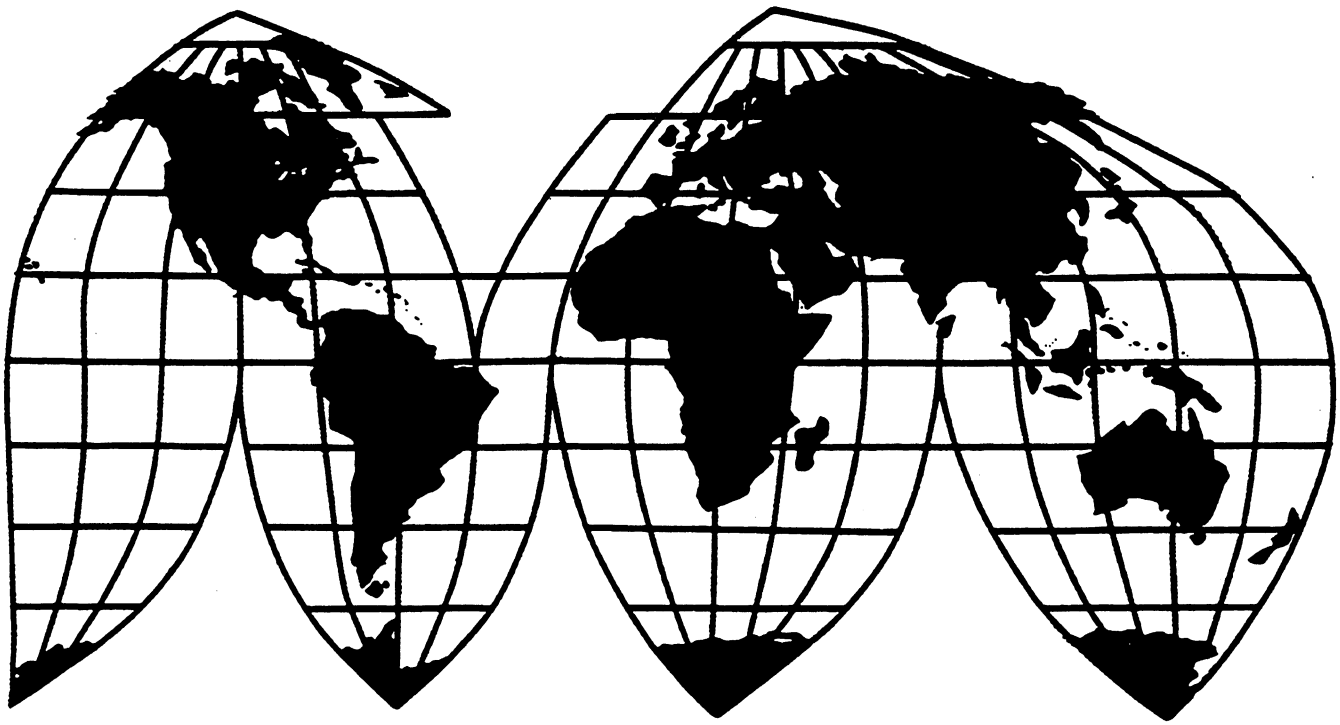
Static Random Access Memory Semiconductors From the Republic of Korea and Taiwan

Investigations Nos. 731-TA-761-762 (Final)

Publication 3098 **April 1998**

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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NOTE

Information that would reveal confidential operations of individual concerns may not be published and therefore has been deleted from this report.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

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigations Nos. 731-TA-761 and 762 (Final)

STATIC RANDOM ACCESS MEMORY SEMICONDUCTORS FROM THE REPUBLIC OF KOREA AND TAIWAN

DETERMINATIONS

On the basis of the record[1] developed in the subject investigations, the United States International Trade Commission determines, pursuant to section 735(b) of the Tariff Act of 1930 (19 U.S.C. § 1673d(b)) (the Act), that an industry in the United States is not materially injured or threatened with material injury, and the establishment of an industry in the United States is not materially retarded, by reason of imports from the Republic of Korea of static random access memory semiconductors (SRAMs)[2] that have been found by the Department of Commerce (Commerce) to be sold in the United States at less than fair value (LTFV). The Commission also determines,[3] pursuant to section 735(b) of the Act (19 U.S.C. § 1673d(b)), that an industry in the United States is materially injured by reason of imports from Taiwan of SRAMs that have been found by Commerce to be sold in the United States at LTFV.

BACKGROUND

The Commission instituted these investigations effective February 25, 1997, following receipt of a petition filed with the Commission and Commerce by Micron Technology Inc., Boise, ID. The final phase of the investigations was scheduled by the Commission following notification of preliminary determinations by Commerce that imports of SRAMs from Korea and Taiwan were being sold at LTFV within the meaning of section 733(b) of the Act (19 U.S.C. § 1673b(b)). Notice of the scheduling of the

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

[2] The products covered by these investigations are synchronous, asynchronous, and specialty SRAMs from Korea and Taiwan, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or die, uncut die, and cut die. Processed wafers produced in Korea or Taiwan, but packaged, or assembled into memory modules, in a third country, are included in the scope; processed wafers produced in a third country and assembled or packaged in Korea or Taiwan are not included in the scope.

The scope of these investigations includes modules containing SRAMs. Such modules include single in-line processing modules (SIPs), single in-line memory modules (SIMMs), dual in-line memory modules (DIMMs), memory cards, or other collections of SRAMs, whether unmounted or mounted on a circuit board. The scope of these investigations does not include SRAMs that are physically integrated with other components of a motherboard in such a manner as to constitute one inseparable amalgam (i.e., SRAMs soldered onto motherboards).

The SRAMs within the scope of these investigations are classified in statistical reporting numbers 8542.13.8037 through 8542.13.8049, 8473.30.1000 through 8473.30.9000, and 8542.13.8005 of the Harmonized Tariff Schedule of the United States (HTSUS).

[3] Vice Chairman Bragg voted in the affirmative, Chairman Miller voted in the negative, and Commissioner Crawford did not participate.

Commission's investigations and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of October 16, 1997 (62 FR 53800). The hearing was held in Washington, DC, on February 18, 1998, and all persons who requested the opportunity were permitted to appear in person or by counsel.

VIEWS OF THE COMMISSION

Based on the record in these antidumping duty investigations, we find that an industry in the United States is neither materially injured nor threatened with material injury by reason of imports of static random access memory semiconductors ("SRAMs") from the Republic of Korea ("Korea") that have been found by the Department of Commerce ("Commerce") to be sold at less than fair value ("LTFV"). We also find that an industry in the United States is materially injured by reason of imports of SRAMs from Taiwan that have been found by Commerce to be sold at LTFV.[1] [2]

I. DOMESTIC LIKE PRODUCT AND INDUSTRY

A. Domestic Like Product

To determine whether an industry in the United States is materially injured or threatened with material injury by reason of the subject imports, the Commission first defines the "domestic like product" and the "industry." Section 771(4)(A) of the Tariff Act of 1930, as amended ("the Act"), defines the relevant industry as the "producers as a [w]hole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product."[3] In turn, the Act defines "domestic like product" as "a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation."[4]

Our decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and we apply the statutory standard of "like" or "most similar in characteristics and uses" on a case-by-case basis.[5] No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.[6] The Commission looks for clear dividing lines among possible like products, and disregards minor variations.[7] Although the Commission must accept the determination of Commerce as to the scope of the imported merchandise

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[1] Chairman Miller, Vice Chairman Bragg, and Commissioner Crawford each voted in the negative with respect to imports from Korea. With respect to imports from Taiwan, Chairman Miller voted in the negative, Vice Chairman Bragg voted in the affirmative, and Commissioner Crawford did not participate.

[2] Material retardation of the establishment of an industry is not an issue in these investigations.

[3] 19 U.S.C. § 1677(4)(A).

[4] 19 U.S.C. § 1677(10).

[5] *See, e.g.,* Nippon Steel Corp. v. United States, 19 CIT __, Slip Op. 95-57 at 11 (Apr. 3, 1995). The Commission generally considers a number of factors including: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) common manufacturing facilities, production processes and production employees; (5) customer and producer perceptions; and, where appropriate, (6) price. *See id.* at 11 n.4; Timken Co. v. United States, 913 F. Supp. 580, 584 (Ct. Int'l Trade 1996).

[6] *See, e.g.,* S. Rep. No. 96-249, at 90-91 (1979).

[7] Torrington Co. v. United States, 747 F. Supp. 744, 748-49 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991).

being sold at LTFV, the Commission determines what domestic product is like the imported articles Commerce has identified.[8]

B. Product Description

In these investigations Commerce has defined the imported articles as:

> *synchronous, asynchronous, and specialty SRAMs from Korea and Taiwan, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or die, uncut die, and cut die. Processed wafers produced in Korea and Taiwan, but packaged, or assembled into memory modules, in a third country, are included in the scope; wafers produced in a third country and assembled or packaged in Korea or Taiwan are not included in the scope.*[9]

Commerce provided further that:

> *The scope of these investigations includes modules containing SRAMs. Such modules include single in-line processing modules ("SIPs"), single in-line memory modules ("SIMMs"), dual in-line memory modules ("DIMMs"), memory cards, or other collections of SRAMs, whether unmounted or mounted on a circuit board.*[10]

Commerce clarified in its final determinations that the subject merchandise does not include the SRAM content of motherboards.[11]

SRAMs are integrated circuits containing thousands or millions of cells that allow data to be stored and retrieved at high speeds.[12] SRAMs vary by access speed (the time required to access data, measured in nanoseconds), density (the number of storage cells), and power consumption.[13] Unlike dynamic random access memory semiconductors ("DRAMs"), SRAMs do not require a periodic electrical pulse to maintain

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[8] Hosiden Corp. v. Advanced Display Manufacturers, 85 F.3d 1561 (Fed. Cir. 1996) (Commission may find single like product corresponding to several different classes or kinds defined by Commerce); Torrington, 747 F. Supp. at 748-752 (affirming Commission determination of six like products in investigations where Commerce found five classes or kinds).

[9] 63 Fed. Reg. 8934, 8934 (Feb. 23, 1998) (Korea); 63 Fed. Reg. 8909, 8910 (Feb. 23, 1998) (Taiwan).

[10] *Id.*

[11] 63 Fed. Reg. 8934, 8934 (Feb. 23, 1998) (Korea) ("We have determined that the scope of this investigation does not include SRAMS that are physically integrated with other components of a motherboard in such a manner as to constitute one inseparable amalgam (i.e., SRAMs soldered onto motherboards)."); 63 Fed. Reg. 8909, 8910 (Feb. 23, 1998) (Taiwan) (same).

[12] Confidential Staff Report ("CR") at I-6 to I-8, Public Staff Report ("PR") at I-6 to I-7.

[13] CR at I-7, PR at I-7 (density); CR at I-6 to I-8, PR at I-6 to I-8 (access speed); CR at I-11, PR at I-10 (power consumption).

the information they contain.[14] SRAMs thus consume less power than DRAMs of comparable density.[15] An SRAM can also provide a faster access speed than a DRAM.[16] On the other hand, SRAMs are generally more complicated and expensive to produce than DRAMs.[17] For these reasons, SRAMs are used instead of DRAMs where faster access speeds or lower power consumption are required.[18]

SRAM manufacture begins with the creation of hundreds of identical circuit patterns on a silicon wafer.[19] The development of the design of these circuits is itself a highly technical process that is sometimes performed by companies not involved in the manufacture of SRAMs.[20] The circuitry is created by the repetitive application of a series of photolithographic and chemical processes, which create microscopic channels on the face of the wafer that conduct or inhibit the flow of electricity.[21] While still on the wafer, these identical circuit patterns, each of which is a "die" or "chip," are tested electronically.[22] The wafer is then cut into individual dice, each of which is an unassembled (or "uncased" or "unpackaged") SRAM.[23] The dice then undergo assembly and further testing, often at a different facility or by a different company.[24] Wafer fabrication requires heavy capital investment, in both research and development of constantly evolving product and process technology, as well as the highly sophisticated equipment required for the manufacture of these complex products.[25] The subsequent assembly and test process also requires significant capital investment, but is comparatively more labor intensive.[26]

C. Domestic Like Product Issue in These Investigations

At issue in these investigations is whether there should be a single domestic like product corresponding to the subject merchandise, as the petitioner argues, or whether, as some of the respondents have argued, there should be separate domestic like products consisting, respectively, of "fast" SRAMs, defined as SRAMs with access speeds of 44 nanoseconds ("ns.") and faster, and "slow" SRAMs, defined as those with access speeds of 45 ns. and slower.[27] [28] In the preliminary determination, the Commission

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[14] CR at I-6, PR at I-6.

[15] CR at I-7 to I-8, PR at I-6.

[16] CR and PR at I-6 to I-7.

[17] CR and PR at I-6.

[18] CR and PR at I-6.

[19] CR and PR at I-12.

[20] CR at I-12, III-8; PR at I-12 and III-5 to III-6.

[21] CR at I-15, PR at I-12.

[22] CR at I-15, PR at I-12.

[23] CR at I-15, PR at I-12.

[24] CR and PR at I-15.

[25] CR and PR at I-12, I-15; transcript of March 18, 1997 conference ("conf. tr.") at 16-19 (Donnelly) (regarding costs of capital investment, research and development, and manufacturing equipment).

[26] CR at I-15, I-17; PR at I-12, I-15.

[27] During the preliminary phase investigations, a number of Korean and Taiwan respondents argued that the Commission should find separate domestic like products for fast and slow SRAMs. In the final phase, Korean respondent Samsung Electronics Co., Ltd. and U.S. importer Samsung Semiconductor, Inc. (collectively

(continued...)

found a single domestic like product consisting of all SRAMs, including unassembled SRAMs, assembled SRAMs, and SRAM memory modules, regardless of access speed.[29] Despite finding certain differences in end use and limits on interchangeability between SRAMs at the extremes of the access speed continuum, the Commission was unable to discern a clear dividing line between fast SRAMs and slow SRAMs. Based on our examination of the six traditional domestic like product factors, we find a single domestic like product consisting of all SRAMs and SRAM modules for purposes of these final determinations as well.

1. Physical characteristics and uses

Fast and slow SRAMs share the same basic physical characteristics, as both types consist of circuitry and transistors on the face of a silicon wafer.[30] Certain other physical characteristics appear primarily in either slow or fast SRAMS, but they do not characterize either the fast or slow grouping as a whole. For example, synchronous SRAMs have an operating frequency that is synchronized with the clock speed of the controlling unit (usually the microprocessors for which it provides memory).[31] Although this synchronized operating frequency is a physical characteristic found almost solely in fast SRAMs, many fast SRAMs are asynchronous, and thus do not have a synchronized operating frequency.[32] A low power consumption characteristic appears much more frequently in slow SRAMs, but at least one domestic producer makes fast SRAMs with low power consumption and another producer is developing such a product.[33]

These differences in access speed and power consumption frequently result in different end uses for fast and slow SRAMs. In general, only fast SRAMs are used as cache memory,[34] a special high-speed

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[27] (...continued)
"Samsung") again advocated separate domestic like products, although, after Commerce calculated a de minimis dumping margin for it, Samsung did not actively participate in the investigations. The other respondents took no position on the definition of the domestic like product in the final phase of the investigations.

[28] The Commission's definition of "fast" and "slow" for purposes of the final determinations is the same as it was in the preliminary determination. The Commission asked the parties in the final phase investigations to comment on whether the terms should be re-defined. A consensus definition did not emerge from those comments, just as it had not from a review of industry publications (as discussed below under "Customer and Producer Perceptions"). CR at I-8 to I-9, PR at I-8. In the absence of a clearly preferable alternative, the Commission again defines fast SRAMs as those with access speeds of 44 ns. or faster, and slow SRAMs as those with access speeds of 45 ns. or slower.

[29] Static Random Access Memory Semiconductors from the Republic of Korea and Taiwan, 731-TA-761-762 (Preliminary), Pub. No. 3036 (April 1997) ("Prelim. Det.") at 10.

[30] CR at I-6 to I-8, PR at I-6 to I-7, I-12.

[31] CR at I-7 to I-8, PR at I-7.

[32] CR at I-7 to I-8, V-5 and PR at I-7, V-4 (indicating that products examined by the Commission include asynchronous SRAMs of 30 ns. and faster).

[33] Transcript of February 18, 1998 hearing ("hearing tr.") at 96-97 (Black & Cloud), 103-04 (Bruneau).

[34] The term "cache" refers to a relatively small, but quickly accessible memory capacity. Computers with cache memory also have a main memory, which is larger, with slower accessibility. More advanced computers function most efficiently when they have cache memory in addition to main memory. Memorandum to the file regarding Micron plant tour of March 11, 1997.

capacity that allows computers to operate at designed speeds.[35] Slow SRAMs, by virtue of their low power consumption, are favored for use as main memory in battery-operated end uses, such as hand held cell telephones.[36] Both fast and slow SRAMs, however, are used in consumer electronics, data and telecommunications equipment, and cellular telephones and pagers.[37]

2. Interchangeability

There is a limited degree of interchangeability between fast and slow SRAMs. A slow SRAM cannot be substituted for a fast one.[38] Under certain circumstances fast SRAMs can be substituted for slow SRAMs. This one-way interchangeability is limited, however, because many of the applications in which slow SRAMs are used require low power consumption, whereas most fast SRAMs consume significantly more power.[39]

3. Channels of distribution

Both fast and slow SRAMs are sold to original equipment manufacturers ("OEMs") as well as to a variety of distributors.[40] A greater proportion of fast SRAMs is sold to OEMs than to distributors.[41]

4. Production facilities, processes, and employees

The production processes for fast and slow SRAMs are similar.[42] Both fast and slow SRAMs are produced on silicon wafers, using a mask set and repetitious photolithographic and chemical procedures.[43] The CMOS process is used to make both fast and slow SRAMs.[44] Some of the fastest SRAMs are made by the BiCMOS process.[45] The same production employees produce fast and slow SRAMs in the same production facilities.[46]

5. Customer and producer perceptions

Many customers and producers perceive that fast and slow SRAMs are different in terms of access speed.[47] Customers and producers did not agree, however, on a definition of the "fast" and "slow," perhaps

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[35] Table I-2, CR at I-11 and I-13 and PR I-10 and I-11.

[36] CR at I-7, I-17; PR at I-6, I-15.

[37] Table I-2, CR at I-13 and PR at I-11.

[38] CR at I-18, PR at I-15 to I-16.

[39] CR at I-17, PR at I-15 to I-16; hearing tr. at 103-04 (Bruneau), 190-91 (Fischer).

[40] CR at I-18 to I-20; PR at I-17.

[41] CR at I-12 to I-13, PR at I-8 to I-9.

[42] CR at I-12 to I-17, PR at I-12 to I-15; hearing tr. at 78, 106 (Bruneau).

[43] CR at I-15, PR at I-12.

[44] CR and PR at I-7.

[45] CR and PR at I-7 and E-6.

[46] Hearing tr. at 78 (Bruneau); CR at I-17, PR at I-15.

[47] CR at I-18, PR at I-16.

due to the fact that SRAM access speeds are generally increasing.[48] Some customers perceive the terms "fast" and "slow" as general in nature because their products require SRAMs of very specific access speeds to optimize functionality.[49]

6. Price

The record is mixed with regard to how much higher priced fast SRAMs are than slow SRAMs. There is evidence that some fast SRAMs are harder to produce and have shorter life spans than slower SRAMs, and thus command up to twice the price of similarly configured slow SRAMs.[50] On the other hand, domestic industry representatives testified that the difference was much smaller, although still significant.[51] Data gathered during these investigations indicates that in 1997 the price of fast and slow SRAMs were very close.[52] Price reductions in one area of the market can affect other areas, even across product family lines.[53]

7. Conclusion

Based on our examination of the six factors above, we do not find a clear dividing line between SRAMs with access speeds of 44 ns. and faster and SRAMs with access speeds of 45 ns. and slower.[54] Accordingly, we find a single domestic like product consisting of SRAMs of all access speeds.[55] Our difficulty in discerning a clear dividing line is due in part to the fact that access speed varies along a continuum. Our difficulty was compounded by the rapid evolution of certain aspects of the product, including, for example, generally increasing access speeds[56] and the fact that some fast SRAMs operate at lower power-consumption rates.

D. Domestic Industry

The Commission is directed to consider the impact of the subject imports on the domestic industry, defined as "the producers as a [w]hole of a domestic like product."[57] In defining the domestic industry, the

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[48] CR at I-8 to I-9, PR at I-8 (indicating definitions proposed by producers and those used by industry publishers); Prehearing Brief of Micron at 11 n.22 (summarizing producer and importer questionnaire responses); and CR at I-8, PR at I-7 (indicating that access speeds are increasing).

[49] CR at I-18, PR at I-16.

[50] CR at I-20 to I-21, PR at I-17 to I-18.

[51] Hearing tr. at 105-06 (Bruneau), 190-91 (Fischer).

[52] CR at I-21, V-20; PR at I-18, V-14.

[53] CR at I-21, PR at I-18; hearing tr. at 65-67 (Commissioner Crawford & Mr. Franciscovich). *See also* Prehearing Brief of Micron at 13-16 (claiming a high correlation between prices of fast and slow SRAMs).

[54] Based on her examination of the six factors above, Commissioner Crawford finds that the SRAM market is somewhat segmented between fast and slow SRAMs, but not sufficiently segmented to find separate like products.

[55] The single domestic like product includes unassembled SRAMs, assembled SRAMs, and SRAM memory modules.

[56] CR at I-8, PR at I-7.

[57] 19 U.S.C. § 1677(4)(A).

Commission's general practice has been to include in the industry all of the domestic production of the like product, whether toll produced, captively consumed, or sold in the domestic merchant market.[58]

Based on our definition of the domestic like product, we define the corresponding domestic industry as all companies that perform the manufacture of unassembled SRAMs and/or perform the assembly and testing of unassembled SRAMs in the United States, as we did in the preliminary determination.[59] [60] Also consistent with our preliminary determination, we do not include in the domestic industry companies whose sole SRAM production activity is to purchase assembled SRAMs and assemble them into SRAM modules. We find that the assembly of purchased assembled SRAMs into SRAM modules does not involve sufficient production-related activity to merit the inclusion of such companies in the domestic industry.[61]

It was argued in the final phase of these investigations that we should include in the domestic industry companies that develop in the United States the designs used in some of the subject imports from Taiwan. These companies are known as "fabless" producers because they have no fabrication facility, instead engaging other companies (such as the Taiwan producers in this case) to perform fabrication. The fabless producers argue that they should be included in the domestic industry because design is a significant part of the production process, one that adds significant value to the finished SRAM. We do not include

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[58] *See* United States Steel Group v. United States, 873 F. Supp. 673, 682-83 (Ct. Int'l Trade 1994) *aff'd* 96 F.3d 1352 (Fed. Cir. 1996).

[59] Prelim. Det. at 10 n.56. No party disputed that such companies should be included in the domestic industry. In determining whether a company's production-related activities are sufficient that it should be included in the domestic industry, the Commission has generally considered the following six factors: (1) the source and extent of the firm's capital investment, (2) the technical expertise involved in U.S. production activities, (3) the value added to the product in the United States; (4) employment levels; (5) the quantity and type of parts sourced in the United States; and (6) any other costs and activities in the United States directly leading to production of the like product. *See* Certain Carbon Steel Plate From China, Russia, South Africa, and Ukraine, Invs. Nos. 731-TA-753-756 (Final), Pub. No. 3076 (December 1997) at 10-11. Although *** performs only assembly and testing in the United States, it adds *** value to SRAMs as domestic producers that perform the manufacture of unassembled SRAMs: *** percent for *** versus *** percent for the other domestic producers. CR at VI-10; PR at VI-3. Also, due to the highly automated nature of the assembly and testing activities, a high degree of technical expertise is present. CR at I-15, I-17; PR at I-15. It also indicates a considerable capital investment in the equipment used to perform assembly and testing.

[60] Commissioner Crawford does not join the remainder of this section. She gives the benefit of the doubt to petitioner for purposes of this investigation and finds that all domestic companies performing assembly and testing operations should be considered part of the domestic industry. However, she notes the inconsistency of treating assembly and testing operations of a domestic company such as ***, which does not produce wafers or die, as significant enough to be considered domestic production, regardless of the source of the input, while treating the assembly and testing operations of foreign producers as insufficient to transform the origin of the product. Under this approach, an imported SRAM that is assembled and tested in the U.S. becomes the product of a domestic producer, yet a U.S.-produced SRAM assembled and tested abroad and subsequently re-imported does not become a foreign product. The latter is not even counted as an import in this investigation.

[61] One SRAM module maker indicated that it added *** percent of the value of the module, when measured excluding selling, general, and administrative expenses. CR at VI-10, PR at VI-3. This suggests that module makers do not engage in significant production activities, do not make significant capital investments, or have significant technical expertise, especially when compared to companies that perform the manufacture of unassembled SRAMs or perform the assembly and testing of unassembled SRAMs. No party argued that SRAM module makers should be included in the domestic industry.

the fabless producers in the domestic industry because they do not produce the domestic like product. SRAM designs, although necessary to SRAM production, do not come within the definition of the domestic like product (which reflects the fact that Commerce did not define the subject merchandise to include SRAM designs).[62] The designs, moreover, are incorporated into SRAMs that Commerce has included in the subject merchandise, despite a request by the fabless producers that Commerce exclude such SRAMs from the subject merchandise.[63]

E. Related Parties

We have considered whether Motorola should be excluded from the domestic industry under the "related parties" provision of the statute. The statute allows the Commission to exclude certain domestic producers[64] from the domestic industry for the purposes of an injury determination, if appropriate circumstances exist.[65] Exclusion of such a producer is within the Commission's discretion based upon the facts presented in each case.[66]

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[62] The fabless producers point out correctly that the Commission has considered design to be a production-related activity in a number of past determinations. Although the Commission is not bound by past determinations because each is *sui generis*, we note that in each of those past determinations the company in question in fact produced the domestic like product. *See, e.g.*, Erasable Programmable Read only Memories from Japan, 731-TA-288 (Final), Pub. No. 1927 (December 1986) at 11-12; Dynamic Random Access Memory Semiconductors of 256K and Above from Japan, 731-TA-300 (Preliminary), Pub. No. 1803 (Jan. 1986) at 15; and Dynamic Random Access Semiconductors of One Megabit and Above from the Republic of Korea, 731-TA-556 (Final), Pub. No. 2629 (May 1993) at 17. The Commission examined the companies' design activities only to determine whether they engaged in sufficient activities related to the production of that domestic like product to be included in the domestic industry. In the present investigations, by contrast, the fabless producers do not engage in the production of a domestic like product.

In fact, the fabless producers present a set of circumstances highly analogous to those of the "jobbers" that the Commission considered in Sweaters Wholly or in Chief Weight of Manmade Fibers from Hong Kong, the Republic of Korea, and Taiwan, 731-TA-448-450 (Final), Pub. No. 2312 (Sept. 1990). The jobbers, like the fabless producers here, produced designs for the domestic like product, but did not produce the domestic like product. The Commission did not include the jobbers in the domestic industry, noting with emphasis that they do not engage in any manufacturing. Sweaters at 25-26. The Commission allowed that it might reach a different decision in a high-technology industry (Sweaters at 25 n.71), but we decline to do so here, because the fabless producers do not produce an article within the definition of the domestic like product.

[63] 63 Fed. Reg. 8909, 8915-16 (Comment 1) (Feb. 23, 1998).

[64] A domestic producer may be excluded from the domestic industry if it is either related to the exporters or importers of the subject merchandise, or is itself an importer of the subject merchandise. Parties are considered to be related if one party directly or indirectly controls another party, or if both are controlled by a third party. Direct or indirect control exists when "the party is legally or operationally in a position to exercise restraint or direction over the other party." 19 U.S.C. § 1677(4)(B).

[65] 19 U.S.C. § 1677(4)(B).

[66] *See* Torrington Co. v. United States, 790 F. Supp. at 1168; Sandvik AB v. United States, 721 F. Supp. 1322, 1331-32 (Ct. Int'l Trade 1989) *aff'd without opinion*, 904 F.2d 46 (Fed. Cir. 1990); Empire Plow Co. v. United States, 675 F. Supp. 1348, 1352 (Ct. Int'l Trade 1987).

Motorola, a producer of the domestic like product, imported the subject merchandise during the period of investigation.[67] Thus, Motorola is a "related party," and the Commission may exclude it from the domestic industry if "appropriate circumstances" exist.[68] We do not find that appropriate circumstances exist to exclude Motorola from the industry. The company's interests appear to be those of a producer rather than an importer because the amount of importation is *** relative to its production.[69] Moreover, the company does not appear to be deriving any benefit from its importation of the subject merchandise and, although it accounts for a *** proportion of domestic production, its inclusion in the domestic industry would not skew the data for the rest of the industry.[70] [71] [72]

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[67] Table III-2, CR at III-10 and PR at III-6.

[68] Factors the Commission has examined in deciding whether appropriate circumstances exist to exclude a related party include the percentage of domestic production attributable to the importing producer; the reason the U.S. producer has decided to import the product subject to investigation; whether inclusion or exclusion of the related party will skew the data for the rest of the industry; the ratio of import shipments to U.S. production for related producers; and whether the primary interest of the related producer lies in domestic production or importation. *See, e.g.*, Torrington Co. v. United States, 790 F. Supp. 1161 (Ct. Int'l Trade 1992), *aff'd without opinion*, 991 F.2d 809 (Fed. Cir. 1993). *See also* Open-End Spun Rayon Singles Yarn from Austria, Inv. No. 731-TA-751 (Preliminary), Pub. No. 2999 at 7, n.39 (Oct. 1996).

[69] The ratio of Motorola's imports of the subject merchandise to its domestic production was *** percent during the period of investigation. Table III-2, CR at III-10 and PR at III-6.

[70] Motorola's operating margins *** those of the overall industry, which showed *** operating *** in 1994 and 1995 and *** in 1996. In 1997, Motorola and the overall industry had operating ***, although those of Motorola were *** Table VI-3, CR at VI-9 and PR at VI-2 (showing, for Motorola, operating results of *** percent for 1994 through 1997 and *** percent for the entire industry for those years). Motorola's *** operating results for 1996 and 1997 compared to the overall industry contradicts the inference that it was sheltered from the effect of subject imports. Motorola accounts for *** percent of domestic production of uncased SRAMs, and *** percent of domestic cased SRAMs. Table III-1, CR at III-3 and PR at III-2.

