CERTAIN BIMETALLIC CYLINDERS FROM JAPAN

Determination of the Commission in Investigation No. 731-TA-383 (Final) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigation

USITC PUBLICATION 2080

MAY 1988

United States International Trade Commission / Washington, DC 20436

UNITED STATES INTERNATIONAL TRADE COMMISSION

COMMISSIONERS

Susan Liebeler, Chairman
Anne E. Brunsdale, Vice Chairman
Alfred E. Eckes
Seeley G. Lodwick
David B. Rohr
Ronald A. Cass

Staff assigned:

Janine Wedel, Investigator
David Slingerland, Industry Analyst
Terry Planton, Economist
Marshall Wade, Financial Analyst
Paul Bardos, Attorney
Robert Carpenter, Supervisory Investigator

Address all communications to
Kenneth R. Mason, Secretary to the Commission
United States International Trade Commission
Washington, DC 20436

C O N T E N T S

CONTENTS--Continued

Figures

Tables

CONTENTS--Continued

Tables--Continued

Note.--Information that would reveal confidential operations of individual concerns may not be published and therefore has been deleted from this report. Such deletions are indicated by asterisks.

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC

Investigation No. 731-TA-383 (Final)

CERTAIN BIMETALLIC CYLINDERS FROM JAPAN

Determination

On the basis of the record 1/ developed in the subject investigation, the Commission unanimously determines, pursuant to section 735(b) of the Tariff Act of 1930 (19 U.S.C. § 1673d(b)), that an industry in the United States is not materially injured or threatened with material injury, and the establishment of an industry in the United States is not materially retarded, by reason of imports from Japan of certain bimetallic cylinders, 2/ provided for in item 678.35 of the Tariff Schedules of the United States, that have been found by the Department of Commerce to be sold in the United States at less than fair value (LTFV).

Background

The Commission instituted this investigation effective January 15, 1988, following a preliminary determination by the Department of Commerce that imports of bimetallic cylinders from Japan were being sold at LTFV within the meaning of section 731 of the Act (19 U.S.C. § 1673). Notice of the institution of the Commission's investigation and of a public hearing to be

---

1/ The record is defined in sec. 207.2(i) of the Commission's Rules of Practice and Procedure (19 CFR § 207.2(i)).

2/ Bimetallic cylinders are defined as hollow metal cylinders that serve as part of a machine used to process various materials, including plastic resins, and various types of food, either by injection molding, extrusion, or by blow molding. The products consist of an outer shell of steel and an inner lining of a corrosion- and abrasion-resistant alloy that are metallurgically bonded, and are, if imported, reported under items 678.3570, 678.3575, and 678.3580 of the Tariff Schedules of the United States Annotated (TSUSA).

held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of February 3, 1988 (53 F.R. 3084). The hearing was held in Washington, DC, on April 7, 1988, and all persons who requested the opportunity were permitted to appear in person or by counsel.

VIEWS OF CHAIRMAN LIEBELER, VICE CHAIRMAN BRUNSDALE, AND COMMISSIONER CASS

We determine that an industry in the United States is not materially injured or threatened with material injury by reason of imports of bimetallic cylinders from Japan sold at less than fair value (LTFV). [1/]

I. The Like Product and the Domestic Industry

Like Product and Industry Definition

In order to assess material injury, the Commission must determine the relevant domestic industry. The term "industry" is defined 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." [2/] "Like product" is 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. . . ." [3/] Factors the Commission has examined in deciding what domestically produced products are products like the imports under investigation have included (1) physical characteristics and uses, (2) interchangeability, (3) channels of distribution, (4) common manufacturing facilities and production employees, and (5) customer or producer perceptions. [4/]

1/ Since this is an established domestic industry, "material retardation" was not raised as an issue in this investigation and will not be discussed further.

2/ 19 U.S.C. § 1677(4)(A).

3/ 19 U.S.C. § 1677(10).

4/ E.g., Certain All-Terrain Vehicles from Japan, Inv. No. 731-TA-388 (Preliminary), USITC Pub. 2071 (March 1988); Certain Forged Steel Crankshafts from the Federal Republic of Germany and the United Kingdom, Invs. Nos. 731-TA-351 and 353 (Final), USITC Pub. 2014 (Sept. 1987).

The articles subject to investigation are certain bimetallic cylinders used as a part of machines for extrusion, injection molding, and blow molding. 5/ In such a machine, materials such as plastics are heated and pushed through the cylinder by a screw and either extruded in a continuous line or injected into a mold. The materials are more or less abrasive and corrosive, necessitating a hardened cylinder.

In our preliminary determination, we found that there was one like product, consisting of bimetallic cylinders, and one domestic industry, consisting of the domestic producers of such cylinders. The definition of the like product included cylinders (also called barrels) for use in injection molding machines, extrusion machines, and blow molding machines, as well as sleeves for reconditioning worn bimetallic cylinders, but did not include nitrided cylinders. 6/ No evidence has arisen in this final investigation which warrants a change in these aspects of our like product determination.

This is not true of the finding made in the preliminary determination to exclude vented conversions and downsized cylinders from the like product definition. 7/ In view of new information gathered in this final investigation and the fact that all parties now agree, we believe that vented conversions and downsized cylinders should be considered "like" bimetallic

---

5/ 53 Fed. Reg. 10552 (April 1, 1988).

6/ A nitrided cylinder is a steel cylinder hardened by a nitriding process. That process results in considerably less resistance to corrosion or abrasion than the bimetallic process.

7/ A vented cylinder has the advantage of allowing harmful volatiles to escape during processing. A downsized cylinder replaces a cylinder with a larger internal diameter which was run, inefficiently, at less than full capacity. Certain Bimetallic Cylinders from Japan, Inv. No. 731-TA-383 (Preliminary), USITC Pub. 2017 (Sept. 1987) at A-3.

cylinders. 8/

Downsized cylinders and bimetallic cylinders are produced by the same companies using the same bimetallic processes, the same equipment and workers, for the same general purposes and the same customer base as standard bimetallic cylinders. 9/ The interior dimension of a downsized cylinder is less than that of the cylinder it replaces, but in view of the wide range of sizes and specifications for bimetallic cylinders, which were found in the preliminary investigation to be one like product, that distinction is not as significant as it might be in the case of a fungible product. In comparable cases, the Commission has not fragmented the like product definition on the basis of differences in physical dimensions alone, and we decline to do so here. 10/

As to venting, the issue is analogous to that of comparing an article at one stage of a multi-stage production process and an article at a later stage in that process. The Commission has in the past considered that issue in light of such factors as the degree to which the conversion imparts essential characteristics to the final product, the necessity for the conversion, the existence of separate markets for the two products, the value of the different

---

8/ One notable difference between such new information and the data gathered in the preliminary investigation is the understanding that all of the downsized cylinders and many of the vented conversions sold by respondent Spirex are manufactured entirely by bimetallic cylinder producers. Report to the Commission (Report) at A-8. In the preliminary investigation, it appeared that Spirex performed all venting and downsizing itself, using sophisticated technology which set vented conversions and downsized cylinders apart from standard bimetallic cylinders.

9/ Tr. at 96, 101.

10/ See, e.g., Color Picture Tubes from Canada, Japan, the Republic of Korea, and Singapore, Invs. Nos. 731-TA-367-370 (Final), USITC Pub. 2046 (Dec. 1987) (different sizes of color picture tube not separate like products, despite lack of interchangeability). See also S. Rep. No. 249, 96th Cong. 1st Sess. 90-91 (1979).

production stages, and the degree of interchangeability of the articles. 11/

A vented cylinder is basically a standard bimetallic cylinder with a hole cut into it. The process involved is somewhat more sophisticated than the bare description, but all of the parties agree that the conversion process does not radically modify the basic bimetallic cylinder. In many applications, venting is not necessary, and an unvented cylinder is used. Vented and standard bimetallic cylinders are produced mostly by the same companies and workers using the same equipment, serve the same basic purposes, and are sold to the same customer base.

We note that vented conversions and downsized cylinders are not interchangeable with standard bimetallic cylinders, but the wide range of sizes and specifications in bimetallic cylinders precludes interchangeability even among standard cylinders. 12/ Downsized and vented cylinders can be more expensive than standard cylinders. This consideration is not as significant in the bimetallic cylinder market as it might be in other situations, however, because that market exhibits wide fluctuations in price even for the same bimetallic cylinder, depending on the transaction and its circumstances. 13/

Based upon the foregoing considerations and in light of the record in this investigation, we define the like product to be bimetallic cylinders,

---

11/ See Certain Forged Steel Crankshafts from the Federal Republic of Germany and the United Kingdom, supra n. 4.

12/ Report at A-30-33. Lack of interchangeability is not necessarily decisive: see Certain Forged Steel Crankshafts from the Federal Republic of Germany and the United Kingdom, supra n. 4.

13/ Report at A-30-33. Venting adds less to the price of a cylinder than does downsizing. Average unit value for vented cylinders was lower than average unit value for all bimetallic cylinders in 1987. Report at A-17.

including sleeves, as well as vented conversions and downsized cylinders, and define the industry as the domestic producers of such cylinders.

Condition of the Domestic Industry

In describing the condition of the domestic industry, the Commission considers, among other factors, domestic consumption, production, capacity, capacity utilization, shipments, inventories, employment and profitability. 14/

During the period of investigation, the U.S. bimetallic cylinder industry experienced growth, increases in many indicators of performance, and continuing profitability. 15/ Although operating income dipped somewhat, this was a time of expansion and its attendant costs. 16/

Apparent consumption of bimetallic cylinders rose from $27.0 million in 1985 to $29.8 million in 1987. The domestically produced share of U.S. apparent consumption remained over 87 percent throughout this period. 17/

Domestic production of bimetallic cylinders rose steadily from 7,921

14/ 19 U.S.C. § 1677(7)(C)(iii).

15/ One domestic producer, Wexco Corp., which petitioners claimed was particularly impacted by unfair imports, indicated rather that its business prospects were in fact improving. Prehearing brief of respondents at Exhibit 1. Xaloy's president stated: "I believe the industry believes that the long-term projections for the industry are very good and that we continue to invest, to expand to meet the prospects for the future." Tr. at 34.

16/ See American Spring Wire Corp. v. United States, 8 CIT 20, 590 F. Supp. 1273 (1984), aff'd sub nom., Armco, Inc. v. United States, 760 F.2d 249 (Fed. Cir. 1985) (expansion leads to increases in cost which can impact profitability).

17/ Report at A-9. We note that although the domestic share of U.S. apparent consumption declined from 1985 to 1987, U.S. export sales more than doubled during this period. Id. at A-16.

units in 1985 to 9,485 units in 1987 or by 20 percent. [18/] Capacity to produce bimetallic cylinders expanded almost 45 percent during the period from 9,098 units in 1985 to 13,152 units in 1987. [19/] The large increase in capacity both in 1986 and 1987 would indicate that the long-term projections for the industry are good and that the industry is optimistic about its future prospects. [20/] In particular, one firm, Wisconsin Bimetallic, entered the market during the period of investigation. As the capacity expansion outstripped the rise in production, capacity utilization declined from 1985 to 1987. [21/]

U.S. producers' domestic shipments were 7,277 units valued at $25.3 million in 1985, rising to 8,441 units valued at $27.5 million in 1986, and then declining to 8,404 units valued at $26.2 million in 1987, a level still above that of 1985. [22/] U.S. producers' end-of-period inventories increased as a share of shipments from 4.5 percent in 1985 to 7.0 percent in 1987. [23/]

The number of employees producing bimetallic cylinders decreased from 391 in 1985 to 360 in 1986 but rose to 372 in 1987. In contrast, the number of hours worked by these employees increased steadily from 575,000 in 1985 to 647,000 in 1987. [24/]

The Commission gathered financial data on bimetallic cylinder operations from four domestic producers that produce only bimetallic cylinders

---

18/ Report at A-13, Table 6.
19/ Id.
20/ See Tr. at 34.
21/ Report at A-13, Table 6.
22/ Id. at A-15, Table 7.
23/ Id. at A-18.
24/ Id. at A-18, Table 13.

and accounted for all domestically produced bimetallic cylinder shipments in 1987. 25/ Aggregate net sales increased from $26.5 million in 1985 to $28.9 million in 1987. 26/ During this period, as industry capacity increased, the cost of goods sold rose from $18.3 million in 1985 to $22.2 million in 1987, and rose as a share of net sales from 69.0 percent in 1985 to 76.8 percent in 1987. General, selling, and administrative costs also rose, from $3.3 million in 1985 to $4.4 million in 1987. Operating income declined from 1985 to 1987, but the industry as a whole remained profitable with an operating margin of 8.1 percent in 1987. 27/

In sum, the record shows rising trends for most indicators of performance and favorable prospects for long-term growth in the domestic industry.

II. No Material Injury by Reason of LTFV Imports

We have determined that the domestic bimetallic cylinder industry is not experiencing material injury by reason of the LTFV imports. 28/ 29/ 30/

III. No Threat of Material Injury by Reason of LTFV Imports

In the preliminary determination, we found that there was a reasonable indication that the domestic industry was threatened with material injury. We do not make an affirmative threat finding in this final investigation, because the record no longer supports such a finding.

In examining whether the domestic industry is threatened with material injury by reason of LTFV imports, we are directed to consider, among other

---

25/ Id. at A-7, Table 1.
26/ Id. at A-19.
27/ Id. at A-20, Table 14.
28/ See separate views on causation of Chairman Liebeler.
29/ See separate views on causation of Vice Chairman Brunsdale.
30/ See separate views on causation of Commissioner Cass.

factors, any existing unused foreign capacity, increases in imports to the United States, any rapid increase in U.S. market penetration, the likelihood that such penetration will increase to an injurious level, the probability that imports will enter the United States at prices that will have a depressing or suppressing effect on domestic prices, any substantial increase in inventories in the United States, and the potential for product-shifting. 30/ In addition, the Commission must base a finding of threat of material injury on "evidence that the threat of material injury is real and the actual injury is imminent," and not on "mere conjecture." 31/

Available data show that Hitachi, the largest bimetallic cylinder producer in Japan, experienced a steady rise in its capacity utilization during the period of investigation, and currently has little unused capacity available to increase its market penetration significantly in the immediate future. There is no evidence that Hitachi plans to increase its capacity, which has remained stable throughout the period of investigation. 32/ 33/

Since the end of 1987, the subject imports appear to have dropped considerably in volume. 34/ This is due at least in large part to the recent termination of an exclusive distribution arrangement between Hitachi Metals America and the domestic distributor Spirex Corp. 35/ The agreement was apparently terminated primarily because the appreciation of the yen made

---

30/ 19 U.S.C. § 1677(7)(F)(i); see also Yuasa-General Battery Corp. v. United States, 11 CIT __, 661 F. Supp. 1214 (1987).
31/ 19 U.S.C. § 1677(7)(F)(ii).
32/ Report at A-12; Tr. at 55.
33/ We note that Hitachi's home-market shipments increased from 1985 through 1987, and that Hitachi holds no significant inventories in Japan. See Report at A-10-12.
34/ Tr. at 86.
35/ Tr. at 66.

importation unattractive. 36/

The timing of the agreement's termination suggests another reason for terminating the agreement may have been the institution of the current investigation, which suggests the possibility that a negative Commission determination might result in the reestablishment of the Hitachi-Spirex agreement. Speculation on this point does not, however, in this investigation, rise to the level of "evidence that the threat of material injury is real and the actual injury is imminent," as is required by the statute. Moreover, the president of Spirex has testified under oath that the agreement will not be renewed. 37/ Considering the small number of firms in this industry, it would seem that a company such as Spirex would find it difficult to switch suppliers frequently.

Without the relationship with Spirex, Hitachi does not appear to have the ability to affect the U.S. market significantly in the near future. The imperfect market knowledge of customers could make it difficult for a relative newcomer like Hitachi to develop a larger customer base. The importance of quick delivery to minimize the downtime of expensive extrusion or injection molding machinery might also limit Hitachi's market share, considering the longer delivery time for imported bimetallic cylinders. 38/

Importers' inventories rose from 1985 to 1987 in units, but declined as a share of imports from 1986 to 1987. The record suggests that, due to the termination of the Hitachi-Spirex agreement, inventories have declined in

---

36/ Tr. at 66.
37/ Tr. at 66.
38/ Tr. at 75.

1988. 39/ Considering the largely customized nature of bimetallic cylinders, the existing inventory may be hard to sell.

The record shows no evidence that the imports will have a depressive or suppressive effect on domestic prices. 40/ Since there are no products similar to bimetallic cylinders under investigation or subject to final orders, there is no potential for product shifting. 41/

We determine that the domestic bimetallic cylinder industry is not threatened with material injury by reason of LTFV imports.

IV. Conclusion

For the foregoing reasons, we determine that there is no material injury to the domestic bimetallic cylinder industry by reason of LTFV imports from Japan and that the industry is not threatened with material injury by reason of LTFV imports from Japan.

39/ Tr. at 69.

40/ Report at A-29-33.

41/ We note that the Department of Commerce has initiated a national security investigation concerning imports of certain injection molding machines under section 232 of the Trade Expansion Act of 1962. 19 U.S.C. § 1862; see 53 Fed. Reg. 6857 (March 31, 1988). Because that investigation is not yet completed and because there are important differences between injection molding machines and bimetallic cylinders, we decline to speculate on the effect of the national security investigation on this antidumping investigation.

VIEWS OF COMMISSIONER ECKES, COMMISSIONER LODWICK,
AND COMMISSIONER ROHR

We determine that an industry in the United States is not materially injured or threatened with material injury by reason of imports of bimetallic cylinders from Japan sold at less than fair value (LTFV).[1/] We base our determination primarily on the preponderance of positive indicators of the domestic industry's performance and on changes in the major factors that led to our preliminary affirmative determination of a reasonable indication of threat of material injury.

The like product and domestic industry

In order to assess material injury, the Commission must determine the relevant domestic industry. The term "industry" is defined 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." [2/] "Like product" is 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

---

1/ Since this is an established domestic industry, "material retardation" was not raised as an issue in this investigation and will not be discussed further.

2/ 19 U.S.C. § 1677(4)(A).

investigation. . . ." [3/] Factors the Commission has examined in deciding what domestically produced products are products like the imports under investigation have included (1) physical characteristics and uses, (2) interchangeability, (3) channels of distribution, (4) common manufacturing facilities and production employees, and (5) customer or producer perceptions. [4/]

The articles subject to investigation are certain bimetallic cylinders used as a part of machines for extrusion, injection molding, and blow molding. [5/] In such a machine, materials such as plastics are heated and pushed through the cylinder by a screw and either extruded in a continuous line or injected into a mold. The materials are more or less abrasive and corrosive, necessitating a hardened cylinder.

In our preliminary determination, we found that there was one like product, consisting of bimetallic cylinders, and one domestic industry, consisting of the domestic producers of such cylinders. The definition of the like product included cylinders (also called barrels) for use in injection molding machines, extrusion machines, and blow molding machines, as well as sleeves for reconditioning worn bimetallic cylinders, but did not include nitrided cylinders. [6/] No evidence has arisen in this final investigation which warrants a change in these aspects of our like product determination.

3/ 19 U.S.C. § 1677(10).

4/ E.g., Certain All-Terrain Vehicles from Japan, Inv. No. 731-TA-388 (Preliminary), USITC Pub. 2071 (March 1988); Certain Forged Steel Crankshafts from the Federal Republic of Germany and the United Kingdom, Invs. Nos. 731-TA-351 and 353 (Final), USITC Pub. 2014 (Sept. 1987).

5/ 53 Fed. Reg. 10552 (April 1, 1988).

6/ A nitrided cylinder is a steel cylinder hardened by a nitriding process. That process results in considerably less resistance to corrosion or abrasion than the bimetallic process.

