81	3/	3/	3/
All others	39.61	64.81	3/	3/	3/
Singapore:					
NMB/Pelmec	25.08	3/	3/	3/	3/
All others	25.08	3/	3/	3/	3/
Sweden:					
SKF	180.00	140.00	13.69	1/	1/
All others	180.00	140.00	13.69	1/	2/ 0.00
Thailand:					
NMB/Pelmec	20.40	3/	3/	3/	3/
All others	20.40	3/	3/	3/	3/
United Kingdom:					
INA	1/	1/	1/	174.17	1/
RHP	44.12	1/	43.44	1/	1/
Rose	1/	1/	1/	1/	2/ 0.00
SKF	61.14	7.69	1/	1/	1/
All others	54.31	7.69	43.44	174.17	2/ 0.00

1/ Not applicable.
2/ Negative determination.
3/ Investigation rescinded.

Table 3
Antifriction bearings (other than tapered roller bearings) and parts thereof: Commerce's final determinations of critical circumstances, by country and company

Country and company	Ball bearings and parts	Spherical bearings and parts	Cylindrical bearings and parts	Needle bearings and parts	Spherical plain bearings and parts
Federal Republic of Germany:					
GMN	No	--	--	--	--
FAG	No	Yes	Yes	Yes	No
INA	Yes	--	Yes	Yes	--
SKF	Yes	--	Yes	Yes	Yes
All others	No	Yes	Yes	Yes	No
Italy:					
FAG	No	No	--	--	--
SKF	Yes	--	Yes	Yes	--
ICSA	--	No	--	--	--
All others	No	No	No	No	--
Japan:					
Koyo	Yes	Yes	Yes	Yes	--
Minebea	Yes	--	--	--	Yes
Nachi	No	Yes	No	--	--
NSK	No	Yes	No	--	--
NTN	No	No	No	No	Yes
All others	No	No	No	No	Yes
Romania:					
TIE	No	No	--	--	--
Sweden:					
SKF	Yes	Yes	No	--	--
All others	No	Yes	No	--	--
U.K.:					
SKF	Yes	No	--	--	--
RHP	No	--	Yes	--	--
INA	--	--	--	Yes	--
Rose	--	--	--	--	No
All others	No	No	Yes	No	No

The U.S. Market

U.S. producers

The petition listed 95 known manufacturers of antifriction bearings (other than tapered roller bearings) in the United States. Of these, eight firms are owned by foreign producers of antifriction bearings.

The Commission sent questionnaires to 50 of these producers and, at the time of this report's preparation, had received completed responses from 23 firms. These firms are believed to have accounted for 80 percent of total domestic shipments by U.S. producers of the subject antifriction bearings in 1987. Table 4 presents shipment levels in 1987, and the share of shipments by product type for each of the antifriction bearing producers that responded to the Commission's questionnaire. As table 4 indicates, foreign-owned U.S. producers play a significant role in each of the product categories subject to these investigations and all of them are in opposition to the petition. 1/ On the basis of value, the foreign-owned firms accounted for the following portions of reported domestic shipments during 1987 in the five product categories: 22.3 percent for ball bearings and parts thereof; *** percent for spherical bearings and parts thereof; 50.2 percent for cylindrical bearings and parts thereof; 15.0 percent for needle bearings and parts thereof; and *** percent for spherical plain bearings and parts thereof. Given the role foreign-owned firms play in these investigations and their opposition to the petition, this report will provide data separately for the two categories of producers, foreign-owned and non-foreign-owned, to the extent that such information is available.

1/ Throughout these investigations, the petitioner argued that the eight U.S. producers of antifriction bearings that are foreign-owned should be excluded, as related parties, from the definition of the "U.S. industry". In its preliminary determinations, the Commission said "Given...the fact that inclusion of the related parties does not significantly alter the condition of the domestic industry, we have not excluded any related parties for the purposes of these preliminary investigations. Should any final investigations occur, we would reconsider this issue in more detail, on a product specific basis, to determine if particular producers should be excluded from particular industries based upon the information then available." Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand and the United Kingdom, Invs. Nos. 303-TA-19 and 20 and 731-TA-391-399 (Preliminary), USITC Pub. 2083 at 29.

Table 4
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. producers' share of domestic shipments (based on value), 1987

Firm	Location	Establish-ments	Foreign ownership	Share of shipments: Ball bearings and parts	Spheri-cal bearings and parts	Cylind-rical bearings and parts	Needle bearings and parts	Spherical plain bearings and parts
				Percent				
In support of petition:								
*	*	*	*	*	*	*	*	*
In opposition:								
*	*	*	*	*	*	*	*	*
Did not take a position:								
*	*	*	*	*	*	*	*	*

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note: Totals may not add due to rounding.

Character of the U.S. market

The antifriction bearing industry in the United States can be described as dynamic. To one degree or another, most producers of antifriction bearings in the United States appear to have "restructured" and/or "rationalized" their operations during the period of investigation. In response to the Commission's questionnaire, the producers of the subject antifriction bearings reported the numerous changes in operations during the period of investigation which are summarized below.

Date	Firm	Occurrence
*	*	*
*	*	*
*	*	*

Staff discussions with industry sources as to the condition of the antifriction bearings industry have identified the additional following plant closings that occurred during the period of investigation: 1/

1/ Apr. 20, 1988, interview with * * *.

Firm	Product	Plant location
*	*	*
*	*	*
*	*	*
*	*	*

The dynamic situation of the antifriction bearing industry is further illustrated by * * *. 1/

U.S. importers

Information identifying importers of antifriction bearings was provided by counsel for the petitioner, and was verified against files provided by the U.S. Customs Service. The Commission sent questionnaires to 75 importers, which included all the known major importers of the subject antifriction bearings. The 75 importers are believed to account for approximately 75 percent of total imports of the subject antifriction bearings from the countries subject to these investigations.

The principal importers of antifriction bearings in the United States are the domestic bearing manufacturers and/or their affiliated firms. U.S. producers of the subject antifriction bearings accounted for increasing shares of total imports over the period of investigation and in each of the product categories accounted for the majority of imports. In each of the product categories, the foreign-owned producers imported more of the subject products than their U.S.-owned counterparts. OEMs and U.S. distributors of antifriction bearings account for the next largest portions of imports after U.S. bearing producers. Table 5 presents information on the U.S. producers who import products from countries subject to these investigations in product categories they also produce in the United States, and the ratio of such imports to domestic shipments of the firm's U.S. production.

Table 5
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. producers' imports and ratio of imports to domestic shipments of U.S.-produced merchandise, by products, 1985-87, January-September 1987, and January-September 1988

*	*	*	*	*	*	*

1/ Ibid, and May 6, 1988, telephone interview with * * *.

Apparent U.S. consumption

The data on apparent U.S. consumption of the subject antifriction bearings presented in table 6 are composed of the sum of domestic shipments of U.S.-produced antifriction bearings by U.S. producers, as reported in response to the Commission's questionnaires, 1/ and imports of the subject antifriction bearings as reported in official import statistics for ball and spherical bearings and imports of cylindrical, needle, and plain bearings as reported in the Commission's importer questionnaires. 2/

Ball bearings.--Total U.S. consumption of ball bearings and parts thereof decreased steadily from $1.7 billion in 1985 to $1.6 billion in 1987, or by 5.6 percent. Consumption during January-September 1988 was 13.4 percent ahead of that for the same period of 1987. Imports subject to these investigations increased as a share of total consumption throughout the reporting period.

Spherical bearings.--Total U.S. consumption of spherical bearings and parts thereof decreased irregularly from $227.1 million in 1985 to $221.6 million in 1987, or by 2.4 percent. Total consumption increased 20.9 percent in interim 1988 compared with interim 1987. Imports subject to these investigations declined as a share of total consumption throughout the period of investigation.

Cylindrical bearings.--Total U.S. consumption of cylindrical bearings and parts thereof dropped irregularly from $208.5 million in 1985 to $204.6 million in 1987, a decline of 1.8 percent. Consumption for January-September 1988 was 6.3 percent higher than that during the same period of 1987. The imports subject to these investigations increased their share of the market throughout the reporting period.

Needle bearings.--Total U.S. consumption of needle bearings and parts thereof increased steadily from *** in 1985 to *** in 1987, or by *** percent. Apparent consumption in January-September 1988 was *** percent ahead of that in the same period of 1987. Imports subject to these investigations increased their share of consumption from *** percent in 1985 to *** percent in 1987. During January-September 1988, such imports' share of consumption stood at *** percent, compared with *** percent for the same period of 1987.

1/ Questionnaire responses have been used for domestic shipments data. Therefore, to the extent any producers had not responded at the time of the preparation of this report, domestic shipments are understated.

2/ Official import statistics used in apparent consumption calculations for ball and spherical bearings do not include bearing articles imported under the basket categories of automotive parts (TSUSA item 692.3295) and, therefore, are understated. A portion of the official import statistics from the other basket categories have been allocated in these two product categories based on discussions with officials at the Department of Commerce and in the antifriction bearing industry. Import statistics for cylindrical, needle, and plain bearings and parts thereof come from importer questionnaires and are understated to the extent that all questionnaires have not been returned.

Table 6
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. producers' domestic shipments (including company transfers), imports for consumption, and apparent U.S. consumption, by products, 1985-87, January-September 1987, and January-September 1988

(Value in 1,000 dollars)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings and parts thereof:					
U.S. producers' shipments:					
U.S.-owned firms	1,031,456	944,899	913,371	735,260	753,031
Foreign-owned firms	270,229	241,872	255,456	168,868	204,232
Total	1,301,685	1,186,771	1,168,827	904,128	957,263
U.S. imports:					
Unfair imports	339,761	365,580	377,553	279,797	372,769
Other imports	43,206	40,371	44,292	32,068	49,020
Total	382,967	405,951	421,845	311,865	421,789
Apparent U.S. consumption	1,684,652	1,592,722	1,590,672	1,215,993	1,379,052
Spherical bearings and parts thereof:					
U.S. producers' shipments:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	192,069	185,315	191,613	148,247	180,325
U.S. imports:					
Unfair imports	31,869	28,307	27,110	21,204	23,826
Other imports	3,152	3,447	2,849	2,097	3,310
Total	35,021	31,754	29,959	23,301	27,136
Apparent U.S. consumption	227,090	217,069	221,572	171,548	207,461
Cylindrical bearings and parts thereof:					
U.S. producers' shipments:					
U.S.-owned firms	135,758	90,830	90,456	64,631	71,476
Foreign-owned firms	53,371	80,742	92,552	68,451	68,887
Total	189,129	171,572	183,008	133,082	140,363
U.S. imports:					
Unfair imports	18,855	19,002	21,138	17,905	20,208
Other imports	476	524	489	397	381
Total	19,331	19,526	21,627	18,302	20,589
Apparent U.S. consumption	208,460	191,098	204,635	151,384	160,952
Needle bearings and parts thereof:					
U.S. producers' shipments:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
U.S. imports:					
Unfair imports	***	***	***	***	***
Other imports	***	***	***	***	***
Total	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***

Continued on next page

Table 6--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. producers' domestic shipments (including company transfers), imports for consumption, and apparent U.S. consumption, by products, 1985-87, January-September 1987, and January-September 1988

(Value in 1,000 dollars)

Item	1985	1986	1987	January-September-- 1987	1988
Spherical plain bearings and parts thereof:					
U.S. producers' shipments:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
U.S. imports:					
Unfair imports	***	***	***	***	***
Other imports	***	***	***	***	***
Total	***	***	***	***	***
Apparent U.S. consumption	***	***	***	***	***
All subject bearings and parts thereof:					
U.S. producers' shipments:					
U.S.-owned firms	1,552,078	1,435,667	1,400,263	1,101,327	1,176,925
Foreign-owned firms	478,441	467,226	502,295	348,418	407,364
Total	2,030,519	1,902,893	1,902,558	1,449,745	1,584,289
U.S. imports:					
Unfair imports	414,124	446,585	468,203	351,984	452,264
Other imports	49,225	45,434	50,261	36,274	54,687
Total	463,349	492,019	518,464	388,258	506,951
Apparent U.S. consumption	2,493,868	2,394,912	2,421,022	1,838,003	2,091,240

Source: Shipments and imports of cylindrical, needle, and plain bearings, compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; imports of ball and spherical bearings derived from official statistics of the U.S. Department of Commerce.

Spherical plain bearings.--Total U.S. consumption of spherical plain bearings and parts thereof dropped irregularly from *** in 1985 to *** in 1987, or by *** percent. Consumption in interim 1988 was *** percent ahead of consumption levels for interim 1987. Imports subject to these investigations steadily increased their share of total consumption throughout the period of investigation.

All subject bearings.--Apparent consumption of all subject antifriction bearings decreased slightly from $2.49 billion in 1985 to $2.42 billion in 1987, or by 2.9 percent. Consumption for January-September 1988 was 13.8 percent above consumption for January-September 1987. Imports of all subject bearings rose as a share of total consumption throughout the period of investigation.

Channels of distribution

As was found in the competitive assessment of the ball and roller bearing industry, 1/ the major channel of distribution for the subject antifriction bearings (other than spherical bearings) continues to be original-equipment manufacturers (OEMs) (table 7). 2/ Import competition occurred initially in the high-volume OEM market, and has, likewise, increased in the distributor/ aftermarket channel. The OEM users of antifriction bearings cover almost all manufacturing segments, with many of those bearings destined for the motor-vehicle market.

In response to Commission questionnaires, 23 U.S. producers (accounting for 80 percent of total domestic shipments in 1987) and 27 importers (accounting for 60 percent of total imports from the subject countries in 1987) provided information on shipments of antifriction bearings. Such information indicates that the principal OEM markets for both U.S. producers and importers of antifriction bearings are automotive, industrial equipment, and other applications. These markets accounted for approximately 90 percent of total shipments of the subject antifriction bearings.

1/ Competitive Assessment of the Ball and Roller Bearing Industry, USITC 1797, p. 98.

2/ Shipment values in table 7 do not reconcile with those in table 6 due to a number of respondents using estimates with respect to shipments to the various market segments as well as using data derived from fiscal year, rather than calendar year, information.

Table 7
Antifriction bearings (other than tapered roller bearings) and parts thereof: Channels of distribution, by products, 1985-87

Item	Value			Share of total		
	1985	1986	1987	1985	1986	1987
	(1,000 dollars)			(Percent)		
U.S. producers' shipments:						
Ball bearings and parts thereof:						
OEM-related	422,921	376,868	355,885			
OEM-unrelated	535,245	506,809	505,967			
Total OEM	958,166	883,677	861,852	72.5	72.8	72.4
Distributor-related	59,619	56,936	62,340			
Distributor-unrelated	303,390	272,422	266,801			
Total distributor	363,009	329,358	329,141	27.5	27.2	27.6
Total	1,321,175	1,213,035	1,190,993	100.0	100.0	100.0
Spherical bearings and parts thereof:						
OEM-related	5,869	3,256	7,496			
OEM-unrelated	65,738	62,454	66,245			
Total OEM	71,607	65,710	73,741	35.1	34.1	35.8
Distributor-related	3,660	3,591	4,160			
Distributor-unrelated	128,756	123,145	127,794			
Total distributor	132,416	126,736	131,954	64.9	65.9	64.2
Total	204,023	192,446	205,695	100.0	100.0	100.0
Cylindrical bearings and parts thereof:						
OEM-related	20,874	15,251	12,554			
OEM-unrelated	129,623	127,507	139,422			
Total OEM	150,497	142,758	151,976	74.6	80.1	80.1
Distributor-related	4,292	1,631	1,628			
Distributor-unrelated	46,842	33,755	36,230			
Total distributor	51,134	35,386	37,858	25.4	19.9	19.9
Total	201,631	178,144	189,834	100.0	100.0	100.0
Needle bearings and parts thereof:						
OEM-related	***	***	***			
OEM-unrelated	***	***	***			
Total OEM	***	***	***	85.0	85.5	84.2
Distributor-related	***	***	***			
Distributor-unrelated	***	***	***			
Total distributor	***	***	***	15.0	14.5	15.8
Total	***	***	***	100.0	100.0	100.0
Spherical plain bearings and parts thereof:						
OEM-related	***	***	***			
OEM-unrelated	***	***	***			
Total OEM	***	***	***	80.3	80.1	77.6
Distributor-related	***	***	***			
Distributor-unrelated	***	***	***			
Total distributor	***	***	***	19.7	19.9	22.4
Total	***	***	***	100.0	100.0	100.0

Continued on next page

Table 7--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: Channels of distribution, by products, 1985-87

Item	Value			Share of total		
	1985	1986	1987	1985	1986	1987
	(1,000 dollars)			(Percent)		
U.S. imports:						
Ball bearings and parts thereof:						
OEM-related	446	183	556			
OEM-unrelated	164,648	190,322	238,431			
Total OEM	165,094	190,505	238,987	70.7	70.5	71.4
Distributor-related	601	823	1,533			
Distributor-unrelated	67,965	78,966	94,381			
Total distributor	68,566	79,789	95,914	29.3	29.5	28.6
Total	233,660	270,294	334,901	100.0	100.0	100.0
Spherical bearings and parts thereof:						
OEM-related	216	266	342			
OEM-unrelated	9,681	8,564	10,477			
Total OEM	9,897	8,830	10,819	35.3	33.0	31.6
Distributor-related	894	1,635	2,740			
Distributor-unrelated	17,267	16,264	20,688			
Total distributor	18,161	17,899	23,428	64.7	67.0	68.4
Total	28,058	26,729	34,247	100.0	100.0	100.0
Cylindrical bearings and parts thereof:						
OEM-related	0	0	0			
OEM-unrelated	14,150	11,852	14,058			
Total OEM	14,150	11,852	14,058	48.3	42.4	42.1
Distributor-related	0	75	25			
Distributor-unrelated	15,155	16,024	19,299			
Total distributor	15,155	16,099	19,324	51.7	57.6	57.9
Total	29,305	27,951	33,382	100.0	100.0	100.0
Needle bearings and parts thereof:						
OEM-related	***	***	***			
OEM-unrelated	***	***	***			
Total OEM	***	***	***	72.9	77.7	74.0
Distributor-related	***	***	***			
Distributor-unrelated	***	***	***			
Total distributor	***	***	***	27.1	22.3	26.0
Total	***	***	***	100.0	100.0	100.0
Spherical plain bearings and parts thereof:						
OEM-related	***	***	***			
OEM-unrelated	***	***	***			
Total OEM	***	***	***	70.5	69.0	60.7
Distributor-related	***	***	***			
Distributor-unrelated	***	***	***			
Total distributor	***	***	***	29.5	31.0	39.3
Total	***	***	***	100.0	100.0	100.0

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Consideration of Alleged Material Injury

The information in this section of the report was compiled from responses to questionnaires of the U.S. International Trade Commission. The 23 producers who had provided questionnaire responses at the time of this report's preparation are believed to account for approximately 80 percent of total U.S. shipments of the subject antifriction bearings in 1987. 1/

U.S. production, capacity, and capacity utilization

Data on reported U.S. production, end-of-period capacity, and capacity utilization in connection with operations on the subject antifriction bearings are presented in table 8.

Ball bearings.--Production of all finished ball bearings dropped from 215 million units in 1985 to 195 million units in 1986, or by 9.4 percent, but then increased to 199 million units in 1987, or by 1.9 percent. January-September 1988 production increased by 6.8 percent compared with that in the same period of 1987.

Capacity to produce finished ball bearings decreased from 296 million units in 1985 to 259 million units in 1987, or by 12.4 percent. Capacity for January-September 1988 was 2.5 percent more than capacity for the same period of 1987. Ball bearing capacity levels were influenced by the number of corporate reorganizations/rationalizations that occurred during the period of investigation, as discussed in the section on the U.S. market.

Utilization of capacity to produce ball bearings increased over the period of investigation, with foreign-owned firms operating at higher levels of capacity utilization in all reporting periods. Capacity utilization for U.S.-owned producers in manufacturing finished ball bearings slipped from 67.5 percent in 1985 to 62.1 percent in 1987. U.S.-owned capacity utilization for January-September 1988 was 66.3 percent compared with 61.8 percent for the same period of 1987. These rates reflect * * *. 2/ Capacity, production, and

---

1/ As noted earlier in this report, the Commission, in addition to requesting information in the 5 major product categories, also requested information on producer operations within the ball, spherical, cylindrical, and needle categories along precision and superprecision bearing lines, as well as information with regard to wheel hub unit operations. Those data are presented in app. B.

2/ * * *.

Table 8
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. capacity, production, and capacity utilization, by products, 1985-87, January-September 1987, and January-September 1988 1/

(Quantity in 1,000 units; capacity utilization in percent)

Item	1985	1986	1987	January-September-- 1987	January-September-- 1988
Ball bearings:					
U.S.-owned producers:					
Capacity	161,121	139,648	140,887	106,730	102,023
Production	108,835	90,936	87,508	65,930	67,643
Capacity utilization	67.5	65.1	62.1	61.8	66.3
Foreign-owned producers:					
Capacity	134,435	125,647	118,020	75,051	84,213
Production	106,262	103,898	111,122	69,462	76,981
Capacity utilization	79.0	82.7	94.2	92.6	91.4
Total, all producers:					
Capacity	295,556	265,295	258,907	181,781	186,236
Production	215,097	194,834	198,630	135,392	144,624
Capacity utilization	72.8	73.4	76.7	74.5	77.7
Spherical roller bearings:					
U.S.-owned producers:					
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Capacity utilization	***	***	***	***	***
Foreign-owned producers:					
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Capacity utilization	***	***	***	***	***
Total, all producers:					
Capacity	3,488	3,587	3,671	2,751	2,812
Production	2,764	2,409	2,435	1,810	2,252
Capacity utilization	79.2	67.2	66.3	65.8	80.1
Cylindrical roller bearings:					
U.S.-owned producers:					
Capacity	50,568	45,842	45,172	33,883	27,875
Production	11,059	6,776	6,027	4,439	4,286
Capacity utilization	21.9	14.8	13.3	13.1	15.4
Foreign-owned producers:					
Capacity	2,301	5,932	5,937	5,070	5,707
Production	1,755	4,631	4,729	3,543	4,196
Capacity utilization	76.3	78.1	79.7	69.9	73.5
Total, all producers:					
Capacity	52,869	51,774	51,109	38,953	33,582
Production	12,814	11,407	10,756	7,982	8,482
Capacity utilization	24.2	22.0	21.0	20.5	25.3

Continued on next page

Table 8--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. capacity, production, and capacity utilization, by products, 1985-87, January-September 1987, and January-September 1988 1/

(Quantity in 1,000 units; capacity utilization in percent)

Item	1985	1986	1987	January-September-- 1987	January-September-- 1988
Needle roller bearings:					
U.S.-owned producers:					
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Capacity utilization	***	***	***	***	***
Foreign-owned producers:					
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Capacity utilization	***	***	***	***	***
Total, all producers:					
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Capacity utilization	***	***	***	***	***
Spherical plain bearings:					
U.S.-owned producers:					
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Capacity utilization	***	***	***	***	***
Foreign-owned producers:					
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Capacity utilization	***	***	***	***	***
Total, all producers:					
Capacity	***	***	***	***	***
Production	***	***	***	***	***
Capacity utilization	***	***	***	***	***
All subject bearings:					
U.S.-owned producers:					
Capacity	602,191	582,977	578,668	435,256	408,369
Production	426,513	394,856	385,626	289,473	328,849
Capacity utilization	70.8	67.7	66.6	66.5	80.5
Foreign-owned producers:					
Capacity	292,221	287,131	309,585	260,590	275,320
Production	228,558	235,350	253,780	176,108	194,439
Capacity utilization	78.2	82.0	82.0	67.6	70.6
Total, all producers:					
Capacity	894,412	870,108	888,253	695,846	683,689
Production	655,071	630,206	639,406	465,581	523,288
Capacity utilization	73.2	72.4	72.0	66.9	76.5

1/ Data are for complete units only.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

capacity utilization rates for U.S.-owned producers, and all producers, with * * * numbers excluded, are presented in the following tabulation:

				January-September	
	1985	1986	1987	1987	1988
U.S.-owned producers:					
Capacity.....1,000 units..	***	***	***	***	***
Production.....do....	***	***	***	***	***
Capacity utilization percent..	***	***	***	***	***
Total, all producers:					
Capacity.....1,000 units..	***	***	***	***	***
Production.....do....	***	***	***	***	***
Capacity utilization percent..	***	***	***	***	***

Spherical bearings.--Production of all finished spherical bearings dropped from 2.8 million units in 1985 to 2.4 million units in 1987. January-September 1988 production was 24.4 percent above that for the same period of 1987. U.S.-owned producers' production dropped from 1985 to 1987, then increased for interim 1988 compared with interim 1987. Foreign-owned producers showed an opposite trend for 1985 to 1987, with increases for that period.

Capacity to produce all finished spherical bearings increased from 3.5 million units in 1985 to 3.7 million units in 1987, or by 5.2 percent. Capacity for U.S.-owned producers remained essentially level from 1985 to 1987, while foreign-owned capacity increased by *** percent for the same period.

Capacity utilization for all finished spherical bearings dropped from 79.2 percent in 1985 to 66.3 percent in 1987. The January-September 1988 utilization rate stood at 80.1 percent compared with 65.8 percent for the same period of 1987. Foreign-owned producers reported running *** of reported capacity while U.S.-owned producers' capacity utiization ranged from *** percent to *** percent for the five reporting periods.

Cylindrical bearings.--Production of all finished cylindrical bearings dropped from 12.8 million units in 1985 to 10.8 million units in 1987, or by 16.1 percent. January-September 1988 production was 6.2 percent ahead of that for the same period of 1987. U.S.-owned producers' production dropped by 45.5 percent from 1985 to 1987 and showed a slight drop for January-September 1988 compared with the same period of 1987. Foreign-owned producers experienced an opposite trend throughout the period, * * *.

Capacity to produce finished cylindrical bearings decreased from 52.9 million units in 1985 to 51.1 million units in 1987, or by 3.3 percent. Capacity for U.S.-owned producers declined by 10.7 percent from 1985 to 1987, the major portion of which was accounted by * * *.

Capacity utilization for all finished cylindrical bearings decreased from 24.2 percent in 1985 to 21.0 percent in 1987. Interim period utilization rates were similar to full year totals. These rates reflect * * *. Capacity,

production, and capacity utilization rates for U.S.-owned producers and all producers, with * * * numbers excluded, are presented in the following tabulation:

	1985	1986	1987	January-September 1987	January-September 1988
U.S.-owned producers:					
Capacity.....1,000 units..	***	***	***	***	***
Production.....do....	***	***	***	***	***
Capacity utilization percent.....	***	***	***	***	***
Total, all producers:					
Capacity.....1,000 units..	***	***	***	***	***
Production.....do....	***	***	***	***	***
Capacity utilization percent.....	***	***	***	***	***

Foreign-owned producers' capacity utilization for cylindrical bearings rose from 76.3 percent in 1985 to 79.7 percent in 1987. Utilization rates for January-September 1988 stood at 73.5 percent compared with 69.9 percent in the same period of 1987.

Needle bearings.--Production of all finished needle bearings remained relatively level from 1985 to 1987 between *** and *** million units a year. Production for January-September 1988 was *** percent higher than that for the same period of 1987. U.S.-owned producers' production dropped by *** percent from 1985 to 1987, then increased by *** percent in interim 1988 compared with interim 1987. Production by foreign-owned producers rose by *** percent from 1985 to 1987 and showed an increase of *** percent in interim 1988 compared with interim 1987.

Overall U.S. capacity to produce finished needle bearings increased by *** percent from 1985 to 1987, or from *** million units to *** million units. U.S.-owned capacity remained level during that period while foreign-owned U.S. capacity increased by *** percent.

Capacity utilization for all finished needle bearings dropped from *** percent in 1985 to *** percent in 1987. In January-September 1988, the utilization rate was *** percent compared with *** percent for the same period of 1987. Foreign-owned producers' utilization levels dropped irregularly from *** percent in 1985 to *** percent in 1987 while U.S.-owned producers showed a steady decline from *** percent to *** percent over the same period. Both categories of producers reported increases in capacity utilization rates for interim 1988 compared with 1987.

Spherical plain bearings.--The production of spherical plain bearings reported by questionnaire respondents is accounted for by * * *.

The reported production of all finished spherical plain bearings declined from *** units in 1985 to *** units in 1987, or by *** percent. January-September 1988 production increased *** percent over levels for the same period

of 1987. Production by *** U.S.-owned producer *** from 1985 to 1987 while that of *** foreign-owned producer showed a *** of *** percent for the period.

Overall capacity to produce spherical plain bearings remained stable throughout the reporting period and capacity utilization followed trends similar to production patterns, with the U.S.-owned producer's utilization rates * * * and the foreign-owned producer experiencing a * * * in its rates from 1985 to 1987.

All subject bearings.--Total production of all finished subject bearings dropped irregularly from 1985 to 1987, from 655 million units to 639 million units, or by 2.4 percent. Production for January-September 1988 was 12.4 percent higher than that for the same period of 1987. U.S.-owned producers' production dropped by 9.6 percent from 1985 to 1987, then increased by 13.6 percent in interim 1988 compared with interim 1987. Production by foreign-owned producers rose by 11.0 percent from 1985 to 1987 and showed an increase of 10.4 percent in interim 1988 compared with interim 1987.

Overall U.S. capacity to produce all finished subject bearings decreased irregularly by 0.7 percent from 1985 to 1987, or from 894 million units to 888 million units. U.S.-owned capacity dropped by 3.9 percent during that period while foreign-owned U.S. capacity increased by 5.9 percent.

Capacity utilization for all finished subject bearings declined slightly from 73.2 percent in 1985 to 72.0 percent in 1987. In January-September 1988, the utilization rate was 76.5 percent compared with 66.9 percent for the same period of 1987. Foreign-owned producers' utilization levels increased from 78.2 percent in 1985 to 82.0 percent in 1987 while U.S.-owned producers experienced a decline from 70.8 percent to 66.6 percent over the same period. Both categories of producers reported increases in capacity utilization rates for interim 1988 compared with 1987.

U.S. producers' domestic shipments

Data on reported U.S. producers' domestic shipments of the subject antifriction bearings and parts thereof are presented in table 9.

Ball bearings.--The value of all U.S. producers' domestic shipments of ball bearings and parts thereof dropped by 10.2 percent from 1985 to 1987, or from $1.3 billion to $1.2 billion. For January-September 1988, the value of shipments was 5.9 percent above that for the same period of 1987.

The value of U.S.-owned producers' shipments declined steadily from 1985 to 1987, from $1.0 billion to $913 million, or by 11.4 percent. During the same period the value of shipments by foreign-owned producers dropped irregularly from $270 million in 1985 to $255 million, a decline of 5.5 percent. The value of shipments for both U.S.- and foreign-owned producers increased in interim 1988 compared with 1987.

