ERASABLE PROGRAMMABLE READ ONLY MEMORIES FROM JAPAN

Determination of the Commission in Investigation No. 731-TA-288 (Final) Under the Tariff Act of 1930, Together With the Information Obtained in the Investigation

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Note.—Data which would disclose confidential operations of individual concerns may not be published and therefore have been deleted from this report. Deletions are indicated by asterisks.

CONTENTS

Figures

CONTENTS

Figures—Continued

Tables

CONTENTS

Tables—Continued

CONTENTS

Tables——Continued

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC

Investigation No. 731-TA-288 (Final)

ERASABLE PROGRAMMABLE READ ONLY MEMORIES (EPROM'S) FROM JAPAN

Determination

On the basis of the record 1/ developed in the subject investigation, the Commission determines, 2/ 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 materially injured by reason of imports from Japan of erasable programmable read only memories (EPROM's), provided for in item 687.74 of the Tariff Schedules of the United States, which 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 March 17, 1986, following a preliminary determination by the Department of Commerce that imports of EPROM's 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 held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the Federal Register of April 2, 1986 (51 F.R. 11358). Subsequently, the Department of Commerce extended the date of its final determination and, accordingly, the Commission revised its schedule with a notice published in the Federal Register of May 7, 1986 (51 F.R. 16905).

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/ Chairman Liebeler dissenting.

On July 30, 1986, Commerce entered into an agreement with Japan that suspended the investigation pursuant to section 734 of the Act (19 U.S.C. § 1673c) (51 F.R. 28253, August 6, 1986). 1/ On August 26, 1986, however, petitioners filed a request to continue the investigation pursuant to section 734(g)(2) of the Act (19 U.S.C. § 1673c(g)(2)) and, on October 30, 1986, Commerce published a final affirmative determination of sales at LTFV (51 F.R. 39680).

Notice of the continuation of the Commission's final investigation and of a hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary to the Commission and by publishing the notice in the Federal Register of November 12, 1986 (51 F.R. 41028). The hearing was held in Washington, DC, on November 19, 1986, and all persons who requested the opportunity were permitted to appear in person or by counsel.

1/ The Commission published its suspension notice in the Federal Register of August 20, 1986 (51 F.R. 29708).

VIEWS OF VICE CHAIRMAN BRUNSDALE, COMMISSIONER STERN
COMMISSIONER ECKES, COMMISSIONER LODWICK, AND COMMISSIONER ROHR

We determine that an industry in the United States is materially injured by reason of imports of erasable programmable read only memories (EPROMs) from Japan which the Department of Commerce (Commerce) has determined are being sold at less than fair value (LTFV). 1/ Our determination is based primarily on the severe decline in the financial performance of the industry, which has adversely affected its long term competitive position. The subject imports from Japan are a cause of the precipitious price decline in the U.S. market which resulted in severe financial losses in the domestic industry. 2/

Like product and the domestic industry

To determine material injury, the Commission must first define the relevant domestic industry. The term "industry" is defined in section 771(4)(A) of the Tariff Act of 1930 as "the domestic producers 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 . . . ." 3/ "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." 4/

The "article subject to an investigation" is defined by the scope of the investigation initiated by Commerce. In this case, Commerce has defined the products under investigation to be

1/ Chairman Liebeler determines that an industry in the United States is not materially injured by reason of LTFV imports of EPROMs from Japan.
2/ Material retardation is not an issue in this investigation and will not be discussed further.
3/ 19 U.S.C. § 1677(4)(A).
4/ 19 U.S.C. § 1677(10).

> erasable programmable read only memories (EPROMs), which are a type of memory integrated circuit that is manufactured using variations of Metal Oxide-Semiconductor (MOS) process technology, including both Complementary (CMOS) and N-Channel (NMOS). The products include processed wafers, dice and assembled EPROMs produced in Japan and imported into the United States from Japan. . . . EPROMs assembled in third countries using wafers or dice processed in Japan are included within the scope of the investigation. . . . [A] variant of EPROMs, OTPs (One-Time-Programmable read only memories) are included in the scope of the investigation. In making the decision to include both third country assembled EPROMs and OTPs in the scope of the investigation we have been guided by the fact that the processed dice contain all the essential electronic properties which distinguished EPROMs as a separate class of goods from other semiconductors . 5/

The Commission's decision regarding the appropriate like product in an investigation is essentially a factual determination made on a case-by-case basis. The Commission looks for clear dividing lines among products in terms of distinct characteristics and uses. Minor variations in products have been determined to be an insufficient basis for separate like product analysis. 6/

5/ Final Determination of Sales at Less than Fair Value, 51 Fed. Reg. 39680 (October 30, 1986).

6/ E.g. Certain Radio Paging and Alerting Receiving Devices from Japan, Inv. No. 731-TA-102 (Final), USITC Pub. No. 1410 at 7 n.23 (1983)(different models of tone only pagers not separate like product, although tone only pagers separate like product from display pagers); Certain Amplifier Assemblies and Parts Thereof from Japan, Inv. No. 731-TA-48 (Final), USITC Pub. No. 1266 at 4-5 (1982)(addition of linearizer to amplifier insufficient to affect essential characteristics and uses of amplifier); Certain Steel Products from Belgium ..., Invs. Nos. 701-TA-86-144, 146 and 147 (Preliminary), USITC Pub. No. 1221 at 14-16 (1982)(differences in size, shape, or composition and lack of competition between products support distinct like product for each type). The Commission has also noted the legislative history of the like product definition, which provides in pertinent part:

> The requirement that a product be "like" the imported article should not be interpreted in such a narrow fashion as to permit minor differences in physical characteristics or uses to lead to the conclusion that the product and article are not "like" each other, nor should the definition of "like product" be interpreted in such a fashion as to prevent consideration of an industry adversely affected by the imports under investigation.

S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

The Commission examines factors relating to the characteristics and uses of the subject merchandise, including physical appearance, customer perceptions of the articles, common manufacturing facilities and production employees, channels of distribution, and interchangeability between products. 7/ Moreover, in addressing the question of whether "semifinished" products are "like" the "finished" product, the Commission considers the necessity for further processing, the relative cost of such processing, and the degree of substitutability or interchangeability of the products. 8/ In addition, the Commission has considered whether the product during the earlier stage of production is dedicated to use in the finished product, and whether it embodies or imparts to the finished product an essential characteristic. 9/

7/ See, e.g., Color Television Receivers from the Republic of Korea and Taiwan, Invs. Nos. 731-TA-134 and 135 (Final), USITC Pub. No. 1514 at 3-6 (1984); Certain Radio Paging and Alerting Receiving Devices from Japan, supra note 6.

8/ See Oil Country Tubular Goods from Argentina, Brazil, Korea, Mexico, and Spain, Invs. Nos. 731-TA-191-195 and 701-TA-215-217 (Preliminary), USITC Pub. No. 1555 at 6-7 (1984) ("green" tubes are like finished product because interchangeable); Certain Steel Valves and Certain Parts Thereof from Japan, Inv. No. 731-TA-145 (Preliminary), USITC Pub. No. 1446 at 6 n.10 (1983) (parts of valves same like product as finished product to which dedicated); Certain Forged Undercarriage Components from Italy, Inv. No. 701-TA-201 (Preliminary), USITC Pub. No. 1394 at 9-10 (1983)(views of Chairman Eckes) (semifinished components not like finished components); Fireplace Mesh Panels from Taiwan, Inv. No. 701-TA-185 (Preliminary), USITC Pub. No. 1284 (1982)(fireplace mesh on rolls not like mesh panels).

9/ Erasable Programmable Read Only Memories from Japan, Inv. No. 731-TA-288 (Preliminary), USITC Pub. No. 1778 (1985) [hereinafter EPROMs]; 64K Dynamic Random Access Memory Components from Japan, Inv. No. 731-TA-270 (Final), USITC Pub. No. 1862 (1986) [hereinafter 64K DRAMs]; Dynamic Random Access Memory Semiconductors of 256 Kilobits and Above from Japan, Inv. No. 731-TA-300 (Preliminary), USITC Pub. No. 1803 (1986) [hereinafter 256K and Above DRAMs].

In this investigation, the petitioners manufacture wafers and unassembled dice in the United States, an overwhelming percentage of which are then shipped overseas and assembled into finished EPROMs, and reexported into the United States. The Customs Service has determined that assembly of dice into finished EPROMs constitutes a "substantial transformation" within the meaning of the Customs laws. 10/ Therefore, the finished EPROMs enter the United States as imports from the country of assembly. The majority of assembly overseas is done by affiliated companies of the manufacturer of the wafers and dice. Some assembly is also done by subcontractors, companies that are unrelated to the manufacturer of the wafers and dice. The manufacturer, however, retains substantial control over the assembly and testing operations, as the final assembled product is sold as the product of the manufacturer of the wafers and dice, not the assembler. At least one domestic producer of wafers and dice, Mostek Corp., has assembled EPROMs in the United States, and petitioner Intel has built an assembly operation in Chandler, Arizona.

The majority of the imports from Japan are of finished EPROMs, assembled in Japan, from wafers and dice manufactured in Japan. One company, Fujitsu, imports wafers and dice from Japan for assembly in the United States. In addition, there are some imports of EPROMs assembled in third countries but

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10/ As the Commission has noted in past investigations, the Customs Service definition of "substantial transformation," while a factor to be considered, is not binding upon the Commission in its determination of like product under title VII. E.g., EPROMs, supra note 9, at 12 n.31.

containing dice manufactured in Japan. [11/] The potential exists for Japanese companies to shift their assembly operations to third countries: many of these companies already have semiconductor assembly operations in other Pacific Rim countries that can be adapted to EPROM assembly, and some are already assembling EPROMs in third countries. [12/] [13/]

Like product -- Petitioners argue in this investigation that the Commission's determination of the like product in our preliminary investigation was correct, and that the Commission should reach the same conclusion here, that EPROMs comprise a single like product. [14/]

11/ Imports of processed wafers and dice produced in Japan and assembled into finished EPROMs in another country prior to importation into the United States are fewer than direct imports from Japan. In addition, imports of processed wafers and dice produced in Japan and imported into the United States for assembly into finished EPROMs are fewer than imports of finished EPROMs. Report of the Commission (Report) at A-39. The majority of the imports at issue in this case are of assembled EPROMs produced in Japan from wafers and dice manufactured in Japan.

12/ Japanese producers could in this manner circumvent an antidumping duty order entered on EPROMs from Japan. Therefore, petitioners were concerned that the scope of the investigation include third country imports. Commerce has included such imports within the scope of the investigation. Consequently, in considering the effect of imports, we have treated third country imports subject to investigation and imports from Japan together.

13/ Commissioner Stern notes that although the Department of Commerce has responsibility for defining the scope of an investigation through the identification of the imports subject to investigation, she does not believe that this includes extending the scope of investigation to include imports from third countries. If there is reason to believe that the unfair nature of imports from third countries are causing material injury or threat thereof, either independently or cumulatively, an investigation should be instituted as to those imports. Commissioner Stern has considered only imports from Japan in reaching her deterimination.

14/ In the preliminary investigation, the Commission determined that there was one like product, EPROMs, which included processed wafers, dice and assembled EPROMs. EPROMs, supra note 9, at 6-9. In addition, in later investigations involving a different memory integrated circuit, dynamic random access memories (DRAMs), the Commission similarly concluded that there was a single like product, DRAMs, comprising processed wafers, dice, and assembled DRAM's. 64K DRAM's, supra note 9, at 5-11. See also, 256K and Above DRAMs, supra note 9, at 5-13.

Respondents argue that the Commission's previous determination was in error and that there are several like products in this investigation, specifically: assembled EPROMs; "components" of EPROMs, i.e., processed wafers and unassembled dice; one-time-programmable EPROMs (OTPs); and electrically erasable programmable read only memories (EEPROMs).

Respondents' arguments raise several issues in determining the appropriate like product in this investigation that were not addressed in the preliminary investigation. The first issue is whether one-time-programmable EPROMs (OTPs) constitute a separate like product from standard EPROMs. The chip in a standard EPROM is enclosed in a ceramic package which includes a transparent window, allowing the end user to erase the chip by exposing it to ultraviolet light for several hours. Once the chip has been erased it can then be reprogrammed. On the other hand, the chip in an OTP is enclosed in a solid plastic body having no window. Consequently, the end user cannot erase or reprogram the chip. The semiconductor chip itself is identical in both standard EPROMs and OTPs. The chips are manufactured in the same plants, by the same workers, and use the same technology. Moreover, during the manufacturing and test phases, the chips can be and are erased by the manufacturer.

OTPs simply represent a different packaging for the chip. It is this difference in packaging which results in the erasability or the lack thereof in the chips. [15/] The chip maintains its essential characteristics and uses, even though its packaging renders it unerasable by end users. This is

15/ The industry recognizes that the majority of EPROM users do not need to, and will never choose to, reprogram the chip. Transcript of Hearing (Tr.) at 55. Therefore, the ceramic package with the window, which is significantly more expensive than the plastic packaging, is an unnecessary expense to both the manufacturer and the consumer in most applications for EPROMs. Id. at 69.

not a sufficient difference in the characteristics and uses of OTPs and ceramic-packaged EPROMs to render them separate like products. The information on the record in this investigation supports the conclusion that OTPs are "like" standard EPROMs within the meaning of the statute.

A second issue in this investigation is whether electrically erasable programmable read only memories (EEPROMs) constitute a separate like product from EPROMs. EEPROMs are a variant of EPROM technology which allows the erasure of the chip by electrical means, rather than by exposure to ultraviolet light. Because of their more complicated technology, EEPROMs are significantly more expensive than EPROMs. 16/ Electrically erasing an EEPROM is much faster than erasing an EPROM by exposing it to ultraviolet light. Consequently, purchasers who foresee the need to reprogram their chips regularly or frequently are apparently willing to pay the premium.

Both petitioners and respondents agree that EEPROMs are a different like product from the articles subject to investigation, since they are different in design and function from EPROMs. While the memory characteristics of EEPROMs are almost identical to those of EPROMs, we conclude that the difference in technology responsible for the characteristic of electrical erasability renders them different from EPROMs. In addition, they are used in applications where the erasability feature is important. This is a significant difference in characteristics and uses from those of EPROMs.

16/ Tr. at 69.

Therefore, we determine that EEPROMs are a different like product than the products subject to investigation. 17/

A third issue concerns whether the N-channel and Complementary Metal Oxide Semiconductors (NMOS and CMOS) are one like product. 18/ The actual memory in both CMOS and NMOS technology is composed of NMOS transistors. In an NMOS chip, the peripheral circuitry also is composed of NMOS transistors, while in a CMOS chip, the peripheral circuitry is composed of both NMOS and PMOS transistors, permitting lower power consumption and operation over a broader temperature range.

Both types of EPROMs are manufactured in the same plants, by the same workers, using essentially the same technology. Moreover, CMOS EPROMs are fully interchangeable with NMOS EPROMs, although the reverse is not the case. The essential function of both, their memory capacity, is identical. We therefore determine that CMOS and NMOS EPROMs are a single like product.

Based on the record developed in this investigation, we determine that the like product in this investigation is EPROMs, both NMOS and CMOS, including EPROM wafers/dice, assembled EPROMs, and OTPs, but excluding EEPROMs.

17/ Commissioner Rohr notes that EEPROMs are not within the scope of the investigation as defined by Commerce. Thus, having determined that they are not "like" EPROMs, there is no need for the Commission to determine whether the industry producing the separate like product EEPROMs is materially injured by reason of imports of that product.

18/ CMOS and NMOS are two technologies of semiconductor manufacture. There are EPROMs, both imported and domestic, manufactured using both technologies. The principal difference between the two is that in a CMOS chip, additional steps are performed to add PMOS transistors to the interface, or peripheral, circuitry of an NMOS chip.

Domestic industry - Having determined that there is one like product in this investigation, we must determine the identity of the companies which are "domestic producers of the like product." There are seven known producers of EPROM wafers and dice in the United States. 19/ One company manufactured wafers and dice and assembled EPROMs in the United States until first quarter 1983. 20/ Intel has a U.S. assembly operation which is not yet in commercial operation. 21/ In addition, Fujitsu Microelectronics, Inc. (Fujitsu) assembles EPROMs in the United States using wafers/dice imported from Japan. 22/

The Commission's analysis of domestic industry is a factual determination and is made on a case-by-case basis. 23/ The U.S.-based producers' activities in the United States include research and development of all aspects of EPROM technology, as well as wafer fabrication and testing. We determine that the U.S. operations of each of these companies comprise the domestic industry.

19/ They are Intel, Inc., Advanced Micro Devices, Inc., National Semiconductor Corp. (petitioners), and Mostek Corp., Motorola, Inc., Rockwell International Corp., SEEQ Technology, Inc., and Texas Instruments. Report at A-6.
20/ Id. at A-7 n.1, A-8.
21/ Tr. at 14.
22/ Report at A-7-A-12. Fujitsu is also an importer of assembled EPROMs from Japan. Fujitsu opposes the petition in this investigation.
23/ In prior investigations, the Commission has examined the overall nature of production-related activities in the United States, including the extent and source of a firm's capital investment, the technical expertise involved in production activity in the United States, the value added to the product in the United States, employment levels, the quantity and type of parts sourced in the United States, and any other costs and activities in the United States directly leading to production of the like product. No single factor is determinative, and the Commission's analysis should consider all of these factors, and any other factors which are deemed relevant in light of the specific facts of the investigation. See Cellular Mobile Telephones and Subassemblies Thereof From Japan, Inv. No. 731-TA-207 (Final), USITC Pub. No. 1786 (1985); Color Television Receivers from the Republic of Korea and Taiwan, supra note 7, at 8; Certain Radio Paging and Alerting Receiving Devices from Japan, supra note 7, at 8.

We have also determined that Fujitsu is a part of the domestic industry. However, the question arises as to whether to exclude Fujitsu's operations from the Commission's analysis under the related parties provision of the statute, which provides:

> When some producers are related to the exporters or importers, or are themselves importers of the allegedly subsidized or dumped merchandise, the term "industry" may be applied in appropriate circumstances by excluding such producers from those included in that industry. 24/

That provision calls for the Commission to exercise its discretion in determining whether "appropriate circumstances" exist for the exclusion of related parties from the industry. The primary purpose for the provision is to avoid the distortion in the aggregate data concerning the domestic industry which might result from not excluding related parties whose operations are shielded from the effect of the imports.

Fujitsu holds an unique position in the U.S. market since Fujitsu is the only company to assemble EPROMs from imported Japanese wafers/dice. Fujitsu is also an importer of assembled EPROMs from Japan. Moreover, Fujitsu does not conduct research and development or wafer fabrication of EPROMs in the United States. Therefore, its position is significantly different from that of U.S.-based producers. Consequently, we determine that appropriate circumstances exist to exclude Fujitsu's operations from the domestic industry under the related parties provision. 25/ 26

24/ 19 U.S.C. § 1677(4)(B).
25/ We note that the trends in performance indicators for the domestic industry are the same with or without inclusion of Fujitsu. Therefore, exclusion of Fujitsu did not affect our determination in this investigation.
26/ Vice Chairman Brunsdale and Commissioner Stern note that the inclusion of the Fujitsu data does not distort the data on the performance of the domestic industry and they have made their determinations without removing Fujitsu based on the related parties provision.

Based on our analysis of the nature of production related activities in the United States by companies involved in EPROM manufacture, we conclude that the U.S. operation of all the companies which conduct some part of their manufacturing operations in the United States, whether wafer or dice fabrication or assembled EPROMs, comprise the domestic industry. However, due to the unique position of Fujitsu in the U.S. market, we conclude that it is appropriate to exclude that firm's U.S. operations from our consideration of the domestic industry under the related parties provision of the statute.

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, inventories, employment, and financial performance. [27/] No single factor is determinative, and in each investigation, the Commission must consider the particular nature of the industry which it is examining in making its determination.

Apparent domestic consumption of cased EPROMs increased steadily by 23 percent, from 60,443,000 units in 1983 to 74,470,000 units in 1985. [28/] During the most recent period, January June 1986, there was a 10 percent increase in total consumption of cased EPROMs as compared to the corresponding period of 1985. Consumption of higher density EPROMs (128K and above) increased dramatically during the period of January June 1986 as compared with the corresponding period of 1985. [29/]

27/ 19 U.S.C. § 1677(7)(C)(iii).
28/ Report at A 9.
29/ Vice Chairman Brunsdale thinks that it would be more appropriate to measure quantities in terms of memory equivalents but notes that the trends for apparent domestic consumption and domestic shipments are the same whether measured in memory equivalents or in raw units. See her Additional Views infra.

The Commission collected data on capacity to produce all integrated circuits, because the manufacturing facilities used to produce EPROMs can generally be used to produce all integrated circuits, and because segregated EPROM capacity was not available from the domestic industry. Producers reported capacity on two different bases, die equivalents, and 4-inch wafer starts. Because of the differences in reporting, it is impossible to aggregate capacity information. Average for-period capacity to produce on the basis of die equivalents rose by 29 percent from 1983 to 1984, declined slightly in 1985, and then fell by 16 percent in January-June 1986 as compared to capacity for the corresponding period of 1985. 30/ Average-for-period capacity for producers reporting on the basis of 4-inch wafers starts followed similar trends. Capacity increased from 1983 to 1984, declined in 1985 and then declined still further in January-June 1986. 31/ Capacity utilization for those producers reporting on the basis of die equivalents rose from 90.1 percent in 1983 to 98.5 percent in 1984, then declined to 51.6 percent in 1985. Capacity utilization rose to 70.9 percent in January-June 1986, from 50.6 percent in January-June 1985. For producers reporting on the basis of 4-inch wafer start equivalents capacity utilization rose from 1983 to 1984, then declined to just above the 1983 level in 1985. Capacity utilization declined substantially in January-June 1986, as compared to the corresponding

30/ Id. at A-13.
31/ Id.

period of 1985. 32/ 33/ 34/

Domestic shipments of cased EPROMs, the wafer/dice which were manufactured in the United States, increased throughout the period under investigation. 35/ Domestic shipments of higher density EPROMs have continued to increase rapidly, while domestic shipments of lower density EPROMs have increased more slowly or declined. 36/

U.S. producers' inventories of cased EPROMs made from uncased EPROMs produced in the United States increased by 31 percent from 1983 to 1985, then declined by less than 10 percent from January-June 1985 to January-June 1986. 37/

The number of production and related workers employed in the production of uncased EPROMs increased by 31 percent in the period 1983 to 1985, then declined by 21 percent in January-June 1986 as compared to the corresponding period of 1985. 38/ Hours worked by these employees followed a similar trend.

32/ Id.
33/ Commissioner Rohr notes that because of the data problems indicated above, it is not possible for him to draw any conclusions with regard to production capacity except in the most general terms, that there is significant excess capacity to produce EPROMs.
34/ Vice Chairman Brunsdale does not place much weight on available evidence regarding capacity or capacity utilization in this case. Because only three domestic firms out of eight were able to provide separate capacity data for EPROMs, most of the data available to the Commission are for all integrated circuits. EPROMs are a very small part of all integrated circuits so that total IC capacity is not very useful to an analysis of the EPROM industry. Moreover, the evidence indicates that producers can easily switch their capacity among different integrated circuits, e.g., from DRAMs to EPROMs, so that even the segregated data furnished are of limited value in this case. However, she notes that there was substantial unused capacity to produce integrated circuits in 1985 and in interim 1986, which is a general indicator of harm in this case.
35/ Report at A-16, Table 6.
36/ Id.
37/ Id. at A-23. Commissioner Rohr notes that the interim inventory figures are not particularly reliable in this case.
38/ Id. at A-24.

It is in the financial data that material injury to the domestic industry is most apparent. The Commission received financial information from the seven firms which perform wafer fabrication in the United States. Net sales of EPROMs increased from 1983 to 1984 then declined to below the 1983 level in 1985, 39/ and declined again in January-June 1986, as compared with the corresponding period of 1985. 40/ Operating income rose from 1983 to 1984, before plummeting in 1985 to a loss approximately two and one-half times 1983's income; 41/ data for January-June 1986 show increasing losses over the corresponding period of 1985. 42/ The ratio of operating income to net sales remained steady at a profit of 17 percent for 1983 and 1984 but then fell to a loss of 45 percent in 1985. 43/ In interim 1986, the industry showed a ratio of operating income to net sales of negative 50 percent, as compared with a loss of 13.5 percent during interim 1985. 44/ All seven firms reported operating losses during 1985, as compared to two firms in 1984 and four firms in 1983. All six of the firms providing interim results continued to report operating losses during interim 1986, as compared with five firms reporting losses during interim 1985. 45/

39/ Id. at A-27, Table 14.
40/ Id.
41/ Even excluding the operations of one firm which showed extraordinarily high losses, the domestic industry recorded operating losses. Id. at A-29.
42/ Id. at A-27, Table 14. Again, excluding the data for one firm which reported extraordinarily high losses lowers the absolute amount, but the trend remains the same. Id.
43/ Id. at A-41.
44/ Id. at A-27.
45/ Id.

Based on our overall assessment of the condition of the domestic industry, we conclude that the domestic industry producing EPROMs is currently experiencing material injury. 46/ 47/

Causation 48/

When making a determination as to whether there is material injury by reason of LTFV imports, the statute provides that:

> the Commission shall consider, among other factors:
> (1) the volume of imports of the merchandise which is the subject of the investigation,
> (2) the effect of imports of that merchandise on prices in the United States for like products, and
> (3) the impact of imports of such merchandise on domestic producers of like products. 49/

Petitioners' argument concerning causation is based on significant losses resulting from a collapse in prices in the U.S. market. They argue that they chose to meet a Japanese-led rapid decline in EPROM prices, in order to maintain production levels and market presence and to benefit from learning economies, as well as to enable them to continue to develop and bring into

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46/ Commissioner Stern believes that the causal context is critical to a reliable material injury determination. Therefore, she does not believe it necessary or desirable to make a determination on the question of material injury separate from the consideration of causation. She joins her colleagues by concluding that the domestic industry is experiencing economic problems. For a fuller discussion of this issue, see Additional Views of Chairwoman Stern in Cellular Mobile Telephones and Subassemblies Thereof from Japan, Inv. No. 731-TA-207 (Final), USITC Pub. 1786 at 18 (1985).
47/ Commissioner Eckes believes that the Commission is to make a finding regarding the question of material injury in each investigation. See Additional Views of Commissioner Eckes in Cellular Mobile Telephones and Subassemblies Thereof from Japan at 20.
48/ Vice Chairman Brunsdale does not join in this section of the opinion. For her analysis of causation see her Additional Views, infra.
49/ 19 U.S.C. § 1677(4)(B).

production new generations of EPROMs. Meeting Japanese price levels resulted in significant financial losses. The essence of petitioners' argument is that they chose to fight Japanese dumping on the basis of price, and that their success in the short run in preventing increases in Japanese market share at the expense of financial losses, does not mean that LTFV Japanese imports did not cause material injury to the domestic industry. Respondents dispute this characterization of events, arguing that the price declines for EPROMs were caused by cutthroat price competition among the domestic producers, which the market forced them to follow.

With respect to volumes, imports of cased EPROMs from Japan increased from 23.8 million units in 1983 to 27.4 million units in 1984, before declining to 19.4 million units in 1985. 50/ Data for the most recent period, January-June 1986, show a continued decline in imports of cased EPROMs to 8.1 million units, as compared with 10.3 million units during the corresponding period of 1985. 51/ Data concerning imports of uncased EPROMs from Japan are confidential.

Nonetheless, the Japanese presence in the U.S. market is substantial. Further, Japanese import volumes and market penetration grew in the higher value, higher density devices, where apparent consumption was growing,

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50/ Report at A-38, Table 26.
51/ Id. We note however, that the entire decline in imports is attributable to declining imports of lower density EPROMs. Imports of higher density cased EPROMs have continued to increase during the period under investigation. Id. at A-39. In addition, the filing of the petition in 1985 may have contributed to the decline in imports in 1986.

indicating an intent to maintain a strong market position. In addition, Japan sharply increased its semiconductor production. 52/

With respect to pricing, the Commission collected pricing information from domestic producers and importers for different densities of EPROMs with respect to each of the three major channels of distribution. 53/ While there are variations in the pattern with respect to sales of particular density EPROMs to particular purchasers, on the whole the data demonstrate a dramatic collapse in both domestic and import prices. April 1986 price levels are in some cases only a small fraction of what they were in September, 1984. 54/

52/ Japanese production data are available only at the level of all MOS memories, which includes products other than EPROMs, such as DRAMs. Report at A-12.

53/ The three major channels of distribution are (1) sales to end users, i.e., original equipment manufacturers and circuit board stuffers, (2) sales to distributors, and (3) spot sales, which may include sales to end users and distributors. Report at A-17. The Commission collected monthly price information for four different categories of end use products from original equipment manufacturers: (1) office automation equipment; (2) telecommunications equipment; (3) industrial automation equipment; and (4) consumer electronic products, including personal computers. Report at A-74. In addition, the Commission collected monthly price information for both authorized and independent distributors. Id.

54/ Id. at A-48-A-85. For instance, the price of 64K EPROMs sold to OEMs dropped from an index level of 100 in September 1984 to as low as 33 in April 1986. For 128K EPROMs, the price index dropped from 100 in September 1984 to as low as 15 in April 1986, while for 256K EPROMs, the price index dropped from 100 to as low as 18 during the same period. Price indices for distributors showed a similar collapse in prices, with index levels dropping from 100 in September 1984 to as low as 6 in April 1986.

Sales to original equipment manufacturers account for by far the majority of EPROM sales. 55/ The predominant pattern was one of Japanese prices undercutting domestic producer prices in sales to original equipment manufacturers. 56/

Pricing to distributors presented a more mixed picture. Unfortunately, the data are clouded, as sales to authorized distributors also generally are made with price protection. Thus, if the prevailing market price at the time of sale by the distributor is lower than the invoice price for the EPROMs sold, the distributor is in some manner credited for that difference by the manufacturer. 57/ The Commission cannot be certain whether reported distributor prices reflect original invoice prices, or prices adjusted for credits. Thus the patterns of under- and overselling in this market are not a reliable guide to price competition between domestic and imported EPROMs. Similarly, the rapid declines in price make the average monthly price comparisons in the independent distributors market less reliable than usual.

The Commission was able to confirm numerous instances of lost sales and lost revenues due to price competition from Japanese EPROMs. Based on the information of record, we conclude that the subject imports from Japan actively contributed to the dramatic decline of EPROM prices in the U.S.

55/ Most of the original equipment manufacturers require producers of EPROMs to qualify as suppliers, and negotiate long-term contracts with qualified suppliers. Qualification may be based on product specifications and testing or production facility qualification, or both. Such contracts call for scheduled deliveries, usually monthly, during the contract period. Most factory-direct contract sales provide for price renegotiation, generally on a "meet-competition" basis. Thus, once a manufacturer has qualified, competition is largely based on price.
56/ Report at A-76-A-84.
57/ Tr. at 37-40, 91-94.

market. Although U.S. manufacturers were able to hold, and even increase their market share, it has been at the expense of meeting prices far below what could reasonably have been expected, based on the typical declining cost structure of this industry. The financial position of the U.S. industry has consequently suffered during the period under investigation. We therefore conclude that the domestic industry is materially injured by reason of LTFV imports of EPROMs from Japan.

ADDITIONAL VIEWS OF VICE CHAIRMAN ANNE E. BRUNSDALE

EPROMs from Japan
Investigation No. 731-TA-288 (Final)
December 15, 1986

I concur with the determination of the Commission majority that domestic producers of Erasable Programmable Read-Only Memories (EPROMs) are materially injured by reason of dumped imports from Japan. I offer these additional views on causation because I take a different approach than do my colleagues.[1]

This is the second final investigation in the past six months to deal with integrated circuits. In June the Commission determined that dumped 64K Dynamic Random Access Memory Components (64K DRAMs) from Japan materially injured the domestic industry producing DRAMs.[2]

There are several very strong similarities and close links between the EPROM and DRAM segments of the integrated circuit industry. First, both kinds of chips encompass a number of different generations of specific products, e.g., 64K and 256K

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[1] In addition, I have some differences with the majority on secondary issues. They are discussed in footnotes in the majority opinion.

[2] 64K Dynamic Random Access Memory Components from Japan, Inv. No. 731-TA-270 (Final), USITC Pub. 1862 (1986).

DRAMs, 64K and 128K EPROMs, where the "size" of each generation (the number before the "K") indicates the product's memory capacity. Second, for both types of chips, each successive generation usually goes through a product cycle that has two key features: unit cost of production (and price) declines as cumulative output expands (i.e., the so-called learning curve) and the intertemporal demand for a particular generation depends on the eventual availability of close substitutes in succeeding generations. Third, although EPROMs and DRAMs are not close substitutes in demand (because they have different uses), they are close substitutes in supply because they are made in the same establishments by the same workers and use the same or very similar production processes. Fourth, both were adversely affected by the 1985 worldwide recession in integrated circuits in which prices plummeted as domestic and Japanese producers overexpanded supply relative to world demand. Fifth, periodic recessions in the integrated circuit industry are a usual, even expected, feature of this business (e.g., the severe worldwide downturn in 1985 was an echo of a comparable downturn in 1975) because producers do not have perfect foresight and occasionally overbuild capacity.

Given the number of similarities and links between EPROMs and DRAMs, most notably that both EPROMs and DRAMs suffered a

worldwide recession in 1985, one may reasonably ask how I reached a negative determination in the 64K DRAM case, but an affirmative determination here. With respect to causation, the two cases have three important differences.[3] In 64K DRAMs the volume of imports was declining, the import penetration was not large (13.5 percent in 1985), and the weighted-average dumping margin was not high (20.75 percent). In this case, the numbers on these indicators are considerably different.

My analysis of this case begins by looking for evidence that dumping led to an increase in either the volume or the market penetration of the subject imports.[4] Other things being the same, if dumped imports are to be a source of harm to the

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[3] Another difference between the two cases concerns threat of material injury. In 64K DRAMs, the scope of the investigation was limited to 64K DRAMs, a product nearing the end of its product cycle, and I did not find material injury. In contrast, in the present case the scope of the investigation covers all EPROMs, old as well as new.

[4] An analysis of the relative and absolute volume of LTFV imports is required by the statute. "In evaluating the volume of imports of the merchandise [which is the subject of the investigation], the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant." 19 U.S.C. sec. 1677(7)(C)(i) (1982).

domestic industry, through the effect of the dumping,[5] imports must have increased.[6] This is because a certain volume of imports or a certain market share for imports will occur under normal competitive conditions -- which is to say, in the absence of dumping. Thus, in order for dumped imports to harm the domestic industry, either the share or the volume of imports must have risen. In this case the rise in share or volume would have to have occurred in 1985 because the dumping started that year.[7] The market penetration of imports on a value basis declined in 1985, from 25.7 percent in 1984 to 19.4 percent.[8]

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[5] S. Rep. No. 249, 96th Cong., 1st Sess. 88 (1979); H.R. Rep. No. 317, 96th Cong., 1st Sess. 46 (1979).

[6] See, e.g., W. Wares, The Theory of Dumping and American Commercial Policy (1977) ch. 2; An Economic Analysis of Dumping, Memorandum from the Office of Economics, EC-J-457, December 2, 1986.

[7] There is no evidence that dumping occurred before 1985. Indeed there is a strong presumption that dumping started in 1985 because 1984 was a boom year for the industry, 1985 was a recession year, and the Department of Commerce used for foreign market value either constructed value or home market prices (to the extent they exceeded cost of production). Moreover, petitioners claim that dumping started in 1985. Transcript at 77.

[8] Report at A-47. As explained in the Appendix, I find that it is more appropriate to use market share data on a value basis rather than market share on a quantity basis (either in terms of raw units or in terms of memory equivalents).

However, according to the record, import volume rose from 1,388 million memory-equivalent units in 1984 to 1,597 million units in 1985, an increase of 15 percent.[9] In order to determine whether the domestic EPROM industry was harmed by the dumped imports, through the effect of the dumping, it is necessary to examine what happened to U.S. demand for EPROMs. Demand was stable in 1985, the position apparently taken by petitioners.[10] Because the volume of imports increased in 1985, it follows that dumping increased imports.

The next step is to assess whether the harm from dumping is significant enough to constitute material injury. To do this, I consider the market share of imports and the dumping margin.

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[9] I measure quantity by memory-equivalent units rather than raw units to adjust for the different memory capacities or "sizes" for EPROMs of different generations. Since the essential feature of each type of EPROM is its memory capacity, it is more appropriate to aggregate all types of EPROMs on the basis of of memory units rather than on a basis of number of chips. Thus a 128K EPROM chip has twice as much memory capacity as a 64K chip and the former is twice the "size" of the latter.

[10] Tr. at 78. It is not entirely clear that petitioners were talking about the demand curve for EPROMs in terms of memory equivalents. This is the relevant demand. If they were talking about demand in terms of raw numbers of EPROM chips, then the demand in terms of memory units may have increased in 1985. Under competitive conditions an increase in demand would cause the quantity of imports to increase (given the import supply curve is elastic), so that it would not be possible to distinguish between normal competitive import responses and dumping.

The market share of Japanese EPROMs in U.S. apparent consumption was large[11] -- 19.4 percent by value and 26.7 percent by memory-equivalent units in 1985.[12] Moreover, the Department of Commerce (Commerce) reported to the Commission that the vast bulk, more than two-thirds, of Japanese exports to the United States was sold at less than fair value.[13]

Finally, the weighted-average dumping margin is very high -- indeed, Commerce reported it at 93.9 percent.[14] I note that in calculating margins in this case Commerce used for foreign market value either constructed value or home market prices to the extent they exceeded cost of production.[15] I also note that the Commission does not have evidence on EPROM prices in Japan. This is unfortunate because a worldwide recession would surely be

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11 Unfortunately actual data on EPROM consumption is not available and data on apparent consumption must be used instead. Apparent consumption is based on shipments by domestic producers and importers. To determine actual consumption it is also necessary to have data on inventories held by users. The Commission did not collect this information.

12 Staff Report at A-45 and A-46-47.

13 Id. at A-6. The exact proportion of LTFV exports is confidential.

14 Id. at A-6.

15 Id. at a-5.

characterized by a decline in world prices. In other words, it is likely that the force of the 1985 recession was so strong that prices declined everywhere, in the United States as well as in Japan, and that the recession overwhelmed the possible effects of dumping. However, since we lack evidence on Japanese prices I conclude that dumping was a separate and independent cause of harm to the domestic industry.

In order to analyze the combined effect of the large import share and the high dumping margin on prices in the United States and on domestic producers of EPROMs, it is necessary to consider demand and supply conditions in the domestic market.[16] Considered separately, a large import penetration ratio or a high dumping margin does not necessarily mean that the dumped imports are a cause of material injury.[17] However, the combination of

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16 The statute directs the Commission to consider "(ii) the effect of imports of that merchandise [which is subject to investigation] 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." 19 U.S.C. sec 1677(7)(B) (1982).

17 For example, large margins are not by themselves sufficient to reach an affirmative decision when the elasticity of demand for the product is very high. See Certain Ethyl Alcohol from Brazil, Inv. No. 701-TA-239 (Final), USITC Pub. 1818, 15-16 (1986), where the subsidy margin was 98 percent. Similarly, a large market

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the two generally means that dumped imports have substantially depressed prices.

The dumped imports will not significantly affect U.S. prices when either domestic demand for the product or domestic supply is highly sensitive to price,[18] because in either circumstance, increased imports will lead to an increase in consumption without having a significant impact on domestic price. These conditions

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penetration for imports is not sufficient to reach an affirmative determination when the overwhelming factor affecting the market is a contraction in domestic supply. See Certain Fresh Atlantic Groundfish from Canada, Inv. No. 701-TA-257 (Final), USITC Pub. 1844, 14, 20-22 (1986) (Views of Chairwoman Stern, Vice Chairman Liebeler, and Commissioner Brunsdale), where the import penetration ratio was 22 percent. On the other hand, an affirmative determination is generally reached when import penetration is large and when the dumping margin is high. See In-Shell Pistachio Nuts from Iran, Inv. 731-TA-287 (Final), USITC Pub. 1875, 9, 12 (1986), where the import penetration ratio was 42.3 percent and the dumping margin was 241 percent; But-Weld Pipe Fittings from Brazil and Taiwan, Invs. Nos. 731-TA-308 and 310 (Final), where the import penetration ratio was 39 percent and the dumping margin was 49 percent.

[18] The sensitivity of quantity demanded or supplied to price is measured by the concept of elasticity. For example, the elasticity of demand measures the responsiveness of quantity demanded by consumers to price changes. It is equal to the percentage change in quantity demanded divided by the percentage change in price. Inelastic demand means that the quantity demanded changes by a smaller percentage than does price. The elasticity of supply measures to responsiveness of quantity supplied by producers to price changes in the same manner. See P. Samuelson and W. Nordhaus, Economics 380-84 (12th ed. 1985).

do not hold in this investigation. The demand for EPROMs is not highly elastic because EPROMs are an intermediate product.[19] Moreover, while the domestic supply of EPROMs is somewhat sensitive to price changes because domestic producers can easily switch from producing other products (e.g., DRAMs) to producing EPROMs,[20] there is no evidence on the record to suggest that it is highly sensitive. Therefore, dumped imports will have a substantial adverse effect on prices. Accordingly, I determine that dumped imports of EPROMs from Japan have caused material injury to the domestic industry.

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[19] EPROMs are an intermediate product because they are included as raw materials in the final products purchased by consumers, e.g., in personal computers. The elasticity of demand for an intermediate product depends, inter alia, on the elasticity of demand for the final product and the cost of the intermediate product compared to the cost of the final product. When the demand for the final product is relatively inelastic or when the cost of the intermediate product is a small part of the total cost of the final product, the demand for the intermediate product is not expected to be very sensitive to changes in its price. Accordingly, the demand for the intermediate product is relatively inelastic. See G. Stigler, The Theory of Price 243 (3d ed. 1966).

[20] Tr. at 193.

APPENDIX
Value-Based Market Share of Dumped Imports

In their posthearing brief, petitioners responded to questions raised at the hearing by Commissioner Eckes and myself[21] about how market share is best measured in the EPROM industry.[22] Although their remarks are very interesting and stimulating, I find their analysis incomplete and seriously misleading. Thus, I feel it necessary to set forth my views on the matter.

Petitioners argue that market share measured in terms of raw units or in terms of bits of memory provides a more accurate indication of the role of imports than does market share based on value. They suggest that it is instructive to consider the extreme case where Japanese exporters give away EPROMs at no charge. They maintain that the value-based market share would be zero and therefore would not be useful in indicating the injury caused to the domestic industry by dumping.

I have several concerns about this line of argument. First there is the practical issue whether it is appropriate to contemplate the hypothetical suggested by petitioners. It is not

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[21] Tr. at 79, 80, and 97.

[22] Posthearing Brief of Intel Corp., Advanced Micro Devices Inc., and National Semiconductor Corp., Appendix C, 7-10.

reasonable to expect that foreign firms would give away their products to U.S. buyers. Those firms, like their U.S. counterparts, are presumably interested in making a profit, and except for special promotions it is difficult to imagine how giving away products will achieve anything other than bankruptcy.

But suppose we set this objection aside and consider, in steps, a gradual lowering of the foreign price to zero. Specifically, consider the hypothetical situation in which domestic demand and supply remain the same, the price of the foreign product in the foreign country is fixed, and foreign firms are do-gooders that are increasingly benevolent to U.S. consumers. It is necessary to distinguish two cases depending on whether the domestic and imported products are identical.

Case one. Suppose the foreign product and the U.S. like product are identical. U.S. consumers thus, would not pay a different price for the domestic product than for the foreign product. As long as price is high enough so that the market is supplied by both foreign and domestic firms, the market share for imports on a value basis will be exactly the same as the market share on a quantity basis. As the price of the foreign product (and therefore also the price of the domestic product) is lowered, presumably domestic firms will gradually be forced to

leave the market. The market share of imports on either a value or quantity basis will steadily increase to reflect this trend. Eventually foreigners will set so low a price that they capture the entire market and both value share and quantity share of imports would be 100 percent. Lowering price still further will not change import share on either basis until price drops to zero, which of course means that the value share for imports is meaningless (unless someone has invented a way to divide by zero). The conclusion in this case is that market share by value is always identical to market share by quantity, except for the final extreme where price is zero.

Case two. Now consider the more difficult case where the foreign product and the domestic like product are not homogeneous and where the quality of the domestic product is higher (e.g., more durable) than its foreign counterpart. Since this case is more complex than the homogeneous product case, I use numerical examples to illustrate. Suppose consumers decide to spend a certain amount, say $1,000, to purchase the two goods.[23] Because of its higher quality, consumers are willing to pay a

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[23] This means that the demand for the composite good made up of the two separate products is unitary elastic. This assumption is made for simplicity; it does not affect the analysis.

higher price to obtain the more desirable domestic product. Start with a market situation where both quantities are 100 units and assume that the domestic product costs $6 and the foreign product costs $4. On a quantity basis the market share of imports is 50 percent. On a value basis the market share of imports is 40 percent (=$400/$1,000).

Before proceeding, notice what has been done here. To determine the market share on a quantity basis it is necessary to aggregate the quantities of domestic and foreign products. But the two products are not the same so that strictly speaking the aggregation is combining "apples" and "oranges." This can involve serious problems.[24] Adding pounds of apples with pounds of oranges gives us pounds of "fruit." However, a given number of pounds of fruit may not mean very much to consumers if prices per pound for oranges and apples differ. I do not believe that consumers normally make decisions to purchase fruitpounds, but rather decide how to spend their money in light of the prices of oranges and apples. In other words, fruitpounds is an artifice that is not appropriate in an analysis of the fruit

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[24] Obviously market share on a value basis does not involve this problem because dollars spent on one product are perfectly homogeneous with dollars spent on the second product.

market or in assessing the relative importance of apples and oranges in this market. I have made this same point elsewhere, in my analysis of imported candles from the People's Republic of China.[25]

However, let us set this important problem to one side and let the price of the imported product decline to $3 and trace through what happens. Consumers will substitute in favor of the import so the demand for the domestic product falls. This will normally cause its price to decline.[26] The quantity of domestic product will also fall. The new figures for domestic quantity and price depend on the steepness of the domestic supply curve. In the new equilibrium suppose that domestic price is $5 and that quantity supplied is 80 units. Since consumers spend $1,000 on the two products this means that the new quantity for imports must be 200 units [=($1,000-$5x80)/$3]. Therefore, the market share of imports is 71 percent (=200/280) on a quantity basis and 60 percent (=$3x200/$1,000) on a value basis.

Obviously other specific numerical examples can be constructed, but one point suggested by the above illustration is

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25 See Candles from the People's Republic of China, Inv. No. 731-TA-282 (Final), USITC Pub. No. 1888, 40-41, (Dissenting Views of Vice Chairman Brunsdale) (1986).

26 I assume that the domestic supply curve is upward sloping, i.e., as price goes up domestic firms are willing to supply a larger quantity.

that when the relative price of imports drops, the market share of imports will increase, whether measured on a quantity basis or on a value basis. But the quantity-based measure will always be larger than the value-based measure. This pattern is apparently the source of the notion that the value-based measure is somehow distorted.

This is a crucial point and relates to how one thinks about import market penetration on a value basis when imports are dumped (or subsidized). Using the numerical example given above, suppose that the dumped import price is $3 and that the "fair value" is $4. The dumping margin therefore is 33 percent. One may feel that the import penetration ratio on a value basis is too low because imports enter at less than fair value. The question is how to adjust for the distortion.

Suppose it is decided to boost the import price up to "fair value" -- e.g., raise it from $3 to $4 -- in order to obtain the total value of imports on a "fair value" basis so as to recalculate the import penetration ratio. Doing so gives a new ratio of 33 percent [=($400/$1,200)=$4x200/($4x200+$5x80)]. The flaw in the exercise is that it gives an impossible result. The result could not be observed in the market because it implies that consumer spending would be $1,200, which exceeds the $1,000 consumers are willing to spend.

If one were to contemplate an adjustment of this sort, it would also be necessary to trace through the effects of increasing the import price. That would involve determining how quantities of foreign and domestic products as well as the domestic price would be affected. Fortunately we know the answer here.[27] It is the original situation given above, i.e., domestic quantity and price would be 100 units and $6, imports would be 100 units, and import penetration would be 40 percent on a value basis and 50 percent on a quantity basis.

This does not mean that the value-based ratio is "distorted" because the value-based ratio is lower than the quantity based-ratio.[28] Rather, one measure of the effect of dumping is the difference between the import penetration of dumped imports and what the import penetration would be if those imports were fairly traded, whether measured by quantity or value. The "distortion," thus, is at the heart of causation analysis of material injury. Import penetration ratios when there is dumping, whether on a quantity or value basis, are "distorted"

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[27] In actual cases before the Commission it would be very difficult to determine what the market would be like if the imports under investigation were not dumped or subsidized.