This is not true of the finding made in the preliminary determination to exclude vented conversions and downsized cylinders from the like product definition. 7/ In view of new information gathered in this final investigation and the fact that all parties now agree, we believe that vented conversions and downsized cylinders should be considered "like" bimetallic cylinders. 8/

Downsized cylinders and bimetallic cylinders are produced by the same companies using the same bimetallic processes, the same equipment and workers, for the same general purposes and the same customer base as standard bimetallic cylinders. 9/ The interior dimension of a downsized cylinder is less than that of the cylinder it replaces, but in view of the wide range of sizes and specifications for bimetallic cylinders, which were found in the preliminary investigation to be one like product, that distinction is not as significant as it might be in the case of a fungible product. In comparable cases, the Commission has not fragmented the like product definition on the basis of differences in physical dimensions alone, and we decline to do so

---

7/ A vented cylinder has the advantage of allowing harmful volatiles to escape during processing. A downsized cylinder replaces a cylinder with a larger internal diameter which was run, inefficiently, at less than full capacity. Certain Bimetallic Cylinders from Japan, Inv. No. 731-TA-383 (Preliminary), USITC Pub. 2017 (Sept. 1987) at A-3.

8/ One notable difference between such new information and the data gathered in the preliminary investigation is the understanding that all of the downsized cylinders and many of the vented conversions sold by respondent Spirex are manufactured entirely by bimetallic cylinder producers. Report to the Commission (Report) at A-8. In the preliminary investigation, it appeared that Spirex performed all venting and downsizing itself, using sophisticated technology which set vented conversions and downsized cylinders apart from standard bimetallic cylinders.

9/ Tr. at 96, 101.

here. 10/

As to venting, the issue is analogous to that of comparing an article at one stage of a multi-stage production process and an article at a later stage in that process. The Commission has in the past considered that issue in light of such factors as the degree to which the conversion imparts essential characteristics to the final product, the necessity for the conversion, the existence of separate markets for the two products, the value of the different production stages, and the degree of interchangeability of the articles. 11/

A vented cylinder is basically a standard bimetallic cylinder with a hole cut into it. The process involved is somewhat more sophisticated than the bare description, but all of the parties agree that the conversion process does not radically modify the basic bimetallic cylinder. In many applications, venting is not necessary, and an unvented cylinder is used. Vented and standard bimetallic cylinders are produced mostly by the same companies and workers using the same equipment, serve the same basic purposes, and are sold to the same customer base.

We note that vented conversions and downsized cylinders are not interchangeable with standard bimetallic cylinders, but the wide range of sizes and specifications in bimetallic cylinders precludes interchangeability even among standard cylinders. 12/ Downsized and vented cylinders can be

---

10/ See, e.g., Color Picture Tubes from Canada, Japan, the Republic of Korea, and Singapore, Invs. Nos. 731-TA-367-370 (Final), USITC Pub. 2046 (Dec. 1987) (different sizes of color picture tube not separate like products, despite lack of interchangeability). See also S. Rep. No. 249, 96th Cong. 1st Sess. 90-91 (1979).

11/ See Certain Forged Steel Crankshafts from the Federal Republic of Germany and the United Kingdom, supra n. 4.

12/ Report at A-30-33. Lack of interchangeability is not necessarily decisive: see Certain Forged Steel Crankshafts from the Federal Republic of Germany and the United Kingdom, supra n. 4.

more expensive than standard cylinders. This consideration is not as significant in the bimetallic cylinder market as it might be in other situations, however, because that market exhibits wide fluctuations in price even for the same bimetallic cylinder, depending on the transaction and its circumstances. 13/

Based upon the foregoing considerations and in light of the record in this investigation, we define the like product to be bimetallic cylinders, including sleeves, as well as vented conversions and downsized cylinders, and define the industry as the domestic producers of such cylinders.

Condition of the domestic industry

In assessing the condition of the domestic industry, the Commission considers, among other factors, domestic consumption, production, capacity, capacity utilization, shipments, inventories, employment and profitability. 14/ No single factor is determinative, and in each investigation the Commission must consider the particular nature of the relevant industry in making its determination.

During the period of investigation, the U.S. bimetallic cylinder industry experienced growth, increases in many indicators of performance, and continuing profitability. 15/ Although operating income dipped somewhat,

---

13/ Report at A-30-33. Venting adds less to the price of a cylinder than does downsizing. Average unit value for vented cylinders was lower than average unit value for all bimetallic cylinders in 1987. Report at A-17.

14/ 19 U.S.C. § 1677(7)(C)(iii).

15/ One domestic producer, Wexco Corp., which petitioners claimed was particularly impacted by unfair imports, indicated rather that its business prospects were in fact improving. Prehearing brief of respondents at Exhibit 1. Xaloy's president stated: "I believe the industry believes that the long term projections for the industry are very good and that we continue to invest, to expand to meet the prospects for the future." Tr. at 34.

this was a time of expansion and its attendant costs. 16/

Apparent consumption of bimetallic cylinders rose from $27.0 million in 1985 to $29.8 million in 1987. The domestically produced share of U.S. apparent consumption remained over 87 percent throughout this period. 17/

Domestic production of bimetallic cylinders rose steadily from 7,921 units in 1985 to 9,485 units in 1987 or by 20 percent. 18/ Capacity to produce bimetallic cylinders expanded almost 45 percent during the period from 9,098 units in 1985 to 13,152 units in 1987. 19/ The large increase in capacity both in 1986 and 1987 would indicate that the long-term projections for the industry are good and that the industry is optimistic about its future prospects. 20/ In particular, one firm, Wisconsin Bimetallic, entered the market during the period of investigation. As the capacity expansion outstripped the rise in production, capacity utilization declined from 1985 to 1987. 21/

U.S. producers' domestic shipments were 7,277 units valued at $25.3 million in 1985, rising to 8,441 units valued at $27.5 million in 1986, and then declining to 8,404 units valued at $26.2 million in 1987, a level still above that of 1985. 22/ U.S. producers' end-of-period inventories

---

16/ See American Spring Wire Corp. v. United States, 8 CIT 20, 590 F. Supp. 1273 (1984), aff'd sub nom., Armco, Inc. v. United States, 760 F.2d 249 (Fed. Cir. 1985) (expansion leads to increases in cost which can impact profitability).

17/ Report at A-9. We note that although the domestic share of U.S. apparent consumption declined from 1985 to 1987, U.S. export sales more than doubled during this period. Id. at A-16.

18/ Report at A-13, Table 6.

19/ Id.

20/ See Tr. at 34.

21/ Report at A-13, Table 6.

22/ Id. at A-15, Table 7.

increased as a share of shipments from 4.5 percent in 1985 to 7.0 percent in 1987. 23/

The number of employees producing bimetallic cylinders decreased from 391 in 1985 to 360 in 1986 but rose to 372 in 1987. In contrast, the number of hours worked by these employees increased steadily from 575,000 in 1985 to 647,000 in 1987. 24/

The Commission gathered financial data on bimetallic cylinder operations from four domestic producers that produce only bimetallic cylinders and accounted for all domestically produced bimetallic cylinder shipments in 1987. 25/ Aggregate net sales increased from $26.5 million in 1985 to $28.9 million in 1987. 26/ During this period, as industry capacity increased, the cost of goods sold rose from $18.3 million in 1985 to $22.2 million in 1987, and rose as a share of net sales from 69.0 percent in 1985 to 76.8 percent in 1987. General, selling, and administrative costs also rose, from $3.3 million in 1985 to $4.4 million in 1987. Operating income declined from 1985 to 1987, but the industry as a whole remained profitable with an operating margin of 8.1 percent in 1987. 27/

In sum, the domestic industry is not experiencing material injury. Rather, the record shows rising trends for most indicators of performance and favorable prospects for long-term growth.

No material injury by reason of LTFV imports

We have determined that the domestic bimetallic cylinder industry is not experiencing material injury. But even if we had found material injury, we would have found that such material injury was not by reason of the LTFV

23/ Id. at A-18.
24/ Id. at A-18, Table 13.
25/ Id. at A-7, Table 1.
26/ Id. at A-19.
27/ Id. at A-20, Table 14.

imports. Although domestic profits declined during the period of investigation, this was caused by the expansion of the domestic industry and the resulting increase in costs. The record shows that although imports increased during the period of investigation, the lack of significant amounts of underselling and lost sales underscores the absence of a causal link between increasing imports and material injury the domestic industry might hypothetically have experienced. 28/

When making a determination as to whether material injury is caused by unfairly traded imports, the statute provides that

> [t]he Commission shall consider, among other factors:
> (i) the volume of imports of the merchandise which is the subject of the investigation,
> (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 the like product. 29/

The value of imports of bimetallic cylinders from Japan rose slowly from 1985 to 1986, capturing only a very small U.S. market share. Imports then increased more substantially in 1987, although the resulting market share was still relatively small. 30/ There is evidence that imports from Japan have virtually stopped since the end of 1987. 31/

28/ See SCM Corp. v. United States, 4 CIT 7, 544 F. Supp. 194 (1982) (import penetration alone, even if significant, does not require affirmative determination).

29/ 19 U.S.C. § 1677(7)(B).

30/ At the same time, imports from countries not subject to investigation were significant and captured a larger market share than imports from the largest Japanese producer. Tr. at 52. In this investigation, consideration of data on value rather than volumes is preferable because of the large variation in sizes and types of cylinders.

31/ Tr. at 86.

The Commission's effort to obtain comparable price data was complicated by the differing specifications of bimetallic cylinders. 32/ The direct price comparisons available showed more instances of overselling than of underselling. 33/ The evidence of record does not show that LTFV imports have undercut, depressed, or suppressed domestic prices.

Petitioners made several lost sales allegations. The largest lost sale, the move of Spirex from Wexco to Hitachi, resulted, by Wexco's own statement, in no adverse impact on Wexco's business. 34/ In spite of Commission staff efforts, none of the other allegations of lost sales to imports from Japan could be fully verified. 35/

Accordingly, we determine that even assuming arguendo that the domestic industry is experiencing material injury, such material injury would not be by reason of Japanese imports of bimetallic cylinders sold at LTFV.

No threat of material injury by reason of LTFV imports

In the preliminary determination, we found that there was a reasonable indication that the domestic industry was threatened with material injury. We do not make an affirmative threat finding in this final investigation, because

---

32/ Other factors may affect the comparability of transaction prices, such as delivery times required by purchasers, urgency of need, and "imperfect market information available to end users." Report at A-30-32.

33/ Report at A-32-34. It has been argued that the Commission should not compare domestic producers' prices with prices charged by Spirex, since Spirex is a distributor, not an importer. Because of the Hitachi-Spirex exclusive distribution agreement in 1987, however, it is appropriate to consider prices charged by Spirex during the term of the agreement as at the first level of competition. Moreover, it should be noted that the Commission also compared domestic producers' prices and importers' prices and found considerable overselling by imports in such comparisons.

34/ Prehearing brief of respondents at Exhibit 1. There is no indication in the record of an adverse impact on other domestic producers.

35/ Report at A-34-35.

the record no longer supports such a finding.

In examining whether the domestic industry is threatened with material injury by reason of LTFV imports, we are directed to consider, among other factors, any existing unused foreign capacity, increases in imports to the United States, any rapid increase in U.S. market penetration, the likelihood that such penetration will increase to an injurious level, the probability that imports will enter the United States at prices that will have a depressing or suppressing effect on domestic prices, any substantial increase in inventories in the United States, and the potential for product-shifting. 36/ In addition, the Commission must base a finding of threat of material injury on "evidence that the threat of material injury is real and the actual injury is imminent," and not on "mere conjecture." 37/

Available data show that Hitachi, the largest bimetallic cylinder producer in Japan, experienced a steady rise in its capacity utilization during the period of investigation, and currently has little unused capacity available to increase its market penetration significantly in the immediate future. There is no evidence that Hitachi plans to increase its capacity, which has remained stable throughout the period of investigation. 38/ 39/

Since the end of 1987, the subject imports appear to have dropped

---

36/ 19 U.S.C. § 1677(7)(F)(i); see also Yuasa-General Battery Corp. v. United States, 11 CIT __, 661 F. Supp. 1214 (1987).

37/ 19 U.S.C. § 1677(7)(F)(ii).

38/ Report at A-12; Tr. at 55.

39/ We note that Hitachi's home-market shipments increased from 1985 through 1987, and that Hitachi holds no significant inventories in Japan. See Report at A-10-12.

considerably in volume. [40/] This is due at least in large part to the recent termination of an exclusive distribution arrangement between Hitachi Metals America and the domestic distributor Spirex Corp. [41/] The agreement was apparently terminated primarily because the appreciation of the yen made importation unattractive. [42/]

The timing of the agreement's termination suggests another reason for terminating the agreement may have been the institution of the current investigation, which suggests the possibility that a negative Commission determination might result in the reestablishment of the Hitachi-Spirex agreement. Speculation on this point does not, however, in this investigation, rise to the level of "evidence that the threat of material injury is real and the actual injury is imminent," as is required by the statute. Moreover, the president of Spirex has testified under oath that the agreement will not be renewed. [43/] Considering the small number of firms in this industry, it would seem that a company such as Spirex would find it difficult to switch suppliers frequently.

Without the relationship with Spirex, Hitachi does not appear to have the ability to affect the U.S. market significantly in the near future. The imperfect market knowledge of customers could make it difficult for a relative newcomer like Hitachi to develop a larger customer base. The importance of quick delivery to minimize the downtime of expensive extrusion or injection molding machinery might also limit Hitachi's market share, considering the longer delivery time for imported bimetallic cylinders. [44/]

40/ Tr. at 86.
41/ Tr. at 66.
42/ Tr. at 66.
43/ Tr. at 66.
44/ Tr. at 75.

Importers' inventories rose from 1985 to 1987 in units, but declined as a share of imports from 1986 to 1987. The record suggests that, due to the termination of the Hitachi-Spirex agreement, inventories have declined in 1988. 45/ Considering the largely customized nature of bimetallic cylinders, the existing inventory may be hard to sell.

The record shows considerable overselling by the subject imports, and no evidence that the imports will have a depressive or suppressive effect on domestic prices. 46/ Since there are no products similar to bimetallic cylinders under investigation or subject to final orders, there is no potential for product shifting. 47/

We determine that the domestic bimetallic cylinder industry is not threatened with material injury by reason of LTFV imports.

45/ Tr. at 69.

46/ Report at A-29-33.

47/ We note that the Department of Commerce has initiated a national security investigation concerning imports of certain injection molding machines under section 232 of the Trade Expansion Act of 1962. 19 U.S.C. § 1862; see 53 Fed. Reg. 6857 (March 31, 1988). Because that investigation is not yet completed and because there are important differences between injection molding machines and bimetallic cylinders, we decline to speculate on the effect of the national security investigation on this antidumping investigation.

ADDITIONAL VIEWS OF CHAIRMAN SUSAN LIEBELER

Certain Bimetallic Cylinders from Japan
731-TA-383 (Final)
May 13, 1988

I join the Commission in its unanimous determination that the domestic industry producing bimetallic cylinders is not materially injured or threatened with material injury by reason of LTFV sales of bimetallic cylinders from Japan. I provide these additional views on causation of material injury by reason of LTFV imports of bimetallic cylinders from Japan.

Having defined the relevant like product and domestic industry, the Commission must determine whether the domestic industry has been materially injured by reason of the subject imports. The statute directs the Commission to consider sixteen specific factors, in addition to other relevant economic factors, in determining whether the domestic industry has been injured by reason of LTFV imports.1/ These factors indicate Congress' intent that the Commission evaluate the effect of LTFV imports on the economic vitality of the domestic industry and also suggest various factual inquiries that facilitate this inquiry.

The statute does not, however, specify how the factors are to be organized into a coherent analysis of causation. Rather, this task is left to the Commission. The statute suggests that the Commission's inquiry must focus on three areas. First, the Commission must look at prices and volumes of the subject imports in the U.S. market. Second, the Commission must evaluate the way in which the subject imports affected domestic prices and domestic production of the like product. Finally, the Commission must

---

1/19 U.S.C.§1677(7)(C)(ii)(iii).

examine the way in which LTFV imports have affected the domestic industry.

In each of these inquiries concerning the effects of LTFV imports, the Commission must compare the conditions we observe with the conditions which would have obtained in the absence of LTFV imports. Digital Readout Systems and Subassemblies Thereof from Japan, Inv. No. 731-TA-390 (Preliminary) (May 12, 1988) (Views of Chairman Liebeler, Vice Chairman Brunsdale and Commissioner Cass) sets forth an analytical structure for assessing the connection between LTFV imports and the condition of the domestic industry and explains why a reference to trends alone generally does not justify a conclusion that LTFV imports have or have not caused or threatened material injury to a domestic industry. In applying the analytical structure set forth in Digital Readout Systems to the facts of this case, I determine that LTFV imports of bimetallic cylinders from Japan have not caused material injury to the domestic industry. In his Additional Views in this case, Commissioner Cass sets forth a more detailed application of this analytical framework to the facts of this case. I find his analysis of this case substantially correlates with my own and, therefore I concur with his discussion of causation.

ADDITIONAL VIEWS OF VICE CHAIRMAN ANNE E. BRUNSDALE

Certain Bimetallic Cylinders from Japan
Inv. No. 731-TA-383 (Final)

May 13, 1988

I concur with the conclusions of Chairman Liebeler and Commissioner Cass regarding like product,1/ the domestic industry, and condition of the domestic industry. I agree that the domestic industry in this case is relatively healthy. I also concur with the determination that domestic producers are not materially injured or threatened with material injury by reason of unfair imports. However, I reach my conclusion on causation through an analysis that differs from the approaches followed by my colleagues. These additional views explain my approach to causation in this case.

I find that the trend analysis traditionally used by the Commission to analyze causation does not allow me to separate the effect of dumped imports from the many other factors that affect the domestic industry. I therefore rely on elementary tools of economics to help resolve causation issues by looking at the domestic market for the product in question, the ability of

---

1/ I would like to acknowledge the thorough work done by staff on this issue in the final investigation. There was some question in my mind as to whether nitrided cylinders were the same like product as bimetallic cylinders. Thanks to their research, I was able to determine that these two products were indeed not "like" products for purposes of this investigation.

domestic producers to respond to changes in the market, and the effect of dumped imports in that market.2/

The dumping margin in this case is fairly low. As calculated by the Department of Commerce, the margin for all Japanese firms is 17.42 percent.3/ As we recently observed in Digital Readout Systems from Japan,4/ the margins computed by the Department of Commerce give us an indication of the maximum difference between the actual prices of the subject imports and the prices that would have been charged in the absence of dumping during the period of the investigation.5/ In the absence of evidence which persuades me to the contrary, I generally assume that the dumping margin directly translates into a price advantage for dumped imports relative to what their prices would have been if they had been fairly traded.

2/ For a discussion of the usefulness of economic analysis in Commission investigations, see Cold-Rolled Carbon Steel Plates and Sheets from Argentina, Inv. No. 731-TA-175 (Final) (Second Remand), USITC Pub. not yet available (Views of Vice Chairman Anne E. Brunsdale) (May 1988); see also Color Picture Tubes from Canada, Japan, the Republic of Korea, and Singapore, 731-TA-367-370 (Final), USITC Pub. 2046, at 23-32 (Dec. 1987) [hereinafter cited as Color Picture Tubes]. The Court of International Trade has also discussed, with approval, the use of economic analysis in Commission opinions. See Copperweld Corp. v. United States, No. 88-23, slip op. at 45-48 (Ct. Int'l Trade Feb. 24, 1988).
3/ See Final Determination of Sales at Less Than Fair Value; Bimetallic Cylinders from Japan, 53 Fed. reg. 10,552 (ITA April 1, 1988). Respondents did not provide the Department of Commerce with complete information in this case, so the Department relied on the best available information. As I have stated in earlier opinions, while the margin calculations from Commerce are sometimes imperfect, they are the best available information. I use them with that caveat in mind. See Certain Welded Carbon Steel Pipes and Tubes from Taiwan, Inv. No. 731-TA-349 (Final), USITC Pub. 1994, at 82 n.66 (July 1987).
4/ Inv. No. 731-TA-390 (Preliminary), USITC Pub. 2081 (May 1988).
5/ Id. at 24.