[71] Commissioner Crawford notes that while no parties have addressed the question of whether appropriate circumstances exist to exclude the related party ***, there is evidence on the record suggesting that exclusion might be appropriate. However, as exclusion would not affect the outcome of this investigation due to ***'s minimal production levels, Commissioner Crawford joins her colleagues and does not exclude ***. She joins her colleagues' discussion below regarding ***.

[72] We have also considered whether appropriate circumstances exist to exclude ***, which also import the subject merchandise. In each case, however, the company's domestic production was *** relative to the rest of the domestic industry, or the ratio of its subject imports to its domestic production was *** that we find on this record that appropriate circumstances do not exist to exclude them from the domestic industry. Table III-2, CR at III-10 and PR at III-6 (indicating that the ratio of ***'s imports of subject merchandise to its domestic production was *** percent and that the ratio for *** was *** percent); and Table III-4, CR at III-15 and PR III-9 (indicating that *** accounted for less than *** percent of domestic production during the period of investigation). An additional producer, ***, was identified as an importer of the subject merchandise during the preliminary phase investigations, due to imports of SRAMs produced by ***. The record in the final phase investigations indicates no subject imports by ***, however, because ***. *Compare* Prehearing report at Table III-2, confidential version at III-10 and public version at III-10 *to* Table III-2, CR at III-10 and PR at III-6.

II. NEGLIGIBILITY

The Uruguay Round Agreements Act ("URAA")[73] amends the statutory provisions pertaining to antidumping duty determinations to require that investigations terminate by operation of law without an injury determination if the Commission finds that the subject imports are negligible.[74] The provision defining "negligibility", 19 U.S.C. § 1677(24), provides that imports from a subject country that are less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition or self-initiation, as the case may be, shall be deemed negligible. The statute provides, however, that the Commission shall not treat imports as negligible if it determines that there is a potential that imports from a country will imminently account for more than 3 percent of the volume of all such merchandise imported into the United States, or that the aggregate volume of imports from all countries described in clause (ii) will imminently exceed 7 percent of the volume of all such merchandise imported into the United States. However, in these circumstances the statute also expressly requires that such imports "be considered only for the purpose of determining threat of material injury."[75]

The issue of negligibility was not argued in the preliminary phase of these investigations because subject imports from Taiwan and Korea each clearly exceeded the three percent threshold. In the final phase investigations, however, the issue arose with regard to Korea after Commerce calculated a de minimis dumping margin for Korean respondent Samsung, resulting in the exclusion of that company's exports from its affirmative finding.[76]

Commission staff calculated that subject imports from Korea accounted for *** percent of all SRAM imports during 1996, the most recent 12-month period preceding the filing of the petition for which data are available, exceeding the three percent threshold by a small margin.[77] [78] The staff used questionnaire responses to calculate both the amount of subject imports from Korea and the total imports.[79]

The Korean respondents agreed that the Commission should use the questionnaire responses to calculate the quantity of the subject imports from Korea, but argued that questionnaire responses were too unreliable to be used to calculate the total imports because they indicated a volume of total imports that

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[73] P.L. 103-463, approved Dec. 8, 1994.

[74] 19 U.S.C. § § 1673b(a), 1673d(b).

[75] 19 U.S.C. § 1677(24)(A)(iv).

[76] In this investigation, Commissioner Crawford gives the benefit of the doubt to petitioners and finds that subject imports from Korea are not negligible.

[77] CR at IV-5, PR at IV-4.

[78] The imports are measured by the number of bits. The Commission chose bits rather than units, because a single SRAM (one unit) may contain a wide ranging number of bits and because the number of bits per unit increases over time. Prelim. Det. at 16 n.94. No party disputed that the Commission should measure imports in bits. Hearing tr. at 138-40 (House & Walders, representing the Korean respondents), 196-97 (Kaplan, representing the petitioner, Micron).

[79] CR at IV-5, PR at IV-4.

was "over 20 percent" smaller than that derived from official import statistics.[80] They argued, therefore, that total imports should be calculated based on estimates of import volumes that Commission staff derived from official import statistics. They argue that the estimates derived from official import statistics indicate that subject imports from Korea were shown to be negligible.

We find that the estimates derived from official import statistics are not more reliable than the data contained in the questionnaire responses. The U.S. Customs Service reported SRAM imports in broad ranges, such as, in the case of HTSUS statistical category 8542.13.8041, SRAMs of 300,000 to 3,000,000 bits.[81] Although Commission staff derived estimates from these official statistics, estimates they remain. We find the questionnaire responses more reliable under the circumstances. Based on those data, we find that the subject imports from Korea are *** percent of the total SRAM imports, and thus are not less than three percent.[82] [83]

III. CUMULATION

Section 771(7)(G)(I) requires the Commission to cumulate imports from all countries as to which petitions were filed and/or investigations self-initiated by Commerce on the same day, if such imports compete with each other and with domestic like products in the United States market.[84] There is no dispute that the petitions on Taiwan and Korea were filed on the same day. The only cumulation issue is whether

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[80] Posthearing brief of Hyundai Electronics Industries Co., Ltd. and Hyundai Electronics America Inc. ("Hyundai") and LG Semicon Co., Ltd. and LG Semicon America, Inc. ("LG Semicon") at 1.

[81] CR at H-14, PR at H-12.

[82] The Korean respondents also argued that the questionnaire responses were unreliable because they were likely to capture a higher percentage of the volume of the subject imports from Korea than of the total imports, because a smaller number of importers handle subject imports from Korea and they are more readily identifiable. As noted above, we do not believe that the questionnaire responses necessarily underreported the total imports simply because they indicated a smaller number of SRAM bit imports than the estimates derived from official import statistics. In fact, the questionnaire responses also indicated a smaller number of SRAM bit imports from all Korean sources (suggesting that any undercounting occurred both in the number of subject imports from Korea and total imports). *Compare* Table H-2 ,CR at H-6 and PR at H-5 *to* Table H-4, CR at H-10 and PR at H-8. Approaching from still another angle the question of whether the questionnaires underrepresent total imports, the petitioner argued that, when measured in units (rather than bits), the questionnaire responses report *** percent of the imports reported in the official import statistics. *Compare* Table H-2, CR at H-6 and PR at H-5, *to* Table H-4, CR at H-10 and PR at H-8. This units-based comparison suggests that any underreporting in the questionnaire responses is insignificant. Assuming, for the sake of argument, that the questionnaire responses captured only *** percent of the actual total imports, we could correct that alleged underreporting by adjusting the figure upward by a corresponding amount. Even using such a revised figure, however, the subject imports from Korea still account for three percent of the total imports. As indicated above, however, we do not find any adjustment necessary because the questionnaire responses are a more reliable source of information in these investigations than the estimates derived from official import statistics.

[83] We also decline, as we have in the past, to use import data prepared on one basis as to the numerator (the volume of subject imports from the country in question) in the negligibility calculation, while using data prepared on another basis for the denominator (the volume of total imports). *See* Stainless Steel Wire Rod, Invs. Nos. 701-TA-373 and 731-TA-769-775 (Preliminary), Pub. No. 3060 (September 1997) at 14 n.79.

[84] 19 U.S.C. § 1677(7)(G)(I). There are four exceptions to the cumulation provision, none of which applies to these investigations. *See id.* at 1677(7)(G)(ii).

the subject imports compete with each other and with the domestic like product. In assessing whether imports compete with each other and with the domestic like product,[85] the Commission has generally considered four factors, including:

> (1) the degree of fungibility between the imports from different countries and between imports and the domestic like product, including consideration of specific customer requirements and other quality related questions;[86]
>
> (2) the presence of sales or offers to sell in the same geographical markets of imports from different countries and the domestic like product;
>
> (3) the existence of common or similar channels of distribution for imports from different countries and the domestic like product; and
>
> (4) whether the imports are simultaneously present in the market.[87]

While no single factor is necessarily determinative, and the list of factors is not exclusive, these factors are intended to provide the Commission with a framework for determining whether the imports compete with each other and with the domestic like product.[88] Only a "reasonable overlap" of competition is required.[89]

In the preliminary phase of the investigations, it was argued that fungibility between the subject imports from Korea and Taiwan was limited because the subject imports from Korea were primarily slow SRAMs whereas the subject imports from Taiwan were primarily fast SRAMs. As noted above in section I.C.2, the interchangeability between fast and slow SRAMs is limited. Although the foreign producers did not report their exports by speed in the preliminary phase of the investigations, there was record evidence

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[85] The Statement of Administrative Action submitted to Congress in connection with the Uruguay Round Agreements Act (P.L. 103-465, approved Dec. 8, 1994) expressly states that "the new section will not affect current Commission practice under which the statutory requirement is satisfied if there is a reasonable overlap of competition." Uruguay Round Agreements Act, Statement of Administrative Action, H.R. Doc. 103-316, Vol. 1, (1994)("SAA") at 848 *citing* Fundicao Tupy, S.A. v. United States, 678 F. Supp. 898, 902 (Ct. Int'l Trade 1988), *aff'd* 859 F.2d 915 (Fed. Cir. 1988).

[86] Commissioner Crawford finds that substitutability, not fungibility, is a more accurate reflection of the statute. Commissioner Crawford is not participating in the investigation regarding subject imports from Taiwan, but she must still consider whether to cumulate the subject imports from Taiwan and Korea for purposes of the determination as to Korea. She finds there is not sufficient substitutability to conclude there is a reasonable overlap of competition between subject imports from Korea and Taiwan. Therefore, she concurs with her colleagues that subject imports from Korea and Taiwan should not be cumulatively assessed. See Dissenting Views of Commissioner Carol T. Crawford in Stainless Steel Bar from Brazil, India, Japan and Spain, Invs. Nos. 731-TA-678, 679, 681, and 682 (Final), for a description of her views on cumulation.

[87] *See* Certain Cast-Iron Pipe Fittings from Brazil, the Republic of Korea, and Taiwan, Invs. Nos. 731-TA-278-280 (Final), USITC Pub. 1845 (May 1986), *aff'd*, Fundicao Tupy, S.A. v. United States, 678 F. Supp. 898 (Ct. Int'l Trade), aff'd, 859 F.2d 915 (Fed. Cir. 1988).

[88] *See, e.g.*, Wieland Werke, AG v. United States, 718 F. Supp. 50 (Ct. Int'l Trade 1989).

[89] *See* Wieland Werke, 718 F. Supp. at 52 ("Completely overlapping markets are not required."); United States Steel Group v. United States, 873 F. Supp. 673, 685-86 (Ct. Int'l Trade 1994), *aff'd*, 96 F.3d 1352 (Fed. Cir. 1996).

that the largest Korean producer, Samsung, produced both fast and slow SRAMs.[90] As a result, we found that Korean and Taiwan SRAMs did not fall into separate access speed ranges, and we found a significant degree of fungibility between subject imports from Korea and Taiwan, and between the subject imports and the domestic like product.[91] Accordingly, we found a reasonable overlap of competition and cumulated the subject imports from Korea and Taiwan.

The record is significantly different in the final phase of these investigations because Samsung's production is no longer considered subject merchandise, and because the parties reported their 1997 shipments by access speed. Among the 1997 shipments, 96.7 percent of subject imports from Korea were 55 ns. or slower, whereas 97.8 percent of subject imports from Taiwan were 34 ns. or faster.[92] We find only a limited degree of fungibility between the subject imports from Korea and Taiwan, based on the distinctions in access speed that exist for the vast majority of the subject imports, and because interchangeability between SRAMs of different speeds is limited. We find a higher degree of fungibility between the subject imports and the domestic like product because, although nearly all subject imports from Korea are 55 ns. or slower, 19.8 percent of the domestic shipments also fall in that range.[93] With regard to Taiwan, nearly all the subject imports from Taiwan had access speeds of 34 ns. or faster, as did 78.5 percent of domestic shipments.[94] We also find that the subject imports and the domestic like product were sold in overlapping geographic markets, were sold through common or similar channels of distribution, and were present in the market simultaneously.[95] We view these other factors as less probative of competition in this industry, however, than the limited fungibility between the subject imports from Korea and Taiwan. The limited degree of fungibility between the subject imports from Korea and Taiwan is probative, in our view, of a lack of a reasonable overlap of competition, regardless of whether the two import groups are sold in the same markets, when they were sold, or how they were distributed. We find that there is not a reasonable overlap of competition between the subject imports from Korea and Taiwan, and therefore do not cumulate their imports in these investigations. Accordingly, we consider the question of material injury by reason of subject imports from Korea and Taiwan on an individual country basis.

IV. NO MATERIAL INJURY BY REASON OF DUMPED IMPORTS FROM KOREA

In the final phase of an antidumping duty investigation, the Commission determines whether an industry in the United States is materially injured by reason of[96] the dumped imports under investigation.[97]

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[90] Conf. tr. at 163 (Griffith).

[91] In the preliminary determination, Commissioner Crawford found a sufficient degree of substitutability between the subject imports from Korea and Taiwan and between the subject imports and the domestic like product to find a reasonable overlap of competition.

[92] Table I-1, CR at I-10 and PR at I-9.

[93] Table I-1, CR at I-10 and PR at I-9.

[94] Table I-1, CR at I-10 and PR at I-9.

[95] CR at I-18 to I-20 and PR at I-16 to I-17 (channels of distribution); Table IV-5, CR at IV-11 and PR at IV-10 (showing shipments of subject imports from both Korea and Taiwan during each year of the period of investigation).

[96] Commissioner Crawford notes that the statute requires that the Commission determine whether a domestic industry is "materially injured by reason of" the LTFV imports. She finds that the clear meaning of the statute is

(continued...)

In making this determination, the Commission must consider the volume of imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.[98] [99]

In assessing whether a domestic industry is materially injured or threatened with material injury by reason of dumped imports, we consider all relevant economic factors that bear on the state of the industry in the United States.[100] These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, profits, cash flow, return on investment, ability to raise capital, and research and development. No single factor is dispositive and all relevant factors[101] are considered "within

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[96] (...continued)
to require a determination of whether the domestic industry is materially injured by reason of LTFV imports, not by reason of the LTFV imports among other things. Many, if not most, domestic industries are subject to injury from more than one economic factor. Of these factors, there may be more than one that independently are causing material injury to the domestic industry. It is assumed in the legislative history that the "ITC will consider information which indicates that harm is caused by factors other than less-than-fair-value imports." S. Rep. No. 96-249 at 75 (1979). However, the legislative history makes it clear that the Commission is not to weigh or prioritize the factors that are independently causing material injury. Id. at 74; H.R. Rep. No. 96-317 at 46-47 (1979). The Commission is not to determine if the LTFV imports are "the principal, a substantial or a significant cause of material injury." S. Rep. No. 96-249 at 74. Rather, it is to determine whether any injury "by reason of" the LTFV imports is material. That is, the Commission must determine if the subject imports are causing material injury to the domestic industry. "When determining the effect of imports on the domestic industry, the Commission must consider all relevant factors that can demonstrate if unfairly traded imports are materially injuring the domestic industry." S. Rep. No. 100-71 at 116 (1987) (emphasis added); Gerald Metals v. United States, 132 F.3d 716 (Fed. Cir. 1997).

For a detailed description of Commissioner Crawford's analytical framework, *see* Certain Preserved Mushrooms from Chile, China, India and Indonesia, Inv. Nos. 731-TA-776-779 (Preliminary), USITC Pub. 3086 at 21-22 (February 1998). Both the Court of International Trade and the United States Court of Appeals for the Federal Circuit have held that the "statutory language fits very well" with Commissioner Crawford's mode of analysis, expressly holding that her mode of analysis comports with the statutory requirements for reaching a determination of material injury by reason of the subject imports. United States Steel Group v. United States, 96 F.3d 1352, 1361 (Fed. Cir. 1996), *aff'g* 873 F. Supp. 673, 694-95 (Ct. Int'l Trade 1994).

[97] 19 U.S.C. § 1673d(b). The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant." 19 U.S.C. § 1677(7)(A).

[98] 19 U.S.C. § 1677(7)(B)(I). The Commission "may consider such other economic factors as are relevant to the determination," but shall "identify each [such] factor . . . and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

[99] Chairman Miller notes that she viewed the trends over the investigation period with some caution. See her dissenting views below.

[100] 19 U.S.C. § 1677(7)(C)(iii).

[101] As noted previously, Commissioner Crawford recognizes that there may be more than one factor that independently is causing material injury to the domestic industry. Although the Commission may consider causes of injury to the industry other than the LTFV imports, it is not to weigh causes. *See, e.g.,* Citrosuco Paulista, S.A. v. United States, 704 F. Supp. 1075, 1101 (Ct. Int'l Trade 1988), S Rep. No. 96-249 at 74 (1979) and H.R. Rep. No. 96-317 at 46-47 (1979). In this regard, Commissioner Crawford does not interpret the Court of Appeals for the Federal Circuit's opinion in Gerald Metals to require weighing of causes.

the context of the business cycle and conditions of competition that are distinctive to the affected industry."[102]

A. Conditions of Competition and the Business Cycle

Several conditions of competition are pertinent to our analysis of the domestic SRAM industry.[103] First, the SRAM market is characterized by the frequent introduction of more advanced versions or generations of the domestic like product, which then tend to replace existing products.[104] The first producer to market a superior product, or to become a qualified supplier of a new product to a major purchaser, often enjoys favorable pricing for a certain period. As other producers enter the market and production efficiencies are achieved, however, prices are driven down, and the product in question changes in character from a high value-added product to a commodity-type product. Price then becomes a primary factor in purchasing decisions.[105]

Second, as producers gain experience in the production process and begin using more advanced equipment and techniques, they are able to reduce their cost of production significantly.[106] This process, known as the "learning curve" phenomenon, allows producers to lower their prices.[107]

Third, SRAM production -- particularly "wafer" or "die" fabrication -- requires substantial and continuous investment. If producers do not maintain these high levels of investment, they are unable to develop new products or lower production costs.[108]

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[102] 19 U.S.C. § 1677(7)(C)(iii).

[103] We have also considered first whether to apply the statutory captive production provision for purposes of these determinations. 19 U.S.C. § 1677(7)(C)(iv). No party has argued that the captive production provision applies. We find that SRAMs are not the predominant material input in the production of the downstream products, which include ***, and that therefore the second criterion of the captive production provision is not satisfied. For this reason, we find that the captive production provision does not apply. *See, e.g.,* Table III-1 n.11, CR at III-3 and PR at III-2; Table III-5 n.4, CR at III-16 and PR at III-10; the December 23, 1997 producer's questionnaire response of *** at section II.10.b, d & e, pages 8-9; and the December 12, 1997 producer's questionnaire response of *** at section II.10.b, d & e, pages 8-9.

[104] CR at I-20, PR at I-16.

[105] CR at I-20 to I-21, II-7; PR at I-16 to I-18, II-5. Quality and availability were other leading factors cited by purchasers. CR at II-7, V-30 to V-31; PR at II-5, V-16.

[106] Producers can reduce costs by increasing the number of die per wafer (by increasing the size of the wafer and reducing the width of the channels used to create the circuitry on each die) and by increasing the percentage of useable die on each wafer. Conf. tr. at 16-20 (Donnelly).

[107] CR at V-1, PR at V-1; hearing tr. at 37-38, 56058 (Finan) (describing the learning curve and estimating that the price per bit falls 38 percent every two years); and conf. tr. at 16-20 (Donnelly) (describing investments intended to lower cost of production).

[108] Conf. tr. at 15-21 (Donnelly).

Fourth, the demand for SRAMs is a function of the demand for the products in which SRAMs are used.[109] Thus, it is a derived demand and it is not greatly affected by changes in SRAM prices.[110] Measured in bits, demand has grown sharply throughout the period of investigation.[111] While demand for SRAMs increases in a more or less continuous fashion, supply increases occur in large and discrete increments as producers bring new fabrication facilities ("fabs") into production.[112] Moreover, because a new fab can require up to two years (and over $1 billion in capital) to construct, SRAM producers must rely on forecasts of demand when deciding whether to increase capacity.[113] Where forecasts prove inaccurate, significant "undersupply" or "oversupply" can result.

Such periods of "undersupply" and "oversupply" occurred during the period of investigation. In early 1995, demand for SRAMs was expected to increase sharply in the near future.[114] It was widely forecast that approximately 80 percent of new personal computers using Intel's Pentium microprocessors would be sold with an SRAM cache memory.[115] SRAM producers therefore invested in new fabs to meet the expected demand.[116] Meanwhile, purchasers built up inventories in anticipation of a shortage, and drove SRAM prices sharply higher.[117] By mid-1996, however, it became apparent that only about 20 percent of new personal computers with Pentium microprocessors contained SRAM cache memory.[118] As new fabs came online and purchasers drew down or sold off large inventories, SRAM supply expanded and prices fell significantly (falling below 1994 levels in the second half of 1996 and 1997).[119]

The fifth condition of competition is the presence in the U.S. market of non-subject imports. The non-subject imports increased in market share during the period of investigation and were larger in volume than the subject imports.[120] For example, the volume of non-subject imports from Korea was *** that of

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[109] CR at II-5 to II-6, PR at II-4 to II-5.

[110] CR at II-6, PR at II-5.

[111] Apparent U.S. consumption, measured in bits, rose 67.2 percent from 1994 to 1995, 17.4 percent from 1995 to 1996, and 44.9 percent from 1996 to 1997. Table C-1, CR at C-3 and PR at C-3.

[112] Conf. tr. at 126 (Reilly), 169 (G. Fischer). The fabs typically produce other types of integrated circuits as well as SRAMs. Conf. tr. at 126 (Reilly).

[113] Conf. tr. at 126 (Reilly), 169 (G. Fischer) (two years' lead time required for fab construction and producers must rely on forecasts of demand); CR at I-15; PR at I-12 (fab construction costs exceed $1 billion).

[114] CR at V-3, PR at V-3; conf. tr. at 127-28 (Reilly).

[115] CR at V-3, PR at V-3.

[116] CR at V-3, PR at V-1; conf. tr. at 128 (Reilly) (producers gearing up for production in 1995) and 169 (G. Fischer) (new fabs coming on line in 1996).

[117] CR at V-3, PR at V-1; conf. tr. at 127 (Reilly).

[118] CR at V-3, PR at V-3; Korean respondents' Postconference Brief at Exhibit 1 ("SRAM module market fading in and out?" at 1, appearing in Electronic Buyers News (June 10, 1996)).

[119] Tables V-1 and V-6 and Figures V-2 and V-5, CR at V-6 to V-19 and PR at V-5 to V-14 (showing, for the two products on which prices were reported for the 1994-96 period, that prices were lower in the second half of 1996 than in 1994).

[120] Table IV-4, CR at IV-9 and PR at IV-8 (market shares); Table IV-3, CR at IV-7 and PR at IV-6 (shipments).

the subject imports from Korea.[121] Regarding the non-subject imports from Korea, which are the only non-subject imports for which pricing data are on the record, they both undersold and oversold the domestic like product, but generally were priced lower than the U.S. product.[122] [123]

The final condition of competition we note is that many producers of SRAMs have the ability to or are presently producing DRAMs as well as other types of integrated circuits.[124] DRAMs and SRAMs can be produced using the same basic equipment and facilities.[125] Trends affecting the DRAM market and the market for other integrated circuits can affect the SRAM market.[126]

B. Volume of Subject Imports

Section 771(7)(C)(i) provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant."[127]

Measured in billions of bits, the volume of U.S. shipments of subject imports from Korea rose from *** in 1994 to *** in 1995, but then fell to *** in 1996, and fell by a *** amount to *** in 1997.[128] Overall, the subject imports from Korea were *** higher in 1997 than in 1994. Due to the rapid growth in U.S. apparent consumption, the market share of the subject imports from Korea fell each year during the period of investigation, based on market share measured in bits, and ended at very low levels.[129] [130] The fall is notable both because it is a decline of nearly *** overall and because it accelerated at the end of the period of investigation. Based on the foregoing, we find that the volume of the subject imports from Korea is not significant.[131]

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[121] Table IV-2, CR at IV-3 and PR at IV-2.

[122] *Compare* the prehearing staff report at Tables V-1 to V-6, confidential and public versions at V-5 to V-15 and Samsung's importer's questionnaire response (showing prices for non-subject imports) *to* Tables V-1 to V-6, CR at V-6 to V-16, PR at V-5 to V-13 (showing prices for the domestic like product). *See also* CR at V-20, PR at V-14.

[123] Vice Chairman Bragg notes that these non-subject imports were generally priced higher than the subject imports. *Compare* the prehearing staff report at Tables V-1 to V-6, confidential and public versions at V-5 to V-15 and Samsung's importer's questionnaire response (showing prices for non-subject imports) *to* Tables V-1 to V-6, CR at V-6 to V-16, PR at V-5 to V-13 (showing prices for the subject imports). *See also* CR at V-20, PR at V-14.

[124] CR at I-17, PR at I-15.

[125] *See, e.g.,* conf. tr. at 135-36 (Fischer).

[126] *See* conf. tr. at 136-39 (Fischer), hearing tr. at 165-67 (Fischer).

[127] 19 U.S.C. § 1677(7)(C)(i).

[128] Table IV-3, CR at IV-7 and PR at IV-6.

[129] The subject imports' market share fell from *** to *** to *** to *** percent for the years 1994 to 1997, respectively. Table IV-4, CR at IV-9 and PR at IV-8.

[130] We believe bits is a more useful measure of market share than value because SRAM values fluctuate sharply as a function of several factors. Additionally, SRAM values tend to decline over time because of the learning curve phenomenon described above in section IV.A.

[131] Commissioner Crawford joins only in the factual, numerical discussion of the volume of imports here. She (continued...)

C. Price Effects of Subject Imports

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

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[132]

The record establishes that the relative price of products is a critical factor in SRAM sourcing decisions by purchasers.[133] As previously noted, newly introduced types of SRAMs rapidly become fungible products (among those bearing the same characteristics such as access speed and power consumption), competing largely on the basis of price.[134] The record also establishes that prices for SRAMs increased overall from 1994 through the first half of 1995 (contrary to the price declines ordinarily suggested by the learning curve phenomenon), then fell sharply during the remainder of the period of investigation.[135] [136]

The subject imports from Korea undersold the domestic like product in 92 percent of comparisons by an average margin of 26.8 percent.[137] We do not find that the underselling is significant, however, because of the small volume of the subject imports and the lack of confirmed lost sales or lost revenues due to competition with these imports.[138] [139]

We also find that the subject imports from Korea have not otherwise suppressed price increases that would have occurred or depressed prices for the domestic like product. We note that the volume of the

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[131] (...continued)
does not rely on any analysis of trends in the market share of subject imports or other factors in her determination of material injury by reason of the LTFV imports. She makes her finding of the significance of volume in the context of the price effects and impact of these imports. For the reasons discussed below, she finds that the volume of subject imports is significant in this investigation.

[132] 19 U.S.C. § 1677(7)(C)(ii).

[133] CR at I-20, II-7; PR at I-17, II-5.

[134] CR at I-20, PR at I-17.

[135] CR at V-20, PR at V-14.

[136] Commissioner Crawford does not join in the following paragraph.

[137] CR at V-20, PR at V-14.

[138] There is one possible lost revenue occurrence, but it was not confirmed whether the price quote at issue was for subject imports from Korea, subject imports from Taiwan, or non-subject (Samsung) imports. Table V-8, CR at V-24 (the twelfth item from the top) and V-28 n.3, PR at V-15.

[139] Chairman Miller agrees that underselling is not significant. She bases her determination, however, not only on the small volume of imports and lack of confirmed lost sales and lost revenues. Chairman Miller finds that price changes for SRAMs reflect broader market conditions for SRAMs, rather than any effect from the subject imports from Korea.

subject imports, although low throughout the period of investigation, was higher during 1994 and 1995, when prices were rising, than during 1996 and 1997, when prices were falling.

For the foregoing reasons, we find that the subject imports from Korea did not cause significant price effects.[140]

D. Impact of Subject Imports [141] [142] [143] [144]

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[140] Commissioner Crawford concurs in her colleagues' conclusion that subject imports are not having significant effects on domestic prices for the domestic like product. To evaluate the effects of the dumping on domestic prices, Commissioner Crawford compares domestic prices that existed when the imports were dumped with what domestic prices would have been if the imports had been fairly traded. In most cases, if the subject imports from Korea had not been traded unfairly, their prices in the U.S. market would have increased. In this investigation, the dumping margins for the majority of subject imports from Korea were low. Table H-10, CR at H-18; PR at H-14 and 63 Fed. Reg. 8934, 8946 (Feb. 23, 1998). Thus, prices for the majority of the subject imports likely would have risen only somewhat if they had been priced fairly, and they would have become only somewhat more expensive relative to the domestic product and other alternative sources for the product (e.g., non-subject imports), while the remaining, higher margin subject imports from Korea may have been priced out of the market had they been fairly priced. In such a case, if the products are substitutable, some demand would have shifted away from subject imports and towards the relatively less-expensive products. However, as noted above, there is little overlap of product speeds between subject imports from Korea and domestic products and therefore substitutability between them is low. Also, as discussed in the conditions of competition section above, there is a strong non-subject import presence in the domestic market, from both Korea and elsewhere, and thus there are other sources available to meet any shift in demand away from subject imports. Furthermore, the magnitude of any shift in demand away from the subject imports would be low since the market share of subject imports is low. Finally, competition in the market and available supply would have limited any price effects. The domestic industry had sufficient capacity available to satisfy the demand supplied by subject imports, and domestic producers compete with each other and non-subject imports for domestic sales. For all of these reasons, had subject imports been priced fairly, the increase in demand for the domestic product would not have been significant and domestic prices would not have increased significantly had the subject imports been priced fairly. Even if all demand for subject imports from Korea had been captured by domestic producers, had the Korean subject imports been fairly priced, the increase in demand for the domestic product would not have been significant and domestic prices would not have increased significantly due to the market conditions described above. Therefore, Commissioner Crawford finds that subject imports from Korea are not having significant effects on prices of domestic SRAMs.