[28] Note that the value-based ratio would be higher than the quantity-based ratio if the quality of the imported product were superior to that of the domestic product.

compared to what the ratios would have been in the absence of dumping. With dumping the quantity-based ratio is 71 percent compared to 50 percent under fair trade. With dumping the value-based ratio is 60 percent compared to 40 percent under fair trade. To compare the value-based ratio with the quantity-based ratio is inappropriate. The two measures are different concepts.

In conclusion, it is not fair to say that the value-based import penetration is distorted compared to the quantity-based measure. When the imported and domestic products are identical the two measures are the same. Furthermore, when the imported and domestic products are not the same I believe that there is a significant conceptual problem with the quantity-based measure. Therefore, I conclude, that as a general rule the value-based measure is more appropriate to an assessment of the significance of imports in the U.S. market.

VIEWS OF CHAIRMAN LIEBELER

Inv. No. 731-TA-288 (Final)

Erasable Programmable Read Only Memories (EPROMs)

I determine that no industry in the United States is materially injured, or threatened with material injury, by reason of imports of erasable programmable read only memories (EPROMs) from Japan which the Department of Commerce has determined are being sold at less than fair value.[1]

Like product and domestic industry

In the series of investigations involving semiconductors, questions have arisen on the proper way to treat unencapsulated versus encapsulated chips. First, are they "like products" within the meaning of the statute? Second, if unencapsulated chips are not like

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[1] Material retardation is not an issue because the industry is well established.

encapsulated ones, should the domestic industry include producers of unencapsulated chips?[2]

I concluded in 64K Dynamic Random Access Memory Components from Japan[3] that unencapsulated chips were not "like" encapsulated chips. Instead, I determined that the proper way to treat unencapsulated chips is to view them as both a separate industry and as part of the industry producing encapsulated chips.[4]

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[2] See 64K Dynamic Random Access Memory Components from Japan, Inv. No. 731-TA-270, USITC Pub. 1862, at 21-25 (1986)(Views of Vice Chairman Liebeler); Erasable Programmable Read Only Memories (EPROMs) From Japan, Inv. No. 731-TA-288 (Preliminary), USITC Pub. 1778 (1985)(hereinafter cited as "EPROMs"); 256K Dynamic Random Access Memory Components from Japan, Inv. No. 731-TA-300, USITC Pub. 1803 (1986). A related question is whether the different density DRAM's are "like products," and if so, whether the product should be analyzed in terms of dynamic random access memory units. For example, are four 64K EPROMs approximately equal to one 256K EPROM? This issue will be discussed infra at text accompanying note 24.

[3] Inv. No. 731-TA-270, USITC Pub. 1862, at 21-25 (1986)(Additional Views of Vice Chairman Liebeler).

[4] In 64K DRAMs unencapsulated chips were not subject to investigation so the mode of analysis had no affect on the outcome of that case. Unencapsulated chips, also known as unassembled chips, were determined by the Department of Commerce to be within the scope of the present investigation. ITA, Final Determination of

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In the preliminary for this investigation, Commissioner Rohr and I noted that such an analysis might be appropriate in the case of EPROMs.[5] No information has been presented that would distinguish the proper like product/domestic industry framework for EPROMs from that in 64K DRAMs. The statute provides that the like product is defined in terms of characteristics and uses. Sometimes this determination is easier than others. In the present case, imported encapsulated EPROMs are clearly more similar to domestically produced encapsulated EPROMs than to any other domestic product. The U.S. Customs Service has ruled that assembling and testing of the EPROM constitutes substantial transformation of a processed wafer or die. Although some argue that the essential characteristic of the processed wafer or die may remain the same after this transformation, the assembled and unassembled product are not readily substitutable.

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Sales at Less than Fair Value, 51 Fed. Reg. No. 210 (Oct. 30, 1986), reprinted in Report at a-7 (hereinafter cited as "ITA Final Determination") (DOC responses to Fujitsu comment nos. 23-24).

[5] EPROMs, supra note 3, at 3 n.3.

Although one could stretch the meaning of characteristics and uses to find that unencapsulated EPROMs are "like" assembled EPROMs, I believe Congress intended that such situations were better handled within the definition of the domestic industry. The Conference Report on the Trade and Tariff Act of 1984 describes the statutory framework and Commission practice as follows:

> The term "industry" for purposes of CVD and AD investigations means the domestic producers of a "like product", and the term "like products" has been defined and interpreted to include only those products which are identical or most similar in their characteristics to the imported article. Accordingly, producers of products being incorporated into a processed or manufactured article (i.e., intermediate goods or component parts) are generally not included in the scope of the domestic industry that the ITC analyzes for the purposes of determining injury.[6]

The quotation indicates that although intermediate products are generally not included in the scope of the domestic industry, there are exceptions. Candidates for such an exception include those in which an upstream (intermediate) product has little alternative use.

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[6] H.R. Rep. 1156, 98th Cong., 1st Sess. 188 (1984) (emphasis added).

Unencapsulated EPROMs meet this test as they have practically no alternative use other than as the raw product for encapsulation. Thus I determine that the producers of unencapsulated EPROMs are part of the industry producing the like product.[7] I also determine that the producers of unencapsulated EPROMs constitute a separate industry.[8]

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[7] Respondents have argued that petitioners have no standing if the domestic industry is comprised of only the assemblers of the final product because such producers either actively oppose the petition or do not support it. Joint Pre-Hearing Brief on behalf of Fujitsu Limited, Hitachi, Ltd., NEC Corp. & Toshiba Corp., at 36-37 (Nov. 12, 1986). Because I have determined that the fabricators as part of the domestic industry producing assembled EPROMs, and the domestic fabricators strongly support the petition, this argument fails. I would note that questions of Commission authority with respect to standing during both the preliminary and final investigations have not been resolved and I am open to further argument on this issue. See Butt-Weld Pipe Fittings from Brazil, Japan, & Taiwan, Inv. Nos. 731-TA-308-310 (Preliminary), USITC Pub. 1834 (1986), at 3 n.1.

[8] In the legislative history to the Trade Reform Act of 1974, the Senate Finance Committee stated:

> The Antidumping Act refers to "an industry in the United States." There are no qualifications as to the kind of industry or the number of industries that might be adversely affected by the less-than-fair-value imports under consideration. Although the Commission's investigations have usually been concerned with an industry consisting

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Of what significance is this determination of like product and domestic industry in this case? The primary reason to recognize this distinction is because the importation of unencapsulated chips generally will not have a negative impact on the domestic producers who specialize in encapsulation. In general, the more unencapsulated chips supplied, either by domestic manufacturers or foreign, the lower the price of the raw product to the encapsulators. Conversely, the importation of encapsulated chips can have a negative impact on the makers of unencapsulated chips, encapsulated chips, or

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> of the domestic-producer facilities engaged in the production of comparable articles (i.e., articles like the imported articles), a number of investigations have been concerned with domestic facilities engaged in the production of articles which, although unlike the imports, are nevertheless competitive therewith in domestic markets. In any case, the industry is a national industry involving all domestic facilities engaged in the production of the domestic articles involved.

S. Rep. 1298, 93d Cong., 2d Sess. 179-80 (emphasis added). This comports with Commission precedent. The Commission includes the facilities of those producing intermediate products, either as part of the industry ("kind") or as a different industry ("number") where those facilities have no good alternative use.

both, depending on the alternative uses available to the labor and capital used in the respective production processes. Disaggregating the effects of imports of finished versus unfinished products where possible can lead to different determinations on the questions of injury and causation.[9]

EPROMs are produced and consumed in many different densities. The different density chips are all made using the same raw material and the same technology. In addition, they all serve the same memory function. I concur with the majority in finding that EPROMs of different densities are like products.[10]

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[9] The related party issue becomes easier to resolve when two industries are found. To include producers of the intermediate product in the domestic industry through a liberal interpretation of the relevant section, and then exclude from consideration the only firm which manufacturers the final product, is inappropriate. I find that Fujitsu should not be excluded from the domestic industry.

[10] I reach this conclusion only with respect to EPROMs up to and including 1 megabit. See 256K DRAM's, supra note 2 (Additional Views of Vice Chairman Liebeler and Commissioner Eckes).

Material Injury by Reason of Imports

In order for a domestic industry to prevail in a final investigation, the Commission must determine that the dumped or subsidized imports cause or threaten to cause material injury to the domestic industry producing the like product. First, the Commission must determine whether the domestic industry producing the like product is materially injured or is threatened with material injury. Second, the Commission must determine whether any injury or threat thereof is by reason of the dumped or subsidized imports. Only if the Commission answers both questions in the affirmative, will it make an affirmative determination in the investigation.

Before analyzing the data, however, the first question is whether the statute is clear or whether one must resort to the legislative history in order to interpret the relevant sections of the antidumping law. The accepted rule of statutory construction is that a statute, clear and unambiguous on its face, need not and cannot be interpreted using secondary sources. Only statutes that are of doubtful meaning are subject to such

statutory interpretation.[11]

The statutory language used for both parts of the two-part analysis is ambiguous. "Material injury" is defined as "harm which is not inconsequential, immaterial, or unimportant."[12] This definition leaves unclear what is meant by harm. As for the causation test, "by reason of" lends itself to no easy interpretation, and has been the subject of much debate by past and present commissioners. Clearly, well-informed persons may differ as to the interpretation of the causation and material injury sections of title VII. Therefore, the legislative history becomes helpful in interpreting title VII.

The ambiguity arises in part because it is clear that the presence in the United States of additional foreign supply will always make the domestic industry worse off. Any time a foreign producer exports products to the United States, the increase in supply, ceteris paribus, must result in a lower price of the product than

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[11] C. Sands, Sutherland Statutory Construction, § 45.02 (4th ed. 1985).

[12] 19 U.S.C. § 1977(7)(A)(1980).

would otherwise prevail. If a downward effect on price, accompanied by a Department of Commerce dumping or subsidy finding and a Commission finding that financial indicators were down were all that were required for an affirmative determination, there would be no need to inquire further into causation.

But the legislative history shows that the mere presence of LTFV imports is not sufficient to establish causation. In the legislative history to the Trade Agreements Acts of 1979, Congress stated:

> [T]he ITC will consider information which indicates that harm is caused by factors other than the less-than-fair-value imports.[13]

The Finance Committee emphasized the need for an exhaustive causation analysis, stating, "the Commission must satisfy itself that, in light of all the information presented, there is a sufficient causal link between the less-than-fair-value imports and the requisite injury."[14]

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[13] Report on the Trade Agreements Act of 1979, S. Rep. No. 249, 96th Cong. 1st Sess. 75 (1979).

[14] Id.

The Senate Finance Committee acknowledged that the causation analysis would not be easy: "The determination of the ITC with respect to causation, is under current law, and will be, under section 735, complex and difficult, and is matter for the judgment of the ITC."[15] Since the domestic industry is no doubt worse off by the presence of any imports (whether LTFV or fairly traded) and Congress has directed that this is not enough upon which to base an affirmative determination, the Commission must delve further to find what condition Congress has attempted to remedy.

In the legislative history to the 1974 Act, the Senate Finance Committee stated:

> This Act is not a 'protectionist' statute designed to bar or restrict U.S. imports; rather, it is a statute designed to free U.S. imports from unfair price discrimination practices. * * * The Antidumping Act is designed to discourage and prevent foreign suppliers from using unfair price discrimination practices to the detriment of a United States industry.[16]

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15 Id.

16 Trade Reform Act of 1974, S. Rep. 1298, 93rd Cong. 2d Sess. 179.

Thus, the focus of the analysis must be on what constitutes unfair price discrimination and what harm results therefrom:

> [T]he Antidumping Act does not proscribe transactions which involve selling an imported product at a price which is not lower than that needed to make the product competitive in the U.S. market, even though the price of the imported product is lower than its home market price.[17]

This "difficult and complex" judgment by the Commission is aided greatly by the use of economic and financial analysis. One of the most important assumptions of traditional microeconomic theory is that firms attempt to maximize profits.[18] Congress was obviously familiar with the economist's tools: "[I]mporters as prudent businessmen dealing fairly would be interested in maximizing profits by selling at prices as high as the U.S. market would bear."[19]

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[17] Id.

[18] See, e.g., P. Samuelson & W. Nordhaus, Economics 42-45 (12th ed. 1985); W. Nicholson, Intermediate Microeconomics and Its Application 7 (3rd ed. 1983).

[19] Trade Reform Act of 1974, S. Rep. 1298, 93rd Cong. 2d Sess. 179.

An assertion of unfair price discrimination should be accompanied by a factual record that can support such a conclusion. In accord with economic theory and the legislative history, foreign firms should be presumed to behave rationally. Therefore, if the factual setting in which the unfair imports occur does not support any gain to be had by unfair price discrimination, it is reasonable to conclude that any injury or threat of injury to the domestic industry is not "by reason of" such imports.

In many cases unfair price discrimination by a competitor would be irrational. In general, it is not rational to charge a price below that necessary to sell one's product. In certain circumstances, a firm may try to capture a sufficient market share to be able to raise its price in the future. To move from a position where the firm has no market power to a position where the firm has such power, the firm may lower its price below that which is necessary to meet competition. It is this condition which Congress must have meant when it charged us "to discourage and prevent foreign suppliers from using unfair price discrimination practices to the detriment of a United States industry."[20]

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[20] Trade Reform Act of 1974, S. Rep. 1298, 93rd Cong. 2d Sess. 179.

In Certain Red Raspberries from Canada, I set forth a framework for examining what factual setting would merit an affirmative finding under the law interpreted in light of the cited legislative history.[21]

> The stronger the evidence of the following . . . the more likely that an affirmative determination will be made: (1) large and increasing market share, (2) high dumping margins, (3) homogeneous products, (4) declining prices and (5) barriers to entry to other foreign producers (low elasticity of supply of other imports).[22]

The statute requires the Commission to examine the volume of imports, the effect of imports on prices, and the general impact of imports on domestic producers.[23] The legislative history provides some guidance for applying these criteria. The factors incorporate both the statutory criteria and the guidance provided by the legislative history. Each of these factors is evaluated in turn. But first I will discuss the condition of the domestic industry.

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[21] Inv. No. 731-TA-196 (Final), USITC Pub. 1680, at 11-19 (1985) (Additional Views of Vice Chairman Liebeler).

[22] Id. at 16.

[23] 19 U.S.C. 1677(7)(B)-(C) (1980 & cum. supp. 1985).

Condition of the Industry

Given my findings on like product and domestic industry, it is necessary to examine the condition of the industry in terms of the performance of the domestic producers of unencapsulated and encapsulated EPROMs of all densities. There are still at least two ways the market could be defined. First, chips could be counted on a unit basis (hereinafter "unit method") so that a 64K EPROM is equivalent to a 256K EPROM. Alternatively, the EPROMs could be measured in terms of memory capacity, with one 256K EPROM equal to four 64K EPROM (hereinafter "K equivalent method"). I find that the key factor shared by all EPROMs is their memory function and the larger density EPROMs substitute closely, but not perfectly, for lower density EPROMs.[24] The K-equivalent method is therefore the most appropriate method to analyze the industry.

The EPROM industry in the United States is healthier than what one might have thought. Apparent U.S.

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[24] See Posthearing Brief on Behalf of Intel Corp., Advanced Micro Devices, Inc., & National Semiconductor Corp., at App. C, at 9-10 (Nov. 26, 1986).

consumption in terms of memory equivalents more than doubled between 1983 and 1985, and increased substantially again during 1986.[25] Domestic producers of both uncased and cased EPROMs shared in a large part of this growth. Shipments of cased EPROMs made from uncased EPROMs produced in the United States and assembled in a third country increased absolutely and as a share of total apparent consumption of EPROM memory.[26] Domestic shipments of EPROMs encapsulated in the United States increased approximately 250 percent between 1983 and 1985.[27] The share of the market held by these domestically assembled EPROMs was fairly stable over the period.

Because the financial data for the producers of uncased EPROMs dominate the figures for the U.S. assembled EPROM industry, the income-and-loss data with respect to domestic production of both cased and uncased EPROMs does

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[25] Report at Table C-1.

[26] Report at Table 7 (derived).

[27] Report at Table 8 (derived).

not differ significantly.[28] For both these industries, the data indicate that 1983 and 1984 were profitable years, while 1985 clearly was not.[29] Employment figures present a mixed picture. Total employment, total compensation and average hourly compensation are all up significantly between 1983 and 1985. Starting in 1984 the number of workers declined, but total hours worked increased. Average compensation continued up during

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[28] Report at Table 14. It follows that the determination whether to exclude Fujitsu as a related party has little, if any impact, on the aggregate data for the industry producing encapsulating EPROMs.

[29] These figures may be misleading because they include costs which, from an economic standpoint, are more properly allocable over the entire product cycle and over additional products. Petitioners have referred to EPROMs as a technology-driver, meaning that the knowledge gained in EPROM production spills over to other product lines. See, e.g., Posthearing brief of Petitioners, at App. A, at 11 ("given the relationship between cumulative output and learning and given the fact that EPROMs are high-volume product, U.S. semiconductor firms do much of their "learning" on EPROMs. This learning is transferable to other lower-volume MOS products")("learning experience gained in EPROM production will be applied to microprocessor production"). See also Hitachi Comment No. 10, ITA Final Determination, supra note 4, reprinted in Report at a-11 (R&D expenses were not product-specific; historic costs should be allocated over total units to be sold (past and future).

January-June 1986.[30] In a technologically advanced industry, such as this one, it is especially necessary to look at the trend in research and development and capital expenditures.[31] Figures for both of these categories are up substantially for both domestic industries.[32] For example, R&D expenses for EPROMs more than doubled between 1983 and 1985. Even comparing interim 1985 and 1986, when the condition of the industry supposedly went from bad to worse, the figure for capital investment is up slightly. The figure for R&D is down, but only slightly.

In sum, the condition of the industry appears stronger than the financial figures for 1985 and interim 1986 would indicate. Operating losses mounted as prices fell during 1985 and interim 1986. However, production, shipments, average labor compensation, labor productivity, capital

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30 Report at Table 12. This is consistent with the causation discussion below. An industry that is making technological advances requires less total labor, but the workers must be more highly skilled.

31 See Certain Amplifier Assemblies and Parts Thereof from Japan, Inv. No. 731-TA-48 (final), USITC Pub. 1266 (1982); Cellular Mobile Telephones and Subassemblies Thereof from Japan, Inv. No. 731-TA-207 (final), USITC Pub. 1786 (1985)(Views of Vice Chairman Liebeler).

32 Report at Table 17.

expenditures, and R&D are all strong. On the whole, I am unable to conclude that the industries are materially injured.[33] The question is sufficiently close that I will assume arguendo that material injury does exist and proceed to a discussion of whether unfair price discrimination is present.

Causation analysis

Examining import penetration data is relevant because unfair price discrimination has as its goal, and cannot take place in the absence of, market power. First, for uncased EPROMs, the market share held by imports of

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[33] In its report on the Trade Agreements Act of 1979, the Senate Finance Committee stated:

> Neither the presence nor the absence of any factor listed in the bill can necessarily give decisive guidance with respect to whether an industry is materially injured, and the significance to be assigned to a particular factor is for the ITC to decide.

S. Rep. No. 249, 96th Cong., 1st Sess. (1979). This standard is codified at 19 U.S.C. § 1677 (1980). See Certain Amplifier Assemblies and Parts Thereof from Japan, Inv. No 731-TA-48 (Final), USITC Pub. 1266 (1982) (Commission focused on three related factors to determine injury in technologically advanced industry: (1) the industry's ability to gain experience, (2) its ability to generate capital for R&D and (3) its ability to remain in the forefront of technological advancement.)

uncased EPROMs was steady and below 10 percent in K-equivalents between 1983 and 1985. During interim 1986, market share was below 5 percent.[34] Thus, market share for imports of uncased EPROMs is neither high nor increasing.

Market share for imports of cased EPROMs has also fallen over the period of investigation.[35] Penetration was nearly constant at 34.5 percent during 1983-84, the "boom" years, before falling to 26.7 percent in 1985, a "bust" year.[36] These numbers indicate that imports of

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[34] Report at Table 31. Part of the decrease in market share in 1986 may be attributable to the filing of the case and the existence of the suspension agreement. Perhaps the interim market share data should be ignored on these grounds. On the same grounds, however, petitioner would not be able to rely on any downward trends in financial data during interim 1986 unless they could demonstrate the existence of lags in the responsiveness of financial data.

[35] These imports include both direct (assembled in Japan) and indirect (assembled in third countries) imports.

[36] Report at Table 31. Preliminary dumping margins were set by the Department of Commerce in March 1986. During interim 1986, the import penetration ratio declined again, to 15.1 percent. Despite the sustained increase in domestic market share, however, the industry's operating margins continued to deteriorate during interim 1986.

cased EPROMs have played an increasingly smaller role in the recent past, especially in 1985, the so-called "bust" year for the EPROM industry. The penetration figures are not consistent with a finding of unfair price discrimination.

The second factor is a high margin of dumping or subsidy. The higher the margin, ceteris paribus, the more likely it is that the product is being sold below the competitive price[37] and the more likely it is that the domestic producers will be adversely affected. In this case, the weighted-average dumping margins ranged from 60 to 188 percent for EPROMs.[38] The dumping margins are high and consistent with a finding of unfair price discrimination.

The third factor is the homogeneity of the products. The more homogeneous the products, the greater will be the

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[37] See text accompanying note 17, supra.

[38] The Commerce Department determined not to make a separate calculation with respect to uncased EPROMs. ITA Final Determination, supra note 4, reprinted in Report at a-15 (Fujitsu Comment No. 25 and DOC Position).

effect of any allegedly unfair practice on domestic producers. In general, foreign and domestic EPROMs are relatively close substitutes. There are some devices within the scope of investigation with slightly differing characteristics and uses, such as plastic encased EPROMs. Differences in speed, complexity and cost also exist between CMOS and NMOS EPROMs.[39] For the most part, however, domestic and foreign products at the same stage of production (i.e., uncased versus cased) are substantially similar.[40]

As to the fourth factor, prices were down significantly for all density cased EPROMs over the period of investigation.[41] This result is not surprising, however. This industry is both highly competitive and characterized by rapid technological advance. There was extensive testimony indicating that the learning curve

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[39] ITA Final Determination, supra note 4, reprinted in Report at a-12 (DOC response to Hitachi Comment No. 14).

[40] Report at A-5.

[41] Staff Report at A-48-85. No data is available for prices of uncapsulated EPROMs in the U.S. market.

phenomenon was clearly at work in this industry.[42] Under such conditions, declining prices are expected. In addition, there was substantial evidence presented that demand for EPROMs, a derived demand, shifted inward.[43] The best evidence available indicates that U.S. capacity increased over the period.[44] These factors combined to produce heavy downward pressure on EPROM prices. Thus, unlike the normal case of a "stable" industry, no strong conclusions can be drawn from the declining prices in this case.[45]

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42 Report at Tables 19-24 (data submissions indicate that unit costs of production down substantially for many producers over period of investigation); Posthearing Brief of Intel Corp., Advanced Micro Devices, Inc., & National Semiconductor Corp., Appendix A, at 6-13 (Nov. 26, 1986); Joint Posthearing Brief of Fujitsu Limited, Hitachi, Ltd., & Toshiba Corp., response to questions of Commissioners, at 1-2 (Nov. 25, 1986).

43 See, e.g., Joint Posthearing Brief of Fujitsu Limited, Hitachi, Ltd., & Toshiba Corp., response to Commissioners' question 3, at 1-2 (Nov. 25, 1986).

44 No industry EPROM capacity data is part of the record. Information collected does indicate that total capital expenditures by petitioners and total integrated circuit capacity both increased during 1983-85.

45 See Cellular Mobile Telephones and Subassemblies Thereof from Japan, Inv. No. 731-TA-207 (Final), USITC

(Footnote continued on next page)

The fifth factor is barriers to entry (foreign supply elasticity). If there are barriers to entry (or low foreign elasticity of supply) it is more likely that a producer can gain market power. A large percentage of imported cased EPROMs consist of U.S. produced uncased EPROMs assembled overseas. These imports are not subject to investigation. Unlike the situation in 64K DRAMs, imports of cased EPROMs fabricated in Japan and assembled outside of Japan are subject to investigation. Currently Japan is the only major foreign producer of unencapsulated EPROMs. Other countries appear ready to enter but it could take time for them to qualify themselves to do business with the major original equipment manufacturers.[46] Entry into the encapsulation industry appears easy. On the other hand, evidence with respect to

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(Footnote continued from previous page)
Pub. 1786 (1985) (Views of Vice Chairman Liebeler)(discussion of technologically advanced industries).

46 Korea has apparently started exporting EPROMs to the United States. Posthearing Brief of Intel Corp., Advanced Micro Devices, Inc., & National Semiconductor Corp., Appendix A, at 19-22 (Nov. 26, 1986). Petitioners point out that Korean entry has been slower than anticipated by the Koreans.

entry barriers for the industry producing processed wafers and dice is not inconsistent with a finding of unfair price discrimination behavior.

These factors must be balanced in each case to reach a sound determination. As noted earlier, however, market share plays a key role in determining whether unfair price discrimination could be occurring. In this case, the market penetration figures indicate that what we are observing is not related to unfair price discrimination. The goal of unfair price discrimination is to take away market share. Although the absolute quantity of imports of Japanese EPROMs has increased in terms of K-equivalents, Japanese market share has dropped significantly. In a traditional industry, the downward trend in prices might indicate that the domestic producers were holding onto market share by matching price cuts in the hope of surviving a price war. In this industry, however, the downward trend in prices is to be expected. At some point prices may stabilize, but they may be even lower than they are now. The evidence with respect to foreign supply elasticity indicates that there will at least be a lag before any substantial competition from other countries will occur.

Assuming arguendo that material injury exists, the case on causation would be close. On balance I find that the decrease in market share indicates that unfair price discrimination does not cause or threaten to cause material injury to the domestic industry. The domestic industry may have overestimated demand growth. Individual firms decided to increase production to meet this anticipated demand. The increase in cumulative production led to decreased prices due to the learning curve phenomenon. The failure of demand to meet expectations led to additional downward pressure on prices. The fact that import prices also decreased during the period is to be expected because these products are relatively homogeneous. The substantial decrease in the market share held by imports indicates the absence of unfair price discrimination. This downward trend also indicates that there is no real and imminent threat of material injury to the domestic industries by reason of imports from Japan.

Conclusion

Therefore, I conclude that no industry in the United States is materially injured or threatened with material injury by reason of dumped imports of EPROMs from Japan.

INFORMATION OBTAINED IN THE INVESTIGATION

Introduction

Following a preliminary determination by the U.S. Department of Commerce that imports of erasable programmable read only memories (EPROM's) 1/ from Japan are being, or are likely to be, sold in the United States at less than fair value (LTFV), the U.S. International Trade Commission, effective March 17, 1986, instituted investigation No. 731-TA-288 (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 final investigation, and of the 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 April 2, 1986 (51 F.R. 11358). 2/ Subsequently, the Department of Commerce extended the date of its final determination. The Commission therefore revised its schedule with a notice posted in the Office of the Secretary and published in the Federal Register of May 7, 1986 (51 F.R. 16905).

On July 30, 1986, Commerce entered into an agreement that suspended the antidumping investigation involving EPROM's from Japan (51 F.R. 28253, Aug. 6, 1986). Accordingly, effective August 6, 1986, the Commission gave notice of the suspension of its antidumping investigation involving EPROM's from Japan (51 F.R. 29708, Aug. 20, 1986). On August 26, 1986, however, a request to continue the investigation was filed with Commerce and the Commission pursuant to section 734(g)(2) of the Tariff Act of 1930 (19 U.S.C. § 1673(g)(2)) by counsel for petitioners. On October 30, 1986, Commerce published its final affirmative determination of sales at less than fair value (51 F.R. 39680, Oct. 30, 1986).

Notice of the continuation of the Commission's final investigation and of a 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 November 12, 1986 (51 F.R. 41028). The hearing was held in Washington, DC, on November 19, 1986, and all persons who requested the opportunity were permitted to appear in person or by counsel. 3/

The applicable statute directs that the Commission make its final determination within 45 days after Commerce's final determination, or by December 15, 1986. The Commission's briefing and vote in this investigation was held on December 10, 1986.

Background

This investigation results from a petition filed on September 30, 1985, by Intel Corp. (Intel), Santa Clara, CA; Advanced Micro Devices, Inc. (AMD),

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1/ EPROM's are provided for in item 687.74 of the Tariff Schedules of the United States.

2/ Copies of cited Federal Register notices are presented in app. A.

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

Sunnyvale, CA; and National Semiconductor Corp. (National), Santa Clara, CA, on behalf of U.S. producers of EPROM's. The petition alleged that an industry in the United States is materially injured or threatened with material injury by reason of LTFV imports of EPROM's from Japan. In response to that petition the Commission instituted investigation No. 731-TA-288 (Preliminary) under section 733 of the Tariff Act of 1930 (19 U.S.C § 1673b(a)) and, on November 8, 1985, determined that there was such a reasonable indication of material injury.

Because of the suspension agreement entered into in connection with this investigation, the effect of an affirmative determination by the Commission would be to cause the terms of the agreement to remain in force, rather than to cause dumping duties to be collected. A negative determination by the Commission would void the suspension agreement as it relates to EPROM's.

Previous and Related Commission Investigations

The Commission has not previously conducted an investigation specifically on or limited to EPROM's. However, the Commission conducted investigations in 1978-79 and in 1984-85, as discussed below, which included EPROM's among the subject products.

On December 7, 1978, pursuant to a request by the Subcommittee on Trade of the Senate Committee on Finance and the Subcommittee on International Finance of the Senate Committee on Banking, Housing, and Urban Affairs, the Commission instituted investigation No. 332-102 under section 332 of the Tariff Act of 1930 to examine the competitive factors influencing world trade in integrated circuits. A report on this investigation was transmitted, with confidential information included, to the Senate Committees on October 31, 1979. The Commission released a public report on the investigation on November 16, 1979. 1/ The report focused on factors affecting the international competitive position of U.S. producers of integrated circuits and presented production and trade data on integrated circuits for 1974-78. The study identified the principal economic factors which affect the growth of the U.S. industry, analyzed the influence of governments on the industry, and compared the U.S. industry with the industry in Japan during 1974-78.

On October 19, 1984, at the direction of the President, the United States Trade Representative (USTR) requested that the Commission prepare advice concerning the probable economic effects of providing duty-free treatment for U.S. imports of certain high-technology products (including EPROM's). On October 26, 1984, in response to the request from the USTR, the Commission instituted investigation No. 332-199; subsequently, upon enactment of the Trade and Tariff Act of 1984, which changed the investigative authority, the Commission instituted investigation No. TA-131(b)-9, effective October 30, 1984. A classified report and other classified information were transmitted

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1/ Competitive Factors Influencing World Trade in Integrated Circuits, Report to the Subcommittee on International Trade of the Committee on Finance and the Subcommittee on International Finance of the Committee on Banking, Housing, and Urban Affairs of the United States Senate on Investigation No. 332-102 Under Section 332 of the Tariff Act of 1930, as Amended, USITC Publication 1013, November 1979.

to the USTR on December 14, 1984. After receiving authorization from the USTR, the Commission released a public version of the report in June 1985. 1/

In addition to these investigations, the Commission recently conducted antidumping investigation No. 731-TA-270 on imports from Japan of a related product, 64K dynamic random access memories (64K DRAM's) of the N-channel metal oxide semiconductor type. The investigation was instituted on June 24, 1985, in response to a petition filed by Micron Technology, Inc., Boise, ID, on behalf of merchant manufacturers of 64K DRAM's. On August 8, 1985, the Commission made a preliminary affirmative determination in that investigation and, on April 29, 1986, Commerce published in the Federal Register its affirmative final determination concerning 64K DRAM's from Japan (51 F.R. 15943). The overall weighted-average LTFV margin was 20.75 percent. On June 6, 1986, the Commission notified the Department of Commerce that it had made a final affirmative determination that an industry in the United States was materially injured by reason of the LTFV imports of 64K DRAM's from Japan. 2/

On March 14, 1986, in another investigation concerning a related product, Commerce made a preliminary determination that imports from Japan of DRAM's having a memory capacity of 256 kilobits (256K) and above of both the N-channel and complementary metal oxide semiconductor type, whether in the form of processed wafer, unmounted die, mounted die, or assembled devices, are being or are likely to be sold in the United States at LTFV. In response to that determination, the Commission instituted investigation No. 731-TA-300 (Final) to determine whether an industry in the United States was materially injured or threatened with material injury, or the establishment of an industry in the United States was materially retarded, by reason of imports of such merchandise. According to Commerce's preliminary determination, the overall weighted-average LTFV margin during the period of investigation, January 1, 1985, through June 30, 1985, was 39.68 percent. On July 30, 1986, the investigation on DRAM's was suspended as a result of an agreement between the Department of Commerce and Japanese producers/exporters of substantially all of the known imports of the subject merchandise.

The Product

Description and uses

An EPROM is a monolithic integrated circuit containing thousands of metal oxide semiconductor (MOS) transistors. 3/ Each of the transistors is equipped

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1/ Probable Economic Effect of Providing Duty-Free Treatment for U.S. Imports of Certain High-Technology Products, Report to the President on Investigation No. TA-131(b)-9 Under Section 131(b) of the Trade Act of 1974, USITC Publication 1705, June 1985.

2/ 64K Dynamic Random Access Memory Components From Japan, Determination of the Commission in Investigation No. 731-TA-270 (Final) Under the Tariff Act of 1930, USITC Publication 1862, June 1986.

3/ This investigation covers EPROM's produced using N-channel (NMOS) and complimentary (CMOS) processes. CMOS EPROM's use less power than NMOS EPROM's and are more immune to their environment.

with four electrodes, two of which are gates that are stacked one above the other. The lower gate is surrounded by a layer of silicon dioxide and is electrically insulated or floating. When a sufficiently large voltage potential is applied to the transistor, the silicon dioxide becomes conductive, permitting electrons to cross the barrier. A data storage program can thus be created in the EPROM's by charging the floating gates of selected transistors. The gates then remain charged indefinitely, even when the power is removed. The ability to retain the stored charges distinguishes EPROM's from DRAM's, which require constant refresh voltages for storage retention. A charged gate represents the binary digit "1" and a floating gate represents the digit "0."

EPROM's are often referred to as "read mostly" memories because the frequency with which the stored charges are "read" or accessed is far greater than the frequency with which the stored program is changed. To accommodate a change in the stored program, a window opening is normally provided in the EPROM's package directly above the semiconductor die. 1/ When the floating gates of the transistors are exposed to ultraviolet light, the silicon dioxide barrier becomes more conductive, causing a leak-off (erasure) of the stored charges. A new storage pattern can be created after the erasure is completed.

The transistors created in an EPROM are arranged in columns and rows, permitting individual access; the speed at which the transistors can be addressed is called access time (expressed in nanoseconds (ns), or one-billionth of a second). EPROM's sold in the U.S. market usually have an access time of 250 ns.

EPROM's were first introduced in the early 1970's with a density of 2,048 transistors (2K). Since then, the densities have progressively increased. In 1985, EPROM's with densities of 64K and above accounted for 63 percent of apparent U.S. consumption.

EPROM chips (or dice) are produced in large numbers on a single silicon wafer. The process required to produce the chips includes repeated photolithographic steps and the controlled introduction of impurity atoms (dopants) into the silicon crystal. After production and separation (including testing of the dice), the good chips are wire bonded to lead frames, final sealed in ceramic or plastic packages, and than tested again. The efficiency of producing EPROM's is determined by the size of the wafer, the size of individual die created on the wafer, the number of good chips obtained (yield) from each wafer, and the yield after final testing.

The production of EPROM's can be divided into four basic operations. The production of the chips on the wafer, called wafer fabrication, is one of the most difficult and costly operations. Following fabrication each die on the wafer is electrically tested and defective dice are marked. This stage, known as wafer sorting, is generally conducted where wafer fabrication is performed. The process of wire bonding and final sealing into a ceramic or plastic case is called assembly. Assembly operations are labor intensive and, for a number of producers, occur in developing countries. The final operations include testing and marking.

1/ Commerce has also included so-called "one-time" programmable EPROM's within the scope of this investigation. These products do not have the window for reprogramming and are encased in plastic rather than ceramic.

EPROM's imported into the United States from Japan and those produced by the petitioners and other domestic and foreign firms are essentially interchangeable. The devices are dual in-line packages that are pin-to-pin compatible; pin spacings and case construction are standard, with few exceptions. The largest uses for EPROM's are in data storage programs in computers, office machines, data processing equipment, and telecommunications equipment.

U.S. tariff treatment

The U.S. Customs Service has determined that the country of origin of an imported EPROM's, for tariff purposes, is the location of the final sealing operations, which constitute a substantial transformation to a new article of commerce. Chips produced in the United States and final sealed abroad do not bear the marking "Made in USA," but rather bear the marking of the country in which they were final sealed. 1/ Under customs regulations of the European Community and Japan, the country of origin of an EPROM is determined by the location of the wafer fabrication.

Imports of EPROM's are classified in item 687.74 of the Tariff Schedules of the United States (TSUS). This tariff item provides for monolithic integrated circuits, which include MOS memory devices. Uncased or unassembled EPROM's are reported under statistical annotation 687.7405, along with all other unmounted monolithic integrated chips, dice, and wafers. Cased or assembled EPROM's, along with a variety of other MOS memory devices, are reported under statistical annotation 687.7445, which excludes random access memories (RAM's). Other memory devices in item 687.7445 include programmable read only memories (PROM's), read only memories (ROM's), and electrically erasable programmable read only memories (EEPROM's).

Effective March 1, 1985, the column 1 or most-favored-nation rate of duty on imports of EPROM's and certain other semiconductors was eliminated by Presidential Proclamation No. 5305 of February 21, 1985. Prior to that date, the rate of duty applied to imports of EPROM's was 4.2 percent ad valorem. The elimination of the duty was supported by the petitioners. The rate of duty on imports into Japan of EPROM's and certain other semiconductors was also eliminated on March 1, 1985. The U.S. rate of duty applied to imports from certain Communist countries enumerated in TSUS general headnote 3(d) (the column 2 rate of duty) is 35 percent ad valorem.

Nature and Extent of Sales at LTFV

On October 30, 1986, Commerce published notice in the Federal Register of its final determination that EPROM's are being sold in the United States at LTFV. Commerce's investigation covered the period April 1, 1985, through September 30, 1985. Fair value comparisons were made on more than 90 percent of sales of EPROM's to the United States during that period by four firms: Hitachi, Ltd. (Hitachi); Fujitsu, Ltd. (Fujitsu); Toshiba Corp. (Toshiba); and NEC Corp. (NEC). Questionnaire responses were received from Hitachi, Fujitsu, and Toshiba, but a letter was received from NEC stating that it would not respond to Commerce's questionnaire. Consequently, with the exception of NEC, fair value comparisons were made on data provide by the respondents.

1/ Commerce has included both direct and indirect imports of EPROM's from Japan within the scope of this investigation. Indirect imports are those assembled in third countries from wafers fabricated in Japan.

For some Toshiba sales, Commerce used the purchase price of the subject merchandise to represent U.S. price, since the merchandise was sold to unrelated purchasers prior to its importation into the United States. For the other Toshiba sales and sales by all other respondents, Commerce used the exporter's sales price to represent U.S. price. These were compared with foreign market values based on home-market prices where there were sufficient home-market sales at or above the cost of production, and constructed value where there were insufficient sales at or above the cost of production. For Hitachi and Fujitsu, foreign market value was calculated based on constructed value for some of their sales. For Toshiba, foreign market value was calculated based on constructed value for all sales because more than 90 percent of its sales of each product were found to be below the cost of production. For NEC, Commerce made a fair value comparison based on the best information available, which was the U.S. price and foreign market value data developed in the petition.

Commerce determined that the final weighted-average LTFV margins were as follows (in percent):

Firm	Margin
Hitachi, Ltd	85.2
Fujitsu, Ltd	103.0
Toshiba Corp	60.1
NEC Corp	188.0
All others	93.9

Commerce provided information on the total quantity and value of EPROM's exported to the United States and the quantity and value of shipments that were found to found to be sold at LTFV by the three firms that responded to its questionnaire. According to these data, which cover the period April-September 1985, *** percent of exports by value, and *** percent by quantity, by these three firms were sold at LTFV. This information is shown in the following tabulation:

Company	Total value	Value at LTFV	Total Quantity	Quantity at LTFV
	1,000 dollars		1,000 units	
Toshiba	***	***	***	***
Fujitsu	***	***	***	***
Hitachi	***	***	***	***
Total	***	***	***	***

The Domestic Market

U.S. producers

Nine firms are known to have produced either uncased or cased EPROM's in the United States during January 1983-June 1986. * * *. Currently, six firms perform EPROM wafer fabrication (i.e., produce uncased EPROM's) in the

United States. All of these firms conduct assembly operations offshore. 1/ One firm (Fujitsu) performs wafer fabrication in Japan and conducts assembly operations in the United States. The nine firms are discussed separately below.

Advanced Micro Devices, Inc. (AMD), Sunnyvale, CA, is a copetitioner in this investigation. It produces uncased EPROM's in densities ranging from *** to *** in facilities in Austin, TX, and Sunnyvale, CA. The uncased EPROM's are shipped to an AMD subsidiary in * * *, for assembly, before being brought back into the United States for sale. AMD accounted for *** percent of U.S. producers' domestic shipments of cased EPROM's in 1985.

Fujitsu Microelectronics, Inc. (Fujitsu), Santa Clara, CA, is a wholly owned subsidiary of Fujitsu, Ltd., of Tokyo, Japan. Fujitsu imports *** uncased EPROM's from Japan. It assembles these uncased products in its plant in San Diego, CA. Fujitsu is currently the only company that assembles EPROM's in the United States. In addition to imports of uncased EPROM's, Fujitsu imports cased (assembled) EPROM's from Japan in * * * densities. Fujitsu stated in its questionnaire response that "* * *. Fujitsu accounted for *** percent of U.S. producers' domestic shipments of cased EPROM's in 1985.

Intel Corp. (Intel), Santa Clara, CA, is a copetitioner in this investigation. It introduced the world's first EPROM, a 2K device, in January 1971, and currently produces EPROM's in densities ranging from *** to ***. Uncased EPROM's are produced in plants in Santa Clara and Livermore, CA; Albuquerque, NM; Aloha, OR; and Chandler, AZ. These are sent to plants in * * *, for assembly and testing. Intel accounted for *** percent of U.S. producers' domestic shipments of cased EPROM's in 1985.

Mostek Corp. (Mostek), Carrollton, TX, is a former subsidiary of United Technologies Corp., which produced uncased EPROM's and assembled them in * * *. It discontinued the production of EPROM's in * * *. Prior to ***, Mostek had produced *** EPROM's. In addition to its facilities in the United States, Mostek had plants in * * *. In its questionnaire response, Mostek reported that "CTU (Mostek) of Delaware, Inc., * * *."

Motorola Corp. (Motorola), Schaumberg, IL, produces uncased EPROM's in densities up to *** and sends them to plants in *** for assembly. In a letter dated November 26, 1986, Motorola indicated that it supports the petition in this investigation. Motorola accounted for *** percent of U.S. producers' domestic shipments of cased EPROM's in 1985.

National Semiconductor Corp. (National), Santa Clara, CA, produced * * * EPROM's in its plants in California and West Jordan, UT. The wafers are assembled by a subsidiary in * * *. National is a copetitioner in this investigation and accounted for *** percent of U.S. producers' domestic shipments of cased EPROM's in 1985.

Rockwell International (Rockwell), Newport Beach, CA, is a subsidiary of Rockwell International Corp. Rockwell produced limited quantities of uncased *** EPROM's in 1983 in its plant in California, then sent them to * * * to be assembled. Rockwell discontinued the manufacture of EPROM's in ***.

1/ * * *, which ceased production of EPROM's prior to 1983, also had assembly operations in the United States.

Seeq Technology, Inc. (SEEQ), San Jose, CA, produces * * * EPROM's in its plant in San Jose, CA, then subcontracts the assembly to a facility in * * *. SEEQ reported that it supports the petition in this investigation. SEEQ accounted for *** percent of U.S. producers' domestic shipments of cased EPROM's in 1985.

Texas Instruments, Inc. (TI), Dallas, TX, produces uncased * * * EPROM's in plants in Dallas and Lubbock, TX. It's EPROM's are shipped to its wholly owned subsidiary in * * * for assembly, before being brought back to the United States for sale. TI also has production facilities in Japan. TI supports the petition in this investigation; it accounted for *** percent of U.S. producers' domestic shipments of cased EPROM's in 1985.

U.S. importers

The Commission sent importers' questionnaires to 28 firms believed to import uncased or cased EPROM's from Japan. According to the data submitted, 1/ there were 18 importers of EPROM's from Japan during the period January 1983 to June 1986, as shown in the following tabulation:

Importer	Location	Share of 1985 imports 1/ of cased and uncased EPROM's from Japan (percent)
* * *	* * *	***
* * *	* * *	***
Epson	Torrance, CA	***
Fujitsu Microelectronics, Inc	San Diego, CA	***
Hitachi America, Inc. (Hitachi)	San Jose, CA	***
* * *	* * *	***
* * *	* * *	***
Mitsubishi Electronics America (MELA)	Torrance, CA	***
NEC Electronics Inc.	Mountain View, CA	***
Nissei Sangyo America	Rolling Meadows, IL	***
* * *	* * *	***
Oki Semiconductor, Inc	Sunnyvale, CA	***
* * *	* * *	***
Panasonic	Secaucus, NJ	***
* * *	* * *	***
* * *	* * *	***
* * *	* * *	***
Toshiba America, Inc	Tustin, CA	***

1/ * * *.
2/ * * *.

Of the 18 importers reporting, *** firms are related to Japanese producers of EPROM's. In addition, TI has an EPROM production facility in Japan. * * *, * * *, * * *, * * *, and * * * accounted for *** percent of total reported imports of cased EPROM's from Japan in 1985. Fujitsu is the only firm to import uncased EPROM's from Japan to produce cased EPROM's in the

1/ Twenty-four of the 28 firms responded to the Commission's questionnaire.

United States 1/ and * * * and * * * are the only U.S. firms that reported imports of cased EPROM's that were produced from uncased EPROM's fabricated in Japan and assembled in third countries (the so-called "indirect" imports which Commerce has included within the scope of this investigation).

Apparent U.S. consumption

U.S. consumption of cased EPROM's was compiled from data submitted in response to questionnaires of the U.S. International Trade Commission. The consumption data are composed of reported shipments of cased EPROM's, whether domestically produced or imported, in the U.S. market by each of the known major entities (producers and importers) supplying EPROM's to the market. The U.S. producers that submitted data are believed to have accounted for 100 percent of the cased EPROM's that were produced at least in part in the United States in 1985, and the 18 reporting importers together accounted for an estimated 85 percent of imports of EPROM's from Japan in 1985.

Table 1.—EPROM's, cased: Apparent U.S. consumption, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June 1985	January-June 1986
	Quantity (1,000 units)				
Under 32K	13,459	11,554	6,330	4,310	2,175
32K	24,739	21,469	21,539	9,386	7,490
64K	***	28,404	27,515	11,825	11,706
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	60,443	71,711	74,470	33,618	36,905
	Share of total (percent)				
Under 32K	22.3	16.1	8.5	12.8	5.9
32K	40.9	29.9	28.9	27.9	20.2
64K	***	39.6	36.9	35.2	31.7
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	100.0	100.0	100.0	100.0	100.0

1/ Less than 0.05 percent.

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

1/ In 1984, * * *.

Data on consumption of uncased EPROM's are not presented because uncased EPROM's produced in the United States are exported to foreign affiliates or subcontractors for assembly into cased EPROM's, and uncased EPROM's from Japan are imported for assembly in the United States. 1/

Total apparent U.S. consumption of cased EPROM's increased steadily, by 23 percent, from 1983 to 1985 and then increased by 10 percent during January-June 1986 compared with consumption during January-June 1985 (table 1). 2/ Consumption of cased EPROM's with densities under 64K generally declined during the period, while consumption of cased EPROM's with densities over 64K increased. Also, as shown in the table, the higher density products accounted for generally increasing shares of consumption.