Spherical bearings.--The value of all domestic shipments by U.S. producers of spherical bearings and parts thereof remained relatively stable from 1985 to 1987. However, the value of shipments for January-September 1988 was 21.6

Table 9
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. producers' domestic shipments (including company transfers), by products, 1985-87, January-September 1987, and January-September 1988

Item	1985	1986	1987	January-September-- 1987	January-September-- 1988
	Quantity (1,000 units)				
Ball bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	104,019	83,218	82,272	61,998	66,284
Foreign-owned firms	104,807	100,174	106,424	67,118	72,080
Total	208,826	183,392	188,696	129,116	138,364
Parts and components:					
U.S.-owned firms	149,756	207,345	206,238	152,580	161,225
Foreign-owned firms	83,992	89,583	61,465	46,385	15,334
Total	233,748	296,928	267,703	198,965	176,559
Spherical bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	2,379	2,236	2,368	1,721	1,946
Parts and components:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	1,269	1,482	744	600	662
Cylindrical bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	9,078	6,336	5,565	4,123	3,888
Foreign-owned firms	1,541	4,370	4,585	3,450	4,100
Total	10,619	10,706	10,150	7,573	7,988
Parts and components:					
U.S.-owned firms	0	0	0	0	0
Foreign-owned firms	2,625	4,799	25,121	14,949	25,023
Total	2,625	4,799	25,121	14,949	25,023
Needle bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Parts and components:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***

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Table 9--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. producers' domestic shipments (including company transfers), by products, 1985-87, January-September 1987, and January-September 1988

Item	1985	1986	1987	January-September--1987	January-September--1988
	Quantity (1,000 units)				
Spherical plain bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Parts and components:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	388,816	359,599	360,645	267,893	299,619
Foreign-owned firms	219,789	220,288	239,759	164,765	175,431
Total	608,605	579,887	600,404	432,658	475,050
Parts and components:					
U.S.-owned firms	3,059,029	2,605,175	2,440,257	1,806,811	2,038,419
Foreign-owned firms	2,135,565	1,938,609	2,145,399	1,581,165	1,667,146
Total	5,194,594	4,543,784	4,585,656	3,387,976	3,705,565
	Value (1,000 dollars)				
Ball bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	1,023,858	938,802	907,623	731,569	748,268
Foreign-owned firms	261,605	232,513	248,237	163,255	198,938
Total	1,285,463	1,171,315	1,155,860	894,824	947,206
Parts and components:					
U.S.-owned firms	7,598	6,097	5,748	3,691	4,763
Foreign-owned firms	8,624	9,359	7,219	5,613	5,294
Total	16,222	15,456	12,967	9,304	10,057
Spherical bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	189,006	180,090	188,380	145,742	176,843
Parts and components:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	3,063	5,225	3,233	2,505	3,482

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Table 9--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. producers' domestic shipments (including company transfers), by products, 1985-87, January-September 1987, and January-September 1988

Item	1985	1986	1987	January-September-- 1987	January-September-- 1988
	Value (1,000 dollars)				
Cylindrical bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	135,758	90,830	90,456	64,631	71,476
Foreign-owned firms	49,816	76,398	87,472	64,565	65,540
Total	185,574	167,228	177,928	129,196	137,016
Parts and components:					
U.S.-owned firms	0	0	0	0	0
Foreign-owned firms	3,555	4,344	5,080	3,886	3,347
Total	3,555	4,344	5,080	3,886	3,347
Needle bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Parts and components:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Spherical plain bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Parts and components:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
Finished bearings:					
U.S.-owned firms	1,483,951	1,368,676	1,334,135	1,052,964	1,120,898
Foreign-owned firms	455,408	440,459	479,325	330,903	389,019
Total	1,939,359	1,809,135	1,813,460	1,383,867	1,509,917
Parts and components:					
U.S.-owned firms	68,127	66,991	66,128	48,363	56,027
Foreign-owned firms	23,033	26,767	22,970	17,515	18,345
Total	91,160	93,758	89,098	65,878	74,372

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

percent higher than that of January-September 1987, increasing from $148 million to $180 million.

U.S.-owned producers' shipment values were relatively level from 1985 to 1987, as were those of foreign-owned producers. Both categories of producers showed increased value of shipments for January-September 1988 compared with the same period of 1987.

Cylindrical bearings.--Overall domestic shipment values for U.S. producers of cylindrical bearings and parts thereof decreased irregularly from $189 million in 1985 to $183 million in 1987, or by 3.2 percent.

The value of U.S.-owned producers' shipments showed a drop of 33.3 percent from 1985 to 1987, declining from $136 million to $90 million. A major portion of this decline is attributable to ***. Interim 1988 shipment values were up to $71 million compared with $65 million in interim 1987. The value of foreign-owned producers' shipments increased from $53 million in 1985 to $93 million in 1987, owing largely to the aforementioned ***. Foreign-owned producers' value of shipments was essentially level for the two interim reporting periods.

Needle bearings.--The value of overall domestic shipments by U.S. producers of needle bearings and parts thereof rose from $*** million in 1985 to $*** million in 1987, or by *** percent. Shipment values in January-September 1988 were *** percent higher than those in the same period of 1987, at $*** million compared with $*** million.

U.S.-owned producers' shipment values increased irregularly from $*** million in 1985 to $*** million in 1987. For January-September 1988, their shipment values were *** percent higher than in the same period of 1987. Foreign-owned producers' shipment values showed an increase of *** percent from 1985 to 1987, rising from $*** million to $*** million. Interim 1988 shipment values for foreign-owned producers stood at $*** million compared with $*** million for interim 1987.

Spherical plain bearings.--The value of shipments for spherical plain bearings is for finished bearings only, as none of the respondents reported any trade in parts thereof. Overall shipment values declined irregularly from $*** million in 1985 to $*** million in 1987, or by *** percent. January-September 1988 shipment values were up to $*** million compared with $*** million for January-September 1987.

*** U.S.-owned producer's shipment values * * * from 1985 to 1987 from $*** million to $*** million, or by *** percent, while *** foreign-owned producer experienced a * * * in shipment values during the same period. Both categories of producers showed * * * during January-September 1988 compared with the same period of 1987.

All subject bearings.--The value of domestic shipments of all subject bearings and parts thereof by U.S. producers dropped from $2.03 billion in 1985 to $1.90 billion in 1987, or by 6.3 percent. Shipment values in January-September 1988 were 9.3 percent higher than those in the same period of 1987, at $1.58 billion compared with $1.45 billion.

U.S.-owned producers' shipment values declined from $1.55 billion in 1985 to $1.40 billion in 1987. For January-September 1988, their shipment values were 6.9 percent higher than in the same period of 1987. Foreign-owned producers' shipment values showed an increase of 5.0 percent from 1985 to 1987, rising from $478 million to $502 million. Interim 1988 shipment values for foreign-owned producers stood at $407 million compared with $348 million for interim 1987.

Calculations of unit values for U.S. producers' domestic shipments are not presented, as they would have limited utility given the range of items within each of the product categories for which the Commission's questionnaire requested data.

U.S. producers' export shipments

Information on U.S. exports of the subject antifriction bearings and parts thereof as reported by questionnaire respondents is presented in table 10.

Ball bearings.--U.S. producers' exports of ball bearings and parts thereof increased from $105.4 million in 1985 to $117.1 million in 1987, or by 11.1 percent. Exports during January-September 1988 dropped to $67.1 million compared with $87.7 million for January-September 1987. U.S.-owned producers accounted for most of the increase from 1985 to 1987, while both U.S.- and foreign-owned producers experienced a decline in export sales during January-September 1988.

Spherical bearings.--Exports by U.S. producers of spherical bearings and parts thereof rose by 68.9 percent from 1985 to 1987, from $12.6 million to $21.3 million. Export sales for the interim periods of 1987 and 1988 were essentially level in comparison with each other. While export sales went up for both U.S.- and foreign-owned producers, those of the latter ***.

Cylindrical bearings.--U.S. producers' exports of cylindrical bearings and parts thereof dropped from $19.8 million in 1985 to $15.5 million in 1987, or by 22.0 percent. Export sales during January-September 1988 were down to $8.4 million compared with $10.0 million for the same period of 1987. Export sales of U.S.-owned producers dropped during the reporting period, while those of foreign-owned producers increased.

Needle bearings.--Export sales by U.S. producers of needle bearings and parts thereof dropped irregularly from $*** million in 1985 to $*** million in 1987. Export sales during January-September 1988 were $*** million compared with $*** million for the same period of 1987. Export sales by U.S.-owned producers dropped from 1985 to 1987, while foreign-owned producers experienced an increase in sales during the same period. For interim 1988 compared with interim 1987, sales by U.S.-owned producers increased with those of the foreign-owned producers remaining essentially level.

Spherical plain bearings.--U.S. producers' export sales of spherical plain bearings and parts thereof * * * from $*** in 1985 to $*** in 1987, or by *** percent. During January-September 1988, sales * * * to $*** compared with $*** for January-September 1987. * * *.

Table 10
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. exports, by product types, 1985-87, January-September 1987, and January-September 1988

Item	Value (1,000 dollars)				
				January-September--	
	1985	1986	1987	1987	1988
Ball bearings and parts thereof:					
U.S-owned firms	81,295	94,528	92,945	71,587	52,198
Foreign-owned firms	24,085	22,958	24,183	16,105	14,895
Total	105,380	117,486	117,128	87,692	67,093
Spherical bearings and parts thereof:					
U.S-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	12,588	14,115	21,260	12,994	12,913
Cylindrical bearings and parts thereof:					
U.S-owned firms	13,353	6,874	6,988	5,061	5,696
Foreign-owned firms	6,477	7,157	8,479	4,939	2,697
Total	19,830	14,031	15,467	10,000	8,393
Needle bearings and parts thereof:					
U.S-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Spherical plain bearings and parts thereof:					
U.S-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
U.S-owned firms	129,610	133,327	133,595	101,957	88,816
Foreign-owned firms	39,325	40,826	50,727	32,311	28,161
Total	168,935	174,153	184,322	134,268	116,977

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

All subject bearings.--U.S. producers' exports of all subject bearings and parts thereof increased from $168.9 million in 1985 to $184.3 million in 1987, or by 9.1 percent. Exports during January-September 1988 dropped to $117.0 million compared with $134.3 million for January-September 1987. Foreign-owned producers accounted for the majority of the increase from 1985 to 1987, while both U.S.- and foreign-owned producers experienced a decline in export sales during January-September 1988.

The primary export markets mentioned by questionnaire respondents are Europe, Canada, South America, and Asia. It is not clear to what extent exports involved intracompany transfers of U.S. producers with foreign subsidiaries or affiliates.

U.S. producers' inventories

Data with respect to U.S. producers' inventories of the subject antifriction bearings, both in quantity and as a ratio to total domestic shipments, are presented in table 11.

Ball bearings.--As a percent of all U.S. producers' total domestic shipments, inventories of ball bearings decreased irregularly from 12.8 percent in 1985 to 10.9 percent in 1987. Inventories of U.S.-owned producers as a share of shipments were higher than those of foreign-owned producers throughout the reporting period.

Spherical bearings.--Inventories of spherical bearings, as a percent of domestic shipments, for all U.S.producers dropped irregularly to 39.0 percent in 1987 from 48.9 percent in 1985. While U.S.-owned producers reported a drop in inventories, foreign-owned producers' inventories rose, and as a percent of shipments fluctuated between *** percent and *** percent during the reporting period.

Cylindrical bearings.--Aggregate U.S.- and foreign-owned producers' inventories of cylindrical roller bearings decreased as a percent of U.S. shipments from 19.2 percent in 1985 to 11.0 percent in 1987. The inventories for U.S.-owned producers showed a more pronounced decline than that experienced by foreign-owned producers.

Needle bearings.--Needle roller bearing inventories increased over the period of investigation for U.S.- and foreign-owned firms, from a combined *** percent of domestic shipments in 1985 to *** percent in 1987, peaking in 1986 at *** percent. As a share of shipments, inventories of foreign-owned producers were at lower levels than those of U.S.-owned producers.

Spherical plain bearings.--Inventories of spherical plain bearings as a percent of U.S. shipments increased overall from *** percent in 1985 to *** percent in 1987. Inventories of the U.S.-owned producer * * * while those of the foreign-owned producer * * * over the same period.

All subject bearings.--Inventories of all subject bearings dropped irregularly from 12.0 percent of shipments in 1985 to 11.4 percent in 1987. Inventories as a share of shipments dropped for foreign-owned producers and remained level for U.S.-owned producers.

Table 11
Antifriction bearings (other than tapered roller bearings): U.S. producers' end-of-period inventories, by products, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88 1/

Item	1985	1986	1987	January-September-- 1987	1988
	End-of-period inventories (1,000 units)				
Ball bearings:					
U.S.-owned firms	16,670	14,352	11,640	11,736	11,149
Foreign-owned firms	10,154	9,479	8,870	9,548	10,344
Total	26,824	23,831	20,510	21,284	21,493
Spherical bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	1,163	1,139	923	1,034	933
Cylindrical bearings:					
U.S.-owned firms	1,728	379	267	254	269
Foreign-owned firms	310	885	846	835	826
Total	2,038	1,264	1,113	1,089	1,095
Needle bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Spherical plain bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings:					
U.S.-owned firms	53,634	55,188	49,844	52,787	56,561
Foreign-owned firms	19,559	20,775	18,415	21,292	24,788
Total	73,193	75,963	68,259	74,079	81,349
	Ratio to U.S. shipments (percent) 2/				
Ball bearings:					
U.S.-owned firms	16.0	17.2	14.1	14.2	12.6
Foreign-owned firms	9.7	9.5	8.3	10.7	10.8
Average	12.8	13.0	10.9	12.4	11.7
Spherical bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	48.9	50.9	39.0	45.1	36.0
Cylindrical bearings:					
U.S.-owned firms	19.0	6.0	4.8	4.6	5.2
Foreign-owned firms	20.1	20.3	18.5	18.2	15.1
Average	19.2	11.8	11.0	10.8	10.3
Needle bearings:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	***	***	***	***	***

Continued on next page

Table 11--Continued
Antifriction bearings (other than tapered roller bearings): U.S. producers' end-of-period inventories, by products, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88 1/

Item	1985	1986	1987	January-September-- 1987	1988
	Ratio to U.S. shipments (percent) 2/				
Spherical plain bearings:					
U.S.-owned firms.....	***	***	***	***	***
Foreign-owned firms.....	***	***	***	***	***
Average.....	***	***	***	***	***
All subject bearings:					
U.S.-owned firms.....	13.8	15.3	13.8	14.8	14.2
Foreign-owned firms.....	8.9	9.4	7.7	9.7	10.6
Average.....	12.0	13.1	11.4	12.8	12.8

1/ Data are for complete units only.
2/ Ratios are based on data supplied by firms that reported both inventory and shipments information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

U.S. producers' employment and wages

Data reporting the average number of production and related workers, hours worked and wages paid to those workers, and their average hourly wage are provided in table 12.

Ball bearings.--The average number of production and related workers producing ball bearings and parts thereof for all U.S. producers decreased from 12,937 in 1985 to 11,681 in 1987, or by 9.7 percent; however, an increase of 5.2 percent was reported for January-September 1988 compared with January-September 1987. The average hourly wage for production and related workers rose from $11.78 in 1985 to $12.42 in 1986, and then fell to $12.18 in 1987.

Spherical bearings.--U.S.- and foreign-owned producers reported a collective decrease of 21.9 percent in the average number of production and related workers producing spherical bearings and parts thereof from 2,123 in 1985 to 1,658 in 1987. The average number of workers increased 10.4 percent from 1,629 during January-September 1987 to 1,798 during the comparable period of 1988. There was an increase in the average hourly wage from $12.87 in 1985 to $14.10 in 1987, with the average hourly wage for workers in the foreign-owned facilities running somewhat higher than their counterparts in U.S.-owned facilities.

Cylindrical bearings.--U.S.-owned producers reported a decrease in the average number of workers producing cylindrical bearings and parts thereof of 13.1 percent from 1,400 in 1985 to 1,216 in 1987, while foreign-owned producers reported an increase of 77.4 percent from 403 in 1985 to 715 in 1987. * * *.

Table 12
Total establishment employment and average number of production and related workers producing antifriction bearings (other than tapered roller bearings) and parts thereof, hours worked, 1/ wages paid to such employees, and hourly compensation, 1985-87, January-September 1987, and January-September 1988 2/

Item	1985	1986	1987	January-September-- 1987	1988
	Number of employees				
U.S.-owned firms	20,073	19,243	18,344	17,615	18,236
Foreign-owned firms	5,845	5,366	5,301	5,293	5,911
Total	25,918	24,609	23,645	22,908	24,147
	Number of production and related workers (PRW's)				
All products of establishments:					
U.S.-owned firms	16,966	16,225	15,776	14,949	15,458
Foreign-owned firms	5,048	4,671	4,596	4,589	5,143
Total	22,014	20,896	20,372	19,538	20,601
Ball bearings and parts thereof:					
U.S.-owned firms	10,300	9,977	9,664	8,846	8,948
Foreign-owned firms	2,637	2,052	2,017	2,004	2,463
Total	12,937	12,029	11,681	10,850	11,411
Spherical bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	2,123	1,772	1,658	1,629	1,798
Cylindrical bearings and parts thereof:					
U.S.-owned firms	1,400	1,145	1,216	1,127	1,207
Foreign-owned firms	403	705	715	740	718
Total	1,803	1,850	1,931	1,867	1,925
Needle bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Spherical plain bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
U.S.-owned firms	16,265	15,569	15,135	14,165	14,591
Foreign-owned firms	4,914	4,427	4,386	4,381	4,877
Total	21,179	19,996	19,521	18,546	19,468

See footnotes at end of table.

Table 12--**Continued**
Total establishment employment and average number of production and related workers producing antifriction bearings (other than tapered roller bearings) and parts thereof, hours worked, 1/ wages paid to such employees, and hourly compensation, 1985-87, January-September 1987, and January-September 1988 2/

Item	1985	1986	1987	January-September-- 1987	1988
	Hours worked by PRW's (thousands)				
All products of establishments:					
U.S.-owned firms	37,186	35,386	34,408	25,562	27,531
Foreign-owned firms	8,918	9,369	9,212	6,447	7,481
Total	46,104	44,755	43,620	32,009	35,012
Ball bearings and parts thereof:					
U.S.-owned firms	22,888	21,804	21,179	16,020	17,163
Foreign-owned firms	4,773	4,246	4,160	2,772	3,446
Total	27,661	26,050	25,339	18,792	20,609
Spherical bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	3,600	3,277	3,007	2,173	2,560
Cylindrical bearings and parts thereof:					
U.S.-owned firms	3,036	2,533	2,703	1,961	2,130
Foreign-owned firms	573	1,185	1,226	895	969
Total	3,609	3,718	3,929	2,856	3,099
Needle bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Spherical plain bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
U.S.-owned firms	35,512	33,785	32,885	24,365	26,514
Foreign-owned firms	8,626	8,752	8,763	6,126	7,045
Total	44,138	42,537	41,648	30,491	33,559

See footnotes at end of table.

Table 12--**Continued**
Total establishment employment and average number of production and related workers producing antifriction bearings (other than tapered roller bearings) and parts thereof, hours worked, 1/ wages paid to such employees, and hourly compensation, 1985-87, January-September 1987, and January-September 1988 2/

Item	1985	1986	1987	January-September--1987	January-September--1988
	Wages paid to PRW's (thousands of dollars)				
All products of establishments:					
U.S.-owned firms	410,227	412,741	391,493	301,124	321,730
Foreign-owned firms	96,169	110,023	110,221	76,708	92,285
Total	506,396	522,764	501,714	377,832	414,015
Ball bearings and parts thereof:					
U.S.-owned firms	275,240	273,290	258,857	199,614	213,036
Foreign-owned firms	50,493	50,309	49,746	32,624	42,983
Total	325,733	323,599	308,603	232,238	256,019
Spherical bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	46,316	45,358	42,413	31,260	36,753
Cylindrical bearings and parts thereof:					
U.S.-owned firms	31,641	27,841	30,454	22,597	22,213
Foreign-owned firms	8,952	17,183	18,225	13,431	13,802
Total	40,593	45,024	48,679	36,028	36,015
Needle bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Spherical plain bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
U.S.-owned firms	395,162	396,832	376,460	288,960	308,296
Foreign-owned firms	93,688	104,705	105,593	73,393	87,944
Total	488,850	501,537	482,053	362,353	396,240

See footnotes at end of table.

Table 12--**Continued**
Total establishment employment and average number of production and related workers producing antifriction bearings (other than tapered roller bearings) and parts thereof, hours worked, 1/ wages paid to such employees, and hourly compensation, 1985-87, January-September 1987, and January-September 1988 2/

Item	1985	1986	1987	January-September-- 1987	1988
	Hourly wages paid to PRW's 3/				
All products of establishments:					
U.S.-owned firms	$11.03	$11.66	$11.38	$11.78	$11.69
Foreign-owned firms	10.78	11.74	11.96	11.90	12.34
Average	10.98	11.68	11.50	11.80	11.82
Ball bearings and parts thereof:					
U.S.-owned firms	12.03	12.53	12.22	12.46	12.41
Foreign-owned firms	10.58	11.85	11.96	11.77	12.47
Average	11.78	12.42	12.18	12.36	12.42
Spherical bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	12.87	13.84	14.10	14.39	14.36
Cylindrical bearings and parts thereof:					
U.S.-owned firms	10.42	10.99	11.27	11.52	10.43
Foreign-owned firms	15.62	14.50	14.87	15.01	14.24
Average	11.25	12.11	12.39	12.61	11.62
Needle bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Spherical plain bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
U.S.-owned firms	11.13	11.75	11.45	11.86	11.63
Foreign-owned firms	10.86	11.96	12.05	11.98	12.48
Average	11.08	11.79	11.57	11.88	11.81

1/ Includes hours worked plus hours of paid leave time.
2/ Firms providing employment data accounted for 90 percent of the reported total value of shipments in 1987.
3/ Calculated using data from firms that provided information on both wages paid and hours worked.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

The average hourly wage for all U.S. production and related workers increased from $11.25 in 1985 to $12.39 in 1987, while for January-September 1987, the average hourly wage was $12.61 compared with $11.62 for January-September 1988.

Needle bearings.--U.S.- and foreign-owned firms producing needle bearings and parts thereof experienced a collective decline in production and related workers from *** in 1985 to *** in 1987. During the period, U.S.-owned producers showed a slight decline in workers while foreign-owned producers showed a slight increase. There was an increase in the average hourly wage from $*** in 1985 to $*** in 1986, with a drop in 1987 to $***.

Spherical plain bearings.--*** U.S.-owned producer reported *** in the average number of production and related workers producing plain bearings and parts thereof from *** in 1985 to *** in 1986, with *** in 1987. *** foreign-owned producer, ***, reported *** from *** in 1985 to *** in 1987. Average hourly wages of all production and related workers *** from $*** in 1985 to $*** in 1986, and then *** to $*** in 1987.

All subject bearings.--The average number of production and related workers producing all subject bearings dropped from 21,179 in 1985 to 19,521 in 1987, or by 7.8 percent. The employment level for January-September 1988 was 5.0 percent above that for the same period of 1987. The average hourly wage for production and related workers rose irregularly from $11.08 in 1985 to $11.57 in 1987.

Producers of the subject antifriction bearings cited permanent reductions of 1,668 employees during the period of investigation, of which the majority were involved in the production of ball bearings. Among the most frequently cited reasons for the reductions were reorganization, lower sales volume, and reduced demand. In addition, ***.

Of the total number of responding producers, 14 reported union representation of all or a portion of their production and related workers. Three of the 8 foreign-owned producers and 11 of the 15 U.S.-owned producers reported some union representation. ***.

Financial experience of U.S. producers

Twenty-three producers, accounting for approximately 98 percent of reported U.S. shipments of the subject antifriction bearings and parts thereof in 1987, supplied income-and-loss data for both the overall operations of their establishments in which these bearings and parts are produced and, separately, for their operations producing such products.

Overall establishment operations.--Aggregate overall establishment financial results for all responding producers are presented in table 13. The overall establishment operations of the petitioner and largest domestic producer, the Torrington Co., as well as most U.S. producers, are primarily devoted to producing antifriction bearings and parts. The bearings not under investigation in the overall establishment operations of these producers are primarily tapered roller bearings and other non-rolling metal parts. The three largest producers are Torrington, * * *, and * * *. These three producers represented *** percent of overall establishment sales and *** percent of antifriction bearing sales in 1987. Net sales for these producers in 1987 are shown in the tabulation below:

Company	Net sales		Antifriction bearings' share of establishment sales
	Antifriction bearings 1/	Overall establishment	
	1,000 dollars		Percent
Torrington	***	***	***
* * *	***	***	***
* * *	***	***	***

1/ The products under investigation; ball, spherical, cylindrical, needle, and spherical plain bearings.

Recent verification to official records has resulted in revisions of data for two producers. * * *.

Additionally, * * * In addition to overall establishment operations, the adjustments for both firms also affect some of the individual product categories, with the primary effect being in ball bearing operations.

Operations on subject antifriction bearings and parts thereof.--Aggregate financial results for all subject bearings are presented in table 14. During the period of investigation several firms restructured their operations by consolidating existing operations, divesting unprofitable segments, or acquiring other bearing operations to diversify into other markets. The restructuring often created immediate adverse effects on profitability in the form of increased goodwill and depreciation amortization for the firms using purchase accounting for acquired operations, losses on discontinued operations for firms closing plants, and initial cost inefficiencies for physical rearrangement of plant operations for firms restructuring existing operations. As recently as September 1988, Torrington indicated that operating income from the Bearings and Components Group continued to be hampered by production problems in the Fafnir Bearings Division, even though Fafnir was acquired

Table 13
Income-and-loss experience of U.S. producers on the overall operations of their establishments within which antifriction bearings and parts thereof are produced, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended September 30-- 1987	1988
	Value (1,000 dollars)				
Net sales	2,429,532	2,318,265	2,396,144	1,775,548	1,928,513
Cost of goods sold	1,880,300	1,823,250	1,897,339	1,409,884	1,508,914
Gross profit	549,232	495,015	498,805	365,664	419,599
General, selling, and administrative expenses	317,678	301,332	280,350	210,981	234,387
Operating income	231,554	193,683	218,455	154,683	185,212
Startup or shutdown expense	873	6,836	16,060	12,787	4,938
Interest expense	40,944	39,091	38,891	28,754	36,447
Other income or (expense), net	5,612	(14,565)	(28,615)	(20,446)	(29,023)
Net income before income taxes	195,349	133,191	134,889	92,696	114,804
Depreciation and amortization included above	102,850	102,107	92,349	72,887	77,700
Cash flow 1/	298,199	235,298	227,238	165,583	192,504
	Share of net sales (percent)				
Cost of goods sold	77.4	78.6	79.2	79.4	78.2
Gross profit	22.6	21.4	20.8	20.6	21.8
General, selling, and administrative expenses	13.1	13.0	11.7	11.9	12.2
Operating income	9.5	8.4	9.1	8.7	9.6
Net income before income taxes	8.0	5.7	5.6	5.2	6.0
	Number of firms reporting				
Operating losses	7	8	4	6	4
Net losses	7	8	8	7	7
Data	23	23	23	23	23

1/ Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 14
Income-and-loss experience of U.S. producers on their operations producing all subject antifriction bearings and parts thereof, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended September 30-- 1987	1988
	Value (1,000 dollars)				
Net sales	2,240,394	2,097,777	2,143,452	1,573,633	1,682,350
Cost of goods sold	1,750,486	1,654,874	1,706,830	1,256,818	1,321,788
Gross profit	489,908	442,903	436,622	316,815	360,562
General, selling, and administrative expenses	282,168	265,451	247,622	185,061	206,668
Operating income	207,740	177,452	189,000	131,754	153,894
Startup or shutdown expense	840	6,773	14,076	10,810	3,840
Interest expense	38,410	26,456	31,445	21,898	32,516
Other income or (expense), net	4,013	(13,610)	(26,656)	(18,719)	(23,190)
Net income before income taxes	172,503	130,613	116,823	80,327	94,348
Depreciation and amortization included above	92,025	89,694	79,195	62,744	66,990
Cash flow 1/	264,528	220,307	196,018	143,071	161,338
	Share of net sales (percent)				
Cost of goods sold	78.1	78.9	79.6	79.9	78.6
Gross profit	21.9	21.1	20.4	20.1	21.4
General, selling, and administrative expenses	12.6	12.7	11.6	11.8	12.3
Operating income	9.3	8.5	8.8	8.4	9.1
Net income before income taxes	7.7	6.2	5.5	5.1	5.6
	Number of firms reporting				
Operating losses	10	10	8	10	8
Net losses	10	10	9	10	10
Data	23	23	23	23	23

1/ Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

3 years earlier in 1985. 1/ According to annual reports, the bearing industry is internationalized and highly competitive with excess worldwide capacity, which is forcing producers to diversify, source off-shore, and streamline their operations to remain competitive.

The companies that supplied financial data encompassed all types of bearing manufacturers. As a result, operating results of the firms were mixed. However, most of the firms were profitable in 1987, and compared with 1985 the overall trend was favorable without the inclusion of * * *. This producer's operating income declined from * * *.

Because of the circumstances that affected the operating results of this company and its distorting effect on the aggregate data, selected key financial data are shown for this producer and others in the following tabulation (in thousands of dollars, except where noted):

* * * * * * * *

As detailed in the tabulation, the total U.S. industry producing the subject bearings remained at essentially the same level of operating profitability during 1985-87, with * * * able to maintain the highest profitability rate of the three largest firms. * * * was aided by its strong performance in * * * bearings, whereas * * *'s profitability rate was eroded by the substantial decrease in its sales revenues. On the other hand, * * *, after experiencing negative margins in 1985-86, made a substantial improvement in later periods with significant profitability improvement in * * * bearings. The income-and-loss experience of the responding U.S. producers on their operations on the various types of antifriction bearings and parts (other than tapered roller bearings) is presented in tables 15-19. An additional income-and-loss summary that is segregated by U.S.-owned and foreign-owned producers in presented in table 20.

Operations on ball bearings and parts thereof.--Aggregate financial results are presented in table 15. Selected financial data for the three largest producers in this category are shown in the following tabulation (in thousands of dollars, except where noted):

* * * * * * * *

As shown by the tabulation, the ball bearing market experienced a downswing after the highpoint in 1985. Sales decreased by 8.4 percent from $1.5 billion in 1985 to $1.3 billion in 1986, then remained at that level in 1987; sales improved slightly from interim 1987 to interim 1988. While * * * and * * * retained their relative market shares as a share of all responding firms at *** percent and *** percent, respectively, * * * decreased from *** percent in 1985 to *** percent in 1987. Retention of market share when the total market is contracting would indicate that * * * are competitive on sales

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1/ Ingersoll-Rand Co., 10-Q Report. Quarter ended Sept. 30, 1988, p. 12.

Table 15
Income-and-loss experience of U.S. producers on their operations producing ball bearings and parts thereof, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended September 30-- 1987	1988
	Value (1,000 dollars)				
Net sales	1,455,208	1,332,555	1,327,502	1,011,563	1,038,978
Cost of goods sold	1,158,409	1,081,317	1,101,005	832,940	848,775
Gross profit	296,799	251,238	226,497	178,623	190,203
General, selling, and administrative expenses	170,718	156,695	137,737	105,823	120,076
Operating income	126,081	94,543	88,760	72,800	70,127
Startup or shutdown expense	263	5,380	3,749	3,064	1,734
Interest expense	23,839	13,999	18,928	13,031	21,130
Other expense, net	(2,556)	(11,118)	(24,909)	(16,342)	(21,582)
Net income before income taxes	99,423	64,046	41,174	40,363	25,681
Depreciation and amortization included above	64,233	57,708	46,547	39,631	41,912
Cash flow 1/	163,656	121,754	87,721	79,994	67,593
	Share of net sales (percent)				
Cost of goods sold	79.6	81.1	82.9	82.3	81.7
Gross profit	20.4	18.9	17.1	17.7	18.3
General, selling, and administrative expenses	11.7	11.8	10.4	10.5	11.6
Operating income	8.7	7.1	6.7	7.2	6.7
Net income before income taxes	6.8	4.8	3.1	4.0	2.5
	Number of firms reporting				
Operating losses	7	7	5	5	5
Net losses	9	7	5	6	7
Data	19	18	18	18	18

1/ Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

and the improvement in * * *'s operating margins would be indicative of relatively decreasing costs. In this capital-intensive industry with high fixed costs, * * *.