With a fairly low dumping margin, dumped imports will not have a significant effect on U.S. prices and sales volumes unless there is a high degree of price-motivated substitutability between the imported and domestic products. A high degree of substitutability is necessary or a potential price advantage enjoyed by reason of dumping will not persuade many customers to buy imports in lieu of the domestic alternative.

The closer the domestic and imported products are as substitutes, the greater the impact lower-priced imports could have on domestic producers. The Japanese and U.S. products in this case are very similar in terms of physical characteristics. Consumers report that the Japanese and domestic products are both manufactured to high quality standards and are of comparable quality.6/ A major difference between the Japanese and U.S. products relates to service -- that is, the lead time required for Japanese products is significantly longer than that for domestic bimetallic cylinders. In some instances, Japanese cylinders had a lead time of ten to twelve weeks, while domestic cylinders normally required lead times of six to eight weeks, and could, in some cases, be delivered in two weeks or less.7/ For consumers of bimetallic cylinders, the difference can be very significant, especially in the replacement market.8/ Based on

---

6/ Memorandum from Office of Economics, Memorandum EC-L-136 at 8 (May 3, 1988).
7/ See Report at A-29.
8/ As stated in the Staff Report, delivery time is crucial for users of bimetallic cylinders. See Report at A-29. The users need to get replacement cylinders quickly to avoid downtime on

(continued...)

such evidence, the Office of Economics estimates that one measure of substitutability in this case, the elasticity of substitution, probably falls in the range of 2-3.9/

Addressing the issue of substitutability, Respondents in this case agree that the degree of substitutability is moderate.10/ Petitioners, in contrast, argued that the Commission staff placed too much emphasis on delivery time in this case.11/ Given the information available in the record, I am not persuaded by Petitioner's argument.12/ After considering the comments from parties, I agree with the Office of Economics that the domestic and imported products are only moderately substitutable, probably falling within the numeric range suggested by the Office of Economics.

Consumers thus do not view domestic products as very close substitutes. Given the moderate degree of substitutability, the price advantage, if any, gained as a result of dumping would not have persuaded many customers to buy the imported product in lieu of the domestic alternative.

This conclusion is buttressed by the low market share achieved by dumped imports during the period of this

---

8/(...continued)
the machines which require them. Id. The domestic firms can offer considerably better delivery terms, which makes their products somewhat distinct in the eyes of purchasers.
9/ The Staff characterizes this range as "fairly high." I would characterize an elasticity estimate of this magnitude (2-3) as "moderate," not fairly elastic.
10/ See Respondent's Posthearing Brief, Elasticity Appendix, at 4.
11/ Petitioner's Post-Hearing Brief at 9.
12/ See supra notes 6 through 9 and accompanying text.

investigation. Although the number and volume of imported bimetallic cylinders increased over the period of investigation, the market share of these dumped imports remained insignificant.13/ In 1987, the year of greatest penetration for Japanese imports, U.S. domestic shipments totalled 8,404 units (compared to [***] for the Japanese) valued at $26.2 million (compared to [**********] for the Japanese).14/ I conclude that these low market shares, when combined with the only moderate substitutability between the imported and domestic products, indicate that unfairly traded imports did not have a material impact on sales of the domestic product.

I am equally persuaded that dumped imports had no material adverse impact on domestic prices. Because the degree of substitutability is not high, any effect on domestic prices resulting from lower prices of dumped imports would be diluted in the marketplace. Moreover, the elasticity of domestic supply appears sufficiently high in this case that domestic prices would not have been materially higher even if domestic producers had

---

13/ The number of dumped bimetallic cylinders in the U.S. market rose from [**] in 1985 to [**] in 1986, and then increased again to [***] in 1987. See Report at A-26 (Table 16). In value terms, the amount of dumped imports was [********] in 1985, [********] in 1986, and [**********] in 1987. Id. The small number and value of Japanese imports is confirmed by market share figures. The market penetration of dumped imports rose from [***] percent in 1985 to [***] percent in 1986 and then rose again to [*] percent in 1987. Id. at A-27 (Table 17). While the 1987 increase in Japanese market share was substantial, that share is still very small.

14/ Id. at A-15 (Table 7), A-26 (Table 16).

garnered every sale that went instead to firms selling dumped imports.

Capacity utilization has fallen over the period of investigation and currently stands at 72.1 percent.15/ The domestic industry ships a significant amount of its production overseas, amounting to approximately [*] percent of its production in 1987.16/ In addition, it appears that all the necessary raw materials for the production of bimetallic cylinders were readily available throughout the period of investigation.17/ All these factors indicate that domestic supply is highly elastic.18/

Petitioners did not address the elasticity of domestic supply.19/ Respondents maintained that domestic supply is only moderately elastic.20/ In support of that position, they argued that the machinery used to produce bimetallic cylinders is dedicated to that use, that signs of supply shortages indicate a

---

15/ See Report at A-13 (Table 6). The drop in the capacity utilization rate can be attributed in large part to an increase in domestic capacity. Id. Between 1985 and 1987, capacity increased almost 50 percent. Id.
16/ See Report at A-15 (Table 8). The value of export shipments increased over the period of investigation, rising from [********] in 1985 to [**********] in 1987. Id.
17/ Memorandum EC-L-136 at 5-6.
18/ One factor suggests that the responsiveness of domestic suppliers to changes in price is somewhat lower. The machinery used to produce bimetallic cylinders cannot be readily converted to the production of other products. I am convinced, however, that on balance, the information gathered by the staff indicates that domestic supply is very responsive to changes in price.
19/ See Petitioner's Post-Hearing Brief at 8-9.
20/ See Respondent's Post-Hearing Brief, Elasticity Appendix, at 2.

fairly high capacity utilization,21/ and that some of the materials used to produce bimetallic cylinders are in short supply.22/ After careful consideration, I am still persuaded by the information and conclusions of Commission staff on this point -- the elasticity of domestic supply is high, probably greater than 10.23/

Reviewing this evidence, I conclude that in this market, where the quantity supplied by domestic producers is very responsive to changes in price, the price supression caused by the very low volume of only moderately substitutable dumped imports was extremely small.24/ I conclude that dumped imports have not had a material effect on domestic prices.

21/ Id. at 2-3.
22/ Id. at 3.
23/ See Memorandum EC-L-136 at 6.
24/ I have also considered the elasticity of domestic demand, but find that it plays little role in this investigation. Bimetallic cylinders account for only a very small portion of the total cost of the machine in which it is fitted. See Memorandum EC-L-136 at 9. Because of the small cost of a bimetallic cylinder in relation to the cost of the machine, demand for bimetallic cylinders should be very inelastic. Staff estimates that the elasticity of demand for bimetallic cylinders ranges from -0.02 to -0.1. Id. at 9-10. Respondents and Petitioners agreed that demand for bimetallic cylinders is fairly unresponsive to changes in price in this case. See Petitioner's Post-Hearing Brief at 8; Respondent's Post-Hearing Brief, Elasticity Appendix, at 5. I conclude that domestic demand is very inelastic, falling within the range estimated by the Office of Economics. Because domestic demand is very inelastic, increases in the volume of lower-priced imports did not result in material increases in the total volume of cylinders consumed domestically. Had I concluded that demand was highly responsive to changes in price, I would have had to consider whether lower aggregate market prices resulted in significantly greater unit sales by domestic producers.

In summary, the facts show that we are confronted in this investigation with only a moderate degree of product substitutability, a moderate dumping margin, highly elastic domestic supply, and a low market penetration of dumped imports. I conclude on the basis of my analysis discussed above, that there is no material injury caused by dumped imports in this investigation.

ADDITIONAL VIEWS OF COMMISSIONER RONALD A. CASS

Certain Bimetallic Cylinders from Japan
Investigation No. 731-TA-383 (Final)

I concur with the Commission's negative determination in this investigation, finding that the domestic industry is not suffering, or threatened with, material injury by reason of LTFV imports from Japan. My views with respect to definition of the like product and the domestic industry, description of the industry, and analysis of the threat of material injury are contained in the Views of Chairman Liebeler, Vice Chairman Brunsdale, and Commissioner Cass. My analysis of the absence of material injury by reason of LTFV imports, however, follows a different approach than other Commissioners have taken. For that reason, I offer these Additional Views.

I. Analysis of Injury By Reason of LTFV Imports

In other investigations, I have indicated my disagreement with the analytic framework that generally is used by the Commission to assess the effects of the LTFV imports on

domestic industries.1/ There are two principal points of disagreement.

First, I do not think it appropriate separately to ask "is the domestic industry injured?" and then "did the imports cause (or contribute to) the injury?" I believe that a unified analysis of the relationship between LTFV imports and effects in the domestic industry is more faithful to Title VII of the Tariff Act than is a bifurcated approach.2/

Second, I think it incumbent on Commissioners to explain clearly how they have assessed the impact of LTFV imports on the domestic industry, and generally I do not believe that the Commission adequately has done this. I believe, however, that Title VII of the Tariff Act suggests fairly plainly both the nature of the Commission's general inquiry and the sequence of more particular inquiries that the Commission should undertake.

1/ See 3.5" Microdisks from Japan, Inv. 731-TA-389 (Preliminary) USITC Pub. 2076 (April 1988) (Additional Views of Commissioner Cass). Certain All-Terrain Vehicles from Japan, Inv. No. 731-TA-388 (Preliminary) USITC Pub. 2071 (March 1988) (Additional Views of Commissioner Cass); Certain Stainless Steel Butt-Weld Pipe Fittings from Japan, Inv. No. 731-TA-376 (Final) USITC Pub. 2067 (March 1988) (Additional Views of Commissioner Cass).

2/ The distinction between the two approaches and the legal basis for preferring the unitary approach are explained at greater length in 3.5" Microdisks and Media Therefor from Japan, Inv. No. 731-TA-389 (Preliminary) USITC Pub. 2076 (April 1988) (Additional Views of Commissioner Cass).

Statutory Framework

Title VII of the Tariff Act directs the Commission to consider sixteen enumerated factors in determining whether a domestic industry is materially injured by reason of imports at less than fair value (LTFV).3/ The factors specified in the statute indicate Congress' intent for the Commission to assess the effect of LTFV imports at reducing returns to (actual and potential) employees and investors in the domestic industry and also suggest various factual inquiries that should facilitate that assessment.

The statute does not specify the exact manner in which these factors are to be organized into a coherent analysis of the factual connection between LTFV imports and returns to employees and investors in the domestic industry. Rather, this task is left to the Commission. It may well be that a single analytic structure may not be appropriate to all cases. Nonetheless, in general the factors given by the statute and

---

3/ 19 U.S.C. §1677(7)(C)(ii),(iii).

the order in which they are listed in the statute4/ suggest a three-part inquiry into the causation of material injury.5/

First, the Commission must examine the prices and volumes of the subject imports. In particular, the Commission must

---

4/ Title VII first describes the determination that the Department of Commerce must make regarding the existence of the unfair trade practice. Then Title VII describes the considerations that should guide the Commission's determination respecting the existence of material injury from unfairly traded imports, directing the Commission to "consider, among other factors --

(i) the volume of imports of the merchandise which is the subject of the investigation,

(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." 19 U.S.C. § 1677(B).

5/ The aggregation of the sixteen statutory factors into three types of inquiry does not suggest that only three of the factors have real importance. The three inquiries comprehend all of the statutory factors. Aggregation of the factors into three groups is not intended to suggest that some factors are especially important and others unimportant. The separation of the factors into groups instead is simply a means of organizing the factors to facilitate analysis. At the same time, it must be confessed that the Commission has not always been able within the statutory time limits on its investigations to gather information on all of the statutorily listed factors and, therefore, cannot always rely on the full panoply of considerations dictated by statute. For example, the Commission's reports rarely contain significant information on investment in the domestic industry, return on investment, or ability to raise capital. By showing the relationships among the statutory factors, the analytical structure followed here allows us to assess the effects of imports with greater confidence even when this sort of information pertinent to related factors is before the Commission.

assess how sales at LTFV changed the prices of subject imports and the volume of those imports' sales in the U.S.

Second, the Commission must examine domestic prices and domestic sales of the like product. The Commission must especially evaluate the effect of LTFV imports on prices and sales of the like product.

Third, the Commission must explore the manner in which the changes in the demand for the like product affect employment and investment in the domestic industry and must assess the significance of such changes.6/

In each of these inquiries respecting the effects of LTFV imports, the Commission must compare the data we observe with an estimate of what the data would have been in the absence of imports traded at less than fair value. The Tariff Act does not instruct the Commission to assess the economic health of the complaining industry.7/ Instead, it asks what effect LTFV

6/ Whether the injury to the domestic industry caused by the LTFV imports rises to the level of materiality requisite under the Title VII can be addressed as a fourth question. Insofar as that is done, however, the fourth inquiry becomes a process of applying the statutory test for materiality to the information developed in the prior three inquiries; that is, this last inquiry would reach a legal conclusion but would not extend the factual analysis of the other inquiries.

7/ S. Rep. No. 1835, 90th Cong., 2d Sess. pt. 2, at 11 (1968), reprinted in 1968 U.S. Code Cong. & Admin. News 4548-49. While the Act does not ask us to do this, analysis of the domestic industry's health also is not prohibited. Congress did, however, indicate that it did not intend to accord the state of the industry, standing alone, decisive weight. See

(continued...)

imports had (or, if threat of injury is alleged, imminently are expected to have) on that industry.

Addressing that question necessitates admitting the absence of clear answers. The question can never be answered with absolute confidence because imports never affect the domestic industry in a manner that is clearly observable. Industry fortunes may rise or fall coincidentally with observed changes in imports; but many factors affect the industry simultaneously, and the effects of LTFV imports cannot be seen separately.8/

The Commission does not evaluate the relative magnitudes of the various causes of observed changes in the domestic industry in cases under Title VII.9/ Indeed, the Commission need not even identify all such causes. But the Commission must evaluate the effects of LTFV imports, and that requires assessment of the ways in which the market information

---

7/(...continued)
3.5" Microdisks and Media Therefor from Japan, Inv. No. 731-TA-389 (Preliminary) USITC Pub. 2076 (April 1988) (Additional Views of Commissioner Cass).

8/ Digital Readout Systems and Subassemblies thereof from Japan, Inv. No. 731-TA-390 (Preliminary) USITC Pub. 2081 (May 1988) (Views of Chairman Susan Liebeler, Vice Chairman Anne E. Brunsdale, and Commissioner Ronald A. Cass)

9/ Cold-Rolled Carbon Steel Plates and Sheets from Argentina, Inv. No. 731-TA-175 (Final) (Second Remand) USITC Pub. _ (May 1988) (Views of Vice Chairman Anne E. Brunsdale)

actually observed differs from what would have been observed in the absence of the LTFV imports.

LTFV Imports

The first inquiry focuses on the imports subject to investigation. The inquiry seeks to identify and compare the actual volumes and prices of the imports subject to investigation and those volumes and prices that would have obtained had the imports been fairly traded.

This inquiry comports with both the language and structure of the Tariff Act. The statutory question committed to the Commission is not "what was the effect of imports from the subject countries?"; instead, the Commission is asked "did the domestic industry suffer material injury (or threat or retardation) 'by reason of foreign merchandise . . . sold in the United States at less than its fair value?'"10/ This question cannot be answered best simply by comparing the observed data with a hypothetical situation in which the foreign producers made no sales in the U.S. market. It requires first attention to the most realistic alternative to sales of imports at LTFV; in the usual case, that alternative will be sales of some volume of imports at fair value (at

---

10/ 19 U.S.C. § 1677(C)(ii),(iii).

prices not less than those charged in the foreign home market).

In this investigation, the record supports an inference that LTFV sales by the exporting firms are the result of efforts to gain additional sales in the U.S. market by charging a lower price here than in Japan where the exporters enjoy greater market power. The foreign firms are private enterprises operating in market economies; the evidence before us suggests that there are impediments to importation of the subject products into Japan; and the evidence does not reveal a pattern of pricing by the exporters that would appear consistent with other explanations for dumping. Thus, it is plausible to assume that the exporters' possess substantially greater market power in Japan and that the existence of LTFV sales reflects exporters' efforts to profit from lowering prices for their products in the U.S. market and increasing sales in that market while maintaining a higher price in Japan.11/

The change in prices and sales volumes of imports that flows from efforts to profit from price differentiation across markets can be estimated from the information available on the

---

11/ Commentators who have studied differential pricing in international markets long have believed that this is the best explanation for most instances of dumping. See, e.g., G. von Haberler, The Theory of International Trade With its Application to Commercial Policy 296-317 (1936).

record. Although precise information on the nature of the demand for the firm's product in each market is necessary to calculate precisely how the exporters' prices differed from what would have been charged if they had been unable to differentiate prices for the two markets, we can approximate those changes from data on the actual volumes of sales in the U.S. and Japan and on the margin of dumping. The margin of dumping, indeed, reflects the difference in the exporters' market power in the two markets.12/ The price that the exporters would have had to charge (to maintain profitability so far as possible) in the absence of U.S. sales at LTFV would reflect the combined market power of the firms in those markets adjusted to account for the relative importance of each market to the firms.

The Department of Commerce has determined that the largest Japanese producer of bimetallic cylinders, Hitachi Metals, Ltd., charged prices 17.42 percent higher in the Japanese market than in its U.S. export market.13/ In addition, Commerce determined that the LTFV margin for all other Japanese producers was also 17.42 percent. The remaining information necessary to approximate the likely

---

12/ See USITC Memorandum EC-L-149 (May 10,1988) from Office of Economics.

13/ Report at A-5.

change in price for bimetallic cylinders sold in the U.S. as a consequence of LTFV sales is the relative volume of home market sales by the LTFV exporters in the combined Japanese and the U.S. markets. The Japanese exporters' sales volume in Japan was between * * * of the combined sales volume in Japan and the United States.14/

Given these margins and the existence of a vastly larger market for the exporters' bimetallic cylinders in Japan, the probable effect of the LTFV sales was to lower the U.S. sales price by a very large part, perhaps by the full amount, of the dumping margin. Even adjusting for the sensitivity of the U.S. demand to the prices of these imports, the decrease in U.S. sales price for imports of bimetallic cylinders from Japan may have been as high as * * * percent. If subject imports' prices declined by approximately that amount, LTFV sales would have accounted for price effects in imports of these products that, if not extremely large, still are significant.

Domestic Prices and Sales

In the instant investigation, the fact that domestic production increased between the beginning and the end of the

---

14/ Report at Table 4.

investigation period15/ does not necessarily demonstrate the absence of adverse effects from the reduction in price of the LTFV imports. Similarly, the decrease in production between 1986 and 1987 for the like product does not necessarily demonstrate the adverse effects from the imports.16/ An analogous argument would qualify the degree to which useful information could be gleaned solely from price trends for bimetallic cylinders. Here, however, such price information is not available: the customizing of each cylinder to end users' individual specifications along with imperfect market information available to the end users did not allow for meaningful price trends to be constructed.17/

Analysis of the relationship between the subject imports and the domestic industry's production and prices based on a framework less dependent on trends and intuitive assessments of their meaning18/ is, thus, especially useful to decision in

---

15/ Report at Table 6.

16/ Id. at A-13.

17/ Report at A-31-A-32. See 3.5" Microdisks and Media Therefor from Japan, Inv. No. 731-TA-789 (Preliminary) USITC Pub. 2076 (April 1988) (Additional Views of Commissioner Cass) for further discussion of the trend analysis of prices and production employed in the traditional approach.