Channels of distribution

EPROM producers supply the merchant market (open market) through three channels of distribution: (1) sales to end users, i.e., original-equipment manufacturers (OEM's) and circuit board stuffers; (2) sales to distributors; and (3) spot sales. Sales to OEM's are either factory direct or through a factory representative. Both * * * and * * * have replaced their factory representatives with a factory direct sales force, whereas * * * continues to use factory representatives. Sales to "key accounts" generally are negotiated by high-level executives of the vendor firm. According to * * *, roughly *** purchasers generate *** to *** percent of the EPROM industry's shipment volume. At least one-half of these purchasers could be termed "key accounts." * * * "key accounts" include such purchasers as * * *, * * *, * * *, * * *, and * * *.

Factory direct sales to OEM's are long-term contract sales. Contract awards are based on bids made in response to an OEM's request for quotes (RFQ). Such contracts range from 3 months to 1 year in length and call for scheduled deliveries, usually monthly, during the contract period. 3/ Most factory-direct contract sales provide for price renegotiation on the downside of the demand cycle. 4/ Factory direct sales to board stuffers also are based on competing bids. Board stuffers issue RFQ's more frequently than OEM's and award purchase orders to winning bidders on a project-by-project basis. Releases are made for shipment to scheduled production run rates. Prices are subject to renegotiation on a "meet-competition" basis.

Sales to distributors provide broad market coverage and access to smaller accounts. Although authorized distributors have both stocking and reporting requirements, they also have price protection. The relatively short life cycle of a particular EPROM (because of the fast-paced technology) and the

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1/ Small quantities of uncased EPROM's imported form Japan are sold to unrelated parties which assemble hybrid integrated circuits; transcript of the conference on investigation No. 731-TA-288 (Preliminary), p. 18.

2/ Consumption data calculated on the basis of memory equivalents and value are presented in appendix tables C-1 and C-2, respectively.

3/ The third quarter of the year is the usual time for negotiating contracts with OEM's. The contract period generally begins in June of the following year.

4/ Contract sales to * * * are made on a central purchase basis and are an exception to this pattern. Prices to * * * are rarely renegotiated during the contract period.

volatility of the market for EPROM's strongly affect price. Consequently, the industry practice is to offer price protection to authorized distributors. Such protection takes the form of "meet-competition" allowances, or as * * * terms it, a "d.p.a." (distributor price authorization). This policy enables distributors to quote and sell competitively from inventory purchased at higher prices, and then obtain a credit from the supplier for the amount of any price reductions.

The spot market includes sales to board stuffers, brokers, small OEM's, and so-called "walk-ins." These purchasers are making a one-time purchase for quick delivery. Terms are usually cash, but can be on credit. Spot-market purchasers may call directly to the factory, call a manufacturer's representative, call a distributor, or buy over the counter. This market is sometimes called the "grey market," especially referring to sales to brokers. Brokers take a position (take title) and look for a price that allows resale at a profit. *** characterizes the grey market as a "wheeler-dealer" channel of distribution. * * * terms the "grey market" disruptive, particularly in a down market. Pressure on prices is created by grey-market supply coming into the market at sharply lower prices. Brokers, buying for OEM's, board stuffers, or distributors, purchase their grey-market supply from surplus inventory held by OEM's and distributors and from offshore oversupply. * * * notes that Japanese EPROM producers "deal with trading companies, selling a block of product, then letting the trading company be the intermediary to the grey market." 1/

Major OEM accounts reportedly generally did not purchase from grey-market vendors in the past. They viewed the potential problems associated with the quality of the incoming product as extremely serious, noting that grey-market supply has been known to include mislabeled, stolen, and even rejected product. Currently, however, according to * * *, significant grey-market supply is offered complete with offshore producers' quality seals on the boxes. Consequently, * * * states that major accounts are now purchasing part of their requirements with grey-market vendors.

The Industry in Japan

According to the petitioners, Dataquest reported that eight firms produce EPROM's in Japan. The Department of Commerce determined that four of these firms (Hitachi, Fujitsu, Toshiba, and NEC Corp.) accounted for over 90 percent of Japanese producers' shipments of EPROM's to the United States. Other producers in Japan are Mitsubishi Electric Co. and Texas Instruments.

Official Japanese statistics published on semiconductors are disaggregated only to the level of MOS memories, and do not provide separately for EPROM's. Production of MOS memories in Japan increased by 56 percent from 1983 to 1984, then declined by 1 percent in 1985. Production increased again, by 7 percent, during January-April 1986, compared with that in the corresponding period of 1985 (table 2).

1/ In investigation No. 731-TA-270 (Preliminary), * * * described this same pattern with respect to 64K DRAM's. According to * * *, Japanese producers such as * * * insulate their participation in the grey market by selling to trading companies who, in turn, sell to brokers and wholesalers who resell to minor OEM's, board stuffers, distributors, and others.

Table 2.—MOS memories: Production in Japan, 1983-85, January-April 1985, and January-April 1986

Item	1983	1984	1985	January-April 1985	January-April 1986
Quantity—1,000 units	740,621	1,152,252	1,140,291	426,860	455,465
Value—million yen	367,256	753,711	591,531	258,507	160,568
Unit value—yen per unit	496	654	519	606	353

Source: Electronics Industries Association of Japan.

Counsel for Fujitsu provided the following information on the production and allocated production capacity for EPROM's of Fujitsu Ltd., in Japan (in thousands units and percent):

	1983	1984	1985
Production	***	***	***
Capacity	***	***	***
Capacity utilization	***	***	***

Consideration of Alleged Material Injury

Data on the EPROM industry contained in this section of the report have been compiled from questionnaire responses submitted by the firms producing either uncased or cased EPROM's in the United States. Separate data on production, shipments, and inventories of uncased and cased EPROM's are presented. Data on shipments and inventories of cased EPROM's are further presented separately on the basis of the country of origin of the uncased EPROM's. Data on employment and financial experience are presented separately for Fujitsu, the only U.S. producer that does not perform wafer fabrication in the United States.

All known producers in the United States responded to the Commission's questionnaire. Mostek reported that it stopped producing EPROM's * * *, and Rockwell produced EPROM's * * *. The other producers, AMD, Fujitsu, Intel, Motorola, National, SEEQ, and TI, responded to all applicable sections of the questionnaire, and the trade data in the report includes all these firms unless otherwise noted.

Capacity and capacity utilization

In its questionnaire, the Commission requested data on capacity and production of all integrated circuits, because the manufacturing facilities used to produce EPROM's are basically the same as those that can be used to produce all integrated circuits. Four producers provided data on capacity and production for wafer fabrication of all integrated circuits on the basis of die equivalents, and two producers provided these data on the basis of 4-inch wafer start equivalents. 1/ Table 3 presents separately integrated circuit

1/ * * * did not provide information on production and capacity of integrated circuits.

Table 3.—Integrated circuit wafer fabrication: U.S. production, average-for-period capacity, and capacity utilization, 1983-85, January-June 1985, and January-June 1986

Item	1983	1984	1985	January-June—	
				1985	1986
Producers reporting on the basis of die equivalents: 1/					
Production——1,000 units—	***	***	***	***	***
Average-for-period capacity 1,000 units—	***	***	***	***	***
Capacity utilization percent—	90.1	98.5	51.6	50.6	70.9
Producers reporting on the basis of 4-inch wafer start equivalents:					
Production——1,000 units—	***	***	***	***	***
Average-for-period capacity 1,000 units—	***	***	***	***	***
Capacity utilization percent—	***	***	***	***	***

1/ One firm, * * *, accounted for approximately *** percent of capacity, but only *** percent of shipments. If their data were not included in this table the capacity utlization rates for 1983, 1984, 1985, January-June 1985 and January-June 1986 would be ***, ***, ***, ***, and ***, respectively.

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

capacity and production based on the reporting method used. In addition, Fujitsu reported data on capacity and production in its facility that assembled cased EPROM's. This information is shown separately.

Production of all integrated circuits increased from 1983 to 1984, by *** percent for producers reporting on the basis of die equivalents and by *** percent for those reporting on the basis of 4-inch wafer start equivalents. Production for those reporting on the basis of die equivalents declined by *** percent in 1985, while production for firms reporting on the basis of 4-inch wafer start equivalents decreased by *** percent. During January-June 1986, production by those producers reporting on the basis of die equivalents increased by *** percent, and production for those reporting on the basis of 4-inch wafer starts declined by *** percent.

Average-for-period capacity for producers reporting on the basis of die equivalents rose by *** percent from 1983 to 1984, declined slightly in 1985, then fell by *** percent during January-June 1986 compared with capacity during January-June 1985. Average-for-period capacity for those producers reporting on the basis of 4-inch wafer starts increased by *** percent from 1983 to 1984, declined by *** percent in 1985, then declined by *** percent in January-June 1986.

Capacity utilization for those producers reporting on the basis of die equivalents rose from 90.1 percent in 1983 to 98.5 percent in 1984, then dropped to 51.6 percent in 1985. In January-June 1986, capacity utilization for these

producers rose to 70.9 percent from 50.6 percent during January-June 1985. For producers reporting on the basis of 4-inch wafer start equivalents, capacity utilization rose from *** percent in 1983 to *** percent in 1984, then declined to *** percent in 1985 and *** percent during January-June 1986.

Fujitsu's production, capacity, and capacity utilization for assembling integrated circuits are reported in the following tabulation:

Period	Production	Capacity	Capacity utilization
	1,000 units		(percent)
1983	***	***	***
1984	***	***	***
1985	***	***	***
January-June			
1985	***	***	***
1986	***	***	***

Uncased EPROM's.--EPROM's are produced in the same facilities and on the same equipment as other integrated circuits; therefore many companies were unable to provide separate capacity data for EPROM's. * * * reported the same capacity figures for all integrated circuits and for EPROM's. * * * responded that they were "* * *." * * * reported on all integrated circuits, stating that "* * *."

Two firms that produce uncased EPROM's were able to provide capacity data on EPROM's separately (* * * and * * *). These figures, reported on the basis of die equivalents, are presented in the following tabulation:

Period	Production	Capacity	Capacity utilization
	1,000 units		(percent)
1983	***	***	***
1984	***	***	***
1985	***	***	***
January-June			
1985	***	***	***
1986	***	***	***

Cased EPROM's.--Fujitsu's production, capacity, and capacity utilization for assembling EPROM's are reported in the following tabulation:

Period	Production	Capacity	Capacity utilization
	1,000 units		(Percent)
1983	***	***	***
1984	***	***	***
1985	***	***	***
January-June			
1985	***	***	***
1986	***	***	***

Production of EPROM's

Data on production of uncased and cased EPROM's were compiled from .

responses to the Commission's questionnaire submitted by the seven firms that produced uncased EPROM's and the one firm that produced cased EPROM's in the United States during the subject period.

Total U.S. production of uncased EPROM's increased steadily from 1983 to 1985, rising by 35 percent from 1983 to 1984 and by 16 percent from 1984 to 1985 (table 4). Production increased by 1 percent during January-June 1986 compared with production in the corresponding period of 1985. Production of under 32K uncased EPROM's declined throughout the period, dropping by 52 percent from 1983 to 1985. Production of 32K uncased EPROM's increased by 87 percent from 1983 to 1984, but leveled off in 1985 and fell in January-June 1986. Production of uncased 64K EPROM's rose by 44 percent from 1983 to 1985, then rose by 33 percent in January-June 1986 compared with production in the corresponding period of 1985. Production of 128K, 256K, and over 256K EPROM's * * * from 1983 to 1985, and * * * continued the * * * in January-June 1986.

Table 4.—EPROM's, uncased and cased: U.S. production, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June— 1985	January-June— 1986
Uncased:					
Under 32K	21,090	15,857	10,086	6,915	2,462
32K	12,156	22,723	22,480	13,276	8,571
64K	19,257	25,313	27,786	13,693	19,271
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	59,835	80,927	94,278	54,258	54,844
Cased: 1/					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***

1/ 100 percent of these cased EPROM's were made from uncased EPROM's produced in Japan.

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

Total U.S. production of cased EPROM's also followed an upward trend from 1983 to 1985, * * * by *** percent from 1983 to 1984 and by *** percent from 1984 to 1985. In January-June 1986, production * * * by *** percent compared with production in January-June 1985. * * *.

Producers' shipments

Uncased EPROM's.--Seven firms provided data on shipments of uncased EPROM's, virtually all of which are transferred to foreign affiliates or subcontractors for offshore assembly. As shown in table 5, total shipments of uncased EPROM's produced in the United States increased by 31 percent from 1983 to 1984, and by 10 percent in 1985. In January-June 1986, total shipments of uncased EPROM's increased by 20 percent compared with such shipments in the corresponding period of 1985.

Cased EPROM's.--Data on shipments of cased EPROM's were submitted by eight firms, seven of which perform only wafer fabrication in the United States and one of which assembles cased EPROM's in the United States from uncased EPROM's produced in Japan. Shipments of all cased EPROM's produced at least in part in the United States are presented in table 6. Tables 7 and 8 present, respectively, shipments of cased EPROM's made from U.S.-produced uncased EPROM's that are assembled offshore, and shipments of cased EPROM's made from uncased EPROM's that are produced in Japan and assembled in the United States. The unit values of domestic shipments of these cased EPROM's are presented in appendix tables C-3 and C-4; unit values of export shipments are presented in table C-5.

As shown in table 6, total shipments of all cased EPROM's produced at least in part in the United States increased by 16 percent from 1983 to 1984, and by 15 percent from 1984 to 1985. In January-June 1986, shipments rose by 5 percent compared with those in January-June 1985.

Domestic shipments of all cased EPROM's produced at least in part in the United States rose by *** percent from 1983 to 1985 and by *** percent in January-June 1986 compared with shipments in the corresponding period of 1985.

Intra- or intercompany transfers of cased EPROM's produced at least in part in the United States remained relatively stable from 1983 to 1985, and then declined by *** percent from January-June 1985 to January-June 1986.

Export shipments of all EPROM's produced at least in part in the United States declined by *** percent from 1983 to 1984, then dropped by *** percent in 1985. Such export shipments continued to drop (by *** percent) in January-June 1986 compared with exports in the corresponding period of 1985. Export shipments accounted for *** percent of total shipments of cased EPROM's produced in part in the United States in 1983 and *** percent of such shipments in 1985.

Cased EPROM's assembled offshore.--Total shipments of cased EPROM's made from uncased EPROM's produced in the United States and assembled in a third country (table 7) accounted for *** percent of U.S. producers' total shipments of cased EPROM's in 1985. Such shipments increased by *** percent from 1983 to 1984, by *** percent in 1985, and by *** percent in January-June 1986 compared with shipments in January-June 1985.

Domestic shipments of cased EPROM's made from uncased EPROM's produced in the United States accounted for *** percent of total shipments of such products in 1983, *** percent in 1984, *** percent in 1985, and *** percent in January-June 1986. Domestic shipments of cased EPROM's made from U.S.-produced uncased EPROM's followed the same general trend as total shipments, increasing by *** percent from 1983 to 1985 and by *** percent from January-June 1985 to January-June 1986.

Table 5.—EPROM's, uncased: U.S. producers' shipments, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June 1985	January-June 1986
Domestic shipments:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Transfers to foreign affiliates or subcontractors:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Total shipments:					
Under 32K	21,070	15,322	9,020	5,726	4,074
32K	12,227	22,705	20,760	12,162	10,275
64K	19,553	24,743	26,153	13,539	20,282
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	60,114	78,953	86,759	51,396	61,577

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

Table 6.—EPROM's, cased: Shipments of cased EPROM's produced at least in part in the United States, 1/ by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June 1985	January-June 1986
Domestic shipments:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Intra- and intercompany transfers:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Export shipments:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K		***	***	***	***
Total	***	***	***	***	***
Total shipments:					
Under 32K	10,725	10,562	5,962	3,929	2,278
32K	15,328	14,912	19,898	8,193	5,787
64K	16,691	18,705	19,746	9,972	9,398
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	47,099	54,529	62,520	29,436	30,908

1/ Includes totals of shipments of cased EPROM's presented in tables 7 and 8.

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

Table 7.--EPROM's, cased: Shipments of cased EPROM's made from uncased EPROM's produced in the United States and assembled in a third country, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June-- 1985	January-June-- 1986
Domestic shipments:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Intra- and intercompany transfers:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Export shipments:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Total shipments:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***

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

Table 8.—EPROM's, cased: Shipments of cased EPROM's made from uncased EPROM's produced in Japan and assembled in the United States, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June 1985	January-June 1986
Domestic shipments: 1/					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Intra- and intercompany transfers:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Export shipments:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
Total shipments:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***

1/ * * *.

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

Intra- and intercompany transfers of cased EPROM's made from uncased EPROM's produced in the United States accounted for *** percent of total shipments of such EPROM's throughout the period. Intra- and intercompany transfers increased by *** percent from 1983 to 1984, declined by *** percent in 1985, then declined by *** percent in January-June 1986 compared with transfers in the corresponding period of 1985.

Exports of cased EPROM's made from uncased EPROM's produced in the United States and assembled in third countries accounted for *** percent of total shipments in 1983, *** percent in 1984, *** percent in 1985, and *** percent in January-June 1986. Such exports declined steadily (by *** percent) from 1983 to 1985, then declined by *** percent in January-June 1986 compared with exports in January-June 1985.

Cased EPROM's assembled in the United States.--Total shipments of cased EPROM's made from uncased EPROM's produced in Japan and assembled in the United States (table 8) accounted for *** percent of total shipments of cased EPROM's produced at least in part in the United States in 1983, *** percent of such shipments in 1984 and 1985, and *** percent in January-June 1986. Fujitsu is the only company that assembles uncased EPROM's from Japan in the United States. These shipments * * * by *** percent from 1983 to 1984, and by *** percent in 1985, before * * * by *** percent in January-June 1986 compared with shipments in the corresponding period of 1985.

Producers' foreign affiliates' drop shipments

Data on U.S. producers' export shipments of cased EPROM's do not include drop shipments, which are shipments to third markets made directly by U.S. producers' foreign affiliates assembling the U.S.-produced uncased EPROM's. U.S. producers' drop shipments, which were the equivalent of *** percent of their parent firms' U.S. shipments in 1983, *** percent in 1984, *** percent in 1985, and *** percent in January-June 1986, are presented in table 9.

Total drop shipments of cased EPROM's increased by *** percent from 1983 to 1984, then * * * in 1985. These shipments increased more * * * in January-June 1986 compared with drop shipments in January-June 1985. * * *.

Producers' inventories

In its questionnaire, the Commission requested data on end-of-period inventories of cased and uncased EPROM's. Seven firms provided data on inventories of uncased EPROM's (two reported no inventories), as presented in table 10. Eight firms provided data on inventories of cased EPROM's; seven of these held inventories of cased EPROM's produced in the United States and assembled in a third county, and one firm (Fujitsu) held inventories of cased EPROM's made from uncased EPROM's produced in Japan and assembled in the United states. Table 11 presents these data separately.

Producers' end-of-period inventories of uncased EPROM's declined by 23 percent from 1982 to 1983, then increased by 69 percent in 1984. End-of-period inventories were more than 4 times higher at the end of 1985 than they had been at the end of 1984; however, they were 22 percent lower at the end of June 1986 than they had been at the end of June 1985.

Table 9.—EPROM's, cased: U.S. producers' foreign affiliates' drop shipments to third markets, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June 1985	January-June 1986
	Quantity (1,000 units)				
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
	Value (1,000 dollars)				
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***
	Unit value				
Under 32K	$ ***	$ ***	$ ***	$ ***	$ ***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***

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

End-of-period inventories of cased EPROM's made from uncased EPROM's produced in the United States * * * from 1982 to 1985, but * * * by *** percent from June 1985 to June 1986.

End-of-period inventories of cased EPROM's made from uncased EPROM's produced in Japan and assembled in the United States accounted for *** percent of total inventories of cased EPROM's in 1982, *** percent in 1983, *** percent in 1984, and *** percent in 1985. End-of-period inventories of such cased EPROM's * * * from 1982 to 1983, then * * * by *** percent in 1984 before * * * *** percent in 1985. Such inventories were *** percent * * * at the end of June 1986 than they had been at the end of June 1985.

Table 10.—EPROM's, uncased: U.S. producers' end-of-period inventories, by densities, 1982-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1982	1983	1984	1985	January-June 1985	January-June 1986
Under 32K	***	***	***	***	***	***
32K	***	***	***	***	***	***
64K	***	***	***	***	***	***
128K	***	***	***	***	***	***
256K	***	***	***	***	***	***
Over 256K	***	***	***	***	***	***
Total	1,739	1,337	2,263	9,563	5,483	4,264

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

Table 11.—EPROM's, cased: U.S. producers' end-of-period inventories, by country of origin of uncased EPROM's used to produce the cased EPROM's and by densities, 1982-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1982	1983	1984	1985	January-June 1985	January-June 1986
Made from uncased EPROM's produced in the United States:						
Under 32K	***	***	***	***	***	***
32K	***	***	***	***	***	***
64K	***	***	***	***	***	***
128K	***	***	***	***	***	***
256K	***	***	***	***	***	***
Over 256K	***	***	***	***	***	***
Total	***	***	***	***	***	***
Made from uncased EPROM's produced in Japan:						
Under 32K	***	***	***	***	***	***
32K	***	***	***	***	***	***
64K	***	***	***	***	***	***
128K	***	***	***	***	***	***
256K	***	***	***	***	***	***
Over 256K	***	***	***	***	***	***
Total	***	***	***	***	***	***
Grand total	4,310	5,937	6,565	7,436	7,696	6,231

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

Producers' employment and wages

In its questionnaire, the Commission requested data on employment and wages for production and related workers producing all products and for those producing EPROM's. Eight firms provided data; seven of these produce uncased EPROM's and one (Fujitsu) assembles cased EPROM's.

The number of production and related workers in U.S. establishments producing uncased EPROM's increased by 31 percent from 1983 to 1985, then declined by 21 percent in January-June 1986 compared with the number employed in the corresponding period of 1985 (table 12). Hours worked by these employees followed the same pattern, increasing by 31 percent from 1983 to 1985, then declining by 24 percent in January-June 1986 compared with hours worked in January-June 1985.

Wages paid to production and related workers producing uncased EPROM's increased by 52 percent from 1983 to 1985, then declined by 19 percent in January-June 1986 compared with wages paid in the corresponding period of 1985. Total compensation paid these workers followed a slightly different trend, increasing by 54 percent from 1983 to 1984, then declining by 2 percent in 1985. There was a continued decline in total compensation paid of 20 percent in January-June 1986 compared with total compensation paid in January-June 1985.

Average hourly compensation paid to production and related workers producing uncased EPROM's increased from $11.74 in 1983 to $13.97 in 1984, then dropped slightly to $13.55 in 1985. Average hourly compensation for these workers increased to $15.48 in January-June 1986, compared with $14.59 in January-June 1985.

* * * and * * * reported layoffs at various times in 1985 in their overall operations. * * * reported that its layoffs were * * *. * * * reported indefinite layoffs affecting *** employees in its EPROM operations due to * * * and * * * reported that its layoff of *** employees in its EPROM operations was permanent and was due to the * * *.

Employment data for Fujitsu, which does not have wafer fabrication operations in the United States, are presented separately in table 13. The number of production and related workers in U.S. establishments producing cased EPROM's * * * by *** percent from 1983 to 1985, then * * * by *** percent in January-June 1986 compared with the number employed in the corresponding period of 1985. Hours worked by these employees * * * by *** percent from 1983 to 1985, then * * * by *** percent in January-June 1986 compared with hours worked in January-June 1985. In its questionnaire response Fujitsu reported that it had * * *.

Wages paid to production and related workers producing cased EPROM's * * * by *** percent from 1983 to 1985, then * * * by *** percent in January-June 1986 compared with wages paid in the corresponding period of 1985. Total compensation paid these workers followed the same trend, * * * by *** percent from 1983 to 1985, then * * * by *** percent in January-June 1986 compared with total compensation paid in January-June 1985.

Average hourly compensation paid to production and related workers producing cased EPROM's * * * from $*** in 1983 to $*** in 1984 and $*** in 1985. Average hourly compensation for these workers * * * to $*** in January-June 1986 compared with $*** in January-June 1985.

Table 12.—Average number of production and related workers employed in U.S. establishments producing uncased EPROM's, hours worked by such workers, wages paid, total compensation paid, and average hourly compensation paid, 1983-85, January-June 1985, and January-June 1986

Item	1983	1984	1985	January-June	
				1985	1986
Average number of production and related workers producing—					
All products	13,918	17,248	15,367	16,364	11,519
EPROM's	2,741	3,556	3,604	3,829	3,009
Hours worked by production and related workers producing—					
All products—1,000 hours	30,212	38,430	33,154	16,668	11,644
EPROM's—do	5,730	7,409	7,492	3,755	2,846
Wages paid to production and related workers producing—					
All products—1,000 dollars	279,594	399,496	372,035	189,280	145,621
EPROM's—do	57,683	86,798	87,532	46,972	38,235
Total compensation paid to production and related workers producing—					
All products—1,000 dollars	345,427	497,124	448,119	230,217	174,201
EPROM's—do	67,256	103,478	101,495	54,778	44,044
Average hourly compensation paid to production and related workers producing—					
All products—per hour	$11.43	$12.94	$13.52	$13.81	$14.96
EPROM's—do	11.74	13.97	13.55	14.59	15.48

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

Table 13.—Average number of production and related workers employed in U.S. establishments by Fujitsu, hours worked by such workers, wages paid, total compensation paid, and average hourly compensation paid, 1983-85, January-June 1985, and January-June 1986

Item	1983	1984	1985	January-June	
				1985	1986
Average number of production and related workers producing—					
All products	***	***	***	***	***
EPROM's	***	***	***	***	***
Hours worked by production and related workers producing—					
All products—1,000 hours	***	***	***	***	***
EPROM's—do	***	***	***	***	***
Wages paid to production and related workers producing—					
All products—1,000 dollars	***	***	***	***	***
EPROM's—do	***	***	***	***	***
Total compensation paid to production and related workers producing—					
All products—1,000 dollars	***	***	***	***	***
EPROM's—do	***	***	***	***	***
Average hourly compensation paid to production and related workers producing—					
All products—per hour	$ ***	$ ***	$ ***	$ ***	$ ***
EPROM's—do	***	***	***	***	***

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

Financial experience of U.S. producers

Overall EPROM operations.--Income-and-loss on the overall EPROM operations of eight U.S. producers are presented in table 14. Of the eight producers, seven U.S.-owned firms perform wafer fabrication in the United States and one Japanese-owned firm (Fujitsu) conducts assembly operations in the United States.

Aggregate total net sales of EPROM's increased by 43 percent from $359 million in 1983 to $512 million in 1984 and then dropped by 33 percent to $341 million in 1985. In 1984, the * * * in net sales for the U.S.-owned firms was *** percent, and that of the Japanese-owned firm was *** percent, but in 1985, U.S.-owned firms reported a drop of *** percent in their net sales whereas the Japanese-owned firm reported a * * * of *** percent. During the interim periods ended June 30, total net sales fell by 8 percent from $164 million in 1985 to $151 million in 1986, although * * *. Intra- or intercompany transfers were * * * percent of total net sales during the period covered by the investigation.

Total operating income on overall EPROM operations rose from $59 million, or 16.3 percent of net sales, in 1983 to $88 million, or 17.1 percent of net sales, in 1984. However, in 1985, * * * sustained operating losses, totaling $155 million, or 45.6 percent of net sales. During the interim periods ended June 30 there was a more than twofold increase in aggregate operating losses, from $23 million in 1985 to $72 million in 1986.

*** sustained very high losses in all periods for which data were collected. * * *

Table 14.--Income-and-loss experience of U.S. producers on their operations relating to the sale of EPROM's, at least some portion of which was produced in their U.S. establishments, by firms, 1983-85, and interim periods ended June 30, 1985, and June 30, 1986

Period and firm	Trade sales	Intra- or inter-company sales	Total net sales	Cost of good sold	Gross profit (loss)	Research and development expenses	Other general, selling, and administrative expenses	Operating income (loss)	Interest expense	Net other income (expense)	Net income (loss) before income taxes	Depreciation and amortization	Cash flow from operations	Ratio to net sales of-- Gross profit (loss)	Operating income (loss)	Pretax net income (loss)
	1,000 dollars													Percent		
1983:																
				*	*	*	*	*	*	*						
Total or average----	357,330	1,859	359,189	209,872	149,317	23,644	66,961	58,712	2,031	137	56,818	25,196	82,014	41.6	16.3	15.8
1984:																
				*	*	*	*	*	*	*						
Total or average----	510,169	2,204	512,373	305,621	206,752	29,039	89,849	87,864	5,620	1,167	83,411	38,727	122,138	40.4	17.1	16.3
1985:																
				*	*	*	*	*	*	*						
Total or average-----	338,783	2,086	340,869	375,296	(34,427)	45,045	75,958	(155,430)	5,910	(241)	(161,581)	55,887	(105,694)	(10.1)	(45.6)	(47.4)
Interim period ending June 30: 1985:																
				*	*	*	*	*	*	*						
Total or average--	162,940	1,039	163,979	140,635	23,344	15,050	31,732	(23,438)	3,861	(49)	(27,348)	25,918	(1,430)	14.2	(14.3)	(16.7)
1986:																
				*	*	*	*	*	*	*						
Total or average--	149,543	1,138	150,681	176,177	(25,496)	17,367	29,370	(72,233)	2,912	(3)	(75,148)	29,953	(45,195)	(16.9)	(47.9)	(49.9)

1/ AMD reported * * *.
2/ Rockwell * * *.
3/ TI reported * * *.
4/ Fujitsu * * *.
5/ Intel * * *.
6/ Less than (0.5) percent.

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

* * *. 1/ 2/

* * *, as shown in the following tabulation:

Item	1983	1984	1985	Interim period ended June 30— 1985	1986
Percentage point (reduction in operating income margin) or increase in operating loss margin by ***:					
Total industry average	(***)	(***)	***	***	***
U.S.-owned firms' average	(***)	(***)	***	***	***

If *** data were excluded from the aggregate data presented in table 14, the average operating income or loss margins for the total industry and for U.S.-owned firms would be as shown in the following tabulation (In percent):

Item	1983	1984	1985	Interim period ended June 30— 1985	1986
Operating income or (loss) margins without ***:					
Total industry average	***	***	***	***	***
U.S.-owned firms' average	***	***	***	***	***)

The trend of profitability remained the same with or without * * * data, but the operating income margins were * * * and the operating loss margins much * * * without *** data.

In 1983, *** U.S.-owned firms operated profitably, with operating income margins ranging from *** percent * * * to *** percent * * *; and * * * U.S.-owned firms sustained operating * * * ranging from a low of *** percent of net sales * * * to a high of *** percent * * *. Fujitsu, which accounted for *** percent of total net sales in 1983, reported an * * * of *** percent.

In 1984, * * * U.S.-owned firms earned operating income. Their operating income margins ranged from a low of *** percent * * * to *** percent * * *. In the same year, * * *. Fujitsu, which * * * its share of total net sales to *** percent in 1984, experienced * * * in its operating income margin to *** percent in 1984.

1/ * * *
2/ * * *

In 1985, operating losses were reported by *** firms, ranging from a low of *** percent * * * to a high of *** percent * * *. Fujitsu, which accounted for *** percent of total net sales, suffered an operating * * * margin of *** percent.

During the interim period ended June 30, 1986, * * *.

Operations on specific densities of EPROM's.—Aggregate gross profit-and-loss data of U.S. producers on their sales of specific densities of EPROM's are presented in table 15. Such data are shown by firms in appendix tables C-6 through C-11. *** did not allocate its startup costs during 1983-84 or capacity underutilization charges during 1985 and interim 1986 to operations on any particular EPROM densities. Hence, these charges are not included in the cost of goods sold data shown in the table 15.

Under 32K EPROM's.—Aggregate net sales of under 32K EPROM's * * *.

32K EPROM's.—Aggregate net sales of 32K EPROM's * * *.

64K EPROM's.—Aggregate net sales of 64K EPROM's rose by 26 percent from $122.6 million in 1983 to $154.2 million in 1984 and then fell by 45 percent to $84.7 million in 1985. During the interim periods, such sales further declined, by 27 percent, from $44.1 million in 1985 to $32.2 million in 1986. Aggregate gross profits increased in absolute terms from 1983 to 1984, fell sharply in 1985, and turned into large losses in interim 1986. Gross profit margins followed the same trend, dropping from 36.4 percent in 1983 to 8.1 percent in 1985. U.S. producers reported * * * of $*** million or *** percent of net sales during interim 1986. The number of U.S.-owned firms selling 64K EPROM's * * *.

128K EPROM's.—Aggregate net sales of 128K EPROM's * * *.

256K EPROM's.—Aggregate net sales of 256K EPROM's * * *.

Over 256K EPROM's.—Commercial sales of EPROM's with densities over 256K started in 1984. Aggregate net sales of over 256K EPROM's * * *.

Overall establishment operations.—Income-and-loss data for eight U.S. producers for their establishments within which EPROM's are produced are presented in table 16. EPROM sales accounted for less than 19 percent of establishment sales during the periods covered by the investigation. Establishment sales increased by 56 percent from $2.1 billion in 1983 to $3.3 billion in 1984, and then dropped by 31 percent to $2.3 billion in 1985. During the interim periods ended June 30, net sales fell by 22 percent from $1.1 billion in 1985 to $825 million in 1986. The trends for overall establishment net sales and operating income and loss are similar to those for EPROM operations during the period under investigation. The overall establishment operating income margins rose from 6.8 percent in 1983 to 13.8 percent in 1984, and then fell to a negative 22.8 percent in 1985. During the interim period ended June 30, 1986, the operating loss margin increased to 24.2 percent compared with 12.6 percent in the corresponding period of 1985.

Table 15.—Gross profit-and-loss experience of 8 U.S. producers on their operations relating to the sale of EPROM's, at least some portion of which was produced in their U.S. establishments, by specified densities, 1/ accounting years 1983-85 and interim periods ended June 30, 1985, and June 30, 1986

Item	1983	1984	1985	Interim period ended June 30— 1985	1986
Under 32K: 2/					
Net sales—1,000 dollars—	***	***	***	***	***
Cost of goods sold:					
Foreign product costs 1,000 dollars—	***	***	***	***	***
Domestic product costs 1,000 dollars—	***	***	***	***	***
Total—	***	***	***	***	***
Gross profit or (loss) 1,000 dollars—	***	***	***	***	***
Gross profit or (loss) margin—percent—	***	***	***	***	***
Number of firms reporting:					
U.S.-owned firms—	***	***	***	***	***
Japanese-owned firm—	***	***	***	***	***
32K:					
Net sales—1,000 dollars—	***	***	***	***	***
Cost of goods sold:					
Foreign product costs 1,000 dollars—	***	***	***	***	***
Domestic product costs 1,000 dollars—	***	***	***	***	***
Total—	***	***	***	***	***
Gross profit or (loss) 1,000 dollars—	***	***	***	***	***
Gross profit or (loss) margin—percent—	***	***	***	***	***
Number of firms reporting:					
U.S.-owned firms—	***	***	***	***	***
Japanese-owned firm—	***	***	***	***	***
64K:					
Net sales—1,000 dollars—	122,578	154,184	84,679	44,102	32,169
Cost of goods sold:					
Foreign product costs 1,000 dollars—	30,561	33,288	28,225	10,743	11,698
Domestic product costs 1,000 dollars—	47,397	55,411	49,596	27,473	27,154
Total—	77,958	88,699	77,821	38,216	38,852
Gross profit or (loss) 1,000 dollars—	44,620	65,485	6,858	5,886	(6,683)
Gross profit or (loss) margin—percent—	36.4	42.5	8.1	13.4	(20.8)
Number of firms reporting:					
U.S.-owned firm—	5	5	7	5	6
Japanese-owned firms—	1	1	1	1	1

See footnotes at end of table.

Table 15.—Gross profit-and-loss experience of 8 U.S. producers on their operations relating to the sale of EPROM's, at least some portion of which was produced in their U.S. establishments, by densities, 1/ accounting years 1983-85 and interim periods ended June 30, 1985, and June 30, 1986—Continued

Item	1983	1984	1985	Interim period ended June 30— 1985	1986
128K:					
Net sales——1,000 dollars—	***	***	***	***	***
Cost of goods sold:					
Foreign product costs 1,000 dollars—	***	***	***	***	***
Domestic product costs 1,000 dollars—	***	***	***	***	***
Total	***	***	***	***	***
Gross profit or (loss) 1,000 dollars—	***	***	***	***	***
Gross profit or (loss) margin——percent—	***	***	***	***	***
Number of firms reporting:					
U.S.-owned firms	***	***	***	***	***
Japanese-owned firm	***	***	***	***	***
256K:					
Net sales——1,000 dollars—	***	***	***	***	***
Cost of goods sold:					
Foreign product costs 1,000 dollars—	***	***	***	***	***
Domestic product costs 1,000 dollars—	***	***	***	***	***
Total	***	***	***	***	***
Gross profit or (loss) 1,000 dollars—	***	***	***	***	***
Gross profit or (loss) margin——percent—	***	***	***	***	***
Number of firms reporting:					
U.S.-owned firms	***	***	***	***	***
Japanese-owned firm	***	***	***	***	***
Over 256K:					
Net sales——1,000 dollars—	***	***	***	***	***
Cost of goods sold:					
Foreign product costs 1,000 dollars—	***	***	***	***	***
Domestic product costs 1,000 dollars—	***	***	***	***	***
Total	***	***	***	***	***
Gross profit or (loss) 1,000 dollars—	***	***	***	***	***
Gross profit or (loss) margin——percent—	***	***	***	***	***
Number of firms reporting:					
U.S.-owned firms	***	***	***	***	***
Japanese-owned firm	***	***	***	***	***

1/ * * *.
2/ * * *.
3/ * * *.

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

Table 16.—Income-and-loss experience of 8 U.S. producers 1/ on the overall operations of their establishments within which EPROM's were produced, accounting years 1983-85, and interim periods ended June 30, 1985, and June 30, 1986 2/

Item	1983	1984	1985	Interim period ended June 30— 1985	1986
Net sales—million dollars—	2,116	3,300	2,278	1,056	825
Cost of goods sold—do—	1,333	1,905	1,886	796	668
Gross profit—do—	783	1,395	392	260	157
General, selling, and administrative expenses million dollars—	639	941	912	393	357
Operating income or (loss) million dollars—	144	454	(520)	(133)	200
Interest expense—do—	13	14	30	12	16
Other (income) or expense, net 3/—million dollars—	9	14	(9)	(1)	9
Net income or (loss) before income taxes—million dollars—	140	454	(559)	(146)	(207)
Depreciation and amortization expense included above 4/ million dollars—	142	189	270	112	121
Cash flow from operations 5/ million dollars—	282	643	(289)	(34)	(86)
As a share of net sales:					
Cost of goods sold percent—	63.0	57.7	82.8	75.4	81.0
Gross profit—do—	37.0	42.3	17.2	24.6	19.0
General, selling, and administrative expenses percent—	30.2	28.5	40.0	37.2	43.3
Operating income or (loss) percent—	6.8	13.8	(22.8)	(12.6)	(24.2)
Net income or (loss) before income taxes—percent—	6.6	13.8	(24.5)	(13.8)	(25.1)
Number of firms reporting operating and net losses—	4	1	8	6	6

1/ These firms are * * *.
2/ Interim period data are for * * * firms.
3/ * * *.
4/ * * *.
5/ Cash-flow is defined as pretax net income or loss plus depreciation and amortization expense.

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

Investment in property, plant, and equipment.--Seven firms provided data concerning their investment in productive facilities for their establishment operations, whereas only three firms, accounting for *** percent of shipments of EPROM's in 1985, supplied such data for EPROM operations. As shown in table 17, their aggregate investment for establishment operations, valued at cost, increased from $1.1 billion in 1983 to $1.7 million in 1985, and further rose to $1.8 billion in interim 1986 compared with $1.6 billion in the corresponding period of 1985. The book value of such investments followed a trend similar to that of their original cost during 1983-85, but showed a decline in interim 1986. Their aggregate investment for EPROM's, valued at cost, * * *. During the interim periods, such investments * * *. The book value of such investment was $*** as of June 30, 1986.

Research and development.--All eight reporting firms supplied research and development expenses related to the production of EPROM's. However, each of the reporting firms could not provide a breakdown of such expenses by specific densities of EPROM's. As shown in the table 17, research and development expenses totalled $81.7 million in pre-1983. Such expenses then increased from $28.4 million in 1983 to $58.8 million in 1985; during the interim periods, such expenses fell by 7 percent from $19.9 million in 1985 to $18.4 million in 1986.

Capital expenditures.--Capital expenditures for all products of their establishments, as supplied by all eight reporting firms, and capital expenditures specifically for EPROM's, as supplied by four firms, are presented by firm ownership in table 18. The four reporting firms for EPROM's accounted for *** percent of total shipments of EPROM's in 1985. Total capital expenditures for establishments increased from $316.0 million in 1983 to $581.0 million in 1984, and then declined to $395.8 million in 1985. During the interim periods, such expenditures dropped from $201.2 million in 1985 to $88.6 million in 1986. Capital expenditures on EPROM operations * * *. During the interim periods, such expenditures * * *. The majority of capital expenditures were for machinery, equipment, and fixtures, and were incurred by U.S-owned firms. Fujitsu's capital expenditures for EPROM's * * *.

Specified costs of production.--In its questionnaire, the Commission requested data on costs relating to the production of each density of EPROM--from under 32K to over 256K--in an effort both to identify and separate the costs associated with the basic production processes and to examine the effects of the "learning curve" through at least a portion of an EPROM's life cycle. Production costs were divided between those associated with wafer fabrication and sorting and those associated with assembly and final unit testing. Among the costs identified with each of these two basic production stages were raw materials, direct labor, indirect labor, depreciation and amortization, and other factory costs. Firms were asked to report these costs of production and the corresponding quantities of usable cased EPROM's produced.

The Commission received a variety of responses from the five firms that reported both costs and quantities of EPROM's produced. 1/ The reported unit costs of wafer fabrication and sorting and of assembly and testing for each density of EPROM produced by the five firms are presented in tables 19 to 24.

1/ * * *.

Table 17.--EPROM's: Investment in property, plant, and equipment and research and development expenses, by specified ownership, 1983-85, and interim periods ended June 30, 1985, and June 30, 1986

Period and ownership	Investment in property, plant and equipment 1/				Research and development expenses related to EPROM's 4/
	Establishment 2/		EPROM's 3/		
	Original cost	Book value	Original cost	Book value	
Pre-1983: 5/					
U.S.-owned firms	-	-	***	***	***
Fujitsu	-	-	***	***	***
Total					81,654
1983:					
U.S.-owned firms	1,044,962	600,281	***	***	***
Fujitsu	26,216	15,056	***	***	***
Total	1,071,178	615,337	***	***	28,388
1984:					
U.S.-owned firms	1,508,057	953,511	***	***	***
Fujitsu	30,311	17,085	***	***	***
Total	1,538,368	970,596	***	***	38,735
1985:					
U.S.-owned firms	1,706,938	961,368	***	***	***
Fujitsu	41,700	24,800	***	***	***
Total	1,748,638	986,168	***	***	58,770
Interim period ended June 30:					
1985:					
U.S.-owned firms	1,613,058	960,016	***	***	***
Fujitsu	31,794	17,751	***	***	***
Total	1,644,852	977,767	***	***	19,877
1986:					
U.S.-owned firms	1,734,721	911,401	***	***	***
Fujitsu	42,273	24,258	***	***	***
Total	1,776,994	935,659	***	***	18,404

1/ Data are as of the end of the specified periods.
2/ Data are for 7 firms. * * *.
3/ Data are for 3 firms. These firms are * * *.
4/ Data are for all 8 firms. * * *.
5/ * * *.

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

Table 18.—EPROM's: Capital expenditures, by specified ownership, 1983-85 and interim periods ended June 30, 1985, and June 30, 1986

(In thousands of dollars)

Period and ownership	All products of the establishment 1/			EPROM's 2/		
	Land and building	Machinery, equipment, and fixtures	Total	Land and building	Machinery equipment, and fixtures	Total
1983:						
U.S.-owned firms	***	***	***	***	***	***
Fujitsu	***	***	***	***	***	***
Total	116,900	199,088	315,988	***	***	***
1984:						
U.S. owned firms	***	***	***	***	***	***
Fujitsu	***	***	***	***	***	***
Total	81,683	499,305	580,988	***	***	***
1985:						
U.S. owned firms	***	***	***	***	***	***
Fujitsu	***	***	***	***	***	***
Total	68,805	326,982	395,787	***	***	***
Interim period ended June 30:						
1985:						
U.S. owned firms	***	***	***	***	***	***
Fujitsu	***	***	***	***	***	***
Total	39,051	162,141	201,192	***	***	***
1986:						
U.S. owned firms	***	***	***	***	***	***
Fujitsu	***	***	***	***	***	***
Total	28,432	60,196	88,628	***	***	***

1/ Establishment data are for 8 firms during 1983-85. Interim period data are for 7 firms, because * * *.
2/ EPROM data are for 4 firms. These firms are * * *.

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

Table 19.—Specified costs of production for under 32K EPROM's, by companies, accounting years 1983-85 and interim periods ended March 31, 1985, and March 31, 1986

* * * * * * *

Table 20.—Specified costs of production for 32K EPROM's, by companies, accounting years 1983-85 and interim periods ended March 31, 1985, and March 31, 1986

* * * * * * *

Table 21.—Specified costs of production for 64K EPROM's, by companies, accounting years 1983-85 and interim periods ended March 31, 1985, and March 31, 1986

* * * * * * *

Table 22.—Specified costs of production for 128K EPROM's, by companies, accounting years 1983-85 and interim periods ended March 31, 1985, and March 31, 1986

* * * * * * *

Table 23.—Specified costs of production for 256K EPROM's, by companies, accounting years 1983-85 and interim periods ended March 31, 1985, and March 31, 1986

* * * * * * *

Table 24.—Specified costs of production for over 256K EPROM's, by companies, accounting years 1983-85 and interim periods ended March 31, 1985, and March 31, 1986

* * * * * * *

Research and development expenses are not included in these figures as most firms indicated that these costs were normally not considered in costs of production.

Consideration of Alleged Threat of Material Injury

Among the relevant economic factors that may contribute to the threat of material injury to the domestic industry are the ability of producers in Japan to increase the level of exports of EPROM's to the United States and the likelihood they will do so, any substantial increases in inventories of imports of Japanese EPROM's in the United States, and any rapid increase in penetration of the U.S. market by the imports.

The available data concerning the production and capacity of Japanese producers of EPROM's are presented in the section of this report entitled "The Industry in Japan." A discussion on the level of shipments of cased EPROM's imported from Japan and their market share is presented in the following section of this report, and the available data concerning U.S. importers' inventories of EPROM's from Japan are presented in table 25.

From 1982 to 1984 importers' yearend inventories of uncased EPROM's * * * by *** percent from 1982 to 1983 and by *** percent from 1983 to 1984. Yearend inventories of uncased EPROM's then * * * from 1984 to 1985 before * * * by *** percent as of June 30, 1986, compared with their level at the end of June 1985. Yearend inventories of imports of cased EPROM's were more than four times higher in 1985 than they were in 1982. These inventories were 32 percent lower at the end of June 1986 than they were at the end of June 1985.

Consideration of the Causal Relationship Between Imports Sold at LTFV and the Alleged Material Injury or Threat Thereof

U.S. imports from Japan

Data on U.S. imports from Japan were compiled from responses to the Commission's questionnaires. Although there are many small importers from Japan these responding firms are believed to account for an estimated 85 percent of total imports of this product from Japan in 1985.

Table 26 presents U.S. imports from Japan of cased EPROM's by importer. As shown, direct imports increased by *** percent from 1983 to 1984, then declined by *** percent in 1985. The 1985 level of direct imports from Japan was * * * than the level of these imports in 1983. Direct imports of cased EPROM's from Japan declined by *** percent in January-June 1986 compared with imports in the corresponding period of 1985. Indirect imports (i.e., those assembled in third countries from wafers fabricated in Japan) * * * by *** percent from 1983 to 1984, then * * * by *** percent in 1985. Indirect imports * * * by *** percent in January-June 1986 compared with the level of such imports in the corresponding period of 1985.

Imports of cased EPROM's from Japan by density are shown in table 27. Direct imports of under 32K EPROM's * * * throughout the period. Direct imports of 32K cased EPROM's * * * (by *** percent) from 1983 to 1985, then * * * in January-June 1986 compared with the level of such imports during January-June 1985. Direct imports of cased 64K EPROM's * * * by *** percent from 1983 to 1984, then * * * by *** percent in 1985, and by *** percent in January-June 1985 compared with imports in January-June 1986. Direct imports of cased 128K EPROM's * * * from 1983 to 1985, then * * * by *** percent in January-June 1986 compared with those in January-June 1985. Direct imports of cased 256K and above EPROM's * * * throughout the period. Indirect imports of 32K, and 64K EPROM's * * * from 1983 to 1984, then * * * in 1985 and in January-March 1986. Indirect imports of EPROM's with densities above 64K *** in January-June 1986.