Operations on spherical bearings and parts thereof.--Aggregate sales of spherical bearings and parts thereof were at their lowest point in 1986, but recovered in 1987 to a level 6.7 percent above the 1985 level. * * * showed continuing gains in net sales throughout 1985-87. Aggregate financial results are presented in table 16. Selected financial data for the three largest producers in this category are presented in the following tabulation (in thousands of dollars, except where noted):

* * * * * * * *

As the tabulation shows, the spherical market is dominated by the three producers with * * * experiencing substantial profitability rates and to a lesser degree, * * *.

Operations on cylindrical bearings and parts thereof.--Aggregate financial results are presented in table 17. The largest producer of cylindrical bearings, * * *, is ***; however, it did not * * * until ***. Selected financial data for the three largest producers in this category and * * * are presented in the following tabulation (in thousands of dollars, except where noted):

* * * * * * * *

Similar to the aggregate experience in most other product categories, cylindrical net sales were at their lowest in 1986, but recovered in 1987 to the 1985 level. Aggregate net sales decreased by 7.9 percent from $193.0 million in 1985 to $177.8 million in 1986, then recovered by 10.4 percent to $196.2 million in 1987. Although * * * improved its market share from *** percent in 1985 to *** percent in 1987, it was * * * until ***. ***.

Operations on needle bearings and parts thereof.--Aggregate financial results are presented in table 18. This category of antifriction bearings is dominated by * * *, whose market share * * * during 1985-87 and stood at *** percent in the interim periods. * * *'s dominance is demonstrated with operating income ranging from *** to *** percent of the industry total. Selected financial data for the three largest producers of needle roller bearings are presented in the following tabulation (in thousands of dollars, except where noted):

* * * * * * * *

Table 16
Income-and-loss experience of U.S. producers on their operations producing spherical bearings and parts thereof, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended Sept. 30-- 1987	1988
	Value (1,000 dollars)				
Net sales	198,299	189,659	211,486	126,959	151,588
Cost of goods sold	143,865	123,250	137,644	85,472	100,054
Gross profit	54,434	66,409	73,842	41,487	51,534
General, selling, and administrative expenses	27,990	28,327	28,452	20,104	22,749
Operating income	26,444	38,082	45,390	21,383	28,785
Startup or shutdown expense	340	852	6,505	4,879	178
Interest expense	2,084	1,753	1,329	919	742
Other expense, net	(26)	(326)	(79)	(305)	(420)
Net income before income taxes	23,994	35,151	37,477	15,280	27,445
Depreciation and amortization included above	6,567	7,508	7,880	5,063	5,372
Cash flow 1/	30,561	42,659	45,357	20,343	32,817
	Share of net sales (percent)				
Cost of goods sold	72.5	65.0	65.1	67.3	66.0
Gross profit	27.5	35.0	34.9	32.7	34.0
General, selling, and administrative expenses	14.1	14.9	13.5	15.8	15.0
Operating income	13.3	20.1	21.5	16.8	19.0
Net income before income taxes	12.1	18.5	17.7	12.0	18.1
	Number of firms reporting				
Operating losses	1	1	1	1	1
Net losses	2	1	1	1	1
Data	7	7	7	7	7

1/ Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 17
Income-and-loss experience of U.S. producers on their operations producing cylindrical bearings and parts thereof, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended Sept. 30-- 1987	1988
	Value (1,000 dollars)				
Net sales	192,976	177,754	196,226	147,367	151,159
Cost of goods sold	158,199	150,462	161,896	123,126	119,088
Gross profit	34,777	27,292	34,330	24,241	32,071
General, selling, and administrative expenses	33,303	27,952	31,565	23,416	24,703
Operating income or (loss)	1,474	(660)	2,765	825	7,368
Startup or shutdown expense	237	541	222	167	110
Interest expense	2,329	2,196	4,084	2,578	4,603
Other income or (expense), net	7,164	(267)	(1,850)	(1,542)	(773)
Net income or (loss) before income taxes	6,072	(3,664)	(3,391)	(3,462)	1,882
Depreciation and amortization included above	6,965	9,368	8,227	6,481	6,663
Cash flow 1/	13,037	5,704	4,836	3,019	8,545
	Share of net sales (percent)				
Cost of goods sold	82.0	84.6	82.5	83.6	78.8
Gross profit	18.0	15.4	17.5	16.4	21.2
General, selling, and administrative expenses	17.3	15.7	16.1	15.9	16.3
Operating income or (loss)	0.8	(0.4)	1.4	0.6	4.9
Net income or (loss) before income taxes	3.1	(2.1)	(1.7)	(2.3)	1.2
	Number of firms reporting				
Operating losses	3	3	2	3	4
Net losses	3	4	4	4	5
Data	9	9	9	9	9

1/ Cash flow is defined as net income or loss plus depreciation and amortization.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 18
Income-and-loss experience of U.S. producers on their operations producing needle bearings and parts thereof, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

* * * * * * * *

Operations on spherical plain bearings and parts thereof.--Aggregate data show that, similar to the experience in other product categories, there was a significant drop in sales from 1985 to 1986. However, unlike the other sales that recovered to the 1985 level in 1987, the spherical plain bearing market did not recover until interim 1988. Aggregate data are presented in table 19. Selected financial data for the producers of spherical plain bearings and parts thereof are presented in the tabulation below (in thousands of dollars, except where noted):

* * * * * * * *

Table 19
Income-and-loss experience of U.S. producers on their operations producing spherical plain bearings and parts thereof, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

* * * * * * * *

Table 20
Income-and-loss experience of U.S. producers on their operations producing antifriction bearings (other than tapered roller bearings) and parts thereof, by type of bearing and by producer category, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended September 30-- 1987	1988
	Value (1,000 dollars)				
Ball bearings and parts thereof:					
Net sales:					
U.S.-owned firms	1,172,838	1,081,816	1,061,856	829,497	829,497
Foreign-owned firms	282,370	250,739	265,646	182,066	209,481
Total	1,455,208	1,332,555	1,327,502	1,011,563	1,038,978
Operating income or (loss):					
U.S.-owned firms	147,010	118,497	93,242	75,675	71,067
Foreign-owned firms	(20,929)	(23,954)	(4,482)	(2,875)	(940)
Total	126,081	94,543	88,760	72,800	70,127
Spherical bearings and parts thereof:					
Net sales:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	198,299	189,659	211,486	126,959	151,588
Operating income or (loss):					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	26,444	38,082	45,390	21,383	28,785
Cylindrical bearings and parts thereof:					
Net sales:					
U.S.-owned firms	137,750	95,391	99,321	82,661	87,557
Foreign-owned firms	55,226	82,363	96,905	64,706	63,602
Total	192,976	177,754	196,226	147,367	151,159
Operating income or (loss):					
U.S.-owned firms	6,277	2,412	(875)	(1,915)	3,783
Foreign-owned firms	(4,803)	(3,072)	3,640	2,740	3,585
Total	1,474	(660)	2,765	825	7,368
Needle bearings and parts thereof:					
Net sales:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Operating income or (loss):					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***

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Table 20--**Continued**
Income-and-loss experience of U.S. producers on their operations producing antifriction bearings (other than tapered roller bearings) and parts thereof, by type of bearing and by producer category, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended September 30-- 1987	1988
	Value (1,000 dollars)				
Spherical plain bearings and parts thereof:					
Net sales:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
Operating income or (loss):					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
Net sales:					
U.S.-owned firms	1,746,106	1,616,762	1,613,195	1,203,252	1,252,480
Foreign-owned firms	494,288	481,015	530,257	370,381	429,870
Total	2,240,394	2,097,777	2,143,452	1,573,633	1,682,350
Operating income or (loss):					
U.S.-owned firms	225,919	190,932	175,780	122,574	137,927
Foreign-owned firms	(18,179)	(13,480)	13,220	9,180	15,967
Total	207,740	177,452	189,000	131,754	153,894
	Operating income or (loss) as a share of net sales (percent)				
Ball bearings and parts thereof:					
U.S.-owned firms	12.5	11.0	8.8	9.1	8.6
Foreign-owned firms	(7.4)	(9.6)	(1.7)	(1.6)	(0.4)
Average	8.7	7.1	6.7	7.2	6.7
Spherical bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	13.3	20.1	21.5	16.8	19.0
Cylindrical bearings and parts thereof:					
U.S.-owned firms	4.6	2.5	(0.9)	(2.3)	4.3
Foreign-owned firms	(8.7)	(3.7)	3.8	4.2	5.6
Average	0.8	(0.4)	1.4	0.6	4.9
Needle bearings and parts thereof:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	***	***	***	***	***

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Table 20--**Continued**
Income-and-loss experience of U.S. producers on their operations producing antifriction bearings (other than tapered roller bearings) and parts thereof, by type of bearing and by producer category, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended September 30--1987	Interim period ended September 30--1988
	Operating income or (loss) as a share of net sales (percent)				
Spherical plain bearings and parts thereof:					
U.S.-owned firms.....	***	***	***	***	***
Foreign-owned firms.....	***	***	***	***	***
Average.....	***	***	***	***	***
All subject bearings and parts thereof:					
U.S.-owned firms.....	12.9	11.8	10.9	10.2	11.0
Foreign-owned firms.....	(3.7)	(2.8)	2.5	2.5	3.7
Average.....	9.3	8.5	8.8	8.4	9.1

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Investment in productive facilities.-- The value of property, plant, and equipment for the responding U.S producers of antifriction bearings and parts is shown in table 21.

Table 21
Antifriction bearings (other than tapered roller bearings) and parts thereof: Value of property, plant, and equipment of U.S. producers, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

(In thousands of dollars)

Item	As of end of accounting year--			As of September 30--	
	1985	1986	1987	1987	1988
	Value (1,000 dollars)				
All products of establishments:					
Fixed assets:					
Original cost	1,589,758	1,616,779	1,673,428	1,589,959	1,710,304
Book value	691,843	742,576	796,509	741,112	806,182
Total assets 1/	1,530,204	1,642,409	1,801,278	1,672,912	1,792,635
Ball bearings and parts thereof:					
Fixed assets:					
Original cost	902,129	910,895	931,295	880,971	953,871
Book value	391,470	336,236	471,630	433,426	474,310
Spherical bearings and parts thereof:					
Fixed assets:					
Original cost	177,954	168,371	176,299	159,323	173,030
Book value	75,640	67,857	68,821	62,569	65,127
Cylindrical bearings and parts thereof:					
Fixed assets:					
Original cost	150,893	159,894	155,356	151,773	154,996
Book value	66,167	72,509	73,984	74,147	76,897
Needle bearings and parts thereof:					
Fixed assets:					
Original cost	***	***	***	***	***
Book value	***	***	***	***	***
Spherical plain bearings and parts thereof:					
Fixed assets:					
Original cost	***	***	***	***	***
Book value	***	***	***	***	***
All subject bearings and parts thereof:					
Fixed assets:					
Original cost	1,458,069	1,489,378	1,533,896	1,454,847	1,563,020
Book value	621,499	577,025	723,775	674,012	730,038

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Table 21--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: Value of property, plant, and equipment of U.S. producers, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

(In thousands of dollars)

Item	As of end of accounting year-- 1985	1986	1987	As of September 30-- 1987	1988
	Return on total assets (percent) 2/				
All products of establishments:					
Operating return	13.5	12.1	11.9	3/	3/
Net return	10.8	8.6	7.3	3/	3/
Ball bearings and parts thereof:					
Operating return	12.3	12.6	8.4	3/	3/
Net return	9.7	8.9	4.1	3/	3/
Spherical bearings and parts thereof:					
Operating return	21.2	32.6	37.7	3/	3/
Net return	19.4	30.6	31.1	3/	3/
Cylindrical bearings and parts thereof:					
Operating return	(4.4)	0.5	5.3	3/	3/
Net return	(5.7)	(1.0)	2.3	3/	3/
Needle bearings and parts thereof:					
Operating return	***	***	***	3/	3/
Net return	***	***	***	3/	3/
Spherical plain bearings and parts thereof:					
Operating return	***	***	***	3/	3/
Net return	***	***	***	3/	3/
All subject bearings and parts thereof:					
Operating return	13.2	14.2	11.8	3/	3/
Net return	10.7	11.0	7.5	3/	3/

1/ Defined as book value of fixed assets plus current and noncurrent assets.
2/ Defined as operating income or net income before taxes divided by total assets that are apportioned to product segments on the basis of respective book value of fixed assets. Accordingly, the rates are calculated only for those firms supplying total assets and book value of fixed assets within each product segment for which they have sales.
3/ Submitted data for varying periods of less than one year prohibit annual rate of return calculation.

Note: Organizational restructuring may affect comparability of values between periods and product segments.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Capital expenditures.--The capital expenditures reported by the firms responding to the Commission's questionnaires are shown in table 22. The large increase in outlays in 1986 was primarily attributable to a plant constructed by * * * and completed in 1987. The petitioner's capital expenditures were $*** in 1985, $*** in 1986, and $*** in 1987.

Table 22
Antifriction bearings (other than tapered roller bearings) and parts thereof: Capital expenditures by U.S. producers, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

(In thousands of dollars)

Item	1985	1986	1987	Interim period ended Sept. 30-- 1987	1988
All products of establishments:					
Land and land improvements	1,177	1,642	581	319	90
Building and leasehold improvements	17,610	12,321	15,455	6,736	16,902
Machinery, equipment, and fixtures	101,911	139,677	153,493	102,706	90,250
Total	120,698	153,640	169,529	109,761	107,242
Ball bearings and parts thereof:					
Land and land improvements	732	754	182	146	25
Building and leasehold improvements	12,519	9,755	11,333	4,298	6,997
Machinery, equipment, and fixtures	61,782	96,739	102,015	71,747	45,032
Total	75,033	107,248	113,530	76,191	52,054
Spherical bearings and parts thereof:					
Land and land improvements	0	71	33	13	0
Building and leasehold improvements	224	156	222	115	460
Machinery, equipment, and fixtures	7,395	9,289	6,647	2,899	3,078
Total	7,619	9,516	6,902	3,027	3,538

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Table 22--**Continued**
Antifriction bearings (other than tapered roller bearings)and parts thereof: Capital expenditures by U.S. producers, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

(In thousands of dollars)

Item	1985	1986	1987	Interim period ended Sept. 30--1987	Interim period ended Sept. 30--1988
Cylindrical bearings and parts thereof:					
Land and land improvements	0	50	15	9	0
Building and leasehold improvements	178	347	405	317	294
Machinery, equipment, and fixtures	6,495	7,702	8,456	4,306	5,646
Total	6,673	8,099	8,876	4,632	5,940
Needle bearings and parts thereof:					
Land and land improvements	***	***	***	***	***
Building and leasehold improvements	***	***	***	***	***
Machinery, equipment, and fixtures	***	***	***	***	***
Total	***	***	***	***	***
Spherical plain bearings and parts thereof:					
Land and land improvements	***	***	***	***	***
Building and leasehold improvements	***	***	***	***	***
Machinery, equipment, and fixtures	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
Land and land improvements	733	1,539	372	310	53
Building and leasehold improvements	13,680	11,826	13,912	6,158	13,007
Machinery, equipment, and fixtures	87,327	127,092	131,651	91,880	69,488
Total	101,740	140,457	145,935	98,348	82,548

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Research and development expenses.--Company outlays for research and development are shown in table 23. The petitioner's expenses were $*** in 1985, $*** in 1986, and $*** in 1987.

Table 23
Antifriction bearings (other than tapered roller bearings) and parts thereof: Research and development expenses of U.S. producers, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

(In thousands of dollars)

Item	1985	1986	1987	Interim period ended Sept. 30-- 1987	1988
All products of establishments	33,925	36,697	35,205	26,094	29,153
Ball bearings and parts thereof	18,391	19,550	20,357	15,159	17,777
Spherical bearings and parts thereof	2,357	1,742	1,616	1,191	1,677
Cylindrical bearings and parts thereof	1,934	2,023	2,208	1,522	1,534
Needle bearings and parts thereof	***	***	***	***	***
Spherical plain bearings and parts thereof	***	***	***	***	***
All subject bearings and parts thereof	28,593	30,984	30,322	22,567	25,206

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Capital and investment.-- The Commission requested U.S. producers to describe any actual or potential negative effects of imports of antifriction bearings and parts from the specified countries on their firm's growth, investment, and ability to raise capital. The responses of the producers are presented in appendix E.

Consideration of the Question of Threat of Material Injury

Section 771(7)(F)(i) of the Tariff Act of 1930 (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 any merchandise, the Commission shall consider, among other relevant factors 1/ 2/--
>
> (I) If a 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 subsidy is an export subsidy inconsistent with the Agreement),
>
> (II) any increase in production capacity or existing unused capacity in the exporting country likely to result in a significant increase in imports of the merchandise to the United States,
>
> (III) any rapid increase in United States market penetration and the likelihood that the penetration will increase to an injurious level,
>
> (IV) the probability that imports of the merchandise will enter the United States at prices that will have a depressing or suppressing effect on domestic prices of the merchandise,
>
> (V) any substantial increase in inventories of the merchandise in the United States,
>
> (VI) the presence of underutilized capacity for producing the merchandise in the exporting country,
>
> (VII) any other demonstrable adverse trends that indicate the probability that the importation (or sale for importation) of the merchandise (whether or not it is actually being imported at the time) will be the cause of actual injury,

---

1/ Section 771(7)(F)(ii) of the act (19 U.S.C. § 1677(7)(F)(ii)) provides that "Any determination by the Commission under this title that an industry in the United States is threatened with material injury shall be made on the basis of evidence that the threat of material injury is real and that actual injury is imminent. Such a determination may not be made on the basis of mere conjecture or supposition."

2/ The Omnibus Trade and Competitiveness Act of 1988 amended section 771(7)(F) of the Tariff Act of 1930 by adding two items to section 771(7)(F)(i) (19 U.S.C. §§ 1677(7)(F)(i)(IX) and (X)), and by adding section 771(7)(F)(iii) (19 U.S.C. § 1677(7)(F)(iii)) in its entirety. While these investigations were initiated prior to the effective date of the amendments, they are presented here for information.

(VIII) the potential for product-shifting if production facilities owned or controlled by the foreign manufacturers, which can be used to produce products subject to investigation(s) under section 701 or 731 or to final orders under section 736, are also used to produce the merchandise under investigation,

(IX) 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), and

(X) 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 like product. 1/

The available information on the nature of the subsidies found by the Department of Commerce (item (I) above) is presented in the section of this report entitled "The nature and extent of subsidies and sales at less than fair value;" information on the volume, U.S. market penetration, and pricing of imports of the subject merchandise (items (III) and (IV) above) is presented in the section entitled "Consideration of the causal relationship between imports of the subject products and the alleged material injury;" and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts (item (X)) is presented in the section entitled "Consideration of alleged material injury." Available information on U.S. inventories of the subject products (item (V)); foreign producers' operations, including the potential for "product-shifting" (items (II), (VI), (VIII) and (IX) 2/ above); any other threat indicators, if applicable (item (VII) above); and any dumping in third-country markets, follows.

The world market

This section of the report has been prepared in order to provide a perspective on the globalization of the market for antifriction bearings. The companies and countries that are the subject of these investigations account for approximately 75 percent of the western world's supply of antifriction bearings.

1/ 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 GATT 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."

2/ Item IX does not apply in these investigations.

World production.--World demand for bearings is dependent on the level of business activity in their end-use markets, which are primarily in manufacturing, construction, mining, transportation, agriculture, and defense-related industries. World production dropped by approximately 13 percent from 1981-1983 during the global recession, but grew annually during 1984-87 as the world economy recovered and industrial production increased. Table 24 shows production levels in the United States, the countries named in these investigations, and all countries during 1981-87.

Table 24
Bearings and parts: Production, by major countries, 1981-87

(In millions of dollars)

Country	1981	1982	1983	1984	1985	1986	1987
United States...	3,583	2,891	2,956	3,535	3,509	3,349	3,526
Japan.....	1,653	1,661	1,693	1,884	2,091	2,734	3,095
West Germany....	1,446	1,394	1,169	1,161	1,398	1,979	2,030
Italy.....	1,666	1,437	1,140	1,010	1,004	1,034	1,090
France.....	509	440	371	350	433	567	615
United Kingdom..	375	339	293	249	294	344	370
Romania.....	173	195	202	204	211	216	220
Sweden.....	167	125	117	118	143	173	191
Singapore.....	20	33	43	51	58	61	66
Thailand.....	22	35	47	60	60	68	74
All other.....	2,576	2,503	2,612	2,677	2,731	2,810	2,970
Total.....	12,190	11,053	10,643	11,299	11,932	13,335	14,247

Source: Based on Torrington Company estimates from official U.S. publications, MA-35Q, The Antifriction Bearings Industry, and Competitive Assessment of the U.S. Ball and Roller Bearing Industry.

Note: These data have been revised since the preliminary investigations. Some of the data for 1981-86 have been revised as the Commission has received new information. Additionally, the revised data for the United States now include parts and mounted bearings so as to be consistent with the data from the other countries.

During this period, the United States, Japan, and West Germany were the three largest world producers of antifriction bearings. These three countries accounted for 61 percent of total world production in 1987. U.S. production of bearings declined in value by 2 percent from approximately $3.6 billion in 1981 to $3.5 billion in 1987, whereas Japanese production increased by 87 percent from $1.7 billion in 1981 to $3.1 billion in 1987. The decline in U.S. production may be attributable to the following factors: (1) the appreciation of the U.S. dollar in relation to other currencies (through 1985); and (2) the loss of domestic and international market share to foreign competitors. The second factor is somewhat due to the significant increase in U.S. imports of automobiles and other end-use products containing foreign-made bearings and the increased foreign sourcing of antifriction bearings by major U.S. original equipment manufacturers (OEMs). By comparison, the surge in the demand for Japanese automobiles, computers, and other machinery has contributed to the increase in Japanese production. West Germany's production of bearings increased by 40 percent from $1.4 billion in 1981 to $2.0 billion in 1987.

World imports.--Total world imports of bearings and parts fell from $3.7 billion in 1981 to $2.9 billion in 1983, but then rose annually to $4.7 billion in 1987, or by 27 percent during 1981-87 (table 25). The United States was the largest importer of bearings throughout the period; U.S. imports rose from $497 million in 1981 to $741 million in 1987, or by 49 percent.

Table 25
Bearings and parts: Imports, by major countries, 1981-87

(In thousands of dollars)

Country	1981	1982	1983	1984	1985	1986	1987
United States..	496,821	477,729	443,938	654,020	660,295	683,988	741,126
West Germany...	366,107	346,541	333,236	363,910	417,090	587,135	687,916
Italy.....	269,202	185,992	189,744	220,671	249,474	354,374	447,243
France.....	263,393	244,266	211,236	210,738	227,027	304,571	376,657
Canada.....	211,827	164,771	169,058	225,433	219,690	242,885	271,499
United Kingdom.	176,290	176,282	159,731	186,531	212,764	248,903	324,938
Sweden.....	114,446	105,144	99,621	104,663	111,955	145,998	194,619
Japan.....	65,559	69,003	68,876	111,952	122,825	145,549	173,319
Singapore.....	96,996	88,970	79,935	95,863	93,184	136,575	182,655
Brazil.....	135,680	89,639	55,148	69,350	103,697	152,381	161,322
Thailand.....	32,651	24,743	28,320	33,061	62,573	60,758	63,937
All other.....	1,489,893	1,280,894	1,044,231	1,091,463	1,138,492	1,380,263	1,108,137
Total.....	3,718,865	3,253,974	2,883,074	3,367,655	3,619,066	4,443,380	4,733,368

Source: Compiled from official statistics of the United Nations. Data on Romania were not available. The 1987 data on Thailand were estimated.

World exports.--World exports of bearings and parts rose from $3.2 billion in 1981 to $4.7 billion in 1987 (table 26). Exports from all major exporting countries, except the United States, increased during 1981-87; West Germany and Japan were the leading exporters during this period.

Table 26
Bearings and parts: Exports, by major countries, 1981-87

(In thousands of dollars)

Country	1981	1982	1983	1984	1985	1986	1987
West Germany..	781,029	694,312	644,613	698,852	782,989	1,056,224	1,241,271
Japan.....	590,131	497,100	511,626	658,122	650,773	806,216	918,577
United States..	381,892	310,317	253,136	330,579	304,846	282,922	338,823
France.....	318,086	247,023	219,257	242,822	284,072	382,691	489,428
Italy.....	205,341	188,211	168,228	195,927	235,334	325,537	383,513
United Kingdom.	223,133	186,139	153,754	167,817	194,693	241,971	289,953
Sweden.....	195,188	166,444	151,428	165,036	180,596	239,018	274,544
Singapore.....	104,951	111,441	112,458	134,799	138,071	153,967	179,163
Canada.....	66,662	56,604	62,946	70,379	68,394	75,433	81,320
Austria.....	76,722	73,780	62,353	65,077	73,228	99,864	105,035
Thailand.....	39	593	7,892	37,208	64,352	64,777	141,188
All other.....	221,500	195,896	202,932	222,322	240,337	310,771	301,723
Total.....	3,164,674	2,727,860	2,550,623	2,988,940	3,217,685	4,039,391	4,744,538

Source: Compiled from official statistics of the United Nations. Data on Romania were unavailable. The 1987 data on Thailand were estimated.

Major world producers.--There are five dominant producers in the world: SKF (Sweden), FAG (West Germany), NSK (Japan), NTN (Japan), and Koyo (Japan). These five firms 1/ accounted for approximately 65 percent of world sales of bearings in 1987 and have somewhat rationalized their production on a worldwide basis. The three Japanese-owned companies accounted for approximately 80 percent of Japanese sales of bearings in 1987; SKF and FAG accounted for approximately 60 percent of European sales in 1987.

Foreign production, capacity, and capacity utilization

The information that follows was received from counsels for respondents, foreign embassies in Washington, and U.S. embassies in the subject countries. None of the respondents reported any plans for expansion of capacity in the subject countries or in the operations of their U.S. affiliates.

Federal Republic of Germany.--Information on capacity, production, inventories, and shipments of the subject antifriction bearings was provided by counsels for a number of major West German producers/exporters. The data are presented in table 27.

1/ The 1985 Annual Report of Ingersoll-Rand (Torrington's parent) stated that the acquisition of the Fafnir Bearing Division makes Ingersoll-Rand "the largest broad-line bearing manufacturer in the United States and the fifth largest in the world."

Ball bearings.--Seven West German producers/exporters provided information concerning ball bearings and parts thereof. 1/ The firms' exports of finished ball bearings to the United States remained level at 6 percent 2/ of their total shipments of ball bearings from 1985 to 1987. The respondents reported operating at levels in excess of capacity in 1985 and 1986, with a decline to 96 percent in 1987. Inventory levels dropped overall from 15 percent of total shipments in 1985 to 13 percent in 1987.

Spherical bearings.--One major producer/exporter provided information on its operations on spherical bearings and parts thereof. 3/ Exports of finished spherical bearings to the United States accounted for *** percent of its total shipments in 1985, with *** to *** percent in 1987. The respondent reported that it operated at *** capacity in 1985 and 1986; however, production *** to *** percent of capacity in 1987. Inventory levels *** from *** percent of total shipments in 1985 to *** percent in 1987. January-September 1988 inventory levels were *** percent of total shipments compared with *** percent for the comparable period of 1987.

Cylindrical bearings.--Three West German producers/exporters of cylindrical bearings and parts thereof provided information on their operations. 4/ The share of their exports of finished cylindrical bearings to the United States dropped from 7 percent of total shipments in 1985 to 6 percent in 1987. The three producers reported operating at 96 percent of capacity in 1985, 102 percent in 1986, and 94 percent of capacity in 1987. Inventory levels decreased from 8 percent of total shipments in 1985 to 6 percent in 1987.

Needle bearings.--Information on needle bearings and parts thereof was provided by three major West German producers/exporters. 5/ Exports of finished needle bearings to the United States decreased from 4 percent of total shipments of such bearings in 1985 to 3 percent in 1987. Capacity utilization was 98 percent for 1985 and 1986, then decreased to 93 percent in 1987. Inventory levels increased overall from 21 percent of total shipments in 1985 to 28 percent in 1987.

1/ The seven West German respondents to report production of ball bearings and parts thereof during the period of the investigation were: FAG Kugelfischer Georg Schaefer KGaA (FAG), NTN Kugellagerfabrik (Deutschland) GmbH (NTN), GMN Georg Muller Nurnberg AG (GMN), INA Walzlager Schaeffler KG (INA), SKF GmbH, SKF Gleitlager GmbH, and Gebr. Reinfurt GmbH & Co. KG.
2/ The share of exports to the United States as a share of total shipments is discussed in terms of value throughout the entire section on foreign production, capacity, and capacity utilization.
3/ FAG was the only West German respondent to report production of spherical bearings and parts thereof during the period of the investigation.
4/ The three West German respondents reporting production of cylindrical bearings and parts thereof were SKF, INA, and FAG.
5/ The three West German respondents reporting production of needle bearings and parts thereof were SKF, INA, FAG.