18/ See Digital Readout Systems and Subassemblies Thereof from Japan, Inv. No. 731-TA-390 (Preliminary), USITC Pub. 2081 (May 1988) (Views of Chairman Susan Liebeler, Vice Chairman Anne E. Brunsdale, and Commissioner Ronald A. Cass); Cold-Rolled

(continued...)

this investigation. Such analysis makes fairly clear that, notwithstanding the exporters' pricing of the LTFV imports below the prices they would have charged if they had not made LTFV sales, it is extremely unlikely that these imports have had any depressing effect on prices and sales of domestically produced bimetallic cylinders.

The effect of the LTFV imports on the demand for domestic bimetallic cylinders will depend principally on the magnitude of the change in price of the LTFV imports, the degree of substitutability between the LTFV imports and the domestic like product, the U.S. market share of the dumped cylinders, and the availability of other good substitutes for the domestic product. The larger the magnitude of the first three factors, the larger will be the decline in the demand for domestic cylinders.19/ The greater the availability of other substitutes, the smaller will be the decline in the demand for

---

18/(...continued)
Carbon Steel Plates and Sheets from Argentina, Inv. No. 731-TA-175 (Final) (Second Remand) USITC Pub. _ (May 1988) (Views of Vice Chairman Anne E. Brunsdale); and 3.5" Microdisks and Media Therefor from Japan, Inv. No. 731-TA-389 (Preliminary) USITC Pub. 2076 (April 1988) (Additional Views of Commissioner Cass).

19/ See USITC Memorandum EC-L-149 (May 10, 1988) from Office of Economics.

domestic cylinders consequent to any change in relative prices of the domestic and LTFV cylinders.20/

The record here suggests that there is significant substitutability between imports and domestic cylinders,21/ even though two facts suggest that there are at least some limitations on substitutability. First, there is evidence that the products, although technologically compatible, are not perfect substitutes since delivery time appears to be a major determinant in the decision to purchase a cylinder. Importers of cylinders are at a "distinct disadvantage," taking as much as four weeks longer than domestic producers to make a delivery.22/ Second, in those instances where price comparisons between the U.S. like product and the LTFV import were possible, incidents of overselling were reported (and some incidents of underselling also are suggested by the record).23/ This might indicate differences in consumers' perceptions of the LTFV imports and the like product, although other factors also might explain these differences.

20/ Id. at 12.

21/ The domestic and imported cylinders are technically interchangeable and appear closely substitutable for a number of uses. (See USITC Memorandum EC-L-136 (May 3, 1988) from Office of Economics.)

22/ Id. at 12.

23/ Report at A-31-A-32.

Nonetheless, even if the LTFV imports and the domestic cylinders are not perfect substitutes, the degree of substitution between the two still appears to be very high.24/

Even if one posits a very high degree of substitution between LTFV cylinders and domestic cylinders, however, the LTFV imports would be most unlikely to have affected the price for domestic cylinders by more than a minuscule amount. In this investigation, the subject imports have such a small share of the U.S. market for bimetallic cylinders25/ that a much greater change in price than even the full extent of the dumping margin would be necessary to have had a significantly depressing effect on the demand of the domestic like product. It is likely that the demand for domestic cylinders declined by an amount in the vicinity of only * * * percent as a result of the estimated decrease in the price of the LTFV cylinders. Even if this estimate were doubled or trebled, the price effects in domestic products in this case still would be small.

24/ Supra fn. 21.

25/ Report at Table 17. At its highest level, the market share for the LTFV imports accounted for only * * * percent of shipments-to-apparent consumption in the U.S. market during the period of investigation. Over the period of investigation, the average market share of LTFV imports was * * * percent.

This small estimated price effect is not dispositive of the question before us. In some instances, a small effect on domestic prices will be accompanied by a very substantial effect on domestic sales. In other words, even if domestic prices remain high, perhaps because of substantial differences between the domestic and imported products, a large portion of the domestic industry's sales will be lost to imports. In this investigation, however, that simply cannot be the case. Even if every sale by the subject imports replaced a sale by the domestic industry, only a very small quantity of sales--less than * * * percent over the period of investigation, indeed, closer to * * * percent--could have been lost to the LTFV imports.

Employment and Investment Effects

The third and final inquiry is whether the LTFV imports materially injure the domestic industry (or threaten to do so) by adversely affecting employment and investment in the industry. The evidence presented on this issue by the parties is, at best, conflicting.

Petitioner asserts that the domestic industry's profitability, domestic shipments, and production have fallen during the period of the investigation; that certain layoffs occurred in the industry in 1987 that were attributable to Respondents' LTFV sales; that domestic producers lost certain

specific sales as a result of Respondents' sales at LTFV prices; and that the domestic industry's ability to raise capital has been impaired because of Respondents' practices. Petitioner also argues that the domestic injury is threatened by the LTFV sales in that Respondent Hitachi's exclusive sales agent in the U.S., Spirex Corp., purportedly has maintained or threatened to maintain a large inventory of bimetallic cylinders.

Respondent Hitachi, on the other hand, contends that the recent financial downturn experienced by some firms in the industry is attributable to factors other than LTFV sales by Respondent. In that context, Hitachi points in particular to increased costs for the firms supporting the Petitioner, including costs associated with expansion or financial restructuring, and a decline in demand by one of the domestic industry's major customers, the injection machinery market. Respondent also argues that the domestic industry is quite strong, notwithstanding these problems, and cites as supporting evidence, inter alia, the recent plant expansions completed by certain domestic firms and the leveraged buyout of another such firm. Respondent also argues that its exports could not, in any event, have caused a decline in domestic shipments by domestic producers since the volume of imports from all Japanese producers is small relative to such domestic shipments, and notes that the volume of imports coming from

countries other than Japan increased significantly during the period covered by the investigation. Finally, Respondent asserts that its exports do not materially threaten the domestic industry because it principally sells to the Japanese market, which is expanding, and it has little unused capacity; Respondent also dismisses petitioner's argument concerning an actual or potential inventory overhang, noting that its arrangement with Spirex has been terminated and claiming that the inventory of its former U.S. agent, Spirex, is any event relatively small.

The evidence presented by the parties regarding those issues, and especially respecting the link between LTFV imports and returns to investors and employees in the domestic bimetallic industry, is contradictory. Although neither party's arguments provide a conclusive basis for decision, Respondent's testimony supports the inferences that are suggested by other quantitative evidence in the record contradicting Petitioner's claim that the domestic industry was not materially injured by these imports. Given the imports' evident lack of significant effects on the domestic industry's prices and sales, it is implausible to expect that substantial changes occurred in employment and wages, profits, return on investment, cash flow, ability to raise capital, and level of investment in the domestic industry by reason of the LTFV imports.

IV. Conclusion

For the reasons given above, I determine that the domestic, bimetallic cylinder industry is not suffering material injury by reason of LTFV imports from Japan.

INFORMATION OBTAINED IN THE INVESTIGATION

Introduction

Following a preliminary determination by the U.S. Department of Commerce that imports from Japan of certain bimetallic cylinders, 1/ provided for in item 678.35 of the Tariff Schedules of the United States (TSUS), are being sold in the United States at less than fair value (LTFV), the U.S. International Trade Commission, effective January 15, 1988, instituted investigation No. 731-TA-383 (Final) under section 735(b) of the Tariff Act of 1930 (19 U.S.C. § 1673d(b)), to determine whether an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports of such merchandise.

Notice of the institution of the Commission's investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of February 3, 1988 (53 F.R. 3084). 2/ Commerce made its final LTFV determination on March 28, 1988, and the hearing was held in Washington, DC, on April 7, 1988. 3/ The Commission voted on this investigation on May 5, 1988, and transmitted its determination to the U.S. Department of Commerce on May 13, 1988.

Background

The petition leading to this investigation was filed on August 4, 1987, with the U.S. International Trade Commission and the U.S. Department of Commerce by counsel on behalf of Xaloy, Inc., Pulaski, VA, and Bimex Corp., Wales, WI. The petition alleges that imports from Japan of certain bimetallic cylinders are being sold in the United States at LTFV, and that an industry in the United States is materially injured and threatened with material injury by reason of such imports. Accordingly, effective August 4, 1987, the Commission instituted preliminary antidumping investigation No. 731-TA-383 (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 threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of such imports. On September 18, 1987, the Commission determined 4/ that there is a reasonable indication of such threat of material injury.

1/ Such articles consist of an outer shell of steel and an inner lining of a corrosion- and abrasion-resistant alloy that are metallurgically bonded, and are, if imported, reported under items 678.3570, 678.3575, and 678.3580 of the Tariff Schedules of the United States Annotated (TSUSA).

2/ Copies of the Commission's initiation notice and Commerce's final determination are presented in app. A.

3/ A list of witnesses appearing at the hearing is presented in app. B.

4/ Chairman Liebeler dissenting.

Related Investigations

On January 11, 1988, the Society of the Plastics Industry brought a petition to the Department of Commerce on behalf of the Domestic Injection Molding Machinery Trade Group. The petition claims that imports of plastic injection-molding machines threaten the national security of the United States. On March 3, 1988, Commerce published notice in the Federal Register (53 F.R. 6857) of an investigation under section 232 of the Trade Expansion Act of 1962 to determine the effects on national security of imports of plastic-molding machines.

The petition states that injection-molding machines are the most common type of machinery used to produce defense-related plastics products and that nearly two-thirds of the injection-molding machines purchased in the United States in 1986 were imports. The petition claims that U.S. producers' share of the growing demand for injection-molding machinery is declining and that U.S. manufacturers of injection-molding machines "are severely threatened by competition from abroad, particularly from Japan, and may soon no longer remain a viable portion of the U.S. plastics industry." Commerce will submit its findings and recommendations regarding this investigation to the President no later than January 11, 1989.

The Product

Description and uses

A bimetallic cylinder is a hollow metal cylinder that serves as part of an injection-molding, extrusion, or blow-molding machine to process plastics and, to a lesser extent, materials such as rubber, food, oil, concrete, and fireplace logs. The product consists of an outer shell of steel and an inner lining of an alloy, which are metallurgically bonded. The inner lining is resistant to corrosive and abrasive environments and may be composed of various metals such as nickel, boron, tungsten carbide, silica, and iron.

In machinery for processing plastics, a hopper feeds a plastics filler or resin into the cylinder (commonly referred to in the industry as a barrel). A rotating screw inside the cylinder mixes and moves the material while heaters on the outside of the cylinder melt the material. The melt is conveyed to a mold (for the injection process) or a die (for the extrusion process). Bimetallic cylinders may be used as original equipment or as replacement parts in injection-molding, extrusion, or blow-molding machines.

Manufacturing process

As noted above, a bimetallic cylinder consists of an outer shell and an inner lining that are metallurgically bonded together. The outer shell, or backing steel, is raw alloy steel, usually specified as "grade 4140." The raw steel is cut to specified length and machined to within 0.375 inch of the desired finished outside diameter. U.S. producers normally buy such steel in solid form, although unusually large sizes may be prebored. When boring out a large internal diameter, the by-product can sometimes be saved to make a smaller cylinder, but typically the steel that is removed is sold as scrap.

A charge of premixed and carefully measured alloy is loaded inside the cylinder. The alloy is made of various materials depending on the requirements of the end user/processor with respect to the corrosive and abrasive characteristics of the material being processed. Caps are welded to each end, and the cylinder is slowly rotated inside a heated furnace. The furnace is set at a temperature high enough to melt the alloy but low enough not to melt the backing steel. After reaching the proper temperature, the cylinder is transferred to a centrifugal casting station where it is rotated at a rate sufficient to produce approximately 75 gravitational units of force. This process creates a metallurgical bonding of the alloy to the backing steel.

The bimetallic cylinder is then transferred to an insulated vertical or horizontal cooling pit to cool gradually. Vertical pits are used for the shorter cylinders to insure straightness. Larger bimetallic cylinders are straightened horizontally. After the bimetallic cylinder is cooled, the caps are removed and the cylinder is rough honed to within 0.009 inch to 0.012 inch of the finished diameter. At this point, the cylinders are inspected for slag inclusions, cracks, and hardness. Some that do not meet standards can be repaired but others must be scrapped. If accepted, the cylinder is further machined, straightened, honed, milled, and drilled to the specified bore and outside dimensions required by the engineer's drawings.

Sleeves

In lieu of purchasing new bimetallic cylinders as replacement parts, some end users prefer to have worn bimetallic cylinders reconditioned by having sleeves (also known as liners) custom made for use inside cylinders. All U.S. producers of bimetallic cylinders do some manufacturing of sleeves and repairing of worn cylinders. To produce a sleeve, the old bimetallic cylinder must be rebored to create a larger inside diameter. The producer manufactures a sleeve with a bimetallic anti-corrosive quality using techniques similar to those used in producing a new bimetallic cylinder. The sleeve is then welded or fitted to the old cylinder. The sleeve may be short, for the high pressure area of an injection-molding machine, or full length, for an extrusion machine.

A sleeve can be made from the same material as the original bimetallic cylinder or from other materials such as D2 steel (a type of tool steel) and a vanadium alloy, which is highly wear-resistant but expensive. 1/ Purchasers responding to the Commission's questionnaire reported that bimetallic cylinders may be resleeved only once or twice before they must be replaced. Whether or not a cylinder can be resleeved or the frequency of the resleeving depends greatly on the corrosiveness of the materials being processed.

Venting and downsizing

Bimetallic cylinders may be modified in a number of ways, particularly through "venting" and "downsizing." In the former process, vents are cut into

1/ Plastic Technology, Feb. 1988, p. 35.

the cylinder to remove moisture, liquids, gases, or other volatiles from the materials being processed that may otherwise discolor or distort them. A vented cylinder can eliminate the need for a dryer and reduces a mold venting problem. Such cylinders are becoming increasingly popular with injection-molding plants because they reduce costs and cosmetic problems in molding parts. One major U.S. producer of injection-molding machines estimates that 5-8 percent of its machines are currently sold with vented cylinders. Such venting is performed by the cylinder manufacturer. 1/

A downsized cylinder or barrel is a complete, new cylinder, custom made to conform to the requirements of an injection machine that has been in use. A cylinder is described as "downsized" because, while it is manufactured to conform to the outside diameter of a previous barrel used in a specific injection machine, it has a smaller inside diameter. Since the front end of a downsized cylinder is smaller in diameter than that of the cylinder previously used in the specific machine, the downsized cylinder will eliminate unneeded shot capacity 2/ and reduce excessive residence time for the polymers. Customers purchase downsized cylinders either because an injection machine has too much capacity and a smaller injection unit is needed to improve the performance of the machine and finished product, or because customers wish to process a new product requiring a smaller injection mold.

Nitrided cylinders

Original equipment manufacturers (OEMs) of injection-molding machines, in particular, can use an alternative product, nitrided cylinders, as original equipment. Nitrided cylinders are less often used in blow-molding machines and seldom used on extrusion machines. Nitrided cylinders are less expensive and less wear resistant than bimetallic cylinders and are produced by different firms employing a different manufacturing process. 3/ Factors that influence the choice of cylinder include the material to be processed and the market served. If the material is abrasive and/or corrosive, a bimetallic cylinder is normally selected. For example, electrical market purchases are predominantly bimetallic, whereas toy market sales are mostly nitrided. The automotive market uses significant numbers of both types of cylinders. The size of the cylinder affects the price difference and influences the selection process. In the smallest sizes, nitrided cylinders cost about one-half as much as comparable bimetallic cylinders; small nitrided cylinders are produced in volume by several U.S. manufacturers of injection-molding machines. However, as the size of the cylinder increases, the price difference between the bimetallic and nitrided cylinders diminishes, to several hundred dollars in the medium size range, i.e., a 5-15 percent premium for the bimetallic type. U.S. manufacturers of injection-molding machines do not offer nitrided cylinders on many models of the largest machines.

1/ * * *.

2/ Shot capacity is the volume of material that can be processed within the cylinder at any point in time.

3/ See app. C for a description of nitrided cylinders, their uses, and production processes.

U.S. tariff treatment

Imports of bimetallic cylinders are classified in TSUS item 678.35 and reported for statistical purposes under TSUSA items 678.3570, 678.3575, and 678.3580, which include parts for injection-molding, extrusion, and blow-molding machines, respectively. 1/ The most-favored-nation (MFN) or column 1 rate of duty, applicable to imports from Japan, is 3.9 percent ad valorem. The column 2 rate of duty, applicable to most Communist-controlled countries and areas, is 35 percent ad valorem.

The Nature and Extent of Sales at Less Than Fair Value

The final LTFV margins determined by Commerce were 17.42 percent for Hitachi Metals, Ltd., and for all other producers and exporters. Hitachi's U.S. sales examined by Commerce for the period March 1, 1987, through August 31, 1987, amounted to * * * bimetallic cylinders, valued at $* * *. Commerce could not verify home market sales or the percent of sales at LTFV and relied on "best information available." The methods used to calculate these LTFV margins are detailed in Commerce's notice, which is included in appendix A.

The U.S. Market

U.S. producers

There are four U.S. manufacturers of bimetallic cylinders. 2/ In support of the petition are the two petitioners, Xaloy, Inc., Pulaski, VA, and Bimex Corp., Wales, WI, * * *. * * *. * * *.

The bimetallic cylinder industry is small, and key personnel representing the four producers, as well as some of the importers, are well acquainted with one another and are knowledgeable about one another's plants and operations. For example, former Xaloy employees founded both Wexco and Bimex, and a former Bimex employee founded Wisconsin Bimetallic.

The shares of U.S.-produced domestic shipments and apparent U.S. consumption of bimetallic cylinders and related products (including sleeves, vented conversions, and downsized cylinders) accounted for by the four producers in 1987 are presented in table 1.

Xaloy, Inc., Pulaski, VA, is the largest U.S. producer of bimetallic cylinders and claims to be the only U.S. manufacturer of this product that conducts research and development. 3/ Originally known as Industrial Research,

---

1/ In addition, such cylinders would be reported for statistical purposes elsewhere under TSUS item 678.35 if they entered as parts for machines used for molding or otherwise forming pneumatic tires (TSUSA item 678.3555) or as parts for other machines for molding or otherwise forming rubber or plastics articles (TSUSA item 678.3585).

2/ The petition alleged that there are only 3 U.S. producers of bimetallic cylinders: Bimex, Xaloy, and Wexco. Petition, pp. 2-3. * * *. * * *.

3/ Petition, attached Xaloy catalogue.

Table 1
Bimetallic cylinders and related products: 1/ U.S. producers' shares of the value of U.S.-produced domestic shipments and apparent U.S. consumption, by firms, 1987 2/

(In percent)

Firm	Share of U.S.-produced domestic shipments	Share of apparent U.S. consumption
Xaloy, Inc.	***	***
Bimex Corp.	***	***
Wexco Corp.	***	***
Wisconsin Bimetallic	***	***
Total	100.0	87.9

1/ Related products include sleeves, downsized cylinders, and vented conversions.
2/ Shares are based on the value, rather than the quantity, of shipments. Fluctuations in shipments expressed in units may simply reflect shifts in product mix rather than actual trends because of the wide variation in unit values of bimetallic cylinders.

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

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Xaloy invented the bimetallic cylinder in 1959 for Honolulu Research and Development, a manufacturer of slush pump liners used in oil drilling. Xaloy purports to be the world's largest producer of bimetallic cylinders and exports this product worldwide. Xaloy's * * * export markets include * * *. 1/

Since it began operation in 1964, Xaloy's plant in Pulaski, VA, has been almost entirely devoted to the production of bimetallic cylinders. Sales of sleeves accounted for * * * percent of the value of domestic shipments in 1987. During the same year, shipments of vented conversions and downsized cylinders accounted for * * * percent and * * * percent, respectively, of the value of domestic shipments.