[141] As part of its consideration of the impact of imports, the statute as amended by the URAA specifies that the Commission is to consider "the magnitude of the margin of dumping." 19 U.S.C. § 1677(7)(C)(iii)(V). The SAA indicates that the amendment "does not alter the requirement in current law that none of the factors which the Commission considers is necessarily dispositive in the Commission's material injury analysis." SAA at 850. New section 771(35)(C), 19 U.S.C. § 1677(35)(C), defines the "margin of dumping" to be used by the Commission in a final determination as the last margin or margins published by Commerce prior to the closing of the administrative record in the Commission's investigations. In its final determinations (the last margins to be published before the closing of the record in these investigations, Commerce found dumping margins as follows (in percent): Samsung (1.00) (de minimis), Hyundai (5.08), LG Semicon (55.36), all others (5.08). 63 Fed. Reg. 8934, 8946 (Feb. 23, 1998). The Uruguay Round Agreements Act ("URAA") amended title VII of the Tariff Act of 1930 to require the Commission to close its record in a final phase antidumping or countervailing duty investigation on a date certain and to provide all parties with a final opportunity to comment on information obtained in the investigation upon which they previously had no opportunity to comment. The purpose of the statute is to assure all parties an equal

(continued...)

Section 771(7)(C)(iii) provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry," as described above in the second paragraph of section IV.

The quantity of the domestic industry's production and shipments rose during each year of the period of investigation.[145] Due to declining prices after 1995, however, the value of domestic shipments has fallen each year since 1995.[146] The domestic industry's financial performance and investment levels also fell. The domestic industry had operating margins of *** and *** percent in 1994 and 1995,

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[141] (...continued)
opportunity to comment on all information that may form the basis for the Commission's final determination. *See* S. Rep. No. 103-412 at 85 (1994). 19 U.S.C. § 1677(35)(C)(ii) indicates that the dumping margin to be considered by the Commission is the margin published by Commerce prior to the closing of the Commission's record. Accordingly, we have not considered the slightly revised margins provided to the Commission on the day of the vote, upon which the parties had not commented.

[142] In considering whether the domestic industry is materially injured or threatened with material injury, Chairman Miller has taken note of the magnitude of the margins of dumping for the subject countries. In light of her finding that subject imports have not had significant volume effects relative to consumption in the United States, and have not had significant price effects, she does not consider these margins to be significant.

[143] Vice Chairman Bragg notes that she does not ordinarily consider the margin of dumping to be of particular significance in evaluating the effects of subject imports on domestic producers. *See* Separate and Dissenting Views of Commissioner Lynn M. Bragg in Bicycles from China, Inv. No. 731-TA-731 (Final), USITC Pub. 2968 (June 1996).

[144] Commissioner Crawford does not make her determination based on industry and import trends. However, she concurs that subject imports are not having a significant impact on the domestic industry. In her analysis of material injury by reason of dumped imports, Commissioner Crawford evaluates the impact on the domestic industry by comparing the state of the industry when the imports were dumped with what the state of the industry would have been had the imports been fairly traded. In assessing the impact of the subject imports on the domestic industry, she considers, among other relevant factors, output, sales, inventories, capacity utilization, market share, employment, wages, productivity, profits, cash flow, return on investment, ability to raise capital, research and development and other relevant factors as required by 19 U.S.C. § 1677(7)(C)(iii). These factors together either encompass or reflect the volume and price effects of the dumped imports, and so she gauges the impact of the dumping through those effects. In this regard, the impact on the domestic industry's prices, sales and overall revenues is critical, because the impact on the other industry indicators (e.g., employment, wages, etc.) is derived from this impact. As she noted earlier, Commissioner Crawford finds that the domestic industry would not have been able to increase its prices had subject imports been priced fairly. Even if the entire demand for subject imports shifted to the domestic product, had the subject imports been priced fairly, the increase in demand for the domestic product would not have been significant. Therefore, any increase in the domestic industry's output and sales would not have been material, and thus the domestic industry would not have been materially better off if the subject imports had been priced fairly. Consequently, Commissioner Crawford determines that the domestic industry is not materially injured by reason of LTFV imports of SRAMs from Korea.

[145] The domestic industry's production of uncased SRAMs, in billions of bits, increased from 63,904 to 84,366, to 126,317 to 167,663 in 1994 through 1997, respectively. Table III-4, CR at III-15 and PR at III-9. (Uncased SRAMs are the best measure of domestic production because their production volume was *** greater than the production of cased SRAMs and SRAM modules combined.) Table III-4, CR at III-15 and PR at III-9. Domestic producers' shipments, in billions of bits, were 60,445, 84,030, 92,503, and 135,584 for 1994 through 1997, respectively. Table III-5, CR at III-16 and PR at III-11.

[146] The value of the domestic producers' shipments were $889,152,000, $1,585,320,000, $1,258,536,000, and $1,015,480,000 for 1994 through 1997, respectively. Table III-6, CR at III-17 and PR at III-12.

respectively.[147] The industry's operating margins had declined to *** percent in 1996, however, and became operating losses of *** percent in 1997.[148] Likewise, the domestic industry curtailed capital expenditures in 1997 to a level slightly less than half that of either 1995 or 1996.[149] The domestic industry's research and development expenditures also fell from 1996 to 1997, although the 1997 levels remained higher than in 1994 or 1995.[150]

Despite these unfavorable indications of industry profitability and investment in 1996 and 1997, we find no basis to conclude that these difficulties were by reason of the subject imports from Korea. Consistent with our conclusions that the subject imports from Korea are not significant in volume, and that they have not resulted in significant price effects, we find that they have not affected adversely the domestic industry. As noted above, the volume of the subject imports from Korea declined during the years in which the domestic industry experienced financial reverses. On the basis of the foregoing, we find that the domestic industry producing SRAMs is not experiencing material injury by reason of the subject imports from Korea.

V. NO THREAT OF MATERIAL INJURY BY REASON OF SUBJECT IMPORTS FROM KOREA

A. Cumulation for Purposes of Threat Analysis

In assessing whether a domestic industry is threatened with material injury by reason of imports from two or more countries, the Commission has discretion to cumulate the volume and price effects of such imports if they meet the requirements for cumulation in the context of present material injury.[151] As discussed previously, we find that the requirements for cumulation are not satisfied in the context of present material injury. Accordingly, we do not cumulate for purposes of our threat analysis.

B. Statutory Factors

Section 771(7)(F) of the Act directs the Commission to determine whether the U.S. industry is threatened with material injury by reason of the subject imports by analyzing whether "further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted."[152] The Commission may not make such a determination "on the basis of mere conjecture or supposition," and considers the threat factors "as a whole" in making its determination whether further dumped or subsidized imports are imminent and

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[147] Table VI-3, CR at VI-9 and PR at VI-2.

[148] Table VI-3, CR at VI-9 and PR at VI-2.

[149] The domestic industry's capital expenditures fell from $541,357,000 in 1995 and $511,139,000 in 1996, to $245,419,000 in 1997. In 1994, capital expenditures were $236,088,000. Table VI-4, CR at VI-11 and PR at VI-4.

[150] The domestic industry's research and development expenses fell from $*** in 1996 to $*** in 1997. In 1994 and 1996, research and development expenses were $*** and $***, respectively. Table VI-4, CR at VI-11 and PR at VI-4.

[151] 19 U.S.C. § 1677(7)(H).

[152] 19 U.S.C. § 1673d(b) and 1677(7)(F)(ii).

whether material injury by reason of imports would occur unless an order is issued.[153] In making our determination, we have considered all statutory factors[154] that are relevant to these investigations.[155]

For the reasons discussed below, we determine that the domestic industry is not threatened with material injury by reason of LTFV imports from Korea.

We find the factors concerning possible increases in production capacity and the producers' ability to shift production to be interrelated in this investigation because a variety of semiconductors, including SRAMs, generally can be produced using the same equipment in the same facilities (see section I.C.4 above). There is some evidence that the producers of the subject imports from Korea plan to increase semiconductor capacity in general in the near future.[156] Thus, in theory, that additional capacity could be used to produce SRAMs. We find, however, based on a number of factors, that the additional semiconductor capacity does not indicate that significantly increased imports of SRAMs are imminent. The Korean producers' exports to the United States have fallen each of the past three years. Also, SRAMs represent a relatively minor product line for the Korean producers, and we find no evidence that they intend to expand it vis-a-vis their other semiconductor products. In fact, one Korean producer has indicated that it intends to concentrate in the future on the production of DRAMs, a product in which it perceives itself as a technological leader.[157] Perhaps most importantly, however, the Korean producers reported that their SRAM capacity was lower in 1997 than in 1994, and they project further reductions in the future.[158] We find these reported reductions consistent with recent increases in SRAM inventories (discussed below) held by the Korean producers .

Regarding the current economic crisis in Korea, although it may increase the incentive to export, we find that it also restricts the Korean producers' access to the large amounts of capital necessary to expand production, and increases the cost to Korean producers of the foreign production machinery

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[153] 19 U.S.C. § 1677(7)(F)(ii). While the language referring to imports being imminent (instead of "actual injury" being imminent and the threat being "real") is a change from the prior provision, the SAA indicates the "new language is fully consistent with the Commission's practice, the existing statutory language, and judicial precedent interpreting the statute." SAA at 854.

[154] The statutory factors have been amended to track more closely the language concerning threat of material injury determinations in the WTO Antidumping Agreement and Subsidies and Countervailing Measures Agreement, although "[n]o substantive change in Commission threat analysis is required." SAA at 855.

[155] 19 U.S.C. § 1677(7)(F)(I). Factor I is inapplicable because these investigations do not involve a countervailable subsidy. Factor VII regarding raw and processed agriculture products is inapplicable to the products at issue. Additionally, there are no known antidumping or countervailing duty findings or remedies in effect in other countries with respect to SRAMs from Korea. CR at VII-2, PR at VII-2. *See* 19 U.S.C. § 1677(7)(F)(iii)(I).

[156] *See* citations to trade articles in the Prehearing brief of Micron at 54-55.

[157] Posthearing brief of Hyundai and LG Semicon at 12 (providing what it represents is a quotation from the Feb. 23, 1998 issue of "Electronic News" at 60). There was also contrary evidence, however, at least with regard to one fabrication facility. See Prehearing brief of Micron at 57.

[158] Table VII-1, CR at VII-5 and PR at VII-4.

necessary to equip new or upgraded facilities.[159] Additionally, the lack of capital restricts the Korean producers' ability to invest in the research and development of new SRAMs. In fact, as noted previously, nearly all the subject imports from Korea are slow SRAMs, which suggests that these producers are not among the most technologically advanced of SRAM producers.[160] We note further that the percentage of total Korean shipments that are shipped to the United States has not increased significantly during the period of investigation, from *** percent in 1994 to *** percent in 1997.[161] Nor have exports increased in relation to home market sales over the period of investigation.[162] In sum, despite some evidence of planned increases in semiconductor capacity and the relative ease of production shifting, our analysis of these factors does not lead us to conclude that imminent and significant increases in SRAM exports to the United States are likely.

As indicated above, the volume of subject imports has fallen in quantity each year since 1995 and in terms of U.S. market share each year since 1994. Moreover, these declines occurred from an already low volume base. Accordingly, we find that the volume and market penetration of the subject imports do not indicate a likelihood of substantially increased imports.

In our discussion of no material injury by reason of the subject imports from Korea, we found that subject imports are not having significant effects on domestic prices. We find nothing in the record to indicate that subject imports are likely to have significant price effects in the future.[163]

Inventories of the Korean subject merchandise have grown rapidly over the period of investigation. In 1997 they represented *** percent of production and *** percent of shipments.[164] Petitioner and other domestic producers contend that the inventory build up will adversely affect U.S. prices.[165] We find the inventory build up to be significant, but, in the context of Korea's declining exports to the United States, do not view it as indicating a likelihood of imminent and substantially increased SRAM imports.

Several domestic producers indicated that the cumulated subject imports have had negative effects on projected expansions of production capacity, the development of new products, and their financial condition.[166] In only one instance, however, did the domestic producer indicate that the effects were due to the subject imports from Korea in particular.[167] Considering the declining volume of the subject imports

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[159] CR at VII-4, PR at VII-4.

[160] *See* CR at II-4 and PR at II-3 (indicating that only SRAMs from other countries participate in the production of advanced SRAMs).

[161] Table VII-1, CR at VII-6 and PR at VII-4.

[162] Table VII-1, CR at VII-6 and PR at VII-4.

[163] See Timken Co. v. United States, 20 CIT __, 913 F. Supp 580, 591 n.18 & 592 (1996) (in assessing immediate future harm resulting from domestic price suppression or depression by subject imports, the Commission is permitted to rely on its findings on material injury that subject imports had no "present effect on prices").

[164] Table VII-1, CR at VII-5 to VII-6 and PR at VII-4.

[165] CR at L-5 to L-6, PR at L-3.

[166] CR at L-3 to L-6, PR at L-3.

[167] CR at L-5 and PR at L-3 (comments of ***).

from Korea and their lack of significant price effects, we do not find they had an actual or potential negative effects on development and production efforts of the domestic industry.

Finally, we find no indication of any "other demonstrable adverse trends" that indicate that there is likely to be material injury by reason of the subject imports.

Evaluating all the statutory factors, we find that further imports of SRAMs from Korea are not imminent and that material injury by reason of the subject imports from Korea would not occur in the absence of an antidumping order. Therefore, we determine that the domestic industry is not threatened with material injury by reason of LTFV imports of SRAMs from Korea.

VI. MATERIAL INJURY BY REASON OF SUBJECT IMPORTS FROM TAIWAN[168]

A. Conditions of Competition and the Business Cycle

The conditions of competition and circumstances regarding the business cycle are set forth above in the views regarding Korea.

B. Volume of Subject Imports from Taiwan

Section 771(7)(C)(I) provides that the "Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States, is significant.[169]

The volume of the subject SRAMs from Taiwan rose, in billions of bits, from *** in 1994 to *** in 1995, to *** in 1996, and *** in 1997.[170] From 1994 to 1997, the increase is nearly ***.[171] This rapid rate of increase outpaced the already considerable growth in U.S. apparent consumption. As a result, the subject imports from Taiwan also rose in terms of market share during the period of investigation. The market share of the subject imports from Taiwan fell from *** percent in 1994 to *** percent in 1995, but then rose above 1994 levels to *** percent in 1996, and rose by a *** amount to *** percent in 1997.[172] Both in terms of absolute volume and in market share, the largest increases occurred from 1996 to 1997, suggesting an accelerating trend. The foregoing indicates that the volume of the subject imports from Taiwan and the increase in that volume are significant, both in absolute terms and relative to production or consumption in the United States.

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[168] These constitute the views of Vice Chairman Bragg. Chairman Miller does not join the discussion of material injury by reason of subject imports from Taiwan below (see her dissenting views). Commissioner Crawford did not participate in the investigation regarding the subject imports from Taiwan.

[169] 19 U.S.C. § 1677(7)(C)(I).

[170] Table IV-5, CR at IV-11 and PR at IV-10.

[171] Measured in value, which as indicated previously is considered a less reliable measure of volume in these investigations, the subject imports from Taiwan increased *** percent from 1994 to 1997. Table C-1, CR at C-3 and PR at C-3.

[172] Table IV-4, CR at IV-9 and PR at IV-8.

C. Price Effects of Subject Imports

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

> (I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and
> (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.[173]

The record establishes that price is a critical factor in purchasing decisions. As previously noted, newly introduced types of SRAMs rapidly become fungible products, competing largely on the basis of price. In such a market, significant underselling by significant and increasing volumes of imports can have a dramatic effect on prices for the domestic like product. The record in this investigation demonstrates that the large and increasing volume of LTFV imports from Taiwan undersold the domestic like product in 161 of 213, or 76 percent of possible price comparisons, at average underselling margins of 21.5 percent.[174] While some of the underselling turned to overselling during 1996 and 1997 for products 3 and 5,[175] Taiwanese imports consistently undersold the domestic product in products 1 and 2.[176] These more recently developed products accounted for a significant percentage of Taiwanese shipments during the latter part of the period of investigation.[177]

The record also establishes that, overall, prices for SRAMs increased during the first half of 1995, then generally declined during the remainder of the period of investigation.[178] Although oversupply and price declines due to the "learning curve" may have played a role in the declines during the latter part of the period of investigation, the increasing volumes of lower-priced LTFV imports from Taiwan exerted further downward pressure on prices, exacerbating the 1996-1997 price declines. In this regard, prices for the subject merchandise and the domestic like product generally fell in tandem, and the subject merchandise undersold the domestic like product in a significant number of instances, which in a price-sensitive market suggest that the subject imports depressed prices of the domestic like product to a significant degree. In

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[173] 19 U.S.C. § 1677(7)(C)(ii).

[174] CR at V-20, PR at V-14.

[175] Taiwanese imports undersold the domestic product in pricing product 3 in 12 out of 12 months in 1994 and 1995; 5 out of 12 months in 1996 and 2 out of 12 months in 1997. Table V-3, CR at V-9 to V-10; PR at V-8 to V-9. Taiwanese imports undersold the domestic product in pricing product 5 in 11 out of 12 months in 1994; 9 out of 12 months in 1995; 5 out of 12 months in 1996; and 4 out of 12 months in 1997. Table V-5, CR at V-13 to V-14 and PR at V-11 to V-12.

[176] Tables V-1 and V-2, CR at V-6 to V-8 and PR at V-5 to V-7.

[177] Product 1 accounted for 20.9 percent of Taiwanese shipments in 1996 and 7.0 percent in 1997, and product 2 accounted for 18.0 percent of Taiwanese shipments in 1997. Table IV-3, CR at IV-7 and PR at IV-6 and Tables V-1 and V-2, CR at V-6 to V-8 and PR at V-5 to V-7.

[178] CR at V-6 to V-20, PR at V-5 to V-14 ***.

addition, there were a significant number of confirmed lost sale and revenue allegations due to Taiwanese imports.[179]

Accordingly, in light of the importance of price to purchasers, the evidence that subject imports compete with the domestic like product largely on the basis of price, the dramatic decline in prices for both the domestic like product and subject imports during the period of investigation in the face of significant underselling by the subject imports, and the domestic industry's inability to stem those price declines despite rising demand, the substantial and increasing volumes of LTFV imports from Taiwan that entered the United States during the period of investigation depressed prices for the domestic like product to a significant degree.

D. Impact of Subject Imports [180]

Section 771(7)(C)(iii) provides that the Commission, in examining the impact of the subject imports on the domestic industry, "shall evaluate all relevant economic factors which have a bearing on the state of the industry," as described above in the second paragraph of section IV.

As indicated in the discussion of the conditions of competition discussed above, the domestic industry must make substantial ongoing investments in the research and development of new products and process technologies, and make substantial capital investments to upgrade fabrication equipment and facilities, in order to maintain competitiveness. In addition, the failure to expand production facilities portends lost market share, which can lead to an inability to participate in economies of scale to the same extent as larger competitors.[181] To maintain investment, the domestic industry must generate income. Weak financial operating results limit producers' ability to fund the continued investments needed to maintain competitiveness in this rapidly evolving industry.[182]

The domestic industry had operating margins of *** and *** percent in 1994 and 1995, respectively.[183] The industry's operating margins had *** at *** percent in 1996, however, and became

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[179] CR at V-21 to V-28, PR at V-15 to V-16.

[180] Pursuant to 19 U.S.C. § 1677(7)(C)(iii)(V), the dumping margins for Taiwan producers are those identified by Commerce in its final determination: 113.85 percent for Advanced Microelectronics, BIT, and TI-Acer; 50.58 percent for Alliance; 7.59 percent for ISSI; 93.87 percent for UMC.; 102.88 percent for Winbond; and 41.98 percent for all others. 63 Fed. Reg. 8909, 8933 (Feb. 23, 1998). As noted in the footnote accompanying the discussion of the impact of the subject imports from Korea (section IV.D), the statute requires us to use the margins published in Commerce's final determination, although, as indicated in a previous footnote, Vice Chairman Bragg ordinarily does not consider the margins of dumping to be of particular significance in evaluating the effect of subject imports on domestic producers.

[181] Conf. tr. at 168 (Reilly) (testifying that a small domestic producer went out of the SRAM business because it was too small to generate sufficient capital to invest in a new production facility).

[182] CR at I-20 and PR at I-16 to I-17 (SRAM industry highly cyclical, with short product life cycles); conf. tr. at 21-22 (Donnelly) (domestic producer's capital investments funded out of cash flow, and that dumped imports "dry up [a domestic producer's] capital, [and] ability to generate capital"), 30 (Taylor) (heavy operating losses having a "severe impact" on domestic producer's capital investment plans).

[183] Table VI-3, CR at VI-9 and PR at VI-2.

operating losses of *** percent in 1997.[184] The domestic industry's financial troubles are due in significant part to the price depressing effects of the subject imports from Taiwan on the domestic like product during the period of investigation. A number of market forces set these price declines in motion, including an excess of supply relative to demand that developed in 1996 due to prior industry forecasts that had overestimated future growth in demand. Also adversely affecting the price of the domestic like product was competition from a growing volume of non-subject imports, some of which are known to have undersold the domestic like product, although generally by lesser amounts than did the subject imports. In addition, however, the subject imports from Taiwan contributed to and exacerbated the price collapse to a significant degree by their increase in volume, both in quantity and in market share, and their significant instances of underselling of SRAM products, particularly during 1996 and 1997. As a result of the domestic industry's worsening financial condition, it curtailed capital expenditures in 1997 to a level slightly less than half that of either 1995 or 1996.[185] The domestic industry's research and development expenditures also fell from 1996 to 1997, although the 1997 levels remained higher than in 1994 or 1995.[186] In sum, the record indicates that continuous heavy investment is critical to the domestic industry, that the industry's financial results were poor in 1997 and indicative of a further downward trend, that the industry's financial condition has resulted in reduced investment, and that the subject imports from Taiwan exacerbated the price collapse that caused the industry's poor financial results. Based on the foregoing, it is determined that the domestic industry is experiencing material injury by reason of the subject imports from Taiwan.

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[184] Table VI-3, CR at VI-9 and PR at VI-2.

[185] The domestic industry's capital expenditures fell from $541,357,000 in 1995 and $511,139,000 in 1996, to $245,419,000 in 1997. In 1994, capital expenditures were $236,088,000. Table VI-4, CR at VI-11 and PR at VI-4.

[186] The domestic industry's research and development expenses fell from $*** in 1996 to $*** in 1997. In 1994 and 1996, research and development expenses were $*** and $***, respectively. Table VI-4, CR at VI-11 and PR at VI-4.

DISSENTING VIEWS OF CHAIRMAN MARCIA E. MILLER

Based on the record in this investigation, I find that an industry in the United States producing static random access memory semiconductors (SRAMs) is neither materially injured nor threatened with material injury by reason of imports of SRAMs from Taiwan that have been found by the Department of Commerce to be sold in the United States at less than fair value. I join the majority views on like product and domestic industry, negligible imports, cumulation, and Conditions of Competition (Sections I, II, III, and IV.a.).

I. NO MATERIAL INJURY BY REASON OF LTFV SRAMS FROM TAIWAN

In analyzing the SRAM industry and the market for these products, I note that I have viewed trends over the investigation period with some caution. The SRAM industry is highly cyclical, characterized by rapid technological advancement, relatively short product life cycles, volatile market conditions, and periods of mismatched supply and demand.[1] It is normal for low volumes and high prices to prevail when a new product is introduced. As the product and market mature, the industry expects to see increased volumes and declining prices.[2] Thus, an evaluation of industry trends may not be as informative of the effect of the imports as in other investigations.

A. Volume of Subject Imports

Consistent with the characteristics of this industry as described above, U.S. apparent consumption of SRAMs increased substantially during the period examined by the Commission in this investigation. Between 1994 and 1997, U.S. consumption increased threefold from 86.0 billion bits to 244.6 billion bits.[3] In absolute volume, both domestic shipments and imports (subject and non-subject) participated in this increase.[4]

In the context of this growing market, U.S. SRAM producers lost considerable market share to imported SRAMs. Between 1994 and 1997, the share of the U.S. market held by domestic SRAMs dropped steadily from 48.9 percent to 34.0 percent. However, the record developed by the Commission in this investigation demonstrates that this market share was lost overwhelmingly to non-subject imports, rather than to subject imports from Taiwan. Between 1994 and 1997, the share of U.S. consumption held by non-subject imports rose from *** to *** percent. Subject imports from Taiwan accounted for a relatively stable share of the market from 1994 through 1996, and then increased their market share somewhat in 1997.[5]

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[1] CR at II-1, PR at II-1.

[2] CR at V-1, PR at V-1.

[3] CR at Table IV-3.

[4] From 1994 to 1997, domestic shipments increased from 42.0 to 83.2 billion bits; shipments of subject imports from Korea increased from *** to *** billion bits; shipments of subject imports from Taiwan increased from *** to *** billion bits; and shipments of non-subject imports increased from *** to *** billion bits. CR at Table IV-3.

[5] Subject imports from Taiwan accounted for *** percent of the U.S. market in 1994, *** percent in 1995, and *** percent in 1996. In 1997, their market share grew to *** percent. CR at Table IV-4.

Based on this record, I find that the absolute increase in the volume of imports of SRAMs from Taiwan over the period of investigation, from *** to *** billion bits, is significant. However, I note that this increase occurred in the context of substantial growth in domestic consumption and thus resulted in little gain in the market share attributable to subject imports from Taiwan.

B. Price Effects of the Subject Imports

As noted above, in this industry, prices are expected to decline over the product's life cycle. Costs of production and selling prices tend to be high when a new generation of product is introduced and is relatively scarce. As producers move along the learning curve,[6] production yields increase and defects decrease, lowering production costs, and accordingly, prices. Costs and prices are estimated to decrease by an average 30 to 35 percent for each doubling of production.[7] Generally, prices tend to follow a steady downward trend after product introduction.[8]

The record of this investigation, however, shows that the price path in the SRAM industry deviated from this expected performance. Several unusual market developments caused SRAM prices to increase strongly through 1995, and then fall in 1996, generally back to and then below the pricing level prevailing in the market in 1994. In 1994 and 1995, forecasts for future demand of SRAMs were strong, largely tied to the expected demand for cache memory in Intel's Pentium microprocessor and other personal computer systems.[9] In anticipation of widespread SRAM shortages in 1996, purchasers accumulated large inventories, leading to a situation of tight supply, and driving prices in 1995 to a period high. Rather than falling as expected, prices increased by as much as 40 percent during 1995.[10] For several products, prices in 1995 rose above any price level achieved in 1994.[11] In addition, because of the strong demand forecasts, producers and new suppliers were adding substantial capacity. When, contrary to these expectations, fewer than 20 percent of personal computer systems required cache memory, purchasers sold off inventories, or required vendors to take returns. Accordingly, starting late in 1995 and into 1996, prices declined sharply. This price decline continued through the end of the period of investigation.

The Commission collected price information for six SRAM products.[12] For domestic producers and importers of SRAMs from Taiwan, products 3 and 5 were the largest in terms of quantities sold (measured in bits).[13] Both products followed the general price trends discussed above, increasing through the third quarter of 1995, and then falling throughout 1996 and 1997. For product 3, imports from

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[6] CR at V-1; PR at V-1.

[7] *Id*.

[8] Posthearing brief of Micron, at Attachment 1, Exhibit A (PPB Learning Curve).

[9] Widespread forecasts were made that up to 80 percent of Pentium microprocessors would use SRAMs. CR at V-1; PR at V-1.

[10] CR at Table V-3, ***.

[11] CR at Tables V-3, V-4, V-5, and V-6.

[12] These six products accounted for about *** percent of total U.S. shipments of domestic SRAMs and subject imports from Korea and Taiwan in 1997.

[13] Products 3 and 5 accounted for a combined *** percent of total U.S. shipments by the domestic producers and the subject imports in 1997. For shipments of SRAMs by domestic producers and importers of SRAMs from Taiwan, these two products accounted for *** and *** percent, respectively, of total 1997 shipments.

Taiwan were priced below the domestic SRAMs in 1994, by margins ranging from *** percent. In 1995, however, prices for both the domestic and imported product trended upward with the price of the imported product increasing by more than the U.S. product; thus, the margins narrowed.[14] Prices for product 5 moved in a similar manner, although the 1995 increases were not as steep.[15] The price increases in 1995 for both products 3 and 5 reflected the tight supply situation described above. This pattern changed in 1996, when prices for both products 3 and 5 fell sharply. In 1996, however, SRAMs imported from Taiwan were priced above the domestic SRAMs in over half of the months compared. Price declines continued in 1997, and subject imports from Taiwan continued to oversell the domestic product in most instances. These mixed patterns of over- and underselling during the period in which domestic prices were declining consistently indicates that the subject imports were not having significant price effects. Instead, it appears that the domestic price trends reflected the broader market conditions described above.[16]

I do not find that the lost sales and lost revenue allegations, despite allegations that were at least in part confirmed, support an affirmative finding of material injury. In many instances, purchasers noted that competition exists between all qualified suppliers, not just those from Taiwan and the United States,[17] and that prices are set on a global basis. Along with price, purchasers noted the importance of qualifying suppliers, delivery times, and volume requirements.[18]

Based on my analysis of the record in this investigation, I find that prices of domestic SRAMs were driven by the unusual market conditions discussed earlier. Thus, despite price underselling by the subject imports in the earlier part of the investigation period, I find that SRAMs from Taiwan have not depressed prices to a significant degree, nor do I find that these imports have prevented price increases which otherwise would have occurred, to a significant degree.

C. Impact of the Subject Imports

In assessing the impact of subject imports on the domestic like product, I consider all relevant economic factors which have a bearing on the state of the domestic industry, including but not limited to actual and potential declines in output, sales, market share, profits, productivity, return on investments, and utilization of capacity; factors affecting domestic prices; actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product; and, the magnitude of the margin of dumping.[19]

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[14] CR at Table V-3.

[15] CR at Table V-5.

[16] Price comparisons with SRAMs from Taiwan were also possible for products 1, 2, 4, and 6. The results are mixed for these products, but generally, prices declined more or less steadily, and underselling by the subject imports was prevalent, except for products 4 (minuscule quantities) and 6 in 1997. However, I note that, combined, these products accounted for significantly less volume than products 3 and 5.

[17] In fact, two domestic producers were named the most often in Commission questionnaires as being price leaders. CR at V-3 to V-4; PR at V-3.

[18] CR at V-29 to V-34; PR at V-14 to V-16.

[19] 19 U.S.C. § 1677(7)(C)(iii). In its final determination, Commerce found dumping margins for the subject

(continued...)