Table 27
Antifriction bearings (other than tapered roller bearings) and parts thereof: FRG capacity, production, inventories, and shipments, by product, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings:					
Capacity:					
Finished	287,928	280,476	306,043	238,033	247,178
Parts/components	1,431,773	1,354,027	1,245,224	1,023,821	1,089,153
Production:					
Finished	297,980	292,977	292,750	229,066	240,534
Parts/components	1,362,875	1,313,488	931,901	739,121	962,144
Inventories:					
Finished	44,564	47,046	38,901	39,046	28,544
Parts/components	344,978	385,428	284,208	288,075	277,618
Exports to the U.S.:					
Finished:					
Quantity	17,048	20,613	26,728	19,258	25,027
Value (1,000 dollars)	28,456	35,857	44,602	33,749	38,660
Parts/components:					
Quantity	54,272	43,493	59,705	46,209	35,747
Value (1,000 dollars)	2,222	2,152	2,231	1,743	1,754
Ratios (in percent):					
Finished:					
Capacity utilization	103	104	96	96	97
Inventory/shipments	15	17	13	17	12
Exports to U.S./ shipments:					
Quantity	6	7	9	8	10
Value	6	6	6	6	7
Spherical bearings:					
Capacity:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Production:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Inventories:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Exports to the U.S.:					
Finished:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***

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Table 27--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: FRG capacity, production, inventories, and shipments, by product, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Spherical bearings:					
Parts/Components:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Ratios (in percent):					
Finished:					
Capacity utilization	***	***	***	***	***
Inventory/shipments	***	***	***	***	***
U.S. Exports/ shipments:					
Quantity	***	***	***	***	***
Value	***	***	***	***	***
Cylindrical bearings:					
Capacity:					
Finished	23,198	23,199	24,065	20,744	20,489
Parts/components	307,854	318,287	328,388	299,472	310,522
Production:					
Finished	22,220	23,738	22,668	19,424	19,882
Parts/components	282,733	291,382	203,713	180,288	262,388
Inventories:					
Finished	5,111	5,957	5,669	5,941	3,607
Parts/components	90,932	145,156	110,981	107,455	97,944
Exports to the U.S.:					
Finished:					
Quantity	424	659	558	418	817
Value (1,000 dollars)	13,948	15,181	17,958	13,071	15,792
Parts/Components:					
Quantity	4,693	5,432	2,735	2,614	4,785
Value (1,000 dollars)	1,399	932	1,040	770	1,279
Ratios (in percent):					
Finished:					
Capacity utilization	96	102	94	94	97
Inventory/shipments	8	7	6	8	5
U.S. Exports/ shipments:					
Quantity	1	1	1	1	1
Value	7	6	6	5	7
Needle bearings:					
Capacity:					
Finished	235,429	264,667	261,527	241,222	243,730
Parts/components	2,579,700	2,474,800	2,485,200	2,404,900	2,403,700
Production:					
Finished	230,310	260,579	242,175	220,402	235,960
Parts/components	2,469,179	2,114,813	2,202,576	2,121,868	1,960,830

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Table 27--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: FRG capacity, production, inventories, and shipments, by product, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September--1987	January-September--1988
Needle bearings:					
Inventories:					
Finished	48,508	77,635	70,904	69,238	54,717
Parts/components	1,131,355	1,296,074	1,208,410	1,213,686	1,092,316
Exports to the U.S.:					
Finished bearings:					
Quantity	5,629	7,691	7,770	7,209	9,199
Value (1,000 dollars)	5,245	9,092	8,320	7,842	10,899
Parts/Components:					
Quantity	132,684	101,211	27,074	25,348	23,869
Value (1,000 dollars)	1,279	1,340	1,590	1,484	1,372
Ratios (in percent):					
Finished:					
Capacity utilization	98	98	93	91	97
Inventory/shipments	21	33	28	30	21
U.S. Exports/shipments:					
Quantity	2	3	3	3	4
Value	4	5	3	4	4
Spherical plain bearings:					
Capacity:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Production:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Inventories:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Exports to the U.S.:					
Finished bearings:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Parts/Components:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Ratios (in percent):					
Finished:					
Capacity utilization	***	***	***	***	***
Inventory/shipments	***	***	***	***	***
U.S. Exports/shipments:					
Quantity	***	***	***	***	***
Value	***	***	***	***	***

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Table 27--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: FRG capacity, production, inventories, and shipments, by product, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September--1987	January-September--1988
Total all subject bearings:					
Capacity:					
Finished	559,809	581,684	605,085	510,111	521,269
Parts/components	4,339,327	4,167,114	4,078,812	3,742,193	3,817,375
Production:					
Finished	562,309	589,129	568,227	477,022	504,331
Parts/components	4,137,198	3,742,783	3,355,512	3,055,775	3,199,397
Inventories:					
Finished	101,384	134,407	119,338	118,055	89,175
Parts/components	1,569,261	1,829,390	1,605,088	1,611,954	1,469,224
Exports to the U.S.:					
Finished bearings:					
Quantity	23,594	29,555	35,684	27,387	35,639
Value (1,000 dollars)	61,635	72,639	84,109	65,648	78,011
Parts/Components:					
Quantity	196,951	155,127	94,969	78,090	69,959
Value (1,000 dollars)	7,322	6,531	6,842	5,485	7,083
Ratios (in percent):					
Finished:					
Capacity utilization	100	101	94	94	97
Inventory/shipments	17	22	18	22	15
U.S. Exports/shipments:					
Quantity	4	5	5	5	6
Value	6	6	6	6	6

Source: Compiled from data submitted by counsel for the respondents.

Spherical plain bearings.--Two major West German producers/exporters of spherical plain bearings and parts thereof provided information on their operations. 1/ Their exports of finished spherical plain bearings to the United States *** from *** percent of total shipments of finished bearings in 1985 to *** percent in 1987. The producers reported operating at *** percent of capacity for 1985 and 1986, with a *** to *** percent in 1987. Inventory levels *** overall from *** percent of total finished plain bearing shipments in 1985 to *** percent in 1987, and stood at *** percent for January-September 1988 compared with *** percent for the same period of 1987.

All subject bearings.--Exports to the United States of all subject bearings as a share of total shipments remained at 6 percent throughout the period of investigation. Capacity utilization rates were at or very near full capacity and inventory levels ranged from 15 to 22 percent of total shipments.

1/ The two West German respondents reporting production of spherical plain bearings and parts thereof were SKF and FAG.

France.--Information on capacity, production, inventories, and shipments of the subject antifriction bearings was provided by counsels for four French producers/exporters. The data are presented in table 28.

Ball bearings.--Four French producers/exporters provided information concerning ball bearings and parts thereof. 1/ Exports to the United States of finished ball bearings remained relatively stable between 3 and 4 percent of total shipments of finished ball bearings throughout the period of the investigation. The respondents reported operating at more than 94 percent of capacity throughout the period of the investigation. Inventories as a share of total shipments generally remained at levels of 12-13 percent during the period of investigation.

Spherical bearings.--Information for one major French producer/exporter of spherical bearings and parts thereof was provided. 2/ Exports to the United States of finished spherical bearings *** from 1985 to 1986 at *** percent of total shipments, but *** to *** percent in 1987. The respondent operated *** of reported capacity for most of the period of investigation. Inventory levels *** from *** percent of total shipments in 1985 to *** percent in 1986, and *** to *** percent in 1987.

Cylindrical bearings.--Three French producers/exporters provided information concerning cylindrical bearings and parts thereof. 3/ Exports to the United States of finished cylindrical bearings were 3 to 4 percent of total shipments during the period of investigation. Capacity utilization increased steadily from 70 percent in 1985 to 88 percent in 1987, while levels of inventory as a percentage of total shipments decreased from 12 percent in 1985 to 6 percent in 1987.

Needle bearings.--SKF was the only French producer/exporter to provide information on needle bearing operations. Its exports to the United States as a share of total shipments were *** percent throughout the period of investigation. Capacity utilization *** from *** percent in 1985 to *** percent in 1987. Capacity utilization in interim 1988 stood at *** percent. Inventories as a share of total shipments *** throughout the period of investigation.

Spherical plain bearings.--SKF was the only French producer/exporter to report information on spherical plain bearing operations. Its exports to the United States represented *** percent of total shipments during the period of investigation. Its capacity utilization rates ranged from *** percent to *** for the same period. Inventory levels *** from *** percent of total shipments in 1985 to *** percent in 1987.

1/ The four French respondents reporting production of ball bearings and parts thereof were SKF-France, SNFA-France, INA Roulements SA (INA), and SNR Roulements (SNR).
2/ SKF was the only French respondent to report production of spherical bearings and parts thereof during the period of the investigation.
3/ The three French respondents reporting production of cylindrical bearings and parts include were SNFA, INA, and SNR.

Table 28
Antifriction bearings (other than tapered roller bearings) and parts thereof: French capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September- 1987	1988
Ball bearings:					
Capacity:					
Finished	117,572	135,822	144,905	108,096	116,656
Parts/components	0	0	0	0	0
Production:					
Finished	116,671	127,284	143,960	106,121	112,832
Parts/components	85,173	37,112	29,859	23,525	12,850
Inventories:					
Finished	15,041	14,678	18,029	14,298	11,178
Parts/components	10,320	4,520	3,146	3,779	1,827
Exports to the U.S.:					
Finished:					
Quantity	7,289	9,393	8,503	6,210	8,460
Value (1,000 dollars)	7,009	9,982	10,808	7,546	12,299
Parts/Components:					
Quantity	3	1	108	40	20
Value (1,000 dollars)	1/	1	3	1/	1/
Ratios (in percent):					
Finished:					
Capacity utilization	99	94	99	98	97
Inventory/shipments	13	12	13	13	9
U.S. Exports/shipments:					
Quantity	6	7	6	6	7
Value	4	4	3	3	4
Spherical bearings:					
Capacity:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Production:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Inventories:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Exports to the U.S.:					
Finished:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Parts/Components:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***

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Table 28--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: French capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-1987	January-September-1988
Spherical bearings:					
Ratios (in percent):					
Finished:					
Capacity utilization	***	***	***	***	***
Inventory/shipments	***	***	***	***	***
U.S. Exports/shipments:					
Quantity	***	***	***	***	***
Value	***	***	***	***	***
Cylindrical bearings:					
Capacity:					
Finished	5,340	5,340	5,350	4,736	4,736
Parts/components	0	0	0	0	0
Production:					
Finished	3,741	4,226	4,684	4,032	4,411
Parts/components	0	0	0	0	0
Inventories:					
Finished	441	317	261	240	291
Parts/components	0	0	0	0	0
Exports to the U.S.:					
Finished:					
Quantity	28	26	19	18	17
Value (1,000 dollars)	1,028	1,395	1,483	1,160	1,558
Parts/Components:					
Quantity	0	0	0	0	0
Value (1,000 dollars)	0	0	0	0	0
Ratios (in percent):					
Finished:					
Capacity utilization	70	79	88	85	93
Inventory/shipments	12	7	6	6	7
U.S. Exports/shipments:					
Quantity	1	1	2/	2/	2/
Value	4	3	3	3	4
Needle bearings:					
Capacity:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Production:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Inventories:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***

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Table 28--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: French capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September- 1987	January-September- 1988
Needle bearings:					
Exports to the U.S.:					
Finished:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Parts/Components:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Ratios (in percent):					
Finished:					
Capacity utilization	***	***	***	***	***
Inventory/shipments	***	***	***	***	***
U.S. Exports/shipments:					
Quantity	***	***	***	***	***
Value	***	***	***	***	***
Spherical plain bearings:					
Capacity:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Production:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Inventories:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Exports to the U.S.:					
Finished:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Parts/Components:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Ratios (in percent):					
Finished:					
Capacity utilization	***	***	***	***	***
Inventory/shipments	***	***	***	***	***
U.S. Exports/shipments:					
Quantity	***	***	***	***	***
Value	***	***	***	***	***

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Table 28--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: French capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September- 1987	1988
Total all subject bearings:					
Capacity:					
Finished	127,728	148,999	169,046	131,172	137,801
Parts/components	0	0	0	0	0
Production:					
Finished	124,707	138,404	161,577	122,507	131,941
Parts/components	95,316	46,079	37,963	29,728	18,041
Inventories:					
Finished	16,104	15,602	19,428	15,572	12,471
Parts/components	14,061	5,994	4,109	4,703	2,519
Exports to the U.S.:					
Finished bearings:					
Quantity	7,334	9,439	8,582	6,269	8,533
Value (1,000 dollars)	8,253	11,699	13,108	9,288	14,735
Parts/Components:					
Quantity	4,132	6,548	7,483	5,823	4,529
Value (1,000 dollars)	769	1,462	3,222	2,713	1,188
Ratios (in percent):					
Finished:					
Capacity utilization	98	93	96	93	96
Inventory/shipments	13	11	12	12	9
U.S. Exports/shipments:					
Quantity	6	7	5	5	6
Value	3	3	3	3	4

1/ Less than $500.
2/ Less than 0.05 percent.
3/ Less than 500 units.

Source: Compiled from data submitted by counsel for the respondents.

All subject bearings.--Exports to the United States as a share of total shipments remained at 3 percent from 1985 to 1987. Capacity utilization rates ranged from 93 to 98 percent during the period of investigation, while inventory levels ran from 11 to 13 percent of total shipments

Italy.--Information on capacity, production, inventories, and shipments of the subject antifriction bearings was provided by counsels for three Italian producers/exporters. The data are presented in table 29.

Ball bearings.--Three Italian producers/exporters provided information concerning ball bearings and parts thereof. 1/ Italian exports of finished ball bearings to the United States accounted for 11 percent of respondents' total shipments of such bearings in 1985, increasing to 12 percent in 1986, and then decreasing to 8 percent in 1987. The respondents operated at 116 percent and 99 percent capacity for 1985 and 1986, respectively; however, this dropped to 87 percent in 1987. Levels of inventory were level from 1985 to 1987 at 21 percent of total shipments of finished ball bearings.

Spherical bearings.--Information was provided by two Italian producers/exporters concerning spherical bearings and parts thereof. 2/ Exports of finished spherical bearings by the respondents to the United States *** overall from *** percent of total shipments of such bearings in 1985 to *** percent in 1987, while capacity utilization *** from *** percent to *** percent during the same period. Finished spherical bearing inventory levels of *** percent of total shipments of such bearings in 1985 *** to *** percent in 1987.

Cylindrical bearings.--Two Italian producers/exporters provided information on cylindrical bearings and parts thereof. 3/ Exports of finished cylindrical bearings by the respondents to the United States were *** accounting for *** percent of the value of their total shipments of finished cylindrical bearings for the period of the investigation. Respondents reported operating at *** percent capacity in 1985, with *** to *** percent in 1986, and *** percent in 1987. Inventory levels for the period of 1985 *** from *** percent to *** percent of total shipments of finished cylindrical bearings in 1986, then *** to *** percent in 1986.

Needle bearings.--One major Italian producer/exporter provided information on needle bearings and parts thereof. 4/ Exports of finished needle bearings to the United States accounted for *** percent of the respondent's total shipments of such bearings in 1985; this share *** to *** percent during 1986-87. Respondent's capacity utilization *** from *** percent in 1985 to *** percent in 1987, and for January-September 1988 stood at *** percent compared with *** percent for January-September 1987. Finished needle bearing inventory levels as a percentage of total shipments *** from *** percent in 1985 to *** percent in 1987.

1/ The three Italian respondents to report production of ball bearings and parts thereof during the period of the investigation were: SKF-Italy, FAG Cuscinetti SpA, SOMECAT SpA.

2/ The two Italian respondents reporting production of spherical bearings and parts thereof were ICSA Industria Cuscinetti SpA (ICSA) and FAG-Italy.

3/ The two Italian respondents to report production of cylindrical bearings and parts thereof during the period of the investigation were SKF-Italy and FAG-Italy.

4/ SKF-Italy was the only Italian respondent to report production of needle bearings and parts thereof during the period of the investigation.

Table 29
Antifriction bearings (other than tapered roller bearings) and parts thereof: Italian capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

	1985	1986	1987	January-September-- 1987	1988
Ball bearings:					
Capacity:					
Finished	150,543	144,563	160,948	121,087	124,687
Parts/components	1,864,537	1,979,052	1,880,938	1,311,562	1,688,544
Production:					
Finished	173,942	142,682	140,350	120,197	104,380
Parts/components	1,902,331	2,055,325	1,955,979	1,413,458	1,577,556
Inventories:					
Finished	30,563	27,856	32,864	29,433	23,740
Parts/components	100,932	128,911	136,808	81,871	159,605
Exports to the U.S.:					
Finished:					
Quantity	18,668	29,837	21,986	17,161	19,644
Value (1,000 dollars)	20,537	34,168	28,795	21,153	27,716
Parts/Components:					
Quantity	5,858	302	104	104	34
Value (1,000 dollars)	24	11	17	17	0
Ratios (in percent):					
Finished:					
Capacity utilization	116	99	87	99	84
Inventory/shipments	21	17	21	25	19
U.S. Exports/shipments:					
Quantity	13	18	14	14	16
Value	11	12	8	9	10
Spherical bearings:					
Capacity:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Production:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Inventories:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Exports to the U.S.:					
Finished:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Parts/Components:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***

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Table 29--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: Italian capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

	1985	1986	1987	January-September--1987	January-September--1988
Spherical bearings:					
Ratios (in percent):					
Finished:					
Capacity utilization...	***	***	***	***	***
Inventory/shipments....	***	***	***	***	***
U.S. Exports/shipments:					
Quantity.....	***	***	***	***	***
Value.....	***	***	***	***	***
Cylindrical bearings:					
Capacity:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Production:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Inventories:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Exports to the U.S.:					
Finished:					
Quantity.....	***	***	***	***	***
Value (1,000 dollars)..	***	***	***	***	***
Parts/Components:					
Quantity.....	***	***	***	***	***
Value (1,000 dollars)..	***	***	***	***	***
Ratios (in percent):					
Finished:					
Capacity utilization...	***	***	***	***	***
Inventory/shipments....	***	***	***	***	***
U.S. Exports/shipments:					
Quantity.....	***	***	***	***	***
Value.....	***	***	***	***	***
Needle bearings:					
Capacity:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Production:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Inventories:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***

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Table 29--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: Italian capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

	1985	1986	1987	January-September--1987	January-September--1988
Needle bearings:					
Exports to the U.S.:					
Finished:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Parts/Components:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Ratios (in percent):					
Finished:					
Capacity utilization	***	***	***	***	***
Inventory/shipments	***	***	***	***	***
U.S. Exports/shipments:					
Quantity	***	***	***	***	***
Value	***	***	***	***	***
Total all subject bearings:					
Capacity:					
Finished	153,594	150,545	168,042	126,389	129,991
Parts/components	1,962,528	2,153,552	1,973,993	1,378,458	1,743,584
Production:					
Finished	176,759	147,991	146,164	124,279	109,439
Parts/components	2,001,427	2,236,774	2,051,259	1,484,735	1,628,174
Inventories:					
Finished	30,720	28,099	33,343	29,719	24,919
Parts/components	136,446	203,301	194,316	147,306	213,266
Exports to the U.S.:					
Finished bearings:					
Quantity	20,233	34,169	26,977	20,735	23,342
Value (1,000 dollars)	21,859	37,085	31,402	22,979	29,861
Parts/Components:					
Quantity	5,861	3,110	5,390	3,649	2,033
Value (1,000 dollars)	27	394	687	443	212
Ratios (in percent):					
Finished:					
Capacity utilization	115	98	87	98	84
Inventory/shipments	21	16	21	24	20
U.S. Exports/shipments:					
Quantity	14	20	17	17	18
Value	10	12	9	9	10

1/ Less than 500 units.
2/ Less than 0.05 percent.

Source: Compiled from data submitted by counsel for the respondents.

All subject bearings.--Exports to the United States as a share of total shipments dropped irregularly from 10 percent in 1985 to 9 percent in 1987. Capacity utilization rates dipped from 115 percent in 1985 to 87 percent in 1987, while inventory levels fluctuated between 16 and 21 percent over the same period.

Japan.--Information on capacity, production, inventories, and shipments of the subject antifriction bearings was provided by counsels for six major Japanese producers/exporters. The data are presented in table 30.

Ball bearings.--Five producers provided information concerning ball bearings and parts thereof. 1/ Exports of finished ball bearings to the United States by respondents dropped from 7 percent of total shipments in 1985 to 5 percent in 1987. Operating levels near or in excess of capacity were reported for the same period. Inventory levels dropped from 9 percent of total finished ball bearings shipments in 1985 to 7 percent in 1987.

Spherical bearings.--Three respondents provided information on spherical bearing operations. 2/ Their exports of finished spherical bearings to the United States accounted for 3 percent of their total shipments in 1985 and 1986, dropping to 2 percent in 1987. The responding firms operated at 90 percent of capacity in 1985, increasing to 93 percent in 1986, then dropping to 86 percent in 1987. Inventory levels remained stable between 14 and 15 percent of total shipments for the 1985-87 period.

Cylindrical bearings.--Four respondents provided information on their cylindrical bearing operations. 3/ Exports of finished cylindrical bearings to the United States remained level at 3 percent of the respondents' total shipments of such bearings from 1985 to 1987. The responding firms operated at 95 percent of capacity in 1985, with a decrease to 94 percent in 1987. Inventory levels as a share of total shipments remained relatively stable, increasing only 1 percentage point from 10 percent of total shipments of finished cylindrical bearings in 1985 to 11 percent in 1986 and 1987.

Needle bearings.--Three producers/exporters provided information concerning needle bearings and parts thereof. 4/ Exports of finished needle bearings to the United States accounted for 3 percent of the respondents' total shipments of such bearings from 1985 to 1987. The three responding firms operated in excess of reported capacity during the period of the investigation. Inventory levels dropped from 15 percent of total finished needle bearing shipments in 1985 to 10 percent in 1987.

1/ The five Japanese respondents to report production of ball bearings and parts thereof were Koyo Seiko Co., Ltd, Nachi-Fujikoshi Corp., Nippon Thompson, Ltd., Nippon Seiko KK, and NTN Toyo Bearing Co., Ltd.
2/ The three Japanese respondents to report production of spherical bearings and parts thereof during the period of investigation were Koyo Seiko Co., Ltd, Nippon Seiko KK, and NTN Toyo Bearing Co.
3/ The four Japanese respondents to report production of cylindrical bearings and parts thereof during the period of investigation were Koyo Seiko Co., Ltd., Nippon Seiko KK, Nippon Thompson, Ltd., NTN Toy Bearing Co.
4/ The three Japanese respondents to report production of needle bearings and parts thereof during the period of the investigation were Koyo Seiko Co., Ltd., Nippon Thompson, Ltd., and NTN Toyo Bearing Co.

Table 30
Antifriction bearings (other than tapered roller bearings) and parts thereof: Japanese capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings:					
Capacity:					
Finished	1,199,797	1,225,738	1,251,050	815,163	871,433
Parts/components	0	0	0	0	0
Production:					
Finished	1,234,532	1,217,148	1,286,561	830,875	950,015
Parts/components	0	0	0	0	0
Inventories:					
Finished	114,417	99,686	91,663	88,085	94,167
Parts/components	11	13	10	21	13
Exports to the U.S.:					
Finished:					
Quantity	76,194	71,766	74,705	34,736	51,866
Value (1,000 dollars)	88,356	89,487	89,322	49,328	79,733
Parts/Components:					
Quantity	1,293,627	1,450,665	1,256,611	997,817	651,290
Value (1,000 dollars)	12,945	16,348	19,359	14,912	13,859
Ratios (in percent):					
Finished:					
Capacity utilization	103	99	103	102	109
Inventory/shipments	9	8	7	10	9
U.S. Exports/shipments:					
Quantity	6	6	6	4	5
Value	7	6	5	4	6
Spherical bearings:					
Capacity:					
Finished	1,884	1,868	1,848	1,416	1,384
Parts/components	0	0	0	0	0
Production:					
Finished	1,689	1,734	1,581	1,143	1,314
Parts/components	0	0	0	0	0
Inventories:					
Finished	246	248	243	241	199
Parts/components	0	0	0	0	0
Exports to the U.S.:					
Finished:					
Quantity	57	50	28	20	28
Value (1,000 dollars)	2,767	3,041	2,355	1,577	1,940
Parts/Components:					
Quantity	0	0	0	0	0
Value (1,000 dollars)	0	0	0	0	0

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Table 30--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: Japanese capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September--1987	January-September--1988
Spherical bearings:					
Ratios (in percent):					
Finished:					
Capacity Utilization...	90	93	86	81	95
Inventory/shipments....	14	14	15	20	14
U.S. Exports/shipments:					
Quantity.....	3	3	2	2	2
Value.....	3	3	2	2	2
Cylindrical bearings:					
Capacity:					
Finished.....	11,167	10,858	11,310	8,498	9,172
Parts/components.....	0	0	0	0	0
Production:					
Finished.....	10,661	10,032	10,604	7,626	9,603
Parts/components.....	0	0	0	0	0
Inventories:					
Finished.....	1,144	1,224	1,232	1,220	1,243
Parts/components.....	0	0	2,063	1,933	1,799
Exports to the U.S.:					
Finished:					
Quantity.....	487	376	641	480	440
Value (1,000 dollars)..	3,098	3,867	3,922	3,169	2,433
Parts/Components:					
Quantity.....	796	425	141	117	527
Value (1,000 dollars)..	47	37	24	20	57
Ratios (in percent):					
Finished:					
Capacity utilization...	95	92	94	90	105
Inventory/shipments....	10	11	11	15	12
U.S. Exports/shipments:					
Quantity.....	4	4	6	6	4
Value.....	3	3	3	3	2
Needle bearings:					
Capacity:					
Finished.....	186,792	187,846	201,362	150,207	163,862
Parts/components.....	10,445	8,130	7,500	5,340	7,350
Production:					
Finished.....	231,988	223,008	231,698	170,288	195,487
Parts/components.....	94,770	103,077	103,486	77,035	88,808
Inventories:					
Finished.....	34,784	29,122	25,534	27,974	22,060
Parts/components.....	3,950	3,801	6,859	7,251	8,425

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Table 30--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: Japanese capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Needle bearings:					
Exports to the U.S.:					
Finished:					
Quantity	6,888	10,478	12,074	9,147	13,005
Value (1,000 dollars)	7,055	6,715	8,480	6,184	8,799
Parts/Components:					
Quantity	2,766	7,020	9,636	6,434	8,716
Value (1,000 dollars)	782	1,204	1,568	1,169	1,569
Ratios (in percent):					
Finished:					
Capacity utilization	124	119	115	113	119
Inventory/shipments	15	12	10	15	10
U.S. Exports/shipments:					
Quantity	3	4	5	5	6
Value	3	3	3	4	4
Spherical plain bearings:					
Capacity:					
Finished	12,247	11,718	10,835	7,896	8,846
Parts/components	0	8	7	7	4
Production:					
Finished	12,256	11,244	9,813	7,206	8,408
Parts/components	0	6	6	6	0
Inventories:					
Finished	2,411	2,905	2,724	2,834	1,851
Parts/components	61	54	54	46	345
Exports to the U.S.:					
Finished:					
Quantity	269	386	348	286	336
Value (1,000 dollars)	896	1,261	1,183	911	1,768
Parts/Components:					
Quantity	1	1	1	1	3
Value (1,000 dollars)	1	1	2	0	5
Ratios (in percent):					
Finished:					
Capacity utilization	100	96	91	91	95
Inventory/shipments	20	26	26	37	20
U.S. Exports/shipments:					
Quantity	2	3	3	4	4
Value	4	5	5	6	8

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Table 30--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: Japanese capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September--1987	January-September--1988
Total all subject bearings:					
Capacity:					
Finished	1,411,887	1,438,028	1,476,405	983,180	1,054,697
Parts/components	10,445	8,138	7,507	5,347	7,354
Production:					
Finished	1,491,126	1,463,166	1,540,257	1,017,138	1,164,827
Parts/components	94,770	103,083	103,492	77,042	88,808
Inventories:					
Finished	153,002	133,184	121,396	120,355	119,520
Parts/components	4,022	3,868	8,986	9,251	10,581
Exports to the U.S.:					
Finished bearings:					
Quantity	83,895	83,056	87,797	44,668	65,675
Value (1,000 dollars)	102,172	104,372	105,263	61,169	94,672
Parts/Components:					
Quantity	1,297,191	1,458,110	1,266,390	1,004,368	660,536
Value (1,000 dollars)	13,775	17,590	20,954	16,102	15,489
Ratios (in percent):					
Finished:					
Capacity utilization	106	102	104	103	110
Inventory/shipments	10	9	7	11	10
U.S. Exports/shipments:					
Quantity	5	5	5	4	5
Value	6	5	5	4	5

Source: Compiled from data submitted by counsel for the respondents.

Spherical plain bearings--Information was provided by three Japanese producers/exporters concerning spherical plain bearings and parts thereof. 1/ Their exports of finished spherical plain bearings to the United States increased from 4 percent of total shipments in 1985 to 5 percent in 1987. Capacity utilization decreased from 100 percent in 1985 to 91 percent in 1987. Inventory levels increased from 20 percent of total finished spherical plain bearing shipments in 1985 to 26 percent in 1987.

All subject bearings.--Exports to the United States as a share of total shipments dropped from 6 percent in 1985 to 5 percent in 1987. Capacity utilization rates declined from 106 percent in 1985 to 104 percent in 1987, while inventory levels dropped between 10 to 7 percent over the same period.

Outstanding dumping orders.--On June 24, 1985, the Commission of the European Community imposed the following antidumping duties for manufacturers and exporters of ball bearings from Japan (in percent ad valorem):

	Duty
NTN Toyo Bearing, Ltd.	3.00
Koyo Seiko Co., Ltd.	5.52
Nippon Seiko KK Tokyo	16.71
Nachi Fujikoshi Corp.	13.91
FKC Bearing Co., Ltd.	1.21
Fujino Iron Works Co., Ltd.	7.97
Izumoto Seiko Co., Ltd.	21.75
Nankai Seiko Co., Ltd.	4.23
Sapporo Precision, Inc.	1.86
Wada Seiko Co., Ltd.	10.73

Additionally, there is an ongoing antidumping investigation by the EC in response to a complaint by five European producers against all the major Japanese producers involving ball bearings, 30mm OD and under. These investigations will likely be completed during the summer of 1989.

Romania.--Counsel for Tehnoimportexport (TIE) provided information on that company's operations producing ball and spherical bearings in Romania. The data are presented in table 31.

Ball bearings.--Exports of finished ball bearings to the United States by TIE *** from *** percent of total shipments in 1986 to *** percent in 1987. Operating levels *** percent of capacity were reported for the same period.

Spherical bearings.--TIE's exports of finished spherical bearings to the United States accounted for *** percent of their total shipments in 1986, then *** to *** percent in 1987. TIE operated at *** percent of capacity in 1986, then *** to *** percent in 1987.

All subject bearings.--TIE's exports of all subject bearings to the United States accounted for *** percent of their total shipments in 1986, then *** to *** percent in 1987. TIE operated at *** percent of capacity *** in 1986 and 1987.

1/ The three Japanese respondents reporting production of plain bearings and parts thereof were Minebea Co., Ltd., Nippon Thompson, Ltd., and NTN Toyo Bearing Co. Ltd.

Table 31
Antifriction bearings (other than tapered roller bearings) and parts thereof: Romania's capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings:					
	*	*	*	*	*
Spherical bearings:					
	*	*	*	*	*
All subject bearings:					
	*	*	*	*	*

1/ Not provided.

Source: Compiled from data submitted by counsel for the respondents.

Singapore.--Information on capacity, production, inventories, and shipments of ball bearings and parts thereof was provided by counsel for two major producers/exporters in Singapore. 1/ The data are presented in table 32. Exports of finished ball bearings from Singapore to the United States accounted for *** percent of total shipments of such bearings from 1985 to 1987. The respondents operated at *** percent of capacity in 1985; this *** in 1986 to *** percent and *** to *** percent in 1987. Inventory levels *** from 1985-87 at *** percent of total finished ball bearing shipments.

1/ The two firms from Singapore that responded were NMB Singapore Ltd. and Pelmec Industries (Pte.) Ltd. For Singapore, ball bearings and parts thereof was the only product category subject to these investigations and, therefore, data in this category are the equivalent of "all subject bearings."

Table 32
Ball bearings and parts thereof: Singapore's capacity, production, inventories, and shipments, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings:					
	*	*	*	*	*

Source: Compiled from data submitted by counsel for the respondents.

Sweden.--Information on capacity, production, inventories, and shipments of the subject antifriction bearings for a major producer/exporter in Sweden was provided by counsel for the respondent. 1/ The data are presented in table 33.

Ball bearings.--The respondent's exports of finished ball bearings to the United States accounted for *** percent of the firm's total shipments of such bearings in 1985 and 1986, *** to *** percent in 1987. The firm reported operating at *** capacity in 1985 and *** of reported capacity in 1986 and 1987. Inventory levels *** from *** percent of total finished ball bearings shipments in 1985 to *** percent in 1986, then *** to *** percent in 1987.

Spherical bearings.--Exports of finished spherical bearings to the United States by the respondent accounted for *** to *** percent of its total shipments of such bearings throughout the period of the investigation. Capacity utilization of *** percent in 1985 *** to *** percent in 1986, then *** to *** percent in 1987. The respondent reported inventory levels at *** percent of total finished spherical bearing shipments in 1985, *** to *** percent in 1986, then *** to *** percent in 1987.

Cylindrical bearings.--Respondent's exports of finished cylindrical bearings to the United States *** from *** percent of total shipments in 1985 to *** percent in 1986 and 1987. Respondent reported operating at *** in 1985 and *** of reported capacity in 1986, but its operating rate *** to *** percent of capacity in 1987. The respondent's inventory levels steadily *** over the period of the investigation from *** percent of total finished cylindrical bearing shipments in 1985 to *** percent in 1987.

1/ SKF was the only respondent to report production of antifriction bearings and parts thereof in Sweden.

Table 33
Antifriction bearings (other than tapered roller bearings) and parts thereof: Sweden's capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings:					
	*	*	*	*	*
Spherical bearings:					
	*	*	*	*	*
Cylindrical bearings:					
	*	*	*	*	*
Total all subject bearings:					
	*	*	*	*	*

Source: Compiled from data submitted by counsel for the respondent.