Xaloy produces a broad range of cylinders. It manufactures both single and twin bimetallic cylinders. The sizes of its cylinders range from * * * to * * * in inside diameter. 2/ According to a * * * representative, only Xaloy and certain European manufacturers have the production means to manufacture cylinders * * *, an estimated * * * percent of total world demand. 3/

Xaloy owns Flame Tech, a plant in Newburyport, MA, which manufactures screws for use in conjunction with bimetallic cylinders. The company has been

1/ Petition, p. 2; conversation with Mr. Gunther Hoyt, Vice President of Sales, Xaloy, Mar. 7, 1988.
2/ Staff visit with Mr. Walter Cox, President, and Mr. Gunther Hoyt of Xaloy, Feb. 16, 1988.
3/ Staff meeting with * * *.

in operation since 1975 and relies * * *. Flame Tech's sales are about * * * of the value of Xaloy's. 1/

Bimex Corp., Wales, WI, was founded by Mr. Donald Lomax, President, in 1975. He was formerly a metallurgist and salesman for Xaloy. The Bimex plant was expanded by * * * square feet in 1985, and in July 1986 Littleford Group, Inc., Cincinnati, OH, purchased the plant. The company offers more alloys than any other supplier to the U.S. market. 2/

Bimex produces only new and reconditioned bimetallic cylinders. Sleeve sales accounted for * * * percent of the value of domestic shipments in 1987. * * * in 1987, and sales of vented cylinders accounted for * * * percent of the value of domestic shipments during that year.

* * * * * * *

Wexco Corp., Lynchburg, VA, was established in 1964 by Mr. Jack Congrove, a former plant manager at Xaloy. Wexco is the * * * U.S. producer of bimetallic cylinders. The company recently built and moved to a new plant in Lynchburg, VA, which * * * the firm's capacity to produce bimetallic cylinders, * * *. Mr. Congrove stated that * * *. 3/ Wexco can produce bimetallic cylinders * * *.

Throughout the period of investigation, Wexco * * *. In 1987, sales of sleeves accounted for * * * percent of Wexco's shipments of bimetallic cylinders and related products. During the same year Wexco's sales of vented conversions accounted for * * * percent of the value of the company's total domestic shipments. Wexco * * *.

Wisconsin Bimetallic Casting Corp., Sullivan, WI, was founded in 1985 by Mr. Ronald Boggs, a former employee of Bimex. The firm produces * * *. In 1987 domestic sales of sleeves and downsized cylinders accounted for * * * and * * * percent, respectively, of the total value of domestic sales. Wisconsin Bimetallic * * *.

U.S. importers

Imports of bimetallic cylinders are reported under TSUSA numbers that include various parts for injection-molding, extrusion, and blow-molding machines. The Commission sent questionnaires to approximately 170 importers of products entered under those TSUSA numbers. Approximately 100 importers indicated through questionnaires and notices that they do not import bimetallic cylinders. The Commission received questionnaires from 18 importers of bimetallic cylinders that are believed to account for the vast majority of total imports of bimetallic cylinders from all countries.

Four firms reported imports of the subject merchandise from Japan. The largest importer from Japan is the Hitachi Metals America (HMA) division of Hitachi Metals International, Ltd., Purchase, NY. HMA accounted for * * *

1/ Staff visit with Mr. Walter Cox and Mr. Gunther Hoyt of Xaloy, Feb. 16, 1988.
2/ Petition, Exhibit 2.
3/ Staff meeting with Mr. Jack Congrove, President, Wexco Corp., Aug. 19, 1987.

percent of imports from Japan in 1986 and * * * percent in 1987. In January 1987 HMA signed a 5-year exclusive agreement with Spirex Corp., Youngstown, OH, an independent distributor of bimetallic cylinders. Previously Spirex had purchased cylinders from * * *. Mr. Paul Colby, President of Spirex, * * *.

The HMA-Spirex agreement granted * * *. It granted Spirex * * *. * * *. In 1986 Spirex's purchases of bimetallic cylinders and related products (downsized cylinders and vented conversions) accounted for * * * percent (by value) and * * * percent (by quantity) of all Hitachi imports of these products. In 1987 these figures were * * * percent and * * * percent, respectively.

* * *. * * *. * * *. * * *. * * *. 1/ Additional details regarding this agreement are included in the section entitled "Channels of distribution."

Spirex was formed in 1978 by Mr. Paul Colby. Originally the company specialized in building screws according to its own unique designs, and reconditioning worn screws. In recent years Spirex has specialized in putting together packages that include cylinders and parts, and in custom work on cylinders, such as venting and downsizing. Although Spirex draws up the specifications and sells the finished product, * * *. The company is also a distributor of new cylinders. According to Mr. Colby, Spirex was the first company in the industry to convert existing cylinders. Spirex began venting about * * * years ago, and vented packages represented * * * percent of the company's total sales (by quantity) in 1987. Spirex started selling downsized packages about * * * years ago; this product accounted for * * * percent of its total sales (by quantity) in 1987. Although U.S. producers of bimetallic cylinders have the capacity to vent, downsize, and otherwise modify cylinders, these modifications are not the focus of their operations. Spirex also manufactures screw devices designed to fit inside both Hitachi and U.S.-produced bimetallic cylinders. Cylinders sold as part of a screw package accounted for * * * percent of the company's bimetallic cylinder sales (by quantity) in 1987.

Spirex has geared its marketing towards a finished package and is known in the industry for its "packaging" of products. The company reported that * * * percent of its business in 1987 was in the form of a package such as a vented or downsized unit or a screw and end-cap combination. Standard cylinders accounted for * * * percent of the company's sales (by quantity) in 1987. Currently * * * percent of Spirex's cylinder business is in new cylinders and packages and * * * percent is in reconditioning of cylinders that have been sent back by a customer.

* * * * * * *

* * * and * * * were other significant importers of bimetallic cylinders from Japan during the period under investigation. * * *. * * *. * * *. * * *. * * *.

One other firm, * * *, reported imports of Japanese cylinders. The company imported * * * during the period under investigation.

1/ Staff meeting with Mr. Paul Colby, President of Spirex, and Mr. Bill White, Marketing Manager, on Feb. 24, 1988.

The Commission received questionnaires reporting imports of bimetallic cylinders from 1 importer of Swiss bimetallic cylinders, 4 importers of British bimetallic cylinders, and 11 importers of this product from West Germany. Two firms, * * *, reported imports from both the United Kingdom and West Germany. The following tabulation presents information on these importers--their locations, sources of imports, and shares of reported import values in 1986 and 1987, by source (in percent):

* * * * * * *

Apparent U.S. consumption 1/

The data on apparent U.S. consumption of bimetallic cylinders and related products (sleeves, vented conversions, and downsized cylinders) presented in table 2 are the values of domestic shipments of the subject merchandise as reported by U.S. producers and importers in questionnaire responses. Apparent U.S. consumption of bimetallic cylinders and related products rose from $27.0 million in 1985 to $29.4 million in 1986, or by 8.8 percent. Consumption further increased to $29.8 million in 1987, a rise of 1.4 percent from 1986.

Table 2
Bimetallic cylinders: 1/ U.S. producers' domestic shipments, domestic shipments of imports, and apparent U.S. consumption, by value, 1985-87

(In 1,000 dollars) 2/

Item	1985	1986	1987
U.S. producers' domestic shipments....	25,254	27,451	26,182
Domestic shipments of imports from--			
Japan.....	***	***	***
Switzerland.....	***	***	***
United Kingdom.....	***	***	***
West Germany.....	***	***	***
Subtotal, all imports.....	1,757	1,926	3,605
Apparent U.S. consumption.....	27,011	29,377	29,787

1/ Sleeves, vented conversions, and downsized cylinders are included in these data, although there are no known imports of sleeves.
2/ Shipments and consumption are presented in terms of value rather than quantity. Fluctuations in shipments expressed in units may simply reflect shifts in product mix rather than actual trends because of the wide variation in unit values of bimetallic cylinders.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

1/ Apparent U.S. consumption of nitrided cylinders is presented in app. C.

The Japanese Industry 1/

Hitachi Metals, Ltd., is the largest producer of bimetallic cylinders in Japan, accounting for approximately * * * percent of Japanese production. The second largest producer is Japan Steel Works, Ltd. (JSW), which accounts for approximately * * * percent of production. Japan Steel Works America, Inc., reports * * *. Other Japanese producers accounting for approximately * * * percent of production each are * * *. The Japan Hydraulics and Pneumatics Society, an industry association of hydraulic and pneumatic equipment producers, is aware of no other producers.

According to sales literature, Hitachi Metals, Ltd., has developed its own techniques for producing bimetallic cylinders, including applying a metallurgical bond between the alloy lining material and the steel shell by means of a centrifugal casting process. Hitachi's "H-ALOY" is available in four grades. Its bimetallic cylinders are best suited for plastics machinery used in processing fiber reinforced plastics and flame resistant polymers. Hitachi can produce cylinders with a maximum outside diameter of 12.6 inches, an inside diameter of 7.87 inches, and a length of 137.8 inches. 2/ Spirex reports that Hitachi is * * *.

Spirex Corp. sold several different Hitachi bimetallic cylinders in the United States, each with alloys providing different corrosive and abrasive characteristics suited to particular types of processing materials. U.S. producers manufacture alloys that are comparable to * * * of the Hitachi alloys. In addition, Spirex sold * * * other Hitachi cylinders with alloys that may be roughly similar to those offered by * * *.

Available information on Hitachi Metals, Ltd.'s operations producing bimetallic cylinders is presented in tables 3 and 4.

Hitachi Metals, Ltd.'s production of bimetallic cylinders increased steadily during the period under investigation, rising by * * * percent from 1985 to 1986, and by another * * * percent from 1986 to 1987. The company's capacity to produce cylinders remained constant at * * * cylinders during the period under investigation. Hitachi's capacity utilization rose steadily, increasing from * * * percent in 1985 to * * * percent in 1987. Hitachi projected that its capacity * * *.

Hitachi Metals, Ltd.'s value of home-market shipments increased steadily during the period under investigation, rising by * * * percent from 1985 to 1987. The value of Hitachi Metals, Ltd.'s home-market shipments as a share of the firm's value of total shipments was approximately * * * percent during 1985-86 and then declined to * * * percent during 1987.

1/ Counsel for Hitachi Metals, Ltd., Japan, and the Hitachi Metals America division of Hitachi Metals International, Ltd., provided most of the data in this section on the Japanese industry (letters dated Aug. 27, 1987, and Mar. 11, 1988). Japan Steel Works America, Inc., supplied data on its parent company, Japan Steel Works, Ltd. (letter dated Apr. 15, 1988). The U.S. embassy in Tokyo reported that MITI Industrial Machinery Division confirmed that Hitachi Metals, Ltd., is a manufacturer of bimetallic cylinders, but that the MITI Division had no readily available statistics and the embassy was unable to collect the requested data (telegrams of August 1987 and March 1988).

2/ Petition, Exhibit 3, p. 4.

Table 3
Bimetallic cylinders: Hitachi Metals, Ltd.'s production, capacity, and capacity utilization, 1985-87

Item	1985	1986	1987
Production (units)	***	***	***
Capacity (units) 1/	***	***	***
Capacity utilization (percent)	***	***	***

1/ Capacity is based on * * *, totaling * * * hours per week and * * * working days per year.

Source: Compiled from data submitted by counsel for Hitachi Metals America.

Table 4
Bimetallic cylinders: Hitachi Metals, Ltd.'s home-market shipments, exports to the United States, and exports to all other countries, by cylinder units and U.S. dollars, 1985-87

Item	1985	1986	1987
	Quantity (units)		
Home-market shipments	***	***	***
Exports to--			
United States	***	***	***
* * *	***	***	***
* * *	***	***	***
* * *	***	***	***
* * *	***	***	***
* * *	***	***	***
Other countries	***	***	***
Total exports	***	***	***
Total shipments	***	***	***
	Value (1,000 dollars)		
Home-market shipments	***	***	***
Exports to--			
United States	***	***	***
Three largest non-U.S. export markets 1/	***	***	***
Other countries	***	***	***
Total exports	***	***	***
Total shipments	***	***	***

1/ * * *.

Source: Compiled from data submitted by counsel for Hitachi Metals America.

The value of Hitachi Metals, Ltd.'s shipments to the United States increased * * * during the period under investigation. Starting from a small base, such shipments * * * from 1985 to 1986 and increased * * * from 1986 to 1987. As a share of the firm's value of total shipments, the value of shipments to the United States was * * * percent during 1985-86 and then rose to * * * percent during 1987.

Hitachi Metals, Ltd.'s value of shipments to * * * combined decreased by * * * percent from 1985 to 1986, but rose by * * * percent from 1986 to 1987. As a share of the firm's value of total shipments, the value of shipments to * * * fluctuated between * * * and * * * percent during the period of investigation. The value of total shipments of Hitachi Metals, Ltd., increased by * * * percent from 1985 to 1986 and by * * * percent from 1986 to 1987.

Hitachi projected * * *. Hitachi gave the following reasons for its projections: "The sustained rise in the value of the yen eliminated the ability of Hitachi Metals America to compete in the U.S. market despite the value of engineering and technical services available to customers from Spirex. The high value of the yen is not expected to change at any time in the near future. Hitachi Metals America is not presently active in the U.S. market, and no independent promotion can be economically justified. The Japanese market can absorb Hitachi Metals' output. Home market demand is expected to remain strong." 1/

JSW is a manufacturer of injection-molding machines. The company reports * * *. * * *. JSW did not provide data on capacity, home-market shipments, or inventories during the period of investigation. However, the company reported that its inventory was * * * units as of April 15, 1988. JSW's production and export shipments are shown in table 5. The company stated * * *.

Table 5
Bimetallic cylinders: Japan Steel Works, Ltd.'s production and exports to the United States and all other markets, by cylinder units, 1985-88

Item	1985	1986	1987	1988 (projected)
Production by JSW.....	***	***	***	***
Exports to--				
United States.....	***	***	***	***
Taiwan.....	***	***	***	***
Singapore.....	***	***	***	***
Total exports.....	***	***	***	***

Source: Compiled from data submitted by Japan Steel Works America, Inc.

1/ Hitachi's post-hearing brief, p. 7.

Consideration of the Question of Material Injury

The information in this section of the report was compiled from responses to questionnaires of the U.S. International Trade Commission. Reported capacity, employment, and financial data include U.S. producers' operations related to the production of standard bimetallic cylinders as well as sleeves, downsized cylinders, and vented conversions (separate data could not be provided). Data on production and shipments of bimetallic cylinders and related products (including sleeves, vented conversions, and downsized cylinders) are presented separately and in the aggregate. Data on inventories of bimetallic cylinders are presented separately.

U.S. production, capacity, and capacity utilization

Data on U.S. production, average capacity, and capacity utilization for bimetallic cylinders and related products (sleeves, downsized cylinders, and vented conversions) are presented in table 6. U.S. production of bimetallic cylinders and related products rose steadily from 1985 to 1987, increasing by 19.7 percent during the period. Production of bimetallic cylinders (excluding sleeves, downsized cylinders, and vented conversions) increased by 23.5 percent from 6,611 cylinders in 1985 to 8,162 cylinders in 1986. Production of this product fell to 7,959 cylinders in 1987, or by 2.5 percent. Three of the four U.S. producers--Bimex, Wexco, and Wisconsin Bimetallic--* * *. Xaloy's production of bimetallic cylinders * * *.

Table 6
Bimetallic cylinders and related products: 1/ U.S. production, average capacity, and capacity utilization, by quantity, 1985-87

Item	1985	1986	1987
Production:			
Bimetallic cylinders (units)	6,611	8,162	7,959
Sleeves (units)	***	***	***
Downsized cylinders (units)	***	***	***
Vented conversions (units)	***	***	***
Total (units)	7,921	9,308	9,485
Average capacity (units) 2/	9,098	12,302	13,152
Capacity utilization (percent)	87.1	75.7	72.1

1/ Related products include sleeves, downsized cylinders, and vented conversions.
2/ Xaloy bases its capacity figures on operations of * * * hours per week, * * * weeks per year. Bimex's figures are based on * * * hours per week, * * * weeks per year. Wexco's figures are based on the plant's operation for * * * hours per week, * * * weeks per year. For Wisconsin Bimetallic, these estimates were * * * hours per week, * * * weeks per year.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Average U.S. capacity to produce bimetallic cylinders and related products increased by 35.2 percent from 1985 to 1986, then rose again by 6.9 percent in 1987. The average capacity of * * * U.S. producers increased from 1985 to 1986. Capacity of * * * producers * * * further increased from 1986 to 1987.

The 44.6-percent increase in capacity during the period under investigation is largely attributable to * * *. * * *. * * *. Average capacity of Xaloy and Bimex * * *. During the period under investigation, Xaloy * * *. Bimex expanded its plant by * * * square feet during 1985. Bimex reported capacity utilization levels ranging from * * * percent in 1985 to * * * percent in 1986. * * *.

Mr. Walter Cox, President of Xaloy, offered the following comment on the average capacity of the U.S. industry to produce bimetallic cylinders: "I believe the industry believes that the long term projections for the industry are very good and that we will continue to invest, to expand to meet the prospects for the future." 1/

U.S.-produced domestic shipments and export shipments

Data on U.S.-produced domestic shipments and exports of bimetallic cylinders and related products (sleeves, downsized cylinders, and vented conversions) are presented in table 7. The quantity and value of domestic shipments of bimetallic cylinders and related products increased by 16.0 percent and 8.7 percent, respectively, from 1985 to 1986. The quantity and value of domestic shipments of these products then declined from 1986 to 1987, by 0.4 percent and 4.6 percent, respectively. The decline in shipments from 1986 to 1987 is due to a decline in * * *. Domestic shipments of bimetallic cylinders and related products of * * * rose steadily during the period under investigation, both by quantity and value.

Exports of bimetallic cylinders and related products rose steadily from 1985 to 1987, increasing by * * * percent in quantity and * * * percent in value during the period under investigation. The rise is attributable to a sharp increase in * * *.

Data on U.S.-produced domestic shipments and export shipments of bimetallic cylinders (excluding sleeves, downsized cylinders, and vented conversions) are presented in table 8. The quantity of U.S.-produced domestic shipments increased by 22.1 percent from 1985 to 1986, but then declined by 5.5 percent in 1987. The value of shipments of bimetallic cylinders rose from $20.3 million in 1985 to $24.2 million in 1986, an increase of 19.4 percent, but fell to $21.8 million in 1987, a decline of 9.8 percent from 1986.

The average unit value of U.S.-produced domestic shipments fell steadily from $3,366 per cylinder in 1985 to $3,146 in 1987, a decrease of 6.6 percent. This decline is largely attributable to the fact that * * *.

1/ Transcript of the hearing, p. 34.

Table 7
Bimetallic cylinders and related products: 1/ U.S.-produced domestic shipments and export shipments, by quantity, value, and average unit value, 1985-87

Item	1985	1986	1987
Domestic shipments:			
Quantity (units) 2/	7,277	8,441	8,404
Value (1,000 dollars) 2/	25,254	27,451	26,182
Average unit value 3/	$3,470	$3,252	$3,115
Export shipments:			
Quantity (units)	***	***	***
Value (1,000 dollars)	***	***	***
Average unit value	$***	$***	$***

1/ Related products include sleeves, downsized cylinders, and vented conversions.
2/ The decline in the quantity and value of domestic shipments from 1986 to 1987 is due to the decline in * * *.
3/ This decline is largely attributable to the fact that, during the period under investigation, * * *.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 8
Bimetallic cylinders: U.S.-produced domestic shipments and export shipments, by quantity, value, and average unit value, 1985-87

Item	1985	1986	1987
Domestic shipments:			
Quantity (units) 1/	6,024	7,354	6,946
Value (1,000 dollars) 1/	20,278	24,214	21,849
Average unit value 2/	$3,366	$3,293	$3,146
Export shipments:			
Quantity (units)	***	***	***
Value (1,000 dollars)	***	***	***
Average unit value	$***	$***	$***

1/ These data are overstated to the extent that Wexco could not separate its shipments of bimetallic cylinders from those of downsized cylinders.
2/ This decline is largely attributable to the fact that, during the period under investigation, * * *.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Three of the four U.S. producers export bimetallic cylinders. From 1985 to 1987, export shipments steadily increased in value, from $* * * in 1985 to $* * * in 1987. The quantity of these exports more than doubled, rising from * * * cylinders in 1985 to * * * cylinders in 1987. Xaloy, which accounted for * * * percent of exports in 1987, is * * *.