Production of uncased SRAMs (billion bits) increased during the investigation period, and wafer starts also increased overall, although utilization of the increasing uncased capacity fell over the period.[20] Although petitioners stated that capital investments in wafer fabrication plants by a number of producers were either canceled or put on hold due to competition from the subject imports,[21] overall capital expenditures increased strongly during the earlier part of the investigation period, largely reflecting the strong demand that was forecast at least two years prior, and subsequent investments worldwide to meet that projected demand.[22] I find that the decline in these expenditures in 1997 resulted from the unusual market conditions described earlier and not from imports of subject merchandise from Taiwan.

Cased SRAM production fluctuated throughout the period, but in 1997, production was up compared to all previous periods.[23] The volume of domestic shipments of SRAMs and modules almost doubled for the period, and the value also increased overall, but by a much smaller percentage. Value is expected to fall on a unit basis, following the general rule that with additional production experience and improvements in wafer yield and die size, costs of production fall over time. Employment indicators also improved over the period.[24]

Domestic apparent consumption by volume increased steadily and sharply over the period, while the domestic share of that consumption fell. I note, however, that the largest decline in the domestic industry's share occurred from 1994 to 1995, the year in which the share of subject imports from Taiwan was also falling, and non-subject imports were gaining the most in market share. While the actual increase in the volume of subject SRAMs from Taiwan was significant, these imports were relatively stable in market share terms. Non-subject imports captured the largest share of the domestic market during the period, and accounted for more than half of domestic consumption in 1996 and 1997.[25] [26]

The industry's financial performance in 1994 and 1995 was strong, with double-digit operating income margins. Although still profitable in 1996, net sales value fell, and gross profits declined by almost half. Net sales value declined further in 1997, and gross profits again fell sharply, contributing to a

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[19] (...continued)
imports from Taiwan ranging from 7.59 to 113.85 percent. Because I do not find significant volume effects, relative to consumption in the United States, nor significant price effects, I do not consider these margins to be significant.

[20] U.S. capacity to produce SRAMs, including uncased, cased, and modules, increased throughout the period; however, I believe that the most appropriate measure of capacity is the ability to produce uncased SRAMS. CR at Table III-3.

[21] CR at Appendix L.

[22] CR at Table VI-4.

[23] CR at Table III-3.

[24] The decrease from 1996 to 1997 reflects at least in part the sale in late 1996 of Paradigm's SRAM fab. CR at III-12; PR at III-7.

[25] CR at Table IV-4.

[26] *Id.* By value, the domestic industry gained an increasing share of the declining value of apparent consumption, accounting for just over half of consumption by value in 1997, while imports from Taiwan accounted for a relatively steady share throughout the period.

negative operating margin for that year.[27] The drop in the domestic industry's operating income in 1996, coincides with the lowering expectation for SRAM demand for personal computer systems, and the subsequent sell off of inventories accumulated in 1995 in response to concerns about future supply shortages.

Despite the worsening performance of the domestic industry, I find no basis to conclude that this deterioration was by reason of the subject imports from Taiwan. The most significant and consistent underselling by the subject SRAMs from Taiwan was during the period in which prices were increasing due to the tight supply in 1995, and the subject imports were losing market share. As prices for all SRAMs were falling later in the period, the imports from Taiwan were mostly priced above the domestic SRAMs for those products accounting for the largest share of domestic consumption.

II. NO THREAT OF MATERIAL INJURY BY REASON OF DUMPED IMPORTS

A. Cumulation for Purposes of Threat Analysis

In assessing whether a domestic industry is threatened with material injury by reason of imports from two or more countries, the Commission has discretion to cumulate the volume and price effect of such imports if they meet the requirements for cumulation in the context of present material injury.[28] In deciding whether to cumulate for purposes of making a threat determinations, we also consider whether the subject imports are increasing at similar rates and have similar pricing patterns.[29] Because I found for purposes of my determination on present material injury that there is not a reasonable overlap of competition between the subject imports from Korea and Taiwan, I decline to cumulate for purposes of my determination with respect to threat of material injury.

B. Statutory Factors

Section 771(7)(F) of the Act directs the Commission to determine whether the U.S. industry is threatened with material injury by reason of the subject imports by analyzing whether "further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted."[30] The Commission may not make such a determination "on the basis of mere conjecture or supposition," and considers the threat factors "as a whole" in making its determination whether further dumped or subsidized imports are imminent and

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[27] Operating margins over the period of investigation were *** percent in 1994, *** percent in 1995, *** percent in 1996, and *** percent in 1997. CR at Table VI-1.

[28] 19 U.S.C. § 1677(7)(H).

[29] *See* Torrington Co. v. United States, 790 F. Supp. 1161 (Ct. Int'l Trade 1992); Metallverken Nederland B.V. v. United States, 728 F. Supp. 730, 741-42 (Ct. Int'l Trade 1989); Asociacion Colombiana de Exportadores de Flores v. United States, 704 F. Supp. 1068, 1072 (Ct. Int'l Trade 1988).

[30] 19 U.S.C. §§ 1673(d)(b) and 1677(7)(F)(ii).

whether material injury by reason of imports would occur unless an order is issued.[31] In making my determination, I have considered all statutory factors that are relevant to these investigations.[32]

For the reasons discussed below, I determine that the domestic industry is not threatened with material injury by reason of LTFV imports from Taiwan.

As was noted in our threat determination with respect to subject imports from Korea, production capacity and producers' ability to shift production are interrelated, because a variety of semiconductors generally can be produced using the same equipment in the same facilities. Information on the industry in Taiwan suggests that producers of SRAMs in Taiwan also produce other memory integrated circuit (IC) products, such as DRAMs and ROMs, communication ICs, information product ICs, and consumer electronics ICs.[33] In 1996, memory ICs accounted for 60 percent of total IC output. Although Taiwan's production of semiconductors is projected to increase, there is no indication that this additional production will be for SRAMs, and several of the foreign producers reported that no capacity is dedicated to SRAMs. In the near term, foreign producers reported a projected sharp decline in both capacity and production of the subject SRAMs for 1998.[34] Despite the planned increases over the longer term, as well as the relative ease with which production capacity can be shifted between different types of semiconductors, I do not find evidence that imminent and significant increases in SRAM exports to the United States are likely.

By absolute volume, exports of cased SRAMs to all markets, as well as shipments to the Taiwan home market, increased throughout the investigation period, while exports of uncased SRAMs fluctuated, but generally increased in absolute terms to the home and U.S. markets. As a share of total shipments, however, exports of cased SRAMs to the U.S. market were relatively steady, at *** percent in 1994, *** percent in 1995, *** percent in 1996, and *** percent in 1997. For 1998, producers in Taiwan projected an increase in the total share of shipments to the United States, to *** percent, but a substantial decline in the absolute volume. Exports of uncased SRAMs to the U.S. market declined as a share of total exports, at just *** percent in 1997. I do not find that the volume and market penetration of the subject imports indicates a likelihood of substantially increased imports.

I did not find that the subject imports from Taiwan were having a significant price depressing or suppressing effect on domestic prices for purposes of my determination on present material injury. I find nothing in the record to suggest that these imports are likely to have significant price effects in the future, especially in light of the widespread availability of non-subject imports.

Inventories of subject SRAMs from Taiwan increased over the period, but as a share of total shipments of the subject imports, inventories declined in 1997 to *** percent of shipments, from ***

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[31] 19 U.S.C. § 1677(7)(F)(ii).

[32] 19 U.S.C. § 1677(7)(F)(I). Factor I is inapplicable because this investigation does not involve a countervailable subsidy. Factor VII regarding raw and processed agriculture products is inapplicable to the products at issue. Additionally, there are no known antidumping or countervailing duty findings or remedies in effect in other countries with respect to SRAMs from Taiwan. CR at VII-3, PR at VII-2. *See* 19 U.S.C. § 1677(7)(F)(iii)(I).

[33] CR at VII-7; PR at VII-5.

[34] CR at Table VII-2.

percent in 1996. The declining share of inventories of the subject imports also indicates that substantially increased SRAM imports are unlikely.

As noted in the discussion on Korea, *supra*, certain domestic producers have alleged that cumulated subject imports have had negative effects on projected expansions of production capacity, the development of new products, and their financial condition. Others, however, either reported no negative effects on expansion projects or could not attribute any such effects to the subject imports from Taiwan.[35] Capital expenditures in new equipment and facilities were strong throughout the period, although there was a decrease in such expenditures in 1997 compared to 1995 and 1996. Research and development expenses *** in 1997, but were *** the level of 1994 and were *** than in 1995.[36] I do not find that the subject imports from Taiwan have had an actual or potential negative effect on the development and production efforts of the domestic industry.

Finally, I find no indication of any "other demonstrable adverse trends" that indicates that there is likely to be material injury by reason of the subject imports.

In sum, I do not find that significant increases in imports of SRAMs from Taiwan are imminent, or that material injury would occur by reason of these imports in the absence of an antidumping order. Therefore, I determine that the domestic industry is not threatened with material injury by reason of less than fair value imports of SRAMs from Taiwan.

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[35] CR at Appendix L.

[36] CR at Table VI-4.

PART I: INTRODUCTION

BACKGROUND

These investigations result from a petition filed by Micron Technology, Boise, ID, on February 25, 1997, alleging that an industry in the United States is materially injured and threatened with material injury by reason of less-than-fair-value ("LTFV") imports of static random access memory semiconductors ("SRAMs")[1] from the Republic of Korea ("Korea") and Taiwan. Information relating to the background of the investigations is provided below.[2]

Effective Date	Action	*Federal Register* Citation
Feb. 25, 1997	Petition filed with Commission; Commission institutes investigations	62 FR 10073, March 5, 1997
Mar. 21, 1997	Initiation of investigations by Commerce	62 FR 13596
Apr. 18, 1997	Commission's preliminary determinations	62 FR 24973, May 7, 1997
Sept. 25, 1997	Commerce's preliminary determinations and postponement of final determinations	62 FR 51437, Oct. 1, 1997
Sept. 25, 1997	Scheduling of final phase of the Commission's investigations	62 FR 53800, Oct. 16, 1997
Feb. 23, 1998	Commerce's final determinations	63 FR 8909
Feb. 18, 1998	Commission's public hearing [1]	
Apr. 1, 1998	Commission's briefing and vote	
Apr. 8, 1998	Commission determinations transmitted to Commerce	

[1] A list of witnesses that appeared at the hearing is presented in app. B.

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[1] The products covered by these investigations are synchronous, asynchronous, and specialty SRAMs, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or die, uncut die, and cut die. Processed wafers produced in Korea or Taiwan, but packaged, or assembled into memory modules, in a third country, are included in the scope; processed wafers produced in a third country and assembled or packaged in Korea or Taiwan are not included in the scope. The scope of these investigations includes modules containing SRAMs. The SRAMs within the scope of these investigations are included in statistical reporting numbers 8542.13.8037 through 8542.13.8049, 8473.30.1000 through 8473.30.9000, and 8542.13.8005 of the Harmonized Tariff Schedule of the United States ("HTS"). A complete description of the imported products subject to investigation is presented in the section of this report entitled *The Product.*

[2] *Federal Register* notices cited in the tabulation since Commerce's initiation are presented in app. A.

ORGANIZATION OF THIS REPORT

Section 771(7)(B) of the Act (19 U.S.C. § 1677(7)(B)) provides that in making its determination of injury to an industry in the United States, the Commission--

> *shall consider (I) the volume of imports of the subject merchandise, (II) the effect of imports of that merchandise on prices in the United States for domestic like products, and (III) the impact of imports of such merchandise on domestic producers of domestic like products, but only in the context of production operations within the United States; and. . .may consider such other economic factors as are relevant to the determination regarding whether there is material injury by reason of imports.*

Section 771(7)(C) of the Act (19 U.S.C. § 1677(7)(C)) further provides that--

> *In evaluating the volume of imports of merchandise, the Commission shall consider whether the volume of imports of the merchandise, or any increase in that volume, either in absolute terms or relative to production or consumption in the United States is significant.*
> . . .
> *In evaluating the effect of imports of such merchandise on prices, the Commission shall consider whether. . .(I) there has been significant price underselling by the imported merchandise as compared with the price of domestic like products of the United States, and (II) the effect of imports of such merchandise otherwise depresses prices to a significant degree or prevents price increases, which otherwise would have occurred, to a significant degree.*
> . . .
> *In examining the impact required to be considered under subparagraph (B)(i)(III), the Commission shall evaluate (within the context of the business cycle and conditions of competition that are distinctive to the affected industry) all relevant economic factors which have a bearing on the state of the industry in the United States, including, but not limited to . . .(I) actual and potential decline in output, sales, market share, profits, productivity, return on investments, and utilization of capacity, (II) factors affecting domestic prices, (III) actual and potential negative effects on cash flow, inventories, employment, wages, growth, ability to raise capital, and investment, (IV) actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and (V) in [an antidumping investigation], the magnitude of the margin of dumping.*

Information on the subject merchandise, margins of dumping, and domestic like product are presented in Part I. Information on conditions of competition and other relevant economic factors are presented in Part II. Part III presents information on the condition of the U.S. industry, including data on capacity, production, shipments, inventories, and employment. The volume and pricing of imports of the subject merchandise is presented in Parts IV and V. Part VI presents information on the financial experience of U.S. producers.

The statutory requirements and information obtained for use in the Commission's consideration of the question of threat of material injury are presented in Part VII.

SUMMARY DATA

A summary of data collected in these investigations is presented in appendix C. Except as noted, U.S. industry data are based on questionnaire responses of 13 firms accounting for the great bulk of domestic production of uncased and cased SRAMs for the period 1994 through 1997, the period for which data were gathered in these investigations. U.S. imports of subject SRAMs are based on questionnaire responses of 45 firms, including all of the major importers of subject merchandise from Korea and Taiwan, as well as importers from all other countries.

PREVIOUS INVESTIGATIONS

Prior to the current investigations, the Commission has not conducted an investigation concerning SRAMs. The Commission has, however, conducted several previous Title VII and unfair trade practices investigations concerning dynamic random access memory semiconductors ("DRAMs").[3]

SALES AT LTFV

Commerce determined that the subject products from Korea and Taiwan are being, or are likely to be, sold in the United States at LTFV. The following tabulation provides the weighted-average dumping margins (in percent ad valorem) determined by Commerce for countries and companies subject to these investigations:

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[3] *See*, U.S. International Trade Commission, *DRAMs of One Megabit and Above From the Republic of Korea* (Inv. No. 731-TA-556), USITC Pub. 2629, May 1993; *64K Dynamic Random Access Memory Components From Japan* (Inv. No. 731-TA-270), USITC Pub. 1862, June 1986; and *Dynamic Random Access Memory Semiconductors of 256 Kilobits and Above From Japan* (Inv. No. 731-TA-300). Also, see U.S. International Trade Commission, Invs. Nos. 337-TA-242, 337-TA-312, and 337-TA-345.

Country/Company	Dumping Margins--[1] Preliminary	Final	Revised Final[2]
	(percent ad valorem)		
Korea--			
Samsung (SSI)	1.59[3]	1.00[3]	0.97
Hyundai	3.38	5.08	4.90
LG Semicon (LGS)	55.36[4]	55.36[4]	55.36
All others	3.38	5.08	4.90
Taiwan--			
Advanced Microelectronics	113.85[5]	113.85[5]	113.85
Alliance	59.06	50.58	50.15
BIT	113.85[5]	113.85[5]	113.85
ISSI	10.96	7.59	7.56
Texas Instruments	113.85[5]	113.85[5]	113.85
UMC	63.36	93.87	93.71
Winbond	94.10	101.53	101.53
All others	41.30	41.98	41.75

[1] Commerce's period of investigation was January 1, 1996, through December 31, 1996.

[2] On March 19, 1998, and April 1, 1998, Commerce revised its final margins in the investigations relating to Taiwan and Korea, respectively, pursuant to ministerial error allegations (March 19 and April 1, 1998, memoranda to Louis Apple from the Teams). Information regarding the revised final margins was received by the Commission after March 19, 1998, the date the Commission's administrative record for the investigations was closed.

[3] *De minimis*.

[4] Adverse facts available rate; LGS withdrew from participation in Commerce's investigation.

[5] Adverse facts available rate; the firms failed to respond to Commerce's requests for information.

TARIFF RATES

The U.S. Customs Service ("Customs") has determined that, for tariff and marking purposes, the country of origin of imported SRAMs is the location of assembly rather than the location of wafer fabrication.[4] Mounting (also referred to as packaging) of integrated circuit ("IC") chips is still considered to be a substantial transformation for both country-of-origin and marking purposes.

Imports of SRAM wafers and uncut and cut dice are currently classified in subheading 8542.13.80 of the HTS (statistical reporting number 8542.13.8005).[5] Imports of assembled or cased SRAMs fall into

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[4] As indicated previously, however, Commerce's scope language states that processed wafers produced in Korea and Taiwan, but packaged, or assembled into memory modules, in a third country, are included in the scope, but wafers produced in a third country and assembled or packaged in Korea or Taiwan are not.

[5] Prior to 1996, SRAM wafers and uncut and cut dice were classified under subheading 8542.11.80 (statistical: 8542.11.8001) of the HTS.

the same subheading but are reported under statistical categories numbered 8542.13.8037 through 8542.13.8049.[6] Imports of SRAM modules are classified in subheadings 8473.30.10 through 8473.30.90 of the HTS. The most-favored-nation (MFN) tariff rate, applicable to imports from Korea and Taiwan, for all HTS subheadings identified, is free.

THE PRODUCT[7]

Commerce has defined the imported products subject to the scope of its investigations as--[8]

> *"(S)ynchronous, asynchronous, and specialty SRAMs from Korea and Taiwan, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or die, uncut die, and cut die. Processed wafers produced in Korea or Taiwan, but packaged, or assembled into memory modules, in a third country, are included in the scope; processed wafers produced in a third country and assembled or packaged in Korea or Taiwan are not included in the scope.*
>
> *The scope of these investigations includes modules containing SRAMs. Such modules include single in-line processing modules (SIPs), single in-line memory modules (SIMMs), dual in-line memory modules (DIMMs), memory cards, or other collections of SRAMs, whether unmounted or mounted on a circuit board.*
>
> *(T)he scope of these investigations does not include SRAMs that are physically integrated with other components of a motherboard in such a manner as to constitute one inseparable amalgam (i.e., SRAMs soldered onto motherboards)."*

DOMESTIC LIKE PRODUCT

During the preliminary phase of these investigations the Commission found "a single domestic like product consisting of unassembled SRAMs, assembled SRAMs, and SRAM memory modules."[9] The Commission had considered whether there should be separate domestic like products[10] consisting of "fast" (SRAMs with access speeds of 44 nanoseconds ("ns") and faster) and "slow" SRAMs (SRAMs with access speeds of 45ns and slower), but found that "(t)he current record does not indicate clear differences

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[6] Prior to 1996, assembled or cased SRAMs were classified under subheading 8542.11.80 (statistical: 8542.11.8037 through 8542.11.8049) of the HTS.

[7] See app. D for a glossary of SRAM terms.

[8] Notice of Final Determination of Sales at Less Than Fair Value: Static Random Access Memory Semiconductors from Taiwan, 63 FR 8910, Feb. 23, 1998. Similar language was included in Commerce's notice regarding Korea (63 FR 8934).

[9] See, *Static Random Access Memory Semiconductors From the Republic of Korea and Taiwan*, Invs. Nos. 731-TA-761-762 (Preliminary), USITC Pub. 3036 (April 1997), p. 7, (hereinafter referred to as "Preliminary Report)."

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

among SRAMs at a defined point along the access speed continuum." The Commission also noted that it intended to re-examine this issue in the final phase of these investigations, and invited comments from the parties concerning whether there is a clear dividing line between fast and slow SRAMs.[11] The Commission's questionnaires in the final phase of these investigations sought certain information from producers, importers, and purchasers regarding fast and slow SRAMs, and a discussion/presentation of questionnaire comments/data is incorporated in the sections presented below.[12]

Physical Characteristics and Uses

Physical Characteristics

SRAM is a class of volatile semiconductor memory that allows data to be both read from and written into the device's storage locations. It is a related but separate product from DRAM, the subject of prior Commission investigations. SRAMs are integrated circuits capable of retaining their information at very low power, without the need for periodic electrical "refresh." Once information is loaded into an SRAM, it will remain indefinitely until it is intentionally changed or power to the memory circuit is shut off. In contrast, DRAMs typically store information in a manner that requires electrical "refresh" on a regular basis (milliseconds). SRAMs are far more complex than DRAMs and require almost four times the area to achieve the same storage capacity. Because of the increased design complexity, SRAMs are more difficult and expensive to manufacture than DRAMs.[13] However, because of design differences and the fact that SRAMs do not require electrical refresh, SRAMs typically have much faster access speeds than DRAMs. The speed at which the individual memory cells within a circuit can be accessed is expressed in nanoseconds, or one-billionths of a second. The fastest SRAMs have access speeds of under 10ns. Conventional DRAM access speeds typically begin at around 25-40ns. In addition, SRAMs differ from DRAMs in the amount of power that they consume. Because SRAMs do not require the continual electrical refresh of DRAMs, they consume less electricity and are better suited for battery-powered applications.[14]

SRAMs come in a variety of sizes, process technologies, classifications, designs, and access speeds. These characteristics are discussed below.

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[11] Preliminary Report, p. 10, fn 53.

[12] See app. E for a compilation of questionnaire comments.

[13] Unlike SRAMs, DRAMs require extra control circuitry in order for them to function. In a situation where small amounts of memory are required, the extra circuitry can account for a significant portion of the overall semiconductor memory cost. In such a situation, SRAM could be cost competitive with the normally less expensive DRAM. Information provided by the petitioner, telephone interview by USITC staff, Apr. 3, 1997.

[14] McGraw-Hill Inc., "Semiconductor Memories," *McGraw-Hill CD-ROM Encyclopedia of Science and Technology* (U.S.A.: McGraw-Hill, 1995), p. 2.

Size

SRAM size is measured in terms of density, the number of storage cells or bits contained in a single chip. New generations of SRAMs typically, but not always, increase in density by factors of 4. Current prevalent SRAM densities include 256 kilobits ("K"), 1 megabit ("Meg"), and 4 Meg.[15]

Process Technologies

The two chief process technologies utilized to fabricate SRAMs are CMOS (complimentary metal oxide semiconductor) and BiCMOS (a combination of bipolar technology and CMOS). In general, BiCMOS technology can offer increases in access speed over CMOS technology, but often results in greater energy consumption and heat build-up in the circuit. BiCMOS technology is most often used in the production of SRAMs with the fastest access speeds, while CMOS technology is used to manufacture SRAMs of multiple speeds.[16]

Classifications

SRAMs can be classified as synchronous or asynchronous. Synchronous means that the SRAM's clock signal or operating frequency is synchronized with the clock speed of a controlling circuit, usually a microprocessor. By synchronizing the clock speeds, the SRAM and microprocessor are able to operate in lockstep, which improves overall performance. An asynchronous SRAM does not require a clock signal to validate its control signals, and therefore its operating frequency is not synchronized with the clock signal of a microprocessor. Synchronous SRAMs are typically slightly higher in price and maintain higher access speeds than asynchronous SRAMs of similar density.

Designs

SRAMs are constructed with a variety of designs and configurations. The design or cell structure of an SRAM refers to the number and type of transistors used per cell. Current cell types include four transistors, six transistors, and thin-film transistor. SRAM configuration refers to the number of bits available in a single access of the chip (die).

Access Speeds

SRAMs are constructed with a variety of access speeds. The fastest current access speeds for SRAMs range from 2ns to 10ns, while the slowest SRAM access speeds are in excess of 100ns. As reported during the preliminary phase of these investigations, access speeds are continually being improved to meet the system demands of the electronic products in which they are included. As a result, delineation lines between speeds are also moving.

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[15] A single K is equivalent to 1,024 bits; a single Meg is equivalent to 1,048,576 bits.

[16] *Mid-Term 1996*, ed. Bill McLean (Scottsdale, AZ: Integrated Circuit Engineering Corp.("ICE"), 1996), pp. 5-17.

During the final phase of these investigations, parties were invited to provide the Commission with an industry-accepted delineation of SRAMs into fast and slow categories.[17] In general, counsel for Korean respondents Samsung and Hyundai argued that the appropriate dividing line for fast and slow SRAMs is 45ns, and that this dividing line will be appropriate for future generations as well.[18] [19] Counsel for the U.S. producer Motorola suggested a delineation of 30ns. Counsel for petitioner, Micron, argued that there are multiple definitions of fast and slow offered by industry sources, a selection of 45ns would be arbitrary and no more useful or meaningful than a selection of any other cutoff, and access speeds change over time with each new generation of SRAM. A summary of access speed definitions used by semiconductor industry sources, over time, is presented below:[20]

	"Slow"	"Fast"	Other
In-Stat (before 5/94)	>70ns	36-70ns	Very fast (≤35ns)
(after 5/94)	≥45ns	16-44ns	Very fast (≤15ns)
Dataquest (5/96)	>70ns	≤70ns	
ICE (4/96)	≥30ns	10-30ns	Very fast (<10ns)
SEMICO (10/97)[21]	≥30ns	<30ns	
WSTS (3/97)	≥30ns	<30ns	

Based on a review of these data, there does not appear to be an industry consensus on the definition of "fast" and "slow" SRAMs; delineations have also changed over time.

The Commission's questionnaires in the final phase of these investigations requested data for total shipments of SRAMs by access speed for 1997. The shares of shipments (in percent) on both a quantity and a value basis, by access speed category, are presented in table I-1. Counsel for Samsung has argued that the data show only *de minimis* production in the 35-54ns range, and that using either 35 or 45ns as the break point would reasonably divide the two markets.[22]

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[17] See, Oct. 22, 1997, and Oct. 28, 1997, party comments on the Commission's draft questionnaires.

[18] Counsel for respondents argued further that selection of a 45ns or 30ns dividing point is not critical because of a purported "dead zone" between 25 and 55ns where "there is almost no production or shipment worldwide of SRAMs" (Oct. 28, 1997, submission of Akin, Gump, Strauss, Hauer & Feld, p. 3). Counsel for petitioner argued that "(t)here are significant shipments of SRAMs within each 10ns interval between 10ns and 70ns" (Oct. 22, 1997, submission of Hale & Dorr, p. 4).

[19] In the initial round of comments on the draft questionnaires, no representative of Taiwan producers or importers of SRAMs provided comments on the fast vs. slow issue, as requested.

[20] Except as noted, data are derived from information presented in party comments.

[21] Oct. 29, 1997, telephone interview with a semiconductor analyst at SEMICO, Phoenix, AZ.

[22] Feb. 10, 1998, prehearing brief of Akin, Gump, Strauss, Hauer & Feld, p. 3.

Table I-1
Cased SRAMs: Distribution by access speed and source, 1997

Source	≥75ns	55-74ns	35-54ns	15-34ns	≤14ns	Total
	Share of quantity, based on bits (*in percent*)					
Domestic product	10.3	9.5	1.7	43.9	34.6	55.8
Imported product from--						
Korea, LTFV	10.1	86.6	(1)	3.3	(1)	1.5
Taiwan	(2)	1.1	1.1	59.5	38.3	15.0
Subtotal LTFV	1.1	9.0	1.0	54.2	34.7	16.5
Korea, Samsung	4.1	37.5	(2)	31.5	26.9	16.7
All other countries	29.8	27.0	(1)	11.4	31.7	10.9
Subtotal imported	9.3	24.2	0.4	35.1	31.0	44.1
Total[3]	9.9	16.0	1.1	40.0	33.0	100.0
	Share of value (*in percent*)					
Domestic product	3.4	4.7	4.3	33.9	53.7	63.0
Imported product from--						
Korea, LTFV	21.7	75.8	(1)	2.5	(1)	1.0
Taiwan	0.4	1.9	1.0	57.0	39.6	8.8
Subtotal LTFV	2.5	9.2	0.9	51.6	35.7	9.8
Korea, Samsung	3.4	27.0	(2)	30.6	39.1	13.0
All other countries	10.9	13.9	(1)	13.1	62.1	14.2
Subtotal imported	6.0	17.3	0.2	29.5	47.0	37.0
Total[3]	4.4	9.4	2.8	32.3	51.2	100.0

[1] No shipments.
[2] Less than 0.05 percent.
[3] Totals do not reconcile with totals for shipments by access speed and end use as presented in table I-2. Data presented above include shipments of non-subject imports while data in table I-2 do not include such shipments.

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

Specialty SRAMs and SRAM Modules

Included in the scope of these investigations are all specialty SRAMs and modules incorporating SRAMs. Specialty SRAMs mentioned by the petitioner include cache tag and multiport. These types of SRAM are often used in specific applications. Included in a cache tag SRAM is a method of signaling the microprocessor to indicate whether requested information is available in cache memory. Multiport SRAMs are constructed to allow data to be accessed concurrently by two or four separate ports, or pathways.[23] Memory modules and memory cards are narrow printed-circuit boards that contain several memory chips.

Uses

SRAMs basically have two uses: main memory in applications requiring low power usage, and intermediate storage, or "cache" memory, between fast microprocessors and the relatively slower DRAM main memory. The end use often dictates the access speed required of the SRAM, as well as the degree of power consumption.

SRAMs are used as main memory in such products as hand-held cellular phones, portable computers, personal digital assistants, portable test equipment, fax copiers, and modems. SRAMs with slower access speeds are often chosen for these applications because they offer lower power usage than SRAMs with faster access speeds, as well as lower cost. In addition, slower SRAMs offer significantly lower power usage than DRAMs of similar density and access speeds, which can be essential in battery-powered applications.

SRAMs are used as cache memory in computer systems where speed is critical, such as mainframes, workstations, and newer generation personal computers. Cache memory is a special high-speed memory that acts as an intermediary between a microprocessor and the main memory (DRAMs). Cache is designed to store the most frequently requested instructions and data, which it in turn supplies to the microprocessor. Instructions and data located in cache memory can be accessed as much as four times faster than instructions and data located in main memory. The more instructions and data the microprocessor can access directly from cache memory, the faster the computer or other equipment operates as a whole. By necessity, SRAMs with faster access speeds are used as cache memory. Although both synchronous and asynchronous SRAMs can be used as cache memory, increasingly, synchronous SRAMs are required in order to meet the accelerating clock speeds of microprocessors.[24]

With respect to uses of fast and slow SRAMs, the Commission's questionnaires in the final phase of these investigations requested data for total shipments of SRAMs by access speed and end use for 1997. The shares of shipments (in percent) on a value basis, by access speed category and end use, are presented in table I-2.