All subject bearings.--Exports to the United Stats as a share of total shipments *** from *** percent in 1985 to *** percent in 1987. Inventories as a share of total shipments *** irregularly from *** percent in 1985 to *** percent in 1987. Operating rates were *** capacity during the period of investigation.

Thailand.--Information on capacity, production, inventories, and shipments of ball bearings and parts thereof for two major producers/exporters in Thailand was provided by counsel for the respondents. 1/ The data are presented in table 34. The respondents' exports of finished ball bearings from Thailand to the United States *** irregularly from *** percent of total shipments of such bearings in 1985 to *** percent in 1987. The firms operated at *** and *** percent of capacity in 1985 and 1986, respectively, while *** their operations to *** percent of capacity in 1987. Inventory levels *** throughout the period of the investigation at *** percent of total finished ball bearing shipments.

In addition to these investigations, there is an ongoing antidumping investigation by the EC in response to a complaint by five European producers against NMB Thailand, as well as a subsidy investigation concerning a complaint against the Government of Thailand. Both instances involve ball bearings, 30mm OD and under. These investigations will likely be completed during the summer of 1989.

1/ The two respondents from Thailand to report production of ball bearings and parts thereof were NMB Thai Ltd. and Pelmec Thai Ltd. For Thailand, ball bearings and parts thereof was the only product category subject to these investigations and, therefore, data in this category are the equivalent of "all subject bearings."

Table 34
Ball bearings and parts thereof: Thailand's capacity, production, inventories, and shipments, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings:					
	*	*	*	*	*

Source: Compiled from data submitted by counsel for the respondents.

United Kingdom.--Information on capacity, production, inventories, and shipments of the subject antifriction bearings was provided by counsels for five major UK producers/exporters. The data are presented in table 35.

Ball bearings.--Three UK producers/exporters provided information concerning ball bearings and parts thereof. 1/ Exports of finished ball bearings to the United States by the respondents remained relatively level at 5 percent of total shipments from 1985 to 1987. Capacity utilization increased from 87 percent in 1985 to 91 percent in 1987, while inventory levels decreased during the same period from 31 percent to 16 percent of total finished ball bearing shipments.

Spherical bearings.--Information on spherical bearings and parts thereof for one major UK producer/exporter was provided. 2/ Respondent's exports of finished spherical bearings to the United States accounted for approximately *** percent of the firm's total shipments in 1985 and 1986 and *** percent in 1987. The firm's capacity utilization *** overall during the period of the investigation from *** percent in 1985 to *** percent in 1987, peaking at *** percent in 1986. Inventory levels of *** percent of total finished spherical bearing shipments in 1985 *** steadily to *** percent in 1987.

Cylindrical bearings.--Two UK producers/exporters provided information concerning cylindrical bearings and parts thereof. 3/ Exports of finished cylindrical bearings by the respondents to the United States ***

1/ The three UK respondents to report production of ball bearings and parts thereof during the period of the investigation were SKF-UK, SNFA Bearings, Ltd. (UK), and RHP Bearings, Ltd.
2/ SKF-UK was the only UK respondent to report production of spherical bearings and parts thereof during the period of the investigation.
3/ The two UK respondents reporting production of cylindrical bearings and parts thereof were RHP Bearings, Ltd. and Cooper Bearings Company Limited (Cooper).

Table 35
Antifriction bearings (other than tapered roller bearings) and parts thereof: UK capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings:					
Capacity:					
Finished	32,329	28,464	28,534	21,546	20,863
Parts/components	0	0	0	0	0
Production:					
Finished	28,051	25,355	25,982	19,407	21,343
Parts/components	0	0	0	0	0
Inventories:					
Finished	9,553	6,524	4,680	5,365	3,919
Parts/components	0	0	0	0	0
Exports to the U.S.:					
Finished:					
Quantity	1,566	1,839	2,319	1,638	1,925
Value (1,000 dollars)	5,308	7,185	7,144	4,657	9,055
Parts/Components:					
Quantity	0	1	3	2	0
Value (1,000 dollars)	0	13	107	62	2
Ratios (in percent):					
Finished:					
Capacity utilization	87	89	91	90	102
Inventory/shipments	31	21	16	25	17
U.S. Exports/shipments:					
Quantity	5	6	8	7	8
Value	5	6	5	4	6
Spherical bearings:					
Capacity:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Production:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Inventories:					
Finished	***	***	***	***	***
Parts/components	***	***	***	***	***
Exports to the U.S.:					
Finished:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Parts/Components:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***

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Table 35--Continued
Antifriction bearings (other than tapered roller bearings) and parts thereof: UK capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Spherical bearings:					
Ratios (in percent):					
Finished:					
Capacity utilization...	***	***	***	***	***
Inventory/shipments....	***	***	***	***	***
U.S. Exports/shipments:					
Quantity.....	***	***	***	***	***
Value.....	***	***	***	***	***
Cylindrical bearings:					
Capacity:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Production:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Inventories:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Exports to the U.S.:					
Finished:					
Quantity.....	***	***	***	***	***
Value (1,000 dollars)...	***	***	***	***	***
Parts/Components:					
Quantity.....	***	***	***	***	***
Value (1,000 dollars)...	***	***	***	***	***
Ratios (in percent):					
Finished:					
Capacity utilization...	***	***	***	***	***
Inventory/shipments....	***	***	***	***	***
U.S. Exports/shipments:					
Quantity.....	***	***	***	***	***
Value.....	***	***	***	***	***
Needle bearings:					
Capacity:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Production:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***
Inventories:					
Finished.....	***	***	***	***	***
Parts/components.....	***	***	***	***	***

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Table 35--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: UK capacity, production, inventories, and shipments, by products, 1985-87, January-September 1987, and January-September 1988

(Quantity in 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Needle bearings:					
Exports to the U.S.:					
Finished:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Parts/Components:					
Quantity	***	***	***	***	***
Value (1,000 dollars)	***	***	***	***	***
Ratios (in percent):					
Finished:					
Capacity utilization	***	***	***	***	***
Inventory/shipments	***	***	***	***	***
U.S. Exports/shipments:					
Quantity	***	***	***	***	***
Value	***	***	***	***	***
Total all subject bearings:					
Capacity:					
Finished	37,820	34,136	33,823	26,298	25,475
Parts/components	493	2,635	4,005	2,443	4,738
Production:					
Finished	32,678	30,365	30,530	23,441	25,616
Parts/components	485	2,628	4,002	2,441	4,737
Inventories:					
Finished	10,912	7,919	6,071	6,737	5,032
Parts/components	5	298	93	4	723
Exports to the U.S.:					
Finished bearings:					
Quantity	1,628	1,892	2,769	2,077	2,737
Value (1,000 dollars)	6,402	9,340	9,853	6,848	12,964
Parts/Components:					
Quantity	459	2,307	4,184	2,718	4,113
Value (1,000 dollars)	200	965	1,441	1,052	1,378
Ratios (in percent):					
Finished:					
Capacity utilization	86	89	90	89	101
Inventory/shipments	31	22	18	26	18
U.S. Exports/shipments:					
Quantity	5	5	8	8	10
Value	4	5	5	5	7

1/ Less than 0.05 percent.

Source: Compiled from data submitted by counsel for the respondents.

from *** percent of total shipments in 1985 to *** percent in 1986, then *** to *** percent in 1987. The firms' capacity utilization levels *** irregularly from *** percent in 1985 to *** percent in 1987. Capacity utilization for January-September 1988 stood at *** percent compared with *** percent during the same period of 1987. Inventory levels *** steadily from *** percent of total finished cylindrical bearing shipments in 1985 to *** percent in 1987.

Needle bearings.--Information on needle bearings and parts thereof for one major UK producer/exporter was provided. 1/ Exports of finished needle bearings to the United States by the respondent *** from *** percent of total shipments in 1985 to *** percent in 1987. For January-September 1988, the firm's level of exports to the United States stood at *** percent of total shipments compared with *** percent for the same period of 1987. Capacity utilization *** from *** percent in 1985 to *** percent in 1987, while inventory levels as a percentage of total finished needle bearing shipments *** from *** percent to *** percent over the same period.

All subject bearings.--Exports to the United States as a share of total shipments increased from 4 percent in 1985 to 5 percent in 1986 and 1987. Capacity utilization rates increased from 86 percent in 1985 to 90 percent in 1987, while inventories as a share of total shipments dropped from 31 percent to 18 percent over the same period.

1/ INA Bearing Company Ltd. was the only UK respondent to report production of needle bearings and parts thereof during the period of the investigation.

Importers' inventories

The available data on U.S. importers' inventories of antifriction bearings (other than tapered roller bearings) from the subject countries, as reported by 23 importers in response to the Commission's questionnaires in these investigations are presented in table 36.

Table 36
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. importers' end-of-period inventories of imported bearings, by products and by sources, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

(In 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings and parts thereof:					
Finished bearings:					
France	2,008	2,852	2,140	2,618	2,572
Italy	3,988	7,256	4,973	6,320	5,988
Japan	29,275	32,848	26,798	24,532	26,410
Romania	4,149	2,627	3,217	2,184	4,683
Singapore	19,721	27,057	20,693	.	.
Sweden	850	1,208	755	1,047	909
Thailand	6,124	8,077	9,665	.	.
United Kingdom	774	873	464	614	546
West Germany	4,718	5,358	4,259	5,247	5,284
All other sources	3,557	5,272	4,691	4,583	6,399
Total	75,164	93,428	77,655	47,145	52,791
Parts and components:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	5,233	38,318	3,393	3,413	2,959
Spherical bearings and parts thereof:					
Finished bearings:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	264	327	283	280	415

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Table 36--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. importers' end-of-period inventories of imported bearings, by products and by sources, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

(In 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Spherical bearings and parts thereof:					
Parts and components:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	***	***	***	***	***
Cylindrical bearings and parts thereof:					
Finished bearings:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	901	902	848	838	765
Parts and components:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	***	***	***	***	***

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Table 36--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. importers' end-of-period inventories of imported bearings, by products and by sources, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

(In 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Needle bearings and parts thereof:					
Finished bearings:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	13,106	17,695	23,555	21,204	23,298
Parts and components:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	***	***	***	***	***
Spherical plain bearings and parts thereof:					
Finished bearings:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	666	993	769	863	889

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Table 36--Continued
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. importers' end-of-period inventories of imported bearings, by products and by sources, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

(In 1,000 units)

Item	1985	1986	1987	January-September-- 1987	1988
Spherical plain bearings and parts thereof:					
Parts and components:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	***	***	***	***	***
All subject bearings and parts thereof:					
Finished bearings:					
France	2,842	3,704	3,044	3,513	3,474
Italy	4,382	7,818	6,669	7,580	7,617
Japan	34,055	39,762	34,893	31,229	36,059
Romania	4,200	2,674	3,263	2,231	4,725
Singapore	19,721	27,057	20,693	.	.
Sweden	853	1,216	764	1,054	918
Thailand	6,124	8,077	9,665	.	.
United Kingdom	2,071	4,175	6,773	6,115	4,694
West Germany	9,609	10,934	9,544	11,017	11,187
All other sources	6,244	7,928	7,802	7,591	9,484
Total	90,101	113,345	103,110	70,330	78,158
Parts and components:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Romania	***	***	***	***	***
Singapore	***	***	***	***	***
Sweden	***	***	***	***	***
Thailand	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
All other sources	***	***	***	***	***
Total	119,430	153,569	121,401	120,850	165,462

1/ Less than 500 units.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Consideration of the Causal Relationship Between Imports of the Subject Products and the Alleged Injury

Imports

Data on U.S. imports of the subject antifriction bearings and parts thereof (on a value basis) from the countries subject to these investigations are presented in table 37. 1/

The Federal Republic of Germany.--Imports of the subject antifriction bearings from West Germany were at the top of three of the five product categories subject to investigation: spherical, cylindrical, and spherical plain bearings. Imports from West Germany ranked second to Japan in the ball bearing category, while imports of needle bearings were essentially equal to those from Japan over the period of investigation.

France.--Imports of the subject antifriction bearings from France were principally ball bearings. In addition to ball bearings, imports from France were also reported in the spherical, cylindrical, needle bearings, and spherical plain bearings.

Italy.--Ball bearings were the primary category of imports of the subject antifriction bearings. Imports from Italy were also reported in the spherical, cylindrical, and needle bearing categories.

Japan.--Japan was the largest overall supplier of imports of the subject antifriction bearings. Ball bearing imports from Japan accounted for more than one-half of that category's total imports from the countries subject to investigation. In the other categories, imports from Japan ranked second among the countries subject to investigation in the spherical, cylindrical, and spherical plain bearing categories and were essentially equal to imports from West Germany in the needle bearing category.

Romania.--Imports of the subject antifriction bearings from Romania were principally ball bearings. In addition, there were imports from Romania in the spherical bearing category, with no imports reported in the other categories subject to investigation.

Singapore.--Imports of antifriction bearings from Singapore were almost totally made up of ball bearings. During the period of investigation, imports from Singapore consistently ranked fourth among the countries subject to investigation in the ball bearing category.

Sweden.--Imports of the subject antifriction bearings from Sweden were principally ball bearings. In addition, imports from Sweden of spherical bearings ranked third among the countries subject to investigation during the period of investigation.

1/ These import numbers represent the same statistics used in calculating apparent consumption (table 6). Calculations for ball and spherical bearings do not include bearing articles imported under the basket category of automotive parts (TSUSA item 692.3295) and, therefore, are understated. Official import statistics from the other basket categories have been allocated in these two categories based on discussions with officials at the Department of Commerce and in the antifriction bearing industry. Import statistics for cylindrical, needle, and spherical plain bearings and parts thereof come from respondents to the Commission's questionnaires and are understated to the extent that all questionnaires have not been returned.

Table 37
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. imports for consumption, by products, 1985-87, January-September 1987, and January-September 1988

(Value in 1,000 dollars)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings and parts thereof:					
Apparent U.S. consumption..	1,684,652	1,592,722	1,590,672	1,215,993	1,379,052
Unfair imports:					
France.....	10,666	14,481	16,343	13,204	15,369
Italy.....	22,643	34,448	22,719	18,676	19,700
Japan.....	200,002	192,200	196,051	141,175	203,902
Romania.....	9,742	8,970	10,812	8,049	10,813
Singapore.....	21,576	20,811	22,073	15,996	19,334
Sweden.....	7,191	9,011	11,278	9,142	6,942
Thailand.....	8,209	14,310	16,336	11,265	16,982
United Kingdom.....	11,920	13,595	13,601	9,959	14,424
West Germany.....	47,811	57,755	68,340	52,331	65,304
Subtotal.....	339,761	365,580	377,553	279,797	372,769
Fair imports:					
All other sources.....	43,206	40,371	44,292	32,068	49,020
Total, all imports....	382,967	405,951	421,845	311,865	421,789
Spherical bearings and parts thereof:					
Apparent U.S. consumption..	227,090	217,069	221,572	171,548	207,461
Unfair imports:					
France.....	1,414	942	1,350	1,040	1,152
Italy.....	2,384	2,410	1,828	1,178	1,793
Japan.....	5,479	5,236	3,678	2,859	3,366
Romania.....	1,242	908	2,919	1,856	843
Singapore.....	9	10	6	.	.
Sweden.....	3,588	4,034	4,763	3,818	4,441
United Kingdom.....	3,850	3,423	2,014	1,861	846
West Germany.....	13,904	11,345	10,552	8,592	11,384
Subtotal.....	31,869	28,307	27,110	21,204	23,826
Fair imports:					
Thailand.....	.	.	.	.	2
All other sources.....	3,152	3,447	2,849	2,097	3,308
Subtotal.....	3,152	3,447	2,849	2,097	3,310
Total, all imports.....	35,021	31,754	29,959	23,301	27,136

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Table 37--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. imports for consumption, by products, 1985-87, January-September 1987, and January-September 1988

(Value in 1,000 dollars)

Item	1985	1986	1987	January-September--1987	January-September--1988
Cylindrical bearings and parts thereof:					
Apparent U.S. consumption	208,460	191,098	204,635	151,384	160,952
Unfair imports:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Sweden	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
Subtotal	18,855	19,002	21,138	17,905	20,208
Fair imports:					
All other sources	476	524	489	397	381
Total, all imports	19,331	19,526	21,627	18,302	20,589
Needle bearings and parts thereof:					
Apparent U.S. consumption	***	***	***	***	***
Unfair imports:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
Subtotal	***	***	***	***	***
Fair imports:					
All other sources	***	***	***	***	***
Total, all imports	***	***	***	***	***
Spherical plain bearings and parts thereof:					
Apparent U.S. consumption	***	***	***	***	***
Unfair imports:					
France	***	***	***	***	***
Japan	***	***	***	***	***
West Germany	***	***	***	***	***
Subtotal	***	***	***	***	***
Fair imports:					
All other sources	***	***	***	***	***
Total, all imports	***	***	***	***	***

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Table 37--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: U.S. imports for consumption, by products, 1985-87, January-September 1987, and January-September 1988

(Value in 1,000 dollars)

Item	1985	1986	1987	January-September-- 1987	1988
All subject bearings and parts thereof:					
Apparent U.S. consumption..	2,493,868	2,394,912	2,421,022	1,838,003	2,091,240
Unfair imports:					
France.....	13,008	16,472	18,482	14,950	17,228
Italy.....	25,136	38,736	27,985	22,311	23,928
Japan.....	218,728	213,259	219,111	158,625	224,435
Romania.....	10,984	9,878	13,731	9,905	11,656
Singapore.....	21,585	20,821	22,079	15,996	19,334
Sweden.....	10,929	13,257	16,267	13,148	11,563
Thailand.....	8,209	14,310	16,336	11,265	16,982
United Kingdom.....	17,792	22,645	25,074	19,233	20,299
West Germany.....	87,753	97,209	109,138	86,551	106,839
Subtotal.....	414,124	446,585	468,203	351,984	452,264
Fair imports:					
Thailand.....	.	.	.	.	2
All other sources.....	49,225	45,434	50,261	36,274	54,685
Subtotal.....	49,225	45,434	50,261	36,274	54,687
Total, all imports.....	463,349	492,019	518,464	388,258	506,951

Source: Imports of ball and spherical bearings derived from official statistics of the U.S. Department of Commerce; imports of cylindrical, needle, and plain bearings, compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Thailand.--Imports of antifriction bearings from Thailand consisted almost entirely of ball bearings and parts thereof. Such imports increased steadily throughout the period of investigation.

United Kingdom.--Imports of the subject antifriction bearings from the United Kingdom consisted of ball, spherical, cylindrical, and needle bearings. Ball bearings accounted for the largest amount of imports from the United Kingdom, with needle bearing imports accounting for the second largest category of trade for the period of investigation.

Market penetration of imports

Shares of apparent U.S. consumption accounted for by the subject antifriction bearings are presented in table 38.

Table 38
Antifriction bearings (other than tapered roller bearings) and parts thereof: Share of apparent U.S. consumption held by imports, by products, based on value, 1985-87, January-September 1987, and January-September 1988

(In percent)

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings and parts thereof:					
Unfair imports:					
France	0.6	0.9	1.0	1.1	1.1
Italy	1.3	2.2	1.4	1.5	1.4
Japan	11.9	12.1	12.4	11.6	14.8
Romania	0.6	0.6	0.7	0.7	0.8
Singapore	1.3	1.3	1.4	1.3	1.4
Sweden	0.4	0.6	0.7	0.8	0.5
Thailand	0.5	0.9	1.0	0.9	1.2
United Kingdom	0.7	0.9	0.9	0.8	1.0
West Germany	2.8	3.6	4.3	4.3	4.7
Subtotal	20.2	23.0	23.8	23.0	27.0
Fair imports:					
All other sources	2.6	2.5	2.8	2.6	3.6
Total, all imports	22.7	25.5	26.6	25.6	30.6
Spherical bearings and parts thereof:					
Unfair imports:					
France	0.6	0.4	0.6	0.6	0.6
Italy	1.0	1.1	0.8	0.7	0.9
Japan	2.4	2.4	1.7	1.7	1.6
Romania	0.5	0.4	1.3	1.1	0.4
Singapore	1/	1/	1/		
Sweden	1.6	1.9	2.1	2.2	2.1
United Kingdom	1.7	1.6	0.9	1.1	0.4
West Germany	6.1	5.2	4.8	5.0	5.5
Subtotal	14.0	13.0	12.2	12.4	11.5
Fair imports:					
Thailand					1/
All other sources	1.4	1.6	1.3	1.2	1.6
Subtotal	1.4	1.6	1.3	1.2	1.6
Total, all imports	15.4	14.6	13.5	13.6	13.1

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Table 38--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: Share of apparent U.S. consumption held by imports, by products, based on value, 1985-87, January-September 1987, and January-September 1988

(In percent)

Item	1985	1986	1987	January-September-- 1987	1988
Cylindrical bearings and parts thereof:					
Unfair imports:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
Sweden	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
Subtotal	9.0	9.9	10.3	11.8	12.6
Fair imports:					
All other sources	0.2	0.3	0.2	0.3	0.2
Total, all imports	9.3	10.2	10.6	12.1	12.8
Needle bearings and parts thereof:					
Unfair imports:					
France	***	***	***	***	***
Italy	***	***	***	***	***
Japan	***	***	***	***	***
United Kingdom	***	***	***	***	***
West Germany	***	***	***	***	***
Subtotal	5.5	6.8	8.6	9.1	7.7
Fair imports:					
All other sources	***	***	***	***	***
Total, all imports	***	***	***	***	***
Spherical plain bearings and parts thereof:					
Unfair imports:					
France	***	***	***	***	***
Japan	***	***	***	***	***
West Germany	***	***	***	***	***
Subtotal	***	***	***	***	***
Fair imports:					
All other sources	***	***	***	***	***
Total, all imports	***	***	***	***	***

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Table 38--**Continued**
Antifriction bearings (other than tapered roller bearings) and parts thereof: Share of apparent U.S. consumption held by imports, by products, based on value, 1985-87, January-September 1987, and January-September 1988

(In percent)

Item	1985	1986	1987	January-September-- 1987	1988
All subject bearings and parts thereof:					
Unfair imports:					
France	0.5	0.7	0.8	0.8	0.8
Italy	1.0	1.6	1.2	1.2	1.1
Japan	8.8	8.9	9.1	8.6	10.7
Romania	0.4	0.4	0.6	0.5	0.6
Singapore	0.9	0.9	0.9	0.9	0.9
Sweden	0.4	0.6	0.7	0.7	0.6
Thailand	0.3	0.6	0.7	0.6	0.8
United Kingdom	0.7	0.9	1.0	1.0	1.0
West Germany	3.5	4.0	4.4	4.6	5.0
Subtotal	16.6	18.6	19.3	19.1	21.5
Fair imports:					
Thailand	.	.	.	.	1/
All other sources	2.0	1.9	2.1	2.0	2.6
Subtotal	2.0	1.9	2.1	2.0	2.6
Total, all imports	18.6	20.5	21.4	21.0	24.1

1/ Less that 0.05 percent.

Source: Imports of ball and spherical bearings derived from official statistics of the U.S. Department of Commerce; imports of cylindrical, needle, and plain bearings, compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Monthly imports of companies subject to critical circumstances determinations

For its critical circumstances determinations, Commerce compared each of the responding foreign producer's exports to the United States in the various product categories during the period September 1987-March 1988, the 7 months immediately preceding the institution of these investigations, with the period April 1988-October 1988, the 7 month period running from the beginning of these investigations to Commerce's preliminary LTFV determinations. In making its determinations, Commerce found that there is a reasonable basis to believe that imports from the companies in question have been massive over a relatively short period of time. As noted earlier, these affirmative rulings direct Customs to suspend liquidation of those affected imports for the period 90 days prior to the date of publication of Commerce's preliminary determinations in the Federal Register. Commerce's preliminary notices were published November 9, 1988; accordingly, those suppliers affected by the critical circumstances rulings are subject to LTFV penalties retroactive to August 11, 1988. Data providing the affected companies month by month exports to the United States for the two periods in question are presented on the following pages. Such data are presented in value terms (1,000 dollars).

Ball bearings.--Commerce made seven affirmative critical circumstance determinations with respect to foreign producers of ball bearings and parts thereof. Monthly imports of ball bearings and parts thereof from companies subject to the affirmative determinations are shown in the following tabulation (in 1,000 dollars):

	FRG			Italy	Japan			Sweden	UK
	INA	SKF	Total	SKF	Koyo	Minebea	Total	SKF	SKF
Month & year									
1987:									
September....	*	*	*	*	*	*	*	*	
October.....									
November.....									
December.....									
1988:									
January.....									
February.....									
March.....									
Total.....									
Average....									
April.....	*	*	*	*	*	*	*	*	
May.....									
June.....									
July.....									
August.....									
September....									
October.....									
Total.....									
Average....									
Percent change...									

Spherical bearings.--Commerce made five affirmative critical circumstance determinations with respect to foreign producers of spherical bearings and parts thereof. Monthly imports of spherical bearings and parts thereof from companies subject to the affirmative determinations are shown in the following tabulation (in 1,000 dollars):

	FRG	Japan				Sweden
	FAG	Koyo	Nachi	NSK	Total	SKF
Month & year						
1987:						
September....	*	*	*	*	*	*
October.....						
November.....						
December.....						
1988:						
January.....						
February.....						
March.....						
Total.....						
Average....						
April.....	*	*	*	*	*	*
May.....						
June.....						
July.....						
August.....						
September....						
October.....						
Total.....						
Average....						
Percent change.....						

Cylindrical bearings.--Commerce made six 1/ affirmative critical circumstance determinations with respect to foreign producers of cylindrical bearings and parts thereof. Monthly imports of cylindrical bearings and parts thereof from companies subject to the affirmative determinations are shown in the following tabulation (in 1,000 dollars):

	FRG				Japan	UK
	FAG	INA	SKF	Total	Koyo	RHP
Month & year						
1987:						
September....	*	*	*	*	*	*
October.....						
November.....						
December.....						
1988:						
January.....						
February.....						
March.....						
Total.....						
Average....						
April.....	*	*	*	*	*	*
May.....						
June.....						
July.....						
August.....						
September....						
October.....						
Total.....						
Average....						
Percent change...						

1/ Commerce made an affirmative determination with respect to cylindrical bearings exported to the United States by SKF-Italy. SKF imported *** bearings in this category during the period of investigation, ***. Commerce, in the absence of monthly shipment data, as the best information available, determined that imports of cylindrical bearings from SKF-Italy have been massive over a relatively short period of time.

Needle bearings.--Commerce made six affirmative critical circumstance determinations with respect to foreign producers of needle bearings and parts thereof. Monthly imports of needle bearings and parts thereof from companies subject to the affirmative determinations are shown in the following tabulation (in 1,000 dollars):

	FRG				Italy	Japan	UK
	FAG	INA	SKF	Total	SKF	Koyo	INA
Month & year							
1987:							
September....	*	*	*	*	*	*	*
October.....							
November.....							
December.....							
1988:							
January.....							
February.....							
March.....							
Total.....							
Average....							
April.....	*	*	*	*	*	*	*
May.....							
June.....							
July.....							
August.....							
September....							
October.....							
Total.....							
Average....							
Percent change...							

Spherical plain bearings.--Commerce made three affirmative critical circumstance determinations with respect to foreign producers of spherical plain bearings and parts thereof. Monthly imports of spherical plain bearings and parts thereof from companies subject to the affirmative determinations are shown in the following tabulation (in 1,000 dollars):

	FRG	Japan		
	SKF	Minebea	NTN	Total
Month & year				
1987:				
September....	*	*	*	*
October.....				
November.....				
December.....				
1988:				
January.....				
February.....				
March.....				
Total.....				
Average....				
April.....	*	*	*	*
May.....				
June.....				
July.....				
August.....				
September....				
October.....				
Total.....				
Average....				
Percent change...				

Prices

Market characteristics.--Prices for antifriction bearings vary according to differences in such characteristics as size and tolerance levels. Generally, domestic and imported bearings that meet a set of industry standard specifications can be substituted in a given use. While most producers and importers reported little difference in the quality of imported bearings vis-a-vis domestic bearings, one importer commented that German and Japanese manufacturing standards and methods are superior to those in the United States, giving these imported bearings more consistent quality in terms of noise levels and lot control. Producers and importers consider Romanian bearings to be of lower quality than most other bearings. An importer of Romanian bearings stated that these bearings cannot compete in market segments requiring top-quality products.

Original equipment manufacturers (OEMs) and distributors account for virtually all purchases of antifriction bearings in the United States, and the majority of sales were to OEM accounts. Bearings purchased by OEMs can be either standard sizes and tolerances produced by both producers and importers, or items engineered specifically for a particular use by an OEM by a limited number of qualified companies. Producers and importers reported that more than 70 percent of sales are standard size bearings, with the remaining 30 percent classified as specialty bearings. Differences between standard and specialty bearings can range from only using a different grease in a standard bearing, to producing a bearing unique to one company in both size and specifications.

Purchasers frequently qualify more than one producer, often both a domestic and a foreign producer, to produce bearings to specifications unique to the manufacturing processes or end uses of the purchasers. The qualification process can take up to 5 years, with bearings undergoing stringent engineering design and use testing throughout the approval phase. Qualifying more than one producer helps to maintain dependable and constant sources in the event of delivery or other sourcing problems.

Buyers and sellers negotiate OEM purchase prices based on the competitive situation in the marketplace and fix prices for a given time period, usually not exceeding 1 year. When quoting prices to OEMs, producers and importers define the terms of the contract, including the time period of the price and quantity quotes, discounts, scheduling of delivery dates, safety stock, and technical support. Many large OEM purchasers that use a number of different types of bearings prefer to buy from full-line producers that manufacture a variety of types of bearings, since these producers are able to supply a relatively complete line of the purchasers' bearing needs. This reduces the need to maintain contracts with many smaller suppliers. 1/

OEM accounts are of key importance to producers and importers. These accounts not only provide long-term manufacturing demand for specific part numbers and quantities, but they also guarantee, to a certain extent, corresponding aftermarket, or replacement, sales at the distributor level. *** reported that a *** bearing in the OEM market is sold at *** in the aftermarket, thus making an OEM account lucrative in both the OEM and

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1/ Transcript of hearing, p. 81; also see posthearing brief of petitioner, p. 34. The questionnaire response of *** states that its customers expect it to be a full-service distributor.

distributor channels of distribution. However, purchasers are not limited to a specific brand of bearing when selecting a replacement since the original bearing can usually be replaced with the same specification of bearing produced by other companies.

Distributors also purchase a mixed bundle of bearings, although usually in smaller quantities than OEMs, on a spot basis, with prices based on published lists. Producers and importers commonly apply quantity discounts to distributor purchases. With one exception, producers and importers reported charging higher prices for bearings sold to distributors than for those sold to OEMs, mainly because distributors purchase an assortment of bearings in small quantities. Distributors also pay higher prices since manufacturers incur additional costs to individually package and label all bearings sold through this channel. ***, a full-size distributor of bearings, purchases from producers that are able to consistently meet its requirements, principally ***. *** commented that some competing foreign manufacturers, most notably Japanese, do not offer a complete range of bearings, and only offer attractive prices on high-volume, standard bearings.

Bearing manufacturers' sales terms to distributors are generally similar to those for OEMs, specifying price, quantity discounts, annual volume targets, packaging requirements, shipping and payment terms, and any applicable technical assistance.