Imports of uncased EPROM's from Japan are shown in table 28. As shown, such imports * * * by *** percent from 1983 to 1985, then * * * by *** percent in January-June 1986 compared with imports in the corresponding period of 1985.

Table 25.—EPROM's, uncased and cased: U.S. importers' inventories of EPROM's produced in Japan, by densities, as of Dec. 31, 1982-85, June 30, 1985, and June 30, 1986

(In thousands of units)

Item	As of Dec. 31—				As of June 30—	
	1982	1983	1984	1985	1985	1986
Uncased:						
Under 32K	***	***	***	***	***	***
32K	***	***	***	***	***	***
64K	***	***	***	***	***	***
128K	***	***	***	***	***	***
256K	***	***	***	***	***	***
Over 256K	***	***	***	***	***	***
Total	***	***	***	***	***	***
Cased:						
Indirect—						
Under 32K	***	***	***	***	***	***
32K	***	***	***	***	***	***
64K	***	***	***	***	***	***
128K	***	***	***	***	***	***
256K	***	***	***	***	***	***
Over 256K	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***
Direct—						
Under 32K	***	***	***	***	***	***
32K	***	***	***	***	***	***
64K	***	***	***	***	***	***
128K	***	***	***	***	***	***
256K	***	***	***	***	***	***
Over 256K	***	***	***	***	***	***
Subtotal	***	***	***	***	***	***
Total	938	1,769	2,975	4,491	3,776	2,570

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

Table 26.--EPROM's, cased: U.S. imports from Japan, by importers, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June-- 1985	January-June-- 1986
Direct imports:					
* * *	***	***	***	***	***
* * *	***	***	***	***	***
Epson	***	***	***	***	***
Fujitsu	***	***	***	***	***
Hitachi	***	***	***	***	***
* * *	***	***	***	***	***
* * *	***	***	***	***	***
Mitsubishi	***	***	***	***	***
NEC	***	***	***	***	***
Nissei Sangyo	***	***	***	***	***
* * *	***	***	***	***	***
Oki	***	***	***	***	***
* * *	***	***	***	***	***
Panasonic	***	***	***	***	***
* * *	***	***	***	***	***
* * *	***	***	***	***	***
* * *	***	***	***	***	***
Toshiba	***	***	***	***	***
Total, direct imports	***	***	***	***	***
Indirect imports:					
* * *	***	***	***	***	***
* * *	***	***	***	***	***
Total, indirect imports	***	***	***	***	***
Total imports:					
* * *	***	***	***	***	***
* * *	***	***	***	***	***
Epson	***	***	***	***	***
Fujitsu	***	***	***	***	***
Hitachi	***	***	***	***	***
* * *	***	***	***	***	***
* * *	***	***	***	***	***
Mitsubishi	***	***	***	***	***
NEC	***	***	***	***	***
Nissei Sangyo	***	***	***	***	***
* * *	***	***	***	***	***
Oki	***	***	***	***	***
* * *	***	***	***	***	***
Panasonic	***	***	***	***	***
* * *	***	***	***	***	***
* * *	***	***	***	***	***
* * *	***	***	***	***	***
Toshiba	***	***	***	***	***
Total imports	23,834	27,388	19,364	10,329	8,059

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

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

Table 27.—EPROM's, cased: U.S. imports from Japan, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June 1985	January-June 1986
Direct imports:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total, direct imports	***	***	***	***	***
Indirect imports:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total, indirect imports	***	***	***	***	***
Total imports:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	6,676	14,151	7,034	3,545	2,497
128K	450	2,768	3,591	1,913	1,217
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	23,834	27,388	19,364	10,329	8,059

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

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

Table 28.--EPROM's, uncased: U.S. imports from Japan, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June--	
				1985	1986
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	***	***	***	***	***

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

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

U.S. market shares of shipments

Table 29 presents the market shares of total U.S. consumption accounted for by shipments of cased EPROM's on the basis of the country of origin of the uncased EPROM'S used to make the product and the country in which the uncased EPROM was assembled. As shown, shipments of EPROM's made from uncased EPROM's produced and assembled in Japan declined steadily from *** percent of U.S. consumption in 1983 to *** percent in 1985, then rose to *** percent in January-June 1986 compared with *** percent in January-June 1985.

Shipments of "indirect" imports of EPROM's from Japan (i.e., those with wafer fabrication in Japan and assembly in a third country) * * * from *** percent in 1983 to *** percent in 1984, then * * * to *** percent in 1985 and to *** percent in January-June 1986.

Shipments of EPROM's made from U.S.-produced uncased EPROM's which were assembled in third countries increased their share of the market from *** percent in 1983 to *** percent in 1984 and *** percent in 1985. These products accounted for *** percent of apparent U.S. consumption in January-June 1985 and *** percent in January-June 1986.

U.S. market shares based on open-market consumption are presented in table 30. Open market consumption accounted for *** to *** percent of total consumption and, accordingly, market shares for open-market consumption follow the same trends as those for total consumption.

U.S. market shares based on memory equivalents are presented in table 31. As shown, the market share of EPROM's made from uncased EPROM's produced and assembled in Japan * * * from *** percent in 1983 to *** percent in 1984, then * * * to *** percent in 1985. Market share of these imports * * * from *** percent in January-June 1985 to *** percent in the corresponding period of 1986.

Table 29.—EPROM's, cased: U.S. market shares of total apparent U.S. consumption accounted for by shipments of specified EPROM's, by densities, 1983-85, January-June 1985, and January-June 1986

(In percent)

Item	1983	1984	1985	January-June— 1985	January-June— 1986
Made from U.S.-produced uncased EPROM's and assembled in third countries:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***
Made from uncased EPROM's produced in Japan and assembled in the United States:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***
Made from uncased EPROM's produced and assembled in Japan:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***
Made from uncased EPROM's produced in Japan and assembled in third countries:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***
Made from uncased EPROM's produced and assembled in third countries:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***

1/ * * *.

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

Table 30.—EPROM's, cased: U.S. market shares of apparent U.S. open-market consumption accounted for by shipments of specified EPROM's, by quantity, by densities, 1983-85, January-June 1985, and January-June 1986

(In percent)

Item	1983	1984	1985	January-June— 1985	January-June— 1986
Made from U.S.-produced uncased EPROM's and assembled in third countries:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***
Made from uncased EPROM's produced in Japan and assembled in the United States:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***
Made from uncased EPROM's produced and assembled in Japan:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***
Made from uncased EPROM's produced in Japan and assembled in third countries:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***
Made from uncased EPROM's produced and assembled in third countries:					
Under 32K	***	***	***	***	***
32K	***	***	***	***	***
64K	***	***	***	***	***
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Average	***	***	***	***	***

1/ * * *.

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

Table 31.—EPROM's, cased: U.S. market shares of apparent U.S. consumption accounted for by shipments of specified EPROM's, on the basis of memory equivalents, 1983-85, January-June 1985, and January-June 1986

(In percent)

Item	1983	1984	1985	January-June	
				1985	1986
Made from U.S.-produced uncased EPROM's and assembled in third countries	***	***	***	***	***
Made from uncased EPROM's produced in Japan and assembled in the United States	***	***	***	***	***
Made from uncased EPROM's produced and assembled in Japan	***	***	***	***	***
Made from uncased EPROM's produced in Japan and assembled in third countries	***	***	***	***	***
Made from uncased EPROM's produced and assembled in third countries	***	***	***	***	***

1/ * * *.

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

Shipments of "indirect" imports based on memory equivalents * * * their share of the market from *** percent in 1983 to *** percent in 1984, then declined to *** percent in 1985. Shipments of indirect imports * * * further to *** percent of consumption based on memory equivalents in January-June 1986, compared with *** percent in January-June 1985.

Shipments of EPROM's made from U.S.-produced uncased EPROM's which were assembled in third countries, based on memory equivalents, * * * from *** percent in 1983 to *** percent in 1985. These shipments' share of the market * * * to *** percent in January-June 1986 compared with *** percent in January-June 1985.

Shipments of EPROM's made from uncased EPROM's produced in Japan and assembled in the United States, based on memory equivalents, * * * from *** percent in 1983 to *** percent in 1984, then * * * to *** percent in 1985. In January-June 1986 these shipments * * * to *** percent compared with *** percent in the corresponding period of 1985.

U.S. market shares on the basis of value are are presented in table 32. The market share of EPROM's made from uncased EPROM's produced and assembled in Japan dropped from *** percent in 1983 to *** percent in 1985. Market share of these imports declined from *** percent in January-June 1985 to *** percent in the corresponding period of 1986.

Shipments of "indirect" imports on the basis of value * * * their share of the market from *** percent in 1983 to *** percent in 1985.. Shipments of indirect imports * * * further to *** percent of consumption on the basis of value in January-June 1986, compared with *** percent in January-June 1985.

Shipments of EPROM's made from U.S.-produced uncased EPROM's which were assembled in third countries, on the basis of value, * * * from *** percent in 1983 to *** percent in 1985. These shipments' share of the market * * * at *** percent in January-June 1986 compared with *** percent in January-June 1985.

Shipments of EPROM's made from uncased EPROM's produced in Japan and assembled in the United States, based on value, * * * from *** percent in 1983 to *** percent in 1984, then * * * to *** percent in 1985. In January-June 1986 these shipments * * * to *** percent compared with *** percent in the corresponding period of 1985.

Table 32.—EPROM's, cased: U.S. market shares of apparent U.S. consumption accounted for by shipments of specified EPROM's, on the basis of value, 1/ 1983-85, January-June 1985, and January-June 1986

(In percent)

Item	1983	1984	1985	January-June—	
				1985	1986
Made from U.S.-produced uncased EPROM's and assembled in third countries	***	***	***	***	***
Made from uncased EPROM's produced in Japan and assembled in the United States	***	***	***	***	***
Made from uncased EPROM's produced and assembled in Japan	***	***	***	***	***
Made from uncased EPROM's produced in Japan and assembled in third countries	***	***	***	***	***
Made from uncased EPROM's produced and assembled in third countries	***	***	***	***	***

1/ The value of imports used in these calculations is f.o.b. U.S. importers' point of shipment.

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

Prices

As noted in the "Channels of Distribution" section of this report, EPROM's are sold through three general channels of distribution: (1) to OEM's and board stuffers on a contract basis, (2) to distributors, and (3) to spot-market purchasers (which may include OEM's, board stuffers, and distributors). These three channels reflect different pricing policies and different sized purchases and purchasers. 1/ In order to compare domestic and import price trends and measure margins of underselling (or overselling) by imports from Japan, the Commission asked U.S. purchasers in each of these categories to supply monthly price data 2/ for their purchases of 250 ns EPROM's during September 1984-April 1986. Separate price data were requested for three EPROM densities (64K, 128K, and 256K) from four categories of OEM's (those that produce (1) office automation equipment, (2) telecommunications equipment, (3) industrial automation equipment, and (4) consumer-market end products (including personal computers)); two categories of distributors (authorized and independent); and spot market purchasers. 3/

The following discussion addresses prices paid by each of these categories of purchasers separately (except spot-market purchasers, for which inadequate data were received for analysis). However, some of the categories had many fewer responses than others, and the reader should keep this in mind in assessing the significance of price trends or underselling/overselling for a particular category. For the entire period covered (September 1984-April 1986), the shares of total purchases, by density, reported by each category were as follows (in percent): 4/

1/ For example, long-term contracts generally are subject to price renegotiations at the purchaser's option. Distributor prices are adjusted on a "meet-competition" basis to enable sales of in-stock product at competitive prices without a distributor selling below cost and absorbing a loss.

2/ The Commission asked firms to report, by brand name, transaction prices that represented their lowest net delivered purchase price in each of the specified periods.

3/ The Commission also asked U.S. producers and importers for their selling prices to these categories of customers. Those data, along with margins of under/overselling are presented in appendix tables D-1 through D-8.

4/ The total volume reported during this period for purchases of domestic EPROM's was 8.9 million units; the volume reported for purchases of Japanese products was 3.9 million units. Fifty-three percent of the total reported quantity was purchased by OEM's. By EPROM density, reported purchases of Japanese EPROM's constituted 32 percent of the 64K total, 40 percent of the 128K total, and 17 percent of the 256K total.

Item	Share of reported purchases of domestic products	Share of reported purchases of imports from Japan
250 ns 64K EPROMS:		
Office automation OEM's	22.7	8.4
Telecommunication OEM's	16.3	12.4
Industrial automation OEM's	0.8	–
Consumer products OEM's	14.0	8.3
Subcontractors	1.5	–
Authorized distributors	38.7	41.4
Independent distributors	6.0	29.5
Total, 250 ns 64K EPROM's	100.0	100.0
250 ns 128K EPROM's:		
Office automation OEM's	36.8	15.9
Telecommunication OEM's	12.6	9.1
Industrial automation OEM's	1.2	1.8
Consumer products OEM's	13.1	4.4
Subcontractors	1.8	–
Authorized distributors	33.8	36.2
Independent distributors	0.5	32.6
Total, 250 ns 128K EPROM's	100.0	100.0
250 ns 256K EPROM's:		
Office automation OEM's	39.2	24.1
Telecommunication OEM's	8.9	7.7
Industrial automation OEM's	1.3	0.5
Consumer products OEM's	21.3	7.2
Subcontractors	7.2	–
Authorized distributors	19.1	43.9
Independent distributors	3.0	16.6
Total, 250 ns 256K EPROM's	100.0	100.0

As mentioned, the Commission asked U.S. purchasers for prices of 64K, 128K, and 256K NMOS EPROM's (250ns). Thirty-six firms 1/ responded with usable data on their purchases of EPROM's, providing a data base of 3,566 purchases that span the subject time period.

Prices of 64K EPROM's purchased by office automation OEM's.—The price trend in factory direct purchases of domestic EPROM's by this class of OEM was slowly down in late 1984 from a base price of $6.72 in September to a low of $6.33 in December. The price level then recovered in January 1985 to a level 4 percent above the base-period price (table 33, figure 1). A sharp downtrend began in February and by December prices had reached a low of $2.64, 61 percent below the base-period level. The downtrend continued in 1986 to a period low of $2.31.

1/ Seventy firms were selected from customer lists provided by producers and importers to receive purchaser questionnaires. The coverage included most of the large firms known as "national accounts," as well as many smaller firms.

Table 33.—64K EPROM's (250 ns) purchased by OEM's: Weighted-average purchase prices for purchases of domestic products and of imports from Japan, and indexes of those prices, 1/ by classes of OEM's and by months, September 1984-April 1986

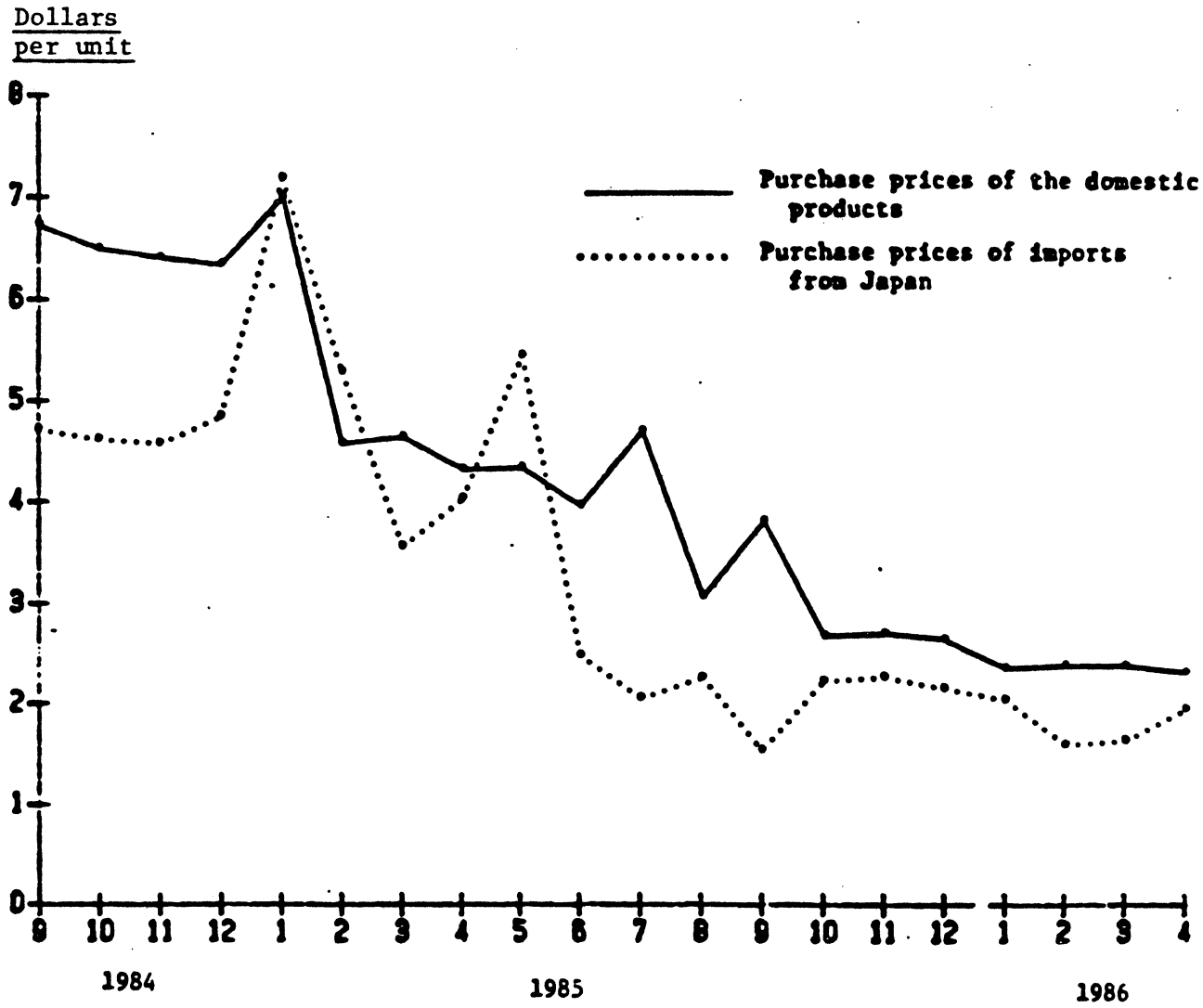
(Per unit)

Month	Office automation OEM				Telecommunication OEM				Industrial automation OEM				Consumer products OEM			
	U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price	
	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
1984:																
September	100	$6.72	100	$4.71	100	$5.91	100	$4.71	100	$5.84	100	$4.71	100	$5.87	100	$4.29
October	97	6.49	98	4.61	109	6.44	97	4.55	88	5.17	99	4.65	88	5.17	101	4.33
November	95	6.40	97	4.57	108	6.38	98	4.62	99	5.80	98	4.64	99	5.80	95	4.06
December	94	6.33	103	4.84	100	5.90	98	4.64	99	5.80	103	4.84	99	5.80	107	4.59
1985:																
January	104	6.99	152	7.18	116	6.86	102	4.83	88	5.17	152	7.18	89	5.23	167	7.18
February	69	4.57	112	5.28	75	4.45	107	5.03	80	4.65	152	7.18	78	4.61	85	3.67
March	68	4.64	76	3.56	77	4.55	95	4.48	80	4.67	152	7.18	79	4.66	85	3.67
April	64	4.32	86	4.03	72	4.28	115	5.44	74	4.30	146	6.88	75	4.42	160	6.88
May	65	4.34	116	5.45	77	4.53	108	5.07	65	3.81	139	6.55	65	3.81	153	6.55
June	59	3.96	53	2.48	62	3.67	56	2.65	68	3.96	49	2.31	64	3.76	54	2.31
July	70	4.70	43	2.05	79	4.70	39	1.85	63	3.67	49	2.31	62	3.66	54	2.31
August	46	3.07	48	2.26	56	3.30	42	2.00	51	2.99	49	2.31	50	2.91	51	2.17
September	57	3.81	32	1.53	63	3.73	46	2.17	61	3.58	50	2.34	61	3.59	54	2.34
October	40	2.68	47	2.22	52	3.10	50	2.35	45	2.64	48	2.28	44	2.59	34	1.46
November	40	2.70	48	2.26	53	3.11	57	2.69	52	3.02	48	2.28	52	3.07	36	1.53
December	39	2.64	45	2.14	50	2.95	44	2.10	44	2.58	48	2.28	45	2.65	53	2.28
1986:																
January	35	2.35	43	2.03	41	2.42	32	1.53	41	2.41	38	1.77	42	2.45	44	1.90
February	35	2.38	34	1.59	37	2.19	38	1.77	42	2.45	38	1.77	42	2.48	41	1.77
March	35	2.38	35	1.63	35	2.06	38	1.78	41	2.39	38	1.77	42	2.45	41	1.77
April	34	2.31	41	1.94	39	2.31	33	1.58	40	2.31	38	1.77	39	2.31	41	1.77

1/ First period with data=100.

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

Figure 1.—64K EPROM's purchased by Office Automation OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



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

The price level of Japanese 64K EPROM's, initially 30 percent below that of the domestic product, began a slight uptrend in 1984 that continued in January 1985 to a period high of $7.18, a level 52 percent above the September 1984 level of $4.71. Then, an irregular price decline began that steepened in June and continued to a period low of $1.53 in September, a price drop of 68 percent from the year before. Prices firmed at an average of $2.24 in October-November 1985, then slid to $1.59 in February 1986 but recovered to end the subject period at $1.94 in April.

Prices of 64K EPROM's purchased by telecommunication OEM's.--Purchases of domestic EPROM's by this class of OEM showed a faltering uptrend in prices during October 1984-January 1985, then a steep and rather steady downtrend beginning in February 1985 and continuing in 1986 (table 33, figure 2). Prices fell by 25 percent from a base period level of $5.91 to $4.45 per unit in February 1985, then fell to a period low of $2.06 in March 1986 for a decline of 65 percent from the base-period price level.

Imported Japanese EPROM's, which were initially priced below the domestic EPROM's, showed a rather level price trend in 1984 and early 1985, then a steep decline from a period high of $5.44 in April to $1.53 per unit in January 1986, a price level 68 percent below the September 1984 base-period price of $4.71.

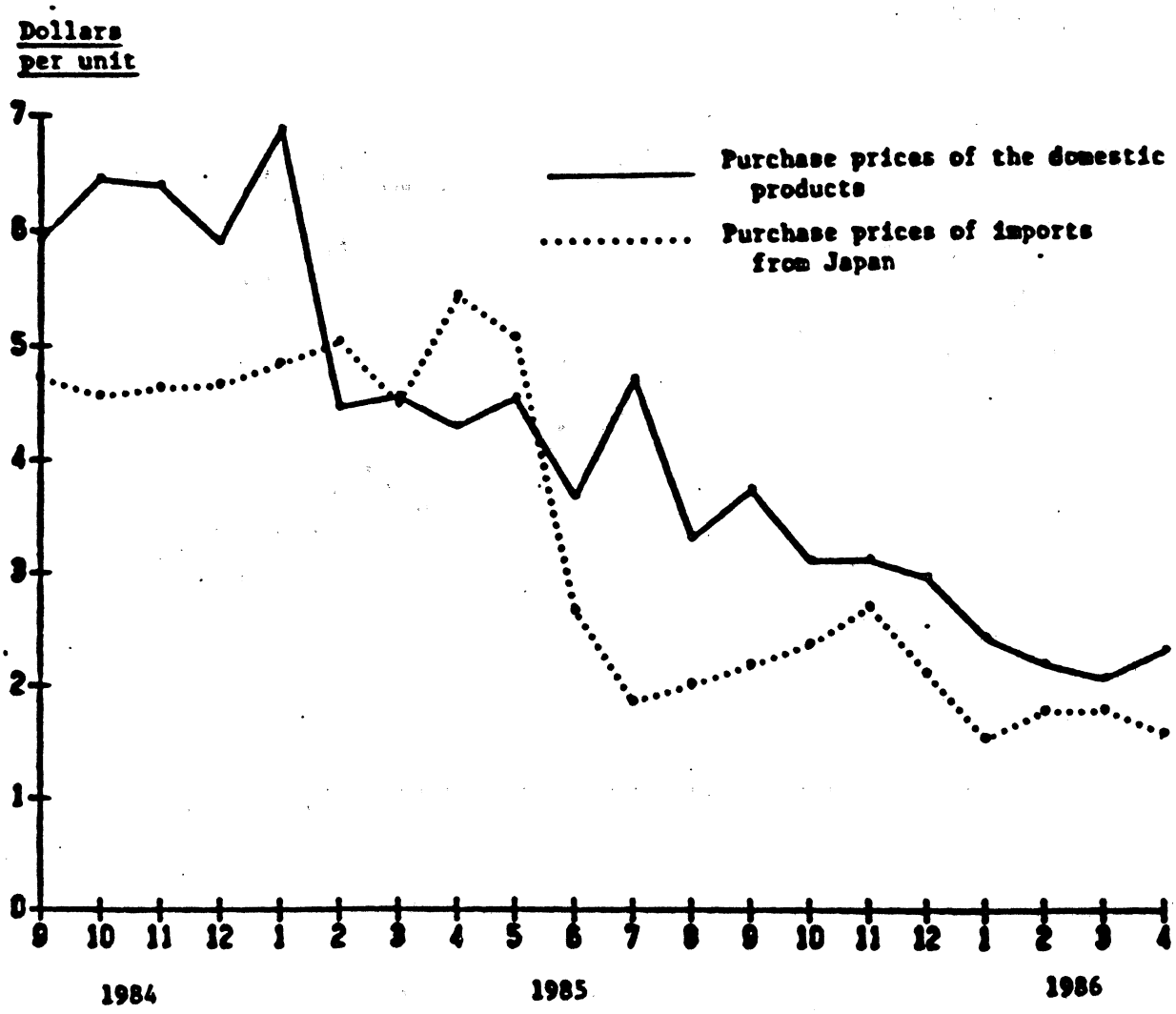
Prices of 64K EPROM's purchased by industrial automation OEM's.--Factory direct purchase prices of domestic EPROM's sold to this class of OEM reflect a similar but more irregular downtrend in 1985 to a level of $2.64 in October, 55 percent below the September 1984 base period price of $5.84 (table 33, figure 3). Prices strengthened a bit in November of 1985 to near the $3.00 level, then slid slowly to a low of $2.81 in April 1986, 60 percent lower than the base-period price.

Purchase prices for Japanese 64K EPROM's sold to this class of OEM were steady during September-December 1984 at an average of $4.67 per unit, then showed a sharp upturn to $7.18 in January 1985. Prices remained steady at that level through March, then dropped 13 index points to $6.55 in April-May and plunged to $2.31 in April and finally to a 1985 low of $2.28 in October, 52 percent below the base-period price. In 1986, the downtrend continued to a period low of $1.77.

Prices of 64K EPROM's purchased by consumer products OEM's.--The price trend in purchases of domestic EPROM's by this class of OEM showed a rather steady pattern in September-December 1984 at roughly the $5.80 level (table 33, figure 4). In 1985, prices began an erratic decline to a low of $2.59. The downturn continued during the balance of the subject period to a low of $2.31 in April 1986, a level 61 percent below the base-period price of $5.87.

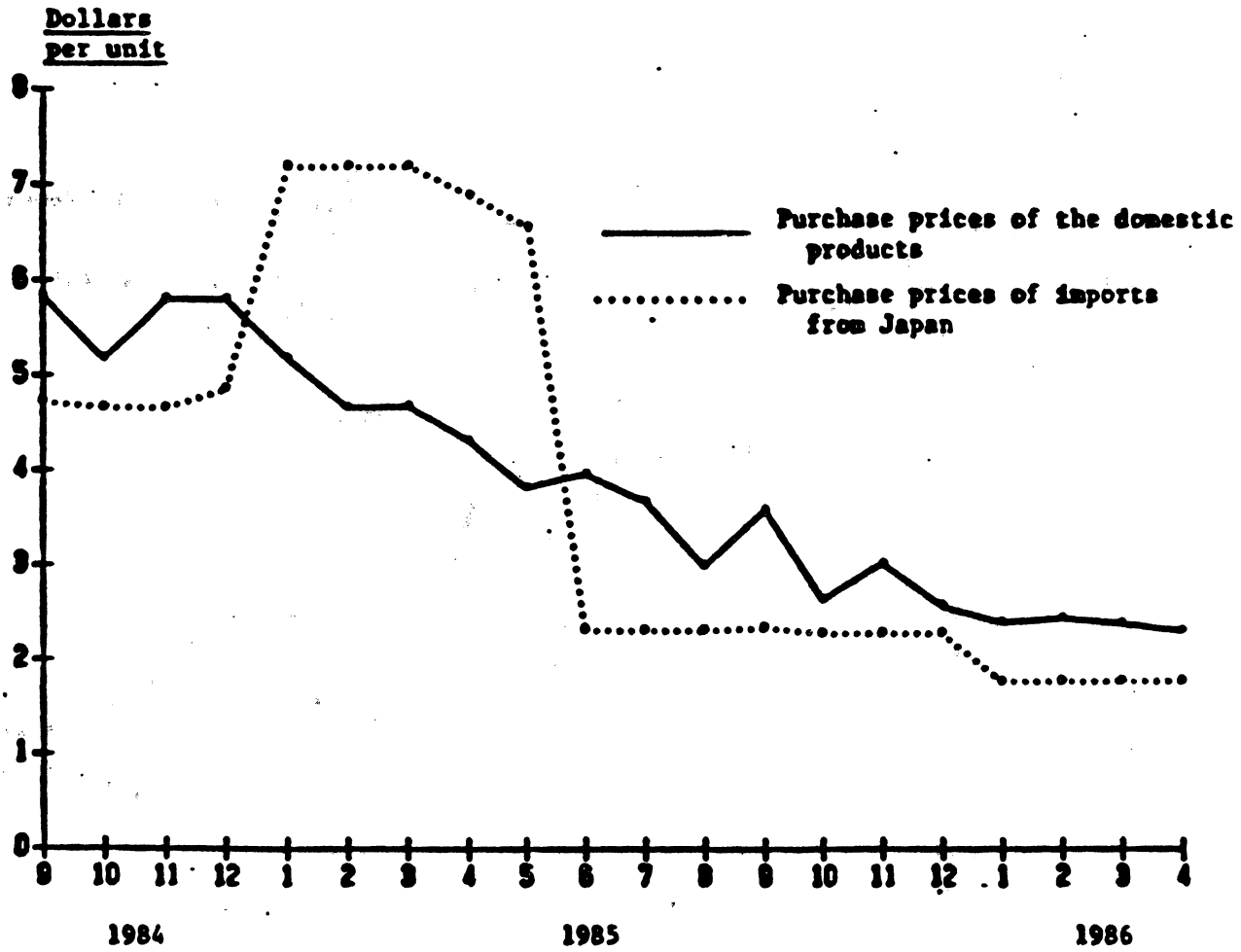
Price data for Japanese EPROM's purchased by this class of OEM show an irregular uptrend in 1984 from a base-period price of $4.29 to a December price of $4.59. In January 1985 the average price jumped to $7.18; it then declined to $3.67 in February and March, recovered to a level of more than $6.50 in April and May, then plunged to $2.31 in June, a drop of 99 index points. The decline continued to a period low of $1.46 in October, 66 percent below the base-period price level. During the balance of the subject period, prices firmed a bit in December and January, then fell to end the period at a February-April 1986 level of $1.77 per unit.

Figure 2.--64K EPROM's purchased by Telecommunication OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



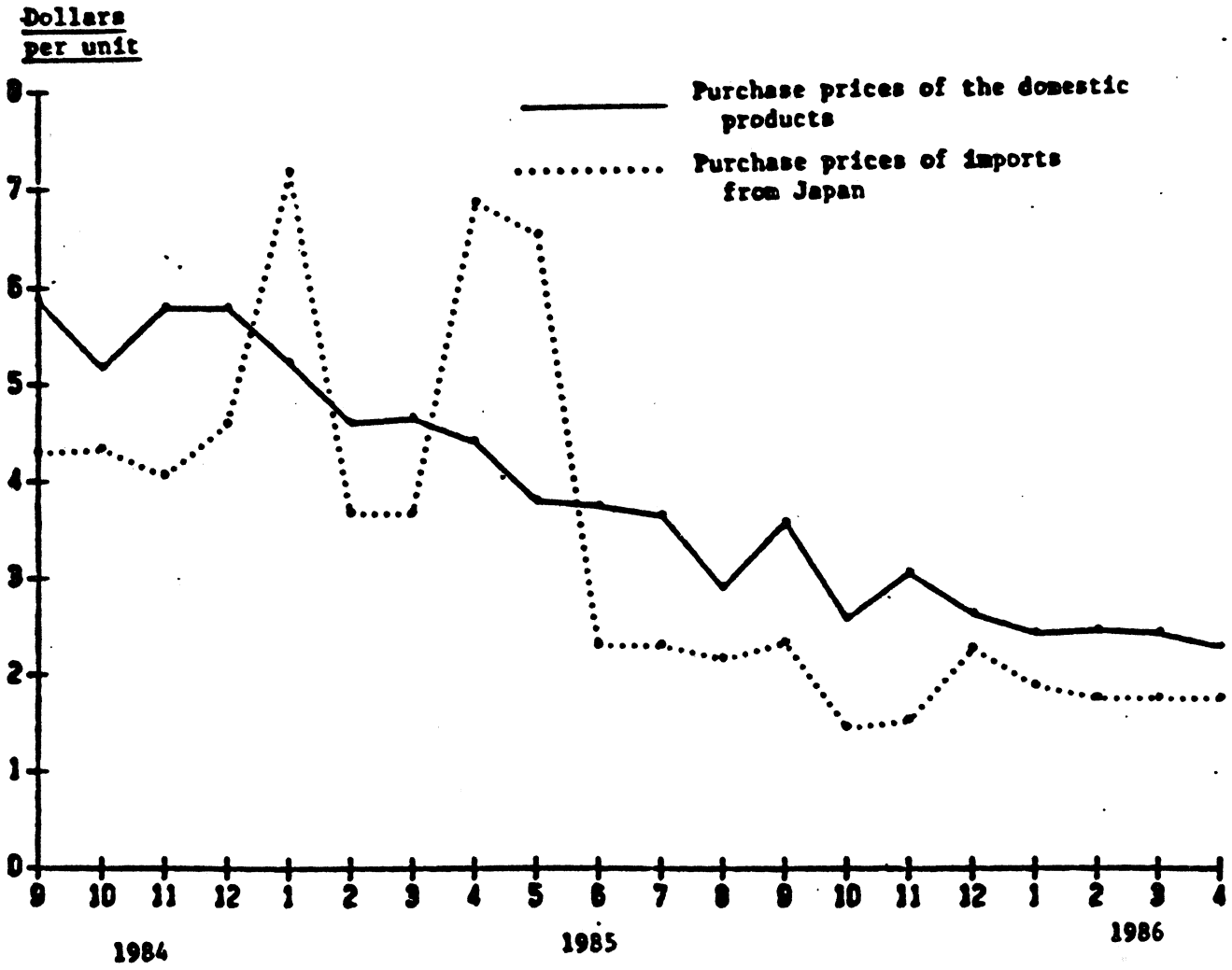
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 3.--64K EPROM's purchased by Industrial Automation OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



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

Figure 4.--64K EPROM's purchased by Consumer Product OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



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

Prices of 128K EPROM's purchased by office automation OEM's.--The general price trend in factory direct purchases by this class of OEM was sharply downward (56 percent) in September 1984-July 1985 to a price level of $6.39 from the base price level of $14.52 (table 34, figure 5). Prices reflected an erratic trend in August-November, then fell sharply in December 1985 and again in January 1986 to a period low of $3.07, 79 percent below the base-period price. Prices strengthened by roughly 10 percent in February and held at an average level of $3.42 during March and April.

In September 1984, Japanese EPROM prices were about 25 percent below domestic prices. The price fell 31 percent in October from $10.69 to $7.33 and held at about that level through December. The trend turned upward during January-March 1985 to a level ($9.77) only 9 percent below the base-period price. A sharp downtrend began in April that bottomed out at $2.68 in August, 75 percent below the September 1984 price. Prices turned upward in September-November but plummeted in December and fell to a period low of $1.44 in March 1986.

Prices of 128K EPROM's purchased by telecommunication OEM's.--Price data for factory direct sales to this class of OEM showed a sharp downward trend in 1984 to a low of $10.50 in January 1985, 25 percent below the base-period price of $13.96 (table 34, figure 6). The price remained at about that level during February-April, then decreased steadily to a period low of $3.27 in January 1986, 77 percent below the base-period price level.

Japanese prices showed the same trend, falling by 85 percent from a June-September level of $11.39 to $1.69 in December 1985. Again, prices strengthened about 25 percent in January-February 1986, but fell in March-April to an average price that almost equaled the period low.

Prices of 128K EPROM's purchased by industrial automation OEM's.--The general price trend of domestic purchases of EPROM's by this class of OEM showed the usual steep downward trend beginning in January 1985 (table 34, figure 7). Prices fell by 57 percent from a September 1984 level of $13.62 to $5.93 in September 1985, then firmed somewhat to end the year at $6.93. In January 1986, the price fell sharply and hit a period low of $2.78 in February, 80 percent below the base-period price.

Japanese prices reflect a price uptrend that spanned November 1984-February 1985. Prices climbed 46 percent from an October level of $8.88 to a period high of $13.00. Data from March through June is not available, but an entry for May shows that the price had fallen to $8.71. By July, the price had plunged to $3.00, and it continued to decline to a period low of $1.67 in March 1986, 82 percent below the beginning period price level.

Prices of 128K EPROM's purchased by consumer products OEM's.--Factory direct purchases by this class of OEM reflected a bit different price trend. Prices held at about $13.00 during 1984, then declined somewhat less sharply early in 1985 but slid to a level of $7.65 in July 1985, a price level 37 percent below the base-period price (table 34, figure 8). In September, another dip in price occurred (17 index points), and prices continued to fall in subsequent months to a period low of $3.22 in March 1986, a level 72 percent below the base-period price.

Table 34.—128K EPROM's (250 ns) purchased by OEM's: Weighted-average purchase price: for purchases of domestic products and of imports from Japan, and indexes of those prices, 1/ by classes of OEM's and by months, September 1984-April 1986

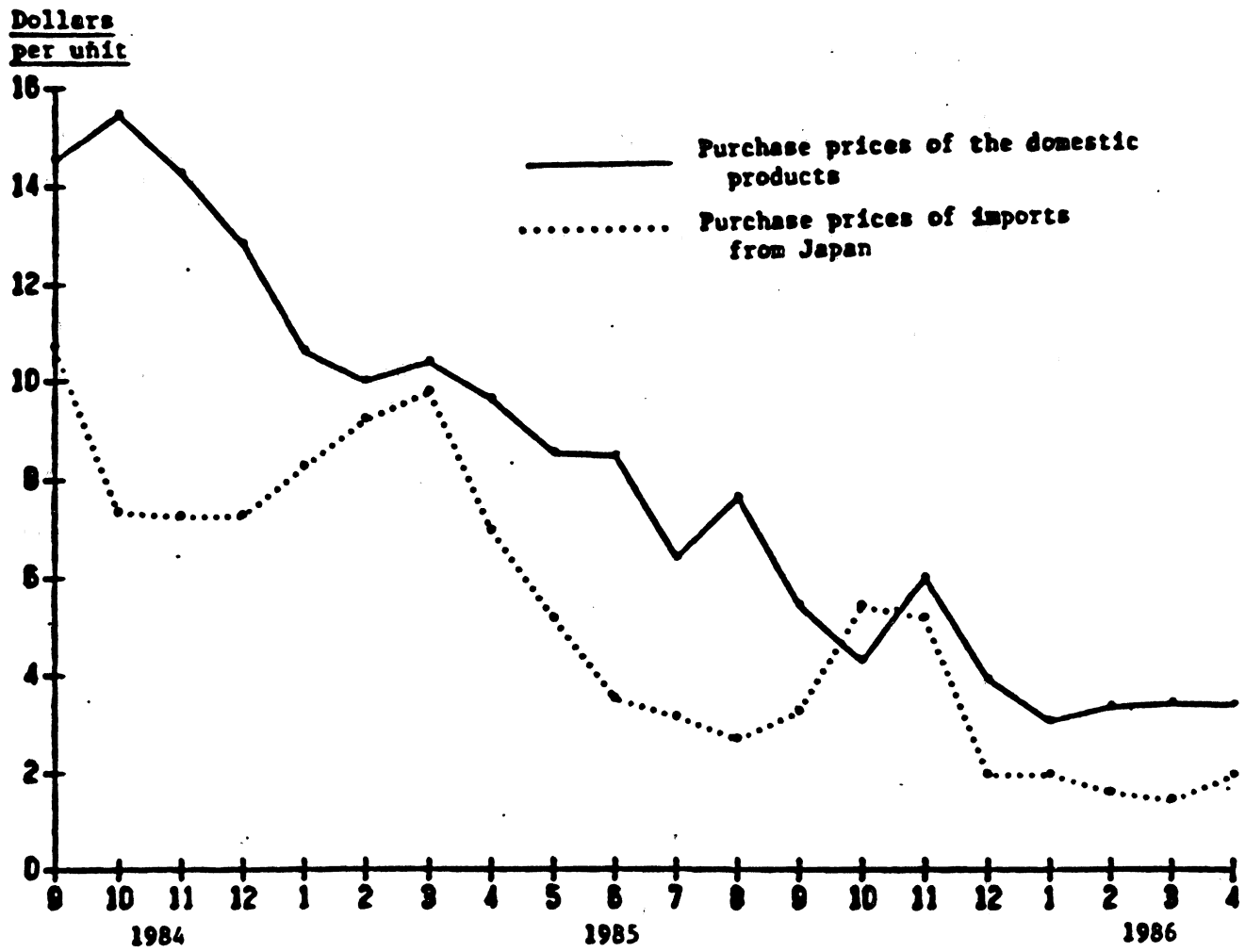
(Per unit)

Month	Office automation OEM				Telecommunication OEM				Industrial automation OEM				Consumer products OEM			
	U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price	
	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
1984:																
September	100	$14.52	100	$10.69	100	$13.96	100	$11.39	100	$13.62	100	$9.13	100	$12.10	100	$6.66
October	106	15.45	69	7.33	104	14.46	89	10.65	101	13.81	97	8.88	108	13.07	121	8.05
November	98	14.26	68	7.25	102	14.18	86	9.79	97	13.28	99	9.02	108	13.06	-	-
December	88	12.83	68	7.25	95	13.32	103	11.72	96	13.03	115	10.50	108	13.06	-	-
1985:																
January	73	10.63	77	8.26	75	10.50	84	9.60	78	10.57	142	13.00	84	10.22	90	6.00
February	69	10.00	86	9.22	72	9.99	59	6.72	67	9.10	142	13.00	76	9.15	99	6.60
March	72	10.40	91	9.77	73	10.21	53	6.04	74	10.04	-	-	58	6.99	50	3.32
April	66	9.63	65	6.95	73	10.22	50	5.71	71	9.62	-	-	56	6.73	49	3.25
May	59	8.54	48	5.15	59	8.27	48	5.47	60	8.24	95	8.71	67	8.06	-	-
June	58	8.47	33	3.50	54	7.48	40	4.60	62	8.42	-	-	69	8.35	45	3.00
July	44	6.39	29	3.14	57	7.95	25	2.84	62	8.50	32	3.00	63	7.65	-	-
August	52	7.63	25	2.68	53	7.44	23	2.58	58	7.87	25	2.25	65	7.87	56	3.70
September	37	5.43	30	3.25	44	6.17	32	3.66	43	5.93	24	2.20	48	5.86	-	-
October	29	4.29	50	5.40	43	6.05	30	2.36	64	8.78	24	2.20	36	4.34	54	3.57
November	41	6.00	48	5.17	38	5.37	19	2.17	45	6.14	24	2.19	36	4.35	49	3.28
December	27	3.92	18	1.95	28	3.94	15	1.69	51	6.93	21	1.95	32	3.89	52	3.44
1986:																
January	21	3.07	18	1.95	23	3.27	18	2.09	22	3.01	24	2.17	28	3.41	29	1.95
February	23	3.36	15	1.59	24	3.41	18	2.04	20	2.78	24	2.17	28	3.39	29	1.95
March	24	3.44	13	1.44	24	3.35	15	1.69	22	3.01	18	1.67	27	3.22	25	1.67
April	23	3.41	18	1.95	24	3.42	15	1.75	22	3.01	21	1.95	28	3.42	29	1.95

1/ First period with data=100.