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[23] Petition, pp. 7-8.
[24] Petition, pp. 6-7 and 16.

Table I-2
Cased SRAMs: Distribution by access speed and end use, 1997

End use	≥75ns	55-74ns	35-54ns	15-34ns	≤14ns	Total
	Share of value (*in percent*)					
PC cache memory	[1]	0.1	[2]	16.1	83.8	17.7
Workstations/mainframes	[1]	[1]	[2]	2.5	97.5	26.9
Modems	[1]	0.7	5.0	67.6	26.7	12.9
Consumer electronics	4.3	37.7	0.1	57.7	0.3	2.8
Data/telecommunications equipment	0.9	9.8	6.9	60.0	22.3	23.1
Cellular telephones/pagers	4.6	48.3	0.2	46.9	[1]	4.3
Military	11.1	21.8	39.6	26.2	1.3	1.1
Other [3]	1.9	12.8	11.0	61.9	12.3	11.2
Total [4]	0.9	7.2	3.9	37.0	51.0	100.0

[1] No shipments.
[2] Less than 0.05 percent.
[3] Unidentifiable distributor shipments and other products such as ***.
[4] Data presented above do not include shipments of non-subject imports and, therefore, do not reconcile with data presented in table I-1.

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

Manufacturing Facilities and Production Employees

The manufacture of SRAMs is a highly capital-intensive and automated process that transforms sand into semiconductors (see figure I-1). Starting with silicon wafers,[25] the SRAM manufacturing process can be divided into three stages: design, fabrication, and assembly and test.[26] The design of the circuit layout for an SRAM often requires highly-skilled technical employees, computer hardware, and computer-aided design software.[27] It is at the design stage that decisions are made relating to the essential characteristics and functions of the SRAMs. Based on data submitted in response to the Commission's questionnaires, the design (R&D) of SRAMs accounted for an average 17 percent of total production costs, ranging from *** percent to *** percent for individual firms.[28]

The fabrication process is very automated and extremely capital intensive, with the cost of a new fabrication facility (and equipment) currently estimated at over $1 billion. SRAMs are produced on a single wafer of highly-purified silicon, usually 6 to 8 inches in diameter. The process of fabricating SRAMs on the silicon wafer entails the use of a mask set to form the circuit design, the repeated use of photolithographic steps, and introductions of chemical impurities (dopants) into the silicon (see figure I-2). The introduction of dopants forms conducting and non-conducting regions on the wafer by changing the electrical characteristics of certain areas. Metal connections between selected regions of each die are formed and a final protective coating is applied to the wafer. It is in the wafer fabrication stage that the electrical and technical characteristics of the SRAM are developed. While still incorporated on the wafer, the individual SRAMs are referred to as dice (or chips). Depending on the diameter of the wafer and the size of the individual die, hundreds of identical SRAMs may be produced simultaneously. At the close of the fabrication stage, a wafer-probe test is performed, electrically testing each die on the wafer and marking defective dice for rejection. Based on data submitted in response to the Commission's questionnaires, wafer fabrication for SRAMs accounted for an average 53 percent of total production costs, ranging from *** percent to *** percent for individual firms.[29]

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[25] Wafer preparation entails the chemical transformation of sand (silicon dioxide) into highly pure polysilicon and then into silicon wafers. Most U.S. SRAM fabricators purchase their silicon wafers from third parties and begin the SRAM manufacturing process at the design stage.

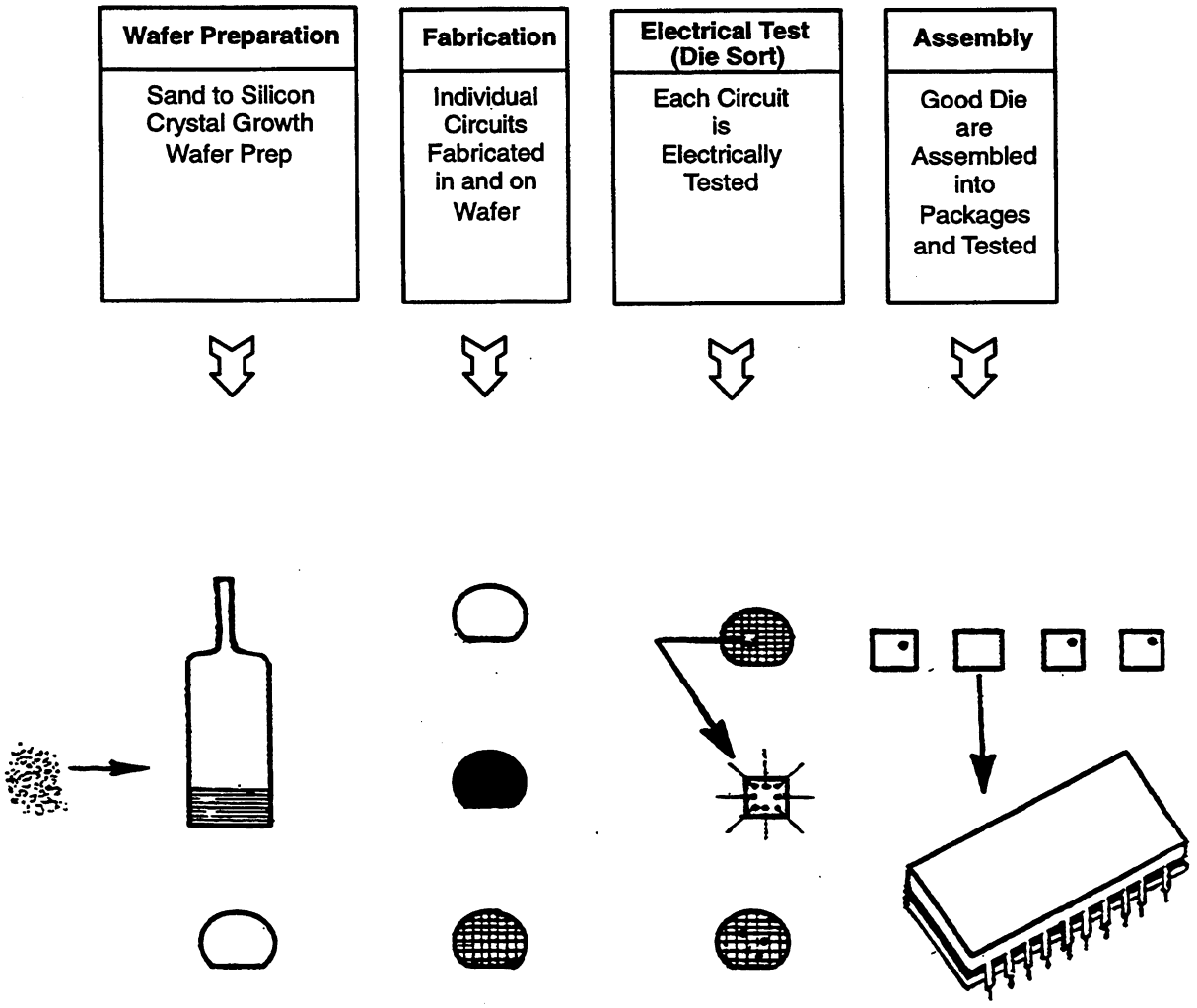
[26] This description of SRAM manufacturing draws upon material from Motorola Corp., "The Making of a Semiconductor" (faxed to USITC staff on July 29, 1996), and Harris Semiconductor, *How Semiconductors are Made*, http:www.semi.harris.com/docs/lexicon/manufacture.html, Jan. 6, 1997.

[27] "Fabless" companies concentrate on the SRAM design stage. The fabrication stage is contracted out by the fabless company to a "foundry" producer. The foundry producer fabricates the SRAM, including any prototyping and test run, using the fabless companies' design. The assembly stage is also contracted out by the fabless company and can be conducted by the foundry or by a third party. ***, telephone interview with USITC staff, Mar. 6, 1998.

[28] See the discussion of value-added in Part VI, *Financial Condition of the U.S. Industry*, and relevant appendices.

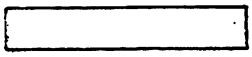
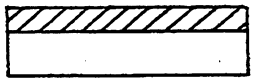
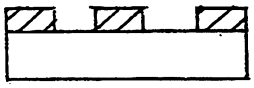
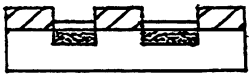
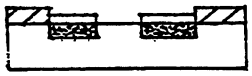
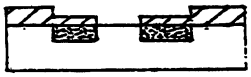
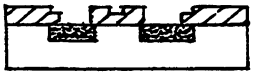
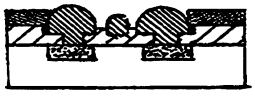
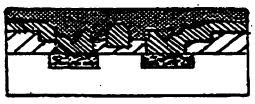
[29] See the discussion of value-added in Part VI, *Financial Condition of the U.S. Industry*, and relevant appendices.

Figure I–1
Integrated Circuit Manufacturing sequence



Source: *Microchip Fabrication,* Van Zant, McGraw Hill, 1997.

Figure I–2
Formation of a Semiconductor

Cross Section	Step	Operation	Name/Purpose
		Starting wafer	
	1	Layering	Field Oxide
	2	Patterning	Source/drain holes
	3	Doping Layering	N-type doping and reoxidation of source/drain
	4	Patterning	Gate region is formed
	5	Layering	Gate oxide is grown
	6	Patterning	Contact holes are patterned into source/drain regions
	7	Layering	Conducting metal layer is deposited
	8 9	Patterning Heat Treatment	Metal layer is patterned Metal is alloyed to layer
	10	Layering	Protective passivation layer is deposited
	11	Patterning	passivation layer is removed over metal pads

Source: *Microchip Fabrication*,VanZandt, McGraw Hill, 1997.

After the fabrication stage, chips are tested and assembled. Assembly includes the separation of the wafer into individual chips, encapsulating the chips in either plastic or ceramic, wire bonding metal leads to the chips, solder plating the metal leads, and trimming and forming the leads into a desired shape.[30] After assembly, the assembled (cased) chips are marked for identification purposes and given final tests to ensure quality and reliability. Although test and assembly is quite automated, it is relatively labor intensive compared to fabrication and is often conducted in low-labor-cost countries in East Asia.[31] Great effort is required to maximize wafer yield (number of working chips per wafer), especially in commodity products, because it determines to some extent the price that a company must charge for its product. The higher the wafer yield, the lower the price that the company can feasibly charge. Based on data submitted in response to the Commission's questionnaires, assembly and testing of SRAMs accounted for an average 27 percent of total production costs, ranging from *** percent to *** percent for individual firms.[32]

The manufacturing processes for different speeds, configurations, and cell structures of SRAMs are similar. Producing different types of SRAMs requires the use of a different mask set during wafer fabrication. Most SRAM manufacturers employ their fabrication facilities and personnel in the production of both SRAMs and other semiconductor products such as DRAMs and logic devices.[33]

Interchangeability

SRAMs have individual design and functional characteristics that optimize their utility for certain applications. As stated above, SRAMs designed for use as cache memory are designed and constructed to maximize access speeds, with less emphasis being placed on energy conservation. In addition, cache SRAM is often designed to operate with a specific microprocessor. In contrast, SRAMs used as main memory, especially in portable applications, are designed to minimize energy consumption with less emphasis placed on access speed.[34]

Within most specific applications, domestically produced and imported SRAMs of similar density, speed, and power consumption can be interchangeable.[35] However, interchangeability across SRAMs with different access speeds can be problematic. Slower SRAMs technically may function in an application suitable for faster SRAMs, but the intended level of performance (i.e., clock speed or access speed) within

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[30] E-mail from ***, Jan. 20, 1998.

[31] This delineation of the manufacturing process is referred to as production sharing. For a more detailed explanation of production sharing in semiconductors, see USITC, *Production Sharing: Use of U.S. Components and Materials in Foreign Assembly Operations, 1993-1996* (Inv. No. 332-237), USITC Pub. 3077, Dec. 1997, pp. 3-31 to 3-35.

[32] See the discussion of value-added in Part VI, *Financial Condition of the U.S. Industry*, and relevant appendices.

[33] See, questionnaire responses (QR) of ***.

[34] ***.

[35] Responses in a number of questionnaires have pointed out the necessity to "qualify" an SRAM product with end users. The qualification process generally takes the form of providing the customer with samples to use as test devices in their equipment. Without qualification, the ability to quickly substitute one producer's SRAM for another producer's would be hampered.

the overall electronic system would not be met, as the slower SRAM could not keep pace with the faster system microprocessor.[36]

Customer and Producer Perceptions

Customer and producer perceptions of SRAMs in regard to access speed vary. Many SRAM customers appear to perceive SRAMs in terms of their access speed, either as "fast" or "slow."[37] These customers often view SRAMs in this fashion because they only purchase SRAMs from one of the two speed categories. Other customers recognize the groupings of "fast" and "slow," but their companies' requirements lead them to view SRAMs in an even more detailed fashion.[38] The groupings of "fast" and "slow" are not exact enough for these companies, as their products require very specific SRAM speed types to optimize functionality. All of the customers contacted perceived SRAMs as being somewhat application specific, and specific types of SRAMs were purchased for specific applications.

Channels of Distribution

In general, the majority of domestic and imported SRAMs are sold to unrelated end users as shown in table I-3. Both U.S.-produced and subject imported SRAMs are sold to a variety of customers, including original equipment manufacturers (OEMs), distributors, and value-added resellers. The petitioner has stated that the channels of distribution are essentially the same but that different distributors may be used by different producers.[39] The petitioner has argued that for all SRAM products, fast and slow, major OEMs are the dominant purchasers, and that a distribution network exists that serves the thousands of smaller OEMs in the U.S. market. The petitioner added that, although the use of direct sales to OEMs versus sales through distributors may vary slightly depending on the speed of the SRAMs, the channels of distribution do not differ markedly.[40]

The respondents contend that there is a difference in the channels of distribution based on the access speed of the SRAM. They stated that sales of SRAMs with faster access speeds are made directly to OEM computer manufacturers and require substantial engineering support. On the other hand, sales of SRAMs with slower access speeds are more often made through distributors and are more likely to be "plug and play," standardized products that would not require engineering support.[41] In regard to differences in distribution channels for "fast" and "slow" SRAMs, industry representatives have reported that both "fast" and "slow" SRAMs can be purchased directly from manufacturers as well as through distributors.[42] When an SRAM product begins its life cycle, and there are few manufacturers that can supply the product, there is a higher likelihood of direct sale from the manufacturer to the OEM purchaser, because the purchasers are competing for a scarce product. In addition, engineering support by the producer may be required because of the relatively untried state of the product. As more producers enter

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[36] See questionnaire comments in app. E.

[37] Representatives from *** and ICE, telephone interviews by USITC staff, Mar. 25, 1997, to Apr. 2, 1997, and information provided via e-mail by In-Stat, Mar. 27, 1997.

[38] Representatives from ***, telephone interviews by USITC staff, Mar. 26-27, 1997.

[39] Conference transcript ("CTR"), p. 56.

[40] CTR, p. 159.

[41] CTR, p. 80.

[42] Representatives from ***, telephone interviews by USITC staff, Mar. 31, and Apr. 1, 1997.

Table I-3
Cased SRAMs: Shares of U.S. shipments to distributors and end users, 1997

Item	Distributors			End users		
	Related	Unrelated	Total	Related	Unrelated	Total
	Share of quantity (*in percent*)					
"Domestic" product	***	***	21.9	***	***	78.1
"Imported" product containing dice from--						
LTFV Korea	***	***	32.7	***	***	67.3
Taiwan	***	***	16.0	***	***	84.0
Total subject "imports"	***	***	19.4	***	***	80.6

[1] None reported.

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

the market and the product becomes more widely available, distributors are more likely to enter into the distribution system for the product and distributor sales are likely to comprise increasingly higher percentages of SRAM sales. This is the case regardless of access speed.[43] Because "slow" SRAMs typically use somewhat older technology, and because they usually have relatively longer life cycles than "fast" SRAMs, distributor sales may represent a higher percentage of overall "slow" SRAM sales than overall "fast" SRAM sales.

Price

The SRAM industry is highly cyclical, with short product life cycles. SRAMs begin their life cycle as a value-added product but are quickly transformed into a commodity product as increased numbers of suppliers join the market and production volume and manufacturing experience build up.[44] As a result, SRAM prices historically show a pattern of steep price declines as the products move along market and production life cycles.[45]

[43] Representative from ***, telephone interview by USITC staff, Mar. 31, 1997.
[44] CTR, p. 125.
[45] CTR, p. 82.

Information gathered during the preliminary phase of these investigations from industry representatives indicated that there typically is a price gap between "fast" and "slow" SRAMs.[46] "Fast" SRAMs are somewhat more difficult to manufacture, have shorter product life cycles, and usually command as much as twice the price of similarly configured "slow" SRAMs.[47] However, according to the market research firm In-Stat, a "trickle down effect" can occur where price reductions in one area of a market can impact another area. This effect can occur across product family lines. When customers perceive a price reduction in one area of the product market, they may immediately press producers for similar price reductions in other areas.[48]

During the final phase of these investigations questionnaire data have indicated that U.S. producer prices for slow and fast SRAMs did not differ significantly. For a detailed discussion of product-specific pricing of SRAMs, see Part V, *Pricing and Related Data,* in this report.

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[46] Representatives from ICE and ***, telephone interviews by USITC staff, Mar. 26, 1997, to Apr. 1, 1997, and information provided via e-mail by In-Stat, Apr. 1, 1997.

[47] Representatives from ICE and ***, telephone interviews by USITC staff, Mar. 26, 1997, to Apr. 1, 1997.

[48] Information provided via e-mail by In-Stat, Apr. 1, 1997.

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

BUSINESS CYCLES

The SRAM industry is highly cyclical, characterized by rapid technological advancement, demand volatility, and periods of mismatched supply and demand.[1] As stated by Micron, "the semiconductor memory market is characterized by rapid technological change, relatively short product life cycles, frequent product introductions and enhancements, difficult product transitions, and volatile market conditions."[2]

MARKET SEGMENTS

SRAMs are sold for a wide variety of end uses, including PCs, workstations, servers, telecommunications, datacommunications, and consumer electronics. The value and percentage of the value of reported shipments of SRAMs in 1997, by end use and by source, are shown in table II-1. SRAMs are manufactured to meet a variety of specifications, including different configurations, speeds, and densities. The SRAM market is constantly shifting to higher speeds and densities and has been shifting from asynchronous to synchronous SRAMs. However, lower speeds and densities are still used in some applications.

Purchasers were asked to list the range of speeds they considered "fast" and the range they considered "slow" and to describe competition between "fast" and "slow" based on their given definitions. There was no consensus among purchasers regarding which speeds are considered "fast" and which are "slow." Purchasers[3] cited speeds ranging from 7 to 70ns for the lower speed boundary for "fast" SRAMs and from 8 to 75ns for the highest speeds for "slow" SRAMs. However, most cited 35 to 55ns as the low-end for "fast" SRAMs. Most purchasers said there was no competition between "fast" SRAMs and "slow" SRAMs, given their individual definitions of "fast" and "slow." However, in some cases purchasers stated that fast SRAMs could be substituted for slow SRAMs.

The SRAM market is becoming more diverse as customers and manufacturers differentiate their products. The newest, high-speed SRAMs are designed for customer-specific PC and workstation microprocessor applications.[4] SRAMs can be designed with a number of options. For synchronous SRAMs, customers can choose from such options as pipeline or flow-through, double de-select or single de-select, capacitance, acceptable latency between read and write cycles, and late write or early write. For asynchronous SRAMs, available options include high-speed, fast SRAM with low standby current for portable electronics; low operating current; industrial temperature operation; high-density battery back up; and slow buffer memory.[5]

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[1] Prehearing brief of Taiwan respondents, p. 2.

[2] Micron SEC 10-K, 1996, p. 20.

[3] The Commission received questionnaire responses from 27 purchasers representing all major SRAM end uses.

[4] *Electronic Engineering Times*, Jan. 19, 1998. According to this article, in the past, technology from high-speed SRAMs later was used in commodity SRAMs. However, in the past few years, SRAMs for the Intel Pentium and for workstations have required special features that don't necessarily work well in other SRAM applications.

[5] *** questionnaire response.

Table II-1
SRAM open-market shipment values and percentages, by end use and source, 1997[1]

End use	United States[2]		Korea (non-SSI)[3]		Taiwan[4]	
	($1,000)	*(percent)*	*($1,000)*	*(percent)*	*($1,000)*	*(percent)*
Personal computer cache memory	$78,055	10.3	***	***	$24,977	22.2
Workstations/mainframes	284,436	37.4	***	***	1,523	1.4
Modems	42,816	5.6	***	***	42,048	37.4
Consumer electronics	11,436	1.5	***	***	1,154	1.0
Data/telecommunications	211,532	27.8	***	***	27,513	24.5
Cellular phones/pagers	13,128	1.7	***	***	104	0.1
Military	12,375	1.6	***	***	227	0.2
Other[5]	107,616	14.1	***	***	14,823	13.2
Total	761,395	100.0	***	100.0	112,370	100.0

[1] ***.
[2] ***.
[3] ***.
[4] ***.
[5] This category includes shipments to distributors and shipments that were not classified by the supplier.

Note--Because of rounding, percentages may not add to 100 percent.

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

One of the largest end uses for SRAMs is for cache memory in PCs. This market has changed significantly with the introduction of the Intel Pentium Pro microprocessor and most recently, the Pentium II microprocessor. Intel Pentium chips currently account for more than 80 percent of the microprocessors used to power new PCs.[6] Pentium Pros and Pentium IIs package SRAM with the microprocessor rather than as a separate component purchased by PC motherboard manufacturers, as has been the case in the past. For the Pentium Pro, Intel manufactured its own proprietary SRAMs. However, for the Pentium II microprocessor, which includes SRAM in a single cartridge that is plugged into the motherboard, Intel has opted to source

[6] *Computer Retail Week*, Nov. 10, 1997. Other major producers of microprocessors for PCs include IBM, Motorola, Cyrix, and Advanced Micro Devices.

from other SRAM suppliers. The Pentium's dominance limits competition in much of the PC cache market to those SRAM suppliers selected by Intel. ***.[7]

With the narrowing of opportunities in the PC cache market, SRAM suppliers are shifting to other expanding markets. The communications market is expected to consume even more SRAMs than the PC market in 1998.[8] Demand for SRAMs in networking applications has increased significantly in recent years. Mobile communications, such as cellular phones, is also a rapidly growing end use for SRAMs. Applications such as cellular phones, pagers, modems, and portable data terminals use slower SRAMs as main memory and require SRAMs that consume low power.[9]

Workstations[10] and servers[11] also consume a large amount of SRAM, and account for a large percentage of the value of SRAM sales. These applications use very high-end, high-speed SRAMs that sell for premium prices. This segment is predominantly supplied by SRAMs produced in the United States and non-subject imports, particularly from Japan, although importers of SRAMs from Taiwan reported some shipments in this category.

SUPPLY AND DEMAND CONSIDERATIONS

U.S. Supply

During 1994-97, there was an increase in the number of suppliers selling SRAMs in the U.S. market and an increase in worldwide capacity. There was a particularly significant increase in capacity in 1996, as new wafer fabs came on line.

Domestic Production

The ability of U.S. producers of SRAMs to respond to price changes with changes in the quantity shipped to the U.S. market depends on several factors. These include the amount of excess capacity, production alternatives for SRAMs, the quantity of inventories, and the availability of alternate markets. Available information indicates that U.S. producers could increase or decrease shipments to the U.S. market in response to a change in SRAM prices.

Industry capacity

There were significant levels of unused capacity during 1996 and 1997, suggesting that U.S. producers would have been able to increase or decrease production levels given a change in the price of

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[7] ***.

[8] *Electronic Buyers News Daily Digest,* Sept. 12, 1997.

[9] CTR, pp. 79-80.

[10] Workstations are similar in appearance to PCs and are often attached to networks but have greater technical analysis and computing capabilities than PCs. *Industry and Trade Summary- Computers, Peripherals, and Computer Components*, USITC Pub. 2821, Oct. 1994, p. B-5.

[11] A server is one of the central computers in a network that distributes information to and from hundreds of users, many times acting as a "traffic cop" by directing information from one user to another. Ibid, p. B-5.

SRAMs. Detailed information regarding U.S. producers' capacity and capacity utilization is presented in Part III (table III-3).

Alternative products

SRAMs are manufactured using the same facilities and workers as other memory products. Other products produced by U.S. producers using the same wafer fabs as SRAMs include DRAMs, flash, microprocessors, mask ROM, system ICs, PROMs, EEPROMs, and logic.

Inventory levels

The ratio of end-of-period inventories to shipments was relatively high, particularly for uncased SRAMs during 1996 and 1997. Detailed information regarding inventories is shown in Part III (table III-7).

Export Markets

Shipments of "domestic" product were mainly within the United States, with a relatively small percentage exported. Detailed information regarding U.S. producers' export shipments and total shipments is shown in Part III (table III-5).

U.S. Demand

Demand Characteristics

On a megabit basis, overall demand for SRAMs in the United States increased during 1994-97. Factors affecting demand include faster speed requirements in many applications, particularly increases in the internal clock speed of microprocessors. Other factors affecting demand have been growth in networking applications associated with the Internet, growth in telecommunications uses, new end uses for SRAMs, and lower prices for SRAMs. Based on the available information regarding substitute products and the percentage of the cost of the final end-use products accounted for by SRAMs, demand for SRAMs is not likely to change significantly with changes in the price level of SRAMs.

Substitute Products

U.S. producers, importers, and purchasers generally agree that there are few substitute products for SRAMs. For cache memory applications, most other memory products cannot achieve the access times that SRAM can achieve. In applications that use slower SRAMs, such as cellular phones, other memory products cannot often be substituted because these applications require low power consumption.

However, with speed improvements of DRAMs, there may be more substitution of DRAMs for SRAMs in the future.[12] *** reported that in some cases DRAM could be used in place of SRAM of 50 nanoseconds or slower and that DRAM prices have dropped at a faster rate than SRAM prices. It stated that

[12] Two DRAM suppliers are marketing DRAMs as substitutes for SRAMs in communications bridges and routers, and in mobile computing and desktop PCs. *Electronic Buyers News*, Apr. 28, 1997.

in one of its product line designs SRAM was replaced by DRAM. Another purchaser, ***, stated that its new products are designed with flash memory rather than SRAM.

Cost Share

The cost of SRAMs accounts for a small percentage of the total cost of PCs and other end products. Most purchasers reported that SRAMs accounted for 10 percent or less of the cost of the downstream products. Micron stated that low prices for SRAMs have caused customers to design higher quantities of SRAMs into their systems. However, it stated that if prices were to rise, demand would probably not fall because of the increased speed of microprocessors using cache memory.[13]

SUBSTITUTABILITY ISSUES

The qualification process for SRAMs is "often a collaborative effort among suppliers and a particular OEM."[14] Eighty percent of responding purchasers reportedly require their suppliers to become certified or prequalified. For the most demanding end users qualification can take months and involve extensive testing, but for other end users it may take just a few days.[15] About half of purchasers reported that the qualification process takes 3 months or less while the other half reported a longer qualification period. Two purchasers reporting that the qualification process can take up to a year. Purchasers often have approved vendor lists for each SRAM part they purchase. A vendor may be qualified to supply some SRAM parts to a particular purchaser but not be qualified on other parts.

Purchasers were asked to rank the importance of 14 factors in their purchase decisions for SRAMs.[16] Availability, reliability of supply, product quality, and delivery time were rated as "very important" by nearly all responding purchasers. Other factors rated as very important by more than half of responding purchasers were lowest failure rates, product consistency, and technical support/service. Purchasers were also asked to list the top three factors in deciding from whom to purchase SRAMs. Price,[17] followed by quality, and availability were the factors most often named. Approved or qualified vendor, traditional supplier, and contracts were also named as important factors in the purchasing decisions. While price was named most often as an important factor, it was most often listed third. Quality was most often listed as the most important factor in the purchasing decision, while availability was most often listed as the second most important factor.

Purchasers were asked if any suppliers qualified with new SRAM products earlier than other suppliers, and whether this limited competition. Cypress, Galvantech, IBM, IDT, Micron, Motorola,

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[13] CTR, pp. 61-62.

[14] Petitioner's post-conference brief, p. 11.

[15] CTR, p. 63.

[16] The factors were availability, delivery terms, delivery time, discounts offered, lowest failure rates, price, minimum quantity requirements, packaging, product consistency, product quality, product range, reliability of supply, technical support/service, and U.S. transportation costs.

[17] Purchaser responses regarding the importance of price in their purchase decisions for SRAMs were somewhat contradictory. While price was most often listed as one of the three most important factors in the buying decision by purchasers, only 12 of 25 purchasers rated price as a very important factor in their purchasing decision.

Mitsubishi, NEC, Samsung, and Sony were all named as suppliers that were the first to qualify various products. Purchasers reported that competition was only limited by the lack of availability of new products by other suppliers. One purchaser stated that the first supplier to market a new SRAM receives the initial qualification, and that alternate sources typically follow 1 to 2 quarters later. Another purchaser reported that competition is not limited, as other suppliers of SRAMs are approved prior to volume production of the product in which the SRAM is used.

Purchasers were also requested to state how much higher the price of imported SRAMs would have had to have been in 1997 before they would have purchased U.S.-produced SRAMs instead of imports. *** stated the following percentages: Samsung-50 percent and Taiwan-25 to 100 percent, but said there are a limited number of SRAM parts where purchases could have been switched. *** reported that if subject Korean imports as well as those from Samsung and Japan were priced 5 to 10 percent higher it would have switched, but stated that qualifications and changes in business would normally take place if conditions exist for 2 or more quarters and that it will sometimes not switch business to retain a mix of suppliers. *** cited the following percentages: Taiwan-20 percent, Japan and Korea-10 percent depending on the density purchased.

Other purchasers stated that U.S.-produced SRAMs were priced the same or higher than imported SRAMs. *** stated that "we've found U.S. based companies driving lower pricing in advance of off-shore competitors." *** said imported and domestic SRAMs are priced the same "but the quality and delivery is better." *** stated that for its approved suppliers "the U.S. suppliers have been generally less expensive than foreign suppliers in 1997." *** said "pricing from all key suppliers is virtually the same or they cannot become strategic." Finally, a number of purchasers stated that pricing is not the primary factor in their purchasing decisions.