Technical assistance is provided by many domestic producers and importers of antifriction bearings. Services provided include application and failure analysis engineering, life and load calculations, bearing selection, and training. Torrington estimated that the value of technical assistance provided in 1987 was ***, and many of the other producers and importers estimated values in the hundreds of thousands of dollars. One large purchaser, Caterpillar, Inc., stated that Torrington is the only company providing it with engineering support for ball bearing applications. 1/

Lead times varied among countries; producers and importers reported lead times often exceeding 6 months after the date of order. Several producers and importers reported that distributors purchase from warehouse stock and that these bearings are often shipped immediately, whereas OEMs generally follow annual purchase plans and quantities are shipped for just-in-time (JIT) delivery upon confirmation of order quantities. These shipments, however, are generally based on annual contracts, so long lead times may not affect a purchaser's ability to meet forecasted requirements. Purchasers reported contracting for annual bearing requirements at least 4 months in advance of needed shipments, and at times up to several years. Lead times generally did not differ among the different types of bearings, although Torrington admitted some problems with timeliness of accepting new orders and delivery of ball bearings. Torrington tied these problems not to manufacturing time, but rather to the time needed to start up production lines after restructuring the Fafnir organization. 2/

New orders and increases in order volume can result in especially lengthy lead times. Production time for new orders or for volume increases depends on several factors, including lead times for delivery of raw materials necessary

1/ Transcript of the hearing, pp. 248-249.
2/ Transcript of hearing, pp. 98-99.

to produce that part if it is not in stock, and the availability of adequate machinery and labor. According to OEM purchasers, annual contracts specify projected bearing requirements, and producers allocate production time based on all customers' orders. If production facilities are at high rates of capacity utilization, volume increases or new orders can be virtually impossible to obtain. Purchasers report that bearing requirements are often ordered 6 months to 2 years in advance of need, and sudden increases in requirements may be difficult to procure due to extremely limited additional supply from both domestic and foreign producers.

Price data.--The Commission requested quarterly net U.S. f.o.b. selling prices and quantities for 19 specific antifriction bearing products from U.S. producers and importers of the subject bearings. This number of products was selected in an attempt to include bearings imported from the nine countries subject to the investigations. 1/ Producers and importers were also requested to report the f.o.b. price data separately for sales to OEMs and to distributors. The price data were requested for the largest sale and for total sales of the products reported, by quarters, during January 1985-September 1988. 2/ The 19 products for which data were requested are shown below. 3/

PRODUCT 1: RADIAL BALL BEARINGS--Generic Part No. 6203ZZ.
PRODUCT 2: RADIAL BALL BEARINGS--Generic Part No. DG19452RS.
PRODUCT 3: RADIAL BALL BEARINGS--Generic Part No. 6202 ZC.
PRODUCT 4: RADIAL BALL BEARINGS--Generic Part No. 6004ZZ.
PRODUCT 5: RADIAL BALL BEARINGS--Generic Part No. 608ZZ.
PRODUCT 6: RADIAL BALL BEARINGS--Generic Part No. 6001 RS1Z.
PRODUCT 7: RADIAL BALL BEARINGS--Generic Part No. R2SS.
PRODUCT 8: SUPER PRECISION RADIAL BALL BEARINGS--FAFNIR Part No. 2MM 9126WI CR DUL.
PRODUCT 9: WIDE INNER-RING BALL BEARINGS--Generic Part No. RA100-RRB + Collar.
PRODUCT 10: BALL BEARING PILLOW BLOCK--Generic Part No. GAPL1100B.
PRODUCT 11: SPHERICAL ROLLER BEARINGS--Generic Part No. 22222.
PRODUCT 12: SPHERICAL ROLLER BEARINGS--Generic Part No. 22216 CJW33.
PRODUCT 13: NEEDLE BEARINGS--Generic Part No. BH-1812.
PRODUCT 14: NEEDLE ROLLER BEARINGS--Generic Part No. 108.
PRODUCT 15: NEEDLE ROLLER BEARINGS--Generic Part No. HJ567232.
PRODUCT 16: CYLINDRICAL ROLLER BEARINGS--Generic Part No. 95RIU430.
PRODUCT 17: CYLINDRICAL ROLLER BEARINGS--Generic Part No. 3010.
PRODUCT 18: SPHERICAL PLAIN BEARINGS--Generic Part No. GEZ 104 ESIMP.
PRODUCT 19: SPHERICAL PLAIN BEARINGS--FAFNIR Part No. REM6ATC10ZM.

Sixteen U.S. producers and 17 importers of the subject antifriction bearings

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1/ In the preliminary investigations, 6 products were selected for which to gather price data for trends and comparisons. No price data were reported for imports from France, Singapore, and Thailand. Additionally, price data reported for imports from Germany, Sweden, and the United Kingdom were limited. Thus, staff asked producers and importers to provide part numbers for high-volume bearings either produced or imported by their firms. The 19 bearings selected include those from the preliminary investigations, and additional bearings recommended by producers and importers.
2/ Price data shown in this section are weighted by total quantity.
3/ Complete descriptions of these 19 products can be found in app. F.

reported usable price data, although few respondents produced or imported all of the specified products. 1/

Price trends and comparisons.--Weighted average prices and percent margins by which the price of the imported product differed from the domestic product are presented on a product basis in tables 39-55. The discussion on trends and

Table 39
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 1 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 40
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 2 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988 1/

* * * * * * *

Table 41
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 3 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 42
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 4 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 43
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 5 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

1/ Percent of total shipments within a category accounted for by selected products:

* * * * * *

Table 44
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 6 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 45
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 7 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 46
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 8 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 47
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 9 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 48
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 10 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 49
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 11 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 50
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 12 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 51
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of underselling for Product 13 sold to OEMs, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 52
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 15 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 53
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of underselling for Product 16 sold to OEMs, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 54
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 18 sold to OEMs and distributors, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

Table 55
Antifriction bearings (other than tapered roller bearings) and parts thereof: Weighted-average prices and margins of under/(over) selling for Product 19 sold to OEMs, as reported by U.S. producers and importers, by quarters, January 1985-September 1988

* * * * * * *

margins, however, focuses on the five categories into which the subject antifriction bearings are grouped by country of origin. These five categories are ball bearings, spherical roller bearings, needle roller bearings, cylindrical roller bearings, and spherical plain bearings.

Price trends for ball bearings (products 1-10) cannot be characterized as either clearly increasing or decreasing. For virtually all product categories sold in both the OEM and distributor channels, prices fluctuated throughout the period for both domestic and imported bearings. Price increases occurring in July-September 1988 may be attributable to price effects resulting from the current investigations. Also, although producers and importers reported that discounts are applied based on the size of a particular purchase, higher-volume sales were not always priced below lower-volume sales; thus, OEM prices do not always fall below distributor prices within a single product category.

Price series for spherical roller bearings (products 11-12), needle roller bearings (products 13-15), cylindrical roller bearings (products 16-17), and spherical plain bearings (products 18-19) also showed no clear trends. 1/ As with ball bearings, price trends are difficult to characterize because prices for most of the products fluctuated erratically throughout the period.

Domestic price trends.--Prices for the various types of ball bearings produced in the United States (products 1-10) fluctuated throughout the period for sales to both OEMs and distributors. While prices changed by as much as 224 percent from one quarter to another for ball bearings, such movements were generally not so large.

Prices for spherical roller bearings moved irregularly throughout the period, with wide fluctuations apparently related to the number of firms reporting data. Quarter-to-quarter price movements were less sharp for product 11 than for product 12, changing by up to 30 percent for product 11 and 111 percent for product 12. Price movements, however, were generally much smaller for both specifications of spherical roller bearings.

Prices for needle roller bearings (products 13-15) also moved irregularly. Examining price movements on a quarter to quarter basis shows little change for products 13 and 14, while prices for product 15 changed by as much as 36 percent.

Cylindrical roller bearing prices for product 16 fell during the investigation period, although a full price series was not available. Price information for product 17 was not available from domestic producers. 2/

Prices for spherical plain bearings (products 18-19) also fluctuated widely throughout the period, and prices from one quarter to the next moved by up to 242 percent.

Import price trends and comparisons

Federal Republic of Germany (Germany).--Prices were reported for 11 products imported from Germany (1, 3-4, 6, 8-12, 15, and 18), none of which showed clearly increasing or decreasing trends. Although prices fluctuated throughout the period, quarterly movements within a series were generally not as large as for domestic prices, changing by up to 52 percent, though generally by a much smaller amount.

Ball bearings imported from Germany were priced below the comparable domestic product in 74 of 105 instances, with margins of underselling ranging from less than 1 to 86 percent. Spherical roller bearings imported from Germany were priced up to 17 percent below the domestic equivalents in 13 of 22 comparisons. Needle roller bearings were priced up to 10 percent below the domestic product in 14 of 23 instances. Prices for German spherical plain bearings fell below the domestic prices by margins of up to 55 percent in 23 of 29 comparisons.

1/ Comparable price data for product 14 (needle roller bearings) and product 17 (cylindrical roller bearings) were not available. To the extent that any price data for these products were received, staff has included comments in the text.

2/ ***

France.--Importers of French-produced bearings reported prices for four radial ball bearings (products 2, 3, 4, and 6). Prices fluctuated widely throughout the investigation period, and quarter-to-quarter prices changed by as much as 73 percent. Ball bearings imported from France were priced below their U.S. equivalents in 56 of 89 comparisons, by differences of up to 87 percent.

Italy.--Importers of Italian-produced bearings reported prices for three radial ball bearings (products 1, 5, and 8) and two spherical roller bearings (products 11 and 12). Prices fluctuated throughout the period with no clear trends. Prices changed from one quarter to the next by as much as 164 percent for ball bearings, and 50 percent for spherical roller bearings.

Ball bearings and spherical roller bearings imported from Italy generally were priced below their U.S. equivalents on sales to both OEMs and distributors, by margins of up to 76 percent for ball bearings, and 56 percent for spherical roller bearings.

Japan.--Prices were reported for nine ball bearings, two spherical roller bearings, three needle bearings, one cylindrical roller bearing, and two spherical plain bearings. Prices within specific series moved irregularly, fluctuating by as much as 350 percent between quarters for ball bearings, 136 percent for spherical roller bearings, 52 percent for needle roller bearings, 40 percent for cylindrical roller bearings, and 45 percent for spherical plain bearings. In general, the price movements between quarters were not as large as these percentages indicate.

Japanese-produced ball bearings undersold domestic bearings in 180 of 241 comparisons, with margins up to 83 percent. Spherical roller bearings were priced below their domestic equivalents in 35 of 60 comparisons, with margins of underselling as high as 56 percent. Needle roller bearings undersold the domestic bearings by up to 40 percent in 32 of 36 comparisons. Cylindrical roller bearings were priced 4 percent below the domestic equivalent in the two quarters in which comparisons were possible. Spherical plain bearings were priced up to 54 percent below the domestic product in 27 of 33 comparisons.

Romania.--Prices were reported for six ball bearings and two spherical roller bearings imported from Romania (products 1-4, 6, 9, and 11-12). Prices for ball bearings moved irregularly during the investigation period, whereas spherical roller bearing prices showed little change. Quarterly price changes for ball bearings were as great as 100 percent.

Romanian ball bearings were priced below the domestic equivalents in 104 of 143 comparisons, and for spherical roller bearings in 38 of 60 comparisons. The imported bearings were priced below the domestic bearings by margins of up to 112 percent.

Singapore.--Prices were reported for two ball bearings imported from Singapore. Price fluctuations were greater for product 5 than for product 6. Prices for these bearings from Singapore were below the domestic prices in all but two of the 48 comparable periods with the imported products priced up to 91 percent below the domestic products.

Sweden.--The importer of product 11 from Sweden, ***, reported that it sells the Swedish product at the same price as *** U.S.-produced product 11. Prices for the Swedish product were above the domestic equivalent in all

but two comparable periods. *** also submitted prices for Swedish-produced cylindrical roller bearings, product 17. These data showed an overall price increase of 46 percent for sales to OEMs, and an overall decrease of 17 percent for sales to distributors, for the investigation period. No comparable domestic prices were received for product 17, thus no table is included in the report.

Thailand.--One importer reported prices for one ball bearing imported from Thailand (product 7). Prices moved little during the investigation period with the exception of a sharp increase during the final period for sales to both OEMs and distributors. The Thai bearing was priced below the domestic product in all comparable quarters, by margins up to 62 percent.

United Kingdom.--Importers of bearings produced in the United Kingdom reported prices for nine ball bearings (products 1-6 and 8-10), spherical roller bearings (products 11-12) and one cylindrical roller bearing (product 17). 1/ The imported ball bearings sold to OEMs were priced above the domestic equivalent in 12 of 15 comparable periods, while the bearings sold to distributors were priced below the domestic product in 48 of 77 observations. Prices for the imported product were below the domestic product by margins of up to 64 percent.

Prices for spherical roller bearings produced in the United Kingdom showed little change during the investigation period, and were priced below the comparable domestic product in 27 of 33 instances, by margins of up to 58 percent.

Ranges.--The range of the lowest and highest price charged for each U.S.-produced product during 1987 is presented in the following tabulation (in dollars per unit):

*	*	*	*	*	*

The range of the lowest and highest price charged for each imported product during 1987 is presented, by country, in the following tabulations (in dollars per unit):

France

*	*	*	*	*	*

Germany

*	*	*	*	*	*

1/ An importer of cylindrical roller bearings produced in the United Kingdom submitted distributor price data for product 17. These data showed an overall decrease of *** percent from January-March 1985 to July-September 1987. No comparable domestic prices were received for product 17, thus no table is included in the report.

Italy						
	*	*	*	*	*	*
Japan						
	*	*	*	*	*	*
Romania						
	*	*	*	*	*	*
Singapore						
	*	*	*	*	*	*
Thailand						
	*	*	*	*	*	*
Sweden						
	*	*	*	*	*	*
United Kingdom						
	*	*	*	*	*	*

Lost sales and lost revenues

In the final investigations, 10 domestic producers of the subject antifriction bearings submitted instances of sales and revenues allegedly lost to lower-priced imports from the subject countries. ***. Allegations submitted by *** involved all nine countries named in these cases. For the other *** companies alleging lost sales and revenues, most allegations involved imports from Japan. The Commission staff contacted, by letter, 56 companies named in these allegations, basing the selection of companies on the quantity and value of the lost sale or revenues. Thirty-four companies responded to the Commission letter. A summary of the responses is presented below.

Responding companies represented 239 allegations, and included sales and revenues allegedly lost to imports from 8 of the 9 countries named in these investigations, Germany, France, Italy, Japan, Romania, Singapore, Sweden, and the United Kingdom. The value of these allegations totaled almost $17 million, and accounted for about 12 million units of bearings.

Companies were asked whether they had purchased imported bearings, and if they had, if price was the determining factor in their purchase decision. Of the companies responding, 12 replied that they purchased the imported bearings based on their price. The countries of origin for which price was the determining factor were Germany, Italy, Japan, Romania, Singapore, and Sweden. Sixteen companies, however, reported reasons other than price as the reason the

imported bearings were selected. 1/ The most common reason for purchasing imported bearings, as indicated in 14 responses, was the inability of the domestic manufacturers to meet delivery and availability requirements. Other factors considered more important than price were superior quality of the imported bearings (named in 6 responses), and lack of an approved domestic supplier (named in 2 responses). 2/

Lost sales alleged in the preliminary investigations.--***

Exchange rates

Quarterly data reported by the International Monetary Fund indicate that, except for Romania, values of currencies of the other eight foreign countries subject to these investigations generally appreciated in nominal and real terms relative to the U.S. dollar during January 1985-September 1988 (table 56). 3/ Market values of the Romanian lei are not readily known because the Romanian Government administratively sets the lei exchange rate and limits the convertibility of the lei with other currencies. Exchange rate changes for the other eight countries are discussed below.

Federal Republic of Germany (West Germany).--The nominal value of the West German mark appreciated relative to the U.S. dollar by approximately 75 percent during January 1985-September 1988. In real terms, the West German mark appreciated against the U.S. dollar during January 1985-September 1988 by approximately 62 percent, or 13 percentage points less than its appreciation in nominal terms.

France.--The nominal value of the French franc appreciated relative to the U.S. dollar during January 1985-September 1988, ending the period about 58 percent above its initial-period value. During January 1985- March 1988 the French franc appreciated in real terms by about 74 percent vis-a-vis the U.S. dollar.

Italy.--The nominal value of the Italian lira appreciated relative to the U.S. dollar by approximately 46 percent during January 1985-September 1988. Appreciation in real terms was somewhat greater than in nominal terms during January 1985-June 1988, 67 percent compared to 59 percent.

Japan.--The nominal value of the Japanese yen appreciated relative to the U.S. dollar by approximately 93 percent during January 1985-September 1988. An approximately 15 percent deflation rate in Japan compared with about 5 percent inflation in the United States during this period, however, resulted in less appreciation of the Japanese yen in real terms compared with nominal terms. In real terms, the Japanese yen appreciated against the U.S. dollar during January 1985-September 1988 by approximately 57 percent.

Singapore.--The nominal value of the Singapore dollar appreciated somewhat relative to the U.S. dollar during January 1985-September 1988, by about 10 percent. In real terms, the Singapore dollar depreciated against the U.S. dollar during January 1985-September 1988 by approximately 8 percent.

1/ The remaining companies were not able to recall the alleged transactions and thus were not able to respond to the Commission request.
2/ Companies responding to the Commission letter are listed in app. G.
3/ International Financial Statistics, November 1988.

Sweden.--The nominal value of the Swedish krona appreciated relative to the U.S. dollar by approximately 44 percent in nominal terms and 46 percent in real terms during January 1985-September 1988. Similar rates of inflation in Sweden and the United States during this period led to only a slightly greater appreciation of the Swedish krona in real terms compared to nominal terms.

Thailand.--The nominal value of the Thai baht appreciated relative to the U.S. dollar during January 1985-September 1988 by about 9 percent. In real terms, the Thai baht appreciated against the U.S. dollar during January 1985-September 1988 by approximately 20 percent.

United Kingdom.--The nominal value of the British pound appreciated relative to the U.S. dollar by approximately 65 percent during January 1985-June 1988. In real terms, the British pound appreciated against the U.S. dollar during January 1985-June 1988 by 85 percent.

Table 56
Exchange rates: 1/ Indexes of the nominal and real exchange rates between the U.S. dollar and currencies of eight specified countries, and indexes of producer prices in the foreign countries and the United States, 2/ by quarters, January 1985-September 1988

Period	Federal Republic of Germany			France			Italy			U.S.
	Nominal exchange rate index	Producer price index	Real exchange rate index 3/	Nominal exchange rate index	Producer price index	Real exchange rate index 3/	Nominal exchange rate index	Producer price index	Real exchange rate index 3/	Producer price index
1985:										
Jan.-Mar...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Apr.-June..	105.5	100.7	106.1	105.9	101.5	107.4	102.5	102.2	104.7	100.1
July-Sept..	114.3	100.7	115.8	114.7	101.6	117.2	106.6	102.1	109.5	99.4
Oct.-Dec...	126.0	100.4	126.5	126.3	100.2	126.5	115.5	103.0	119.0	100.0
1986:										
Jan.-Mar...	138.8	99.8	140.5	138.2	99.5	139.6	126.5	102.5	131.6	98.5
Apr.-June..	145.0	98.5	147.8	139.4	98.2	141.6	131.3	100.7	136.9	96.6
July-Sept..	156.1	97.6	158.5	147.0	97.4	148.9	140.8	99.9	146.2	96.2
Oct.-Dec...	162.2	95.9	161.1	151.5	96.8	152.0	145.4	100.6	151.5	96.5
1987:										
Jan.-Mar...	177.0	95.5	173.1	162.5	97.5	162.3	154.7	102.1	161.8	97.7
Apr.-June..	180.4	95.1	173.0	165.3	98.0	163.3	155.5	103.1	161.6	99.2
July-Sept..	177.0	95.6	168.6	162.3	98.7	159.7	152.0	103.9	157.4	100.3
Oct.-Dec...	190.9	95.9	181.7	173.1	99.3	170.5	161.9	105.2	169.0	100.8
1988:										
Jan.-Mar...	194.3	95.9	183.9	175.7	100.3	174.0	163.6	106.3	171.7	101.3
Apr.-June..	190.7	96.5	178.4	172.4	4/	4/	159.4	107.7	166.5	103.1
July-Sept..	174.5	96.9	161.7	157.6	4/	4/	145.8	4/	4/	104.5

Period	Japan			Singapore			Sweden			U.S.
	Nominal exchange rate index	Producer price index	Real exchange rate index 3/	Nominal exchange rate index	Producer price index	Real exchange rate index 3/	Nominal exchange rate index	Producer price index	Real exchange rate index 3/	Producer price index
1985:										
Jan.-Mar...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Apr.-June..	102.8	98.8	101.5	100.7	97.8	98.5	103.6	100.0	103.5	100.1
July-Sept..	108.0	97.5	106.0	100.9	96.2	97.7	110.4	100.0	111.0	99.4
Oct.-Dec...	124.4	94.7	117.8	105.5	94.5	99.7	118.6	100.0	118.6	100.0
1986:										
Jan.-Mar...	137.2	92.8	129.2	104.5	87.3	92.5	125.1	98.7	125.3	98.5
Apr.-June..	151.5	89.4	140.1	101.3	80.6	84.6	128.7	96.8	129.0	96.6
July-Sept..	165.4	87.0	149.7	103.1	79.2	85.0	133.0	96.2	133.0	96.2
Oct.-Dec...	160.8	86.1	143.5	102.4	82.6	87.6	133.9	97.5	135.2	96.5
1987:										
Jan.-Mar...	168.2	85.6	147.4	104.3	87.5	93.5	142.4	98.7	144.0	97.7
Apr.-June..	180.6	84.9	154.5	105.4	89.2	94.7	147.1	98.7	146.3	99.2
July-Sept..	175.4	86.0	150.2	106.3	89.9	95.2	144.1	100.6	144.5	100.3
Oct.-Dec...	189.7	85.7	161.3	109.3	88.2	95.7	151.3	101.3	152.0	100.8
1988:										
Jan.-Mar...	201.3	84.7	168.3	110.9	87.4	95.6	154.7	102.5	156.6	101.3
Apr.-June..	205.1	84.4	167.8	111.2	88.6	95.6	155.5	104.4	157.5	103.1
July-Sept..	192.7	85.2	157.0	109.6	87.5	91.8	144.4	105.7	146.0	104.5

See footnotes at end of table.

Table 56--Continued
Exchange rates: 1/ Indexes of the nominal and real exchange rates between the U.S. dollar and currencies of eight specified countries, and indexes of producer prices in the foreign countries and the United States, 2/ by quarters, January 1985-September 1988

	Thailand			United Kingdom			U.S.
Period	Nominal exchange rate index	Producer price index	Real exchange rate index 3/	Nominal exchange rate index	Producer price index	Real exchange rate index 3/	Producer price index
1985:							
Jan.-Mar...	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Apr.-June..	101.2	100.9	102.1	112.8	102.0	114.9	100.1
July-Sept..	103.1	101.6	105.4	123.4	102.6	127.3	99.4
Oct.-Dec...	104.9	102.1	107.2	128.8	103.4	133.3	100.0
1986:							
Jan.-Mar...	104.8	101.4	107.9	129.2	104.9	137.5	98.5
Apr.-June..	105.4	100.3	109.4	135.3	106.6	149.3	96.6
July-Sept..	106.3	100.6	111.2	133.6	107.0	148.6	96.2
Oct.-Dec...	106.0	100.8	110.8	128.2	107.8	143.2	96.5
1987:							
Jan.-Mar...	107.4	101.3	111.4	138.3	109.2	154.6	97.7
Apr.-June..	108.2	104.9	114.4	147.3	110.4	163.8	99.2
July-Sept..	107.4	108.7	116.4	145.0	110.9	160.2	100.3
Oct.-Dec...	109.0	111.9	121.1	157.3	112.1	175.0	100.8
1988:							
Jan.-Mar...	110.0	113.2	123.0	161.1	113.5	180.6	101.3
Apr.-June..	110.3	114.9	122.9	165.3	115.2	184.6	103.1
July-Sept..	108.8	115.6	120.4	152.0	4/	4/	104.5

1/ Based on exchange rates expressed in U.S. dollars per unit of foreign currency.
2/ The producer price indexes are aggregate measures of inflation at the wholesale level in the United States and the above foreign countries.
3/ The real values of the foreign currencies are the nominal values adjusted for the difference between inflation rates in the individual foreign countries and the United States, as measured by producer price indexes in these countries.
4/ Not available.

Source: International Monetary Fund, International Financial Statistics, November 1988.

Note: January-March 1985=100.0

APPENDIX A

THE COMMISSION'S FEDERAL REGISTER NOTICES

[Investigations Nos. 731-TA-391-399 (Final)]

Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof From the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom

AGENCY: United States International Trade Commission.

ACTION: Institution of final antidumping investigations and scheduling of a hearing to be held in connection with the investigations.

SUMMARY: The Commission hereby gives notice of the institution of final antidumping investigations Nos. 731-TA-391-399 (Final) under section 735(b) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)) (the act) to determine whether an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from the following countries of antifraction bearings (other than tapered roller bearings) and parts thereof, the foregoing whether finished or unfinished, provided for in items 680.30, 680.33, 680.37, 680.39, 681.04, 681.10, 681.39 and 692.32 [1] of the Tariff

[1] For purposes of these investigations, the subject bearings and parts thereof include the following articles, whether finished or unfinished: antifriction balls and rollers (TSUSA) items 680.3025, 680.3030, and 680.3040, and HTS subheadings 8482.91.00 and 8482.91.10); ball bearings with integral shafts and parts thereof (TSUSA) item 680.3300 and HTS subheading 8482.10.10); ball bearings (including radial ball bearings) and parts thereof (TSUSA items 680.3740, 680.3708, 680.3712, 680.3717, 680.3118, 680.3722, 680.3727, and 680.3728, and HTS subheadings 8482.10.50 and 8482.99.10); spherical roller bearings and parts thereof (TSUSA items 680.3952 and 680.3964, andd HTS subheadings 8482.30.00 and 8482.99.50); other roller bearing (except tapered roller bearings) and parts thereof (TSUSA item 680.3980 and HTS subheadings 8482.40.00, 8482.50.00, 8482.80.00, 8482.91.00, and 8482.99.70); ball or roller bearing type pillow blocks and parts thereof (TSUSA items 681.0410 and 681.0430, and HTS subheadings 8483.20.80, 8483.30.80, 8483.90.30, and 8483.90.70); ball or roller bearing type flange, take-up, cartridge, and hanger units, and parts of the foregoing (TSUSA items

Continued

Schedule of the United States (TSUS) (subheadings 8482.10.10, 8482.10.50, 8482.30.00, 8482.40.00, 8482.50.00, 8482.80.00 8482.91.00, 8482.91.10, 8482.99.50, 8482.99.70, 8483.20.40, 8483.20.80, 8483.30.40, 8483.90.20, 8483.90.30, 8483.90.70, 8485.90.00, 8708.50.50, 8708.60.50, and 8708.99.50 of the Harmonized Tariff Schedule of the United States (HTS)), that have been found by the Department of Commerce, in preliminary determinations, to be sold in the United States at less than fair value (LTFV):

Country	Investigation No.
Federal Republic of Germany	731-TA-391 (Final)
France	731-TA-392 (Final)
Italy	731-TA-393 (Final)
Japan	731-TA-394 (Final)
Romania	731-TA-395 (Final)
Singapore	731-TA-396 (Final)
Sweden	731-TA-397 (Final)
Thailand	731-TA-398 (Final)
United Kingdom	731-TA-399 (Final)

Commerce will make its final LTFV determinations on or before March 24, 1989 and the Commission will make its final injury determinations by May 8, 1989 (see sections 735(a) and 735(b) of the act (19 U.S.C. 1673d(a) and 1673d(b))).[1]

For further information concerning the conduct of these investigations, hearing procedures, and rules of general application, consult the Commission's Rules of Practice and Procedure, Part 207, Subparts A and C (19 CFR Part 207), and Part 201, Subparts A through E (19 CFR Part 201).

EFFECTIVE DATE: November 9, 1988.

FOR FURTHER INFORMATION CONTACT: Jim McClure (202-252-1911), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202/252-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-252-1000.

SUPPLEMENTARY INFORMATION:

Background.—These investigations are being instituted as a result of affirmative preliminary determinations by the Department of Commerce that imports of antifriction bearings (other than tapered roller bearings) and parts thereof from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom are being sold in the United States at less than fair value within the meaning of section 731 of the act (19 U.S.C. 1673). The investigations were requested in a petition filed on March 31, 1988 by the Torrington Company, Torrington, CT. In response to that petition the Commission conducted preliminary antidumping investigations and, on the basis of information developed during the course of those investigations, determined that there was a reasonable indication that an industry in the United States was materially injured by reason of imports of the subject merchandise (53 FR 18808, May 25, 1988).

Participation in the investigations.—Persons wishing to participate in these investigations as parties must file an entry of appearance with the Secretary to the Commission, as provided in § 201.11 of the Commission's rules (19 CFR 201.11), not later than twenty-one (21) days after the publication of this notice in the Federal Register. Any entry to appearance filed after this date will be referred to the Chairman, who will determine whether to accept the late entry for good cause shown by the person desiring to file the entry.

Service list.—Pursuant to § 201.11(d) of the Commission's rules (19 CFR 201.11(d)), the Secretary will prepare a service list containing the names and addresses of all persons, or their representatives, who are parties to these investigations upon the expiration of the period for filing entries of appearance. In accordance with §§ 201.16(c) and 207.3 of the rules (19 CFR 201.16(c) and 207.3), and document filed by a party to these investigations must be served on all other parties to these investigations (as identified by the service list), and a certificate of service must accompany the document. The Secretary will not accept a document for filing without a certificate of service.

Limited disclosure of business proprietary information under a protective order.—Pursuant to § 207.7(a) of the Commission's rules (19 CFR 207.7(a) as amended, (53 FR 33034, August 29, 1988)), the Secretary will make available business proprietary information gathered in these final investigations to authorized applicants under a protective order, provided that the application be made not later than twenty-one (21) days after the publication of this notice in the Federal Register. A separate service list will be maintained by the Secretary for those parties authorized to receive business proprietary information under a protective order. The Secretary will not accept any submission by parties containing business proprietary information without a certificate of service indicating that it has been served on all the parties that are authorized to receive such information under a protective order.

Staff report.—The prehearing staff report in these investigations will be placed in the nonpublic record in March 13, 1989 and a public version will be issued thereafter, pursuant to § 207.21 of the Commission's rules (19 CFR 207.21).

Hearing.—The Commission will hold a hearing in connection with these investigations beginning at 9:30 a.m. on March 30, 1989 at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission not later than the close of business (5:15 p.m.) on March 13, 1989. All persons desiring to appear at the hearing and make oral presentatives should file prehearing briefs and attend a prehearing conference to be held at 9:30 a.m. on March 21, 1989 at the U.S. International Trade Commission Building. The deadline for filing prehearing briefs is March 23, 1989.

Testimony at the public hearing is governed by § 207.23 of the Commission's rules (19 CFR 207.23). This rule requires that testimony be limited to a nonbusiness proprietary summary and analysis of material contained in prehearing briefs and to information not available at the time the prehearing brief was submitted. Any written materials submitted at the hearing must be filed in accordance with the procedures described below and any business proprietary materials must be submitted at least three (3) working days prior to the hearing (see § 201.6(b)(2) of the Commission's rules (19 CFR 201.6(b)(2))).