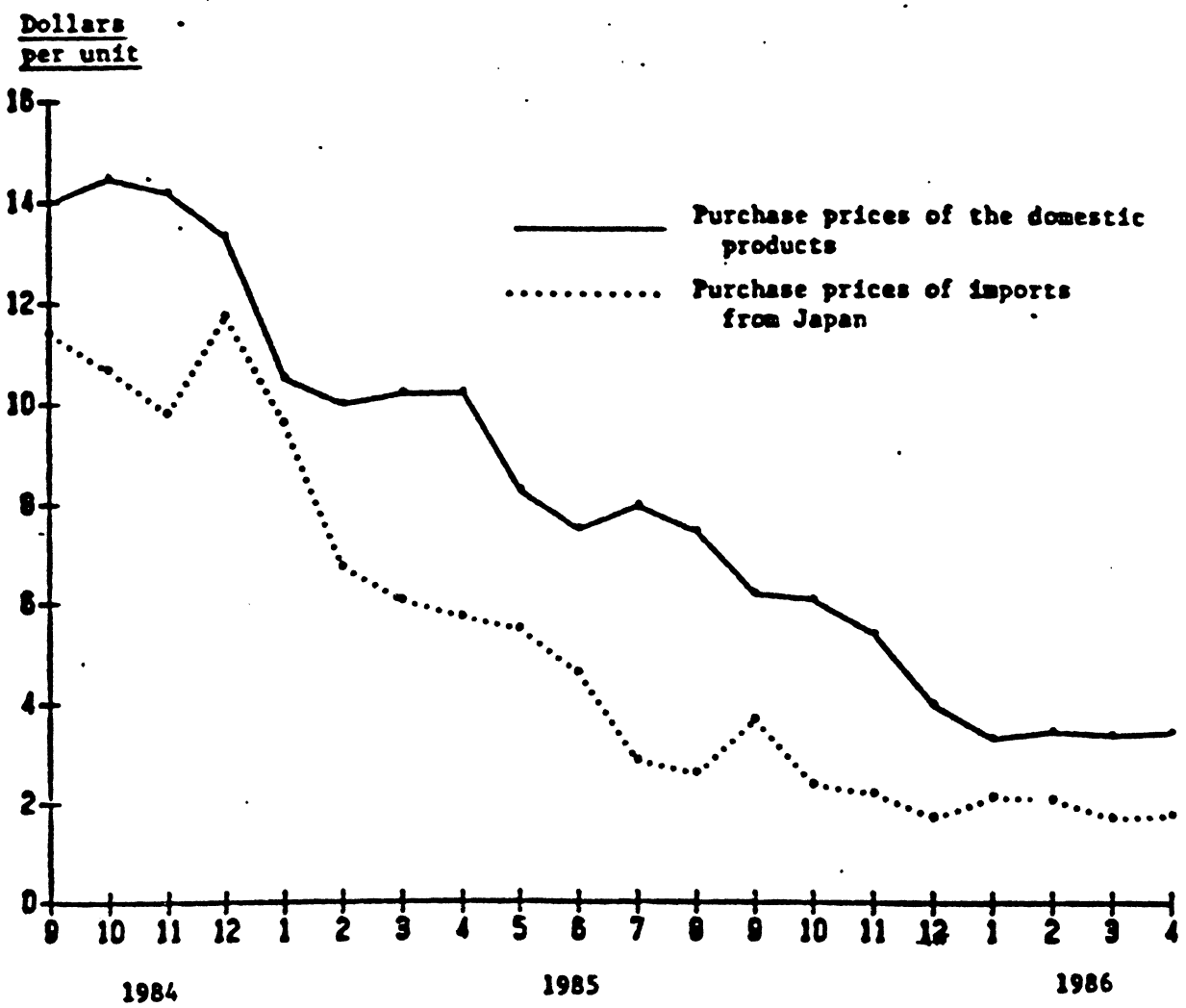
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 5.—128K EPROM's purchased by Office Automation OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



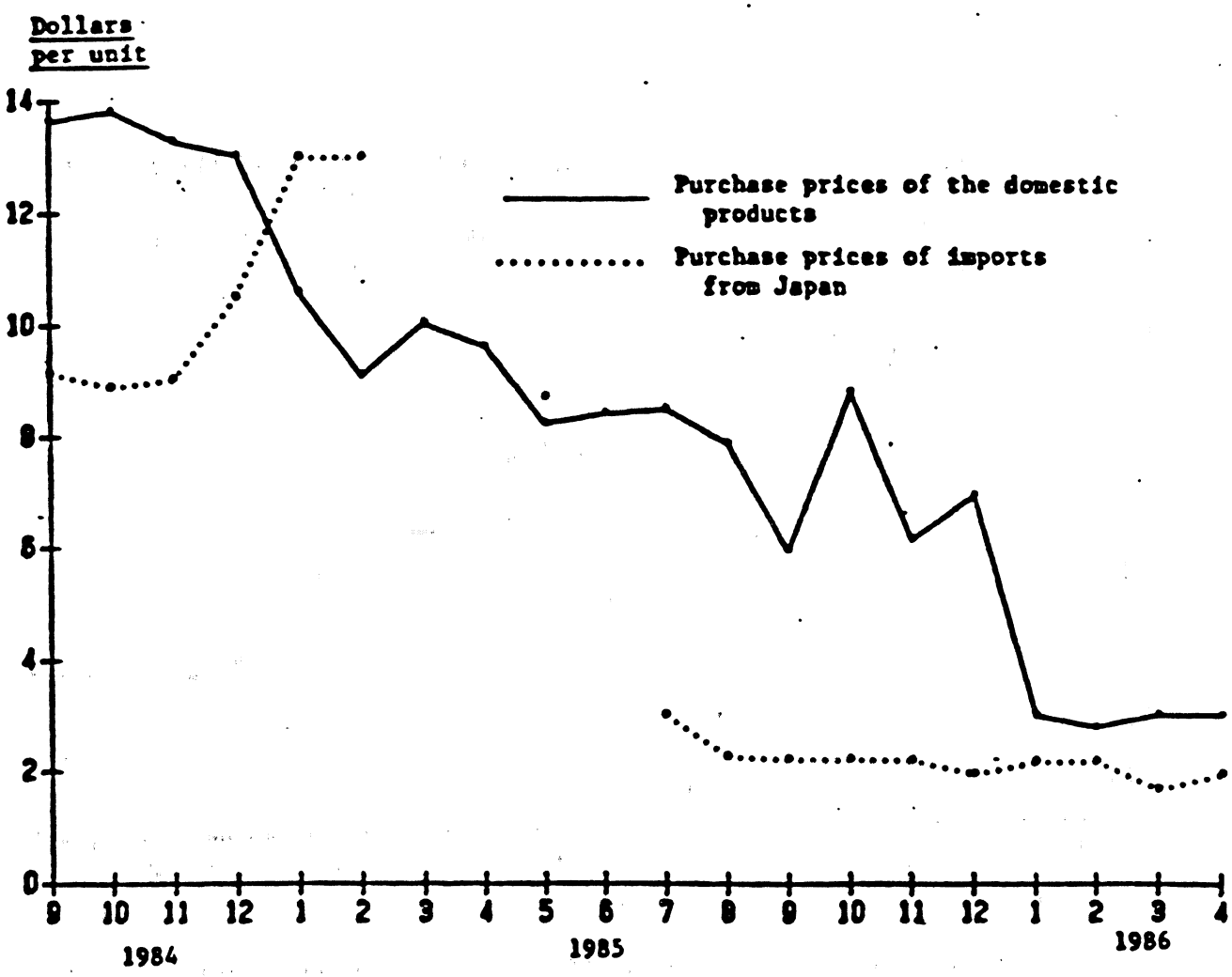
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 6.--128K EPROM's purchased by Telecommunication OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



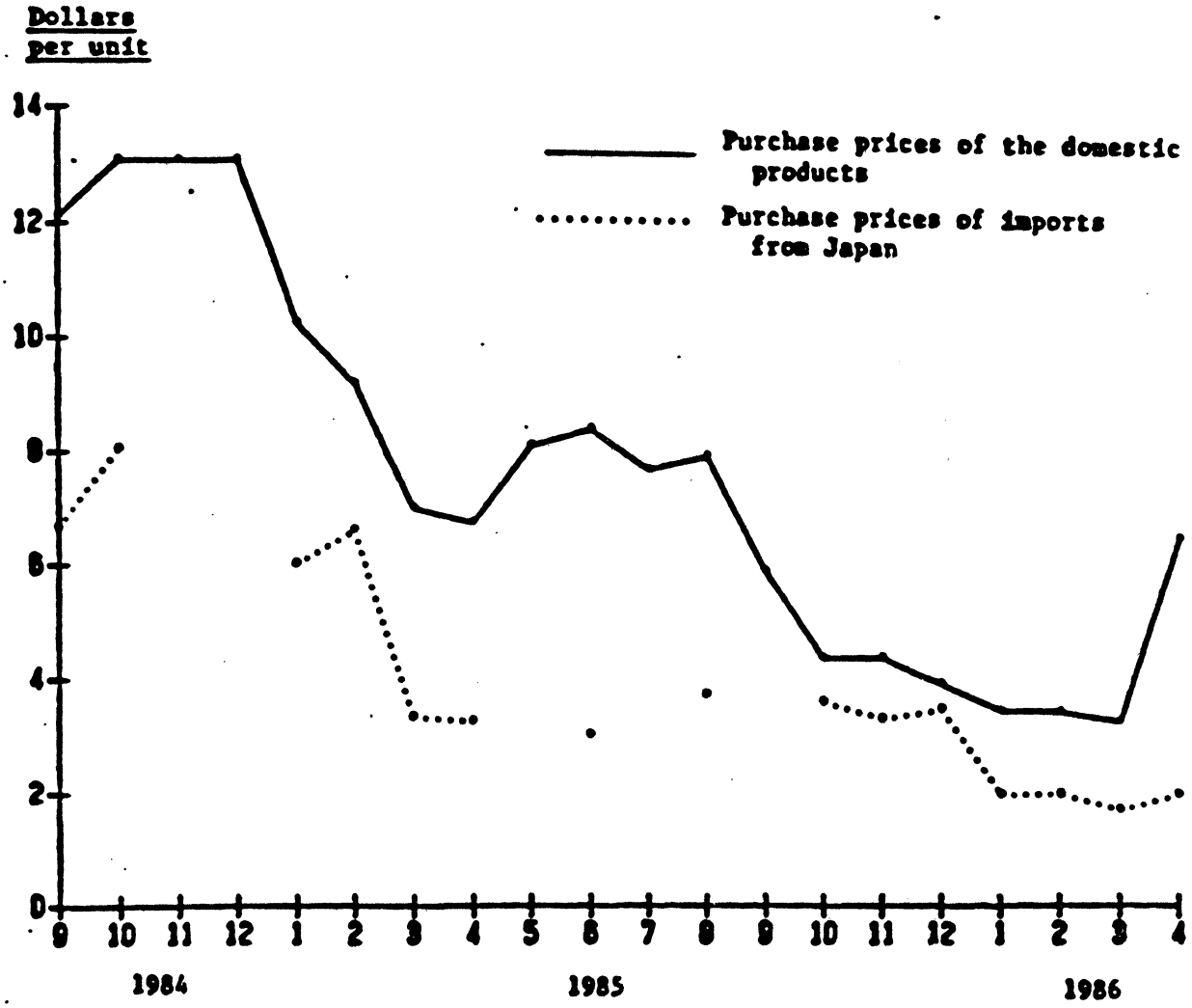
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 7.--128K EPROM's purchased by Industrial Automation OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



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

Figure 8.--128K EPROM's purchased by Consumer Products OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



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

Scant data for 1984 show that purchase prices paid by this class of OEM for Japanese EPROM's were roughly 40 percent below domestic prices. In March 1985 the price plummeted almost 50 percent to $3.32; it hit a 1985 low of $3.00 in June. The price firmed to $3.70 in August, then fell to $3.28 in November, but gained 5 percent to end the year at $3.44. January 1986 saw the price fall 23 index points to $1.95, and in March the price fell to a period low of $1.67, 75 percent below the base-period price.

Prices of 256K EPROM's purchased by office automation OEM's.--Factory direct purchase prices paid by this class of OEM reflected a price decline of 26 percent through November 1984 to $37.91, followed by a steep drop (26 percent) in December (table 35, figure 9). Prices continued to spiral down in 1985 to a low in December of $6.50. In January 1986, the price again fell, but it strengthened from $4.61 to an average of $5.15 in February-March before falling 20 percent to a period low of $4.14 in April, a level equal to only 8 percent of the base-period price of $51.36.

Data on purchase prices paid for Japanese EPROM's begin in January 1985 ($14.67) and showed a downtrend to $6.00 by July. Prices declined from $8.00 in October to a period low of $2.70 in March 1986, 82 percent below the base-period price.

Prices of 256K EPROM's purchased by telecommunication OEM's.--Domestic prices paid by this class of OEM showed a precipitous decline from a base-period high of $47.19 to a period low of $4.15 in April 1985, a price 91 percent below the September 1984 price level (table 35, figure 10). Purchase prices paid for Japanese EPROM's showed an irregular downtrend from a base-period price of $4.50 in June 1985 to a period low of $2.90 in March 1986, followed by an upturn of 10 index points to $3.31 per unit in April.

Prices of 256K EPROM's purchased by industrial automation OEM's.--Prices of domestic EPROM's purchased by this class of OEM reflected a steep downtrend (39 percent) in 1984 from a base-period price of $45.00 in September to $27.65 in December (table 35, figure 11). In 1985, prices continued to fall almost month-by-month to a low of $7.59 in December, a price equal to only 17 percent of the beginning price level. The decline resumed in 1986 to reach a period low of $4.08 in April, 91 percent below the base-period price.

Four average purchase prices were computed for Japanese EPROM's in the period October 1985-April 1986. Although these data are insufficient to establish a definitive trend over the subject time period, they show a decline in price from $6.00 in October to $3.09 in March, followed by an upturn of 30 index points in April to $4.85.

Prices of 256K EPROM's purchased by consumer products OEM's.--The price trend of domestic purchases by this class of OEM also showed an almost continuous decline beginning in October 1984. Prices fell by 39 percent from the base price of $45.00 to $27.42 in December 1984 (table 35, figure 12). The downtrend continued irregularly in 1985 to a period low of $5.34 in January 1986, after which prices show a slight uptrend to end the subject period at $6.41, 86 percent below the base-period price level.

Again, insufficient Japanese price data were received to establish a price trend. Five entries show that purchase prices of Japanese EPROM's declined from $5.00 in June 1985 to $3.33 in August. Data for 1986 reflect an upturn to $4.00 in January-February, then a decline to $3.50 in March, a price 30 percent below the June 1985 level.

Table 35.—256K EPROM's (250 ns) purchased by OEM's: Weighted-average purchase prices for purchases of domestic products and of imports from Japan, and indexes of those prices, 1/ by classes of OEM's and by months, September 1984-April 1986

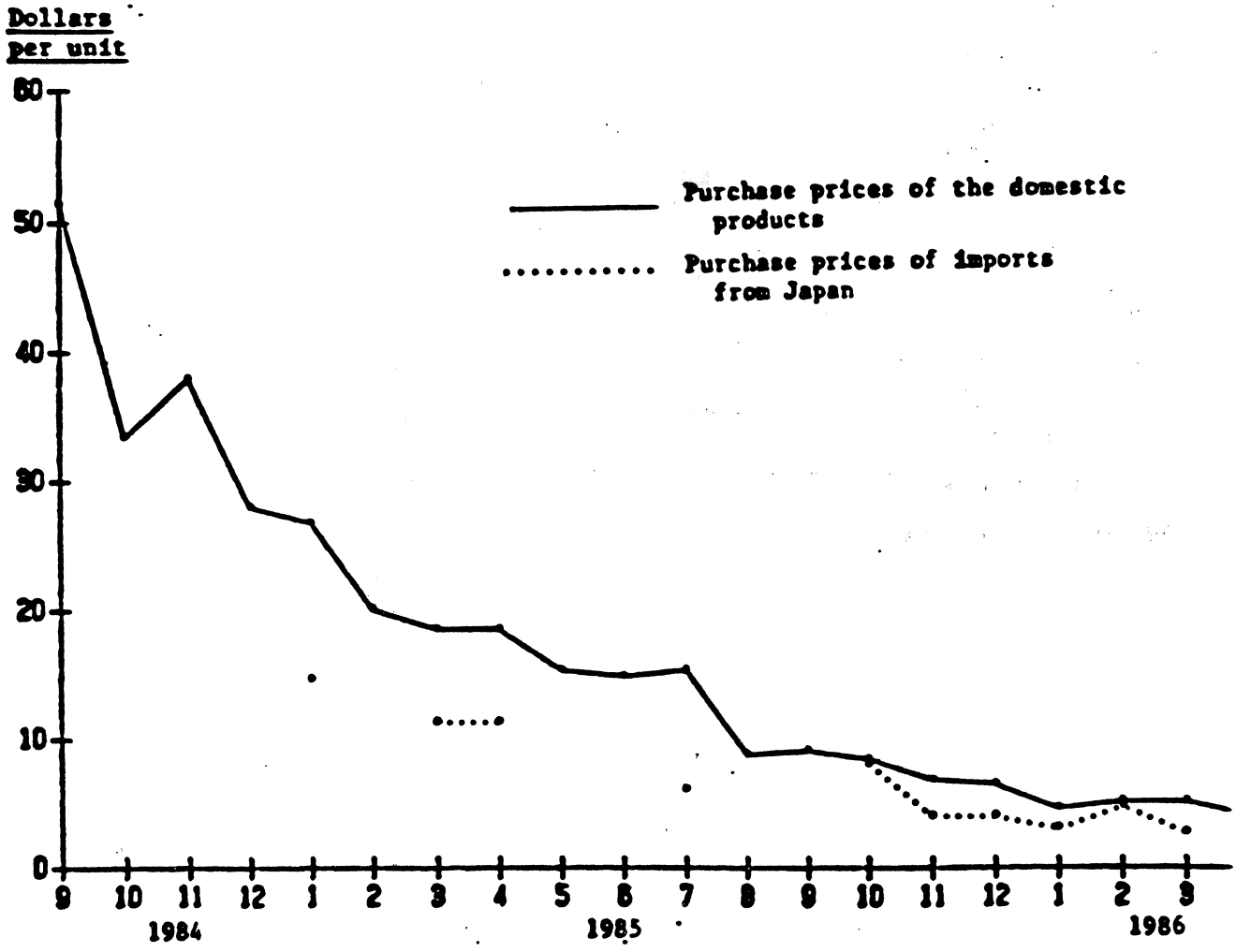
(Per unit)

Month	Office automation OEM				Telecommunication OEM				Industrial automation OEM				Consumer products OEM			
	U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price	
	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
1984:																
September	100	$51.36	-	-	100	$47.19	-	-	100	$45.00	-	-	100	$45.00	-	-
October	65	33.35	-	-	71	33.35	-	-	69	31.13	-	-	69	31.13	-	-
November	74	37.91	-	-	78	36.80	-	-	81	36.67	-	-	79	35.51	-	-
December	54	28.01	-	-	59	27.79	-	-	61	27.65	-	-	61	27.42	-	-
1985:																
January	52	26.73	100	$14.67	55	25.92	-	-	58	25.91	-	-	57	25.78	-	-
February	39	20.14	-	-	43	20.48	-	-	45	20.08	-	-	44	19.68	-	-
March	36	18.60	77	11.30	41	19.54	-	-	42	19.14	-	-	38	16.90	-	-
April	36	18.58	77	11.30	39	18.68	-	-	41	18.63	-	-	36	16.02	-	-
May	30	15.38	-	-	33	15.38	-	-	35	15.65	-	-	30	13.48	-	-
June	29	14.87	-	-	32	15.01	100	$4.50	32	14.35	-	-	33	14.95	100	$5.00
July	30	15.40	41	6.00	33	15.38	-	-	36	16.38	-	-	35	15.75	-	-
August	17	8.81	-	-	18	8.62	78	3.50	20	9.15	-	-	32	14.51	67	3.33
September	18	9.08	-	-	20	9.70	-	-	22	10.05	-	-	25	11.14	-	-
October	16	8.44	54	8.00	17	8.04	-	-	18	8.00	100	$6.00	18	8.28	-	-
November	13	6.82	27	3.97	15	7.18	78	3.50	17	7.63	-	-	15	6.81	-	-
December	13	6.50	27	3.95	15	6.88	100	4.50	17	7.59	-	-	14	6.28	-	-
1986:																
January	9	4.61	21	3.04	12	5.55	-	-	11	5.19	-	-	12	5.34	80	4.00
February	10	5.14	32	4.71	11	5.05	70	3.17	11	5.16	79	4.77	17	7.51	80	4.00
March	10	5.17	18	2.70	11	5.09	64	2.90	10	4.72	51	3.09	13	5.74	70	3.50
April	8	4.14	-	-	9	4.15	74	3.31	9	4.08	81	4.85	14	6.41	-	-

1/ First period with data=100.

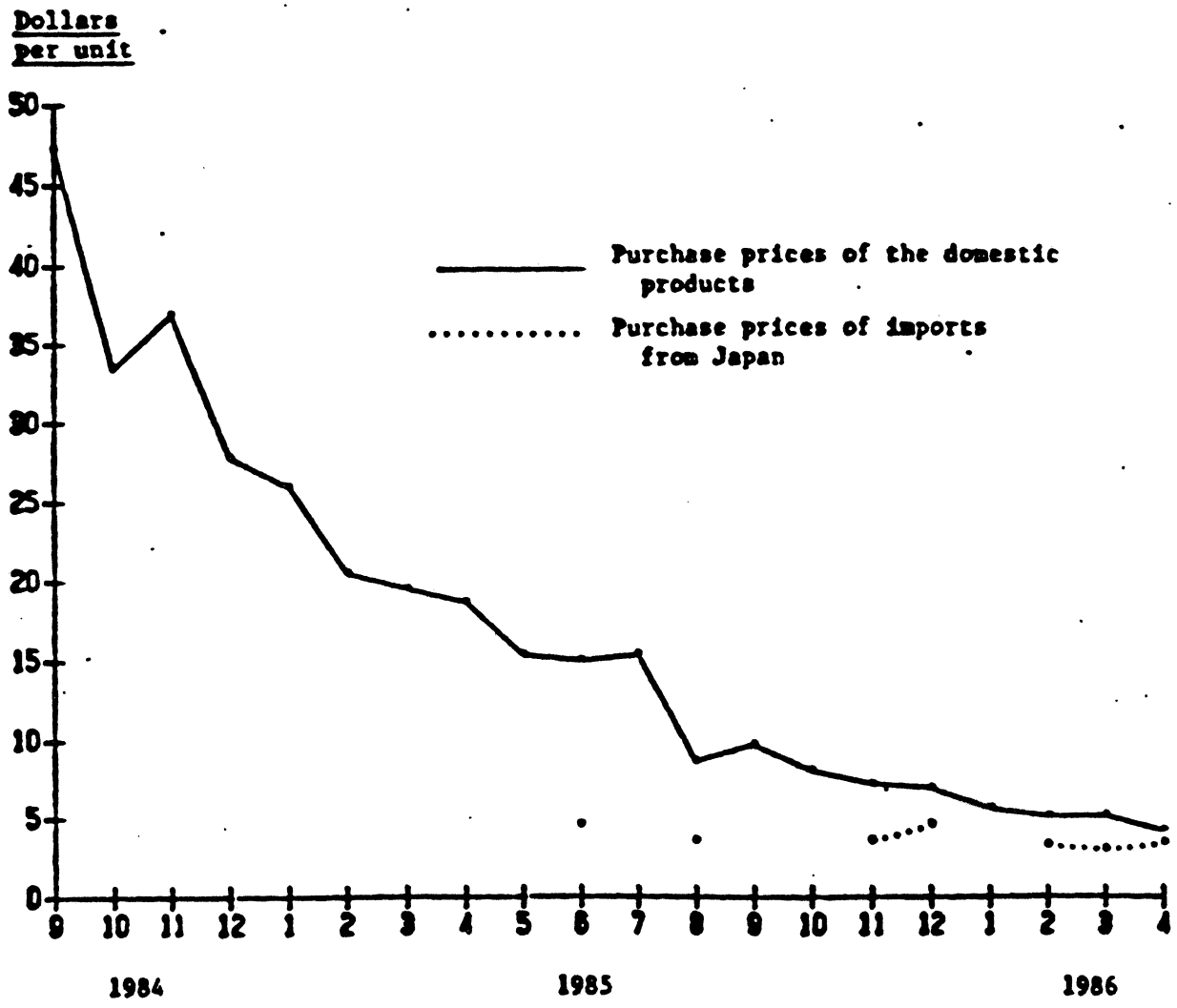
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 9.--256K EPROM's purchased by Office Automation OEM's: Weighted-average purchase prices for domestic-products and for imports from Japan, by months, September 1984-April 1986



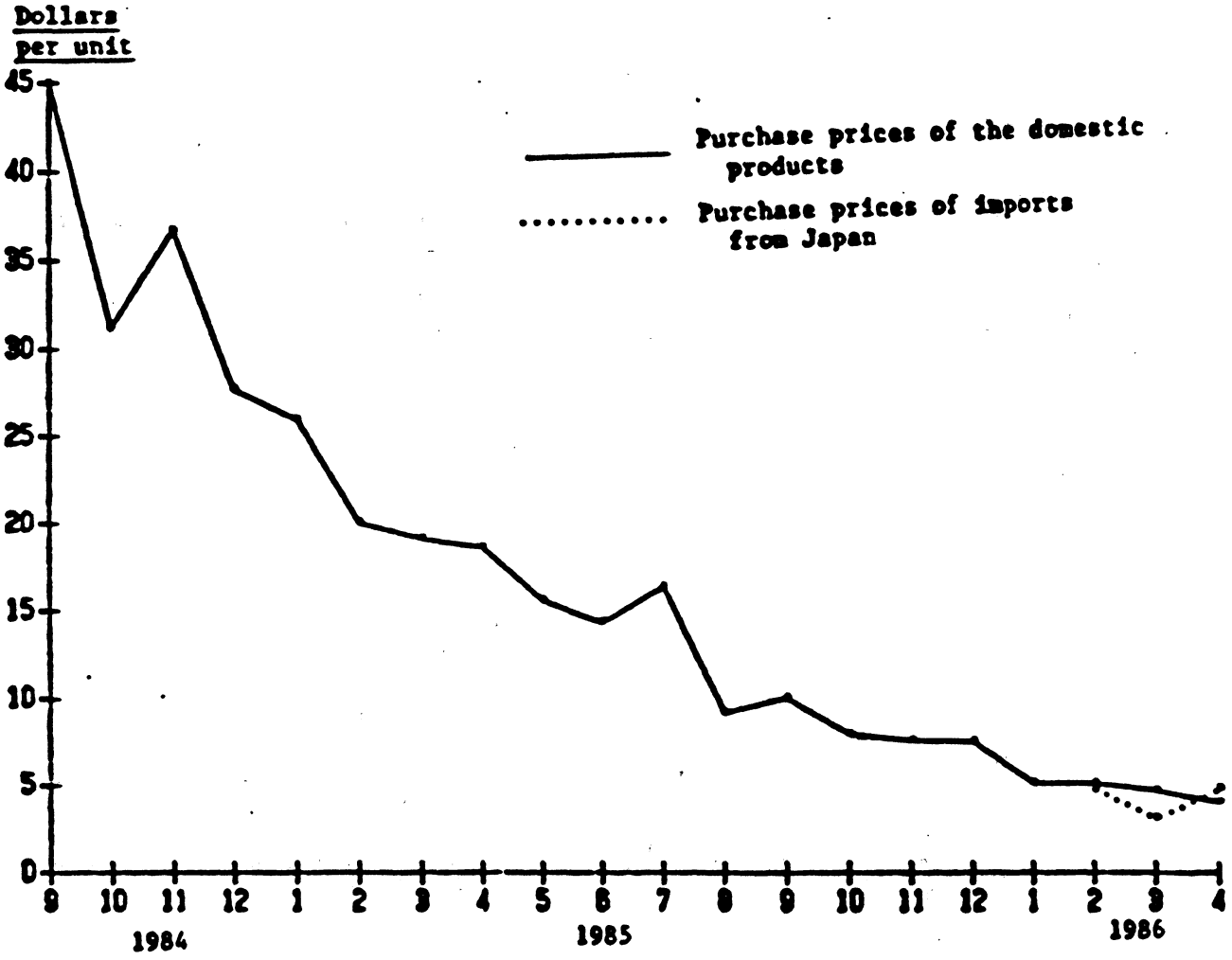
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 10.--256K EPROM's purchased by Telecommunicaton OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



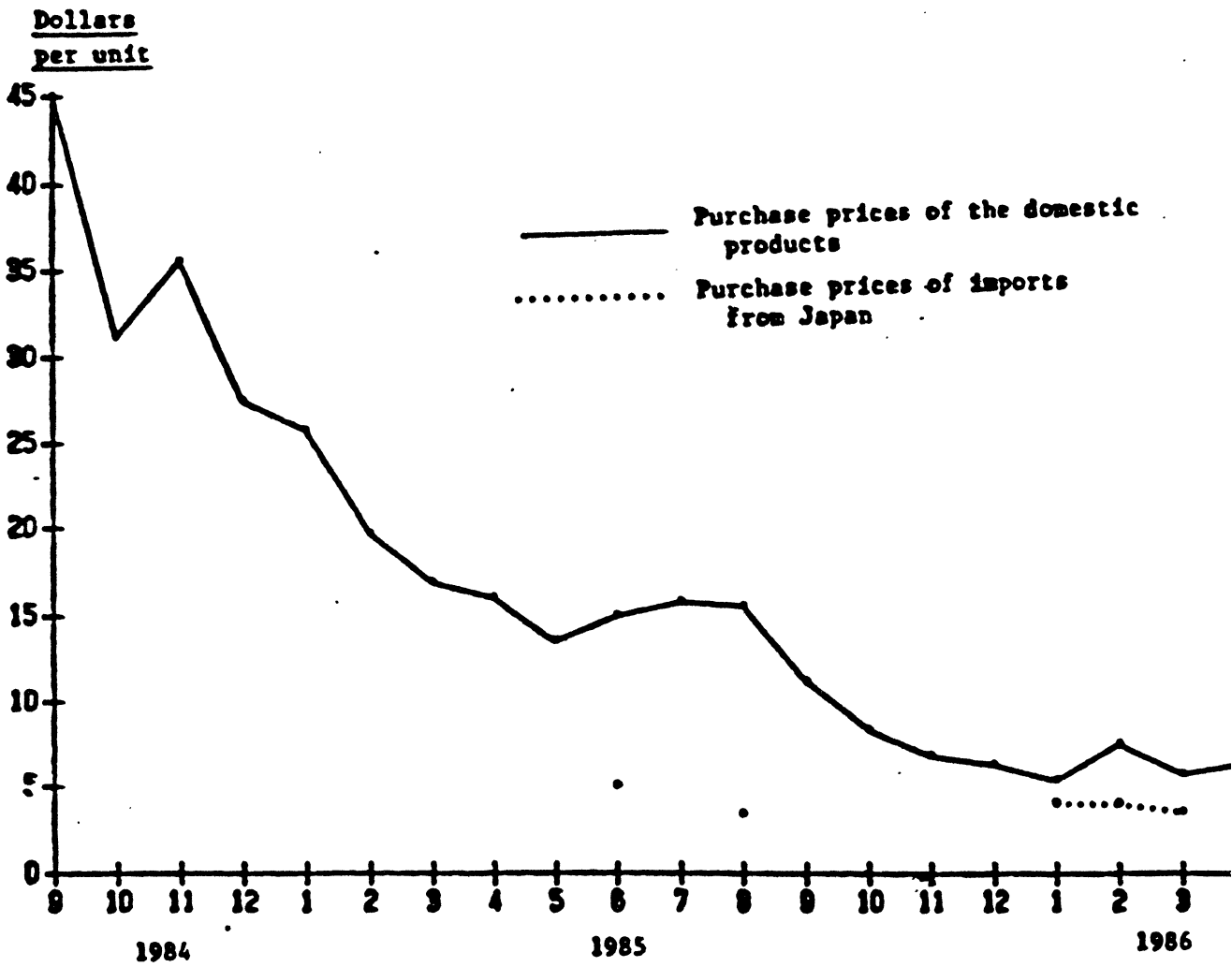
Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 11.--256K EPROM's purchased by Industrial Automation OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



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

Figure 12.--256K EPROM's purchased by Consumer Products OEM's: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



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

Distributor prices 1/.--As noted previously, the Commission requested purchase price data from both authorized and independent distributors. Although these two channels of distribution purchase their product very differently, they compete vigorously against each other for sales to the same end-user customers.

Authorized distributors are vendors of either domestic EPROM's or imported brands, but not both. Sharing shelf space is frowned on not only by domestic (U.S. brand name) producers but also by Japanese (brand name) suppliers. In contrast, independent distributors buy from any available source, domestic or offshore. Some independent distributors are stocking distributors; others are more brokers than distributors, although they usually take title to the goods, even if they are presold, to avoid disclosure of the source of the EPROM's.

Producers, importers, and authorized distributors label the independent distributors as the grey-market dimension of competition. Industry estimates put the number of grey-market vendors as high as 300. Among the largest of these independent distributors are * * *, * * *, and * * *.

In order to compare discrete purchase prices in the two distributor channels of distribution, tables 36 and 37 present, separately, weighted-average net purchase prices for authorized distributors and independent distributors.

Prices of 64K (250ns) EPROM's purchased by authorized distributors.--Factory direct purchase prices of domestic EPROM's by authorized distributors were above the September base price of $4.19 during October and November of 1984, then fell sharply in December to $2.33, but recovered to almost $4.00 in January 1985 (table 36, figure 13). At that point, a steady, sharp downtrend occurred that reached a low of $0.67 in August. An irregular uptrend followed in the balance of 1985 to a price level of $1.88 in December. Prices turned sharply down to $1.24 in January 1986 and $1.17 in February. Beginning in March, the trend reversed and prices climbed to $3.00 in April, only 28 percent below the September 1984 level.

The purchase prices of Japanese EPROM's reflect a downtrend much less steep than domestic prices. From a period high of $4.18 in November 1984, the price declined irregularly to $1.46 in December 1985, 59 percent below the September 1984 base period price of $3.59. In 1986, prices strengthened to an April price level of $3.21.

1/ The policy of price protection to distributors casts a shadow on the accuracy of comparisons of these prices. Producers and importers implement this policy with authorizations, in specific instances, for distributors to "ship from stock and debit" the vendor for the difference between the original distributor "buy price" and the authorized "meet competition" adjusted price. Such price adjustments during this period of plummeting prices were the rule rather than the exception. To the extent that respondent distributors may well have reported "buy prices" rather than adjusted "ship from stocks and debit" prices, the data comparisons would be flawed. For more detailed coverage of this problem see the Official Transcript of the Hearing, pp. 34-40.

Table 36.—EPROM's (250 ns) purchased by authorized distributors: Weighted-average purchase prices of domestic products and of imports from Japan, and indexes of those prices, 1/ by densities and by months, September 1984-April 1986

(Per unit)

Period	64K				128K				256K			
	U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price		U.S. weighted-average price		Japanese weighted-average price	
	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
1984:												
September	100	4.19	100	3.59	100	24.12	100	11.44	100	49.23	-	-
October	116	4.86	115	4.14	94	22.73	99	11.38	81	40.09	-	-
November	101	4.23	116	4.18	98	23.58	95	10.89	67	32.95	-	-
December	56	2.33	109	3.91	95	23.03	100	11.45	75	37.17	-	-
1985:												
January	94	3.96	80	2.89	36	8.76	71	8.12	23	11.56	100	14.39
February	72	3.02	64	2.31	26	6.40	69	7.90	23	11.41	96	13.82
March	57	2.40	64	2.31	23	5.55	41	4.75	20	10.11	80	11.55
April	38	1.60	62	2.24	14	3.28	37	4.26	15	7.24	71	10.18
May	33	1.37	65	2.35	8	1.83	34	3.87	10	4.83	82	11.80
June	32	1.35	55	1.99	8	1.95	32	3.61	9	4.42	83	11.97
July	31	1.30	82	2.93	7	1.67	19	2.22	9	4.47	49	7.06
August	16	0.67	51	1.84	6	1.42	25	2.89	8	3.88	51	7.29
September	23	0.95	51	1.83	6	1.47	20	2.31	5	2.69	66	9.46
October	49	2.06	51	1.82	5	1.29	22	2.51	4	2.21	42	6.03
November	35	1.45	45	1.62	8	1.90	21	2.36	6	2.81	38	5.43
December	45	1.88	41	1.46	7	1.66	18	2.07	5	2.67	31	4.43
1986:												
January	30	1.24	46	1.67	7	1.71	18	2.11	6	2.96	36	5.16
February	28	1.17	46	1.64	7	1.73	28	3.20	6	3.03	25	3.61
March	36	1.49	43	1.56	7	1.77	21	2.44	6	3.18	32	4.61
April	72	3.00	89	3.21	12	3.00	26	2.93	6	3.20	30	4.35

1/ First perod with data=100.

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

Table 37.—EPROM's (250ns) purchased by independent distributors: Weighted-average purchase prices of domestic products and of imports from Japan, and indexes of those prices, by densities and by months, September 1984-April 1986.

* * * * * * *

Figure 13.--64K EPROM's purchased by Authorized Distributors: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986

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

Prices of 250 ns 128K EPROM's purchased by authorized distributors.— The price trend for purchases of domestic 128K EPROM's, factory direct, shows a quite steady pattern in September-December 1984 at roughly $23 per unit (table 36, figure 14). The average price plummeted in January 1985 and continued to decline to a period low of $1.29 in October, a price equal to only 5 percent of the base-period figure. During most of the balance of the subject period, the price hovered at the $1.70 range, but had climbed to $3.00 in April 1986.

During 1984, the price of Japanese EPROM's averaged about half the domestic price and was fairly stable at more than $11.00. The average price softened in January and February 1985, then fell from an average of almost $8.00 to $4.75 in March. The downward trend continued irregularly to a period low of $2.07 in December. An irregular pattern marked the remainder of the subject period, with the April 1986 price at $2.93, 74 percent below the base-period price of $11.44.

Prices of 250 ns 256K EPROM's purchased by authorized distributors.— Prices for domestic EPROM's of this density trended almost continuously downward during most of the subject period. The sharpest drop came in January 1986 when the average price fell 77 index points from $49.23 to $11.56 (table 36, figure 15). Prices continued to decline to a period low of $2.21 in October. During the balance of the subject period, the price crept up slowly to an April 1986 level of $3.20, 94 percent below the base-period price of $49.23.

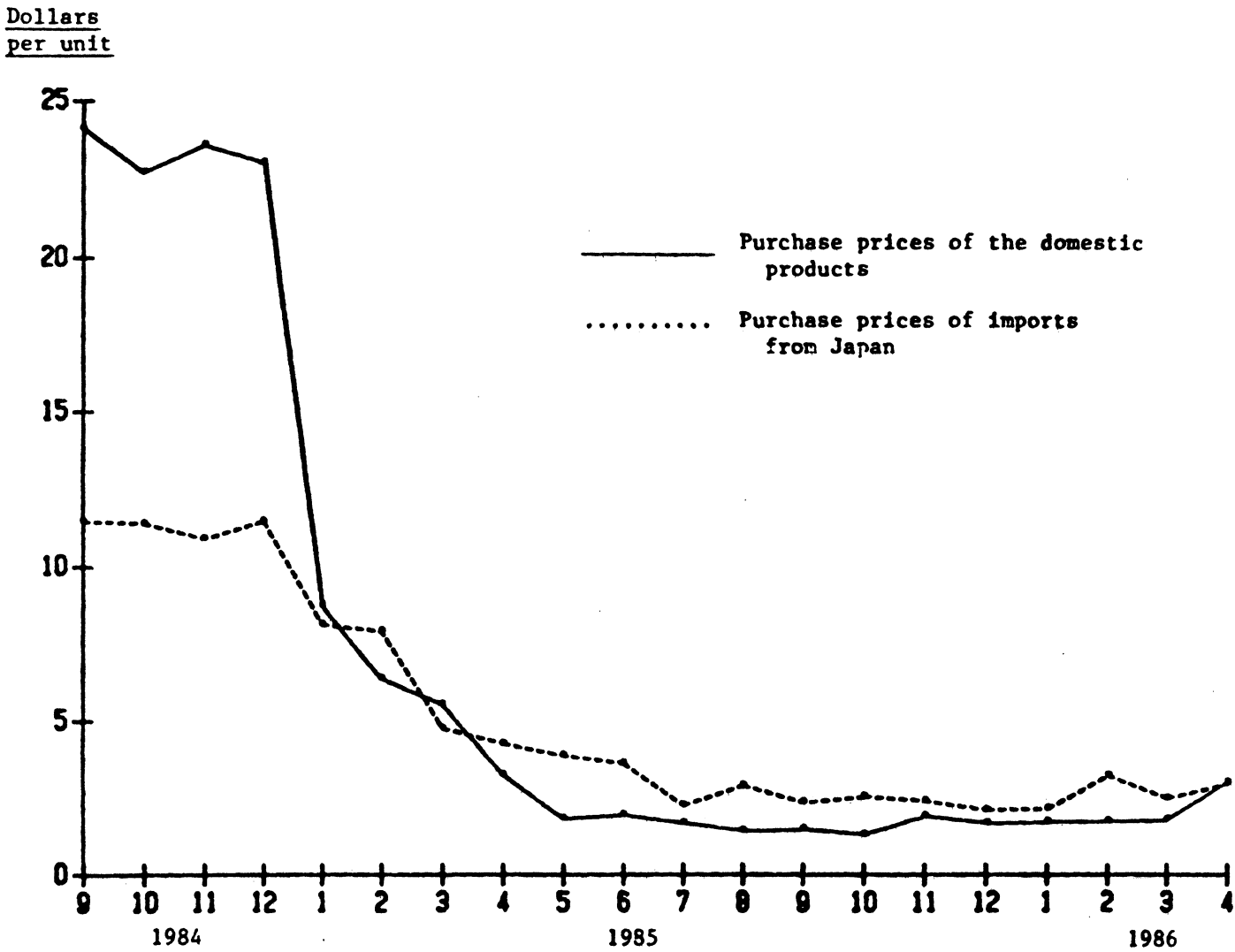
Japanese prices reflect an irregular downtrend from a January 1985 base-price of $14.39 to a period low of $3.61 in February 1986.

Prices of 64K (250ns) EPROM's purchased by independent distributors.— A less complete time series of purchase prices paid by this class of distributor for domestic 64K EPROM's shows a steady * * * from a February 1985 base price of $*** to a * * * of *** per device in September. The average price * * * to $*** in October 1985, then * * * to $*** in November, the last data entry of 1985. The price * * * in 1986 to a peak of $*** in March, then * * * to $*** in April (table 37, figure 16).

Purchase prices for imported Japanese EPROM's span the entire subject time period. A steady * * * is revealed, from a base period price of $*** in September 1984, to $*** in December, and then a continuous * * * to a period low of *** cents in September 1985. The trend reversed in October and prices * * * from $*** to a 1986 * * * of $*** during April, a level *** percent * * * the base-period price.

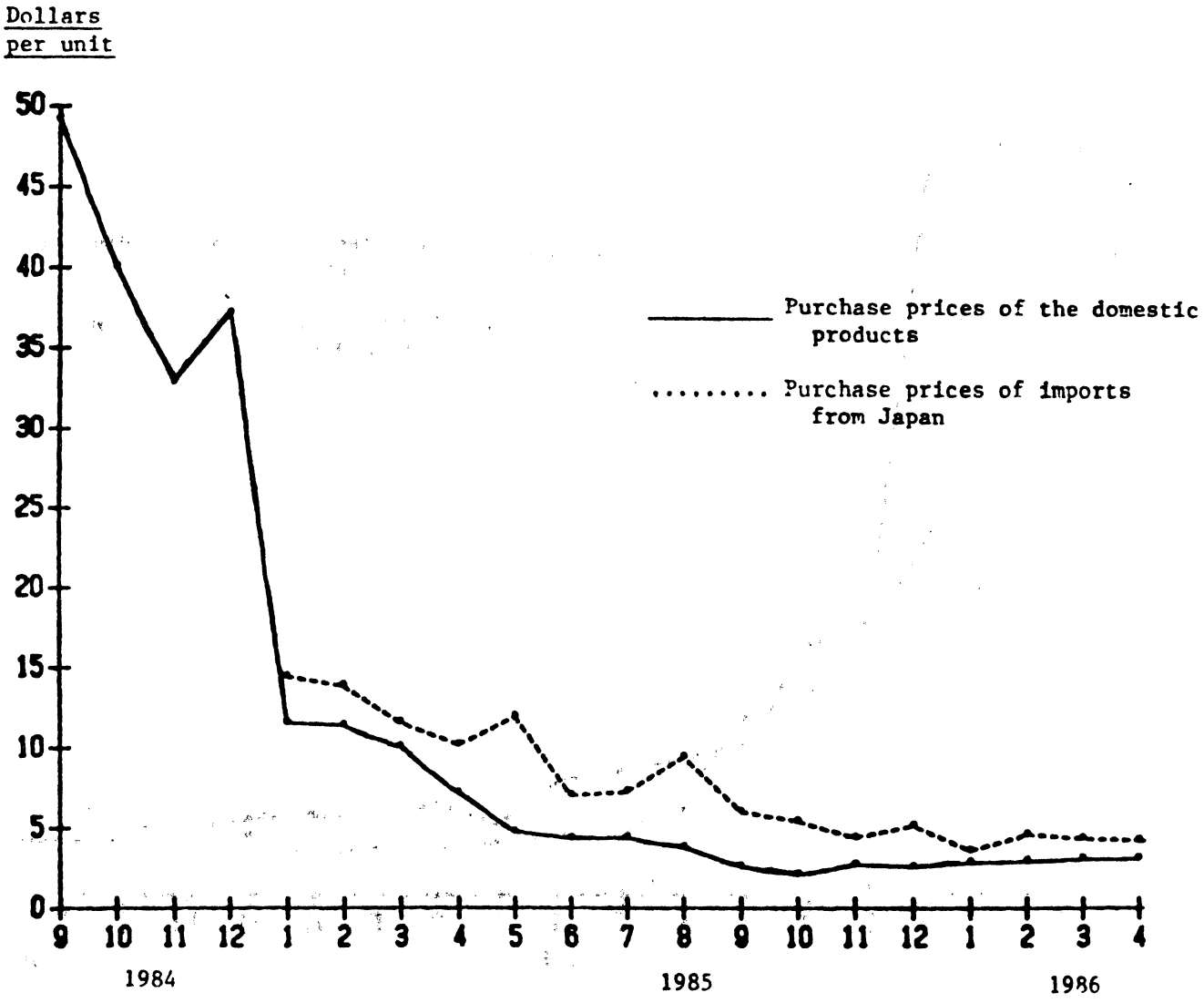
Prices of 128K (250ns) EPROM,s purchased by independent distributors.— Negligible purchases of domestic 128K EPROM's by independent distributors do not provide a basis for a trend analysis of prices. In contrast, purchases of imported Japanese 128K EPROM,s provide a full time series for the 20-month subject timespan. As with 64K EPROM's, the trend is * * * during much of the period. In 1984, the Japanese prices * * * *** percent from a base-period price of $*** to $*** in December. The * * * continued in 1985 from a January level of $*** to a period low of $*** in November, *** percent below the beginning price level. At that point, an

Figure 14.--128K EPROM's purchased by Authorized Distributors: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



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

Figure 15.--256K EPROM's purchased by Authorized Distributors: Weighted-average purchase prices for domestic products and for imports from Japan, by months, September 1984-April 1986



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

Figure 16.—64K EPROM's purchased by Independent Distributors: Weighted-average purchase prices for domestic products and for imports from Japan, by month, September 1984-April 1986

* * * * * * *

* * * began as prices * * * from $*** in December 1985 to $*** in April 1986 (table 37, figure 17).

Prices of 256K (250ns) EPROM's purchased by independent distributors.— Prices for domestic EPROM's of this density * * * from $*** in December 1984 to $*** in January 1985, then, beginning in April 1985, * * * month by month to a period * * * of $*** in September, *** percent * * * the base-period price. Scattered data show a slight * * * from $*** per device in December to $*** in April 1986 (table 37, figure 18).

Over the same time period, prices for imported Japanese 256K EPROM's * * * from $*** in December 1984 to a period * * * of $*** in October 1985, *** percent * * * the base-period price. Again, the trend reversed and prices * * * from $*** in November to $*** in April 1986, a price *** percent * * * the 1984 base-period price.

Margins of underselling

Monthly comparisons of the weighted-average net purchase prices reported by each of the four classes of OEM's and by the two classes of distributors provided the basis for the analysis of margins of underselling (or overselling). 1/ Although there were instances of overselling as well as underselling by imported EPROM's from Japan, the predominant pattern was one of underselling in sales to OEM's and underselling in sales to distributors.

64K EPROM's purchased by office automation OEM's.—Monthly comparisons of prices for these EPROM's purchased by this class of OEM showed that the imported Japanese product undersold the domestic product in 17 of 20 instances by margins that ranged from 6.6 to 59.8 percent or from $0.28 to $2.64 per unit (table 38). The three instances of overselling showed margins of 2.7 to 25.6 percent, or from $0.19 to $1.11 in favor of the domestic EPROM's.

64K EPROM's purchased by telecommunications OEM's.—Imported EPROM's from Japan undersold the domestic product in 17 of 20 monthly comparisons of weighted-average purchase prices by this class of purchaser. Margins of underselling ranged from 1.4 to 60.5 percent, or from $0.06 to $2.84 (table 38). Three instances of overselling by the imported EPROM's showed margins of 12.1 to 27.3 percent, or $0.55 to $1.17 in favor of the domestic product.

64K EPROM's purchased by industrial automation OEM's.—Comparisons of weighted-average net purchase prices by this class of OEM were possible in 20 months. Imported EPROM's from Japan undersold the domestic product in 15 instances. Margins of underselling ranged from 9.9 to 41.7 percent, or from $0.51 to $1.65 per unit (table 38).

64K EPROM's purchased by consumer products OEM's.—Seventeen of 20 monthly comparisons of weighted-average net purchase prices of these EPROM's showed underselling by imported Japanese EPROM's. The margins of underselling ranged from 13.7 to 50.2 percent, or from $0.36 to $1.54 per unit (table 38).

1/ That is, the price data presented in tables 33-37.

Figure 17.--64K EPROM's purchased by Independent Distributors: Weighted-average purchase prices for domestic products and for imports from Japan, by month, September 1984-April 1986

* * * * * * *

Figure 18.--64K EPROM's purchased by Independent Distributors: Weighted-average purchase prices for domestic products and for imports from Japan, by month, September 1984-April 1986

* * * * * * *

Table 38.—64K EPROM's (250 ns) purchased by OEM's: Average margins by which imports of Japanese EPROM's undersold or oversold 1/ U.S.-produced EPROM's, 2/ by classes of OEM's and by months, September 1984-April 1986

(Per unit)

Month	Office automation OEM		Telecommunication OEM		Industrial automation OEM		Consumer products OEM	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1984:								
September	$2.01	29.92	$1.20	20.37	$1.13	19.42	$1.58	26.90
October	1.87	28.89	1.90	29.45	0.51	9.93	0.83	16.15
November	1.83	28.55	1.76	27.60	1.16	19.95	1.74	29.94
December	1.49	23.50	1.26	21.36	0.95	16.48	1.21	20.88
1985:								
January	-0.19	-2.68	2.03	29.60	-2.01	-38.95	-1.95	-37.23
February	-0.71	-15.48	-0.58	-13.01	-2.53	-54.47	0.94	20.42
March	1.08	23.20	0.06	1.37	-2.51	-53.88	0.99	21.23
April	0.28	6.55	-1.17	-27.30	-2.58	-59.99	-2.46	-55.64
May	-1.11	-25.63	-0.55	-12.12	-2.74	-71.77	-2.74	-71.77
June	1.48	37.39	1.02	27.75	1.65	41.71	1.46	38.69
July	2.64	56.30	2.84	60.53	1.37	37.21	1.36	37.04
August	0.80	26.23	1.30	39.39	0.68	22.79	0.74	25.58
September	2.28	59.80	1.56	41.89	1.24	34.55	1.25	34.74
October	0.45	16.90	0.75	24.24	0.35	13.32	1.13	43.53
November	0.44	16.33	0.41	13.33	0.74	24.37	1.54	50.22
December	0.50	18.99	0.85	28.86	0.30	11.63	0.36	13.68
1986:								
January	0.32	13.47	0.88	36.58	0.64	26.74	0.55	22.36
February	0.80	33.40	0.42	19.19	0.68	27.90	0.72	28.84
March	0.75	31.46	0.28	13.51	0.62	25.99	0.68	27.94
April	0.38	16.23	0.72	31.41	0.54	23.51	0.54	23.51

1/ Overselling is shown with a negative (-) sign.
2/ Margins are calculated from unrounded weighted-average prices.