Comparison of Domestic Products and Subject Imports

Most producers, importers except for those importing from Korea, and purchasers stated that products from U.S. producers and subject imports are generally used interchangeably and in the same applications. However, subject imports are sold in a more limited range of uses than U.S.-produced SRAMs.

Competition between U.S.-produced SRAMs and subject imports is limited in high-end applications such as workstations and servers. U.S. producers, particularly Motorola and IBM, manufacture very high speed SRAMs and supply a much larger share of SRAMs to the workstation and server market than do suppliers of Taiwan product. Subject Korean importers do not sell in this market segment. ***, a purchaser of SRAMs for workstations, reported that the SRAMs it requires can only be produced in the United States or Japan. Another purchaser, ***, reported that SRAMs used in its products are only available from U.S. producers. *** stated that the United States leads in the introduction and availability of SRAMs with speeds faster than 10 nanoseconds. *** reported that U.S. producers supply high-end technical parts while simpler parts are better supported by import sources.

All U.S. producers *** agreed that U.S., subject, and nonsubject SRAMs are used interchangeably. ***. Some producers stated that factors other than price were significant in their sales of SRAMs. *** stated that strong customer relationships at major accounts may be an advantage. *** stated that availability was important and also that customers perceived the quality of the Taiwan product to be poor in the first half of

1995, but that it is now regarded as acceptable. *** cited better quality and better technical support of its domestic SRAMs as an advantage over those imported from Taiwan.

U.S. producers reported lead times of 2-12 weeks, importers of Taiwan product reported lead times of 2-16 weeks, and importers of Korean product reported lead times of a few days to 3 weeks. Two-thirds of purchasers reported that the delivery times of U.S. producers and importers from Korea and Taiwan were similar.

Other factors such as military sales and buy-American restrictions have a minimal effect on competition between U.S. producers and importers. Only a very small percentage of U.S. product is reportedly subject to buy-American restrictions.

Comparison of Domestic Products and Subject Korean Imports

The vast majority of imported subject Korean SRAMs are of speeds 55ns or slower, while U.S. producers sell mainly faster speeds. However, slow-speed SRAMs are sold by at least one U.S. producer, Cypress;[18] by a few Taiwan importers, particularly ISSI and Winbond; and by nonsubject importers. Many of these purchasers purchased only from subject Korean sources and nonsubject sources during 1994-97. However, some reported purchasing slow SRAMs from Taiwan importers and several reported that they recently began purchasing slow SRAMs from Cypress.

***.[19]

***.[20] ***.[21]

***.[22]

***.[23]

*** purchased only from LG Semicon and nonsubject sources during 1994-97. Similarly, ***, a purchaser of SRAMs for consumer electronics, also reported that it purchased SRAMs only from LG Semicon and nonsubject sources during 1994-97.

Other purchasers reported that they have single-sourced SRAMs from Hyundai or LG Semicon. ***. It purchases this product only from Hyundai and stated that this product is available from Japan but not from U.S. producers or Taiwan importers. ***. *** reported that it purchases only one SRAM from nonsubject Korean importers, a low volume SRAM that is single sourced with Hyundai.

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18 ***.

19 ***.

20 ***.

21 ***.

22 ***.

23 ***.

Comparison of Domestic Products and Taiwan Imports

Imports from Taiwan are used in a smaller range of end uses than U.S.-produced SRAMs. In the market segments where they do compete with U.S.-produced SRAMs, there appears to be a relatively high degree of substitutability. Respondents argue that imports from Taiwan are sold mostly for modems, consumer electronics, cellular phones, and pagers. They state that SRAMs sold in these market segments are basically commodity products which do not require extended qualification periods or cutting edge access speeds.[24]

Importers of Taiwan product stated that SRAMs from Taiwan and those produced in the United States are generally used interchangeably.[25] However, *** stated that different companies may need to alter their designs to work in various applications. Five of 11 importers of SRAMs from Taiwan stated that differences other than price were a significant factor in their sales of SRAMs. The following factors were cited as differences between Taiwan product and other sources: better quality, technical support, on-time delivery, products for niche markets, faster and low-power dissipating SRAMs, shorter production cycle, better availability, wider variety, and better reliability.

The majority of purchasers rated SRAMs and SRAM suppliers from Taiwan as similar to U.S.-produced SRAMs when compared regarding the 14 factors previously listed.[26] A minority of purchasers rated U.S.-produced SRAMs as different on some of the factors than Taiwan SRAMs. Specifically, 5 of 12 purchasers stated that the Taiwan product was priced lower than the U.S. product. Also, one third of responding purchasers stated that U.S. producers were superior to Taiwan importers in terms of technical support and service. In addition, one fourth of responding purchasers stated that U.S.-produced SRAMs offered superior product quality and lower failure rates than those imported from Taiwan.

Comparison of Imports from Korea and Imports from Taiwan

Importers of subject Korean SRAMs sell in a more limited range of uses than do importers of Taiwan product. As mentioned previously, SRAMs from subject Korea sources are predominantly slower speed SRAMs than those imported from Taiwan. In general, most of the imported SRAMs from Taiwan do not appear to compete with those imported from Korea. However, there is some competition among the slower speeds imported from Korea and those imported from Taiwan. In particular, some purchasers reported that slow SRAMs are available from ISSI and Winbond and compete with those sold by subject Korean importers.

Comparison of Domestic Products and Subject Imports to Nonsubject Imports

Nonsubject imports, most of which are from Samsung (Korea) and Japan, account for a large share of the U.S. market for SRAMs. Suppliers of nonsubject imports supply a broad product line of SRAMs

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[24] Prehearing brief of Taiwan respondents, p. 29.

[25] Only one importer, ***, stated they were not used interchangeably.

[26] Similar comparisons between subject Korean imports and U.S.-produced SRAMs using these 14 factors are not available as purchasers did not distinguish between subject and nonsubject Korean imports when responding to this question.

ranging from very fast SRAMs for the workstation market to slow-speed SRAMs.[27] Competition between nonsubject SRAMs and subject imports is limited in the workstation market due to limited availability of qualified product for this segment from subject importers. ***.

The majority of purchasers rated SRAMs from Japan as comparable to those from U.S. producers and importers of Taiwan product for most factors. However, Japanese SRAMs were rated by a majority of purchasers as superior to Taiwan SRAMs in terms of product quality and lowest failure rates. Also, a majority of purchasers rated the Taiwan product as lower-priced than that from Japan. In comparing imports from Japan to U.S.-produced SRAMs, 6 of 11 purchasers stated that U.S. producers provided better technical support and service, 5 of 11 stated that the U.S. product was priced lower, and 4 of 11 stated that the U.S. product offered better delivery times and product range.

ELASTICITY ESTIMATES

This section discusses the elasticity estimates used in the COMPAS analysis (appendix F). Neither petitioner nor respondents commented on the elasticity estimates contained in the prehearing report.

U.S. Supply Elasticity

The domestic supply elasticity for SRAMs measures the sensitivity of the quantity supplied by U.S. producers to a change in the U.S. market price of SRAMs. The elasticity of domestic supply depends on several factors, including the level of excess capacity, the ease with which producers can alter capacity, producers' ability to shift to production of other products, the existence of inventories, and the availability of alternative markets for U.S.-produced SRAMs.[28] Analysis of these factors earlier indicates that the U.S. industry has significant ability to increase or decrease shipments to the U.S. market given a change in price levels. Staff estimates that supply elasticity is between 5 and 10.

U.S. Demand Elasticity

The U.S. demand elasticity for SRAMs measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of SRAMs. This estimate depends on factors discussed earlier such as the existence, availability, and commercial viability of substitute products, as well as the component share of SRAMs in the production of downstream products. Based on available information, demand for SRAMs is likely to be inelastic, estimated to be in the range of -0.5 to -1.0.

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[27] Samsung reported that it sells a broad range of SRAMs for use in electronic data processing, datacommunications, telecommunications, and consumer applications. Similarly, information provided by purchasers indicates that importers of Japanese products also sell a broad range of SRAMs.

[28] Domestic supply response is assumed to be symmetrical for both an increase and a decrease in demand for the domestic product. Therefore, factors affecting increased quantity supplied to the U.S. market also affect decreased quantity supplied to the same extent.

Substitution Elasticities

The elasticity of substitution depends upon the extent of product differentiation between the domestic and imported products.[29] Product differentiation, in turn, depends upon such factors as differences in specifications and end uses, quality (e.g., failure rates, performance) and conditions of sale (e.g., service, availability, delivery, technical support). Based on available information, the elasticities of substitution between U.S.-produced SRAMs and subject imported SRAMs is likely to be in the range of 2 to 4 for Taiwan and 1 to 3 for Korea.[30]

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[29] The substitution elasticity measures the responsiveness of the relative U.S. consumption levels of the subject imports and U.S. like products to changes in their relative prices. This reflects how easily purchasers switch from the U.S. product to the subject product (or vice versa) when prices change.

[30] Additionally, the elasticity of substitution between U.S.-produced SRAMs and nonsubject SRAMs is likely to be in the range of 2 to 4. The elasticity of substitution between subject Korean SRAMs and other imports is likely to be in the range of 1 to 3. The elasticity of substitution between imported SRAMs from Taiwan and other imports is likely to be in the range of 2 to 4.

PART III: CONDITION OF THE U.S. INDUSTRY

Information on capacity, production, shipments, inventories, and employment is presented in this section of the report, and is based on the questionnaire responses of 13 firms that are believed to have accounted for the great bulk of U.S. fabrication of uncased SRAMs and assembly of cased SRAMs during 1994-97.

Unless otherwise noted, "domestic" SRAMs include all uncased and cased SRAMs that contain U.S.-fabricated dice, regardless of where any final assembly or casing was performed.[1] In addition, SRAMs assembled or cased in the United States from third-country-sourced dice (i.e., dice not fabricated in the United States, Korea, or Taiwan) are also included as "domestic" product.

Data in this section are presented for the consolidated product, SRAMs and SRAM modules. Additional data on "domestic" shipments of uncased SRAMs, cased SRAMs, and SRAM modules are presented in appendix G.

U.S. PRODUCERS

Overview of Industry

The Commission sent producers' questionnaires to all firms identified as producers in the petition, and to additional firms identified as participants in the U.S. SRAM market by industry directories. In addition, the Commission sent producers' questionnaires to 12 SRAM assemblers identified in questionnaires during the preliminary phase of these investigations.[2] According to questionnaire responses, 15 companies produced SRAMs and/or SRAM modules in the United States during at least part of the period 1994-97. Thirteen of the firms performed wafer fabrication in the United States; 7 performed SRAM assembly; and *** assembled SRAM modules. Responding producers are believed to account for the vast majority of U.S. SRAM wafer fabrication and assembly, but only a small fraction of SRAM module assembly in the United States.

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[1] Therefore, unless otherwise noted, U.S.-produced dice cased in Korea, Taiwan, or any third country are included as "domestic product" throughout this report.

[2] The Commission received data from *** companies that performed assembly, but not fabrication, in the United States, ***, (assembled SRAM modules from U.S.-sourced dice). In addition, data were received from two "fabless" producers, Integrated Silicon Solution and Alliance Semiconductor, on SRAM modules produced by the firms' subcontractors. One other module assembler, ***, submitted a questionnaire response during the preliminary phase of these investigations, but did not respond to the Commission's final questionnaires. As such, data presented on SRAM module production are understated.

The Commission had difficulty in collecting accurate data in these investigations because of the complexity of the production process and because a majority of U.S.-fabricated SRAM dice are sent to affiliates or subcontractors abroad for final assembly.[3] Several U.S. producers, ***, perform virtually all of their SRAM assembly outside the United States.[4] One company, ***. Table III-1 presents a list of U.S. producers, with each company's position on the petition, U.S. production activities, production locations, and the share of reported 1997 U.S. production of uncased and cased SRAMs.

Table III-1
SRAMs: U.S. producers, positions on the petition, shares of 1997 U.S. production (based on bits) of uncased and cased SRAMs, U.S. production activities, and U.S. production locations

* * * * * * *

Company Profiles

SRAM Fabricators

Micron Technology

Micron Technology, Inc. ("Micron"), Boise, ID, the petitioner, performs SRAM wafer fabrication and assembly of SRAMs and modules at its headquarters in Boise, ID. It is the only U.S. producer to perform all of its SRAM fabrication and assembly work in the United States. Micron has one production facility that houses four fabrication plants with full assembly and testing capabilities.[5] Micron sells a portion of its production to a related company, Micron Electronics, Inc. (MEI), a personal computer manufacturer. Micron's operations producing SRAMs accounted for a small portion of its establishment's total sales, with the remainder accounted for by sales of DRAMs, flash memory, other memory products, and PC systems.

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[3] Some of the U.S.-fabricated dice assembled abroad never return to the United States; rather they are sold globally from the location of assembly. Likewise, most U.S. producers and importers maintain assembly, transfer, and sales records on a global rather than national basis, making it difficult for them to provide data on U.S. production, assembly, shipments, and imports.

[4] *** perform some SRAM assembly of their U.S.-fabricated dice in Korea and Taiwan.

[5] In 1995, Micron broke ground on a fabrication and assembly facility in Lehi, UT. During 1996, the company postponed the completion of the Lehi facility, but in June 1997, Micron announced its intention to begin use of the facility to provide additional test capacity for its Boise operations and that production would begin in the summer of 1998 (Micron press release, June 4, 1997). However, the firm reports that "***" (Micron QR, Dec. 17, 1997, p. 4, II.2).

Motorola Semiconductor Products

Motorola Semiconductor Products, Fast Static RAM Division ("Motorola"), Austin, TX, is a division of Motorola, Inc., Schaumburg, IL. Motorola has three SRAM wafer fabrication facilities and one assembly facility the United States.[6] A significant share of Motorola's U.S.-fabricated dice is assembled by its affiliated firm in Sekangor, Malaysia. Motorola consumes some of its production internally and also sells on the merchant market. Motorola is a broad-based semiconductor manufacturer with products including microcomponents, logic devices, and DRAMs. SRAMs account for a small percentage of the firm's semiconductor sales. Motorola also imports commodity-type fast SRAMs from Taiwan for the firm's communications access and infrastructure memory market segment (approximately 10 percent by revenue of the SRAM business of Motorola's Fast Static RAM Division in 1997).[7]

Cypress Semiconductor

Cypress Semiconductor Corp. ("Cypress"), San Jose, CA, has four wafer fabrication plants in the United States and an assembly operation in the Philippines.[8] Cypress assembles all of its U.S.- fabricated dice offshore at *** and at its subsidiary in the Philippines. Cypress produces a variety of products, including logic, microcontrollers, read only memories, and other memory devices. SRAMs constitute a major share (approximately ***) of total Cypress semiconductor production.

Integrated Device Technology

Integrated Device Technology, Inc. ("IDT"), Santa Clara, CA, has three wafer fabrication facilities in the United States. Almost all of IDT's U.S.-fabricated dice are assembled offshore in ***. IDT's operations producing SRAMs accounted for approximately *** of its revenues during 1996, with the remainder accounted for by sales of logic, microprocessors, and other memory devices.

Paradigm Technology

Paradigm Technology, Inc. ("Paradigm"), Milpitas, CA, a producer throughout the period 1994-96, had one U.S. fabrication facility, which it sold to Orbit Semiconductor, Inc., in November 1996. All of the company's assembly work was performed offshore in Taiwan, Korea, Malaysia, and the Philippines.[9] Paradigm is in the process of becoming a "fabless" producer, contracting out both the fabrication and assembly of its SRAMs designs. Paradigm is in the process of contracting with United Microelectronics Corp. (UMC) of Taiwan to act as Paradigm's main "foundry."

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[6] Motorola also has a wafer fabrication facility in Glasgow, Scotland.

[7] Feb. 26, 1998, posthearing brief of Covington & Burling, p. 5. Motorola also reported that during the period of investigation it *** (Motorola's Dec. 23, 1997, importers' questionnaire, p. 4, section II.2).

[8] Cypress Semiconductor Philippines, Inc. (CSPI), which started operations in July 1996.

[9] Paradigm supplied the Commission with production and employment data only. No usable shipment or import data were provided. The absence of such data in the report understates actual industry data.

Hitachi Semiconductor America

Hitachi Semiconductor (America), Inc. ("Hitachi"), Irving, TX, is a wholly owned subsidiary of Hitachi America, Ltd., Tarrytown, NY, which in turn is a subsidiary of Hitachi, Ltd., Tokyo, Japan. The parent, Hitachi, Ltd., has SRAM wafer fabrication facilities in Japan and the United States and assembly operations in Japan, the United States, and Malaysia. In the United States, ***. Hitachi's operations producing SRAMs accounted for *** percent of its establishment's total sales during FY 1997 (ending March 31), with the remainder accounted for by sales of DRAMs (*** percent) and microcontrollers (*** percent).

Sony

Sony Semiconductor Company of America ("Sony"), San Jose, CA, has its CMOS wafer fabrication facilities in San Antoino, TX, which includes more than 50,000 sq. ft. of manufacturing and testing. Sony ***.[10]

International Business Machines

International Business Machines Corp. ("IBM"), Armonk, NY, has an SRAM wafer fabrication facility located in Essex Junction, VT, and wafer or assembly facilities located in Canada, Japan, Germany, France, and Italy. ***.

Captive producers

Intel

Intel Corp. ("Intel"), Santa Clara, CA, has three SRAM wafer fabrication plants in the United States. It performs virtually all of its assembly work at its two *** subsidiaries in Penang, Malaysia, and Manila, the Philippines.[11]

During the final phase of these investigations, four additional captive producers have provided information regarding their firms' SRAM fabrication, shipment offshore for assembly into cased SRAMs, and importation of these cased products containing U.S.-fabricated dice. The four captive producers are Dallas Semiconductor (Dallas, TX), Harris Semiconductor (Melbourne, FL), SGS Thomson (Phoenix, AZ), and Xicor (Milpitas, CA). The firms have indicated that their imports of cased SRAMs containing U.S.-fabricated dice are ***.[12]

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[10] In its producers' questionnaire, Sony reported that ***.

[11] Intel reported that it manufactures ***. Intel producer QR, Dec. 10, 1997, p. 1.

[12] See, for example, Jan. 19, 1998, submission of ***, p. 1.

QUESTION OF DOMESTIC PRODUCER AND RELATED PARTY STATUS

During the preliminary phase of these investigations, the Commission defined the domestic industry to include all U.S. producers (wafer fabrication or assembly) of the domestic like product, but reviewed the questions of whether (a) assemblers should be included in the domestic industry producing the domestic like product,[13] and (b) any producers should be excluded from the domestic industry producing SRAMs as related parties.[14] The Commission also indicated that it would re-examine these issues in the final phase of these investigations.[15] A discussion of affected U.S. firms is presented below. In addition, information related to source and extent of capital investment and domestic value-added is presented in Part VI of this report.

Domestic Producer Status

SRAM Assemblers

During the final phase of these investigations, the Commission sent questionnaires to 12 firms that had been identified in preliminary questionnaire responses as producers/assemblers of cased SRAMs and/or SRAM modules. Two firms have submitted questionnaire responses on their assembly operations.

Mitsubishi Semiconductor America, Inc. ("Mitsubishi"), Durham, NC, assembled Japanese-fabricated dice in the United States until early 1996, when it ceased assembly operations. Mitsubishi continues to import cased SRAMs from Japan. In addition, Micron Custom Manufacturing Service ("MCMS"), a subsidiary of the petitioner, Micron, has provided the Commission with information regarding its production of ***.

"Fabless Producers"/Design Houses

During the final phase of these investigations, the "fabless" business model was described in characterizing certain U.S. firms in the SRAM industry.[16] While not engaged in manufacturing operations

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[13] In determining whether a firm is a domestic producer of the subject product, the Commission considers six factors relating to the overall nature of a firm's production-related activities in the United States: The six factors are (1) source and extent of the firm's capital investment; (2) technical expertise involved in U.S. production activities; (3) value added to the product in the United States; (4) employment levels; (5) quantity and type of parts sourced in the United States; and (6) any other costs and activities in the United States directly leading to production of the like product.

[14] A domestic producer may be excluded from the domestic industry if it is either related to the exporters or importers of the subject merchandise, or is itself an importer of the subject merchandise. By statute, a producer and an exporter or importer shall be considered related parties if (1) the producer directly or indirectly controls the exporter or importer; (2) the exporter or importer directly or indirectly controls the producer; (3) a third party directly or indirectly controls the producer and the exporter or importer; or (4) the producer and the exporter or importer directly or indirectly control a third party and there is reason to believe that the relationship causes the producer to act differently than a nonrelated producer.

[15] Preliminary Report, pp. 10-12, fn. 56, 57, and 63.

[16] Feb. 10, 1998, prehearing brief of White & Case, pp. 14-19.

of the subject product in the United States, these U.S. firms conduct R&D, design, development, marketing, and sales, as well as direct and control global manufacturing of their SRAM products. The firms subcontract the various phases of the production of SRAMs in the United States, Korea, Taiwan, and other countries.

During the final phase of these investigations, the Commission received information from six "fabless" producers of SRAMs: Alliance Semiconductor Corp. ("Alliance"), Aptos Semiconductor Corp. ("Aptos"), Galvantech, Inc. ("Galvantech"), Integrated Silicon Solution, Inc. ("ISSI"), Logic Devices Inc. ("Logic Devices"), and Sharp Microelectronics ("Sharp"). Data reported by the firms in response to the Commission's producers' questionnaire included production and shipments of SRAM modules, financial data, and limited employment data. Fabless producers accounted for *** percent, based on bits, and *** percent, based on value, of total apparent U.S. consumption of SRAMs and SRAM modules during 1997.

Related Party Status

Imports Relative to Production

Data relating to imports relative to production for U.S. producers are presented in table III-2. The Commission's questionnaires requested that U.S. producers of SRAMs and SRAM modules discuss the reasons that they decided to import rather than produce SRAMs internally in the United States. The following comments were received:

***

"***."

***

"***."

Table III-2
SRAMs and SRAM modules: Certain U.S. "domestic production," certain subject "imports" by U.S. producers, and ratio of "imports" to "domestic production," by firms, 1994-97

* * * * * * *

U.S. Producers' Changed Circumstances

The Commission's questionnaires in these investigations requested information from U.S. producers regarding plans to add, expand, curtail, or shut down production capacity and/or production of SRAMs or SRAM modules. Information reported in the questionnaires is presented below:

Micron

"In 1995 Micron broke ground on a fabrication and semiconductor facility in Lehi, Utah. Due to the falling prices of memory, including SRAMs, Micron announced in February 1996 that it was postponing indefinitely the completion of the Lehi facility. In June 1997, Micron announced that test operations only would begin in the Lehi facility in the summer of 1998. However, ***."

"***."

Paradigm

"***."

ISSI

"***."

Motorola

"***."

"*** (for production).--***, a new Motorola wafer fabrication facility near Richmond, Virginia."

IDT

"***."

Cypress

"***."

In addition, in 1996, construction began on a state-of-the-art 8-inch wafer fabrication facility in Camas, WA, for WaferTech, a joint venture of TSMC (Taiwan), Altera, Analog Devices, ISSI, and private investors. According to ISSI, WaferTech "***."[17]

U.S. CAPACITY, PRODUCTION, AND CAPACITY UTILIZATION

U.S. producers' capacity, production, and capacity utilization data for SRAMs and SRAM modules are presented in table III-3. U.S. production, by firms, of SRAMs and SRAM modules is presented in table III-4.

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[17] ISSI supplemental QR, Jan. 22, 1998, p. 2.

Table III-3
SRAMs and SRAM modules: U.S. average-of-period capacity, production,[1] and capacity utilization, by products, 1994-97

Item	1994	1995	1996	1997
Uncased SRAMs:				
Capacity[2] (*1,000 wafers*)	773	1,052	1,064	1,075
Wafer starts (*1,000 wafers*)[3]	591	738	742	717
Capacity utilization (*percent*)	76.5	70.1	69.7	66.7
Cased SRAMs:				
Capacity[4] (*1,000 units*)	***	***	***	***
Assembly (*1,000 units*)[5]	***	***	***	***
Capacity utilization (*percent*)	***	***	***	***
SRAM modules:				
Capacity (*billion bits*)	***	***	***	***
Production[6] (*billion bits*)	***	***	***	***
Capacity utilization (*percent*)	***	***	***	***

[1] The "production" presented for uncased SRAMs is wafer starts and that shown for cased SRAMs is assembly. Although cased production data (which were collected by individual densities along with inventory and shipments data and then compiled to get a total for all cased SRAMs) should equal assembly data (which were not collected on a density basis), there are discrepancies because: (1) *** assembly data differed from production data in all years and *** differed in 1996, (2) there are no assembly data posted for ***, and (3) in 1996, production but no assembly is posted for ***.

[2] U.S. producers reported wafer capacity data on the basis of 144- to 168-hour work weeks, operating 51 to 52 weeks per year.

[3] Wafer starts represent the number of raw silicon wafers introduced into the SRAM wafer fabrication process and do not account for yield loss. Wafer yield reported by U.S. producers of uncased SRAMs ranged from 65 to 95 percent during the period for which data were requested.

[4] U.S. producers reported capacity data on the basis of 144- to 168-hour work weeks, operating 52 weeks per year.

[5] Cased SRAM assembly represents the successful assembly of SRAMs.

[6] SRAM module production represents the successful assembly of SRAM modules.

Note.--Capacity utilization is calculated from unrounded figures, using data of firms providing both capacity and production information.

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

Table III-4
SRAMs and SRAM modules: U.S. production, by products and by firms, 1994-97

Item	1994	1995	1996	1997
	Production (*billion bits*)			
Uncased SRAMs:				
Micron	***	***	***	***
IDT	***	***	***	***
Cypress	***	***	***	***
Hitachi	***	***	***	***
Paradigm[1]	***	***	***	***
IBM	***	***	***	***
Intel	***	***	***	***
Motorola	***	***	***	***
Sony	***	***	***	***
***	***	***	***	***
Total	63,904	84,366	126,317	167,663
Cased SRAMs:				
* * *	*	*	*	*
SRAM modules:				
* * *	*	*	*	*

[1] Paradigm sold its fabrication facility in San Jose, CA, in November 1996.
[2] ***.

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

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

U.S. PRODUCERS' SHIPMENTS

Data on U.S. producers' shipments of SRAMs and SRAM modules, by types, are presented in table III-5. Data on U.S. producers' shipments, by firms, are presented in table III-6. Additional data on SRAMs by product type are presented in appendix G.

U.S. PRODUCERS' INVENTORIES

Data on U.S. producers' inventories of SRAMs and SRAM modules are presented in table III-7.

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

U.S. producers' employment data for SRAMs and SRAM modules are presented in table III-8. Employment by fabless SRAM firms currently number in the ***.[18]

[18] Feb. 10, 1998, prehearing brief of White & Case, p. 18. The limited data provided in response to the Commission's producers' questionnaire was submitted by ***.

Table III-5
SRAMs and SRAM modules: Shipments of "domestic" product[1] by U.S. producers and importers, by types, 1994-97

Item	1994	1995	1996	1997
	Quantity (*billion bits*)			
U.S. company transfers[2 3]	***	***	***	***
Domestic shipments[4]	***	***	***	***
U.S. shipments	42,014	57,227	62,253	83,181
"Drop shipments"[5]	***	***	***	***
Other exports[6]	***	***	***	***
All exports	18,431	26,803	30,250	52,403
All shipments	60,445	84,030	92,503	135,584
	Value (*1,000 dollars*)			
U.S. company transfers[2 3]	***	***	***	***
Domestic shipments[4]	***	***	***	***
U.S. shipments	638,859	1,079,552	967,528	752,516
"Drop shipments"[5]	***	***	***	***
Other exports[6]	***	***	***	***
All exports	250,294	505,768	291,008	262,964
All shipments	889,152	1,585,320	1,258,536	1,015,480
	Unit value (*per million bits*)			
U.S. company transfers[2 3]	***	***	***	***
Domestic shipments[4]	***	***	***	***
U.S. shipments	$15.20	$18.86	$15.54	$9.05
"Drop shipments"[5]	***	***	***	***
Other exports[6]	***	***	***	***
All exports	13.58	18.87	9.62	5.02
All shipments	14.71	18.87	13.61	7.49

[1] Includes all SRAMs and SRAM modules made from U.S.-fabricated dice, regardless of where assembled, plus dice fabricated in 3rd sources but assembled in the United States.
[2] To avoid double counting, data exclude internal transfers of SRAM products to cased SRAMs and SRAM modules.
[3] U.S. producers reported internal company transfers of SRAM products for use in the production of downstream products such as programmable memories and logic devices.
[4] To avoid double counting, data exclude non-import purchases of SRAM products to be used in the production of cased SRAMs and SRAM modules. U.S. producers reported that their merchant market sales of SRAMs were used by their customers to produce the same downstream products produced by the U.S. SRAM producers from their captively produced SRAMs (e.g., cache memory, modules, cell phones, etc.) (see, questionnaire responses of ***).
[5] "Drop shipments" reported by producers are shipments to other-than-U.S. markets of product containing U.S. dice that have been assembled by the producers' foreign affiliates/subcontractors.
[6] "Other exports" include all reported exports of cased SRAMs and SRAM modules as well as uncased SRAMs exported to non-affiliates.

Note.--Because of rounding, figures may not add to the totals shown. Unit values are calculated from the unrounded figures, using data of firms supplying both quantity and value information.

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

Table III-6
SRAMs and SRAM modules: Total shipments of "domestic" product,[1] by producers and importers, 1994-97

Item	1994	1995	1996	1997
	Quantity (*billion bits*)			
* * *	*	*	*	*
Total	60,445	84,030	92,503	135,584
	Value (*1,000 dollars*)			
* * *	*	*	*	*
Total	889,152	1,585,320	1,258,536	1,015,480
	Unit value (*per million bits*)			
* * *	*	*	*	*
Average	$14.71	$18.87	$13.61	$7.49

[1] Data are for uncased SRAMs produced in the United States, all cased SRAMs and SRAM modules produced from U.S.-fabricated dice, regardless of where the dice were assembled, plus dice fabricated in 3rd sources but assembled in the United States.
[2] Shipments for ***.
[3] Includes data relating to ***.
[4] Not available.
[5] Not applicable.