Xaloy sells bimetallic cylinders worldwide. Currently the company sells to * * *. * * *. Bimex exports to * * *. Wexco sells to * * *.

Data on U.S.-produced domestic shipments and export shipments of sleeves are presented in table 9. All four producers reported sales of sleeves. Domestic and export shipments of U.S.-produced sleeves declined from 1985 to 1986, both by quantity and by value, but increased by quantity and value from 1986 to 1987. During the period under investigation * * * sold more sleeves than any other U.S. producer of bimetallic cylinders.

Table 9
Sleeves: U.S.-produced domestic shipments and export shipments, by quantity, value, and average unit value, 1985-87

Item	1985	1986	1987
Domestic shipments:			
Quantity (units)	***	***	***
Value (1,000 dollars)	***	***	***
Average unit value	$***	$***	$***
Export shipments:			
Quantity (units)	***	***	***
Value (1,000 dollars)	***	***	***
Average unit value	$***	$***	$***

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

All four U.S. producers sold downsized cylinders in the U.S. market during the period under investigation. * * * reported sales of vented conversions. * * * exported a small number of vented conversions. No other firm reported any exports of either downsized cylinders or vented conversions during the period under investigation. Data on shipments of downsized cylinders are shown in table 10 and data on shipments of vented conversions are presented in table 11.

Table 10
Downsized cylinders: U.S.-produced domestic shipments, by quantity, value, and average unit value, 1985-87 1/

Item	1985	1986	1987
Quantity (units)	***	***	***
Value (1,000 dollars)	***	***	***
Average unit value	$***	$***	$***

1/ All four domestic producers sell downsized cylinders. However, information on Wexco's shipments of downsized cylinders is not included here, as the firm could not separate its data on shipments of downsized cylinders from those of standard bimetallic cylinders.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 11
Vented conversions: U.S.-produced domestic shipments, by quantity, value, and average unit value, 1985-87 1/

Item	1985	1986	1987
Quantity (units)	***	***	***
Value (1,000 dollars)	***	***	***
Average unit value	$***	$***	$***

1/ * * *.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

U.S. producers' end-of-period inventories

U.S. producers' end-of-period inventories of bimetallic cylinders rose steadily during the period under investigation, from * * * cylinders as of yearend 1985 to * * * cylinders as of yearend 1987 (table 12). This represents an increase of * * * percent. The ratio of end-of-period inventories to total U.S.-produced shipments rose from 4.5 percent in 1985 to 7.0 percent in 1987. Only one U.S. producer, * * *, maintained inventories of sleeves, which numbered * * * at yearend 1986 and * * * at yearend 1987. No U.S. producer of bimetallic cylinders reporting production of downsized cylinders or vented conversions maintained any inventories of these products.

Table 12
Bimetallic cylinders: U.S. producers' end-of-period inventories, 1985-87 1/

Item	1985	1986	1987
End-of-period inventories (units)	***	***	***
Ratio of end-of-period inventories to total shipments (percent)	4.5	6.2	7.0

1/ * * *.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

U.S. producers' employment and wages

The average number of production and related workers employed by the four U.S. producers of bimetallic cylinders and related products declined by 7.9 percent from 1985 to 1986, but rose by 3.3 percent from 1986 to 1987 (table 13). The number of hours worked, total wages, and total compensation increased steadily during the period under investigation. Hourly wages increased by 7.3 percent from 1985 to 1986, but decreased by 6.0 percent from 1986 to 1987. Productivity increased from 1985 to 1986, but declined from 1986 to 1987. Unit labor costs fell from 1985 to 1986, but rose from 1986 to 1987.

Table 13
Bimetallic cylinders and related products: 1/ Average number of production and related workers, hours worked, wages and total compensation paid, productivity, and unit labor costs, 1985-87

Item	1985	1986	1987
Average number of workers	391	360	372
Hours worked (1,000 hours)	575	605	647
Wages ($1,000)	6,475	7,307	7,341
Hourly wages	$11.26	$12.08	$11.35
Total compensation ($1,000)	7,195	8,135	8,346
Productivity (cylinders per hour)	0.0138	0.0154	0.0147
Unit labor costs (per cylinder)	$908.34	$873.98	$879.92

1/ Related products include sleeves, downsized cylinders, and vented conversions.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Financial experience of U.S. producers 1/

Xaloy, Inc., Bimex Corp., Wexco Corp., and Wisconsin Bimetallic Casting Corp., accounting for 100 percent of U.S.-produced domestic shipments in 1986, provided usable income-and-loss data on the overall operations of their establishments within which bimetallic cylinders are produced. 2/ For these firms, the production of bimetallic cylinders accounted for 100 percent of their operations in these establishments.

Overall establishment (bimetallic cylinder) operations.--Aggregate income-and-loss data on overall establishment operations are presented in table 14 and figure 1. Overall establishment sales of the reporting firms rose from $26.5 million in 1985 to $29.3 million in 1986, an increase of 10.3 percent, then decreased to $28.9 million in 1987, or by 1.3 percent.

Operating income decreased from $4.9 million in 1985 to $4.1 million in 1986, or by 15.9 percent, then fell dramatically by 43.1 percent in 1987 to $2.3 million. The operating margins during the 1985-87 period were 18.4 percent, 14.0 percent, and 8.1 percent, respectively. * * * of the producers reported operating losses in 1985; * * * experienced operating losses in 1986 and 1987. Net income before taxes shows a similar downward trend, with income of $3.9 million in 1985 and $1.4 million in 1986, and a loss of $1.1 million in 1987. The respective margins are 14.7 percent, 4.6 percent, and a negative 3.7 percent.

The unit-value data for bimetallic cylinder operations for the complete years 1985-87 indicate that sales value was relatively constant, whereas costs increased significantly during the period (table 15). The percentage decrease in sales value from 1985 to 1987 was 2.5 percent, whereas cost of goods sold increased by 8.9 percent in the same period on a per unit basis.

1/ Income-and-loss data of U.S. producers of nitrided cylinders are presented separately in app. C.

2/ In this section, the term "bimetallic cylinders" includes related products (sleeves, downsized cylinders, and vented conversions).

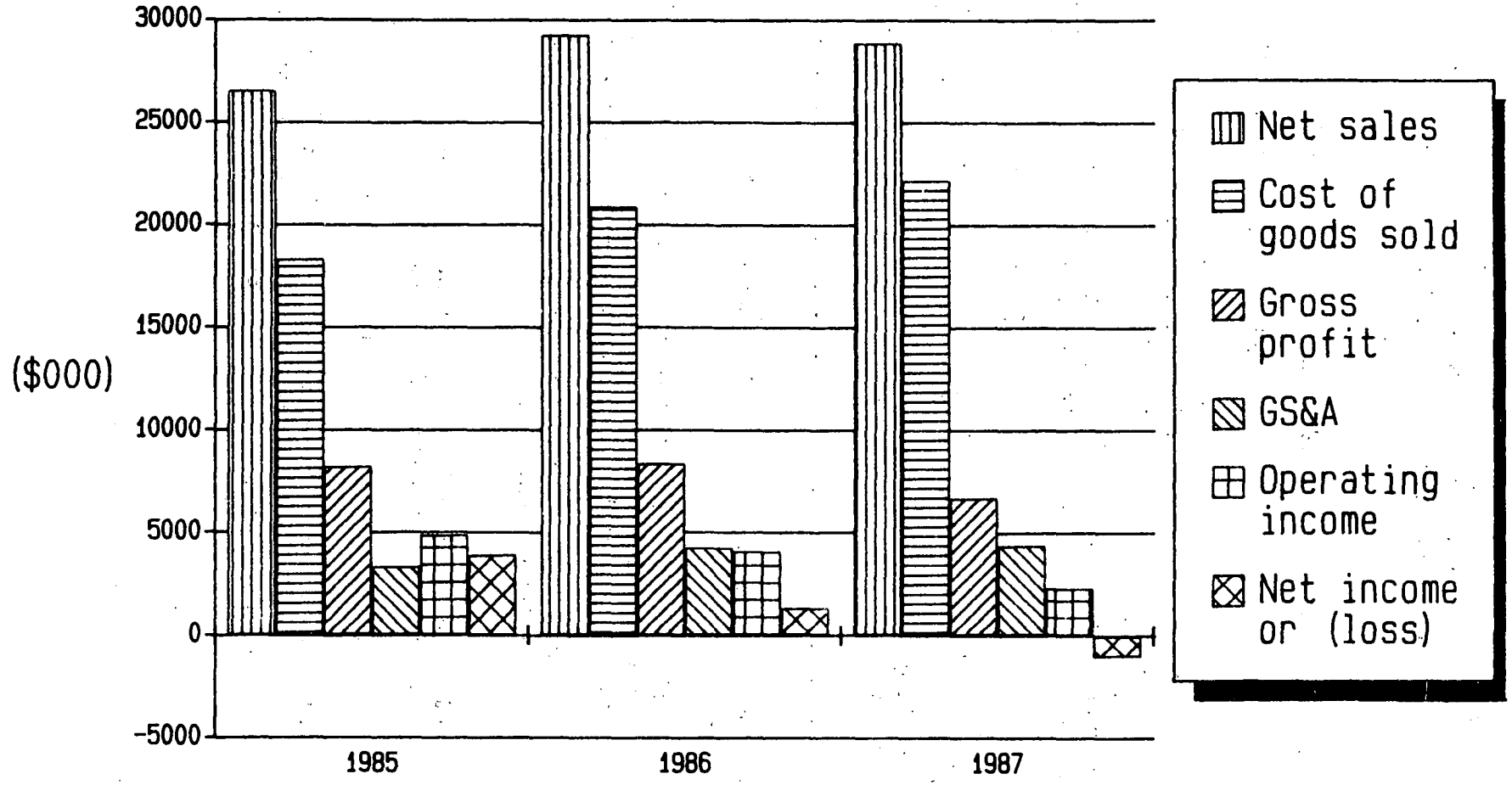
Table 14
Income-and-loss experience of U.S. producers 1/ on their overall establishment (bimetallic cylinder) operations, accounting years 1985-87 and interim periods ended Dec. 31, 1986, and Dec. 31, 1987

Item	1985	1986	1987	Interim period ended Dec. 31--2/ 1986	1987
	Value (1,000 dollars)				
Net sales	26,547	29,280	28,906	***	***
Cost of goods sold	18,314	20,885	22,189	***	***
Gross profit	8,233	8,395	6,717	***	***
General, selling, and administrative expenses	3,345	4,285	4,379	***	***
Operating income	4,888	4,110	2,338	***	***
Startup or shutdown expense	***	***	***	***	***
Interest expense	***	***	***	***	***
Other expense, net	***	***	***	***	***
Net income or (loss) before income taxes	3,915	1,359	(1,057)	***	***
Depreciation and amortization included above	710	842	832	***	***
Cash flow 3/	4,625	2,201	(225)	***	***
	Share of net sales (percent)				
Cost of goods sold	69.0	71.3	76.8	***	***
Gross profit	31.0	28.7	23.2	***	***
General, selling, and administrative expenses	12.6	14.6	15.1	***	***
Operating income	18.4	14.0	8.1	***	***
Net income or (loss) before income taxes	14.7	4.6	(3.7)	***	***
	Number of firms reporting				
Operating losses	***	***	***	***	***
Net losses	***	***	***	***	***
Data	3	4	4	2	2

1/ Xaloy, Inc., Bimex Corp., Wexco Corp., and Wisconsin Bimetallic Casting Corp.
2/ * * *.
3/ 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.

Figure 1.--Income-and-loss experience of U.S. producers on their overall (bimetallic cylinder) operations, accounting years 1985-87



Source: Table 14.

Table 15
Income-and-loss experience (on a per unit basis) of U.S. producers 1/ on their overall establishment (bimetallic cylinder) operations, accounting years 1985-87 and interim periods ended Dec. 31, 1986, and Dec. 31, 1987

Item	1985	1986	1987	Interim period ended Dec. 31--2/ 1986	1987
	Unit value (thousands of dollars per unit)				
Net sales	3.26	3.26	3.18	***	***
Cost of goods sold	2.25	2.34	2.45	***	***
Gross profit	1.01	3/ 0.93	0.73	***	***
General, selling, and administrative expenses	0.41	0.46	0.48	***	***
Operating income	0.60	3/ 0.46	0.25	***	***
	Share of net sales (percent)				
Cost of goods sold	69.0	71.6	76.9	***	***
Gross profit	31.0	28.4	23.1	***	***
General, selling, and administrative expenses	12.6	14.2	15.2	***	***
Operating income	18.4	14.2	7.9	***	***

1/ * * *.
2/ * * *.
3/ Because of rounding, this figure does not equal the difference between the figures shown.

Note: This table reflects per-unit value for all sales during the period; apparent fluctuations may be the result of variances in product mix and volume rather than across-the-board changes for revenue and expense items.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Selected financial data for the firms are presented separately in the following tabulation (in thousands of dollars):

* * * * * * *

Since all the producers are one-product manufacturers, financial allocations for the investigated product from data on overall operations are not required. On-site verifications of questionnaire data revealed * * *. * * *.

* * * * * * *

Verification to official company records for * * * producers * * *, revealed the following sampled major costs for cost of goods sold:

	1985	1986	1987
Raw materials--grade 4140:			
* * * (per pound).....	$***	$***	$***
* * * (per pound).....	***	***	***
Direct labor--common skilled position:			
* * *--emp # * * * (per hour)..	$***	$***	$***
* * *--emp # * * * (per hour)..	***	***	***

* * * * * * *

* * * * * * *

* * * * * * *

Value of plant, property, and equipment.--The data provided by Xaloy, Bimex, and Wexco on their end-of-period investment in productive facilities in which bimetallic cylinders are produced are shown in the following tabulation (in thousands of dollars):

Item	1985	1986	1987	Interim period ended Dec. 31--1/ 1986	1987
Original cost.....	10,419	11,882	12,476	***	***
Book value.....	6,279	6,938	7,958	***	***
Number of firms reporting...	3	3	3	2	2

1/ * * *.

Capital expenditures.--The data provided by Xaloy, Bimex, and Wexco relative to their capital expenditures for land, buildings, and machinery and equipment used in the manufacture of bimetallic cylinders are shown in the following tabulation (in thousands of dollars):

Item	1985	1986	1987	Interim period ended Dec. 31--1/ 1986	1987
Land and land improvements...	***	***	***	***	***
Building or leasehold improvements.....	***	***	***	***	***
Machinery, equipment, and fixtures.....	***	***	***	***	***
Total.....	1,345	1,150	1,055	***	***
Number of firms reporting....	3	3	3	2	2

1/ * * *.

Research and development expenses.--Research and development expenses relating to bimetallic cylinders for Xaloy, Bimex, and Wexco are shown in the following tabulation (in thousands of dollars):

Firm	1985	1986	1987	Interim period ended Dec. 31--1/ 1986	1987
Xaloy.....	***	***	***	***	***
Bimex.....	***	***	***	***	***
Wexco.....	***	***	***	***	***
Total.....	***	***	***	***	***

1/ * * *.

Capital and investment.--The Commission requested U.S. producers to describe any actual or potential negative effects of imports of bimetallic cylinders from Japan on their firms' growth, investment, and ability to raise capital. Their responses are shown in Appendix D.

Consideration of Alleged Threat of Material Injury

In its examination of the question of threat of material injury to an industry in the United States, the Commission may take into consideration such factors as the rate of increase of the subject imports, the rate of increase in U.S. market penetration by such imports, the rate of increase of imports held in inventory in the United States, the capacity of producers in the exporting country to generate exports (including the existence of underutilized capacity and the availability of export markets other than the United States), and the price depressing or suppressing effect of the subject imports on domestic prices.

Discussions of rates of increase in imports from Japan of bimetallic cylinders and their U.S. market penetration, as well as available information on their prices, are presented in the section of the report entitled "Consideration of the causal relationship between imports of the subject merchandise and the alleged injury." Information regarding the capacity of Japanese producers of bimetallic cylinders to generate exports was discussed in the section of the report entitled "The Japanese industry." Information on inventories of the subject imports in the United States is presented in the following section.

U.S. inventories of bimetallic cylinders from Japan

Bimetallic cylinders are typically custom designed to meet the specifications of the end users' processing machinery. When an end user orders a replacement cylinder, it has to be custom made or at least modified to meet the customer's requirements. U.S. importers' inventories of bimetallic cylinders from Japan rose from 1985 to 1986, and further increased in absolute terms but declined as a share of imports from 1986 to 1987, as shown in the following tabulation:

* * * * * * *

Spirex reported its inventories of Hitachi cylinders on a more detailed basis for the period beginning January 1987. The firm reported a beginning inventory of * * * Hitachi cylinders valued at an estimated $* * * as of January 1, 1987. According to Spirex, these barrels * * *. As of June 30, 1987, Spirex had * * * Hitachi cylinders in stock, valued at $* * *. It had * * * Hitachi cylinders in stock as of August 18, 1987, and * * * in stock as of December 31, 1987. Spirex reported its inventories of Hitachi cylinders in 1988 as follows: * * * cylinders valued at $* * * on January 25, 1988, and * * * cylinders valued at $* * * on April 5, 1988.

Consideration of the Causal Relationship Between Imports of the Subject Merchandise and the Alleged Injury

U.S. imports

Data on U.S. imports of bimetallic cylinders from Japan and all other countries known to be sources of imports of the subject merchandise are presented in table 16. The Commission received questionnaires from 18 importers of bimetallic cylinders that account for the vast majority of total imports of bimetallic cylinders from all countries.

The c.i.f. duty-paid value of U.S. imports of bimetallic cylinders from Japan * * * from 1985 to 1986, rising from $* * * in 1985 to $* * * in 1986. The value of such imports then increased * * *, to $* * * in 1987.

Table 16
Bimetallic cylinders: 1/ U.S. imports, by principal sources, 1985-87

Source	1985	1986	1987
	C.i.f. duty-paid value (1,000 dollars)		
Japan	***	***	***
Switzerland	***	***	***
United Kingdom	***	***	***
West Germany	***	***	***
Total	2,002	2,106	3,284
	Quantity (cylinders)		
Japan	***	***	***
Switzerland	***	***	***
United Kingdom	***	***	***
West Germany	***	***	***
Total	553	575	889
	Average unit value (per cylinder)		
Japan	$***	$***	$***
Switzerland	***	***	***
United Kingdom	***	***	***
West Germany	***	***	***
Average	3,620	3,663	3,694
	Percent of total value		
Japan	***	***	***
Switzerland	***	***	***
United Kingdom	***	***	***
West Germany	***	***	***
Total	100.0	100.0	100.0

1/ Vented conversions and downsized cylinders are included in these data. There are no known imports of sleeves.

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

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Market penetration

Shares of apparent U.S. consumption calculated on the basis of value are presented in table 17. The data presented in the table were compiled from responses to the Commission's questionnaires.