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

128K EPROM's purchased by office automation OEM's.—Nineteen of 20 comparisons of weighted-average purchase prices showed underselling by the Japanese product (table 39). Margins ranged from 6.1 to 58.7 percent, or from $0.63 to $4.98 per unit. The single instance of overselling was by a margin of 25.9 percent, or $1.11 in favor of the domestic product.

128K EPROM's purchased by telecommunication OEM's.—Twenty monthly comparisons of weighted-average net selling prices were possible for these OEM's. Underselling by the imported Japanese product appeared in all 20 comparisons. Margins of underselling by imports ranged from 8.5 to 65.4 percent, or from $0.89 to $4.86 per unit (table 39).

128K EPROM's purchased by industrial automation OEM's.—Fourteen of 17 monthly comparisons of weighted-average purchase prices showed underselling by the Japanese EPROM's. The margins of underselling ranged from 19.4 to 74.8 percent, or from $2.53 to $6.58 per unit. Margins in the three instances of overselling by the Japanese product ranged from 5.8 to 42.9 percent, or from $0.48 to $3.90 per unit (table 39).

128K EPROM's purchased by consumer products OEM's.—Comparisons of weighted-average purchase prices were possible in 15 months. Each instance reflected underselling by the imported Japanese product. Margins of underselling ranged from 11.6 to 64.1 percent, or from $0.45 to $5.35 per unit (table 39).

256K EPROM's purchased by office automation OEM's.—Ten monthly comparisons of weighted-average purchase prices in this channel of distribution were possible. All showed underselling by imported Japanese EPROM's. The margins ranged from 5.3 to 61.0 percent, or from $0.44 to $9.40 per unit (table 40).

256K EPROM's purchased by telecommunications OEM's.—Seven monthly comparisons of weighted-average purchase prices were possible for this class of purchaser. Again, all showed underselling; margins ranged from 20.2 to 70.0 percent, or from $0.84 to $10.51 (table 40).

256K EPROM's purchased by industrial automation OEM's.—Three of four possible comparisons of monthly average purchase prices in this channel of distribution showed underselling by the imported Japanese product. The margins of underselling ranged from 7.5 to 34.5 percent, or from $0.39 to $1.63 per unit. The single comparison that reflected overselling by the Japanese product showed a margin of 18.9 percent, or $0.77 in favor of the domestic product (table 40).

256K EPROM's purchased by consumer products OEM's.—Five monthly comparisons of weighted-average purchase prices reported by this class of customer all showed underselling by the imported Japanese product. The margins ranged from 25.1 to 77.1, or from $1.34 to $11.18 per unit (table 40).

64K EPROM's purchased by authorized distributors.—Twenty monthly comparisons of weighted-average purchase prices reported by this class of customer were possible. Eight of the 20 showed underselling by the imported Japanese EPROM's. Margins of underselling ranged from 1.4 to 26.9 percent, or from $0.06 to $1.06 per unit. The 12 instances of overselling by the Japanese product reflected margins of 4.9 to 175.4 percent, or from $0.07 to $1.17 per unit in favor of the domestic product (table 41).

Table 39.—128K EPROM's (250 ns) purchased by OEM's: Average margins by which imports of Japanese EPROM's undersold or oversold 1/ U.S.-produced EPROM's, 2/ by classes of OEM's and by months, September 1984-April 1986

(Per unit)

Month	Office automation OEM		Telecommunication OEM		Industrial automation OEM		Consumer products OEM	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1984:								
September	$3.82	26.33	$2.58	18.45	$4.48	32.92	$5.43	44.92
October	8.11	52.52	3.81	26.35	4.92	35.67	5.02	38.40
November	7.01	49.15	4.38	30.91	4.26	32.08	-	-
December	5.58	43.50	1.60	11.98	2.53	19.42	-	-
1985:								
January	2.36	22.22	0.89	8.52	-2.43	-22.96	4.22	41.32
February	0.78	7.76	3.27	32.74	-3.90	-42.90	2.55	27.90
March	0.63	6.06	4.17	40.82	-	-	3.67	52.51
April	2.68	27.85	4.50	44.07	-	-	3.48	51.69
May	3.39	39.64	2.80	33.83	-0.48	-5.79	-	-
June	4.98	58.73	2.88	38.55	-	-	5.35	64.06
July	3.25	50.85	5.11	64.31	5.50	64.69	-	-
August	4.95	64.87	4.86	65.37	5.62	71.41	4.17	52.99
September	2.18	40.18	2.51	40.63	3.73	62.89	-	-
October	-1.11	-25.93	3.69	59.50	6.58	74.93	0.76	17.62
November	0.83	13.77	3.19	59.49	3.95	64.30	1.07	24.65
December	1.97	50.21	2.24	56.98	4.98	71.84	0.45	11.56
1986:								
January	1.12	36.48	1.19	36.25	0.84	27.81	1.46	42.76
February	1.77	52.72	1.36	39.99	0.60	21.76	1.44	42.47
March	2.00	58.04	1.66	49.62	1.33	44.34	1.55	48.03
April	1.46	42.85	1.67	48.90	1.06	35.17	1.47	42.92

1/ Overselling is shown with a negative (-) sign.
2/ Margins are calculated from unrounded weighted-average prices.

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

Table 40.—256K EPROM's (250 ns) purchased by OEM's: Average margins by which imports of Japanese EPROM's undersold or oversold 1/ U.S.-produced EPROM's, 2/ by classes of OEM's and by months, September 1984-April 1986

(Per unit)

Month	Office automation OEM		Telecommunication OEM		Industrial automation OEM		Consumer products OEM	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1984:								
September	–	–	–	–	–	–	–	–
October	–	–	–	–	–	–	–	–
November	–	–	–	–	–	–	–	–
December	–	–	–	–	–	–	–	–
1985:			–	–	–	–	–	–
January	$12.03	45.13	–	–	–	–	–	–
February	–	–	–	–	–	–	–	–
March	7.30	39.25	–	–	–	–	–	–
April	7.28	39.17	–	–	–	–	–	–
May	–	–	–	–	–	–	–	–
June	–	–	$10.51	70.01	–	–	$9.95	66.55
July	9.40	61.04	–	–	–	–	–	–
August	–	–	5.12	59.38	–	–	11.18	77.05
September	–	–	–	–	–	–	–	–
October	0.44	5.26	–	–	$2.00	25.02	–	–
November	2.85	41.83	3.68	51.27	–	–	–	–
December	2.54	39.17	2.38	34.63	–	–	–	–
1986:								
January	1.57	34.07	–	–	–	–	1.34	25.11
February	0.43	8.34	1.88	37.30	0.39	7.49	3.51	46.72
March	2.47	47.85	2.19	43.02	1.63	34.55	2.24	39.02
April	–	–	0.84	20.18	–0.77	–18.87	–	–

1/ Overselling is shown with a negative (–) sign.
2/ Margins are calculated from unrounded weighted-average prices.

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

Table 41.—EPROM's (250 ns) purchased by authorized distributors: Average margins by which imports of Japanese EPROM's undersold or oversold 1/ U.S.-produced EPROM's, 2/ by density and by months, September 1984-April 1986

(Per unit)

Month	64K		128K		256K	
	Amount	Percent	Amount	Percent	Amount	Percent
1984:						
September	$0.61	14.46	$12.68	52.55	-	-
October	0.72	14.76	11.35	49.93	-	-
November	0.06	1.37	12.70	53.84	-	-
December	-1.58	-67.64	11.57	50.26	-	-
1985:						
January	1.06	26.89	0.64	7.31	$-2.83	-24.52
February	0.72	23.70	-1.50	-23.40	-2.42	-21.19
March	0.09	3.85	0.80	14.38	-1.45	-14.33
April	-0.64	-40.30	-0.98	-29.90	-2.94	-40.62
May	-0.98	-71.73	-2.04	-111.29	-6.96	-144.07
June	-0.64	-46.89	-1.66	-85.22	-7.56	-171.06
July	-1.63	-125.28	-0.56	-33.46	-2.59	-57.81
August	-1.17	-175.42	-1.47	-103.99	-3.41	-88.03
September	-0.88	-93.29	-0.83	-56.57	-6.77	-251.93
October	0.24	11.55	-1.21	-93.76	-3.83	-173.50
November	-0.18	-12.27	-0.46	-24.44	-2.61	-92.97
December	0.41	22.01	-0.41	-24.90	-1.75	-65.49
1986:						
January	-0.43	-34.78	-0.40	-23.09	-2.20	-74.29
February	-0.47	-39.91	-1.48	-85.58	-0.57	-18.88
March	-0.07	-4.92	-0.67	-37.76	-1.43	-45.07
April	-0.21	-6.89	0.07	2.44	-1.15	-35.81

1/ Overselling is shown with a negative (-) sign.
2/ Margins are calculated from unrounded weighted-average prices.

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

128K EPROM's purchased by authorized distributors.--Twenty comparisons of weighted-average net purchase prices were possible for these products. Seven comparisons showed Japanese EPROM's underselling the domestic product by margins that ranged from 2.4 to 53.8 percent, or from $0.07 to $12.70 per unit (table 41). The 13 instances of overselling revealed margins that ranged from 23.1 to 111.3 percent, or from $0.40 to $2.04 per unit.

256K EPROM's purchased by authorized distributors.--Price data enabled 16 comparisons of monthly weighted-average net purchase prices for these EPROM's. In all 16 comparisons, imported EPROM's from Japan oversold the domestic product, by margins that ranged from 14.3 to 251.9 percent, or from $1.45 to $6.77 (table 41).

64K EPROM's purchased by independent distributors --Ten monthly comparisons of weighted-average purchase prices reported by this class of customer were possible. Three comparisons showed * * * by the Japanese product and * * * instance revealed * * *. Margins of * * * ranged from *** to *** percent or from $*** to $*** per unit (table 42). Japanese 64K EPROM's * * * the domestic product in *** instances, by margins that ranged from *** to *** percent or from $*** to $*** per unit.

128K EPROM's purchased by independent distributors.--A single comparison showed the Japanese EPROM's priced * * * the domestic product by a margin of *** percent or $*** (table 42).

256K EPROM's purchased by independent distributors.--Six of 11 possible comparisons of weighted-average purchase prices showed * * * by Japanese EPROM's. Margins ranged from *** to *** percent or from $*** to $*** per unit (table 42). Margins of * * * ranged from *** to *** percent or from $*** to $*** per unit.

Lost sales

In its questionnaire, the Commission asked domestic producers to provide specific instances of lost sales of EPROM's to competing imports from Japan. In the preliminary investigation, * * * provided *** allegations of such lost sales involving *** different purchasers. In the final investigation, * * * added *** more lost sales allegations involving *** firms. * * * submitted *** alleged lost sales in the preliminary investigation, naming *** purchasers. In the final investigation, * * * reported *** new lost sales allegations involving an equal number of firms. * * * named *** firms involved in as many allegations of lost sales. The Commission staff investigated *** of the allegations received, involving a total of *** different purchasers. These allegations represented a possible sales volume of *** units. 1/

* * * named * * * as the purchaser involved in two alleged lost sales of EPROM's in March 1985. The first involved a purchase of *** * * * EPROM's for

1/ * * * listed *** alleged lost sales by their distributors in competition with imported Japanese EPROM's, but did not provide adequate information for verification.

Table 42.—EPROM's (250ns) purchased by Independent Distributors: Average margins by which imports of Japanese EPROM's undersold or oversold U.S.-produced EPROM's, by density and by months, September 1984-April 1986

* * * * * * *

the * * *; the second involved a purchase of *** * * * EPROM's by * * * office in * * *. * * *, buyer for * * *, confirmed the latter allegation. * * *'s quote of $*** per unit was rejected in favor of a competing Japanese * * * offer price of $*** from * * *. * * * was not successful in tracing the other allegation.

Three alleged lost sales of EPROM's cited * * * as the purchaser of imported Japanese EPROM's in three densities--64K, 128K, and 256K. * * * allegedly rejected * * *'s price quotations of $***, $***, and $***, respectively, for the 3 EPROM densities noted above and accepted Japanese offer prices of $***, $***, and $*** for these respective devices. The alleged quantities were ***, ***, and ***. * * *, commodity purchasing manager for * * *, acknowledged that he had accepted lower-priced offers for Japanese EPROM's but corrected certain quantity and price figures provided by * * *. * * * lists * * * as approved vendors for *** EPROM's. 1/ * * * verified the purchase of *** EPROM's from Japan as alleged, but noted that the Japanese vendor's order was for *** units at $*** per unit. At that same time, U.S. suppliers other than * * * received a purchase order for *** chips at a price of $*** per unit.

The alleged purchase of Japanese *** EPROM's was verified by * * * but again the quantities and prices were corrected. Of the alleged lost sale of *** units, a ***-chip order went to U.S. suppliers other than * * * at a price of $*** per unit. * * * was awarded a contract for *** units. 2/ The price, however, was $*** per unit rather than $*** as alleged. * * * noted that * * * had lost the quantity of volume alleged but would not have known that only part of that volume went to the Japanese vendor.

The alleged lost sale for *** *** EPROM's was also confirmed by * * * but, as in the prior instances, the largest portion (*** units) went to another U.S. supplier at a price of $*** per unit. The balance (*** units) of the order was placed with a Japanese vendor at a price of $***, pending qualification. The approval never materialized. That volume, says * * *, is currently going to * * *.

* * * was cited by * * * in six alleged lost sales of EPROM's to competing imported Japanese product in * * * 1984. Two instances involved *** EPROM's, two were for ***, and two for ***. Domestic quotes of $*** and $*** for quantities of *** and *** *** EPROM's, respectively, were allegedly rejected in favor of competing Japanese offer prices of $*** and $*** for those products. On the *** density, domestic prices of $*** and $*** for two different specification *** products were allegedly rejected and offer prices of $*** for Japanese product were accepted for quantities of *** and *** chips, respectively. Domestic prices of $*** and $*** per unit for sales of *** and *** *** EPROM's were allegedly rejected in favor of Japanese offer prices of $*** and $*** per unit. * * *, an assistant purchasing manager for * * *, stated that * * *. * * *, queried by Commission staff for more specifics, asserts that these negotiations were conducted by * * *.

* * * named * * * as the purchaser involved in three alleged lost sales for * * * EPROM's in * * *. The quantity in each instance was * * * units and

1/ * * *.
2/ * * *.

* * *'s rejected quote was $*** per unit. The allegedly accepted Japanese offer prices were $*** in * * * and $*** in * * * and * * *. * * *, purchasing manager at * * *, checked * * *'s records and offered the following comments. Qualified vendors for *** EPROM's included * * *. * * *'s product used a programming voltage of *** volts, whereas * * * required *** volts. * * *'s access speed was too slow. Neither firm was asked to bid on this umbrella contract for *** units covering scheduled deliveries over one year. At the time of this RFQ, * * * was in the process of changing their die and did not bid. * * * was awarded the entire contract at a price of $*** per chip. * * * may have been a competitor initially, but was not after it was determined that the * * * chip voltage would not meet * * *'s specifications.

* * * identified * * *, a manufacturer of automatic office equipment, in an alleged lost sale for *** *** EPROM's in * * *. * * *'s quote of $*** was allegedly rejected in favor of a Japanese offer price of $*** per unit. * * *, buyer for the firm, confirmed that * * * lost the sale. However, the order was split between * * *. * * * won *** percent of the ***-unit order (*** units), * * * was awarded *** percent (*** units), and *** percent (*** units) went to * * *. The price per chip was $*** from each vendor. * * * emphasized that * * * lost the award in part because its initial quote was "way out of line" with the market. All other bids were at a "clustered price level." Moreover, * * * has cut * * * out of recent bid competitions because during a recent supply shortage * * * broke a contract on price and raised the price on what was a firm, non-negotiable price contract.

* * *, a board stuffer in * * *, was cited by * * * in an alleged lost sales in * * * that involved * * * EPROM's. * * *'s offer price was $*** per unit. * * *, owner of * * *, explained that he had issued a "hard purchaser order" to * * * at that price and had issued a release on part of the order, *** units. At that point, * * * lost the bid on the job that involved those parts. The winning bid went to * * *. * * * believes he won the bid on the parts price side but lost it to * * * on the overall assembled board price. He was not certain as to the EPROM brand used in the winning bid, but said it could have been Japanese.

* * * identified * * *, a board stuffer located in * * *, in an alleged lost sale in * * * that involved *** EPROM's. A domestic quote of $*** allegedly was rejected and a competing bid of $*** was accepted for imported EPROM's from Japan. * * *, buyer for * * *, stated that the allegation was basically correct but incomplete. * * * did place the order for Japanese (* * *) EPROM's. The anticipated production schedule, however, did not materialize. Consequently, no deliveries were made. * * *'s EPROM requirements became short-run, small quantity commitments sourced from independent distributors such as * * * and * * *. These firms were quoting under $*** at that time and were dependable suppliers. * * * stated that during 1985 and into 1986, these firms and many "brokers" were able to sell (EPROM's and DRAM's) at a price lower than the authorized distributors of Japanese brands (e.g. * * * and * * *). According to * * *, board stuffers used these brokers extensively at *** to *** percent savings. "The grey market broker dimension was much larger than people realized", said * * *. Currently the price of 128K EPROM's is $*** to $***, almost the same as for 256K EPROM's.

* * * named * * * in an alleged lost sale in * * * that involved *** *** EPROM's. *** allegedly rejected * * *'s quote of $*** in favor of a $*** offer price for competing Japanese EPROM's. * * *, purchasing manager, checked his records and provided a complete picture of *** EPROM sourcing during * * *. * * * split an order for *** *** EPROM's in January between * * * and * * *. * * * received one-third of the order at a price of $***. * * * offered the EPROM's at $*** and won the balance (*** units) of the order. Later in * * *, * * * won an order for *** *** EPROM's, at $*** for delivery in * * *. Later in * * *, * * * shipped *** units at $***. * * * came back in the picture in * * * at a price of $*** and delivered *** units in * * *. * * * stated that qualified vendors included * * *. Normally, he said, a blanket letter of intent for scheduled deliveries is not used for *** EPROM's. They are ordered in small quantities over a short (1 to 2 months) time span.

* * * identified * * *, a bar code reader and printer systems manufacturer located in * * *, in a lost sales allegation involving a purchase of *** *** EPROM's in * * *. * * *'s quote of $*** was rejected and * * *'s offer price of $*** allegedly was accepted. * * *, purchasing manager, confirmed the facts as alleged. * * *, * * * noted, lists almost all the domestic and Japanese EPROM's as approved brands. In this case, he bought the * * * EPROM's through * * *, a distributor of Japanese brand name EPROM's. His distributor source for domestic brands is * * *, the competing distributor in this instance. Only when placing large quantity orders for EPROM's or DRAM's does * * * buy factory direct.

* * * named the * * * as purchaser in an alleged lost sale of *** *** EPROM's to competing products imported from Japan. * * *, buyer for * * *, confirmed that he had purchased the Japanese EPROM's from * * *. The quantity, however, was cut to *** as demand fell for * * *'s products. The rejected price quote of * * * was $*** as alleged, but the * * * offer price was $*** rather than $*** as * * * believed. * * *'s qualified vendor list on this *** EPROM includes * * *. * * * is in the process of qualifying but at present has not been approved.

* * * was cited by * * * in an alleged lost sale for *** *** EPROM's in * * *. * * * allegedly rejected a domestic quote of $*** and accepted a quote of $*** for Japanese *** EPROM's. * * * is a circuit-board manufacturer under subcontract and also offers total parts procurement. * * *, purchasing agent, confirmed buying the Japanese EPROM's. The order went to a distributor for * * * and * * *, * * *. The RFQ went out to four or five distributors. The *** unit award was for a 12-month contract with month-to-month deliveries. The accepted price was $*** as alleged.

* * * cited * * *, a * * * located in * * *, in another alleged lost sale for *** *** EPROM's in * * * and a sale of *** *** EPROM's in * * *. Domestic offer prices of $*** and $*** were rejected in favor of Japanese product offered at respective prices of $*** and $*** per unit. * * *, executive of the firm, recalls the inquiry and the offer prices, but stated that no awards were made by * * * for domestic or Japanese EPROM's. * * * is a subsidiary of * * *, a * * * manufacturer. The inquiry was made for the parent firm. U.S. prices offered by domestic and Japanese vendors were not competitive with European vendor prices. Consequently, no orders were placed.

* * *, a large distributor of * * * products was named in five allegations involving lost sales in * * * that totaled $*** in value and spanned EPROM densities from *** to ***. These were instances in which * * * faced competing offer prices from distributors of Japanese EPROM's or from Japanese vendors quoting direct. Price levels were as follows: ***—domestic price of $*** vs. import price of $***; ***—domestic price of $*** vs. import price of $***; ***—domestic price of $*** vs. import price of $***; and ***—domestic price of $*** vs. import price of $***.

* * *, vice president for semiconductor sales checked the firm's records and reported that without more explicit facts, he could not trace the five alleged lost sales to one of the firm's *** U.S. locations. * * * did affirm that the level of alleged prices fits the market experience of * * * in facing competition from Japanese EPROM's in each of the cited densities.

* * * identified * * *, a laser printer manufacturer located in * * *, in two instances of alleged lost sales. One, in * * *, involved an order for *** *** EPROM's. A domestic quote of $*** was allegedly rejected in favor of an offer price of $*** for competing Japanese product. Another allegation involved an order for *** *** EPROM's in * * *. A Japanese offer price of $*** won out against a domestic quote of $***. * * *, purchasing manager, confirmed the facts as alleged. The order for *** EPROM's was awarded to * * *; the award went to * * * for the *** EPROM's. The contract was for scheduled delivery over a one-year period. 1/

* * * also named * * * in an alleged lost sale for *** *** EPROM's in * * *. A quote of $*** by * * * allegedly was rejected in favor of a competing offer price of $*** for imported Japanese EPROM's. * * * acknowledged giving the order to * * *. During this time period he said that * * *, * * *, and * * * were very aggressive in their price quotes. Later, * * * came back with a price increase which * * * argued was because of the duties imposed by the Department of Commerce and the U.S. International Trade Commission. * * * could not accept this and switched sources to * * * (a * * * brand) at a price close to $*** per unit. * * *'s EPROM's were fully qualified by * * * and the vendor is locked into a contract for monthly deliveries at that price through * * *.

* * * identified * * *, * * * that produces modular printer/entry systems, in two instances of alleged lost sales for *** EPROM's, both in * * *. Each allegation involved a quantity of *** EPROM's. * * * allegedly rejected the respective $*** and $*** per unit price quotes by * * * in favor of an offer price of $*** per unit, in each instance, for imported Japanese *** EPROM's. * * *, buyer for * * *, stated that approved vendors for EPROM's included * * *. * * * added that at times other, non-qualified vendors quoted. A qualification process, * * * said, can take 2 to 3 weeks or as long as 2 to 3 months. When product availability is a problem, the process is speeded up. * * * was unable to confirm or deny the allegations.

1/ Fifty-three RFQ's were received by * * * in response to these inquiries. Both distributors and producers, as well as importers, responded with offer prices.

* * * named * * * in an alleged lost sale that involved *** EPROM's purchased in * * *. * * * allegedly rejected the * * * quote of $*** per unit in favor of an offer price of *** cents per device for competing Japanese brand EPROM's. * * *, owner of the firm, stated that * * * is an independent distributor that sources "from inventory surplus, wherever". He added that he has bought EPROM's at prices ranging from *** cents to $*** and named * * * as an example of an * * * source. * * * also sources EPROM's through other "brokers", i.e. independent distributors such as * * *. As for the * * * allegation, * * * recalled that he had done some business on EPROM's with * * * beginning in * * * with a ***-unit order for *** EPROM's and a similar purchase in * * *. The price was $***. At year-end and during the first quarter of 1986, * * * was buying Japanese EPROM's in the $*** to $*** range. He recalled that * * * wanted $*** per device so he "turned away from * * *" as a source.

* * *, an * * * making * * *, was cited by * * * in an alleged lost sale in * * *. * * * allegedly rejected the * * * quote of $*** in favor of a competing offer price for Japanese *** EPROM's. The alleged order was for *** units. * * *, buyer for * * *, denied the allegation. Although * * * was the sole source for *** EPROM's, * * * stated that * * * was disqualified as an approved source for *** EPROM's. Qualified brands included * * *. Five companies bid for the * * *: * * * ($***); * * * ($***); * * * ($***); * * * ($***); and * * * ($***). The business, *** pieces, went to * * * for * * * delivery. * * * emphasized that the * * * product voltage was *** volts but the bid requirement was for ***-volt EPROM's.

* * * cited * * * in two alleged lost sales for *** EPROM's in * * * that involved * * *. * * * alleged that * * * rejected it's quote of $*** per device on each order in favor of a competing Japanese bid of $***. * * *, director of purchasing for * * *, challenged the allegation. His record showed that * * * won two contracts for *** EPROM's, one on * * *, for *** units, and another on * * *, for *** units. According to * * *, * * * did not lower its price and received $*** per device on *** shipments that totaled *** units through * * *. * * * explained that he calls approved sources for verbal quotes on semiconductor requirements that amount to a total expenditure of $*** or less. For orders above that limit, he sends a written RFQ (request for quote) based on a delivery requirement set by the production planning people. Qualified EPROM brands include * * *. "All of them want the business," said * * *, noting that he also had placed an order for *** *** EPROM's with * * * in * * *.

* * * also listed * * * in two * * * lost sale allegations. One involved an order for *** *** EPROM's and the other an order for *** *** EPROM's. * * * allegedly rejected * * *'s bid of $*** on the *** order in favor of a $*** quote for Japanese EPROM's and rejected a $*** * * * offer price on the *** EPROM's, accepting instead a quote of $*** per device for Japanese product. * * *, corporate contract administrator, checked * * *'s records as to these instances. * * * explained that both * * * and * * * had responded to an RFQ on a projected need for *** *** EPROM's in * * *. * * *, * * * emphasized, "writes share-of-business contracts." In percentage terms, * * * recalled, * * * and * * * together had roughly one-half the firm's overall EPROM business; * * * had the balance. Approved vendors know that "share of business" is a * * * sourcing policy. * * *, however, in these cases, did not

know that reduced requirements by * * * impacted on the "projected" volume requirements. * * * believes that the cuts in quantity required by * * * plus a company-wide policy of "living off inventory" at that time may have appeared to * * * as lost sales. In the *** instance, * * * and * * * shared in the volume required by * * *, each at a price of $*** per unit. The * * * purchaser questionnaire shows, however, that * * * received more than twice the EPROM sales volume that * * * had during * * * 1986. During that same time period, * * * lost its position as * * *'s major supplier of *** EPROM's to * * * and its share fell to a token level, even below that of * * *, who had shared in the *** * * * requirements beginning in * * *. The questionnaire confirms the * * * price of $*** for * * * deliveries, but the $*** price alleged to be Japanese was, in fact, the * * * price. * * *, however, undersold both * * * and * * * at $*** per chip. During this period, * * *'s share of * * *'s *** EPROM requirements was *** percent, * * *'s was *** percent and * * *'s was *** percent.

* * * identified * * *, * * * that manufactures * * *, in two alleged lost sales. One allegedly occurred in * * * and the other in * * *. The first instance involved a possible order for *** *** EPROM's and the second a bid to supply *** *** EPROM's. * * * allegedly opted to purchase Japanese *** EPROM's offered at $*** per device rather then the * * * product quoted at $*** per chip and rejected the * * * price of $*** for the *** EPROM in favor of the Japanese offer price of $***. * * *, purchasing manager for the firm, stated that * * * buys principally through *** or *** distributors. He explained that * * *'s overall semiconductor volume gives him leverage in sourcing all of his purchases through distributors. As for the alleged lost sales, he recalled that although * * *, * * *, * * *, and * * * were qualified brands for *** EPROM's, * * * had not made any shipment on the open purchase order since * * *. Changes in sourcing patterns with respect to densities had limited the scheduled deliveries to a total of *** pieces. * * *, he believed, mistook the lack of any releases as an indication of a lost sale. * * * did acknowledge the purchase of *** EPROM's from Japanese sources. An order for *** * * * devices was placed with * * * at a price of $*** per unit and another order for *** units was split between * * * and * * * and was purchased through * * *. * * * and * * * were both qualified brands but did not obtain any of this volume.

* * * named * * * in two alleged instances of lost sales for *** EPROM's, one in * * * and another in * * *. The first involved a volume of *** pieces and the second a quantity of ***. * * * allegedly rejected * * *'s quote of $*** for * * * delivery in favor of an offer price of $*** for competing chips imported from Japan. * * *'s questionnaire data reveals that this allegation is accurate in part but inaccurate in certain respects. * * * did ship *** pieces in * * * at a price of $*** per unit. * * * did not share in the volume until * * *, when it supplied *** units at $*** per device. * * * supplied *** *** EPROM's in * * *, but retained this share by reducing its price to $*** per unit. In * * *, * * * matched the * * * price of $*** and supplied *** units compared to *** pieces sourced from * * *. These data indicate that rather than characterizing this series of transactions as a lost sale it reflects a combination of lost volume and lost revenue.

The second alleged lost sale is substantiated by * * *'s questionnaire data. * * *'s offer price of $*** for *** units was rejected in favor of

* * *, who quoted a price of $*** per device. * * * was awarded an order shipped in * * * for *** pieces at $*** and an order, also shipped in * * *, for *** pieces at a price of $*** per device. Through * * *, the balance of the anticipated total of *** pieces was not shipped by * * *. * * * did not supply any *** EPROM volume to * * * during the period * * *.

Lost revenue

Domestic producers were requested to provide specific instances in which they had to reduce prices in order to avoid losing sales of EPROM's to competing products imported from Japan. * * * provided *** instances of alleged lost revenue involving *** different purchasers in the preliminary investigation. In the final investigation, * * * added *** more lost revenue allegations. In *** of these allegations (involving five firms) the data were adequate to warrant verification efforts by the staff. * * * listed *** allegations in the preliminary investigation naming *** different purchasers. * * * provided *** new allegations in the final investigation, involving *** firms. * * * submitted * * * allegations involving an equal number of firms. The Commission staff investigated *** of the allegations, which involved *** purchasers. 1/

* * * named * * * in two instances of alleged lost revenue in * * *. The first was a domestic quote of $*** for an order of *** *** EPROM's. The accepted quote was $***, a price offered in meeting Japanese product competition. A second instance was a quote of $*** revised to $*** for an order of * * * *** EPROM's, again to meet competing Japanese offer prices. * * *, buyer for * * *, was unable to find records of these orders. * * * was requested to provide more specifics on these allegations. * * *'s marketing personnel stated that both of these instances were for EPROM's to be used in * * * and were contracts negotiated by * * *'s central procurement office. There was an error in the specified product description. At that time, the contract was still pending on the *** EPROM's but there was an award of *** units to * * * for the *** product with a ***-unit award to a Japanese competitor according to * * *. * * * has not responded to the second staff inquiry.

* * * named * * * as the purchaser in four instances of alleged lost revenue on EPROM sales in * * *. Two allegations involved *** EPROM's in quantities of *** and *** chips and initial prices of $*** and $***, respectively, that were reduced to $*** and $*** to meet lower-priced Japanese offers. Two other allegations were for orders of *** and *** units. The initial rejected quotes were $*** and $***, respectively, reduced to $*** and $*** per unit in the face of lower offer prices for Japanese EPROM's. * * *, coordinator of * * *'s response to this investigation, checked with * * *'s buyers and confirmed the prices and quantities almost exactly as alleged. However, only two firms, * * * and * * *, are approved vendors for these products according to * * *. * * * had no Japanese quotes on these products but was aware of the general market prices, which included the competitive presence of Japanese vendors.

1/ * * *.

* * * was named by * * * as the purchaser in *** instances of alleged lost revenue. The densities, quantities, and prices are shown in the following tabulation:

EPROM density	Quantity	Initial rejected quote	Accepted quote
	Units	Per unit	Per unit
* * * *	*	*	*

1/ Allegation submitted in response to the final investigation questionnaire.

* * *, manager of purchasing, checked his records and confirmed the facts in the first seven allegations (which were made in the preliminary investigation) as alleged. Qualified vendors approved by * * * include * * *. The contracts for these EPROM's are for calendar year 1986, with "downward price negotiation" at * * *'s option. * * * viewed the market as soft, noting that some * * * production sources also bought on the spot market when they needed to fill out a production requirement. This total quantity of sales amounted to lost revenue of about $***.

In the final investigation, * * * again cited * * * as involved in 3 alleged instances of lost revenue. * * * corroborated the facts almost as submitted. * * * and * * * were * * *'s competitors for the *** EPROM order, with respective offer prices of $*** and $***. * * * was the competing source for the *** EPROM order with an offer price half that of * * *'s initial quote. As for the ***, the facts were correct except that the price competition came from * * *, not the Japanese brands. Moreover, * * * recalled that he did split the volume on the *** and *** EPROM's between * * * and * * *. * * * and * * * shared the *** volume requirement. Recently, * * * added, * * * has raised its price on *** EPROM's to $*** (a reaction to U.S. International Trade Commission and Department of Commerce activity), compared with the going price of $*** from * * *.

* * * was cited by * * * in an instance of alleged lost revenue in * * *. This involved an initial quote of $*** per unit on an order for *** *** EPROM's and an accepted quote of $*** to meet Japanese product competition. * * *, buyer for the firm, confirmed the facts as alleged. * * * does not have a formal qualified vendor list, but receives samples from firms who quote prices on EPROM's, then asks their engineering division to pass on the specifications of the generic product. * * * has purchased *** EPROM's only from * * * and * * *, but has used Japanese prices as leverage to negotiate lower prices from domestic vendors.

* * *, a manufacturer of * * *, was identified by * * * in an instance of alleged lost revenue in * * *. The order was for *** *** EPROM's and the initial offer price of $*** allegedly was negotiated down to $*** to meet competition from Japanese product. * * *, buyer for * * *, acknowledged the price reduction in the face of competing Japanese EPROM's, but noted that the order was placed for ***. The qualified vendors approved by * * * include * * *. * * * normally orders quarterly for scheduled delivery to production run rates. The firm has just began to use *** and *** EPROM's.

* * * was named by * * * in *** alleged instances of lost revenue. The densities, quantities, and prices are shown by quote date in the following tabulation:

Quote date	EPROM density	Quantity	Initial rejected quote	Accepted quote
		Units	Per unit	Per unit
* * *	*	*	*	*

1/ Allegation submitted in response to the final investigation questionnaire.

* * *'s commodity purchasing manager confirmed the allegations with respect to revised prices to meet Japanese competition. He noted, however, that quantities were cut on these "intent to buy contracts," which covered deliveries beginning in * * * and extended * * *. * * * believes that in 1986, supply may be tight on certain EPROM's. The initial contract established benchmark quantities and prices. Prices were negotiated downward quarterly on an incremental basis. Quantities were cut by an estimated 60 percent during the last 12-month period. "Demand for EPROM's had dropped drastically," said * * *. There were some errors in the facts presented by * * * according to * * *. One of the *** EPROM orders was for * * * units at $*** rather than ***; another *** order was for * * * units at $*** rather than ***. The order for *** *** EPROM's at $*** was only *** and the ***-unit order at $*** for *** EPROM's was increased to ***. The *** EPROM order was cut from *** units to *** at $*** per chip. For the five allegations made in the final investigation, * * * noted slight differences in terms of the initial quotes. Although * * * responded to competing Japanese offer prices in these instances, * * * stated that in recent weeks the Korean producers have became a larger threat to the domestic producers. "The Korean offer prices are more aggressive and their tactics more predatory," said * * *. The presence of the ITC investigation has made the Japanese "nervous about quoting aggressive prices." Consequently, * * * price quotes currently are lower than Japanese offer prices for EPROM's.

* * * was named by * * * as the purchaser in seven instances of alleged lost revenue. The quote dates, quantities, and offer prices are shown below:

Quote date	EPROM density	Quantity	Initial rejected quote	Accepted quote
		Units	Per unit	Per unit
* * *	*	*	*	*

* * *, purchasing manager, checked his records and identified the above purchase orders. He confirmed the facts as alleged. As for the Japanese price leadership, * * * noted that in * * *, * * * quoted $*** against an

* * * price of $*** for *** EPROM's. Approved EPROM suppliers for * * * include * * *. * * *, in the * * *, quoted higher prices than * * *. The strongest downward price pressure was from * * *.

* * * cited * * * in three instances of lost revenue, all in * * *. The EPROM densities, quantities, and price quotes are shown below:

EPROM density	Quantity	Initial rejected quote	Accepted quote
	Units	Per unit	Per unit
* * * *	*	*	*

* * *, buyer, traced these purchases in the firm's records and confirmed that * * * had decreased its prices in meeting price competition from Japanese vendors offering lower prices. * * * states that the domestic producers know who their competition is from a qualified supplier list provided to all approved vendors by * * *. Approved suppliers for *** EPROM's include * * *. * * * are on the qualified list for *** EPROM's. * * * also recalled that the initial order for the *** EPROM's was *** units and that in * * * the order was reduced to *** "because of a slowdown in demand." * * * commented on prices, noting that the initial price leaders were the Japanese early in this year, but "today the Japanese and domestic producers are quoting competitive prices."

* * * also listed * * * as a purchaser in two instances of alleged lost revenue in * * *. The first allegation involved a price cut from $*** to $*** on an order for *** *** EPROM's. Another allegation involved an order for *** *** EPROM's and a price cut from $*** to $*** per unit. Both instances allegedly were to meet Japanese competition situations. According to * * *, the firm's purchasing agent, both allegations were accurate reflections of the negotiations and ultimate purchase prices.

* * *, a producer of * * *, was identified by * * * as the purchaser in two instances of alleged lost revenue on sales of *** EPROM's, one in * * * and another in * * *. The first order by * * * was for *** *** EPROM's after * * * allegedly dropped its offer price from $*** to $*** per unit. The second instance involved a sale of * * * *** EPROM's at a price of $***, down from an initial rejected quote of $***. * * *, buyer for the firm, stated that RFQ's were put out for bids to all qualified vendors. Qualified vendors included * * *. * * * awards 6-month contracts to the vendor with the "best price and delivery" offer. * * * has awarded contracts to * * *. The alleged instances reported by * * * were accurate representations of the contract awards. These 6-month contracts for scheduled monthly deliveries were subject to price renegotiation if market prices dropped. In these contracts, * * * "ramped up" its production and took the total quantity in 3 months. Then, * * * put out another RFQ and split that award between * * * and * * *.

* * *, a * * *, was cited by * * * in an example of alleged lost revenue in the sale of *** *** EPROM's in * * *. * * * allegedly reduced its price from $*** to $*** to win the award. * * *, buyer for the firm, checked his records and confirmed the facts as alleged. Qualified vendors approved by the company include * * *. * * * sources from these vendors directly at times and through distributors at other times, depending on the price and the need for quick delivery or the desire not to hold inventory. The subject purchase of * * * EPROM's was made through * * *, a distributor. The distributor channel was preferred because production of the company's * * * fell in 1985 from *** to *** per month. * * * sources about *** percent of his needed supply from domestic vendors and *** percent from Japanese firms.

* * * named * * * in an instance of alleged lost revenue that involved a sale of *** *** EPROM's in * * *. * * * allegedly reduced its offer price from $*** to $*** in order to meet the price quoted for the Japanese product. * * *, a principal in the firm, acknowledged buying the domestic EPROM's through distribution. The * * * product was offered through * * *, an * * *; the competing Japanese EPROM's (* * *) were offered through * * *. * * * added that the distributors' price includes the cost of the "burn-in," i.e. the initial programming of the EPROM. * * * buys its EPROM's through distribution, not factory direct.

Another lost revenue allegation by * * * cited * * *, a manufacturer of * * * located in * * *, as the purchaser of *** *** EPROM's in *** after * * * allegedly reduced its offer price from $*** to less than $*** in the face of a competing price for Japanese EPROM's. * * *, purchasing manager, checked with the buyer and confirmed the purchase of about *** *** EPROM's per month in * * *, * * *, and * * * at prices that ranged from $*** to $*** per unit. The volume, however, did not all go to * * *. It was shared by * * * and * * *. The purchases were made through * * *, * * * for these domestic EPROM brands. In * * *, * * * was one of *** sources, but * * * was dropped as a source in * * * and was replaced by * * *. * * * has not switched to *** EPROM's as yet.

* * * named the * * * as the purchasing firm in four instances of alleged lost revenue during the period * * *. The quote dates, EPROM densities, quantities, and price quotes are shown below.

Quote date	EPROM density	Quantity	Initial rejected quote	Accepted quote
		Units	Per unit	Per unit
* * *	*	*	*	*

* * *, purchasing manager of * * * and * * *, buyer, responded to the ITC inquiry. * * * explained that he asks approved vendors for price quotes on specified quantities of EPROM's based on * * *'s estimated annual EPROM usage. He has the option to renegotiate price in accord with market fluctuations. Although * * * qualifies specific EPROM brands (among the 6 or 7 qualified brands are * * *), he buys through authorized distributors of the

qualified brands, e.g. * * *. The selected distributor ships from stock after receiving authorization for "meet competition" price adjustments from the producer of the winning brand name EPROM. The distributor adds a 15 percent margin to the adjusted factory price. * * * noted that prior to the recent semiconductor agreement with Japan (August 1986) purchase prices for EPROM's had not been renegotiated since March 1986. * * *, * * *'s buyer for EPROM's, indicated that the alleged prices in the above instances seemed accurate. To be certain, * * * agreed to check the purchase records and promised to get back to ITC staff but failed to do so.

* * * cited * * * as purchaser in an instance of lost revenue in * * *. * * * allegedly reduced it's initial offer price from $*** to $*** on the order for *** units in the face of competition from lower priced Japanese EPROM's. * * *, director of purchasing for this * * * firm, acknowledged buying the * * * EPROM's after negotiating the price down to $*** per unit. * * *, however, received only part of the estimated annual requirement for *** EPROM's. * * * explained that, as a matter of multi-source policy, the company divides it's volume requirement among several of the approved vendors. In this instance, * * * received a ***-unit share. * * * won the bulk of the contract, *** units, at a price of $***, and * * * received a purchase order for *** units at a price quote of $***. All three vendors were involved in the annual negotiations in * * *. * * * stated that approved vendors are very aware of * * *'s policy of multi-sourcing and should not view the overall volume requirement as a potential sale that could go to a single vendor. Percentage shares, however, are subject to change based on the annual negotiations.

* * * identified * * * as the purchasing firm in two instances of alleged lost revenue in the sale of *** and *** EPROM's for scheduled delivery in * * *. * * * alleged that, in the face of competing quotes on Japanese EPROM's, it reduced it's initial offer price on *** *** EPROM's from $*** to $*** per unit and it's first quote on almost *** *** EPROM's from $*** to $*** per unit in order to make these sales. * * *, corporate contract administrator for * * *, checked the records and confirmed that * * *'s offer price in * * * for the scheduled delivery of the alleged quantities in * * * was indeed reduced to $*** for the *** order and to $*** for the *** order. * * * noted, however, that an order * * * placed with * * * in * * * for delivery of *** EPROM's in * * * was at a price of $*** per device. Moreover, in * * *, * * * sold *** *** EPROM's to * * * for * * * delivery at a negotiated price of $***, but later boosted the price to $*** per unit. Staff notes that * * *'s questionnaire response shows the presence of competing Japanese EPROM's (* * *) in only two densities, *** and ***.

The questionnaire data also not only confirms the price reductions alleged by * * *, but also reveals that * * *'s prices to * * * for *** and *** EPROM's were below those of both * * * and * * *. For example, in * * *, * * * and * * * brand *** EPROM's were sold to * * * at $*** and $***, respectively, compared with * * *'s prices of $*** and $***. Beginning in * * * and continuing through * * *, * * * priced its *** EPROM's to * * * at $*** per device, compared to lowest prices of $*** and $***, respectively, for * * * and * * * brand EPROM's, shown in * * *.

* * * was named by * * * in an alleged instance of lost revenue that occurred beginning with * * * quotes on an overall EPROM requirement that included an offer price on *** *** EPROM's for delivery in * * *. * * * alleged that * * * rejected an initial quote of $*** per device but accepted a revised quote of $*** offered by * * * in the face of a lower offer price for EPROM's imported from Japan. * * *'s data submitted in its questionnaire supports this allegation. * * *'s price matched a * * * July price of $*** and * * * shipped a total of *** units in * * *. In * * *, * * * reduced its price to $*** to hold volume against * * *, whose price was down to $*** per unit. * * * matched that price in * * * and held a share of the * * * volume, *** pieces compared to * * * ***. * * * offered a price of $*** for * * * delivery compared to * * *'s reduced offer price of $***. * * * supplied *** units and * * * shipped *** in * * *, but * * * became the sole source during the balance of the quarter, shipping *** units, *** of which were priced at $*** each and *** at $*** per unit.

* * * cited * * * in *** alleged instances of lost revenue resulting from price reductions in response to lower priced competition from EPROM's imported from Japan during the period * * *. The quote dates, EPROM densities, quantities, and price quotes are shown below.

Quote date	EPROM density	Quantity	Initial rejected quote	Accepted quote
		Units	Per unit	Per unit
* * *	*	*	*	*

* * *, coordinator for * * * responses to ITC data requests, asked for more specific information as to which * * * facilities were involved in these purchases. * * * identified the * * * facility as the * * * entity in question. * * * was unable to confirm or deny the allegations.

Exchange rates

Table 43 presents indexes of the nominal and real exchange rates between the U.S. dollar and the Japanese yen, by quarters, from January-March 1983 (the base period) through July-September 1986. The real exchange-rate index represents the nominal index adjusted for differences in the relative inflation rates between the United States and Japan. As shown in the table, the nominal value of the Japanese yen depreciated relative to the U.S. dollar by 8.5 percent between January-March 1983 and January-March 1985. The real exchange-rate index shows that the Japanese yen actually depreciated by 11.5 percent during that period. Between January-March 1985 and July-September 1986 the nominal value of the Japanese yen appreciated relative to the U.S. dollar by 65.4 percent, and the real value appreciated by 54.2 percent.

Table 43.--Indexes of nominal and real exchange rates between the U.S. dollar and the Japanese yen, by quarters, January 1983-September 1986

(January-March 1983=100)

Period	Nominal exchange-rate index	Real exchange-rate index
1983:		
January-March	100.0	100.0
April-June	99.2	98.0
July-September	97.2	95.2
October-December	100.6	97.5
1984:		
January-March	102.0	97.9
April-June	102.7	97.9
July-September	96.8	93.1
October-December	95.8	92.2
1985:		
January-March	91.5	88.5
April-June	94.0	90.2
July-September 1/	98.8	94.4
October-December	113.8	105.6
1986:		
January-March	125.4	115.4
April-June	138.6	124.5
July-September	151.3	2/ 136.5

1/ In September 1985 the United States and its major trading partners agreed to intervene in foreign-exchange markets to reduce the value of the dollar.
2/ Projected.

Source: International Monetary Fund, International Financial Statistics, November 1986.

APPENDIX A

FEDERAL REGISTER NOTICES

[Investigation No. 731-TA-288 (Final)]

Erasable Programmable Read Only Memories (EPROM's) From Japan

AGENCY: 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-288 (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 erasable programmable read only memories (EPROM's), provided for in item 687.74 of the Tariff Schedules of the United States, which 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 May 27, 1986 and the Commission will make

its final injury determination by July 14, 1986 (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: March 17, 1986.

FOR FURTHER INFORMATION CONTACT: Judith Zeck (202-523-0339), Office of Investigations, U.S. International Trade Commission, 701 E Street NW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-724-0002.

SUPPLEMENTARY INFORMATION:

Background.—This investigation is being instituted as a result of an affirmative preliminary determination by the Department of Commerce that imports of EPROM's from Japan are being sold in the United States at less than fair value within the meaning of section 731 of the act (19 U.S.C. 1673). The investigation was requested in a petition filed on September 30, 1985, by Intel Corp., Santa Clara, CA; Advanced Micro Devices, Sunnyvale, CA; and National Semiconductor Corp., Santa Clara, CA. 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, or threatened with material injury, by reason of imports of the subject merchandise (50 FR 41230, Oct. 9, 1985).

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 Chairwoman, who will determine whether to accept the late entry for good cause shown by the person desiring to file the entry.

Service list.—Pursuant to § 201.11(d) of the Commission's rules (19 CFR 201.11(d)), the Secretary will prepare a service list containing the names and addresses of all persons, or their representatives, who are parties to 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 May 16, 1986, pursuant to § 207.21 of the Commission's rules (19 CFR 207.21).