Note.--Because of rounding, figures may not add to the totals shown. Unit values are calculated from the unrounded figures; averages are computed using data of firms supplying both quantity and value information.

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

Table III-7
SRAMs and SRAM modules: End-of-period inventories of "domestic" product,[1] by origin of dice, 1994-97

Item	1994	1995	1996	1997
	Quantity (*billion bits*)			
Uncased SRAMs	***	***	***	***
Cased SRAMs made from--				
U.S. dice (regardless of where assembled)	***	***	***	***
3rd-source dice assembled in United States	***	***	***	***
Total	***	***	***	***
SRAM modules made from--				
U.S. dice (regardless of where assembled)	***	***	***	***
3rd-source dice assembled in United States	***	***	***	***
Total	***	***	***	***
SRAMs and SRAM modules made from--				
U.S. dice (regardless of where assembled)[3]	***	***	***	***
3rd-source dice assembled in United States	***	***	***	***
Total	11,729	16,759	31,952	45,580
	Ratio to total shipments, on the basis of bits (*percent*)			
Uncased SRAMs	19.9	20.3	27.1	28.1
Cased SRAMs, average	***	***	***	***
SRAM modules, average	***	***	***	***

[1] "Domestic" product includes U.S.-fabricated uncased SRAMs, cased SRAMs and SRAM modules made from U.S.-fabricated dice (regardless of assembly location), and U.S.-assembled cased SRAMs and SRAM modules made from 3rd-source-fabricated dice.
[2] Not available.
[3] Includes uncased SRAMs.

Note.--Because of rounding, figures may not add to the totals shown. Ratios are calculated from the unrounded figures, using data of firms supplying both numerator and denominator information.

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

Table III-8
Average number of U.S. production and related workers producing SRAMs and SRAM modules, hours worked,[1] wages paid to such employees, and hourly wages, productivity, and unit production costs,[2] by products, 1994-97

Item	1994	1995	1996	1997
	Number of production and related workers (PRWs)			
Uncased SRAMs	***	***	***	***
Cased SRAMs	***	***	***	***
SRAM modules	***	***	***	***
Total	2,134	2,626	2,601	2,393
	Hours worked by PRWs (*1,000 hours*)			
Uncased SRAMs	***	***	***	***
Cased SRAMs	***	***	***	***
SRAM modules	***	***	***	***
Total	4,263	5,225	5,232	4,867
	Wages paid to PRWs (*1,000 dollars*)			
Uncased SRAMs	***	***	***	***
Cased SRAMs	***	***	***	***
SRAM modules	***	***	***	***
Total	92,213	118,580	118,858	121,535
	Hourly wages paid to PRWs			
Uncased SRAMs	***	***	***	***
Cased SRAMs	***	***	***	***
SRAM modules	***	***	***	***
Average	$21.63	$22.70	$22.72	$24.97
	Productivity (*million bits per hour*)			
Uncased SRAMs	14.5	16.9	25.0	36.7
Cased SRAMs	***	***	***	***
SRAM modules	***	***	***	***
	Unit production costs (*per million bits*)			
Uncased SRAMs	$1.46	$1.31	$0.91	$0.69
Cased SRAMs	***	***	***	***
SRAM modules	***	***	***	***

[1] Includes hours worked plus hours of paid leave time.
[2] On the basis of wages paid.

Note.--Because of rounding, figures may not add to the totals shown. Ratios are calculated from the unrounded figures using data of firms supplying both numerator and denominator information.

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

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

U.S. IMPORTERS

The Commission sent importer questionnaires to over 100 U.S. companies that were believed to fabricate, assemble, import, or distribute SRAMs or SRAM modules. Fourty-five companies provided the Commission with data on U.S. imports for the period 1994-97.

U.S. IMPORTS

For purposes of presentation in this report, imports of products containing U.S.-fabricated dice, regardless of the source of assembly or export, are considered "domestic" product and not imports. For example, several U.S. fabricators, ***, ship U.S.-fabricated uncased dice to Taiwan, Korea, and other countries for assembly, with much of the assembled product being shipped back to the United States. For the purposes of this report, these shipments are not classified as "imports."

U.S. import data presented in the body of the report are based on data compiled from questionnaires of the Commission, unless otherwise noted. U.S. imports based on official statistics of the U.S. Department of Commerce are presented in appendix H. Official statistics are not being used in the body of the report because Customs has determined that the country of origin of imported SRAMs is the location of assembly rather than the location of wafer fabrication. This differs from Commerce's scope language, which states that the origin of imports from Korea and Taiwan should be determined by the source of dice fabrication regardless of where final assembly takes place.

Table IV-1 presents a list of major U.S. importers. Table IV-2 presents U.S. imports of SRAMS and SRAM modules. Additional data on U.S. imports by source of dice and assembly, as well as official import statistics, are presented in appendix H.

Table IV-1
SRAMs: U.S. importers, abbreviation, source of imports, and SRAM products imported, 1994-97

* * * * * * *

Table IV-2
SRAMs and SRAM modules: U.S. "imports,"[1] by origin of dice, 1994-97

Item	1994	1995	1996	1997
	Quantity (*billion bits*)			
SRAM products (regardless of where assembled) containing--				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subject dice	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
3rd-source dice	***	***	***	***
Total, all "imports"	52,732	106,256	125,487	187,237
	Value (*1,000 dollars*)			
SRAM products (regardless of where assembled) containing--				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subject dice	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
3rd-source dice	***	***	***	***
Total, all "imports"	607,542	1,258,676	946,228	721,598
	Unit value (*per million bits*)			
SRAM products (regardless of where assembled) containing--				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subject dice	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
3rd-source dice	***	***	***	***
Average, all "imports"	$11.52	$11.85	$7.55	$3.83

--See footnotes at end of table.

Table IV-2--*Continued*
SRAMs and SRAM modules: U.S. "imports,"[1] by origin of dice, 1994-97

Item	1994	1995	1996	1997
	Share of total quantity (*percent*)			
SRAM products (regardless of where assembled) containing--				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subject dice	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
3rd-source dice	***	***	***	***
Total, all "imports"	100.0	100.0	100.0	100.0
	Share of total value (*percent*)			
SRAM products (regardless of where assembled) containing--				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subject dice	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
3rd-source dice	***	***	***	***
Total, all "imports"	100.0	100.0	100.0	100.0

[1] "Imports" include all uncased and cased SRAMs, and SRAM modules, but do not include imports of such products containing U.S.-fabricated dice.

Note.--Because of rounding, figures may not add to the totals shown. Unit values and shares are calculated from the unrounded figures; unit values are calculated using data of firms supplying both quantity and value information.

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

U.S. Producers' Imports

Data relating to U.S. producers' imports are presented in table III-2.

The Issue of Negligible Imports

The URAA amended the statutory provisions pertaining to negligibility. The provision defining negligibility provides that imports from a subject country corresponding to the domestic like product identified by the Commission are negligible if such imports account for less than 3 percent of the volume of all such merchandise imported into the United States in the most recent 12-month period for which data are available that precedes the filing of the petition.[1] The following tabulation presents import data (in billions of bits) reported by U.S. importers of SRAMs and SRAM modules in response to Commission questionnaires for 1996, the most recent 12-month period preceding the filing of the petition for which data are available:

Source	"Import" quantity[1] *(Billions bits)*	Share of total *(Percent)*
LTFV Korea	***	***
Taiwan	***	***
Subtotal	***	***
Non-LTFV Korea	***	***
All other countries	***	***
Total imports	125,487	100.0

[1] "Import" product includes SRAMs and SRAM modules containing Korean- and Taiwan-fabricated dice, regardless of assembly location, and 3rd-source-fabricated dice assembled outside the United States.

Counsel for respondents Hyundai and LG Semicon have disputed the methodology used in the above calculation of the share of the total volume of imports held by LTFV imports from Korea. Counsel argued that the use of unadjusted data from importers' questionnaires is not a "reasonable estimate" of the volume of total U.S. subject imports because questionnaire response data significantly understate U.S. imports, capturing only 79 percent of such imports.[2] Counsel for the Korean respondents further argued that adjustments should be made to official import statistics, on the basis of bits, to account for the under-reported imports.

Counsel for petitioner argued that the Commission's methodology provides a "fair and accurate" calculation of the ratio of subject imports from Korea to total imports.[3] Counsel challenged (1) the

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[1] Section 771(24) of the Act (19 U.S.C. § 1677(24)).

[2] Feb. 10, 1998, prehearing brief of Kaye, Scholer, Fierman, Hays & Handler, pp. 3-5; hearing transcript (TR), pp. 117-119; and
Feb. 26, 1998, posthearing brief of Kaye, Scholer, Fierman, Hays & Handler, pp. 4-6.

[3] TR, pp. 196-197, and Feb. 26, 1998, posthearing brief of Hale & Dorr, p. 2.

assumption that official import statistics are inherently more reliable than questionnaire response data, (2) the recommended use of estimated aggregate bit volume for HTS categories that cover a range of densities and contain probable misclassifications, and (3) the assertion that questionnaire data were complete for imports from Korea.[4]

For purposes of the consideration of negligibility, the data in this report have been presented based on information compiled from responses to the Commission's questionnaires for the following reasons:

- As previously stated, official import statistics do not identify the country of origin of fabricated dice contained in the imports. Thus, such data are not consistent with Commerce's scope language, which states that the origin of imports from Korea and Taiwan should be determined by the source of dice fabrication regardless of where final assembly takes place.

- In using official import statistics for calculations, units, rather than bits, are a more reliable standard of measurement because of difficulties in estimating bits for HTS subheadings containing a range of densities and questionnable/misclassified data. Thus, based on units, data for the volume of U.S. imports compiled from questionnaire responses accounted for approximately 90 percent of total imports of cased SRAMs during 1996. In addition, determining negligibility from official imports statistics on the basis of units rather than bits results in LTFV imports from Korea accounting for approximately *** percent of total imports of SRAMs during 1996.

APPARENT U.S. CONSUMPTION

Table IV-3 presents data on apparent U.S. consumption of SRAMs and SRAM modules for the period 1994-97.

U.S. MARKET SHARES

Data on market shares of SRAMs and SRAM modules are presented in table IV-4. Data on market shares for fabless and non-fabless firms are presented in table IV-5.

[4] Feb. 26, 1998, posthearing brief of Hale & Dorr, addendum, pp. 19-23.

Table IV-3
SRAMs and SRAM modules: U.S. shipments of "domestic"[1] product, U.S. shipments of "imported"[2] product, and apparent U.S. consumption, 1994-97

Item	1994	1995	1996	1997
	Quantity (*billion bits*)			
U.S. shipments of "domestic" SRAMs and SRAM modules made from:				
U.S. dice	***	***	***	***
3rd-source dice assembled in the United States	***	***	***	***
Total	42,014	57,227	62,253	83,181
U.S. shipments of "imported" SRAMs and SRAM modules:				
LTFV SRAMs and SRAM modules made from--				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal, subject dice	***	***	***	***
SRAMs and SRAM modules made from non-LTFV Korean dice	***	***	***	***
SRAMs and SRAM modules made from 3rd-source dice	23,674	46,672	60,729	93,481
Total, all imports	43,974	86,557	106,526	161,427
Apparent consumption	85,988	143,784	168,779	244,608
	Value (*1,000 dollars*)			
U.S. shipments of "domestic" SRAMs and SRAM modules made from:				
U.S. dice	***	***	***	***
3rd-source dice assembled in the United States	***	***	***	***
Total	638,859	1,079,552	967,528	752,516
U.S. shipments of "imported" SRAMs and SRAM modules:				
LTFV SRAMs and SRAM modules made from--				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal, subject dice	***	***	***	***
SRAMs and SRAM modules made from non-LTFV Korean dice	***	***	***	***
SRAMs and SRAM modules made from 3rd-source dice	353,540	723,617	581,629	451,497
Total, all imports	603,329	1,257,795	944,510	723,017
Apparent consumption	1,242,187	2,337,347	1,912,038	1,475,533

--See footnotes on the following page.

Table IV-3--*Continued*
SRAMs and SRAM modules: U.S. shipments of "domestic"[1] product, U.S. shipments of "imported"[2] product, and apparent U.S. consumption, 1994-97

Item	1994	1995	1996	1997

--Footnotes for table on preceding page.

[1] "Domestic" product includes SRAMs and SRAM modules made from U.S.-fabricated dice, regardless of assembly location, and U.S.-assembled cased SRAMs and SRAM modules made from SRAMs that were fabricated in countries other than the United States, Korea, and Taiwan. Data presented are net of company transfers of uncased and cased SRAMs that were used to make the downstream subject SRAM products. Adjustments for producer purchases of the upstream product destined for downstream production have been made to avoid double counting.

[2] "Imported" product includes SRAMs and SRAM modules made from Korean and Taiwan-fabricated dice (regardless of assembly location) and 3rd-source-fabricated dice assembled outside the United States. Data presented are net of company transfers of uncased and cased SRAMs that were used to make the downstream subject SRAM products. Adjustments for producer purchases of the upstream product destined for downstream production have been made to avoid double counting.

Note.--The term "3rd source" refers to countries other than Korea, Taiwan, and the United States. Because of rounding, figures may not add to the totals shown.

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

Table IV-4
SRAMs and SRAM modules: Apparent U.S. consumption and market shares, 1994-97

Item	1994	1995	1996	1997
	Apparent consumption			
Quantity (*billion bits*)	85,988	143,784	168,779	244,608
Value (*1,000 dollars*)	1,242,187	2,337,347	1,912,038	1,475,533
	Share of the quantity of U.S. consumption (*percent*)			
U.S. shipments of "domestic"[1] SRAMs and SRAM modules made from:				
U.S. dice	***	***	***	***
3rd-source dice assembled in the United States	***	***	***	***
Total	48.9	39.8	36.9	34.0
U.S. shipments of "imported"[3] SRAMs and SRAM modules:				
LTFV SRAMs and SRAM modules made from--				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal, subject dice	***	***	***	***
SRAMs and SRAM modules made from non-LTFV Korean dice	***	***	***	***
SRAMs and SRAM modules made from 3rd-source dice	27.5	32.5	36.0	38.2
Total, all imports	51.1	60.2	63.1	66.0
	Share of the value of U.S. consumption (*percent*)			
U.S. shipments of "domestic"[1] SRAMs and SRAM modules made from:				
U.S. dice	***	***	***	***
3rd-source dice assembled in the United States	***	***	***	***
Total	51.4	46.2	50.6	51.0
U.S. shipments of "imported"[3] SRAMs and SRAM modules:				
LTFV SRAMs and SRAM modules made from--				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal, subject dice	***	***	***	***
SRAMs and SRAM modules made from non-LTFV Korean dice	***	***	***	***
SRAMs and SRAM modules made from 3rd-source dice	28.5	31.0	30.4	30.6
Total, all imports	48.6	53.8	49.4	49.0

--See footnotes on following page.

Table IV-4--*Continued*
SRAMs and SRAM modules: Apparent U.S. consumption and market shares, 1994-97

--Footnotes for table on preceding page.

[1] "Domestic" product includes SRAMs and SRAM modules made from U.S.-fabricated dice, regardless of assembly location, and U.S.-assembled cased SRAMs and SRAM modules made from SRAMs that were fabricated in countries other than the United States, Korea, and Taiwan. Data presented are net of company transfers of uncased and cased SRAMs that were used to make the downstream subject SRAM products. Adjustments for producer purchases of the upstream product destined for downstream production have been made to avoid double counting.

[2] Positive figure, but less than significant digits displayed.

[3] "Imported" product includes SRAMs and SRAM modules made from Korean and Taiwan-fabricated dice (regardless of assembly location) and 3rd-source-fabricated dice assembled outside the United States. Data presented are net of company transfers of uncased and cased SRAMs that were used to make the downstream subject SRAM products. Adjustments for producer purchases of the upstream product destined for downstream production have been made to avoid double counting.

Note.--The term "3rd source" refers to countries other than Korea, Taiwan, and the United States. Because of rounding, figures may not add to the totals shown; shares are computed from the unrounded figures.

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

Table IV-5
SRAMs and SRAM modules: U.S. shipments of "domestic" product, U.S. shipments of "imported" product, and apparent U.S. consumption and market shares, by type of firm, 1994-97

* * * * * * *

PART V: PRICING AND RELATED DATA

FACTORS AFFECTING PRICING

Transportation Costs

Transportation charges from Korea and Taiwan to the U.S. market are estimated to be 0.2 percent and 1.5 percent of the c.i.f. values, respectively.[1] Most U.S. producers and importers reported that U.S. inland transportation costs account for 2 percent or less of the total delivered price of SRAMs.

Exchange Rates

Quarterly exchange rates reported by the International Monetary Fund for Korea and Taiwan during the period January 1994-December 1997 are shown in figure V-1.

PRICING PRACTICES

Prices of SRAMs, like those of other semiconductors, tend to follow a learning curve in which the cost per unit of output declines with production experience. Each time production volume doubles, the cost of manufacturing falls by about 30 percent. Petitioner estimates that production volumes double approximately every 2 years. Because of the learning curve effects, prices for semiconductors, including SRAMs, tend to fall over time. Petitioner contends that SRAM prices have dropped significantly below the learning curve.[2]

In addition to learning curve price effects, SRAM prices are influenced by supply and demand. In particular, the SRAM industry experienced short supply during 1995 followed by over supply during 1996 and 1997. Prices peaked in 1995 (rather than declined as normally occurs given the learning curve) as SRAMs were in short supply. *** reported that during this time, many of its products were on tight allocation and customers built up inventory as a "buffer." As new capacity came on-line and new suppliers entered the market in 1996, prices declined significantly. *** reported that when capacity increased, some of its customers that had accumulated inventory canceled their orders.

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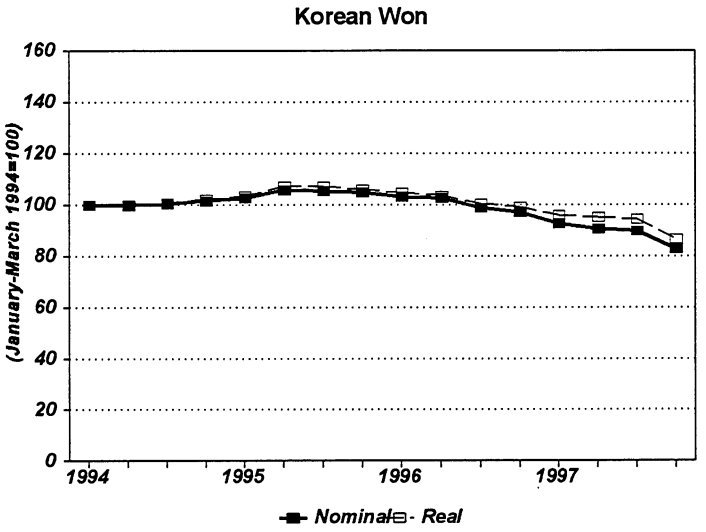
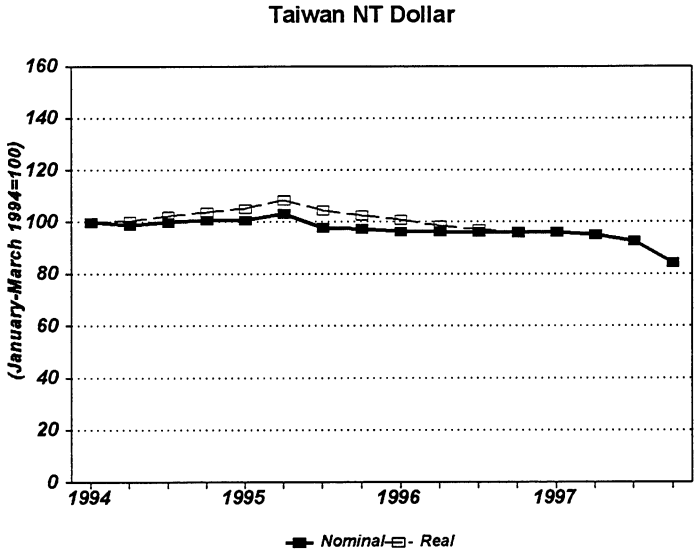
[1] These estimates are derived from official U.S. import data (under HTS subheadings 8473.30.1000, 8473.30.9000, 8542.11.8049, 8542.13.8005, and 8542.13.8037) and represent the transportation and other charges included in imports valued on a c.i.f. basis.

[2] Petitioner's posthearing brief, addendum, pp. 7-12.

Figure V-1
Exchange rates: Indexes of nominal and real exchange rates of the Korean won and Taiwan NT dollar relative to the U.S. dollar, by quarters, Jan. 1994-Dec. 1997[1]





[1] Korean fourth quarter data were available only for October and November. Taiwan producer price index data, which are used to calculate real exchange rates, were unavailable for the second through fourth quarters of 1997.

Source: International Monetary Fund, *International Financial Statistics*, January 1998. Federal Reserve Economic Data, http://www.stls.frb.org/fred/data/exchange/extaus.

One cause of the capacity build-up in the market was misforecast demand for SRAMs used in PCs. It was forecast that up to 80 percent of PCs would use cache memory. However, many low-priced PCs did not use cache as was forecasted; only about 20 percent of Pentium systems were shipped with cache SRAM.[3] PC producers that had overpurchased SRAMs and accumulated large inventories sold off their inventories at low prices or forced their vendors to take returns.[4] In-Stat reported that "the biggest price erosion has occurred in the commodity-type L2 cache products, but price reductions have occurred across the board."[5]

Price competition in the SRAM market occurs between products of similar specifications and among products of differing specifications. For example, Micron reported that it approached Intel with the idea of a 32Kx32 synchronous SRAM in January 1994 and initially quoted a price of $35.00 each. However, Intel asked for a price of $21.00 based on the price of four asynchronous 32Kx8 SRAMs.[6]

Purchasers were asked to name price leaders in the U.S. market. Purchasers named 16 different firms as price leaders, comprising all major sources of SRAMs, including U.S. producers and importers of SRAMs from Japan, Korea, and Taiwan. Two U.S. producers, Cypress and IDT, which were listed as price leaders by five purchasers, were the firms cited most often. *** stated that from 1992 through 1995, suppliers from the United States, Japan, Korea, and Taiwan began raising and dropping prices on a rotation basis to increase market share.

Firms were also asked about the impact of these investigations on prices and shipment volumes. Two U.S. producers, ***, reported a temporary increase in prices at the time of the preliminary phase investigations but *** said this was followed by price declines, while *** said there was no significant overall effect. *** said that price decreases lessened somewhat. *** stated that prices have risen slightly on 32Kx8 configurations, fallen on 128Kx8, and stayed about the same on 32Kx32 and 64Kx32 (although it stated there was a brief price spike on the 64Kx32 in mid 1997 as PC manufacturers switched from 32Kx32 configurations to 64Kx32).

Most importers reported that the investigations have had no effect on prices or import volumes. However, *** reported that an increase in wafer prices at foundries has made *** less competitive. *** stated that it has been unable to secure financing due to uncertainty involving these investigations. *** reported no import shipments since May 1997. *** reported price increases. *** stated that it is unable to compete with Japanese and Korean suppliers because of the duty on Taiwan products. About half of purchasers said that these investigations had not affected pricing or volume while the other half reported a firming and/or increase in prices, limited supply, and/or delivery delays.

U.S. producers and importers sell on both a contract and spot basis, with contracts typically for larger customers. In most cases contract prices are renegotiated monthly or quarterly. SRAM prices are typically quoted f.o.b. warehouse, port, or factory and with terms of net 30 days.

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[3] *ICE*, p. 29, July 1996.

[4] CTR, p. 128.

[5] In-Stat *Electronic News*, Mar. 10, 1997.

[6] In his testimony, Gene Cloud of Micron further described how prices for the 32Kx32 SRAM fell due to pricing from Korea and Taiwan. CTR, pp. 24-27.

PRICE DATA

The Commission requested U.S. producers and importers to provide monthly quantity and value data between January 1994 and December 1997 for the following six products:

Product 1.--32Kx32, 1 Meg synchronous SRAM
Product 2.--64Kx32, 2 Meg synchronous SRAM
Product 3.--128Kx8, 1 Meg asynchronous SRAM, faster than 30ns
Product 4.--128Kx8, 1 Meg asynchronous SRAM, 30ns or slower
Product 5.--32Kx8, 256K asynchronous SRAM, faster than 30ns
Product 6.--32Kx8, 256K asynchronous SRAM, 30ns or slower

Five U.S. producers (***)[7], 2 importers of subject SRAMs from Korea (***), and 12 importers of SRAMs from Taiwan (***) reported pricing data for products 1-6. Pricing data are presented in tables V-1 to V-6 and figures V-2 to V-7.

[7] Data submitted by ***.

Table V-1
Product 1:[1] Weighted-average net f.o.b. prices and quantities for sales to U.S. customers reported by U.S. producers and importers, and margins of under/(over)selling, by months, Jan. 1994-Dec. 1997

Period	U.S. Product		Taiwan Product		
	F.o.b. price	Quantity	F.o.b. price	Quantity	Margin
	Per unit	*1,000 units*	*Per unit*	*1,000 units*	*Percent*
1994:					
January.....	-	-	-	-	-
February.....	-	-	-	-	-
March.....	-	-	-	-	-
April.....	-	-	-	-	-
May.....	-	-	-	-	-
June.....	-	-	-	-	-
July.....	-	-	-	-	-
August.....	-	-	-	-	-
September...	-	-	-	-	-
October.....	-	-	-	-	-
November...	-	-	-	-	-
December....	-	-	-	-	-
1995:					
January.....	-	-	-	-	-
February.....	-	-	-	-	-
March.....	***	***	-	-	-
April.....	***	***	***	***	***
May.....	***	***	***	***	***
June.....	-	-	***	***	-
July.....	-	-	***	***	-
August.....	-	-	***	***	-
September...	***	***	***	***	***
October.....	***	***	***	***	***
November...	***	***	***	***	***
December....	***	***	***	***	***

Table continued on next page.

Table V-1--Continued.
Product 1:[1] Weighted-average net f.o.b. prices and quantities for sales to U.S. customers reported by U.S. producers and importers, and margins of under/(over)selling, by months, Jan. 1994-Dec. 1997

Period	U.S. Product		Taiwan Product		
	F.o.b. price	Quantity	F.o.b. price	Quantity	Margin
	Per unit	*1,000 units*	*Per unit*	*1,000 units*	*Percent*
1996:					
January.....	***	***	$9.62	53	43.3
February.....	***	***	4.11	80	62.8
March.....	***	***	4.55	120	74.0
April.....	***	***	3.70	378	59.6
May.....	***	***	3.95	87	47.8
June.....	***	***	3.29	273	70.9
July.....	***	***	3.08	522	55.3
August.....	***	***	2.80	518	58.8
September...	***	***	2.62	228	67.8
October.....	***	***	2.46	457	42.2
November...	***	***	2.67	254	15.9
December....	***	***	2.53	214	42.6
1997:					
January.....	***	***	2.07	391	52.8
February.....	***	***	2.02	299	22.0
March.....	***	***	2.10	268	49.7
April.....	***	***	2.16	81	54.2
May.....	***	***	2.01	136	57.1
June.....	***	***	2.14	131	36.7
July.....	***	***	2.41	46	21.7
August.....	***	***	1.44	147	56.0
September...	***	***	2.02	100	10.9
October.....	***	***	1.99	129	33.4
November...	***	***	2.45	64	11.8
December....	***	***	2.47	76	1.4

[1] 32Kx32, 1 Meg synchronous SRAM.
[2] Less than 500 units.

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

Table V-2
Product 2:[1] Weighted-average net f.o.b. prices and quantities for sales to U.S. customers reported by U.S. producers and importers, and margins of under/(over)selling, by months, Jan. 1996-Dec. 1997[2]

* * * * * * *

[1] 64Kx32, 2 Meg synchronous SRAM.
[2] There were no reported sales of this product prior to 1996.
[3] Less than 500 units.

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

Table V-3
Product 3:[1] Weighted-average net f.o.b. prices and quantities for sales to U.S. customers reported by U.S. producers and importers, and margins of under/(over)selling, by months, Jan. 1994-Dec. 1997

Period	U.S. Product		Taiwan Product		
	F.o.b. price	Quantity	F.o.b. price	Quantity	Margin
	Per unit	*1,000 units*	*Per unit*	*1,000 units*	*Percent*
1994:					
January.....	$18.73	371	$13.83	12	26.2
February.....	18.22	437	11.99	21	34.2
March.....	17.88	291	13.33	24	25.4
April.....	20.55	216	12.69	22	38.2
May.....	17.33	516	13.38	39	22.8
June.....	15.45	422	12.83	42	16.9
July.....	15.78	388	12.29	52	22.1
August.....	15.93	446	9.24	37	42.0
September...	16.75	310	12.82	28	23.4
October.....	15.98	271	12.79	31	19.9
November...	17.41	243	12.01	42	31.0
December....	15.99	272	12.43	70	22.3
1995:					
January.....	13.16	314	11.48	126	12.8
February.....	13.34	302	11.26	50	15.6
March.....	14.72	559	10.43	124	29.2
April.....	15.07	374	12.48	35	17.2
May.....	14.41	530	13.93	30	3.3
June.....	15.25	534	14.99	113	1.7
July.....	15.79	396	15.03	116	4.8
August.....	17.16	603	15.40	135	10.2
September...	18.42	648	14.51	168	21.2
October.....	18.67	450	16.46	175	11.8
November...	16.78	488	15.79	278	5.9
December....	17.07	869	16.07	441	5.9

Table continued.