Table 17
Bimetallic cylinders: 1/ Ratios of domestic shipments of imports and of U.S.-produced domestic shipments to apparent U.S. consumption, calculated on the basis of value, 1985-87

Source	1985	1986	1987
	Value (1,000 dollars) 2/		
Shipments of imports from--			
Japan	***	***	***
Switzerland	***	***	***
United Kingdom	***	***	***
West Germany	***	***	***
Subtotal	1,757	1,926	3,605
U.S.-produced domestic shipments	25,254	27,451	26,182
Total	27,011	29,377	29,787
	Percent of value		
Shares of apparent U.S. consumption:			
Shipments of imports from--			
Japan	***	***	***
Switzerland	***	***	***
United Kingdom	***	***	***
West Germany	***	***	***
Subtotal	6.5	6.6	12.1
U.S.-produced domestic shipments	93.5	93.4	87.9
Total	100.0	100.0	100.0

1/ Sleeves, vented conversions, and downsized cylinders are included in these data, although there are no known imports of sleeves.
2/ Shipments are presented in terms of value (f.o.b. U.S. producers' and importers' points-of-shipment) rather than quantity. Fluctuations in shipments expressed in units may simply reflect shifts in product mix rather than actual trends because of the wide variation in unit values of bimetallic cylinders.

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

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

U.S. shipments of imports of bimetallic cylinders from Japan accounted for * * * percent of apparent U.S. consumption in 1985, and increased to * * * and * * * percent in 1986 and 1987, respectively. U.S. shipments of imports from Switzerland were insignificant during the period under investigation. Shipments of imports from the United Kingdom rose from * * * percent of apparent consumption in 1985 to * * * percent in 1987. Such shipments from

West Germany decreased from * * * percent of apparent U.S. consumption in 1985 to * * * percent in 1986, but rose to a high of * * * percent in 1987. As a share of apparent U.S. consumption, U.S.-produced domestic shipments declined from 93.5 percent in 1985 to 93.4 percent in 1986, and then fell to a low of 87.9 percent in 1987.

Channels of distribution

U.S. producers of bimetallic cylinders sell the product to either OEMs of injection-molding, extrusion, or blow-molding machines, or in the replacement market. In the replacement market, U.S. producers of cylinders sell either directly to the end users, or through distributors. Distributors in turn compete with U.S. producers and importers of bimetallic cylinders for sales to the end users, but not to OEMs.

In 1986, before the exclusive Spirex/HMA agreement (see the "U.S. importers" section), Spirex was an independent distributor of bimetallic cylinders purchasing from * * *. At that time Spirex was competing for the end-user replacement market with these U.S. sources as well as other distributors representing imports from a variety of countries. 1/ Spirex approached Wexco with an offer to be Wexco's exclusive U.S. sales agent. Mr. Paul Colby, President of Spirex, stated that Spirex had valuable technology to add in the form of downsizing and venting conversions to differentiate its cylinders from those available from other U.S. sources, and that an exclusive agreement would give them a cylinder that they could advertise as a better product without giving indirect advertising to other suppliers or distributors competing for the same end-user replacement sales. Apparently Wexco * * *. Spirex then sought the agreement with HMA.

Under the Spirex/HMA agreement, HMA * * *, and Spirex * * *. * * *. * * *. Spirex agreed to * * *. Spirex informed the Commission staff that the contract * * *. 2/

* * * * * * *

* * * * * * *

Xaloy, the largest U.S. producer, had $* * * in sales to OEM accounts, $* * * directly to end users, and $* * * to distributors in 1987. During the same period, Bimex sold cylinders valued at $* * * to OEM accounts. Bimex's replacement sales were * * *. Wisconsin Bimetallic reported sales of $* * * to end users. Although the final domestic producer, Wexco, failed to provide detailed sales information, Mr. Jack Congrove, President of Wexco, estimated that * * * percent of its sales were to the replacement market and * * * percent to OEMs. Mr. Congrove stated that a majority of Wexco's replacement sales were * * *. The channels of distribution are diagrammed in figure 2.

Figure 2.--Channels of distribution

* * * * * * *

1/ Transcript of the public conference, p. 76.
2/ Staff meeting with Paul Colby, President of Spirex, Aug. 17, 1987.

Prices

Market dynamics.--Both petitioners and respondents agree that a variety of factors may influence the sale of cylinders. Sales are normally made on an f.o.b. plant basis in response to phone orders, salesmen's calls, or requests for quotes. Some larger OEMs and end users make formal bid requests from a preselected set of vendors. Price, service, the characteristics of the alloys used, and the brand name of the cylinder influence the purchasing decision.

Since the majority of bimetallic cylinders are customized to the end users' detailed specifications, delivery time and reliability of supply are critical factors in making a sale. * * * explained that an end user will purchase a cylinder in the replacement market when the quality of the plastic from his processing machine begins to decline due to cylinder wear. The end user needs a replacement cylinder as soon as possible to avoid downtime on his machines. Mr. Paul Colby, President of Spirex, testified at the conference that delivery time was an area in which his firm had a distinct disadvantage when it served as HMA's exclusive distributor. During 1987, Spirex offered delivery schedules of 10 to 12 weeks for Hitachi cylinders. 1/ He stated that average delivery time from a domestic producer such as Xaloy is 6 to 8 weeks. In the past, when he purchased bimetallic cylinders from Wexco, he could get the cylinders in as little as 2 weeks in an extreme situation.

Finance terms are generally not available in this market, as producers and importers sell on a net 30-day basis with no discounts available. 2/ Under the former agreement between Hitachi and Spirex, HMA agreed to provide Spirex with cylinders for inventory with * * *. * * *.

Transportation of cylinders is usually by truck. Since producers and importers sell on an f.o.b. plant basis, transportation costs do not generally enter into sales negotiations. Although the size and weight of the cylinders may push transportation costs to high levels, transportation costs are not large relative to the value of bimetallic cylinders.

World market.--Since the plastics-processing industry is present in most industrialized countries and in many developing nations, there is a market for bimetallic cylinders worldwide. The petition identifies 11 major producers of bimetallic cylinders in 5 countries. Xaloy claims to have had a * * *-percent share of the world market in 1986, with sales predominantly in * * *. * * *. * * *. * * *. * * *. * * *.

Imports of plastics-processing machines into the United States have increased in recent years. The high value of the U.S. dollar vis-a-vis other world currencies during the early 1980's had made imports of plastics-processing machinery less expensive in relation to U.S.-produced plastics-processing machinery. * * *.

Price trends.--The Commission requested pricing information from the four U.S. producers, HMA, and Spirex. U.S. producers were requested to provide pricing data on all sales of bimetallic cylinders in three ranges of bore sizes. The quantity of these reported sales represents * * * percent of Xaloy's sales and * * * percent of Bimex's sales during 1987. Wisconsin

1/ Transcript of the public conference, Aug. 28, 1987, p. 88.
2/ * * *.

Bimetallic provided pricing data on its sales to * * * in 1986. Wexco, accounting for * * * percent of U.S.-produced domestic shipments by value in 1986, provided information on * * * sales from 1986 to 1988.

Spirex provided pricing information on * * * of the Hitachi bimetallic cylinders it sold during 1986-87. Mr. Colby of Spirex stated during the conference that Spirex specializes in three market niches that are largely left unfilled by domestic manufacturers. 1/

The first area in which Spirex specializes is custom design of a screw and cylinder package. Mr. Colby explained that Spirex's main business has always been screw design and manufacturing. Domestic producers of cylinders sell only the bimetallic cylinder, and customers must purchase the accompanying screw from another vendor. A * * * number of the cylinders that Spirex sells are in conjunction with a screw that allegedly will accomplish a particular engineering goal or correct a production problem. During 1987, Spirex sold * * * bimetallic cylinders within a screw package, or * * * percent of its total sales.

Spirex also specializes in a technological advancement called downsizing. Downsizing becomes viable when a plastics processor is operating a machine well below its capacity. This causes a number of problems, including inefficiency. Downsizing the cylinder corrects these problems without forcing the processor to purchase additional processing machinery. Spirex sold * * * units, or * * * percent of its 1987 sales volume, in downsized units. According to questionnaire data, Spirex sold * * * percent of the downsized units introduced into the market during the period of investigation. 2/

Finally, Spirex has specialized in vented conversions of bimetallic cylinders. Venting a cylinder may correct a number of problems associated with volatiles in the processed materials. Spirex has introduced a number of new designs and equipment to improve the venting process. It sold * * * units as vented conversions or with venting packages during 1987, representing * * * percent of its sales. Unlike U.S. producers, Spirex offers installation and training with the vented conversions it sells.

Overall, Spirex sold * * * units, or * * * percent of its sales of HMA's cylinders in one of the previously mentioned value-added packages and only * * * standard cylinders in head-to-head competition with U.S.-produced standard cylinders during 1987. Since purchasing from Wexco resumed in November 1987, Spirex's product mix has remained virtually the same. During the period November 19, 1987, to February 19, 1988, Spirex sold a total of * * * bimetallic cylinders provided by * * *. * * * of the * * * cylinders sold, or * * * percent of Spirex's sales in this 3-month period, were in one of the value-added packages.

Since bimetallic cylinders are made to a detailed set of end-user specifications, and the purchasing dynamics are very complex, direct price

---

1/ Transcript of the public conference, Aug. 12, 1987, pp. 81-82 and 89.
2/ This figure may be overstated since Wexco has provided no data concerning downsizing.

comparisons are rare and difficult to document. Although Xaloy, Wisconsin Bimetallic, and Bimex provided detailed information on over 3,800 bimetallic cylinder sales, comparisons with only * * * of * * *'s * * * standard cylinder sales could be identified. Questionnaire data also yielded one price comparison involving a vented cylinder and seven comparisons involving cylinders sold in screw packages.

Although prices are difficult to compare, prices reported by * * * and * * * were generally lower than those reported by * * *. The following tabulation details the specifics of the 27 price comparisons cited above:

* * * * * * *

In addition to * * *'s sales, * * * made a number of sales in 1986 and 1987 to * * * and * * *. * * * purchased one particular cylinder from both * * * and * * *. The following tabulation details the chronological order of * * *'s purchases:

* * * * * * *

Both of the above tabulations illustrate the wide variation of prices of bimetallic cylinders. Price variations are also evident from data submitted by * * *. The following tabulation details the variations in price from three popular cylinders sold by * * *:

* * * * * * *

One explanation for the wide variation in prices may be the nature of the machinery for which this part is intended. Extrusion, injection-molding, and blow-molding machines are very expensive and vital to the processing of plastics. Machine costs can be as high as $3.5 million, making a replacement bimetallic cylinder a small cost relative to the value of the processing machine. When a bimetallic cylinder begins to wear, the efficiency of the machine declines and costs of production rise. Therefore, the delivery time of a replacement bimetallic cylinder is crucial. Machine downtime may cost the firm much more than the few hundred additional dollars for a cylinder that has a shorter delivery time. Customer service reliability, even the technological enhancements of vented conversions and downsizing, have real value to the end user. Savings generated by efficiency gains and the reduction of lost machine time may easily exceed the value of the cylinder.

Another explanation for variations in price is the imperfect market information available to end users. End users that are not knowledgeable about the U.S. producers and importers of bimetallic cylinders typically return to the OEM to purchase replacement cylinders and other parts. * * * stated that his firm sells some bimetallic cylinders as replacements but at much higher prices than the purchaser would pay if he went directly to the bimetallic cylinder producers or importers. * * * explained that some end users do not take the time to receive competitive quotes and would rather buy a bimetallic cylinder from the OEM of the machine, who they perceive to have a better understanding of the expensive processing machine that they own.

In 1986, another area of competition between U.S. producers and importers was sales made to Spirex. Spirex acted as an independent distributor in 1986, * * * purchasing from * * *. Spirex also purchased * * * units from * * * and * * * units from * * * in 1986. * * * of the units Spirex purchased in 1986 from * * * are directly comparable to cylinders purchased from * * * in 1987. The following tabulation shows that the cylinders from * * * were priced lower on all three occasions:

* * * * * * *

* * * provided one direct quote received from * * * in competition with * * *. * * * offered * * * cylinders for a total price of $* * * and a delivery time of * * * weeks. * * * offered the same cylinders for $* * * with a delivery time of * * * weeks.

* * * provided the Commission detailed information on * * * formal bids it made in competition with U.S. producers in 1987. * * * claims that it lost these * * * sales, which included * * * cylinders valued at $* * *, to U.S. producers because the * * * cylinders were too expensive. Using the detailed price information provided by * * *, the staff was able to confirm that at least * * * of the cylinders sold by * * * to * * * were priced lower than * * *'s bid.

* * * also supplied the Commission with five documents from * * *, responding to * * *'s request for quotes. These documents detailed * * *'s price quotes to * * * on five products during the period of investigation. On all five occasions * * *'s price quotes to * * * were lower prior to * * *. In one instance * * *'s prices dropped from 1986 to 1987 before increasing in 1988. The following tabulation summarizes the information supplied by * * *:

* * * * * * *

Lost sales

In the petition, Xaloy and Bimex provided * * * instances of sales lost to Japanese competition. One of those sales was the Spirex contract with HMA. Details of the contract are provided in the earlier section entitled "Channels of distribution." In this instance, petitioners alleged that Wexco lost substantial sales of bimetallic cylinders to Spirex when Spirex began buying from Hitachi. (Wexco made no such allegation of lost sales on its own behalf.) At the hearing, the petitioners requested that Spirex provide to the Commission figures on annual sales of bimetallic cylinders from Wexco to Spirex. 1/ They projected that such sales would be "in excess of $700,000.00 in 1986 and less than $* * * in 1987," and offered this as "tangible evidence of the sales lost as a result of dumping by Hitachi." 2/ According to Spirex, the company's purchases of bimetallic cylinders from Wexco amounted to $* * *

1/ Transcript of the hearing, p. 105.
2/ Petitioners' post-hearing brief, p. 1.

in 1985 and $* * * in 1986. Spirex's purchases from Wexco in 1987 were valued at $* * *. 1/

The other * * * allegations of lost sales were for * * * cylinders valued at over $* * * during * * *. The first allegation involved a * * * cylinder sold to * * *. * * *'s records indicate that it has * * * during the period of investigation.

* * * * * * *

Another allegation detailed * * *'s loss of a sale to * * * for a * * *. Although no one at * * * was available to comment on this allegation, * * *'s records indicate that the * * *.

Another allegation involved a * * * cylinder sold to * * *. * * * informed the staff that * * *. * * *. Although there was no one available at * * * to provide information regarding this particular sale, * * *'s records show no sales of * * *.

The final allegation involves a * * * cylinder sold to * * *. Neither * * *'s nor * * *'s records show any sales of * * * cylinders to * * *. * * * disputes the claims made by * * * and * * * and states that his firm purchased the * * * cylinder from * * * in * * * for $* * * in direct competition with * * *, which was offering the same cylinder for $* * *. * * *'s records show only * * * cylinder sold during 1986-87, and that sale was for * * * priced at $* * *. * * *.

As a distributor for Xaloy, Mr. McCann * * * provided the Commission with an affidavit detailing three additional lost sales to Spirex. These lost sales allegedly occurred in early 1988 as Spirex sold off its remaining inventory of Hitachi cylinders. Commission staff contacted all three purchasers regarding the sales of four bimetallic cylinders, the value of which is unknown.

The first allegation involved a 35mm Van Dorn cylinder sold to Baylock Manufacturing. * * *. * * *. * * *. * * *.

The second allegation involved a 65mm Van Dorn cylinder sold to Volplex Corp. * * *. * * *.

The final allegation involved two 65mm Van Dorn cylinders sold to U.S. Plastic. The staff was unable to contact anyone at the company who could confirm or deny the allegation.

Exchange rates

Quarterly data reported by the International Monetary Fund indicate that during the period January 1985 through December 1987 the value of the Japanese yen advanced sharply, by 89.7 percent, against the U.S. dollar (table 18). 2/

1/ Staff telephone conversation with Mr. Bill White, Marketing Manager for Spirex, Apr. 19, 1988.
2/ International Financial Statistics, February 1988.

Table 18
U.S.-Japanese exchange rates: 1/ Nominal exchange-rate equivalents of the Japanese yen in U.S. dollars, real exchange-rate equivalents, and producer price indicators in the United States and Japan, 2/ indexed by quarters, January 1985-December 1987

Period	U.S. Producer Price Index	Japanese Producer Price Index	Nominal exchange-rate index	Real exchange-rate index 3/
			-- US dollars/yen --	
1985:				
January-March	100.0	100.0	100.0	100.0
April-June	100.1	99.3	102.8	102.0
July-September	99.4	98.2	108.0	106.7
October-December	100.0	95.9	124.4	119.4
1986:				
January-March	98.5	93.7	137.2	130.4
April-June	96.6	89.7	151.5	140.7
July-September	96.2	87.3	165.4	150.1
October-December	96.5	85.9	160.8	143.0
1987:				
January-March	97.7	85.5	168.2	147.3
April-June	99.2	85.1	180.6	154.9
July-September	100.3	86.2	175.4	150.6
October-December	100.8	4/ 85.9	189.7	4/ 161.7

1/ Exchange rates expressed in U.S. dollars per yen.
2/ Producer price indicators--intended to measure final product prices--are based on average quarterly indices presented in line 63 of the International Financial Statistics.
3/ The indexed real exchange rate represents the nominal exchange rate adjusted for movements in producer price indices in the United States and Japan. Producer prices in the United States increased 0.8 percent during the period January 1985 through December 1987. In contrast, producer prices in Japan decreased 14.1 percent during the period under investigation.
4/ Data are derived from Japanese producer price indices reported for October only.

Note.--January-March 1985=100.

Source: International Monetary Fund, International Financial Statistics, February 1988.

Adjusted for relative movements in producer price indices in the United States and Japan, the real value of the Japanese currency registered an overall appreciation of 61.7 percent vis-a-vis the dollar during that time.

APPENDIX A

FEDERAL REGISTER NOTICES

[Investigation No. 731-TA-383 (Final)]

Certain Bimetallic Cylinders From Japan

AGENCY: United States International Trade Commission.

ACTION: Institution of a final antidumping investigation and scheduling of a hearing to be held in connection with the investigation.

SUMMARY: The Commission hereby gives notice of the institution of final antidumping investigation No. 731-TA-383 (Final) under section 735(b) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)) 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 Japan of certain bimetallic cylinders,[1] provided for in item 678.35 of the Tariff Schedules of the United States, that have been found by the Department of Commerce, in a preliminary determination, to be sold in the United States at less than fair value (LTFV). Unless the investigation is extended, Commerce will make its final LTFV determination on or before March 28, 1988, and the Commission will make its final injury determination by May 13, 1988 (see sections 735(a) and 735(b) of the act (19 U.S.C. 1673d(a) and 1673d(b))).

For further information concerning the conduct of this investigation, 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: January 15, 1988.

FOR FURTHER INFORMATION CONTACT: Janine Wedel (202-252-1178), 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

This investigation is being instituted as a result of an affirmative preliminary determination by the Department of Commerce that imports of certain bimetallic cylinders from Japan are being sold in the United States at LTFV within the meaning of section 731 of the act (19 U.S.C. 1673). The investigation was requested in a petition filed on August 4, 1987, by Xaloy, Inc., Pulaski, VA, and Bimex Corp., Wales, WI. In response to that petition the Commission conducted a preliminary antidumping investigation and, on the basis of information developed during the course of that investigation, determined that there was a reasonable indication that an industry in the United States was materially injured by reason

[1] Such items consist of an outer shell of steel and an inner lining of a corrosion- and abrasion-resistant alloy that are metallurgically bonded, and are, if imported, reported under items 678.3570, 678.3575, and 678.3580 of the Tariff Schedules of the United States Annotated.

of imports of the subject merchandise (52 FR 35770, September 23, 1987).

Participation in the Investigation

Persons wishing to participate in this investigation 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 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 representations, who are parties to this 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 investigation 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.

Staff Report

A public version of the prehearing staff report in this investigation will be placed in the public record on March 22, 1988, pursuant to section 207.11 of the Commission's rules (19 CFR 207.21).