Hearing.—The Commission will hold a hearing in connection with this investigation beginning at 10:00 a.m. on June 4, 1986, at the U.S. International Trade Commission Building, 701 E Street NW., 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 May 20, 1986. 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 May 23, 1986, in room 117 of the U.S. International Trade Commission Building. The deadline for filing prehearing briefs is May 29, 1986.

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 201.6(b)(2))).

Written submissions.—All legal arguments, economic analyses, and factual materials relevant to the public hearing should be included in prehearing briefs in accordance with § 207.22 of the Commission's rules (19 CFR 207.22). Posthearing briefs must conform with the provisions of § 207.24 (19 CFR 207.24) and must be submitted not later than the close of business on June 11, 1986. 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 June 11, 1986.

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 treatment 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.

Issued: March 27, 1986.

Kenneth R. Mason,

Secretary.

[FR Doc. 86-7316 Filed 4-1-86; 8:45 am]

BILLING CODE 7020-02-M

[Investigation No. 731-TA-288 (Final)]

Erasable Programmable Read Only Memories (EPROMS) From Japan

AGENCY: International Trade Commission.

ACTION: Revised schedule for the subject investigation.

EFFECTIVE DATE: April 23, 1986.

FOR FURTHER INFORMATION CONTACT: Judith C. Zeck (202-523-0339), Office of Investigations, U.S. International Trade Commission, 701 E Street NW., Washington, DC 20436. Hearing-impaired individuals may obtain information on this matter by contacting the Commission's TDD terminal on 202-724-0002.

SUPPLEMENTARY INFORMATION: On March 17, 1986, the Commission instituted the subject investigation and established a schedule for its conduct (51 FR 11358, Apr. 2, 1986). Subsequently, the Department of Commerce extended the date for its final determination in the investigation from May 27, 1986 to July 30, 1986. The Commission, therefore is revising its schedule in the investigation to conform with Commerce's new schedule.

The Commission's new schedule for the investigation is as follows: requests to appear at the hearing must be filed with the Secretary to the Commission not later than July 23, 1986; the prehearing conference will be held in room 117 of the U.S. International Trade Commission Building at 9:30 a.m. on July 25, 1986; the public version of the prehearing staff report will be placed on the public record on July 18, 1986; the

deadline for filing prehearing briefs is August 1, 1986; the hearing will be held in room 331 of the U.S. International Trade Commission Building on August 5, 1986; and the deadline for filing all other written submissions, including posthearing briefs, is August 14, 1986.

For further information concerning this investigation see the Commission's notice of investigation cited above and 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).

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).

Issued: April 28, 1986.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 86-10237 Filed 5-6-86; 8:45 am]

BILLING CODE 7020-02-M

Federal Register / Vol. 51, No. 151 / Wednesday, August 6, 1986 / Notices 28253

International Trade Administration

[A-588-504]

Erasable Programmable Read Only Memory Semiconductors From Japan; Suspension of Investigation

AGENCY: International Trade Administration, Import Administration, Department of Commerce.

ACTION: Notice.

SUMMARY: The Department of Commerce has decided to suspend the antidumping investigation involving erasable programmable read only memory semiconductors from Japan. The basis for the suspension is an agreement by the Japanese producers/exporters which account for sustantially all of the known imports of these products from Japan, to revise their prices to eliminate sales of this merchandise to the United States at less than fair value.

EFFECTIVE DATE: August 1, 1986.

FOR FURTHER INFORMATION CONTACT: David Mueller, Office of Compliance, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th and Constitution Avenue NW., Washington, DC 20230; telephone: (202) 377-2923.

SUPPLEMENTARY INFORMATION:

Case History

On September 30, 1985, we received a petition from Intel Corporation, Advanced Micro Devices, Inc., and National Semiconductor Corporation on behalf of the domestic manufacturers of EPROMs. In compliance with the filing requirements of § 353.36 of the Commerce Regulations (19 CFR 353.36), the petition alleged that imports of EPROMs from Japan are being, or are likely to be, sold in the United States at less than fair value within the meaning of section 731 of the Act, and that these imports are materially injuring, or are threatening material injury to, a United States industry. The petition also alleged that sales of the subject merchandise were being made at less than the cost of production. After reviewing the petition, we determined that it contained sufficient grounds upon which to initiate an antidumping duty investigation. We notified the ITC of our action and initiated such an investigation on October 21, 1985 (50 FR 43603, October 28, 1985). On November 14, 1985, the ITC determined that there is reasonable indication that imports of EPROMs from Japan are materially injuring, or are threatening material injury to, a U.S. industry (50 FR 47852, November 20, 1985).

On December 2, 1985, we presented antidumping duty questionnaires to Hitachi Ltd. (Hitachi), Fujitsu Limited (Fujitsu), Toshiba Corporation (Toshiba), and NEC Corporation (NEC). Respondents were requested to answer the questionnaire in 30 days. However, at the requests of Hitachi, Fujitsu, Toshiba, and the Japanese Ministry of International Trade and Industry (MITI), we granted an extension to January 17, 1986. On January 17, 1986, we received incomplete responses from Hitachi, Fujitsu, and Toshiba, and a letter from NEC stating that it would not respond to our questionnaire. In letters dated February 3, 1986, the Department requested supplemental information from Hitachi, Fujitsu, and Toshiba. Additional information was submitted by these respondents on February 18, 1986.

On March 17, 1986, we published a preliminary determination that EPROMs from Japan were being sold at less than fair value in the United States (51 FR 9087).

After the preliminary determination, Hitachi, Fujitsu, and Toshiba requested an extension of the final determination date. These respondents were qualified to make such a request since they accounted for more than 90 percent of exports of the merchandise to the Untied States. If exporters who account for a significant proportion of exports of the merchandise under investigation properly request an extension after an affirmative preliminary determination, we are required, absent compelling reasons to the contrary, to grant the request. Accordingly, we granted the requests and postponed our final determination until July 30, 1986 (51 FR 15519, April 24, 1986).

Between March 10 and April 18, and between June 10 and June 12, 1986, we conducted our verification procedures of the information provided by these respondents at their facilities in Japan and the United States. On May 27, 1986, we held a hearing to provide all interested parties with an opportunity to comment on the investigation.

Products Under Investigation

The products covered by this investigation are erasable programmable read only memories (EPROMs), which are a type of memory integrated circuit that is manufactured using variations of Metal Oxide-Semiconductor (MOS) process technology, including both Complementary (CMOS) and N-Channel (NMOS). The products include processed wafers, dice and assembled EPROMS produced in Japan and imported into the United States from Japan.

Finished EPROMs are currently provided for in the Tariff Schedules of the United States Annotated (TSUSA) under item 687.7445. Unassembled EPROMs, including unmounted chips, wafers, and dice, are provided for under TSUSA item 687.7405.

In the notice of initiation in this case, we tentatively included in the scope of this investigation processed wafers and dice produced in Japan and assembled into finished EPROMs in another

country prior to importation into the United States from the other country. Although none of the respondents reported sales of EPROMS assembled in third countries from Japanese manufactured dice during the period of investigation, we now have information from the United States Customs Service that imports of such merchandise are occurring. Based on the information available to us we are determining that EPROMs assembled in third countries using wafers or dice processed in Japan are included within the scope of the investigation. We have also determined that a variant of EPROMs, OTPs (One-Time-Programmable read only memories) are included in the scope of the investigation. For both third country assembled EPROMs and OTPs, we have been guided by the fact that the processed dice contains all the essential electronic properties which distinguish EPROMs as a separate class of good from other semiconductors.

Suspension of the Investigation

The Department consulted with the parties to the proceeding and has considered the comments submitted with respect to the proposed suspension agreement. We have determined that the agreement will eliminate sales of this merchandise to the United States at less than fair value, that the agreement can be monitored effectively, and that the agreement is in the public interest. We find, therefore, that the criteria for suspension of an investigation pursuant to section 734 of the Act have been met. The terms and conditions of the agreement, signed July 30, 1986, are set forth in Annex 1 to this notice.

Pursuant to section 734(f)(2)(A) of the Act, the suspension of liquidation of all entries, entered or withdrawn from warehouse, for consumption of EPROMs from Japan effective March 19, 1986, as directed in our notice of "Antidumping Preliminary Determination of Sales at Less than Fair Value, Erasable Programmable Read Only Memory Semiconductors from Japan" is hereby terminated. Any cash deposits on entries of EPROMs from Japan pursuant to that suspension of liquidation shall be refunded and any bonds shall be released.

The Department intends to conduct an administrative review within twelve months of the anniversary date of the publication of this suspension agreement as provided in section 751 of the Act.

Notwithstanding the suspension agreement, the Department will continue the investigation if we receive such a request in accordance with section 734(g) of the Act within 20 days after the date of publication of this notice. This notice is published pursuant to section 734(f)(1)(A) of the Act.

Gilbert B. Kaplan,

Deputy Assistant Secretary for Import Administration.

Annex 1: Suspension Agreement—Erasable Programmable Read Only Memory Semiconductors From Japan

Under section 734 of the Tariff Act of 1930, as amended (19 U.S.C. 1673c) ("the Act"), and Part 353 of title 19 U.S. Code of Federal Regulations (19 CFR Part 353.42) ("the regulations"), the U.S. Department of Commerce ("the Department"), and the signatory producers/exporters of erasable programmable read only memory semiconductors from Japan enter into this suspension agreement ("the Agreement"). On the basis of this suspension agreement, the Department shall suspend its antidumping investigation initiated on October 28, 1985, (50 FR 43603) with respect to erasable programmable read only memory semiconductors from Japan, subject to the terms and provisions set out below.

A. *Product Coverage.* The merchandise subject to this Agreement is the following merchandise of Japanese origin:

(1) Erasable programmable read only memory semiconductors ("EPROMs"), whether in the form of processed wafers, unmounted die, mounted die, or assembled devices however packaged (ceramic, plastic, or other), and other merchandise of the same class or kind ("merchandise subject to this Agreement").

(2) Processed wafers and dice produced in Japan and assembled into finished EPROMs, or other merchandise of the same class or kind, in another country prior to importation into the United States.

Finished EPROMs are currently classifiable under item 687.7445 of the Tariff Schedules of the Unitd States Annotated. Unassembled EPROMs, including processed wafers and mounted and unmounted die, are currently classifiable under item 687.7405 of the Tariff Schedules of the United States Annotated.

B. *U.S. Import Coverage.* The signatory producers/exporters collectively are the producers and exporters in Japan which, during the antidumping investigation on the merchandise subject to this Agreement, accounted for substantially all (not less than 85 percent) of the merchandise imported into the United States, as provided in the regulations. The Department may at any time during the period of this Agreement require additional producers/exporters in Japan to sign this Agreement in order to ensure that not less than substantially all imports into the United States are covered by this Agreement.

In reviewing the operation of this Agreement for the purpose of determining whether this Agreement has been violated or is no longer in the public interest, the Department will consider imports into the United States from all sources of the merchandise described in Section A of this Agreement. For this purpose, the Department will consider factors including, but not limited to, the following: volume of trade, pattern of trade, whether or not the reseller is an original equipment manufacturer, and the reseller's purchase price.

C. *Basis of the Agreement.* On and after the effective date of this Agreement, each signatory producer/exporter individually agrees to make any necessary price revisions to eliminate completely any amount by which the foreign market value of its merchandise exceeds the United States price of its merchandise subject to this Agreement. For this purpose, the Department will determine the foreign market values in accordance with section 773(e) of the Act, and the U.S. prices in accordance with section 772 of the Act. In calculating foreign market value, the Department may also consider, to the extent it deems appropriate, information submitted by producers/exporters regarding projected differences in production costs within the quarter in which the information is submitted, resulting from factors such as anmticipated changes in production yield, changes in production process (e.g. die and/or wafer size), changes in production quantities or changes in production facilities.

(1) For all sales occurring between the effective date of this Agreement and October 15, 1986, each signatory producer/exporter agrees not to sell its merchandise subject to this Agreement to unrelated purchasers in the United States at prices that are less than its foreign market value, as determined by the Department on the basis of information obtained during the course of the antidumping investigation and provided to parties not later than July 20, 1986.

(2) For all sales occurring between October 16, 1986 and December 31, 1986, each signatory producer/exporter agrees not to sell its merchandise subject to this Agreement to any unrelated purchaser in the United States at prices that are less than its foreign market

value of the merchandise, as determined by the Department of the basis of information submitted to the Department not later than August 20, 1986 and provided to parties not later than October 11, 1986.

(3) For all sales occurring after December 31, 1986, each signatory producer/exporter agrees not to sell its merchandise subject to this Agreement to any unrelated purchaser in the United States at prices that are less than its foreign market value of the merchandise, as determined by the Department of the basis of information submitted to the Department not later than the dates specified in section D of this Agreement and provided to parties not later than December 20, March 20, June 20, and September 20 of each year. This foreign market value shall apply to sales occurring during the calendar quarter beginning on the first day of the month following the date the Department provides the foreign market value, as stated in this paragraph.

D. *Monitoring.* Each signatory producer/exporter will supply to the Department all information that the Department decides is necessary to ensure that the producer/exporter is in full compliance with the terms of this Agreement. As explained below, the Department will provide each signatory producer/exporter a detailed request for information and prescribe a required format and method of data compilation, not later than the beginning of each reporting period.

(1) *Sales Information.* The Department will require each producer/exporter to report, on computer tape in the prescribed format and using the prescribed method of data compilation, each sale of the merchandise subject to this Agreement, either directly or indirectly to unrelated purchasers in the United States, including each adjustment applicable to each sale, as specified by the Department.

The first report on sales data shall be submitted to the Department, on computer tape in the prescribed format and using the prescribed method of data compilation, not later than October 31, 1986 and shall contain the specified sales information covering the period July 1 to September 30, 1986. Subsequent reports of sales data shall be submitted to the Department not later than January 31, April 30, July 31, and October 31 of each year and each report shall contain the specified sales information for the quarter ending one month prior to the due date, except that if the Department receives information that a possible violation of the Agreement may have occurred, the Department may request sales data on a monthly, rather than quarterly basis.

(2) *Cost Information.* The Department will require Fujitsu, Hitachi and Toshiba (the respondents in the original investigation) to report their actual cost of production and profit data on a quarterly basis, in the prescribed format and using the prescribed method of data compilation. Each such producer/exporter also must report anticipated increases in production costs and may report anticipated decreases in production costs in the quarter in which the information is submitted resulting from factors such as anticipated changes in production yield, changes in production process (e.g., die and/or wafer size), changes in production quantities or changes in production facilities. Each report shall be submitted to the Department not later than January 31, April 30, July 31, and October 31 of each year and each report shall contain specified information for the quarter ending one month prior to the due date.

(3) *Special Adjustment of Foreign Market Value.* If the Department determines that the foreign market value it determined for a previous quarter was erroneous because the reported costs for that period were inaccurate or incomplete, or for any other reason, the Department may adjust foreign market value in a subsequent period or periods, unless the Department determines that Section G of this Agreement applies.

(4) *Verification.* Each producer/exporter agrees to permit full verification of all cost and sales information semi-annually, or more frequently, as the Department deems necessary.

(5) *Rejection of Submissions.* The Department may reject any information submitted after the deadlines set forth in this section or any information which it is unable to verify to its satisfaction. If information is not submitted in a complete and timely fashion or is not fully verifiable, the Department may calculate foreign market value and/or U.S. price based on best information available, as it determines appropriate, unless the Department determines that section G applies.

E. *Disclosure and Comment.* (1) The Department may make available to representatives of each domestic party to the proceeding, under appropriately drawn administrative protective orders, business proprietary information submitted to the Department during each quarter as well as the results of its calculations of foreign market value.

(2) Not later than September 20, 1986, and March 1, June 1, September 1, and December 1 of each year, the Department will disclose to each producer/exporter the results and the methodology of the Department's calculations of its foreign market value. At that time, the Department may also make available such information to the domestic parties to the proceeding, in accordance with paragraph E(1).

(3) Not later than seven days after the date of disclosure under paragraph E(2), the parties to the proceeding may submit written comments to the Department, not to exceed 10 pages. After reviewing these submissions, the Department will provide to each producer/exporter its foreign market value as provided in paragraph C(3). In addition, the Department may provide such information to domestic interested parties as specified in paragraph E(1).

(4) Once during each year of this Agreement, the Department shall provide an opportunity for each party to the proceeding to request a hearing on issues raised during the proceeding. If such a hearing is requested, it will be conducted in accordance with section 751 of the Act (19 U.S.C. section 1675), and applicable regulations.

F. *Signatories.* To the extent administratively feasible, the Department will calculate foreign market values based on cost data that may be submitted by any signatory producer/exporter not required to submit such data under paragraph D(2). To the extent such calculations are not administratively feasible, such producers/exporters may be assigned a foreign market value for each applicable product which is the weighted-average foreign market value of those companies for which specific foreign market values have been calculated.

G. *Violations of the Agreement.* If the Department determines that this Agreement is being or has been violated or no longer meets the requirements of section 734 (b) or (d) of the Act, the Department shall take action it determines appropriate under section 734(i) of the Act and the regulations.

H. *Other Provisions.* In entering into this Agreement, the signatory producers/exporters do not admit that any sales of the merchandise subject to this Agreement have been made at less than fair value. a-8

I. *Termination.* Absent likelihood of dumping, the Department of Commerce expects to terminate this suspended investigation in August, 1991.

J. *Definitions.* For purposes of this Agreement, the following definitions apply:

1. U.S. Price—means the price at which merchandise is sold by the producer or exporter to the first unrelated party in the United States, including the amount of any discounts, rebates, price protection or ship and debit adjustments, and other adjustments affecting the net amount paid or to be paid by the unrelated purchaser, as determined by the Department under section 772 of the Act.

2. Foreign Market Value—means the constructed value of the merchandise, as determined by the Department under section 773(e) of the Act. In calculating foreign market value, the Department may also consider, to the extent it deems appropriate, information submited by producers/exporters regarding projected differences in production costs in the quarter in which the information is submitted resulting from factors such as anticipated changes in production yield, changes in production process (e.g. die and/or wafer size), changes in production quantities or changes in production facilities.

3. Producer/Exporter—means (1) the foreign manufacturer or prooducer, (2) the foreign producer or reseller which also exports, and (3) the related person by whom or for whose account the merchandise is imported into the United States, as defined in section 771(13) of the Act.

4. Date of Sale—(A) For contracts entered into prior to June 3, 1986 the date of sale is the date on which the essential terms of the contract, including price, quantity, and other terms of sale are agreed and determined, normally the date of confirmation of sale. All such contracts will be reviewed by the Department to determine if these criteria are met.

(B) For contracts entered into during the period June 30, 1986 through July 30, 1986, the date of sale is the date of shipment.

(C) For contracts entered into subsequent to July 30, 1986, the date of sale is the date on which the essential terms of the contract, including price, are agreed and determinable, normally the date of confirmation of sale.

The effective date of this Agreement is the July 30, 1986.

Signed on this 30th day of July, 1986.

For Japanese producers/exporters.

Mark W. Herlach,
NEC Corporation.
Carl W. Schwarz (See letter dated 7/30/86),
Hitachi, Ltd.
Warren E. Connelly/L. Daniel O'neil,
Fujitsu, Ltd.
Thomas P. Ondeck,
Mitsubishi Electric Corp.
David P. Houlihan,
Toshiba Corp.
John D. Greenwald (See letter of 7/30/86),
Oki Electric Industry Co., Ltd.
Thomas F. Cullen Jr.,
Texas Instruments, Japan.

For U.S. Department of Commerce.
Gilbert B. Kaplan,
Deputy Assistant Secretary for Import Administration.

[FR Doc. 86-17665 Filed 8-5-86; 8:45 am]
BILLING CODE 3510-DS-M

Issued: August 13, 1986.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 86-18788 Filed 8-19-86; 8:45 am]

BILLING CODE 7020-02-M

[Investigation No. 731-TA-288 (Final)]

Erasable Programmable Read Only Memories (EPROM's) From Japan

AGENCY: International Trade Commission.

ACTION: Suspension of final antidumping investigation.

EFFECTIVE DATE: August 6, 1986.

FOR FURTHER INFORMATION CONTACT: Judith C. Zeck (202-523-0339), Office of Investigations, U.S. International Trade Commission, 701 E Street NW., Washington, DC 20436. Hearing-impaired individuals may obtain information on this matter by contacting the Commission's TDD terminal on 202-724-0002.

SUMMARY: On July 30, 1986, the United States Department of Commerce entered into an agreement that suspends the antidumping investigation involving erasable programmable read only memories (EPROM's) from Japan (51 FR 28253, August 6, 1986). The agreement calls for Japanese producers/exporters to revise their U.S. prices to eliminate sales of EPROM's at less than fair value. Accordingly, the United States International Trade Commission hereby gives notice of the suspension of antidumping investigation No. 731-TA-288 (Final)), involving imports from Japan of EPROM's, provided for in item 687.74 of the Tariff Schedules of the United States. The schedule of this investigation, which was included in the Commission's notice of revised schedule (51 FR 16905, May 7, 1986), is hereby cancelled.

This notice is published pursuant to § 207.40 of the Commission's rules of practice and procedure (19 CFR 207.40).

[A-588-504]

Erasable Programmable Read Only Memories (EPROMs) From Japan; Final Determination of Sales at Less than Fair Value

AGENCY: International Trade Administration, Import Administration Commerce.

ACTION: Notice.

SUMMARY: We have determined that EPROMs from Japan are being, or are likely to be, sold in the United States at less than fair value, and have notified the U.S. International Trade Commission (ITC) of our determination. The Department of Commerce and Japanese producers/exporters of substantially all of the known imports of the subject merchandise entered into a suspension agreement on July 30, 1986 pursuant to section 734 of the Act. The suspension agreement will remain in force and we will not issue an antidumping duty order as long as the conditions of the agreement are met. However, the investigation was continued at petitioners request under section 734.

EFFECTIVE DATE: October 30, 1986.

FOR FURTHER INFORMATION CONTACT: David Mueller, William Kane, or Raymond Busen, Office of Investigations, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230: telephone (202) 377-2923, 377-1766, or 377-3464.

Final Determination

We have determined that EPROMs 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 (19 U.S.C. 1673d(a)) (the Act). We made fair value comparisons on over 90 percent of sales of the class or kind of merchandise to the United States by the respondents during the period of investigation, April 1 through September 30, 1985. The weighted-average margins are shown in the "Results of Investigation" section of this notice.

Case History

On September 30, 1985, we received a petition from Intel Corporation, Advanced Micro Devices, Inc., and National Semiconductor Corporation on behalf of the domestic manufacturers of EPROMs. In compliance with the filing requirements of § 353.36 of the Commerce Regulations (19 CFR 353.36), the petition alleged that imports of EPROMs from Japan are being, or are likely to be, sold in the United States at less than fair value within the meaning of section 731 of the Act, and that these imports are materially injuring, or are threatening material injury to, a United States industry. The petition also alleged that sales of the subject merchandise were being made at less than the cost of production. After reviewing the peitition, we determined that it contained sufficient grounds upon which to initiate an antidumping duty investigation. We notified the ITC of our action and initiated such an investigation on October 21, 1985 (50 FR 43603, October 28, 1985). On November 14, 1985, the ITC determined that there is reasonable indication that imports of EPROMs from Japan are materially injuring, or are threatening material injury to, a U.S. industry (50 FR 47852, November 20, 1985).

On December 2, 1985, we presented antidumping duty questionnaires to Hitachi Ltd. (Hitachi), Fujitsu Limited (Fujitsu), Toshiba Corporation (Toshiba), and NEC Corporation (NEC). Respondents were requested to answer the questionnaire in 30 days. However, at the requests of Hitachi, Fujitsu, Toshiba, and the Japanese Ministry of International Trade and Industry (MITI), we granted an extention to January 17, 1986. On January 17, 1986, we received incomplete responses from Hitachi, Fujitsu, and Toshiba, and a letter from NEC stating that it would not respond to our questionnaire. In letters dated February 3, 1986, the Department requested supplemental information from Hitachi, Fujitsu, and Toshiba. Additional information was submitted by these respondents on February 18, 1986.

On March 17, 1986, we published a preliminary determination that EPROMs from Japan were being sold at less than fair value in the United States (51 FR 9087).

After the preliminary determination, Hitachi, Fujitsu, and Toshiba requested an extension of the final determination date. These respondents were qualified to make such a request since they accounted for more than 90 percent of exports of the merchandise to the United States. If exporters who account for a significant proportion of exports of the merchandise under investigation properly request an extension after an affirmative preliminary determination, we are required, absent compelling reasons to the contrary, to grant the request. Accordingly, we granted the requests and postponed our final determination until July 30, 1986 (51 FR 15519, April 24, 1986)

Between March 10 and April 18, 1986, and between June 10 and June 12, 1986 (for Hitachi), we conducted our verification procedures of the information provided by these respondents at their facilities in Japan and the United States. On May 27, 1986, we held a hearing to provide all interested parties with an opportunity to comment on the investigation.

On July 30, 1986, the Department of Commerce and Japanese poducers/exporters which account for substantially all exports for certain EPROMs to the United States subject to this investigation signed a suspension agreement as provided under section 734 of the Act.

Our notice of the suspension of the investigation of EPROMs from Japan (51 FR 28253, August 6, 1986) announced that, pursuant to the Agreement and section 734(f)(2)(A) of the Act, the suspension of liquidation of all entries, entered or withdrawn from warehouse for consumption, of EPROMs from Japan, effective March 19, 1986, as directed in our notice of "Antidumping Preliminary Determinations of Sales at Less than Fair Value, Erasable Programmable Read Only Memory Semiconductors from Japan," was terminated and any cash deposits on entries of EPROMs from Japan pursuant to that suspension of liquidation were refunded and bonds released.

On August 26, 1986, petitioners requested that the investigation be continued under section 734(g) of the Act. Therefore, we are required to issue a final determination in this investigation.

Products Under Investigation

The products covered by this investigation are erasable programmable read only memories (EPROMs), which are a type of memory integrated circuit that is manufactured using variations of Metal Oxide-Semiconductor (MOS) process technology, including both Complementary (CMOS) and N-Channel (NMOS). The products include processed wafers, dice and assembled EPROMs produced in Japan and imported into the United States from Japan.

Finished EPROMs are currently provided for in the Tariff Schedules of the United States Annotated (TSUSA) under item 687.7445. Unassembled EPROMs, including unmounted chips, wafers, and dice, are provided for under TSUSA item 687.7405.

In the notice of initiation in this case, we tentatively included in the scope of this investigation processed wafers and dice produced in Japan and assembled into finished EPROMs in another country prior to importation into the United States from the other country. Although none of the respondents reported sales during the period of investigation of EPROMs assembled in third countries from Japanese manufactured dice, we now have information from the United States Customs Service that imports of such merchandise are occurring. Based on the information available to us we have determined that EPROMs assembled in third countries using wafers or dice processed in Japan are included within the scope of the investigation. We have also determined that a variant of EPROMs, OTPs (One-Time-Programmable read only memories) are included in the scope of the investigation. In making the decision to include both third country assembled EPROMs and OTPs in the scope of the investigation we have been guided by the fact that the processed dice contain all the essential electronic properties which distinguished EPROMS as a separate class of goods from other semiconductors. See our responses to petitioners comments #27 and 28 for more detail.

Fair Value Comparisons

For the three responding firms, to determine whether sales of the subject merchandise in the United States were made at less than fair value, we compared the United States price with foreign market value as specified below. For NEC, we made our fair value comparison using the best information available for both United States price and foreign market value, since NEC did not respond to our questionnaire. The best information available was the United States price and foreign market value in the petition.

For purposes of this determination, with regard to exporter's sales price (ESP) sales for all companies, we used the date of shipment as the date of sale in both the U.S. and home markets because, in this industry, this date is customarily the first date on which a binding commitment to sell the subject merchandise can be said to have occurred, as explained more fully in the comment section of this notice. With regard to Toshiba's purchase price sales, the date of contract was used as the date of sale because we determined that this was the date at which all key elements for the contracts (i.e, binding commitment, irrevocable price, quantities to be purchased) are firm.

United States Price

For certain Toshiba sales we used the purchase price of the subject merchandise to represent United States price, as provided in section 772(b) of the Act, since the merchandise was sold to unrelated purchasers prior to its importation into the United States. For other Toshiba sales and sales by all other respondents, we used the exporter's sales price to represent United States price, in accordance with section 772(c) of the Act, as the merchandise was sold after the time of importation. A small number of Hitachi's sales were made to unrelated purchasers prior to importation, but no calculations were performed on these sales. For Fujitsu, we disregarded certain U.S. sales when the disparity between their prices and the prices of such or similar merchandise in the home market was considered too great to be accounted for by normal market value factors.

We calculated purchase price based on the packed, F.O.B. prices to unrelated purchasers in the United States. We made deductions for foreign inland freight and insurance. Exporter's sales prices were based on the packed, duty-paid, C.I.F. prices to unrelated purchasers in the United States. For ESP, where appropriate, we made deductions for brokerage charges in Japan and the United States, foreign inland freight and insurance, commissions to unrelated parties, indirect selling expenses incurred both in Japan and in the United States, credit expenses, warranties, technical services, advertising, discounts, and rebates. The cost of additional packing performed in the United States was deducted. For Fujitsu, the cost of further processing in the United States, including an amount for profit or loss associated with that processing, was also deducted.

Foreign Market Value

The petitioners alleged that sales in the home market by all the respondents were at prices below the cost of producing the merchandise.

In accordance with section 773(a) of the Act, we calculated foreign market value based on home market prices, where there were sufficient home market sales at or above the cost of production, to determine foreign market value. Home market sales were considered insufficient for this purpose when less than 10 percent of sales of a particular product (by density, process, package, and lead coating) over the six-month period of investigation were above cost. We used constructed value as the basis for calculating foreign market value where there were no sales of such or similar merchandise in the home market during the month of the

U.S. sale, or where there were not sufficient sales, as defined in section 773(b) of the Act, above the cost of production during the six-month period.

We calculated a foreign market value for each product for each month of the period of investigation, due to sharp declines in monthly prices.

Constructed Value

In accordance with section 773(e) of the Act, we calculated foreign market value based on constructed value for Hitachi and Fijitsu when there were not sufficient home market sales of such or similar merchandise for the purpose of comparison. For Toshiba, we calculated foreign market value based on constructed value for all sales because more than 90 percent of its sales of each product were found to be below the cost of production. In determining constructed value, we calculated the cost of materials, fabrication, general expenses, profit and the cost of packing. General methodologies, which were applicable to all of the respondents, followed by the specifics for each respondent, are described below.

The Department matched the sales prices with the cost of manufacturing occurring three months prior to the date of sale for the final determination. Because of the nature of the industry, which is characterized by technological advancements and rapid changes in the production process, significant increases/decreases in the costs of production occur within a short period of time. Therefore a period of time before the date of sale to allow for the actual manufacturing costs incurred for its production is necessary. From information obtained from the respondents and from the petitioners, the Department concluded that a three-month period was appropriate to account for the production time prior to the date of sale.

Financial expenses used for the cost of production by the Department in its final determination included the net interest expense and the credit expense. interest expense was based on the interest expenses of the consolidated corporation during the fiscal year. Interest income related to the corporation's operation was netted against this expense. Because the full amount of the credit expense for home market sales was also included as part of the financial expense, an amount of interest expense was deducted from the total which represented interest expense related to the accounts receivable.

The Department applied its R&D methodology developed for products which require a significant research and development effort. The Department capitalized those R&D costs specifically associated with the product such as design and design improvements, pilot processing required by, and engineering efforts to produce, the necessary equipment. The criteria enumerated in International Accounting Standard #9 generally set forth the relevant guidelines. These costs are capitalized and amortized over the sales during the market life of the product. Current costs incurred for R&D related to the product-line, such as projects for improving materials or technology used for all or many of the products, are expensed and allocated to the relevant products sold during the period of review. R&D costs include all personnel costs, materials, services, depreciation of equipment and facilities, overhead and the other costs incurred for R&D. R&D incurred by the corporation for general purposes (unrelated to an existing product-line) are expensed and allocated to all of the products sold by the corporation during the period of review.

The Department included in the constructed value for the final determination, costs and adjustments related to start-up. The Department recognizes that certain costs may be incurred during start-up which may not occur during the later stages of production. Because start-up costs are ordinary costs incurred in the manufacture of the product, the Department capitalizes such costs prior to and during the early stages of production and amortizes such costs over the sales during the market life of the product. Start-up costs which are capitalized must be directly identified with start-up. Cost adjustments which reflect the effects of production quantities lower than anticipated capacity utilization are not necessarily attributable to start-up.

For Hitachi, the Department based its final determination on Hitachi's submission. However, for certain methods and valuation principles used by Hitachi and for certain costs which were not verified, the Department made adjustments or applied best information to determine the constructed values.

—The cost of manufacturing was based on the monthly costs incurred for each product for the months of January through June, 1985, thereby, accounting for a three month lag time prior to the dates of sale.

—Certain costs related to the retirement reserve, which had been omitted by Hitachi from the labor costs, were included.

—The overhead pools for the various plants, which were allocated by the Company for the submission to the products on the basis of standard labor hours, were reallocated by the Department. The method used by Hitachi, in some cases, significantly shifted the capital expenses for the semiconductor products to other unrelated products.

—The depreciation expense, which had been restated by Hitachi for its submission based on the residual value of the assets and an extension of their useful life by two years, was recalculated by the Department using best information.

—Certain expenses of the plants had been reclassified by the company for the submission as general expenses. These were reclassified by the Department as part of the cost of manufacturing.

—Best information was used for product-line and product-specific research and development expenses.

For the general expenses, the Department included the home market direct and indirect selling expenses, general research and development, financial expenses and general and administrative expense, adjusted to reflect certain expenses of a general nature which had been excluded by Hitachi. The actual general expenses did not exceed 10 percent of the sum of the materials and fabrication expenses. Therefore, for the constructed value the statutory minimum 10 percent for the general expenses was used. The statutory minimum of 8 percent profit was added to materials, fabrication and general expenses, because actual profit was less than that amount.

For Toshiba, the Department based its final determination on Toshiba's submission. However, for certain methods and valuation principles used by Toshiba and for certain costs which were not verified, the Department made adjustments or applied best information to determine the constructed value.

—The cost of manufacturing was based on the monthly costs incurred for each product for the months of January through June, 1985, therefore, accounting for the three month production time prior to the date of sale.

—The yields used by the respondent for the wafer fabrication cost calculation were adjusted to the actual yields. The wafer fabrication cost components were adjusted to reflect the fully yielded amount based on the actual yields.

—The depreciation expense, which was not verified, was derived by using "best information."

—The yields used by the respondent for the assembly and test costs calculation presented in the response were adjusted by using "best information," and the cost components

were adjusted to reflect the fully yielded amounts based on this "best information."

—The labor and overhead costs were adjusted for wafer fabrication and assembly/test by using the "best information," because these costs were not based on acceptable standards, and reflected omissions and misallocations.

—The product-line and product-specific research and development expenses submitted by Toshiba were used, adjusted for certain omitted costs.

—General expenses as provided by Toshiba could not be verified. Best information, based on Toshiba company data was used.

—Packing was adjusted to include packing materials and subcontract costs.

For general expenses, the Department included the home market direct and indirect selling expenses, general research and development, financial expenses and general and administrative expenses. The actual general expenses exceeded 10 percent of the sum of the materials and fabrication expenses. Therefore, for the constructed value, the actual general expenses were used. The statutory minimum of 8 percent profit was added to materials, fabrication and general expenses, because actual profit was less than that amount.

For Fujitsu, the Department based its final determination on the company's submission, in part, and on "best information" for the remainder. Throughout the verification, certain documents and analyses were requested by the Department which the company refused to provide. In addition, the company's apparent lack of preparation of basic worksheets supporting the submission and failure to provide those and other documents in a timely manner, if at all, prevented the verification team from conducting necessary procedures during the verification. Because of the lack of progress, the verification proceedings were suspended by the Department. Because the absence of certain documents severely limited the scope of the verification, the cost of manufacturing was not considered to be verified. The information requested, but not provided, for this area included:

—Worksheets documenting the reconciliation of the submission to the cost accounting records for a sufficient number of products and months so that the adequacy and completeness of the submission could be tested;

—Full reconciliation of the submission to the in-house product cost system for any one product;

—Equipment acquisition costs for all fixed assets involved in the production of EPROMs;

—Documentation related to the allocation of all indirect costs centers;

—Wafer fabrication yield data for completed lots;

—Documentation for production quantities;

—Profit/loss statement for the Semiconductor Operating Group.

The cost of manufacturing for Fujitsu was based on the monthly costs for January-June of the highest-cost producer of the other respondents, with the exception of research and development expenses.

For general expenses, the Department included the home market direct and indirect selling expenses, general research and development, financial expenses of this notice and general and administrative expense. Where the general expenses were lower than the statutory minimum of 10 percent, the statutory minimum was used. The statutory minimum of 8 percent profit was added to the cost of materials, fabrication and general expenses, because actual profit was less than this amount.

Price to Price Comparisons

For Hitachi and Fujitsu, we found sufficient sales above the cost of production for certain product groups to allow use of home market prices to determine foreign market value in accordance with section 773(a)(1)(A) of the Act. For Toshiba, since virtually all sales were found to be below the cost of production, we calculated foreign market value based on constructed value. For fair value comparisons we compared, where available, identical merchandise. Where comparisons were made between similar merchandise, the similar merchandise was selected based on criteria of density, process, month, package type, lead coating and speed, in that order of priority. Comparisons were made at the same levels of trade where sales at those levels existed. Otherwise, comparisons were made at the nearest comparable commercial level of trade. We calculated the home market price on the basis of the delivered price to unrelated purchasers. When we compared purchase price to foreign market value, we made deductions for foreign inland freight and insurance. We also made adjustments for differences in circumstances of sale for credit terms in accordance with § 353.15 of our regulations.

When we compared ESP with foreign market value, we made deductions, where appropriate, for foreign freight and insurance, discounts, rebates, and commissions to unrelated parties in the home market. We also made deductions, where appropriate, for differences in circumstances of sale for credit terms, technical services, and warranty, in accordance with § 353.15 of our regulations. Where appropriate, we offset commissions paid on U.S. sales with indirect selling expenses in the home market, in accordance with § 353.15(c) of our regulations. We also used indirect selling expenses to offset United States selling expenses, in accordance with § 353.15(c) of our regulations.

For both purchase price and ESP, in order to adjust for differences in packing between the two markets, we deducted home market packing costs and added U.S. packing costs to the home market prices.

Currency Conversion

In calculating foreign market value, we made currency conversions for Japanese yen to U.S. dollars in accordance with § 353.56(a) of our regulations, using the certified daily exchange rates for comparisons involving purchase price. For ESP comparisons, we used the official exchange rate for the date of sale, which we determined was the date of shipment, since the use of that exchange rate is consistent with section 615 of the Trade and Tariff Act of 1984 (1984 Act). We followed section 615 of the 1984 Act rather than § 353.56(a)(2) of our regulations because the later law supersedes that section of the regulations.

Verification

Where possible, we verified the submitted information used in making our final determination in accordance with section 776(a) of the Act. We used standard verification procedures, including examination of relevant sales and financial records of each company. Where information could not be verified, we used the best information available.

Respondents' Comments

Hitachi Comment No. 1: Hitachi states that its method for allocating factory overhead, based on the relative standard labor hours for memory and non-memory products should be used, because this was the method used by the company for its internal accounting.

DOC Position: We disagree. The Department analyzed the company's method of allocating overhead to determine if this method reasonably apportioned costs among the products being manufactured in each plant. This analysis revealed that this method

significantly shifted the depreciation expenses which could be directly identified with memory products to non-memory products. Therefore, since this allocation method caused distortions in costs, the Department reallocated overhead based on relative depreciation expenses of memory and non-memory products.

Hitachi Comment No. 2: Hitachi argues that its restatement of depreciation for the response was performed in accordance with generally accepted accounting principles and, therefore, should have been accepted by the Department.

DOC Position: We disagree. Hitachi restated its depreciation expense from a three-year to a five-year useful life by basing this depreciation expense on the residual value of the equipment, as of the time of the investigation, and extending the life of the assets for an additional two years. This restatement did not reflect depreciation based on a useful life of five years and substantially understated the depreciation expense, because (1) depreciation expenses for equipment three to five years old which had been fully depreciated, were not captured, and (2) the amount of depreciation, based on the residual value for equipment not fully depreciated which was extended for an additional two years, would be significantly less than the depreciation amount based on a useful of five years as of the date of acquisition.

Furthermore, this is not the type of situation where such restatement of depreciation would be justified. Generally accepted accounting principles which pertain to a change in the estimated useful life apply to situations where new events have occurred, additional experience has been acquired or additional information had been obtained, so as to make the original estimate inaccurate. Hitachi has not changed its accounting estimates for the useful life for this equipment for its financial reporting purposes.

Hitachi Comment No. 3: Hitachi states that the prices, as recorded in its books, of the equipment acquired from other Hitachi divisions reflected the cost of production for this equipment and should be used by the Department to determine the depreciation.

DOC Position: We agree. The Department reviewed the cost of equipment obtained from Hitachi's other divisions. The difference between actual cost of production and the price of such equipment recorded on the books would have a *de minimis* impact on the depreciation expense. Therefore, the record amount was used.

Hitachi Comment No. 4: Hitachi argues that the retirement costs reflected on its books should not be used because they exceed the amount which can be deducted for tax purposes.

DOC Position: We disagree. The Department used the cost incurred by the company for its retirement expense. The fact that these costs are not fully tax deductible is not relevant in determining the cost incured by the company for manufacturing the product.

Hitachi Comment No. 5: Hitachi argues that it is appropriate to net interest income against interest expense even though it results in a negative interest expense.

DOC Position: The Department applied its usual methodology and netted interest income related to the operations of the company against interest expense.

Hitachi Comment No. 6: Hitachi states that the Department should use the selling, general and administrative expenses presented in the submission, because they 1) include all relevant costs such as direct and indirect selling expenses, general and administrative expenses of the subsidiary, and 2) these costs are appropriately allocated to the product.

DOC Position: The Department used Hitachi's selling, general and administrative expenses, but adjusted such amounts by including actual direct and indirect selling expenses for the home market and certain other expenses which are general in nature and incurred by the corporation, but which were not included by Hitachi in its submitted cost.

Hitachi Comment No. 7: Hitachi claims that there are no records for wafer production time other than the "travellers" provided at the verification.

DOC Position: The Department reviewed "travellers" which accompanied the wafers through the production process. However, since the company's records did not contain production time information, and because a sufficient number of such travellers could not be tested to be considered a credible sample, the Department did not consider such data to be verified.

Hatachi Comment No. 8: Hitachi states that the wafer costs used in the submission, based on the purchase prices and the cost of production for wafers produced by related companies, are accurate and should be used.

DOC Position: We agree. The wafer costs as submitted in the response were verified and used by the Department for its final determination.

Hitachi Comment No. 9: Hitachi argues that the Department should use the statutory 8 percent profit, because the actual profit was lower for the product under investigation during the relevant period.

DOC Postion: We agree. The Department used the 8 percent statutory minimum profit.

Hitachi Comment No. 10: Hitachi contends that (1) there was no allocation of historic R&D at laboratories or at the Device Development Center associated with EPROMs, because there was no product-line or product-specific R&D needed for the product, and that the general laboratory expenses were allocated on a current basis, (2) product engineering department expenses were not included as product-specific or product-line, because they were not related directly to the product, and (3) the historic costs were allocated over total units to be sold in the past and future. Therefore, the Department should use the amount of R&D submitted in its response.

DOC Position: We disagree. The Department attempted to verify the R&D costs as submitted. However, sufficient documentation could not be reviewed or obtained to test adequately the company's claims. Therefore, best information was used for the product-line and product-specific R&D.

Hitachi Comment No. 11: Hitachi claims that the Department should not use Intel's cost model because (1) the model assumes a set of mechanical relationships derived largely from bits and pieces of public information, and (2) it is not in accordance with the constructed value methodology. Hitachi urges the Department to use the data it supplied.

DOC Position: The Department used the company's actual cost for the manufacturing and sales expenses of the merchandise under investigation. In those instances when such information was not appropriately identified, quantified, valued and/or verified, the Department used "best information." If, in the Department's judgment, publicly available data are the most appropriate information, then they may be used as the "best information."

Adjustments were made to Hitachi's costs, as outlined in the "constructed value" section of this notice.

Hitachi Comment No. 12: The Department should have converted currencies at the rate prevailing at a time prior to the date of sale in order to give the producer a reasonable time in which to adjust to sustained changes in exchange rates. Hitachi suggests that the previous quarter's exchange rate be used, arguing that this is consistent with the special rule in 19 CFR 353.56(b).

DOC Position: We do not agree with Hitachi's interpretation of the special rule. Since the change in relative values of the currencies was moderate and progressive, it is reasonable to expect that Hitachi, in setting prices in the United States, would have taken into account then current exchange rates. To interpret the general statement in 19 CFR 353.56(b) otherwise would render section (a) of this regulation meaningless, since no currency conversion would ever be made at the normal times called for in that section, unless there had been absolutely no change from quarter to quarter. This is not the intent of the regulation.

Hitachi Comment No. 13: Hitachi argues that no production lag should be applied for the purpose of determining sales below cost pursuant to 19 U.S.C. 1677b(b). Further, if a lag time is used in the computation of constructed value pursuant to 19 U.S.C. 1677b(e), it should only account for the time ordinarily required to produce the merchandise prior to the date of exportation, and should not take into account inventory time.

DOC Position: Section 1677b(b) of the Act directs the Department to determine whether sales are made at prices which represent less than the cost of producing "the merchandise in question." We have interpreted this language to mean that costs should be matched to the merchandise sold, just as it is done for constructed value determinations. This is particularly true, where as here, there was considerable volatility of both costs and prices in the period. We have not, however, applied a lag for inventory time in Japan, inasmuch as there is insufficient evidence to support such an adjustment.

Hitachi Comment No. 14: The Department should calculate separate margins for each different density and process EPROM. Each density and process EPROM is a unique product with numerous physical differences from other EPROMs.

DOC Position: We disagree. EPROMs are a distinct category of semiconductor. The fact that there are additional subdivisions of this category does not require that each subdivision have its own margin. Instead, the Department determines that the different densities and processes of EPROMs are all within the same class or kind of merchandise prescribed in section 731 of the statute, to which the Department generally applies a single rate. In determining whether products are within the same general class or kind of merchandise we assess, (1) the general physical characteristics of the merchandise, (2) the expectations of the ultimate purchasers, (3) the channels of trade in which the merchandise moves, and (4) the ultimate use of the merchandise. In this case, the different densities have the same general physical characteristics. While respondents argue that pin configurations can vary, this difference can be easily compensated for, for instance, by providing extra pin holes on the circuit board. Similarly, physical size differences are not a significant distinction. Instead, the similarities between each generation are far more important than the differences, since the basic function of an EPROM remains identical over successive generations of EPROMs regardless of the geometric increase in density. Further, the various generations of EPROMs are to a large extent interchangeable. For example, four 64K devices would perform the exact task of a single 256K chip. The only difference between densities is in the memory storage capacity of the chip. Thus, the expectations of the purchasers and ultimate intended use are substantially the same for the different densities, differing only with respect to the degree of memory storage required. Finally, because of the product substitutability, the different densities move in the same channels of trade, as was further supported by the use of similar advertising. With respect to CMOS and NMOS EPROMs, the Department finds that, while there are differences in speed, complexity and cost of the two devices, they are fundamentally similar in their design and purpose such as to make them substantially interchangeable and within the same class or kind of merchandise. Further, prices and costs rapidly change in this product as one generation succeeds another. An average rate based on several generations at different stages of development will probably be most representative, for estimated duty deposit purposes, of the rate of one generation over an extended time.

Hitachi Comment No. 15: EPROMs of 1 megabit and above should be excluded from the scope of the investigation due to their markedly different physical characteristics.

DOC Position: We disagree. One megabit EPROMs are simply the next generation of this type of device. The ultimate use of one megabit EPROMs is the same as for earlier generation EPROMs, and they are sold in the same channels of trade. Their physical differences are not more pronounced than the differences between other generations of EPROMs, and are outweighed by the similarities in function and use. For the same reasons expressed in our response to Hitachi comment #14, in which we describe why we do not consider other densities to constitute different classes or kinds of merchandise, we do not consider one megabit EPROMs to be a separate class or kind of merchandise. We have, therefore, decided not to exclude them from the scope of the investigation and final determination.

Toshiba Comment No. 1: The respondent argues that the Department's methodology to calculate R&D expenses is flawed because the approach does not follow GAAP and is administratively burdensome. They contend that although all companies maintain records differently from R&D, the Department should use the company method of recordkeeping.