Written submissions.—All legal arguments, economic analyses, and factual materials relevant to the public hearing should be included in prehearing briefs in accordance with § 207.22 of the Commission's rules (19 CFR § 207.22). Posthearing briefs must conform with the provisions of § 207.24 (19 CFR

681.1010 and 681.1030, and HTS subheadings 8483.20.40, 8483.30.40, 8483.90.20, and 8483.90.30); machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for (TSUSA item 681.3900 and HTS subheading 8485.90.00); and parts of motor vehicles containing any of the foregoing bearings and not specially provided for (TSUSA item 692.3295 and HTS subheading 8708.50.50, 8708.60.50, and 8708.99.50). Finished but unground or semiground balls are not included in the scope of these investigations.

[1] The schedule for the conduct of these investigations also applies to countervailing duty investigation Nos. 303-TA-19 and 20 (Final) (53 FR 40137, October 13, 1988).

207.24) and must be submitted not later than the close of business on April 6, 1989. In addition, any person who has not entered an appearance as a party to these investigations may submit a written statement of information pertinent to the subject of these investigations on or before April 6, 1989.

A signed original and fourteen (14) copies of each submission must be filed with the Secretary to the Commission in accordance with § 201.8 of the Commission's rules (19 CFR 201.8). All written submissions except for business proprietary data will be available for public inspection during regular business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary to the Commission.

Any information for which business proprietary treatment is desired must be submitted separately. The envelope and all pages of such submissions must be clearly labeled "Business Proprietary Information." Business proprietary submissions and requests for business proprietary treatment must conform with the requirements of § § 201.6 and 207.7 of the Commission's rules (19 CFR 201.6 and 207.7).

Parties which obtain disclosure of business proprietary information pursuant to § 207.7(a) of the Commission's rules (19 CFR 207.7(a)) may comment on such information in their prehearing and posthearing briefs, and may also file additional written comments on such information no later than April 10, 1989. Such additional comments must be limited to comments on business proprietary information received in or after the posthearing briefs.

Authority: These investigations are being conducted under authority of the Tariff Act of 1930, title VII. This notice is published pursuant to § 207.20 of the Commission's rules (19 CFR 207.20).

By order of the Commission.

Kenneth R. Mason,

Secretary.

Issued: December 7, 1988.

[FR Doc. 88-28775 Filed 12-13-88; 8:45 am]

BILLING CODE 7020-02-M

INTERNATIONAL TRADE COMMISSION

[Investigation Nos. 303-TA-19 and 20 (Final)]

Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof From Singapore and Thailand

B-6

AGENCY: United States International Trade Commission:

ACTION: Institution of final countervailing duty investigations.

SUMMARY: The Commission hereby gives notice of the institution of final countervailing duty investigation Nos. 303-TA-19 and 20 (Final) under section 303 of the Tariff Act of 1930 (19 U.S.C. 1303) to determine whether an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from Singapore and Thailand of antifriction bearings (other than tapered roller bearings) and parts thereof, provided for in items 681.10, 681.39, and 692.32 of the Tariff Schedules of the United States (TSUS),[1] that have been found by the Department of Commerce, in preliminary determinations, to be subsidized by the Governments of Singapore and Thailand.

Pursuant to a request from petitioner under section 705(a)(1) of the Act (19 U.S.C. 1671d(a)(1)), Commerce is expected to extend the date for its final determinations in these investigations to coincide with the date of its final determinations in ongoing antidumping investigations on antifriction bearings (other than tapered roller bearings) and parts thereof from Singapore and Thailand. Accordingly, the Commission will not establish a schedule for the conduct of these countervailing duty investigations until Commerce makes preliminary investigations (currently scheduled for October 27, 1988).

For further information concerning the conduct of these investigations, hearing procedures, and rules of general application, consult the Commission's Rules of Practice and Procedure, part 207, subparts A and C (19 CFR part 207), and part 201, subparts A through E (19 CFR part 201).

EFFECTIVE DATE: September 8, 1988.

FOR FURTHER INFORMATION CONTACT: Diane J. Mazur (202-252-1184), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-252-1809. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-252-1000.

SUPPLEMENTARY INFORMATION:

Background

These investigations are being instituted as a result of affirmative preliminary determinations by the Department of Commerce that certain benefits which constitute subsidies within the meaning of section 303 of the act (19 U.S.C. 1303) are being provided to manufacturers, producers, or exporters in Singapore and Thailand of antifriction bearings (other than tapered roller bearings) and parts thereof. These investigations were requested in a petition filed on March 31, 1988 by the Torrington Co., Torrington, Connecticut. In response to that petition the Commission conducted preliminary countervailing duty investigations and, on the basis of information developed during the course of those investigations, determined that there was a reasonable indication that an industry in the United States was materially injured by reason of imports of the subject merchandise (53 FR 18908, May 25, 1988).

Participation in These Investigations

Persons wishing to participate in these investigations as parties must file an entry of appearance with the Secretary to the Commission, as provided in section 201.11 of the Commission's rules (19 CFR 201.11), not later than twenty-one (21) days after the publication of this notice in the Federal Register. Any entry of appearance filed after this date will be referred to the Chairman, who will determine whether to accept the late entry for good cause shown by the person desiring to file the entry.

Service List

Pursuant to § 201.11(d) of the Commission's rules (19 CFR 201.11(d)), the Secretary will prepare a service list containing the names and addresses of all persons, or their representatives, who are parties to these investigations upon the expiration of the period for filing entries of appearance. In accordance with §§ 201.16(c) and 207.3 of the rules (19 CFR 201.16(c) and 207.3), each document filed by a party to the investigations must be served on all other parties to the investigations (as identified by the service list), and a certificate of service must accompany the document. The Secretary will not accept a document for filing without a certificate of service.

Authority: These investigations are being conducted under the authority of the Tariff Act of 1930, title VII. This notice is published pursuant to section 207.20 of the Commission's rules (19 CFR 207.20).

By order of the Commission.

Issued: September 30, 1988.

Kenneth R. Mason,

Secretary.

[FR Doc. 88-23676 Filed 10-13-88; 8:45 am]

BILLING CODE 7020-02-M

[1] Nondutiable antifriction bearings (other than tapered roller bearings) and parts thereof from Singapore and Thailand subject to investigation include ball or roller bearing type flange, take-up, cartridge, and hanger units, and parts of the foregoing, provided for in TSUS items 681.1010 and 681.1030 (classified in Harmonized Tariff Schedule (HTS) subheadings 8483.20.40, 8483.30.40, 8483.90.20, and 8483.90.30); machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for, provided for in TSUS item 681.3900 (classified in HTS subheading 8485.90.00); and parts of motor vehicles containing any of the foregoing bearings and not specially provided for, provided for in TSUS item 692.3295 (classified in HTS subheading 8708.99.50).

INTERNATIONAL TRADE COMMISSION

[Investigations Nos. 303-TA-19 and 20 and Investigations Nos. 731-TA-391-399 (Preliminary)]

Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof From the Federal Republic of Germany et al.

Determinations

On the basis of the record [1] developed in the subject investigations, the Commission determines, pursuant to section 303 of the Tariff Act of 1930 (19 U.S.C. 1303), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports from Singapore and Thailand of

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

antifriction bearings (other than tapered roller bearings) and parts thereof, whether finished or unfinished, provided for in items 681.10, 681.39, and 692.32 of the Tariff Schedules of the United States (TSUS),[2] that are alleged to be subsidized by the governments of Singapore and Thailand.

The Commission also determines, pursuant to section 733(a) of the Act (19 U.S.C. 1673b(a)), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom of antifriction bearings (other than tapered roller bearings) and parts thereof, whether finished or unfinished, provided for in items 680.30, 680.33, 680.37, 680.39, 681.04, 681.10, 681.39, and 692.32 of the Tariff Schedules of the United States,[3] that are alleged to be sold in the United States at less than fair value (LTFV).

Background

On March 31, 1988, petitions were filed with the Commission and the Department of Commerce by the Torrington Company, Torrington, CT, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized imports of antifriction bearings (other than tapered roller bearings) and parts thereof from Singapore and Thailand, and by reason of LTFV imports of antifriction bearings (other than tapered roller bearings) from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom. Accordingly, effective March 31, 1988, the Commission instituted preliminary countervailing duty investigations Nos. 303-TA-19 and 20 (Preliminary) and preliminary antidumping investigations Nos. 731-TA-391-399 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of April 11, 1988 (53 FR 11917). The conference was held in Washington, DC, on April 21, 1988, and all persons who requested the opportunity were permitted to appear in person or by counsel.

The Commission transmitted its determinations in these investigations to the Secretary of Commerce on May 16, 1988. The views of the Commission are contained in USITC Publication 2083 (May 1988), entitled "Antifriction bearings (other than tapered roller bearings) and parts thereof, from the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom, Determinations of the Commission in Investigations Nos. 303-TA-19 and 20 and 731-TA-391-399 (Preliminary) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigations."

Issued: May 17, 1988.

Kenneth R. Mason,

Secretary.

[FR Doc. 88-11723 Filed 5-24-88; 8:45 am]

BILLING CODE 7020-02-M

[2] Antifriction bearings (other than tapered roller bearings) and parts thereof from Singapore and Thailand subject to investigation include ball or roller bearing type flange, take-up, cartridge, and hanger units, and parts of the foregoing (TSUSA items 681.1010 and 681.1030 and proposed Harmonized Tariff Schedule (HTS) subheadings 8483.20.40, 8483.30.40, 8483.90.20, and 8483.90.30); machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for (TSUSA item 681.3900 and HTS subheading 8485.90.00); and parts of motor vehicles containing any of the foregoing bearings and not specially provided for (TSUSA item 692.3295 and HTS subheading 8708.99.50).

[3] For purposes of these investigations, the subject bearings and parts thereof include the following articles, whether finished or unfinished: antifriction balls and rollers (TSUSA items 680.3025, 680.3030, and 680.3040, and HTS subheading 8482.91.00); ball bearings with integral shafts (TSUSA item 680.3300 and HTS subheading 8482.10.10); ball bearings (including radial ball bearings) and parts thereof (TSUSA items 680.3704, 680.3708, 680.3712, 680.3717, 680.3718, 680.3722, 680.3727, and 680.3728, and HTS subheadings 8482.10.50 and 8482.10.70); spherical roller bearings and parts thereof (TSUSA items 680.3952 and 680.3956, and HTS subheadings 8482.30.00 and 8482.99.50); other roller bearings (except tapered roller bearings) and parts thereof (TSUSA items 680.3960 and HTS subheadings 8482.40.00, 8482.50.00, 8482.80.00, and 8482.99.70); ball or roller bearing type pillow blocks and parts thereof (TSUSA items 681.0410 and 681.0430, and HTS subheadings 8483.20.80, 8483.30, 8483.90.30, and 8483.90.70); ball or roller bearing type flange, take-up, cartridge, and hanger units, and parts of the foregoing (TSUSA items 681.1010 and 681.1030, and HTS subheadings 8483.20.40, 8483.30.40, 8483.90.20, and 8483.90.30); machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for (TSUSA item 681.3900 and HTS subheading 8485.90.00); and parts of motor vehicles containing any of the foregoing bearings and not specially provided for (TSUSA item 692.3295 and HTS subheading 8708.99.50). Finished but unground or semiground balls are not included in the scope of these investigations.

INTERNATIONAL TRADE COMMISSION

[Investigations Nos. 303-TA-19 and 20 and 731-TA-391-399 (Preliminary)]

Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof From the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom

AGENCY: International Trade Commission.

ACTION: Institution of preliminary countervailing duty and antidumping investigations, and scheduling of a conference to be held in connection with the investigations.

SUMMARY: The Commission hereby gives notice of the institution of preliminary countervailing duty investigations Nos. 303-TA-19 and 20 (Preliminary) under section 303 of the Tariff Act of 1930 (19 U.S.C. 1303) to determine whether there is a reasonable indication that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports of antifriction bearings (other than tapered roller bearings) and parts thereof whether finished or unfinished, provided for in items 681.10, 681.39 and 692.32 of the Tariff Schedules of the United States (TSUS), which are alleged to be subsidized by the governments of Singapore and Thailand.[1]

The Commission also gives notice of the institution or preliminary antidumping investigations Nos. 731-TA-391-399 (Preliminary) under section 733(a) of the Tariff Act of 1930 (19 U.S.C. 1673b(a)) to determine whether there is a reasonable indication that an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports from the following countries of antifriction bearings (other than tapered roller bearings) and parts thereof, whether finished or unfinished, provided for in items 680.30, 680.33, 680.37, 680.39, 680.04, 681.10, 681.39 and 692.32[2] of the Tariff Schedules of the United States (TSUS), that are alleged to be sold in the United States at less than fair value:

Country	Investigation No.
Federal Republic of Germany	731-TA-391 (preliminary).
France	731-TA-392 (preliminary).
Italy	731-TA-393 (preliminary).
Japan	731-TA-394 (preliminary).
Romania	731-TA-395 (preliminary).
Singapore	731-TA-396 (preliminary).
Sweden	731-TA-397 (preliminary).
Thailand	731-TA-398 (preliminary).
United Kingdom	731-TA-399 (preliminary).

As provided in sections 303 and 733(a), the Commission must complete preliminary countervailing duty and antidumping investigations in 45 days, or in this case by May 16, 1988.

For further information concerning the conduct of these investigations and rules of general application, consult the Commission's Rules of Practice and Procedure, Part 207, Subparts A and B (19 CFR Part 207), and Part 201, Subparts A through E (19 CFR Part 201).

EFFECTIVE DATE: March 31, 1988.

FOR FURTHER INFORMATION CONTACT: Diane Mazur (202-252-1184), Office of Investigations, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-252-1809. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-252-1000.

SUPPLEMENTARY INFORMATION:

Background

These investigations are being instituted in response to petitions filed on March 31, 1988, by the Torrington Co., Torrington, Connecticut.

Participation in the investigations

Persons wishing to participate in these investigations as parties must file an entry of appearance with the Secretary to the Commission, as provided in § 201.11 of the Commission's rules (19 CFR 201.11), not later than seven (7) days after publication of this notice in the Federal Register. Any entry of appearance filed after this date will be referred to the Chairman, who will determine whether to accept the late entry for good cause shown by the person desiring to file the entry.

Service List

Pursuant to § 201.11(d) of the Commission's rules (19 CFR 201.11(d)), the Secretary will prepare a service list containing the names and addresses of all persons, or their representatives, who are parties to these investigation upon the expiration of the period for filing entries of appearance. In accordance with §§ 201.16(c) and 207.3 of the rules (19 CFR 201.16(c) and 207.3), each document filed by a party to the investigations must be served on all other parties to the investigation (as identified by the service list), and a certificate of service must accompany the document. The Secretary will not accept a document for filing without a certificate of service.

Conference

The Director of Operations of the Commission has scheduled a conference in connection with these investigations for 9:30 a.m. on April 21, 1988 at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC. Parties wishing to participate in the conference should contact Diane Mazur (202-252-1184) not later than April 14, 1988 to arrange for their appearance.

Written Submissions

Any person may submit to the Commission on or before April 25, 1988 a written statement of information pertinent to the subject of the investigations, as provided in § 207.15 of the Commission's rules (19 CFR 207.15). A signed original and fourteen (14) copies of each submission must be filed with the Secretary to the Commission in accordance with § 201.8 of the rules (19 CFR 201.8). All written submissions except for confidential business data will be available for public inspection during regular business hours (8:45 a.m.

[1] Antifriction bearings (other than tapered roller bearings) and parts thereof from Singapore and Thailand subject to investigation include ball or roller bearing type flange, take-up, cartridge, and hanger units, and parts of the foregoing (TSUS item 681.10 and HTS subheadings 8483.20.40, 8483.30.40, 8483.90.20, and 8483.90.30); machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for (TSUS item 681.39 and HTS subheading 8485.90.00); and parts of motor vehicles containing any of the foregoing bearings and not specially provided for (TSUS item 692.32 and HTS subheading 8708.99.50).

[2] For purposes of these investigations, the subject bearings and parts thereof include the following articles, whether finished or unfinished: antifriction balls and rollers (TSUS item 680.30 and proposed Harmonized Tariff Schedule (HTS) subheading 8482.91.00); ball bearings with integral shafts (TSUS item 680.33 and HTS subheading 8482.10.10); ball bearings (including radial ball bearings) and parts thereof (TSUS item 680.37 and HTS subheadings 8482.10.50 and 8482.99.10); spherical roller bearings and parts thereof (TSUS item 680.39 and HTS subheadings 8482.30.00 and 8482.99.50); other roller bearings (except tapered roller bearings) and parts thereof (TSUS item 680.39 and HTS subheadings 8482.99.70); ball or roller bearing type pillow blocks and parts thereof (TSUS item 681.04 and HTS subheadings 8483.20.80, 8483.30.80, 8483.90.30, and 8483.90.70); ball or roller bearing type flange, take-up, cartridge, and hanger units, and parts of the foregoing (TSUS item 681.10 and HTS subheadings 8483.20.40, 8483.30.40, 8483.90.20, and 8483.90.30); machinery parts containing any of the foregoing bearings, not containing electrical features and not specially provided for (TSUS item 681.3900 and HTS subheading 8485.90.00); and parts of motor vehicles containing any of the foregoing bearings and not specially provided for (TSUS item 692.3295 and HTS subheading 8708.99.50).

to 5:15 p.m.) in the Office of the Secretary to the Commission.

Any business information for which confidential treatment is desired must be submitted separately. The envelope and all pages of such submissions must be clearly labeled "Confidential Business Information." Confidential submissions and requests for confidential treatment must conform with the requirements of § 201.6 of the Commission's rules (19 CFR 201.6).

Authority: These investigations are being conducted under authority of the Tariff Act of 1930, title VII. This notice is published pursuant to § 207.12 of the Commission's rules (19 CFR 207.12).

By order of the Commission.

Kenneth R. Mason,

Secretary.

Issued: April 6, 1988.

[FR Doc. 88-7833 Filed 4-8-88; 8:45 am]

BILLING CODE 7020-02-M

APPENDIX B

TRADE AND FINANCIAL DATA ON CERTAIN ANTIFRICTION BEARINGS (OTHER THAN TAPERED ROLLER BEARINGS) AND WHEEL HUB UNITS

Certain antifriction bearings and parts thereof

In the producer questionnaires for these investigations, the Commission asked producers to furnish information with respect to their operations producing precision bearings (defined as ABEC/RBEC 1 and 3), superprecision bearings (ABEC/RBEC 5 and over), and wheel hub units. Some of the producers were not able to respond to the data request at all. Others were able to respond only in part, with data on shipments being the most common information provided. Table B-1 presents a summary of those providing information by company and product category.

Certain ball bearings and parts thereof.--Data were collected on operations producing ball bearings, ABEC 1 and 3, 52mm OD and under; ball bearings, ABEC 1 and 3, over 52mm OD; ABEC 5 and over, 52mm OD and under; and, ABEC 5 and over, over 52mm OD. Fourteen producers provided information in some or each of these categories of ball bearings. These producers accounted for more than 92 percent of aggregate value of shipments of ball bearings and parts thereof in 1987. Counsel for the AMTB argued for a separate like product defined as a "commodity" ball bearings, ABEC 1 and 3, 52mm OD and under and counsel for Minebea, Ltd. argued for a separate like product consisting of miniature and instrument bearings, generally defined as ABEC 1 and 3, 30mm OD and under. Data for such like product considerations are presented in tables B-2 through B-6 1/ under ball bearings, ABEC 1 and 3, 52mm OD and under. This ball bearing category (ABEC 1 and 3, 52mm OD and under) accounted for 17.6 percent of the value and 60.1 percent of the quantity of total ball bearing shipments in 1987. In 1987, the three largest producers in this category were ***, ***, and *** on a shipment value basis, while ***, ***, and *** were the largest producers on a shipment quantity basis.

Insofar as the various definitions of a like product consisting of "aerospace" bearings are concerned, data are found in tables B-2 through B-21 under the following categories: ball bearings, ABEC 5 and over, 52mm OD and under and ball bearings, ABEC 5 and over, over 52mm OD (tables B-2-6); spherical bearings, RBEC 5 and over (tables B-7-11); cylindrical bearings, RBEC 5 and over (tables B-12-16); and, needle bearings, RBEC 5 and over (tables B-17-21).

1/ The data in these tables represent a total of the responses and will not reconcile from table to table.

Table B-1

Certain antifriction bearings (other than tapered roller bearings) and wheel hub units: U.S. producers providing information for tables B-2 through B-26, by product category.

	Ball bearings										
	ABEC 1 and 3		ABEC 5 and above		Spherical bearings		Cylindrical bearings		Needle bearings		Wheel
	52mm and under	Over 52mm	52mm and under	Over 52mm	RBEC 1 and 3	RBEC 5 and over	RBEC 1 and 3	RBEC 5 and over	RBEC 1 and 3	RBEC 5 and over	hub units
U.S.-owned producers:											
*	*	*	*	*	*	*	*	*	*	*	
Foreign-owned producers:											
*	*	*	*	*	*	*	*	*	*	*	

1/ Not applicable.

2/ Did not provided data broken out along these categories.

3/ For 1985 only. ***.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

B-16

Table B-2
Certain ball bearings and parts thereof: U.S. capacity, production, and capacity utilization, by products, 1985-87, January-September 1987, and January-September 1988 1/

Item	1985	1986	1987	January-September-- 1987	1988
	Average-of-period capacity (1,000 units)				
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	98,445	111,448	114,338	80,257	86,210
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	64,891	57,807	53,540	46,196	47,543
ABEC 5 and above, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	6,261	6,632	7,736	5,750	6,309
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	1,496	1,420	1,329	1,110	1,094
	Production (1,000 units)				
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	108,489	100,920	106,589	68,723	74,577
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	42,605	37,928	39,223	27,600	30,606
ABEC 5 and above, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	11,393	10,828	11,714	8,153	8,287
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	1,330	1,043	1,085	819	813

See footnotes at end of table.

Table B-2--Continued
Certain ball bearings and parts thereof: U.S. capacity, production, and capacity utilization, by products, 1985-87, January-September 1987, and January-September 1988 1/

Item	1985	1986	1987	January-September--1987	January-September--1988
	Capacity utilization 2/ (percent)				
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	97.0	87.1	90.9	83.1	84.3
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	65.5	65.5	73.2	59.7	64.3
ABEC 5 and above, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	81.8	81.1	75.6	69.6	68.4
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	75.1	67.0	74.2	67.0	70.7

1/ Data are for complete units only.
2/ Capacity utilization rates are based on data for those firms that provided figures for both capacity and production; therefore, ratios based on capacity and production figures as presented may not reconcile.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-3
Certain ball bearings and parts thereof: U.S. producers' domestic shipments (including company transfers), by products, 1985-87, January-September 1987, and January-September 1988

Item	1985	1986	1987	January-September-- 1987	1988
	Quantity (1,000 units)				
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	40,023	27,233	25,244	18,746	18,908
Foreign-owned firms	81,096	81,049	86,187	53,941	57,560
Total	121,119	108,282	111,431	72,687	76,468
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	53,674	45,388	46,915	35,884	37,363
Foreign-owned firms	14,226	14,027	15,010	8,934	10,469
Total	67,900	59,415	61,925	44,818	47,832
ABEC 5 and above, 52 mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	10,751	10,291	10,981	7,775	8,024
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	1,186	947	978	738	750
	Value (1,000 dollars)				
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	117,169	107,582	101,370	76,281	72,842
Foreign-owned firms	90,171	84,648	88,848	55,524	67,847
Total	207,340	192,230	190,218	131,805	140,689
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	645,549	557,765	572,201	434,792	452,116
Foreign-owned firms	105,868	94,214	100,051	65,005	84,227
Total	751,417	651,979	672,252	499,797	536,343
ABEC 5 and above, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	111,396	119,777	126,632	93,269	99,580
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	90,914	87,536	88,960	66,405	73,572

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-4
Certain ball bearings and parts thereof: U.S. producers' end-of-period inventories, by products, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

Item	1985	1986	1987	January-September-- 1987	1988
	End-of-period inventories (1,000 units)				
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	10,124	9,373	8,364	8,347	9,537
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	10,848	10,110	8,655	9,442	8,340
ABEC 5 and above, 52 mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	1,037	1,237	1,519	1,583	1,534
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	160	137	133	137	134
	Share of U.S. shipments (percent) 1/				
Ball bearings:					
ABEC 1 and 3, 52 mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	9.9	9.7	8.2	9.5	10.2
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	28.1	31.3	24.5	28.3	21.5
ABEC 5 and above, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	9.7	12.1	13.9	15.3	14.3
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	13.5	14.5	13.6	13.9	13.4

1/ Ratios are based on data supplied by firms that reported both inventory and shipments information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-5
Average number of production and related workers producing certain ball bearings and parts thereof, by products, 1985-87, January-September 1987, and January-September 1988

Item	1985	1986	1987	January-September-- 1987	1988
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	2,380	2,314	2,221	2,262	2,148
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	3,479	3,204	3,222	3,237	3,312
ABEC 5 and above, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	723	706	771	744	813
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	199	212	230	232	259

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-6
Income-and-loss experience of U.S. producers on their operations producing **certain ball bearings and parts thereof**, by product and by producer category, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended Sept. 30--1987	Interim period ended Sept. 30--1988
	Net sales (1,000 dollars)				
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	77,948	76,984	79,632	57,982	61,421
Foreign-owned firms	94,048	88,166	91,496	57,909	67,623
Total	171,996	165,150	171,128	115,891	129,044
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	227,904	214,188	227,229	167,305	178,407
Foreign-owned firms	119,570	106,251	111,332	73,328	85,628
Total	347,474	320,439	338,561	240,633	264,035
ABEC 5 and above, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	83,607	89,520	96,925	70,642	76,134
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	76,941	74,098	78,296	57,930	64,041
	Operating income or (loss) (1,000 dollars)				
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	(1,073)	3,350	3,288	3,084	(429)
Foreign-owned firms	(3,185)	(8,292)	(6,293)	(3,878)	(70)
Total	(4,258)	(4,942)	(3,005)	(794)	(499)
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	17,018	15,705	13,965	11,748	3,351
Foreign-owned firms	(14,527)	(10,729)	(1,415)	(1,236)	(1,636)
Total	2,491	4,976	12,550	10,512	1,715
ABEC 5 and above, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	7,507	8,901	10,074	6,288	7,115
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	1,041	2,231	2,764	2,031	279

continued on next page

Table B-6--Continued
Income-and-loss experience of U.S. producers on their operations producing **certain ball bearings and parts thereof**, by product and by producer category, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended Sept. 30--1987	Interim period ended Sept. 30--1988
	Operating income or (loss) as a share of net sales (percent)				
Ball bearings:					
ABEC 1 and 3, 52mm and under:					
U.S.-owned firms	(1.4)	4.4	4.1	5.3	(0.7)
Foreign-owned firms	(3.4)	(9.4)	(6.9)	(6.7)	(0.1)
Average	(2.5)	(3.0)	(1.8)	(0.7)	(0.4)
ABEC 1 and 3, over 52mm:					
U.S.-owned firms	7.5	7.3	6.1	7.0	1.9
Foreign-owned firms	(12.1)	(10.1)	(1.3)	(1.7)	(1.9)
Average	0.7	1.6	3.7	4.4	0.6
ABEC 5 and above, 52mm and under:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	9.0	9.9	10.4	8.9	9.3
ABEC 5 and above, over 52mm:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	1.4	3.0	3.5	3.5	0.4

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Certain spherical bearings and parts thereof.--Data were collected on operations producing spherical bearings, RBEC 1 and 3 and RBEC 5 and over. Such data are presented in tables B-6-11 1/. Six producers provided information in one or both of these categories of spherical bearings. These producers accounted for nearly 70 percent of aggregate value of shipments of spherical bearings and parts thereof in 1987. In 1987, the three largest producers in providing data in the RBEC 1 and 3 category were ***, ***, and *** on both shipment value basis and shipment quantity basis. *** was the only producer to provide information on RBEC 5 and over.

1/ The data in these tables represent a total of the responses and will not reconcile from table to table.

Table B-7
Certain spherical bearings and parts thereof: U.S. capacity, production, and capacity utilization, by products, 1985-87, January-September 1987, and January-September 1988 1/

Item	1985	1986	1987	January-September-- 1987	1988
	Average-of-period capacity (1,000 units)				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	2,938	3,037	3,121	2,817	2,678
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Production (1,000 units)				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	2,410	2,013	2,025	1,452	1,852
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Capacity utilization 4/ (percent)				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	82.0	66.3	64.9	51.5	69.2
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	***	***	***	***	***

1/ Data are for complete units only.
2/ Less than 500 units.
3/ Not available.
4/ Capacity utilization rates are based on data for those firms that provided figures for both capacity and production; therefore, ratios based on capacity and production figures as presented may not reconcile.
5/ Not applicable.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-8
Certain spherical bearings and parts thereof: U.S. producers' domestic shipments (including company transfers), by products, 1985-87, January-September 1987, and January-September 1988

Item	1985	1986	1987	January-September-- 1987	1988
	Quantity (1,000 units)				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	2,043	1,871	1,989	1,385	1,559
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Value (1,000 dollars)				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	138,264	125,700	133,621	96,938	118,066
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***

1/ Less than 500 units.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-9
Certain spherical bearings and parts thereof: U.S. producers' end-of-period inventories, by products, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

Item	1985	1986	1987	January-September-- 1987	1988
	End-of-period inventories (1,000 units)				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	1,073	1,052	840	935	970
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Share of U.S. shipments (percent) 1/				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	52.5	56.2	42.2	50.6	46.7
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***

1/ Ratios are based on data supplied by firms that reported both inventory and shipments information.
2/ Not applicable.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-10
Average number of production and related workers producing certain spherical bearings and parts thereof, by products, 1985-87, January-September 1987, and January-September 1988

Item	1985	1986	1987	January-September-- 1987	1988
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms.....	***	***	***	***	***
Foreign-owned firms.....	***	***	***	***	***
Total.....	1,855	1,522	1,385	1,352	1,498
RBEC 5 and over:					
U.S.-owned firms.....	***	***	***	***	***
Foreign-owned firms.....	***	***	***	***	***
Total.....	***	***	***	***	***

1/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-11
Income-and-loss experience of U.S. producers on their operations producing **certain spherical bearings and parts thereof**, by product and by producer category, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended Sept. 30-- 1987	1988
	Net sales (1,000 dollars)				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	159,051	146,305	158,282	110,104	134,939
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Operating income or (loss) (1,000 dollars)				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	11,325	19,397	22,001	15,457	21,585
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Operating income or (loss) as a share of net sales (percent)				
Spherical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	7.1	13.3	13.9	14.0	16.0
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Certain cylindrical bearings and parts thereof.--Data were collected on operations producing cylindrical bearings, RBEC 1 and 3 and RBEC 5 and over. Such data are presented in tables B-12-16 1/. Ten producers provided information in one or both of these categories of cylindrical bearings. These producers accounted for 93 percent of aggregate value of shipments of cylindrical bearings and parts thereof in 1987. In 1987, the three largest producers in the RBEC 1 and 3 category were ***, ***, and *** on a shipment value basis, while ***, ***, and *** were the largest on a shipment quantity basis. For RBEC 5 and over, *** and *** accounted for over three-fourths of shipments on both a value and quantity basis.

1/ The data in these tables represent a total of the responses and will not reconcile from table to table.