Hearing

The Commission will hold a hearing in connection with this investigation beginning at 9:30 a.m. on April 7, 1988, 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 28, 1988. All persons desiring to appear at the hearing and make oral presentations should file prehearing briefs and attend a prehearing conference to be held at 9:30 a.m. on March 31, 1988, in room 101 of the U.S. International Trade Commission Building. The deadline for filing prehearing briefs is April 1, 1988.

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 nonconfidential 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 confidential 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 84.6(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 207.24) and must be submitted not later than the close of business on April 14, 1988. In addition, any person who has not entered an appearance as a party to the investigation may submit a written statement of information pertinent to the subject of the investigation on or before April 14, 1988.

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 confidential business 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 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 treatemt must conform with the requirements of § 201.6 of the Commission's rules (19 CFR 201.6).

Authority: This investigation is 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: January 28, 1988.

[FR Doc. 88-2224 Filed 2-2-88; 8:45 am]

BILLING CODE 7020-02-M

[A-588-705]

Final Determination of Sales at Less Than Fair Value; Bimetallic Cylinders From Japan

AGENCY: International Trade Administration, Commerce.

ACTION: Notice.

SUMMARY: We have determined that bimetallic cylinders from Japan are being, or are likely to be, sold in the United States at less than fair value. The U.S. International Trade Commission (ITC) will determine, within 45 days of publication of this notice, whether these imports are materially injuring, or are threatening material injury to, a United States industry.

EFFECTIVE DATE: April 1, 1988.

FOR FURTHER INFORMATION CONTACT: John Brinkmann (202) 377-3965 or Raymond Busen (202) 377-3464, Office of Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230

Final Determination

We have determined that bimetallic cylinders from Japan are being, or are likely to be, sold in the United States at less than fair value, as provided in section 735(a) of the Tariff Act of 1930, as amended (the Act) (19 U.S.C. 1673d(a)). The estimated margins of sales at less than fair value are shown in the "Suspension of Liquidation" section of this notice.

Case History

On December 7, 1987, we presented a letter to the respondent stating that the response to our antidumping duty questionnaire continued to be deficient and that, in accordance with section 776(b) of the Act, if the deficient response was not corrected by the January 11, 1988 preliminary determination date, we might not be able to verify the information and might have to rely on best information available for our final determination. No further information was received from the respondent.

On January 11, 1988, we made an affirmative preliminary determination (53 FR 1046 January 15, 1988), using petitioners' information as the best information available.

In accordance with section 353.47 of our regulations (19 CFR 353.47), interested parties were provided an opportunity to comment on our preliminary determination by requesting a public hearing. No requests for a hearing were received and no further information or written views were received from petitioners or the respondent.

Scope of Investigation

The products covered by this investigation are bimetallic cylinders which are provided for in TSUSA items 678.3570, 678.3575, and 678.3580. The corresponding Harmonized System (HS) number is 8477.90.0000. The bimetallic cylinder is defined as a hollow metal cylinder which serves as part of a machine used to process various materials including plastic resins and various types of food either by injection molding, extrusion, or by blow molding. The product consists of an outer sheet of steel and an inner lining being of an alloy which are metallurgically bonded, the inner lining of a material which is resistant to a corrosive and abrasive environment. Nitrided cylinders, those cylinders whose inner surfaces have been hardened and tempered by a nitriding process, are not included in this investigation.

Fair Value Comparisons

To determine whether sales of bimetallic cylinders in the United States were made at less than fair value, we compared the United States price with the foreign market value, both of which were based on the best information available. We used the best information available as required by section 776(b) of the Act for the reasons stated in the "Case History" section of this notice.

The period of investigation for bimetallic cylinders from Japan was March 1, 1987 through August 31, 1987.

United States Price

As best information available for United States price, we used the U.S. price information provided in the petition. The petition provided prices for four sizes of bimetallic cylinders.

Foreign Market Value

As the best information available for foreign market value, we used home market prices provided in the petition. An adjustment was made to petitioners' home market prices to reflect exchange rates as certified by the Federal Reserve Bank.

Currency Conversion

We made currency conversions in accordance with § 353.56(a)(1) of our regulations. All currency conversions were made at the rates certified by the Federal Reserve Bank.

Verification

We did not verify respondent's information because we did not receive a sufficient response to our antidumping duty questionnaire and subsequent deficiency letters.

Continuation of Suspension of Liquidation

We are directing the U.S. Customs Service to continue to suspend liquidation of all entries of bimetallic cylinders from Japan that are entered, or withdrawn from warehouse, for consumption, on or after the date of publication of this notice in the Federal Register. The Customs Service shall continue to require a cash deposit or the posting of a bond equal to the estimated amounts by which the foreign market value of the merchandise subject to this investigation exceeds the United States price as shown below. The suspension of liquidation will remain in effect until further notice. The average dumping margins are as follows:

Manufacturer/Producer/Exporter	Margin percentage
Hitachi Metals, Ltd.	17.42
All Others	17.42

ITC Notification

In accordance with section 735(d) of the Act, we have notified the ITC of our determination.

If the ITC determines that material injury, or threat of material injury, does not exist, this proceeding will be terminated and all securities posted as a result of the suspension of liquidation will be refunded. However, if the ITC determines that such injury does exist, the Department will issue an antidumping duty order directing Customs officers to assess an antidumping duty on bimetallic cylinders from Japan entered, or withdrawn from warehouse, for consumption after the suspension of liquidation, equal to the amount by which the foreign market value exceeds the U.S. price.

This determination is published pursuant to section 735(d) of the Act (19 U.S.C. 1673d(d)).

March 28, 1988.

Gilbert B. Kaplan,

Acting Assistant Secretary for Import Administration.

[FR Doc. 88-7200 Filed 3-31-88; 8:45 am]

BILLING CODE 3510-DS-M

APPENDIX B

LIST OF WITNESSES APPEARING AT THE HEARING

CALENDAR OF PUBLIC HEARING

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

Subject : Certain Bimetallic Cylinders from Japan

Inv. No. : 731-TA-383 (Final)

Date and time: April 7, 1988 - 9:30 a.m.

Sessions were held in connection with the investigation in Room 101 - Main Hearing Room of the United States International Trade Commission, 500 E Street, S.W., in Washington.

In support of the imposition of antidumping duties:

Woods, Rogers & Hazlegrove--Counsel
Roanoke, Virginia
on behalf of

Xaloy, Inc. and Bimex Corporation

Walter G. Cox, Jr., President,
Xaloy, Inc.

H-Gunther Hoyt, Vice President,
Xaloy, Inc.

M. Caldwell Butler--OF COUNSEL

In opposition to the imposition of antidumping duties:

Graham & James--Counsel
Washington, D.C.
on behalf of

Hitachi Metals America division of
Hitachi Metals International, Ltd.
and Hitachi Metals, Ltd.

Ken Nishigaki, General Manager,
Wakamatsu Product Dept. Roll Group,
Hitachi Metals America

Paul Colby, President, Spirex Corporation

William White, Vice President, Spirex
Corporation

Michael A. Hertzberg)
Brian E. McGill) --OF COUNSEL

APPENDIX C

ADDITIONAL INFORMATION CONCERNING NITRIDED CYLINDERS

Description and uses

A nitrided cylinder is a hollow metal cylinder that serves as part of a machine to process plastics or other materials, either by injection-molding, by extrusion, or by blow-molding. The cylinder's surface has been hardened and tempered by a nitriding process. During the nitriding process, nitrogen atoms ionize and collect to form metal nitrides on the cylinder's surface, imparting hardness and corrosion resistance to the cylinder. Petitioner alleges that the nitrided cylinder is "a dissimilar article" from a bimetallic cylinder. 1/ 2/

For certain applications, a nitrided cylinder may be substituted for a bimetallic cylinder. Industry sources estimate that U.S. OEMs of injection-molding machines include nitrided cylinders in 50 percent (by value) of new machines. Nitrided barrels are typically used in smaller injection-molding machines; bimetallic barrels tend to be used in larger ones. Bimetallic cylinders are in the bulk of the new U.S.-produced extrusion machines. The extrusion process is continuous and extruder screws tend to be long and bend, resulting in more wear. Nitrided cylinders can be used in blow-molding injection machines, as well as in blow-molding extrusion machines. 3/

More bimetallic cylinders are sold in the U.S. replacement market, because processors will spend more for the longer-lasting part, even in instances in which the nitrided cylinder might serve the purpose. One additional advantage of the bimetallic cylinder is that since it is replaced less frequently, the processor reduces downtime for parts replacement.

Nitrided cylinders cost less than bimetallic cylinders but do not wear as long. They are usually offered on injection machines at the lower end of the price range, and are frequently sold to price conscious, smaller processors. Such cylinders are more appropriate for processing less corrosive and less abrasive materials, whereas materials with glass fillers, for example, require bimetallic cylinders for better results. Traditionally, nitrided cylinders have been used more in Japan and Europe, in part due to availability and in part due to the tradition in Europe of buying a larger machine and running it less, as compared with the general practice in the United States of buying the smallest possible machine and running it for long periods of time.

Manufacturing processes

There are several techniques for manufacturing nitrided cylinders, including ion-nitriding, gas-nitriding, and liquid-bath nitriding. Nitrided cylinders are produced from a nitralloy material or tool steel. First the

---

1/ Petition, p. 1.
2/ Respondents' position is "neutral regarding whether nitrided barrels should be included within the like product definition." (Respondents' prehearing brief, p. 4.)
3/ Staff telephone conversation with * * *, Mar. 9, 1988.

steel must be bored and cut to specified dimensions. The cylindrical barrel is then hardened and tempered to achieve the desired properties. The cylinder is then treated by means of one of the nitriding techniques.

The best manufacturing technique for longer cylinder life is ion-nitriding. This method uses a vacuum chamber, nitrogen process gas, and electricity. The nitrogen atoms ionize and collect on the barrel surface. These ions combine with the surface constituents to form nitrides that impart hardness to the surface layer.

The depth of the nitrided layer is influenced by the steel composition and the particular nitriding process, and is proportional to the time of exposure to the gases. The result is hardness and thickness of the surface that should be compatible with the end user's processing requirements. However, the thickness of the nitrided area is less than that of the bimetallic alloy; further, the nitrided layer loses hardness from the surface to the inside of the nitrided layer.

Nitrided cylinders are produced primarily in the United States by OEMs of injection-molding, extrusion, and blow-molding machines. Cincinnati Milacron, Inc., Batavia, OH; Van Dorn Plastic Machinery Co., Strongsville, OH; and Reed Division, Package Machinery Co., Stafford Springs, CT, produce and sell nitrided cylinders both as components of their original machines and in the replacement market.

U.S. producers and importers

There are four known U.S. producers of nitrided cylinders: Cincinnati Milacron, Inc., accounting for * * * percent (by value) of reported U.S. production of nitrided cylinders in 1987; Van Dorn Plastic Machinery Co., accounting for * * * percent; Reed Division, Package Machinery Co., accounting for * * * percent; and Flite Technology, Inc., Cocoa, FL, accounting for * * * percent of reported U.S. production of nitrided cylinders.

The Commission received questionnaire responses from 16 importers of nitrided cylinders, believed to account for virtually all of the imports of this product from all countries. Nine of these firms import nitrided cylinders from West Germany, six from Japan, one from Switzerland, and one from Taiwan. Ten of these firms also import bimetallic cylinders. The following tabulation presents information on these importers--their locations, sources of imports, and shares of reported import values in 1986 and 1987, by source (in percent):

* * * * * * *

Foreign producers

Counsel for Hitachi Metals America reported that some of the major Japanese plastic production machinery manufacturers produce nitrided cylinders for use in their own machines. Possible Japanese producers of nitrided cylinders are * * *. Counsel is unaware of significant exports of Japanese nitrided cylinders to the United States, but stated that there may be occasional spare parts exported for use in Japanese manufactured plastic production machines in the United States.

Apparent U.S. consumption

Apparent U.S. consumption of nitrided cylinders, shown in table C-1, steadily increased in value during the period under investigation. The 21.5-percent increase in consumption from 1985 to 1986 is accounted for by a rise in shipments of imports of nitrided cylinders. The 12.8-percent increase in consumption from 1986 to 1987 is due to a rise both in domestic shipments and shipments of imports of nitrided cylinders.

Table C-1
Nitrided cylinders: U.S. producers' domestic shipments, domestic shipments of imports, and apparent U.S. consumption, by value, 1985-87

(In 1,000 dollars)

Item	1985	1986	1987
U.S. producers' domestic shipments	1,145	1,098	1,470
Shipments of imports from--			
Japan	***	***	***
West Germany	***	***	***
Switzerland	***	***	***
Taiwan	***	***	***
Subtotal	4,202	5,398	5,858
Apparent U.S. consumption	5,347	6,496	7,328

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

The U.S. industry

U.S. production of nitrided cylinders, and related capacity and capacity utilization are shown in table C-2. Production of nitrided cylinders declined by 9.7 percent from 1985 to 1986, but rose by 32.0 percent in 1987, to above 1985 production levels. Average capacity remained virtually constant from 1985 to 1987. Capacity utilization declined from 49.5 percent in 1985 to 44.7 percent in 1986, and then rose to 58.9 percent in 1987.

Table C-2
Nitrided cylinders: U.S. production, average capacity, and capacity utilization, by quantity, 1985-87

Item	1985	1986	1987
Production (units)	935	844	1,114
Average capacity (units) 1/	1,888	1,888	1,890
Capacity utilization (percent)	49.5	44.7	58.9

1/ Cincinnati Milacron bases its capacity figures on operations of * * * hours per week, * * * weeks per year. Van Dorn's figures are based on * * * hours per week, * * * weeks per year. Reed's figures are based on the plant's operation for * * * hours per week, * * * weeks per year. For Flite, these estimates were * * * hours per week, * * * weeks per year.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

U.S.-produced domestic shipments by quantity, value, and average unit value are shown in table C-3. Domestic shipments of nitrided cylinders declined by 1.4 percent in quantity and 4.1 percent in value from 1985 to 1986. However, in 1987 such shipments increased to above the 1985 levels, rising by 42.4 percent in quantity and 33.9 percent in value from 1986 to 1987. The average unit value of nitrided cylinders declined by 8.6 percent during the period under investigation.

Table C-3
Nitrided cylinders: U.S.-produced domestic shipments, by quantity, value, and average unit value, 1985-87

Item	1985	1986	1987
Quantity (units)	564	556	792
Value (1,000 dollars)	1,145	1,098	1,470
Average unit value	$2,030	$1,975	$1,856

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

The average number of production and related workers employed by the four U.S. producers of nitrided cylinders declined by 6 percent from 1985 to 1986, but rose by 3.2 percent from 1986 to 1987 (table C-4). The number of hours worked, total wages, hourly wages, and total compensation decreased from 1985 to 1986, but increased from 1986 to 1987. Productivity remained constant from 1985 to 1986, but rose from 1986 to 1987. Unit labor costs rose from 1985 to 1986, but declined from 1986 to 1987.

Table C-4
Nitrided cylinders: Average number of production and related workers, hours worked, wages and total compensation paid, productivity, and unit labor costs, 1985-87

Item	1985	1986	1987
Average number of workers	100	94	97
Hours worked (1,000 hours)	186	178	187
Wages ($1,000)	2,130	1,848	2,106
Hourly wages	$11.45	$10.41	$11.25
Total compensation ($1,000)	2,806	2,619	2,697
Productivity (cylinders per hour)	0.005	0.005	0.006
Unit labor costs (per cylinder)	$3,001	$3,103	$2,421

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Production of nitrided cylinders accounted for a small portion of overall production of the four U.S. producers of nitrided cylinders. Employment, hours, wages, and total compensation attributable to the production of nitrided cylinders was small relative to those attributable to the manufacture of all other products--* * * percent for Reed and Flite and roughly * * * percent and * * * percent for Cincinnati Milacron and Van Dorn, respectively.

Financial experience of U.S. producers

Data relating to the financial experience of U.S. producers are presented in table C-5.

Table C-5
Income-and-loss experience of U.S. producers on their operations producing nitrided cylinders, accounting years 1985-87

* * * * * * *

U.S. imports and market penetration

Data on U.S. imports of nitrided cylinders from Japan and all other countries known to be sources of imports of nitrided cylinders are presented in table C-6. The c.i.f. duty-paid value of U.S. imports of nitrided cylinders from Japan rose by * * * percent from 1985 to 1986, but declined by * * * percent from 1986 to 1987. West Germany was the largest source of imports of nitrided cylinders during the period of investigation, accounting for * * * percent of the value of imports in 1987. Imports from Japan accounted for * * * percent of the value of imports during that year.

Shares of apparent U.S. consumption calculated on the basis of value are shown in table C-7. During the period under investigation, imports from West Germany accounted for the largest share of apparent U.S. consumption, followed by imports from Japan and U.S.-produced domestic shipments. As a ratio to apparent U.S. consumption, imports from West Germany rose during the period under investigation, while imports from Japan fell. As a ratio to U.S. consumption, U.S.-produced domestic shipments fell by 4.5 percentage points from 1985 to 1986, and then rose by 3.2 percentage points during 1987.

Channels of distribution

The vast majority of U.S.-produced nitrided cylinders are sold as original equipment in injection-molding machines. A much smaller portion is sold as replacement parts. The three major U.S. producers of nitrided cylinders--Cincinnati Milacron, Van Dorn, and Reed--are manufacturers of injection-molding machines and produce nitrided barrels for their own use in producing machinery and in supplying replacement parts for their own machinery. Flite, the fourth U.S. producer of nitrided cylinders, is primarily a manufacturer of feed screws for plastic injection and extrusion machines, and sells nitrided cylinders to its buyers of feed screws. Nitrided cylinders sold as part of a new injection-molding machine or as replacement parts accounted for 98.6 percent of all shipments of nitrided cylinders in 1987.

Table C-6
Nitrided cylinders: U.S. imports, by principal sources, 1985-87

Source	1985	1986	1987
	C.i.f. duty-paid value (1,000 dollars)		
Japan	***	***	***
Switzerland	***	***	***
Taiwan	***	***	***
West Germany	***	***	***
Total	4,357	4,391	4,634
	Quantity (cylinders)		
Japan	***	***	***
Switzerland	***	***	***
Taiwan	***	***	***
West Germany	***	***	***
Total	611	449	356
	Average unit value (per cylinder)		
Japan 1/	$ ***	$ ***	$ ***
Switzerland	***	***	***
Taiwan	***	***	***
West Germany	***	***	***
Average	7,131	9,779	13,017
	Percent of total value		
Japan	***	***	***
Switzerland	***	***	***
Taiwan	***	***	***
West Germany	***	***	***
Total	100.0	100.0	100.0

1/ * * *.

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

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table C-7
Nitrided cylinders: Ratios of domestic shipments of imports and of U.S.-produced domestic shipments to apparent U.S. consumption, calculated on the basis of value, 1985-87

(In percent)

Item	1985	1986	1987
Imports from--			
Japan	***	***	***
West Germany	***	***	***
Switzerland	***	***	***
Taiwan	***	***	***
Total	78.6	83.1	79.9
U.S.-produced domestic shipments	21.4	16.9	20.1
Total	100.0	100.0	100.0

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

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

APPENDIX D

IMPACT OF IMPORTS ON U.S. PRODUCERS' GROWTH, INVESTMENT, AND ABILITY TO RAISE CAPITAL

U.S. producers of bimetallic cylinders were asked to describe any actual or potential negative effects of imports of bimetallic cylinders from Japan on their firms' growth, investment, and ability to raise capital. The four producers' comments are quoted below:

Xaloy, Inc.--* * *.

Bimex Corp.--* * *.

Wexco Corp.--* * *.

Wisconsin Bimetallic Casting Corp.--* * *.