DOC Position: The methodology for R&D used by the Department identifies R&D expenses associated with the manufacturing of the product. Generally accepted accounting principles' primary purpose is to develop principles which fairly present the company's overall operating results over a period of time. The constructed value provision of the antidumping law is intended to identify the cost necessary for the manufacture and sale of a particular product. Therefore, if there are costs which are not specifically identified with a product on the company's financial statements, but can be identified with the product through other documentation, the Department may use these product-specific costs in calculating the cost of production. The Department notes that it can not rely solely on the company's recordkeeping methods for determining costs, since such records may not capture all relevant expenses, may inappropriately value such costs, or may not identify such costs with the product.

Toshiba Comment No. 2: The respondent contends that the use of 15 percent of sales price, the average R&D expenditures reported by the Japanese companies to MITI, should not be used because (1) it represents the expenditures for prior years, and (2) the Department does not know all the categories of R&D included in the R&D reported by the companies to MITI.

DOC Position: The Department used Toshiba's actual R&D expenses, as adjusted.

Toshiba Comment No. 3: Toshiba claims that the Department should offset interest expense by interest income to the extent income is tied to operations.

DOC Position: We agree. See "Constructed Value" section, third paragraph.

Toshiba Comment No. 4: Toshiba states that although the selling, general

and administrative expense, included as part of the costs of EPROMs, is lower than the corporate average, the submitted amount included general expense from all corporate levels, corporate R&D and selling expenses. Therefore, the submitted amount should be included.

DOC Position: We disagree. The Department reviewed the general and administrative expenses submitted by Toshiba and found no evidence of divisional general expenses being included in the general expenses. Therefore, the submitted amount was not used.

Toshiba Comment No. 5: Toshiba alleges that because of the dynamic nature of the industry, the Department must adopt a flexible approach and analyze the sales and costs over an extended period, even over the expected life of the product.

DOC Position: We feel that, for this industry, the six month period of sales and costs examined was an extended period. This is also the period normally relied on by the Department for other products. To go beyond this period would require us to base our determination on costs and prices which have not been incurred or taken place. We believe it is inappropriate to make our determination on such subjective and unverifiable data.

Toshiba Comment No. 6: Toshiba contends that the Department made certain methodological errors in its preliminary determination. These were: (1) Lagging the cost of production to the sales prices, because the respondent had already lagged this cost, (2) imputing credit expenses and also including financing expenses, (3) not offsetting interest expense with interest income, and (4) not deducting rebates as a circumstance-of-sale adjustment.

DOC Position: The Department reviewed the respondent's submission prior to verification for use in its premliminary determination. When it appeared that certain costs were not included or were not appropriately valued, the Department used best information to adjust such costs. In the case of Toshiba's preliminary determination, the response: (1) Was not clear as to the method used or the costs which were lagged, (2) appeared to have offset interest expense with investment income not related to the ordinary operation, and (3) had not included an amount for credit expense. Therefore, the Department adjusted these costs for its preliminary determination. For its final determination, the Department continued to lag the cost of manufacturing and included a credit expense. The department deducted rebates as a circumstance of sale adjustment.

Toshiba Comment No. 7: Toshiba points out that in its books, a three-year useful life with additional bonus depreciation was used. However, a five year useful life was recalculated by the company for the verification, in accordance with tax law, since the Department used five years for its preliminary determination. Toshiba argues the the Department should accept the recalculated depreciation for the final determination.

DOC Position: The Company restated its depreciation from a three-year useful life to a five-year useful life by extending the life by two additional years and basing the deprecation on the residual value of the equipment as of the period of investigation. Although such method may be useful for tax purposes, the Department did not accept this restatement, because it substantially understated the amount of depreciation. Therefore, the Department used an estimate, based on data in the record, as best information for the depreciation expense. See the response to Hitachi Comment No. 2.

Toshiba Comment No. 8: Toshiba contends that the R&D it presented was in accordance with the Department's methodology except for an error of not including the quality assurance department expense. Contrary to the verification report, Toshiba points out that product-specific R&D after commercialization was included, and that certain expenses, which were not included in R&D, were considered to be selling expenses.

DOC Position: The Department verified the R&D expenses presented by Toshiba. This amount was used for the final determination.

Toshiba Comment No. 9: Toshiba argues that each density of EPROM should be treated as a separate class or kind of merchandise because of significant physical differences between characteristics and production process technologies associated with each generation of EPROM, differences in end use, and substantial price difference between EPROM generations.

DOC Position: We disagree. See response to Hitachi comment No. 14.

Toshiba Comment No. 10. Toshiba argues that the Department should calculate separate margins for CMOS and NMOS EPROMs. While NMOS EPROMs have an advantage of greater speed, lower power consumption, and the generation of less heat, CMOS EPROMs are more complex and employ a more costly technology, which requires more manufacturing steps than NMOS. Furthermore, CMOS EPROMS command a substantial premium over NMOS because they are suited to particular applications that cannot be adequately satisfied by NMOS models. The price difference, therefore, reflects a basic functional dissimilarity which supports the separate classification of NMOS and CMOS EPROMs.

DOC Position: We disagree. See response to Hatachi comment No. 14.

Toshiba Comment No. 11: Toshiba argues that the scope of the investigation should not include processed wafers and dice produced in Japan and assembled into finished EPROMs in another country prior to importation into the United States.

DOC Position: We disagree. See DOC response to Petitioners' Comment No. 28 (General).

Fujitsu Comment No. 1: Fujitsu argues that the lag methodology adopted by the Department has no statutory basis. In rapidly changing cost environments, the Department traditionally has constructed costs for each month and compared these costs with sales of the same month. In addition, the Department's assumption that all costs including assembly and testing were incurred two months before the month of sale is arbitrary and inconsistent in the case of EPROMs.

DOC Position: We disagree. The Department, for hyperinflationary economy countries, has matched current cost with sales in the same month in order to account for the rapidly changing nominal value of the currency. However, in this case, the change in the costs is a result of the efficiencies of the production cost. The increase or decrease in cost is not a result of a change in the value of the currency but is a change in the actual costs required for the production of the product.

For the Department's position on lag, see "Constructed Value" section, second paragraph.

Fujitsu Comment No. 2: Fujitsu declares that it is the Department's longstanding practice to calculate production costs in accordance with generally accepted accounting principles in the home market, unless those principles artificially distort the results. Fujitsu finds no basis for the Department's deviation from these principles with regard to calculation of Fujitsu's R&D and SG&A costs.

DOC Position: We disagree. See DOC response Toshiba Comment No. 1.

Fujitsu Comment No. 3: The appropriate value for Fujitsu's R&D is that amount expensed during the period for which costs were measured. Fujitsu argues that the Department should not assume general R&D is connected solely

with semiconductors. A portion of R&D should be allocated to costs associated with the wide variety of computer and telecommunications devices Fujitsu also manufacturers, as well as to costs associated with semiconductors used internally by Fujitsu.

DOC Position: With the exception of R&D devoted specifically to EPROMs prior to commercialization, the Department based the R&D expenses of Fujitsu on the period April-September 1985. R&D incurred at semiconductor research facilities was allocated to semiconductors used internally by Fujitsu as well as external sales. Expenses of the corporate laboratory were treated as general and administrative expenses.

Fujitsu Comment No. 4: The Department excluded product-specific R&D from SG&A and aggregated these costs with other direct costs of manufacturing. Fujitsu contends the exclusion of any R&D expense from SG&A violates standard accounting principles, raises the cost of manufacturing, and lowers SG&A.

DOC Position: The Department followed Fujitsu's practice of classifying product-specific R&D expense as a cost of manufacture.

Fujitsu Comment No. 5: Fujitsu declares the Department's method of calculating constructed value has led the Department to double count certain R&D expenses. In its preliminary determination, constructed value contained not only R&D expenses equal to 14 percent of the cost of manufacture, but also some costs (product-specific R&D) which were already reported and included in the cost of manufacture.

DOC Position: The Department used "best information" for its preliminary determination. Such double counting has been eliminated in the final determination. No industry-average figure was included in the R&D expenses of Fujitsu.

Fujitsu Comment No. 6: Fujitsu contends that the Department should use Fujitsu's actual financing costs submitted to the Department rather than an imputed percentage. Credit expenses and long- and short-term debt should not be included in SG&A to meet the 10 percent threshold.

DOC Position: We disagree. See "Constructed Value" section, paragraph three.

Fujitsu Comment No. 7: Fujitsu argues that the Department should not include in the U.S. assembly costs, material costs of the unassembled items transferred from Japan (chip, gold wire, lead frame). Only a small amount of gold ribbon is purchased in the U.S. for use in assembly. All other materials are transferred from Fujitsu Ltd. and should be added to the cost of production in Japan.

DOC Position: The cost of the chip was not included in the cost of U.S. assembly. Since the other materials were added in the production process in the United States, the costs of these items were included in U.S. assembly cost.

Fujitsu Comment No. 8: The Department stated the scope of testing was limited because worksheets were provided for two products for one month. The products referred to constitute most of the EPROMs sold by Fujitsu during the period of investigation. The company believed the Department wished to look at only one month's worksheets, but by the end of verification it provided workshets for three months.

DOC Position: The Department stressed to the respondents that the worksheets used in the preparation of the questionnaire responses should be saved and be available for review at verification. If a respondent cannot trace the cost amounts in the submissions through worksheets into the cost accounting system, the company cannot expect the Department to conclude that the submission is properly supported by the cost accounting system. The worksheets provided to the Department were not furnished in a timely manner nor did they provide a sufficient basis to conclude that all costs were included and appropriately stated.

Fujitsu Comment No. 9: Fujitsu states the company was unfamiliar with verification procedures, was cooperative, and would have provided all information requested at the Department's convenience.

DOC Position: The failure of Fujitsu to allow verification to proceed at an acceptable pace over a period of almost three weeks seriously impeded the progress of the investigation. Under the strict statutory timetable of this investigation, a prolonged verification would have disrupted the ability of the Department to analyze the information and the opportunity for petitioners to comment on the Department's findings. Furthermore, to allow respondents to treat verification in such a way, knowing that the result would simply be an additional verification, would severely damage the effectiveness of the Department's administration of the antidumping statute.

Fujitsu Comment No. 10: Fujitsu contends that the Department, in calculating depreciation expenses, should not assume that a large portion of production equipment is manufactured by related companies since Fujitsu provides the design specifications to several companies which then manufacture the equipment for Fujitsu. Only a small percentage of the total acquisition cost of all semiconductor equipment is provided by a related supplier. The purchase price for this equipment is equivalent to third party prices for substantially identical equipment.

DOC Position: The Department could not verify the facts related to this claim. Therefore, because this and other facts could not be verified, best information was used for the cost of manufacturing which included the depreciation expense for the final determination.

Fujitsu Comment No. 11: Fujitsu argues that the Department should accept as reasonable the different allocation methods used by the different plants, because there are substantial differences in the technical set-up the production lines at the different plants.

DOC Position: The Department could not verify the facts related to these allocation methods. The theoretical arguments related to the allocation methods are, therefore, not relevant. Because this information and other facts could not be verified, best information was used for the cost of manufacturing for the final determination.

Fujitsu Comment No. 12: Fujitsu calculated its average yield for each particular process in accordance with its process cost accounting system, rather then by lot or by wafer start. The Company argues that discrepancies between yields as tested and as submitted are due to errors in sampling methodology.

DOC Position: During verification, the Department attempted to reconcile the submitted yields to the company's records. Discrepancies were noted. The Department attempted to determine the credibility of the company's data by extending the sample which was tested. The company did not provide this additional information, nor did it suggest a different method for establishing the credibility of the data which were submitted.

Fujitsu Comment No. 13: Fujitsu requests that the Department accept the Semiconductor Operating Group's profit and loss statement which Fujitsu provided late in the verification. Fujitsu claims that it was not provided earlier because this management report was not a source document for the numbers submitted to the Department.

DOC Position: The profit and loss statement was not provided until subsequent to the on-site verification. Therefore, the information being verified

could not be reconciled to this statement.

Fujitsu Comment No. 14: The Department was provided, at the time of the suspension of verification, with a schedule of its acquisition costs of all fixed assets in EPROM production that have been purchased in the last five years, grouped by useful life. The Department should use this data.

DOC Position: This schedule of acquisition costs of fixed assets by useful life was provided subsequent to the completion of the on-site verification. The Department could not test or reconcile this information. Therefore, depreciation expense was not considered to be verified.

Fujitsu Comment No. 15: Fujitsu notes that the Department has included a foreign exchange loss as an item under "Miscellaneous expenses." Such exchange rate loss is unrelated to home market sales and should not be included.

DOC Position: We agree. Foreign exchange losses were not included in the cost of production.

Fujitsu Comment No. 16: Fujitsu argues that all underlying data needed to allocate labor and overhead expenses of Fujitsu in San Diego were verified. In addition, Fujitsu advocates a specific method of allocating standard costs plus variance to products produced in San Diego.

DOC Position: We agree that underlying data such as labor and overhead expenses by department and production quantities were verified and we have based our calculation of U.S. manufacturing cost on these amounts. Allocation of labor and overhead expenses to specific products was based on each device in proportion to its standard cost. The reallocation method proposed by Fujitsu was rejected as untimely and unverified.

Fujitsu Comment No. 17: Fujitsu argues that a characteristic of the royalty expense of Fujitsu makes it inappropriate to include this expense as a cost of production. The nature of this characteristic is business proprietary information.

DOC Position: We agree. In this case, the royalty expense of Fujitsu in San Diego was not included in U.S. manufacturing costs.

Fujitsu Comment No. 18: Fujitsu argues that reconciliation to the internal accounting system should be considered complete. Only an insignificant portion of reconciliation to the accounting system was not completed before verification was suspended. Fujitsu believes it supplied the Department with all remaining information necessary to complete the reconciliation.

DOC Position: When a company has an internal product cost accounting system which it uses in the ordinary course of business, the Department expects the company to base its response on this system. Fujitsu had such a system but developed another methodology for its questionnaire response. Under these circumstances, the Department must completely reconcile the costs in the response to the firm's accounting system to determine if all costs have been included, appropriately valued, and allocated. The Department did not complete this reconciliation for Fujitsu's submitted costs. The Department cannot use data submitted subsequent to the on-site verification, since such data cannot be tested or reconciled to other relevant information.

Fujitsu Comment No. 19: Fujitsu claims that the change in Fujitsu's basis for calculating depreciation from a six-month to a twelve-month fiscal period is independent of this investigation and should not be a source of concern to the Department.

DOC Position: Since the Department did not obtain sufficient documentation to verify the depreciation expense, the Department used best information.

Fujitsu Comment No. 20: Fujitsu argues that the Department possesses sufficient verified data concerning monthly depreciation expenses for the five wafer fabrication cost centers at one of the plants.

DOC Position: Although the Department obtained some information concerning monthly depreciation expenses for the five wafer fabrication cost centers at one production site, the sample was very limited. Therefore, the Department did not find the support sufficient to consider the information to be verified.

Fujitsu Comment No. 21: The Department has in its possession verified inventory data for finished devices by device type and access speed. Fujitsu has no inventory record which accumulates all devices by access speed alone. The Company believes the inventory data provided should be sufficient to substantiate submitted volumes.

DOC Position: The Department obtained some inventory information. However, the Department did not find this data to be sufficient to consider inventory to be verified. Information in addition to that related to inventory would need to be verified in order to consider production volume to be verified.

Fujitsu Comment No. 22: According to Fujitsu, the general differences in relative sizes of variances between the plant manufacturing EPROMs and the Semiconductor Operating Group as a whole are primarily a result of the facilities' relative ages and sizes.

DOC Position: The Department could not determine from the information provided whether the variances were appropriately identified with the various plants.

Fujitsu Comment No. 23: Fujitsu argues that EPROM dice should not be included in the scope of the investigation because they are not the same class or kind of merchandise as completed EPROMs.

DOC Position: We disagree. There is no use for an EPROM wafer or die other than in a completed EPROM. Therefore, both the ultimate use and the ultimate purchasers of the components and the finished product are the same. Similarly, there are no separate channels of trade, since the only way the product is advertised is in the form of a finished EPROM, which includes the components. Lastly, the only physical difference between the completed EPROM and die and wafers is that one is assembled and the other is not. The components are identical. (See DOC response to Hitachi Comment #14, for further discussion of class or kind.)

Fujitsu Comment No. 24: EPROM dice should not be included because they are manufactured into completed EPROMs in the U.S. and are, therefore, products of the United States and outside the scope of an antidumping investigation.

DOC Position: We disagree. Both EPROM dice and completed EPROM are explicitly included in the scope of investigation. The fact that EPROM dice are further manufactured in the United States prior to sale does not preclude their inclusion in our investigation. The exporter's sales price provisions of the statute (section 772(e)) implicitly gives the Department authority to include merchandise in the scope of the investigation or order which is further manufactured in the United States.

Fujitsu Comment No. 25: Fujitsu argues that if EPROM dice are included in the scope of the investigation, a separate weighted-average margin should be calculated for the merchandise.

DOC Position: We disagree. As stated in our response to Fujitsu comment #23, we feel that both EPROM dice and completed EPROMs are the same class or kind of merchandise, capable of performing the same functions with only minor modifications. We, therefore, have not differentiated between the products for purposes of determining dumping liability.

Fujitsu Comment No. 26: Fujitsu argues that the Department should calculate a margin based on completed EPROMs and apply it to both EPROM dice and completed EPROMs.

DOC Position: We disagree. As stated in response to Fujitsu comments No. 24 and No. 25, EPROM dice have been included in the scope of the investigation and importations of this merchandise cannot be ignored in our calculations of dumping margins. In order to derive the most accurate calculation of dumping margins, the Department determined that it was necessary to examine both EPROM dice and completed EPROMs.

Fujitsu Comment No. 27: Respondent claims each density of EPROM is a separate class or kind of merchandise and should be the subject of individual weighted-average margins.

DOC Position: We disagree. See response to Hitachi Comment No. 14.

Fujitsu Comment No. 28: Respondent argues that the Department erred in comparing U.S. sales to constructed value based on costs two months prior to the dates of sale.

DOC Position: See response to Hitachi Comment No. 13.

Fujitsu Comment No. 29: Respondent claims that the Department erred in calculating a profit or loss attributable to the EPROM dice used in the manufacture of a finished EPROM in the United States, in that the calculation did not take into consideration the disproportionate amount of value added in the U.S. assembly operation. Fujitsu proposes that the Department correct this error by either (1) making an ESP deduction for further manufacturing in the United States based on values rather than cost, or (2) by maintaining its current methodology, but adjusting profit or loss to reflect losses caused by the high U.S. manufacturing costs.

DOC Position: The Department has calculated United States prices in ESP situations by deducting the value of further processing based on the costs of the processing because these costs are the only reasonable measure of value available to it. Profit or loss has been assigned to the costs of the dice in the same ratio as found in the cost of the finished EPROM.

Fujitsu Comment No. 30: Fujitsu claims the Department's computerized formula for calculating the United States price of the unassembled EPROMs is flawed.

DOC Position: The Department agrees that its program to calculate United States price for its preliminary determination contained both technical and factual errors. The program was changed to eliminate the errors for our final determination.

Fujitsu Comment No. 31: Fujitsu contends an error was made in programming the identification codes for 128K, 64K, and SB0716 EPROMs.

DOC Position: We agree and have corrected this error for our final determination.

NEC Comment No. 1: The Department should not have sent a questionnaire to NEC as the three other producers examined represented nearly 90 percent of exports.

DOC Position: The selection of those producers who will be required to respond to questionnaires is discretionary. In this case, we gave full consideration to NEC's position as expressed in its letter of November 26, 1985. However, in view of the uncertainty of trade statistics (EPROMS do not have a separate tariff classification) we decided the NEC response was necessary to obtain an accurate determination of sales at less than fair value. Therefore, we did not withdraw our questionnaire.

NEC Comment No. 2: Information in the petition can no longer be considered the best information available to the Department. The best information available should be the average margins of responding firms or the highest weighted-average margin of one of these firms. The best available information should not be considered a punitive measure.

DOC Position: We rely on full and complete responses, successfully verified, to reach our determination. When a company is requested to respond and refuses, the most conservative approach is for us to assume that the potential respondent has seen the petition and determined that its actual margins of dumping are even higher than those alleged. To use rates which are lower than those alleged, derived from companies who have participated in the investigation, would enable a respondent to obtain more favorable treatment by refusing to respond than by answering the questionnaire. This is unacceptable. In those instances where we have used as the best information available the highest margins for other respondents, the producers for whom best information was used had made good-faith efforts to comply with our questionnaire; their responses had simply been incomplete or erroneous. That situation is sufficiently different from the case of NEC, which refused entirely to respond, to support different assumptions as to what the actual margins would have been, and therefore, what information should form the basis of best information available.

Petitioners' Comments

Petitioners' Comment No. 1 (Hitachi): Petitioners claim that Hitachi (1) did not account for all its R&D, nor were such costs verified, (2) allocated factory overhead on an incorrect basis, (3) incorrectly recalculated depreciation expenses, (4) offset interest expense with interest income related to other products, and (5) did not account for all of its selling, general, and administrative expense; therefore, the Department should use "best information" for these costs.

DOC Position: For the Department's treatent of such costs, see Respondent's Comments-Hitachi.

Petitioners' Comment No. 2 (Hitachi): The Department should allocate price protection and ship and debit post delivery price adjustments to particular original sales, if possible. If not, then they should connect payments to particular sales using a "first in, first out" (FIFO) inventory assumption. The payments should be assigned to the most recent sales to distributors. Payments should not be averaged as this dilutes the per unit amount rebated.

DOC Position: Since the rebates are not related to any identifiable individual sale, it was necessary for the respondents to choose some reasonable method to allocate these rebate payments. One used an average method, and two used FIFO for price protection and average for ship and debit. We believe that both methods are reasonable, and after adjustment for some under-allocation of payments, have accepted both methods. While the average method does spread out the effect of rebates, it is specific as to distributor and device. The FIFO method does not dilute per unit amounts, but probably assigns rebates to the wrong original sales, since the most recent sales to distributors tend to be at the lower invoice prices, and rebates are applicable more to the oldest purchases still in distributor stocks.

Petitioners' Comment No. 3 (Hitachi): Hitachi's home market sales listing cannot be used because it inconsistently reported sales, using various points in transactions as the date of sale.

DOC Position: The sales listing was revised to list only sales with dates of shipment within the period of a-20 investigation, and has been used in reaching our final determination. It has been verified.

Petitioners Comment No. 4 (Hitachi): The Department must track returned

EPROMs, as they reduce sales revenue and increase production cost.

DOC Position: Revenue figures are based on net sales (deliveries less returns) as reported in Hitachi sales journals. Since the returns are not of defective merchandise and are capable of being resold, the production cost should not be increased. Verification revealed that no EPROMs were written off, so saleable production totals are not affected.

Petitioners' Comment No. 5 (Hitachi): The Department should disallow Hitachi's claim for distribution of free EPROMs, as it could not be verified.

DOC Position: We agree.

Petitioners' Comment No. 6 (Hitachi): Hitachi must report all ship out of stock and debit (SOSAD) payments applicable to sales during the period of investigation. The revised amounts for June through November should be added to amounts paid in April and May to determine the total.

DOC Position: We disagree. Since all SOSAD payments are allocated to sales during the six month period of investigation, it would be inappropriate to apply eight months of payment to six months of sales. The period of payments was shifted two months forward (from April-September to June-November) to account for average delays in processing time by Hitachi. Since the average time a device is in distributor inventory is likely to vary by device and distributor, and is unknown to repondents, we decided that any attempt to estimate this period would not be accurate enough to justify the time required to make a change.

Petitioners' Comment #7 (Hitachi): Hitachi price protection payments should be applied to distributor sales on a FIFO inventory basis.

DOC Position: We disagree. The average method used by Hitachi is reasonable. See reponse to Petitioners' Comment #6 (Hitachi).

Petitioners' Comment #8 (Hitachi): The Department must obtain and verify information from Hitachi on price adjustments on U.S. sales.

DOC Position: We believe we have accounted for all adjustments to price.

Petitioners' Comment #9 (Hitachi): The Department should treat all returned EPROMs as rejects and unsaleable unless Hitachi can demonstrate the return was resold.

DOC Postion: We disagree. Hitachi has sparate accounting codes for returns of defective merchandise and stock rotation returns. We see no basis to assume stock rotation returns are defective and will not be resold.

Petitioners' Comment #10 (Hitachi): The Department must find a verifiable manner by which to calculate commissions paid by Hitachi in the United States.

DOC Position: The Department has used a verifiable method to calculate commissions paid by Hitachi in the United States. Hitachi commissions are paid to agents based on a percentage of distributor resale prices (when sales are to a distributor). As these commissions must be expressed as a percentage of distributor purchase prices, it was necessary, and appropriate, to develop a ratio between distributor purchase and resale prices. The method used is considered the most accurate approach given the documentation available to the respondent.

Petitioners' Comment #11 (Hitachi): The Department must identify EPROMS with special characteristics in Japan and the United States and ensure they are compared with each other. Separate costs of production should be developed for each type of specialized device.

DOC Position: We agree it would be desirable to compare only devices which are identical in all characteristics. However, for the present, we have differentiated only by denisty and process (NMOS or CMOS) as the Department did not have the administrative ability during this investigation stage of the proceeding to develop price and cost data on every sub-type of EPROM manufactured and sold by the respondent.

Petitioners' Comment #12 (Hitachi): The Department should not assume that the date of shipment is always the date of sale, as users (OEMs) sometimes purhase on long-term contracts.

DOC Position: In this particular trade, characterized by abrupt changes of market price and frequent renegotiation of terms, we continue to think that the date of shipment constitutes the date of sale, both in Japan and the United States. Where anomalous prices were found, we questioned the repondents as to reasons for these prices and, where appropriate, eliminated these sales from price comparisons.

Petitioners' Comment #13 (Toshiba): Petitioners' claim that Toshiba's (1) R&D did not include all costs and it was not vertified, (2) depreciation was incorrectly restated, (3) selling, general and administrative costs were incorrectly reported, and (4) yields for both wafer, assembly and test were not verified. On this basis, the Department should use "best information" for these costs.

DOD Position: For depreciation and selling, general, and administrative expenses we have used best available information. We have used actual yields. R&D was satisfactorily verified, and used after adjustments for some omitted costs. For further detail, see our response to Toshiba comments 1, 2, 4, 7, and 8.

Petitioners' Comment #14 (Toshiba): Petitioners argue that due to errors and omissions in Toshibia's reported production costs, the Department should (1) adjust reported labor and overhead costs for assembly and testing to reflect standard costs adjusted to actual, rather than the transfer prices used by Toshiba; (2) add to production costs the omitted ongoing modification costs for EPROM production line processing; and (3) adjust Toshiba's costs to include an appropriate cost for inventory write-offs and adjustments.

DOC Position: The Department reviewed the methodology used by Toshiba to determine the labor and overhead costs. Because the Department could not satisfactorily verify the methodology used, and because of the omission of certain costs, we used "best information."

Petitioners' Comment #15 (Toshiba): Petitioners argue that Toshiba did not accurately quantify its price protection adjustments for its U.S. distributors because it distributed the price protection amount over a larger number of units than the specific units which should have received them. Petitioners allege that this resulted in lower margins of dumping for the EPROMs to which the price protection actually applies. The Department should, therefore, use the best information available to approximate the level of the actual protection provided.

DOC Petition: We disagree. Although the price protection adjustments did not apply to the specific sales being protected, we considered the method of allocation to be a reasonable one. Toshiba used a first-in first-out (FIFO) method of accounting and went back through the most recent shipments until it captured the full price protection adjustment amount.

Petitioners' Comment #16 (Toshiba): Petitioners argue that Toshiba has not accurately quantified its ship and debit price adjustments in that portions of the adjustments falling within the period of investigation were not reported. Furthermore, petitioners allege that Toshiba's method of treating these adjustments reduced its dumping margins by distributing ship and debit expenditures over a larger number of units than those to which the adjustments actually applied.

DOC Position: We agree. Toshiba's ship and debit adjustments have been recomputed. The recomputation involved allocating all ship and debit

claims approved in June–November to sales in April–September. The allocation was distributor and device specific. We believe that the use of a 2-month lag period is necessary because verification indicated that the ship and debit adjustments were not actually paid until several months later. Furthermore, the price adjustments apply to distributor inventory and cannot be directly associated to individual sales. Therefore, the recomputation adjusts prices during the six-month investigative sales period with the adjustments paid during a later six-month period.

Petitioners' Comment #17 (Toshiba): Petitioners state that the Department must verify that Toshiba's reported sales to Canada which were included in sales to the United States are not included in the U.S. sales on which our final antidumping duty determination will be based.

DOC Position: We agree. Sales to Canada which were erroneously reported as sales to the United States were deleted from the U.S. sales listing prior to performing margin calculations for the final determination.

Petitioners' Comment #18 (Fujitsu): Petitioners argue that, since Fujitsu refused to provide the Department with the necessary documentation and information necessary to verify costs which resulted in the Department's suspension of verification, the Department must use "best information."

DOC Position: We agree. Best information was used when such data could not be verified.

Petitions' Comment #19 (Fujitsu): Petitioners contend that rebates for meeting sales objectives during the period of investigation must be applied to sales during the period.

DOC Position: We agree and have adjusted home market prices, where applicable, to reflect these rebates.

Petitioners' Comment #20 (Fujitsu): Petitioners contend that prices of the merchandise in the United States continued to decline througout the period of investigation necessitating further price protection adjustments than those disclosed at verification, and that the Department should impute such price reductions based on U.S. distributor selling prices, adjusted for distributor profit.

DOC Position: In verying the information submitted, the Department reviewed price protection mechanisms for a reasonable time after the period of investigation to account for post-sale adjustments to sales under investigation. U.S. prices were adjusted to reflect documented price protection adjustments. Without evidence that further price protection adjustments were being made, none will be imputed.

Petitioners' Comment No. 21 (Fujitsu): Petitioners argue that the Department must collect information on ship and debit adjustments beyond December 1985, and apply the adjustments to the specific shipments for which they were made.

DOC Position: The Department concluded that there months was a reasonable estimate of the time between shipment and ship and debit credit. Therefore, credits issued from July through December are considered a reasonable reflection of credits applicable to sales made during the period of investigation. As these special price authorizations apply to sales from distributor inventory, they cannot be associated with individual sales or shipments to distributors. We allocated these credtis based on units shipped during the period of investigation.

Petitioners' Comment #22 (Fujitsu): Petitioners contend that early payment rebates to distributors must be applied to the specific sales for which they were made, rather than be allocated over total distributor sales.

DOC Position: Discount claim and allowance account records were found not to be retained in sufficient detail to identify individuals sales receiving this rebate. The totals used to allocate this rebate were verified and the allocation method found to be reasonable.

Petitioners's Comment #23 (General): Petitioners claim that the Department should adjust the reported SG&A costs where SG&A expenses were allocated based on sales rather than cost or where expenses were omitted. The resultant SG&A percentage should not be substantially below the SG&A corporate average percentage.

DOC Position: The Department agrees and in those cases were the SG&A costs were not appropriately allocated or did not include certain costs, the Department used best information or adjusted the amounts of the SG&A expensed.

Petitioners' Comments #24 (General): Petitioners claim that the Department should lag production costs at least three to four months when comparing constructed value with United States prices and when comparing the cost of production to home market sales, in order to match actual costs to the sales price.

DOC Position: We agree. The Department attempted to verify actual production time for each respondent. While production information was not satisfactorily verified for any one company, from the information obtained, the Department estimated the production cycle time to be three months and used this estimate as the "best information" for all of the companies involved.

Petitioners' Comment #25 (General): Petitioners claim that because each respondent had several deficiencies in its reporting of R&D costs the Department should use the "best information" available. It should use average publicly reported Japanese DRAM industry R&D amounts, in the range of 60 percent of variable production costs, or the 1982–84 average R&D as a percentage of sales as reported by MITI.

DOC Position: The Department, when it could not satisfactorily verify the R&D, used the best information, based on data issued by the Ministry of International Trade and Industry. In one case where R&D had been verified, but certain costs were omitted, the Department adjusted the R&D costs by adding the omitted costs.

Petitioners' Comment #26 (General): Petitioners stress that the Department should not permit the respondents to claim that all R&D is a general expense of the corporation.

DOC Position: The Department includes in the cost of manufacturing all costs, direct and indirect, incurred prior to or during production, which are directly related to the manufacturing of the product. R&D expenses, such as those related to the design of the product and product line, are necessary for the manufacturing of the product and, therefore, are included in the cost of manufacturing.

Petitioner's Commment #27 (General): EPROMs in plastic cases are within the scope of the investigation, despite the fact that they are not erasable. Their electrical properties are identical to ceramic cased EPROM and the lack of erasability is irrelevant to most users.

DOC Position: We agree. Material supplied by a respondent and petitioners indicates that the plastic-cased devices are directly interchangeable with those in ceramic cases which have a window through which the erasing light can reach the dice. Although once packaged in plastic the EPROM cannot be erased, the active portion of the chip (the dice) is erasable. An overwhelming majority of the users have no need for the erasability feature.

The plastic devices move in the same channels of trade as the EPROMs encased in ceramic. We have, therefore, determined that the plastic-cased devices are of the same class or kind of merchandise and are included within the scope of this investigation.

Petitioners' Comment #28 (General): EPROMs which are assembled in third countries using processed wafers or dice fabricated in Japan should be included in the scope of this investigation.

DOC Position: We agree. Pursuant to section 731 of the statute the Department is required to look at the class or kind of merchandise produced in the country under investigation. Although the statute is not explicit, section 773(g) indicates that merchandise exported to the United States through an intermediate country is included within the class or kind of merchandise covered by the investigation, unless it is substantially transformed prior to importation into the United States.

The class or kind of merchandise subject to this investigation includes wafers and dice. Thus, when the dice are exported from Japan they are covered by the scope of the investigation, unless they are substantially transformed prior to importation into the United States. Upon examination, we do not regard the packaging of the dice as constituting substantial transformation. In reaching this conclusion we have taken note of the fact that the processed wafer or dice is not only a major component of the finished device, it is *the* essential active component which defines the merchandise under investigation. All of the electrical properties that make an EPROM an EPROM are encoded on the processed side, and neither this element, nor the intended use of the merchandise, is changed by the assembly process in the third country. Further, encapsulation is not a sophisticated process; rather, it is the wafer fabrication in Japan which is the technology intensive portion of EPROM production. Additionally, based upon the factors just discussed, and because of the fact that the asssembly process is the mechanical stage which can be accomplished relatively easily in any country, we find that a failure to include third country imports in the scope of the investigation could lead to substantial circumvention of any order. Respondents have suggested that because U.S. Customs Service rulings have found that assembly and testing in a third country constitutes substantial transformation of the product, we cannot consider the imported finished product to be merchanidse from Japan within the scope of the investigation. However, in making scope determinations, the Department is not required to rely on U.S. Customs rulings, but as independent authority to determine the scope of its investigations, (see *Diversified Products Corp.* v. *United States*, 5 ITRD 1263 (CIT 1983). Lastly, we have evidence of indirect shipments of the merchandise, indirect imports were included in the scope of the petition, and the parties have addressed this issue throughout the proceeding. See also, "Products Under Investigation" section of this notice.

Petitioners' Comment #29 (General): The Department should not exclude EPROMs which are pre-programmed or intended only for the replacement market.

DOC Postion: We agree. We do not regard these devices as sufficiently distinguishable in commercial or physical characteristics to constitute a separate class of merchandise. Further, it would be administratively impossible for U.S. Customs to separate "special order sales" from all other sales if this exception was implemented.

Petitioners' Comment #30 (General): The Department should not calculate separate dumping margins for each density and process of EPROM.

DOC Position: We agree. See response to Hitachi Comment #14.

Petitioners' Comment #31 (General: The Department should continue to use a two-month lag when comparing production costs to sales.

DOC Position: See response to Hitachi Comment #12.

Results of Investigation. The Results of our investigation are as follows:

Manufacturer/producer/exporter	Margin percentage
Hitachi Ltd	85.2
Fujitsu Limited	103.0
Toshiba Corporation	60.1
NEC Corporation	188.0
All others	93.9

ITC Notification

In accordance with section 735(d) of the Act, we will notify the ITC of our determination. In addition, we are making available to the ITC all nonprivileged and nonproprietary information relating to this investigation. We will allow the ITC access to all privileged and business proprietary information in our files, provided the ITC confirms that it will not disclose such information either publicly or under an administrative protective order without the consent of the Deputy Assistant Secretary for Import Administration. The ITC will determine whether these imports materially injure, or threaten material injury to, a U.S. industry within 45 days after we make our final determination. If the ITC determines that material injury or threat of material injury does not exist, this proceeding will be terminated.

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

Paul Freedenberg,

Assistant Secretary for Trade Administration.

October 24, 1986.

[FR Doc. 86-24599 Filed 10-29-86; 8:45 am]

BILLING CODE 3510-DS-M

INTERNATIONAL TRADE COMMISSION

[Investigation No. 731-TA-288 (Final)]

Erasable Programmable Read Only Memories (EPROM's) from Japan; Antidumping Investigation and Hearing

AGENCY: United States International Trade Commission.

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

EFFECTIVE DATE: October 30, 1986.

FOR FURTHER INFORMATION CONTACT: Judith Zeck (202-523-0339), Office of Investigations, U.S. International Trade Commission, 701 E Street NW., Washington, DC 20436. Hearing-impaired individuals may obtain information on this matter by contacting the Commission's TDD terminal on 202-724-0002.

SUPPLEMENTARY INFORMATION:

Background

On July 30, 1986, the United States Department of Commerce suspended its antidumping investigation concerning erasable programmable read only memories (EPROM's) from Japan (51 FR 28253, August 6, 1986). Accordingly, on August 6, 1986, pursuant to section 734(f)(1)(B) of the Tariff Act of 1930 (19 U.S.C. 1673c(f)(1)(B), the United States International Trade Commission suspended its antidumping investigation on EPROM's from Japan (51 FR 29708, August 20, 1986). On August 26, 1986, however, a request to continue the investigation was filed with Commerce and the Commission pursuant to section 734(g)(2) of the Tariff Act of 1930 (19 U.S.C. 1673c(g)(2)) by counsel for petitioners. On October 30, 1986, Commerce published its final affirmative determination of sales at less than fair value (LTFV) (51 FR 39680, October 30, 1986). The Commission must therefore make its final injury determination by December 15, 1986. The Commission hereby gives notice of the continuation of investigation No. 731-TA-288 (Final), and of the scheduling of a hearing to be held in connection with the subject investigation.

Staff Report

A public version of the prehearing staff report in this investigation was placed in the public record on July 18, 1986, pursuant to § 207.21 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 November 19, 1986 at the U.S. International Trade Commission Building, 701 E Street NW., 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 November 10, 1986. 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 November 12, 1986 in room 117 of the U.S. International Trade Commission Building. The deadline for filing prehearing briefs is November 12, 1986.

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 201.6(b)(2))).

Written Submissions

All legal arguments, economic analyses, and factual materials relevant to the public hearing should be included in prehearing briefs in accordance with § 207.22 of the Commission's rules (19 CFR 207.22). Posthearing briefs must conform with the provisions of § 207.24 (19 CFR 207.24) and must be submitted not later than the close of business on November 25, 1986. 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 November 25, 1986.

A signed orginal and fourteen (14) copies of each submissions 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 treatment must conform with the requirements of § 201.6 of the Commission's rules (19 CFR 201.6).

For further information concerning this investigation see the Commission's notice of investigation cited above and the Commission's Rules of Practice and Procedure, part 207, subparts A and C (19 CFR 207), and Part 201, subparts A through E (19 CFR Part 201).

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).

Issued: November 8, 1986.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 86-25578 Filed 11-7-86; 12:47 pm]

BILLING CODE 7020-02-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 : Erasable Programmable Read Only Memories (EPROM's) from Japan

Inv. No. : 731-TA-288 (Final)

Date and time: November 19, 1986 - 9:30 a.m.

Sessions were held in connection with the investigation in the Hearing Room of the United States International Trade Commission, 701 E Street, N.W., in Washington.

In support of the imposition of antidumping duties:

Dewey, Ballantine, Bushby, Palmer & Wood--Counsel
Washington, D.C.
on behalf of

Intel Corporation, Advanced Micro Devices, Inc., and National Semiconductor Corporation

David Bostwick, Director of Strategic Marketing, Memory Group, Advanced Micro Devices, Inc.

Carl Everett, Director of Marketing, Memory Components Division, Intel Corporation

George H. Schneer, Vice President and Director, Components, Quality and Reliability, Intel Corporation

R. Michael Gadbaw)
Rosemary E. Gwynn)
William A. Noellert) --OF COUNSEL
Timothy J. Richards)

- more -

In opposition to the imposition of antidumping duties:

Akin, Gump, Strauss, Hauer & Feld--Counsel
Washington, D.C.
on behalf of

Fjuitsu Limited and Fujitsu Microelectronics, Inc.

Shannon S. Shuman, Economist

Rory F. Quirk)
Warren E. Connelly)--OF COUNSEL
Valerie A. Slater)

Metzger, Shadyac & Schwarz--Counsel
Washington, D.C.
on behalf of

Hitachi, Ltd., Hitachi America, Ltd., and Nissei Sangyo America, Ltd.

Carl W. Schwarz)
William H. Barrett)
Paul J. Pantano, Jr.)--OF COUNSEL
Patrick J. Cumberland)

Mudge, Rose, Guthrie, Alexander & Ferdon--Counsel
Washington, D.C.
on behalf of

Toshiba Corporation and Toshiba America, Inc.

David A. Vaughan)--OF COUNSEL
Robert D. Bannerman)

Coudert Brothers--Counsel
Washington, D.C.
on behalf of

NEC Corporation and NEC Electronics Inc.

Michael J. Calvey)
Mark D. Herlach)--OF COUNSEL
Laura B. Campbell)

APPENDIX C

SUPPLEMENTAL TRADE DATA TABLES

Table C-1.—EPROM's, cased: Apparent U.S. consumption, by densities, on the basis of bits of memory 1983-85, January-June 1985, and January-June 1986
(In thousands of units)

Item	1983	1984	1985	January-June	
				1985	1986
Under 32K 1/	107,672	92,432	50,640	34,480	17,400
32K	791,648	687,008	689,248	300,352	239,680
64K	***	1,817,856	1,760,960	756,800	749,184
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K 2/	***	***	***	***	***
Total	2,533,368	4,027,440	5,974,128	2,493,360	4,228,920

1/ Assumes that all under 32K EPROM's are 8K EPROM's.
2/ Assumes that all over 256K EPROM's are 512K EPROM's

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

Table C-2.--EPROM's, cased: Apparent U.S. consumption, by densities, on the basis of value 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June 1985	January-June 1986
	Quantity (1,000 units)				
Under 32K	36,155	31,200	15,536	10,960	6,472
32K	88,875	87,773	52,796	33,409	16,903
64K	***	185,000	86,195	53,411	30,633
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	313,601	473,498	293,770	180,258	138,861
	Share of total (percent)				
Under 32K	11.5	6.6	5.3	6.1	4.7
32K	28.3	18.5	18.0	18.5	12.2
64K	40.3	39.1	29.3	29.6	22.1
128K	***	***	***	***	***
256K	***	***	***	***	***
Over 256K	***	***	***	***	***
Total	100.0	100.0	100.0	100.0	100.0

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

Table C-3--EPROM's, cased made from U.S. produced uncased EPROM's: U.S. producers' domestic shipments by densities, 1983-85, January-June 1985, and January-June 1986

Item		1983	1984	1985	January-June	
					1985	1986
		Quantity (1,000 units)				
*	*	*	*	*	*	*
		Value (1,000 dollars)				
*	*	*	*	*	*	*
		Unit value				
*	*	*	*	*	*	*

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

Table C-4--EPROM's, cased made from uncased EPROM's produced in Japan: 1/ U.S.producers' domestic shipments, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item		1983	1984	1985	January-June	
					1985	1986
		Quantity (1,000 units)				
*	*	*	*	*	*	*
		Value (1,000 dollars)				
*	*	*	*	*	*	*
		Unit value				
*	*	*	*	*	*	*

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

Table C-5.--EPROM's, cased made from U.S.-produced uncased EPROM's: U.S. producers' export shipments, by densities, 1983-85, January-June 1985, and January-June 1986

(In thousands of units)

Item	1983	1984	1985	January-June	
				1985	1986
	Quantity (1,000 units)				
* *	*	*	*	*	*
	Value (1,000 dollars)				
* *	*	*	*	*	*
	Unit value				
* *	*	*	*	*	*

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

Table C-6.—Gross profit-and-loss experience of U.S. producers on their operations relating to the sale of under 32K EPROM's, at least some portion of which was produced in their U.S. establishments, by firms, accounting years 1983-85, and interim periods ended June 30, 1985, and June 30 1986

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Table C-7.—Gross profit-and-loss experience of U.S. producers on their operations relating to the sale of 32K EPROM's, at least some portion of which was produced in their U.S. establishments, by firms, accounting years 1983-85, and interim periods ended June 30, 1985, and June 30 1986

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Table C-8.—Gross profit-and-loss experience of U.S. producers on their operations relating to the sale of 64K EPROM's, at least some portion of which was produced in their U.S. establishments, by firms, accounting years 1983-1985, and interim periods ended June 30, 1985, and June 30 1986

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Table C-9.—Gross profit-and-loss experience of U.S. producers on their operations relating to the sale of 128K EPROM's, at least some portion of which was produced in their U.S. establishments, by firms, accounting years 1983-85, and interim periods ended June 30, 1985, and June 30 1986

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Table C-10.—Gross profit-and-loss experience of U.S. producers on their operations relating to the sale of 256K EPROM's, at least some portion of which was produced in their U.S. establishments, by firms, accounting years 1983-85, and interim periods ended June 30, 1985, and June 30 1986

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Table C-11.—Gross profit-and-loss experience of U.S. producers on their operations relating to the sale of over 256K EPROM's, at least some portion of which was produced in their U.S. establishments, by firms, accounting years 1983-85, and interim periods ended June 30, 1985, and June 30 1986

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Table C-12.—Gross profit-and-loss experience of U.S. producers on their operations relating to the sale of all EPROM's, at least some portion of which was produced in their U.S. establishments, by firms, accounting years 1983-85, and interim periods ended June 30, 1985, and June 30 1986

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APPENDIX D

SUPPLEMENTAL PRICE TABLES

Table D-1.—64K EPROM's (250ns) sold to OEM's: Weighted-average net selling prices for sales of domestic products and for sales of imports from Japan, and average margins by which imports of Japanese EPROM's undersold or oversold U.S. produced EPROM's, by classes of OEM's and by months, September 1984-March 1986

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Table D-2.—128K EPROM's (250ns) sold to OEM's: Weighted-average net selling prices for sales of domestic products and for sales of imports from Japan, and average margins by which imports of Japanese EPROM's undersold or oversold U.S. produced EPROM's, by classes of OEM's and by months, September 1984-March 1986

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Table D-3.—256K EPROM's (250ns) sold to OEM's: Weighted-average net selling prices for sales of domestic products and for sales of imports from Japan, and average margins by which imports of Japanese EPROM's undersold or oversold U.S. produced EPROM's, by classes of OEM's and by months, September 1984-March 1986

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Table D-4.—EPROM's (250ns) sold to subcontractors/circuit board stuffers: Weighted-average net selling prices for sales of domestic products and for sales of imports from Japan, and average margins by which imports of Japanese EPROM's undersold or oversold U.S. produced EPROM's, by densities and by months, September 1984-March 1986

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Table D-5.—EPROM's (250ns) sold to spot-market purchasers: Weighted-average net selling prices for sales of domestic products and for sales of imports from Japan, and average margins by which imports of Japanese EPROM's undersold or oversold U.S. produced EPROM's, by densities and by months, September 1984-March 1986

* * * * * * *

Table D-6.—64K EPROM's (250ns) sold to distributors: Weighted-average net selling prices for sales of domestic products and for sales of imports from Japan, and average margins by which imports of Japanese EPROM's undersold or oversold U.S. produced EPROM's, by sales quantities and by months, September 1984-March 1986

* * * * * * *

Table D-7.—128K EPROM's (250ns) sold to distributors: Weighted-average net selling prices for sales of domestic products and for sales of imports from Japan, and average margins by which imports of Japanese EPROM's undersold or oversold U.S. produced EPROM's, by sales quantities and by months, September 1984-March 1986

* * * * * * *

Table D-7.—256K EPROM's (250ns) sold to distributors: Weighted-average net selling prices for sales of domestic products and for sales of imports from Japan, and average margins by which imports of Japanese EPROM's undersold or oversold U.S. produced EPROM's, by sales quantities and by months, September 1984-March 1986

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