Table B-12
Certain cylindrical bearings and parts thereof: U.S. capacity, production, and capacity utilization, by products, 1985-87, January-September 1987, and January-September 1988 1/

Item	1985	1986	1987	January-September-- 1987	1988
	Average-of-period capacity (1,000 units)				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	10,606	9,836	9,844	8,335	8,973
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Production (1,000 units)				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	12,424	11,084	10,442	7,733	8,255
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Capacity utilization 2/ (percent)				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	66.9	71.1	75.6	66.8	73.9
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	***	***	***	***	***

1/ Data are for complete units only.
2/ Capacity utilization rates are based on data for those firms that provided figures for both capacity and production; therefore, ratios based on capacity and production figures as presented may not reconcile.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-13
Certain cylindrical bearings and parts thereof: U.S. producers' domestic shipments (including company transfers), by products, 1985-87, January-September 1987, and January-September 1988

Item	1985	1986	1987	January-September-- 1987	1988
	Quantity (1,000 units)				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	10,238	10,389	9,856	7,344	7,766
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Value (1,000 dollars)				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	118,795	107,969	116,358	84,899	83,291
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-14
Certain cylindrical bearings and parts thereof: U.S. producers' end-of-period inventories, by products, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

Item	1985	1986	1987	January-September-- 1987	1988
	End-of-period inventories (1,000 units)				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	2,097	1,330	1,169	1,156	1,162
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Share of U.S. shipments (percent) 1/				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	20.5	12.8	11.9	11.8	11.2
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***

1/ Ratios are based on data supplied by firms that reported both inventory and shipments information.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-15
Average number of production and related workers producing certain cylindrical bearings and parts thereof, by products, 1985-87, January-September 1987, and January-September 1988

Item	1985	1986	1987	January-September-- 1987	1988
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms.....	***	***	***	***	***
Foreign-owned firms.....	***	***	***	***	***
Total.....	1,001	1,088	1,122	1,129	1,147
RBEC 5 and over:					
U.S.-owned firms.....	***	***	***	***	***
Foreign-owned firms.....	***	***	***	***	***
Total.....	***	***	***	***	***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table B-16
Income-and-loss experience of U.S. producers on their operations producing **certain cylindrical bearings and parts thereof**, by product and by producer category, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

Item	1985	1986	1987	Interim period ended Sept. 30-- 1987	1988
	Net sales (1,000 dollars)				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	105,490	91,850	105,506	72,535	75,952
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Operating income or (loss) (1,000 dollars)				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	8,674	120	3,262	2,088	2,638
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***
	Operating income or (loss) as a share of net sales (percent)				
Cylindrical bearings:					
RBEC 1 and 3:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Average	8.2	0.1	3.1	2.9	3.5
RBEC 5 and over:					
U.S.-owned firms	***	***	***	***	***
Foreign-owned firms	***	***	***	***	***
Total	***	***	***	***	***

1/ Less than 0.05 percent.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Certain needle bearings and parts thereof.--Data were collected on operations producing needle bearings, RBEC 1 and 3 and RBEC 5 and over. Such data are presented in tables B-17-21. Four producers accounting for all of the aggregate value of shipments of needle bearings and parts thereof in 1987 provided information. All of the data were reported in the RBEC 1 and 3 category, with *** and *** accounting for more than *** percent of shipment value and quantity information.

Table B-17
Certain needle bearings and parts thereof: U.S. capacity, production, and capacity utilization, by products, 1985-87, January-September 1987, and January-September 1988 1/

* * * * * * *

Table B-18
Certain needle bearings and parts thereof: U.S. producers' domestic shipments (including company transfers), by products, 1985-87, January-September 1987, and January-September 1988

* * * * * * *

Table B-19
Certain needle bearings and parts thereof: U.S. producers' end-of-period inventories, by products, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

* * * * * * *

Table B-20
Average number of production and related workers producing certain needle bearings and parts thereof, by products, 1985-87, January-September 1987, and January-September 1988

* * * * * * *

Table B-21
Income-and-loss experience of U.S. producers on their operations producing **certain needle bearings and parts thereof**, by product and by producer category, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

* * * * * * *

Wheel hub units.--Data collected on operations producing wheel hub units are presented in tables B-22-27. As noted earlier in this report, New Departure Hyatt is currently the only U.S. producer of wheel hub units. *** plans to begin production of wheel hub units at its *** facility in the fall of 1989. During the period of investigation, the vast majority of New Departure Hyatt's production was consumed by its corporate parent, General Motors Corporation, for its automotive operations. All of the wheel hub units produced by New Departure Hyatt employed *** as the rolling element.

Table B-22
Wheel hub units: U.S. capacity, production, and capacity utilization, 1985-87, January-September 1987, and January-September 1988 1/

* * * * * * *

Table B-23
Wheel hub units: U.S. producers' domestic shipments (including company transfers), 1985-87, January-September 1987, and January-September 1988

* * * * * * *

Table B-24
Wheel hub units: U.S. producers' end-of-period inventories, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

* * * * * * *

Table B-25
Average number of production and related workers producing wheel hub units, 1985-87, January-September 1987, and January-September 1988

* * * * * * *

Table B-26
Income-and-loss experience of U.S. producers on their operations producing **wheel hub units**, by producer category, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

* * * * * * *

Table B-27
Wheel hub units: U.S. producers' domestic shipments (including company transfers), imports for consumption, 1985-87, January-September 1987, and January-September 1988

* * * * * * *

Slewing rings.--In its final determinations, March 24, 1989, Commerce determined that slewing rings were included in the scope of these investigations, after having excluded them at the preliminary stage of their investigations. Subsequent to that finding, Commission staff contacted the two major U.S. producers of slewing rings to request that they provide trade and financial information with respect to their slewing ring operations. Additionally, at the public hearings in these investigations, held on March 30, 1989, staff requested information with respect to imports of slewing rings. The information elicited in response to these requests is presented in tables B-28 through B-33 as well as in the following text

The two major U.S. producers of slewing rings, *** and *** provided information on their operations producing slewing rings. Both produce slewing rings at dedicated facilities and treat their slewing ring operations as separate profit centers. Both reported data on slewing rings as such, indicating they do not maintain records based on the particular rolling element involved in the product. Both producers indicated that their slewing rings employ ball and/or roller bearings as the rolling element and that such rolling elements are purchased from other U.S. producrers of antifriction bearings. ***.

Importers providing data include ***, ***, ***, and ***, a *** of slewing rings. Staff believes that the data from these importers and producers account for a substantial majority of slewing ring consumption in the United States. A discussion of the description and uses and manufacturing process for slewing rings as well as the trade and financial data collected follows.

Description and uses

Slewing rings are large-sized, specialty bearings designed to accommodate oscillatory movement between fixed and moving parts. Slewing rings are comprised of an inner ring and an outer ring, one of which often incorporates a gear; balls and/or rollers; spacers to separate the balls and or rollers; and synthetic rubber seals to protect the bearing from foreign matter and to prevent grease from escaping. The rings have a number of holes which permit them to be bolted or welded to other machinery. U.S.-produced slewing rings are normally between 1 1/2 and 15 feet in diameter. These products are considered to be low-precision bearings and, thus, do not conform to ABEC/RBEC standards. These bearings have a higher coefficient of friction associated with them than most other bearings and, therefore, do not reduce friction as well as most other bearings do. They are custom made and produced in small lots, typically between 3 to 5 pieces.

Slewing rings can simultaneously accommodate radial loads (loads applied perpendicularly to the shaft axis), thrust loads (loads applied parallel to the shaft), and tilting moments. That is, slewing rings can support a load that is outside the bearing diameter. For example, slewing rings on cranes are designed both to support the load hanging from the crane and to support radial and thrust loads. Other bearings, however, cannot accommodate tilting loads.

Slewing rings may contain balls, rollers, or a combination of both. Such bearings are used principally on construction machinery, hoisting and mechanical handling equipment, and also in the steel industry. In particular, they are used in excavators, cranes, and stackers. They are also used in numerous new fields of energy production, such as in nuclear power plants, windmills, and solar mirrors, and by the U.S. Department of Defense in products such as tank turrets, gun mounts, missile launchers, and radar antennas.

Manufacturing process

Slewing rings are not produced in the same facilities as other antifriction bearings. ***. ***. Slewing rings are produced on different equipment than that used in the manufacture of the other antifriction bearings subject to these investigations.

Although slewing rings are run through certain of the same manufacturing processes as other antifriction bearings, such as, machining, heat treatment, finishing, and assembly, they also undergo additional processes, such as forging, induction hardening, the drilling of holes into the rings so that these bearings may be bolted, and the manufacture of gears. Unlike most other bearings, the rings of the slewing rings are often not ground. Additionally, these bearings are made of a different steel alloy than that used in the manufacture of other bearings. A typical manufacturing process follows.

Steel ingots of different sizes and grades are procured for use in the manufacture of the inner and outer races. Low alloy grades of steel, such as AISI 1050, 1020, 4140, 4340, and 8660 are used in the manufacture of the rings, not through-hardenable grades, such as AISI 52100 which is used in many other antifriction bearings. The steel is cut into billets, each marked with a specific job number and heated to an upset temperature of about 2100 degrees Fahrenheit to prepare it for forging. It is then sent through a hydraulic press where it is flattened into a doughnut preform and then run through a ring roller where it is forged and where the ring is further flattened. The serial number for the ring is then affixed to the bearing. Each ring has a unique serial number so that, if a customer needs a replacement, he can refer back to the original dimensions associated with his slewing ring.

The outside diameter is then measured by an inspector. The ring is placed on a cooling rack for several hours and then sent to the inspection table where the inside and outside diameter and height of the ring is again measured. The ring is then heat treated to ensure its strength and wearability. During this process, the ring is placed in a furnace at high temperatures and then quenched in water. The ring is again measured as the dimensions often grow during this process. The ring is placed on a turning machine to refine its dimensions and prepare it for further processing (machining). Each ring is then further turned on a vertical turret lathe (VTL) to establish a ball/roller path and one mounting face. The raceway of each ring is then induction hardened or case hardened (which enables the slewing ring to carry substantial loads) to approximately 1/8 inch in depth. The rings are then further turned on the lathe to establish the opposite mounting surface and to smooth all critical surfaces. Customers quite frequently require gears on the slewing ring. In this instance, gears will be cut into one of the rings using a shaper, hobber, or gasher. Next, holes must be drilled into the ring so that the finished slewing ring may be bolted to other machinery. This is accomplished through the use of a CNC drill machine. The raceway is again either turned or ground to establish closer tolerances. Lastly, the ring is set on a table where it is manually assembled. ***.

Table B-28
Slewing rings: U.S. producers' domestic shipments, U.S. imports for consumption, and apparent U.S. consumption, 1985-87, January-September 1987, and January-September 1988

* * * * * * *

Table B-29
Slewing rings: U.S. capacity, production, and capacity utilization, 1985-87, January-September 1987, and January-September 1988 1/

* * * * * * *

Table B-30
Slewing rings: U.S. producers' domestic shipments (including company transfers), 1985-87, January-September 1987, and January-September 1988

* * * * * * *

Table B-31
Slewing rings: U.S. producers' end-of-period inventories, as of Dec. 31 of 1985-87 and as of Sept. 30 of 1987-88

* * * * * * *

Table B-32
Average number of production and related workers producing slewing rings, 1985-87, January-September 1987, and January-September 1988

* * * * * * *

Table B-33
Income-and-loss experience of U.S. producers 1/ on their operations producing slewing rings, accounting years 1985-87 and interim periods ended Sept. 30, 1987, and Sept. 30, 1988

* * * * * * *

APPENDIX C

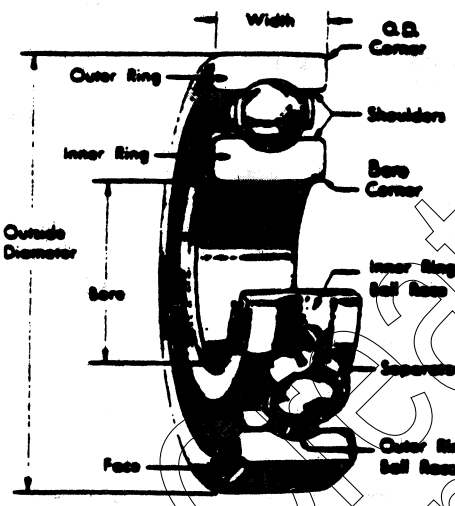
DIAGRAMS OF ANTIFRICTION BEARINGS AND ANTIFRICTION BEARING PRODUCTION PROCESSES

Bearing Parts and Their Names

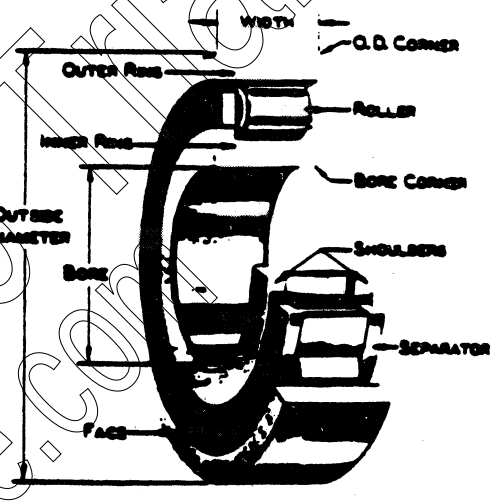
The parts common to all standard ball and roller bearings have, for the purpose of this manual, been given names as shown below.

Basically all anti-friction bearings consist of two hardened steel rings, the hardened balls or rollers and separator. A number of variations of these types are in use. Some types, such as Needle roller bearings may be used without an inner ring, the rollers fitting directly upon the hardened shaft. Needle bearings have no separator.

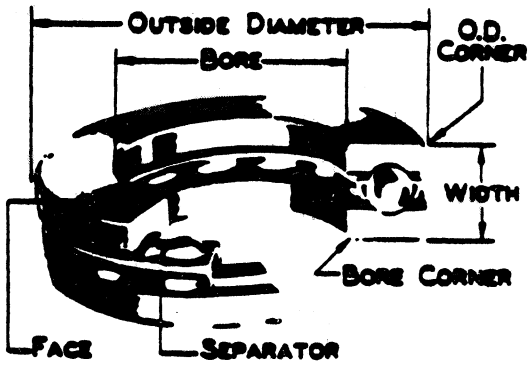
Ball Bearing



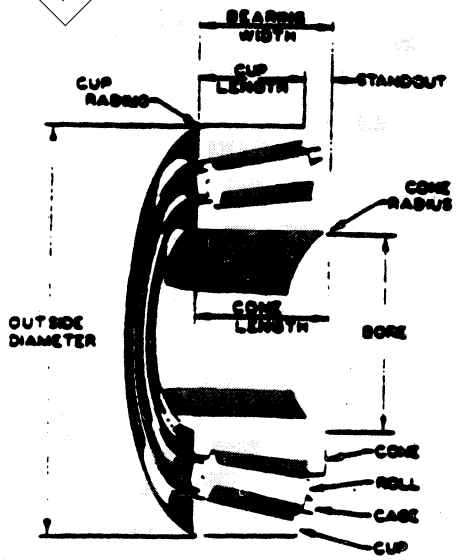
Straight Roller Bearing



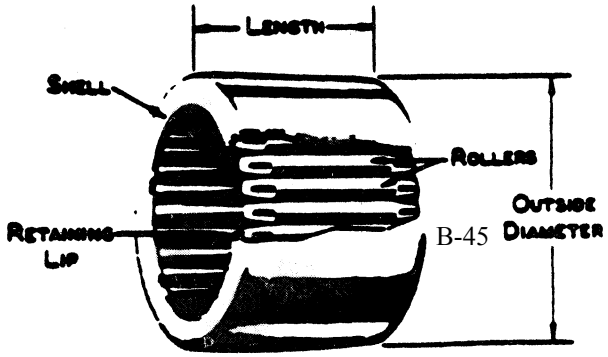
Ball Thrust Bearing



Tapered Roller Bearing



Needle Roller Bearing



Types of Anti-friction Bearings

Ball Bearings

*4. Duplex bearings are specially face ground for use in pairs.

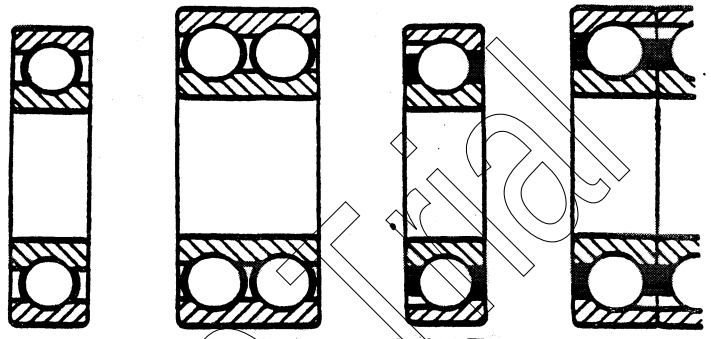
*5. Snap Ring bearings are used both with and without shields.

*6. Shields may be on either one or both sides.

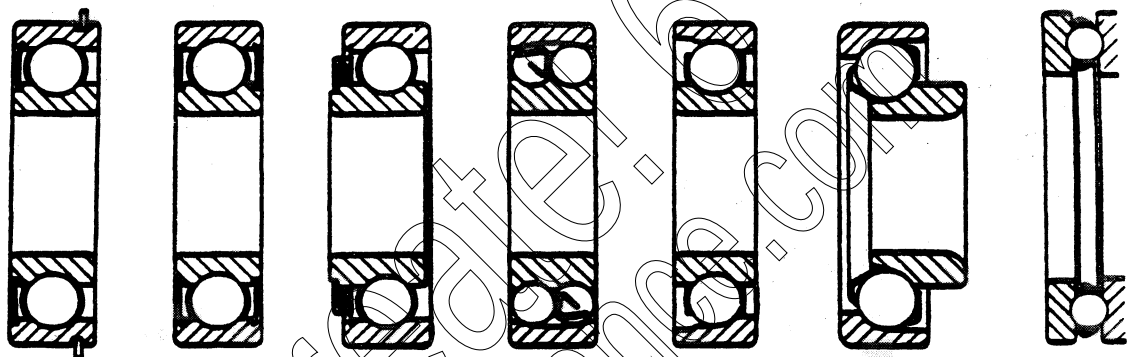
*7. Sealed bearings may have seals on both sides—are then wider.

*9 & 10. Magneto and Front Wheel bearings are separable.

*11. Ball Thrust bearings are treated separately on pages 16 and 17.



1. Single Row 2. Double Row 3. Radial-Thrust *4. Duplex



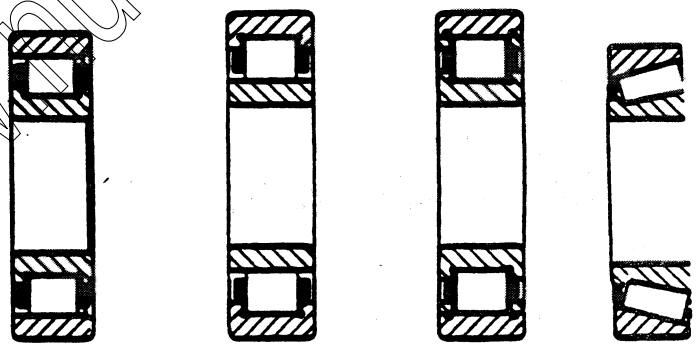
*5. Snap Ring *6. Shielded *7. Single Seal 8. Self-aligning *9. Magneto *10. Front Wheel *11. Ball T

Roller Bearings

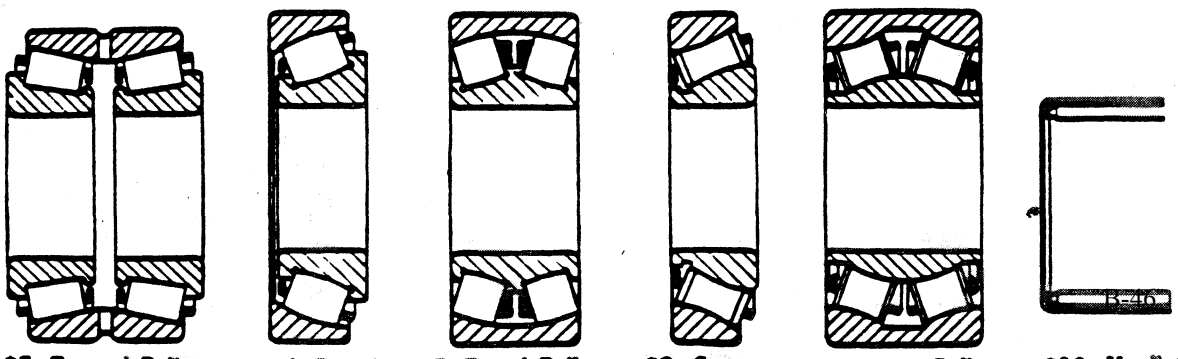
*1, 2, 4, 5, 6, & 8. These bearings are all separable either as to inner or outer rings.

*5. Double Row tapered roller, adjustable through cones. Also made adjustable through the cups.

*10. In some cases needle bearings may have inner rings which are separable.

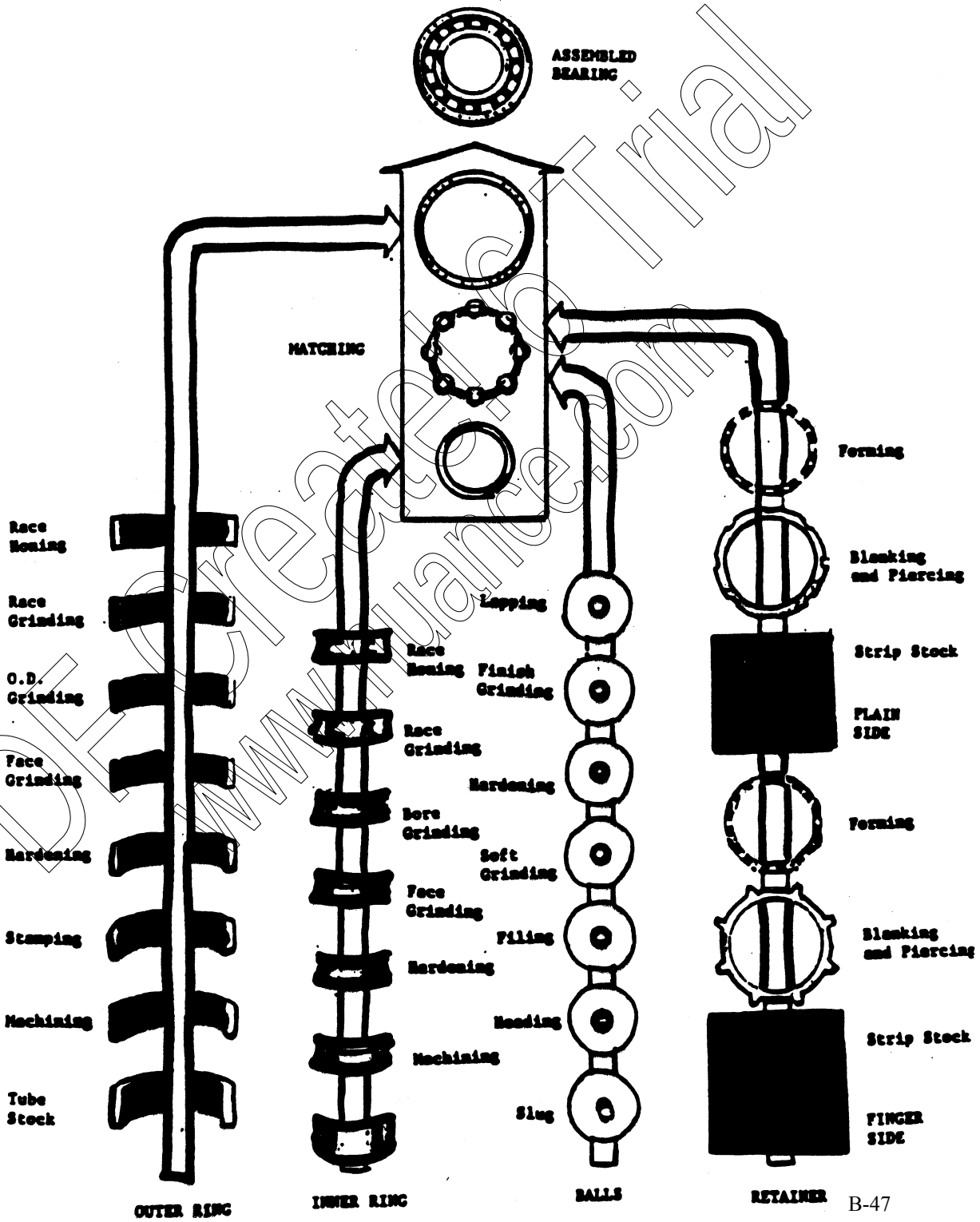


*1. Straight Roller Separable outer ring *2. Straight Roller Separable inner ring 3. Straight Roller Non-separable *4. Taper Roller



*5. Tapered Roller Double Row *6. Barrel Roller 7. Barrel Roller Double Row *8. Concave Roller 9. Concave Roller Double Row *10. Needle Roller

STEPS IN THE MANUFACTURE OF A BALL BEARING



B-47

Source: Fafnir Bearing Co.

APPENDIX D

DIAGRAMS SUBMITTED BY PETITIONER CONCERNING INTERCHANGEABILITY AMONG BEARING TYPES

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APPENDIX E

ADDITIONAL FINANCIAL INFORMATION CONCERNING U.S. PRODUCERS OF ANTIFRICTION BEARINGS (OTHER THAN TAPERED ROLLER BEARINGS) AND PARTS THEREOF

The Commission requested U.S. producers to describe any actual or potential negative effects of imports of the subject antifriction bearings and parts thereof from the specified countries on their firm's growth, investment, and ability to raise capital. The responses of the producers follow.

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APPENDIX F

PRODUCT SPECIFICATIONS FOR WHICH PRICING DATA WERE REQUESTED

The specified products for which price data were requested are listed below.

PRODUCT 1: RADIAL BALL BEARINGS--Generic Part No. 6203ZZ (FAFNIR 203KDD). **Bearing description**: Ball bearing, single row, deep groove radial. **Bearing specification**: 17mm bore, 40mm OD, 12mm width with two shields. ABEC 1 tolerances.

PRODUCT 2: RADIAL BALL BEARINGS--Generic Part No. DG19452RS. (FAFNIR 204RR6) **Bearing description**: Ball bearing, single row, deep groove radial. **Bearing specification**: 0.7505 inch bore, 1.7805 inch OD, 0.610 inch width with two seals. ABEC 1 tolerances.

PRODUCT 3: RADIAL BALL BEARINGS--Generic Part No. 6202 ZC. **Bearing description**: Ball bearing, single row, deep groove, radial. **Bearing specification**: 15mm bore, 35mm OD, 11mm width and one shield. ABEC 1 tolerances.

PRODUCT 4: RADIAL BALL BEARINGS--Generic Part No. 6004ZZ. **Bearing description**: Ball bearing, single row, deep groove, radial. **Bearing specification**: 20mm bore, 42mm OD, 12mm width with two shields. ABEC 1 tolerances.

PRODUCT 5: RADIAL BALL BEARINGS--Generic Part No. 608ZZ. **Bearing description**: Ball bearing, single row, deep groove, radial. **Bearing specification**: 8mm bore, 22mm OD, 7mm width with two shields. ABEC 1 tolerances.

PRODUCT 6: RADIAL BALL BEARINGS--Generic Part No. 6001 RS1Z. **Bearing description**: Ball bearing, single row, deep groove, radial. **Bearing specification**: 12mm bore, 28mm OD, 8mm width with one seal and one shield. ABEC 1 tolerances.

PRODUCT 7: RADIAL BALL BEARINGS--Generic Part No. R2SS (MPB No. SR2FRHH5). **Bearing description**: Ball bearing, single row, deep groove radial. **Bearing specification**: .1250 inch bore, .3750 inch OD, 0.1562 inch width with two shields. ABEC 5 tolerances.

PRODUCT 8: SUPER PRECISION RADIAL BALL BEARINGS--FAFNIR Part No. 2MM 9126WI CR DUL. **Bearing description**: Ball bearing, two bearings matched by width, angular contact of 15 degrees. **Bearing specification**: 130mm bore, 200mm OD, 33mm width per bearing. ABEC 7 tolerances. Inner, outer, and balls.

PRODUCT 9: WIDE INNER-RING BALL BEARINGS--Generic Part No. RA100-RRB + Collar. **Bearing description**: Ball bearing, single row, deep groove radial with eccentric locking collar, narrow overall width. **Bearing specification**: 1 inch bore, 52mm spherical OD, 1-7/32 inch overall width with two seals. ABEC 1 tolerances.

PRODUCT 10: BALL BEARING PILLOW BLOCK--Generic Part No. GAPL1100B. **Part description**: Pillow block unit with radial ball bearing insert. **Housing specification**: Grey cast iron, two bolt hole, with grease fitting base-to-centerline height 1-5/16 inch, bolt hole spacing 4-1/8 inch. **Bearing insert specification**: Ball bearing, single row, deep groove radial, with eccentric locking collar, wide overall width, 1 inch bore, 52mm spherical OD, 1-3/4 inch overall width with two seals.

PRODUCT 11: SPHERICAL ROLLER BEARINGS--Generic Part No. 22222. **Bearing description**: Spherical roller bearing, two row. **Bearing specification**: 110mm bore, 200mm OD, 53mm width with outer ring groove and relubrication hole. ABEC 1 tolerances.

PRODUCT 12: SPHERICAL ROLLER BEARINGS--Generic Part No. 22216 CJW33. **Bearing description**: Spherical roller bearing, two rows. **Bearing specification**: 80 mm bore, 140 mm OD, 33mm width with outer ring lubrication groove and holes. ABEC 1 tolerances.

PRODUCT 13: NEEDLE BEARINGS--Generic Part No. BH-1812. **Bearing description**: Drawn cup full complement needle roller bearing ANSI/AFBMA standard 18.2, table 3.1. **Bearing specification**: Designed to operate on a 1.1250/1.1245 inch diameter shaft when pressed into a 1.4995/1.5005 inch steel housing. Width is .750/.740 inch.

PRODUCT 14: NEEDLE ROLLER BEARINGS--Generic Part No. 108. **Bearing description**: Drawn cup full complement needle roller bearing ANSI/AFBMA standard 18.2, table 3.1. **Bearing specification**: Designed to operate on a .6250 to .6245 inch diameter shaft when pressed into a .8120 to .8130 inch steel housing. Width is .500 to .490 inch.

PRODUCT 15: NEEDLE ROLLER BEARINGS--Generic Part No. HJ567232. **Bearing description**: Needle roller bearing with flanges without inner ring. **Bearing specification**: 3.5 inch ID, 4.5 inch OD, 2.0 inch width.

PRODUCT 16: CYLINDRICAL ROLLER BEARINGS--Generic Part No. 95RIU430. **Bearing description**: Cylindrical roller bearing, single row. **Bearing specification**: 9.5 inch bore, 12.75 inch OD, 1.625 inch width with straight bore. Inch series with RBEC 1 tolerances. Inner, outer and rollers.

PRODUCT 17: CYLINDRICAL ROLLER BEARINGS--Generic Part No. 3010 **Bearing description**: Cylindrical roller bearing, two rows. **Bearing specification**: 50mm bore, 80mm OD, 23mm width with tapered bore and outer ring lubrication groove and holes. RBEC 1 tolerances.

PRODUCT 18: SPHERICAL PLAIN BEARINGS--Generic Part No. GEZ 104 ESIMP. (Torrington 12SF20) **Bearing description**: Two piece 52/100 Steel on steel radial Spherical Plain Bearing with single fractured outer ring. **Bearing specification**: 1.25 inch bore, 2 inch OD, 1.093 inch inner ring width, .937 inch outer ring width, inch series without seals.

PRODUCT 19: SPHERICAL PLAIN BEARINGS--FAFNIR No. REM6ATC10ZM. **Bearing description**: Plain bearing aircraft control, male-type rod end, inner and outer ring material of AISI 440C stainless, rod end housing of AISI 4130 or 4340 cadmium with teflon liner. **Bearing specification**: .1900 inch bore, .806 inch OD, .337 inch width.

APPENDIX G

Companies responding to lost sale and lost revenue allegations

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