Table V-3--Continued.
Product 3:[1] Weighted-average net f.o.b. prices and quantities for sales to U.S. customers reported by U.S. producers and importers, and margins of under/(over)selling, by months, Jan. 1994-Dec. 1997

Period	U.S. Product		Taiwan Product		
	F.o.b. price	Quantity	F.o.b. price	Quantity	Margin
	Per unit	*1,000 units*	*Per unit*	*1,000 units*	*Percent*
1996:					
January.....	$17.18	510	$18.20	245	(5.9)
February.....	16.31	512	18.32	157	(12.3)
March.....	15.46	1,024	14.75	246	4.6
April.....	11.73	537	15.05	221	(28.3)
May.....	10.82	438	11.75	204	(8.6)
June.....	11.19	915	11.44	224	(2.2)
July.....	9.82	321	9.56	116	2.7
August.....	9.26	278	8.46	146	8.6
September...	7.53	1,067	6.87	150	8.8
October.....	5.22	354	6.71	104	(28.5)
November...	4.77	570	5.17	89	(8.3)
December....	5.65	1,089	4.49	126	20.4
1997:					
January.....	3.41	979	4.28	158	(25.4)
February.....	2.92	771	4.11	304	(41.0)
March.....	3.71	1,625	3.84	689	(3.5)
April.....	3.39	1,475	3.04	483	10.4
May.....	3.44	1,623	3.21	405	6.7
June.....	2.79	3,065	3.15	684	(13.0)
July.....	2.86	2,220	3.57	769	(24.9)
August.....	2.84	2,515	3.51	700	(23.9)
September...	2.60	3,845	3.21	1,452	(23.3)
October.....	2.62	2,041	3.19	799	(22.1)
November...	2.54	2,717	3.09	572	(21.7)
December....	2.65	2,392	2.68	1,230	(1.2)

[1] 128Kx8, 1 Meg asynchronous SRAM, faster than 30ns.

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

Table V-4
Product 4:[1] Weighted-average net f.o.b. prices and quantities for sales to U.S. customers reported by U.S. producers and importers, and margins of under/(over)selling, by months, Jan. 1994-Dec. 1997

* * * * * * *

[1] 128Kx8, 1 Meg asynchronous SRAM, 30ns or slower.
[2] Less than 500 units.

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

Table V-5
Product 5:[1] Weighted-average net f.o.b. prices and quantities for sales to U.S. customers reported by U.S. producers and importers, and margins of under/(over)selling, by months, Jan. 1994-Dec. 1997

Period	U.S. Product		Subject Korean Product			Taiwan Product		
	F.o.b. price	Quantity	F.o.b. price	Quantity	Margin	F.o.b. price	Quantity	Margin
	Per unit	*1,000 units*	*Per unit*	*1,000 units*	*Percent*	*Per unit*	*1,000 units*	*Percent*
1994:								
January.....	$3.42	2,857	-	-	-	$2.15	1,643	37.1
February.....	3.57	3,064	-	-	-	2.30	2,137	35.5
March.....	3.37	3,785	-	-	-	2.46	3,916	27.1
April.....	3.03	2,921	-	-	-	2.34	2,474	22.8
May.....	3.13	2,909	-	-	-	2.44	2,259	22.2
June.....	3.14	3,464	-	-	-	2.41	2,609	23.1
July.....	3.24	2,899	-	-	-	2.28	2,558	29.7
August.....	3.34	3,162	-	-	-	2.58	3,356	22.8
September...	3.20	4,275	-	-	-	2.61	3,690	18.4
October.....	3.24	3,537	-	-	-	2.78	3,000	14.2
November...	3.35	4,337	-	-	-	2.57	3,662	23.3
December....	3.35	5,896	-	-	-	3.45	2,849	(3.1)
1995:								
January.....	3.48	3,974	-	-	-	3.33	3,740	4.5
February.....	3.56	4,021	-	-	-	3.35	2,905	5.9
March.....	3.52	5,446	-	-	-	3.29	3,667	6.5
April.....	4.00	3,576	-	-	-	3.76	3,309	6.0
May.....	4.20	3,003	-	-	-	3.82	3,238	8.9
June.....	3.95	6,250	-	-	-	3.42	4,706	13.4
July.....	4.29	3,593	-	-	-	3.97	2,162	7.5
August.....	4.12	4,680	-	-	-	4.28	3,659	(3.8)
September...	3.93	8,985	-	-	-	4.28	4,512	(8.7)
October.....	3.73	4,300	-	-	-	3.95	3,265	(6.1)
November...	4.14	4,068	-	-	-	3.95	3,411	4.4
December....	3.66	6,954	-	-	-	3.23	2,891	11.7

Table continued on next page.

Table V-5--Continued
Product 5:[1] Weighted-average net f.o.b. prices and quantities for sales to U.S. customers reported by U.S. producers and importers, and margins of under/(over)selling, by months, Jan. 1994-Dec. 1997

Period	U.S. Product		Subject Korean Product			Taiwan Product		
	F.o.b. price	Quantity	F.o.b. price	Quantity	Margin	F.o.b. price	Quantity	Margin
	Per unit	*1,000 units*	*Per unit*	*1,000 units*	*Percent*	*Per unit*	*1,000 units*	*Percent*
1996:								
January.....	$3.32	3,898	-	-	-	$3.43	1,566	(3.2)
February.....	3.04	4,724	-	-	-	3.26	1,763	(7.3)
March.....	2.74	9,920	-	-	-	2.63	3,755	4.2
April.....	2.25	4,117	-	-	-	2.44	1,933	(8.5)
May.....	1.85	4,176	-	-	-	2.28	2,343	(23.2)
June.....	1.69	7,998	-	-	-	1.99	1,475	(17.9)
July.....	1.46	2,796	-	-	-	1.52	1,372	(4.1)
August.....	1.32	2,860	-	-	-	1.35	1,183	(2.6)
September...	1.69	6,475	-	-	-	1.48	3,241	12.6
October.....	1.24	3,429	-	-	-	1.09	1,885	11.5
November...	1.30	4,637	-	-	-	1.17	2,547	9.8
December....	1.21	7,669	-	-	-	1.14	3,705	6.3
1997:								
January.....	0.97	3,820	***	***	***	1.11	2,287	(15.1)
February.....	1.07	5,687	***	***	***	1.05	3,420	2.0
March.....	0.99	11,225	***	***	***	1.03	4,092	(4.2)
April.....	0.97	5,623	-	-	-	1.03	1,692	(6.4)
May.....	0.97	6,112	***	***	***	0.96	3,484	1.5
June.....	0.98	8,332	-	-	-	1.04	3,181	(6.4)
July.....	1.00	5,755	***	***	***	1.01	2,969	(0.7)
August.....	0.96	6,923	***	***	***	0.97	3,096	(1.0)
September...	0.89	13,802	***	***	***	0.94	4,258	(5.3)
October.....	0.81	7,463	***	***	***	0.93	3,856	(14.6)
November...	0.92	6,729	***	***	***	0.91	3,050	1.2
December....	1.00	11,732	***	***	***	0.86	4,124	14.4

[1] 32Kx8, 256K asynchronous SRAM, faster than 30ns.

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

Table V-6
Product 6:[1] Weighted-average net f.o.b. prices and quantities for sales to U.S. customers reported by U.S. producers and importers, and margins of under/(over)selling, by months, Jan. 1994-Dec. 1997

* * * * * * *

[1] 32Kx8, 256K asynchronous SRAM, 30ns or slower.

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

Figure V-2
Products 1 and 2:[1] Weighted-average net f.o.b. prices reported by U.S. producers and importers, Jan. 1994-Dec. 1997

* * * * * * *

[1] Product 1--32Kx32, 1 Meg synchronous SRAM; Product 2--64Kx32, 2 Meg synchronous SRAM.

Source: Tables V-1 and V-2.

Figure V-3
Products 3 and 4:[1] Weighted-average net f.o.b. prices reported by U.S. producers and importers, Jan. 1994-Dec. 1997

* * * * * * *

[1] Product 3--128Kx8, 1 Meg asynchronous SRAM, faster than 30ns; Product 4--128Kx8, 1 Meg asynchronous SRAM, 30ns or slower.

Source: Tables V-3 and V-4.

Figure V-4
Products 5 and 6:[1] Weighted-average net f.o.b. prices reported by U.S. producers and importers, Jan. 1994-Dec. 1997

* * * * * * *

[1] Product 5--32Kx8, 256K asynchronous SRAM, faster than 30ns; Product 6--32Kx8, 256K asynchronous SRAM, 30ns or slower.

Source: Tables V-5 and V-6.

Overall, SRAM prices increased during the first half of 1995 and then declined sharply beginning in late 1995, coinciding with a period of tight supply followed by oversupply as suppliers increased production. Prices continued to decline significantly throughout 1996. During 1997, prices generally continued to decline but less rapidly than in the previous year.[8]

Prices of imports from Korea and Taiwan were generally lower than prices reported for U.S.-produced SRAMs. Subject Korean imports were priced lower than U.S.-produced SRAMs in 86 of 93, or 92 percent, of possible comparisons. The average margin was 26.8 percent. Taiwan imports were priced lower than U.S.-produced SRAMs in 161 of 213, or 76 percent, of possible comparisons. The average margin was 21.5 percent. However, results were somewhat different for products 3 and 5, the largest volume products for both U.S. producers and Taiwan importers. For these products, the U.S.-produced product was generally priced higher in 1994 and 1995 but the Taiwan product was generally priced higher in 1996 and 1997. On average, for products 3 and 5, the Taiwan product was priced 4.8 and 5.5 percent lower, respectively, than the U.S. product during 1994-97. Nonsubject imports from Samsung were also generally priced lower than the U.S.-produced product, but by a smaller margin than subject imports from Korea and Taiwan.

The Commission requested firms to provide pricing separately based on speed (faster than 30ns or 30ns or slower) for 128Kx8 and 32Kx8 asynchronous SRAMs (products 3-6). A comparison of U.S. producer prices for these products shows that the faster speed 128Kx8 (product 3) was priced somewhat higher than the slower speed 128Kx8 (product 4) but that this was not the case in every month. Prices for the two speed ranges were very close in 1997. For the 32Kx8 SRAM (products 5 and 6), reported prices were higher for the slower product than for the faster product.

LOST SALES AND LOST REVENUES

The following producers alleged specific instances of lost sales and lost revenues involving subject imports:[9] ***. Twenty-nine purchasers were named in the allegations. Most of the allegations involved Taiwan. Only one lost sale and seven lost revenues allegations were made concerning subject Korean SRAMs, ***.[10] The total quantity and value of allegations, by country, are shown in the following tabulation.[11]

---

[8] ***.

[9] ***. Motorola reported *** to imports from Taiwan in its questionnaire response. However, in its posthearing submission, Motorola reported that these transactions involved Motorola products that were not fabricated in the United States. Motorola's posthearing brief, p. 6.

[10] U.S. producers also listed a number of allegations regarding lost sales or lost revenues due to competition with Samsung. In many cases, an allegation involved both Taiwan and Samsung.

[11] These totals only reflect those allegations which included complete quantity and value information. Also, allegations in which the U.S. producer did not provide purchaser contact information were not included as staff had no way to verify these allegations.

	Quantity *(1,000 units)*	Value *($1,000)*
Lost revenues:		
Korea (subject).....	22,663	3,230
Taiwan.....	67,378	49,427
Korea/Taiwan.....	17,368	1,636
Total.....	107,409	54,293
Lost sales:		
Korea (subject).....	20	98
Taiwan.....	8,119	12,085
Total.....	8,139	12,183

Purchasers disagreed with 12 lost sales allegations and partly agreed with 3 allegations. Purchasers agreed with 22 lost revenues allegations, partly agreed with one, and disagreed with 21. The allegations and purchaser comments regarding these allegations are presented in tables V-7 and V-8 and in the discussion that follows.[12]

Table V-7: Lost sales allegations and responses

* * * * * * *

Source: Compiled from information submitted in response to questionnaires of the U.S. International Trade Commission, and information provided by purchasers via telephone and fax.

Table V-8: Lost revenues allegations and responses

* * * * * * *

Source: Compiled from information submitted in response to questionnaires of the U.S. International Trade Commission, and information provided by purchasers via telephone and fax.

[12] The tables reflect only the allegations regarding purchasers which responded to staff's request for information.

Lost Revenues Involving Both Subject Korean and Taiwan SRAMs

* * * * * * *

Lost Sales and Lost Revenues Involving Subject Korean SRAMs

* * * * * * *

Lost Sales and Lost Revenues Involving Taiwan SRAMs

* * * * * * *

PART VI: FINANCIAL CONDITION OF THE U.S. INDUSTRY

BACKGROUND

Nine U.S. producers[1] reported the results of their operations on SRAMs. Five fabless[2] producers of SRAMs also provided results of their operations on SRAMs, which are presented in appendix I. One assembler of modules provided its results of operations (app. J).

Financial data include cased and uncased SRAMS, modules containing SRAMS, and various densities of SRAMs. Because of the mix of products, quantities sold have little correlation with financial performance on a per-unit basis and thus were not requested in the financial section of the questionnaire.

Data for Micron were verified by the Commission staff, resulting in changes to the financial and pricing data. Data for Motorola were also verified,[3] resulting in changes to the financial, trade, and pricing data in the producer's questionnaire and also changes to data included in the importer's questionnaire.

OPERATIONS ON SRAMS

The results of operations data shown in table VI-1 include all reported U.S.-produced SRAMs (uncased, cased, and modules).[4] The total sales value increased substantially in 1995, compared to 1994, but then decreased in 1996 and decreased further in 1997 ***. The reporting companies realized an increased operating income margin in 1995 compared to 1994, which then *** in 1996. The combined companies incurred an operating loss in 1997.[5] Research and development is a large expense in this ever-

---

[1] The producers and their fiscal year ends are ***. The producers were requested to, and except for *** did, provide data for the calendar years 1994-97. ***.

[2] Fabless producers are defined as U.S. firms that do not engage in actual wafer fabrication, but rather design the wafer and purchase the fabricated wafer product of SRAM foundries.

[3] During the verification, Motorola ***.

[4] The results of operations include domestic and export sales of SRAM products produced from wafers and dice fabricated in the United States, regardless of assembly location. The data also include U.S.-assembled cased SRAMs from 3rd-source-fabricated dice. The revenue includes only the final sales or transfer values of U.S.-produced cased SRAMs and the final sales or transfer values of U.S.-produced uncased SRAMs that are not used as captive consumption in the assembly of U.S.-produced SRAMs. The financial data were reconciled with SRAM shipments on a company-by-company basis.

[5] IDT incurred an impairment charge in 1996, of which approximately *** was allocated (on the basis of net sales) to SRAMs. If the impairment charge were not included, IDT's operating income (loss) margin would have been *** percent and that of the combined companies would have been *** percent. IDT explained in its Feb. 10, 1997, Quarterly 10-Q report to the SEC (downloaded from EDGAR online by Commission staff) that the impairment relates principally to recording reserves against the carrying value of manufacturing assets, including IDT's oldest wafer fabrication plant in Salinas, CA. The reserves were recorded in accordance with the Statement of Financial Accounting Standards 121 (SFAS 121) "Accounting for the Impairment of Long Lived assets." "SFAS 121 requires that the Company analyze whether the cash flows attributable to an asset support the value assigned to that asset. Where estimated cash flow is not sufficient to recover the net asset carrying values, a fair value

(continued...)

changing industry, increasing each year through 1996, but decreasing in 1997.[6]

The companies were requested to provide a detail of the type of sales and transfers included in their data. A summary of the combined detail for the companies is presented in table VI-2.

Table VI-1
Results of operations of U.S. SRAM producers, calendar years 1994-97

* * * * * * *

Table VI-2
Detail of net trade sales and company transfers of U.S. SRAM producers, calendar years 1994-97

* * * * * * *

Selected financial data for the individual producers are shown in table VI-3. All of the companies (except ***)[7] had increased sales in 1995 compared to 1994, but then all (except ***) had decreased sales in 1996. All of the companies (except ***) realized operating income in 1995, but *** companies incurred operating losses in 1996. The *** had operating losses in 1997 and *** had decreased net sales value in 1997 compared to 1996.

Table VI-3
Results of operations of U.S. SRAM producers, by firms, calendar years 1994-97

* * * * * * *

---

[5] (...continued)
approach is taken towards reassigning a carrying value to the assets. As a result of significant changes in the semiconductor industry, such as the rapid erosion of SRAM average selling prices, and the Company's emphasis on communication-oriented products, the Company has accelerated the use of more advanced manufacturing processes to produce its products. The use of these more advanced processes and available information on demand for the Company's products indicate that the remaining cost of these selected older manufacturing assets will not be fully recovered. Therefore, reserves have been recorded for the difference between the carrying value at historical costs and estimates of the fair market value of the assets."

[6] IDT explained its high R&D expenses in 1996 in its Feb. 10, 1997 submission of the Quarterly 10-Q Report to the SEC as follows: "Also adversely impacting gross profit . . . were costs, which were not fully offset by additional revenues associated with the new 8 (inch) wafer fabrication facility located in Hillsboro, Oregon . . . as this facility continued its production ramp, both the number of wafers produced and the total manufacturing cost incurred increased when compared to previous quarters. During the first quarter of fiscal 1997 (June 30, 1996) substantially all operating expenses associated with the new Oregon facility were classified as process engineering research and development expense, as production of salable die was not significant. In the second and third quarters (Sept. 30 and Dec. 31, 1996), costs associated with the Oregon facility negatively impacted gross margins, as a majority of total facility operating costs were allocated to the manufacture of products charged to cost of goods sold."

[7] ***.

DOMESTIC VALUE ADDED TO SRAMS

The producers[8] that fabricated dice in the United States, the fabless producers, and the assemblers were requested to provide the domestic value added to 256K and 1 Meg SRAMs on a unit basis for their last full year of production. Data were computed by Commision staff on an overall SRAM basis for ***. The domestic value added as a percent of total processing costs provided by the producers is summarized in the following tabulation:

* * * * * * *

As shown by the detail computations presented in appendix K, the analysis is based on the source of the production process (domestic or foreign) that is added to the purchased materials. For instance, even though ***. The fabless producers design the dice and purchase fabrication from foreign companies, thereby obtaining a significantly lower value added than the fabricators who typically do the fabrication in the United States and may have the assembly done by foreign sources.

CAPITAL EXPENDITURES, RESEARCH AND DEVELOPMENT EXPENSES, AND INVESTMENT IN PRODUCTIVE FACILITIES

Capital expenditures, research and development expenses, and the original cost and book value of property, plant, and equipment used in the production of SRAMs are shown in table VI-4. Capital expenditures increased substantially in 1995 compared to 1994, decreased slightly in 1996, but then decreased to almost the 1994 level in 1997. Research and development expenses for the combined companies increased each year from 1994 to 1996 and then decreased in 1997. The research and development expenses in 1997 ***. The original cost of fixed assets increased each year for the reporting companies, reflecting their continued investment in new equipment and facilities.

[8] ***.

Table VI-4
Value of assets, capital expenditures, and research and development expenses of U.S. producers of SRAMs, 1994-97

Item	Calendar year			
	1994	1995	1996	1997
	Value (*$1,000*)			
Capital expenditures (1)	236,088	541,357	511,139	245,419
R&D expenses (2)	***	***	***	***
Fixed assets: (3)				
Original cost	642,167	1,109,833	1,280,284	1,324,975
Book value	354,485	555,251	777,128	693,698

(1) The producers are ***.
(2) The producers are ***. ***.
(3) The producers are ***.

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

CAPITAL AND INVESTMENT

The producers' comments regarding any actual or potential negative effects of imports of SRAMs from Korea and Taiwan on their firms' growth, investment, ability to raise capital, and/or development and production efforts (including efforts to develop a derivative or more advanced version of the product) are presented in appendix L.

PART VII: THREAT CONSIDERATIONS

Section 771(7)(F)(I) of the Act (19 U.S.C. § 1677(7)(F)(I)) provides that--

> *In determining whether an industry in the United States is threatened with material injury by reason of imports (or sales for importation) of the subject merchandise, the Commission shall consider, among other relevant economic factors*[1]--
>
> *(I) if a countervailable subsidy is involved, such information as may be presented to it by the administering authority as to the nature of the subsidy (particularly as to whether the countervailable subsidy is a subsidy described in Article 3 or 6.1 of the Subsidies Agreement), and whether imports of the subject merchandise are likely to increase,*
>
> *(II) any existing unused production capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States, taking into account the availability of other export markets to absorb any additional exports,*
>
> *(III) a significant rate of increase of the volume or market penetration of imports of the subject merchandise indicating the likelihood of substantially increased imports,*
>
> *(IV) whether imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices, and are likely to increase demand for further imports,*
>
> *(V) inventories of the subject merchandise,*
>
> *(VI) the potential for product-shifting if production facilities in the foreign country, which can be used to produce the subject merchandise, are currently being used to produce other products,*
>
> *(VII) in any investigation under this title which involves imports of both a raw agricultural product (within the meaning of paragraph (4)(E)(iv)) and any product processed from such raw agricultural product, the likelihood*

---

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

that there will be increased imports, by reason of product shifting, if there is an affirmative determination by the Commission under section 705(b)(1) or 735(b)(1) with respect to either the raw agricultural product or the processed agricultural product (but not both),

(VIII) the actual and potential negative effects on the existing development and production efforts of the domestic industry, including efforts to develop a derivative or more advanced version of the domestic like product, and

(IX) any other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports (or sale for importation) of the subject merchandise (whether or not it is actually being imported at the time).[2]

Information on the nature of the LTFV margins was presented earlier in Part I of this report; information on the volume and pricing of imports of the subject merchandise is presented in Parts IV and V; and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in Part VI. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows.

The Commission sent foreign producer's questionnaires to all Korean and Taiwan SRAM producers represented by counsel. Responses were received from all three Korean producers and from the major producers in Taiwan. Information on SRAM operations in both countries was also received during the preliminary phase of these investigations from the Department of State and the AIT in Taipei. No information has been received during the course of these investigations that would suggest that SRAMs have been the subject of any other import relief investigations in the United States or elsewhere.

THE INDUSTRY IN KOREA

There are three major producers of SRAMs in Korea: Samsung Electronics Co., Ltd. (Samsung); Hyundai Electronics Industries Co., Ltd. (Hyundai); and LG Semicon, a division of Lucky Goldstar.[3] [4] As reported in a recent Commission study,[5]

---

[2] Section 771(7)(F)(iii) of the Act (19 U.S.C. § 1677(7)(F)(iii)) further provides that, in antidumping investigations, ". . . the Commission shall consider whether dumping in the markets of foreign countries (as evidenced by dumping findings or antidumping remedies in other WTO member markets against the same class or kind of merchandise manufactured or exported by the same party as under investigation) suggests a threat of material injury to the domestic industry."

[3] ***.

[4] According to their foreign producers' questionnaires, SRAMs accounted for less than *** percent of each firm's total sales in 1996.

[5] *Advice Concerning the Proposed Modification of Duties on Certain Information Technology Products and Distilled Spirits*, Report to the President on Inv. No. 332.380, USITC Pub. 3031 (Final), April 1997, pp. 5-10 and 11.

These three firms account for nearly 98 percent of total Korean production [of semiconductors]. They are vertically integrated conglomerates that produce a wide variety of electronic products from components to finished electronic systems such as televisions and other consumer electronics. As such, they have the financial resources to sustain downturns in the market and to make significant investments in R&D and capital equipment and other product lines to offset the down cycles in semiconductors. For example, Korean capital spending has increased from about $1 billion in 1992 to roughly $7 billion in 1996. Korean firms have concentrated almost exclusively in the production of DRAMs and SRAMs, and in 1995, Samsung was the global leader in both DRAM and SRAM production.

Data showing the three Korean producers' worldwide shipments of SRAMs and their corresponding world market shares in 1995 and 1996, as reported by In-Stat, are shown in the following tabulation:

* * * * * * *

The Commission's questionnaires in the final phase of these investigations requested information from foreign producers regarding plans to add, expand, curtail, or shut down production capacity and/or production of SRAMs or SRAM modules in Korea. In addition, the Commission's questionnaires requested information regarding constraints that set limits on production capabilities in Korea. The following comments were received:

***

Changed circumstances.--"*** plans to reduce production of memory products, including SRAMs, and move capacity into other product lines such as logic devices, application specific integrated circuits (ASICS) and micro processors."

Production contstraints.--"Because ***'s production runs are carefully planned months in advance in response to market forecasts or production orders placed to meet critical product demands, there are limits to how many SRAMs *** can produce at any time because the lines have been set-up and are being run for other products. Beyond these planning constraints, there are also many complex engineering constraints . . . (w)hen particular line or pieces of equipment are being used to produce one product (e.g., DRAMs), the effort and cost required to shift to SRAMs in terms of equipment changeover, modification and recalibration, mask adjustment and change-outs, equipment testing, test production runs, etc. is very significant, and in many cases can take months."

***

Changed circumstances.--"No."

Production contstraints.--"The major constraint on production capability is the requirement for capital investment in new facilities. For example, construction of a new wafer fabrication facility requires an investment of about $1 billion. It would be extremely difficult to obtain such funds in present economic

conditions in Korea. Other constraints include availability of equipment such as photo lithographic equipment, test equipment and the availability of experienced engineers."

***

Changed circumstances.--"*** has stopped SRAMs fabrication at *** and back-end production thereafter."

Production contstraints.--"The basic production capability is limited by the number of steppers, and product specific capability of *** SRAMs is determined by each year's production plan, and by equipment configuration. *** does not have the capability to make *** SRAMs."[6]

Data on Korean production and shipments of uncased SRAMs, cased SRAMs, and SRAM memory modules for LG Semicon and Hyundai were provided by counsel in response to the Commission's foreign producer questionnaires and are presented in table VII-1.

VII-1
SRAMs: Korean capacity, production, inventories, capacity utilization, and shipments, 1994-97 and projected 1998

* * * * * * *

THE INDUSTRY IN TAIWAN

There are five major producers/exporters of SRAMS in Taiwan: Winbond Electronics Corp. ("Winbond"); Alliance Semiconductor Corp. ("Alliance"--a U.S. firm whose production is fabricated in Taiwan by United Microelectronics Corp.); Integrated Silicon Solutions, Inc. ("ISSI"--a U.S. firm whose production is fabricated by Taiwan Semiconductor Manufacturing Corp.); United Microelectronics Corp. ("UMC"); and Taiwan Semiconductor Manufacturing Corp. ("TSMC"). Data showing the largest Taiwan producers' worldwide shipments of SRAMs and their corresponding world market shares in 1995 and 1996, as reported by In-Stat, are shown in the following tabulation:

* * * * * * *

The following information was obtained from the AIT in Taipei in a telegram dated March 26, 1997. The AIT noted that integrated circuit (IC) development and production is an area in which Taiwan believes it has a comparative advantage. Both government and industry have concentrated efforts in this area. Taiwan's IC industry, which was established in the early 1980s, has expanded rapidly since 1993. Among the types of products produced by the firms are memory ICs (including SRAMs, DRAMs, and ROMs), communication ICs, information product ICs, and consumer electronic ICs. Since 1991, memory

---

[6] Information available on ***'s worldwide website indicates that the firm does offer for sale some fast SRAMs (e.g., 1Meg, 128Kx8, at 17, 20, and 25ns). See, ***.

ICs have been the main product line of Taiwan's IC industry. In 1996, memory ICs accounted for 60 percent of total IC output.

Currently Taiwan has 15 major IC manufacturers. In 1996, these 15 firms (including manufacturers and foundry[7] service companies) had a combined capacity of 5.26 million pieces in terms of 6-inch wafers, up 38 percent from 3.812 million pieces in 1995. In 1996, the 15 firms produced $4.8 billion worth of ICs, an increase of 7.3 percent from the previous year's total. In 1996, Taiwan exported 61.1 percent of its total IC output, mainly to the United States (24 percent), Southeast Asia (15 percent), Hong Kong (14 percent), and Japan (12 percent).

Taiwan's production of memory ICs is projected to continue to grow as the number of 8-inch silicon wafer factories increases from the current number to 22. According to ERSO (Electronics Research and Service Organization, of the Industrial Technology Research Institute) projections, Taiwan is expected to have an IC output of $7.5 billion by 2000 (about 5 percent of projected world output in that year), up substantially from output in 1996.

Taiwan's IC chip manufacturers have been affected by the sluggish world semiconductor market. Yet construction of the 22 new 8-inch wafer fabrication plants (9 of which are completed and running) by the year 2000, after a brief slowdown, continues. The average investment per plant is about $1 billion. Taiwan's IC manufacturers have budgeted nearly $24 billion for plant construction from 1990 to 2000. Taiwan's exports of SRAMs have not been limited by tariffs or other barriers such as antidumping findings or other restraint agreements.

Following are more specific details on some of Taiwan's SRAM producers. This information was obtained from sources other than the AIT in Taipei. According to the petitioner (petition, p. 34 and exhibit 12), Winbond--

> *"has also commenced construction of two additional Fabs, with an estimated aggregate cost of NT$50 billion (US$1.83 billion). Fab 3, which is expected to commence operation in the first quarter of 1997, is being designed primarily to manufacture SRAM memory products using 0.35 micron to 0.25 micron CMOS process. Plans for Fab 3 include a floor area of approximately 63,600 square meters and a capacity to process 25,000 eight-inch wafers pre (sic) month. This fab expansion will more than double Winbond's capacity to produce SRAMs."*[8]

---

[7] As explained at the conference during the preliminary phase of these investigations, a foundry is a company whose primary business is to make wafers and sell them to anyone who comes with a set of masks, and not offer a product. In other words, it offers wafers, but no products. See CTR, p. 69.

[8] During the preliminary phase of these investigations, the Taiwan respondents stated in their post-conference brief (p. 21) that Winbond's Fab 3 "was heavily damaged by a fire in October 1996." The relevant article cited in their brief (see exhibit 3) adds that "contrary to earlier reports from within the company, *** should have little or no effect on Winbond's ability to meet customer demand. . . . The company has not yet disclosed repair estimates, but said some equipment in its class 1 cleanroom will have to be replaced. . . . Production levels at the company's five-and six-inch wafer fabs were unaffected by the fire . . ." During the final phase of these investigations, counsel for Winbond has clarified that the firm is in the process of constructing two new semiconductor fabrication facilities (Fab 3 and Fab 4), but that these facilities "will be dedicated to the production of non-subject DRAMs,

(continued...)

Petitioner also cites Alliance's Form 10-K submitted to the Securities and Exchange Commission for the fiscal year ended March 30, 1996 (see petition, exhibit 13), as follows:

> *"In July 1995, the Company entered into an agreement with UMC and S3 Incorporated ("S3") to form a separate Taiwanese company, United Semiconductor Corporation, for the purpose of building and managing an 8-inch semiconductor manufacturing facility in Taiwan. The facility is expected to commence production in late 1996. It is presently contemplated that the manufacturing facility will, over time, require $1 billion to complete its construction and finance operations. . . ."*
>
> *"In October 1995, the Company entered into an agreement with UMC and other parties to form a separate Taiwanese company, United Silicon Inc., for the purpose of building and managing an 8-inch semiconductor manufacturing facility in Taiwan. The facility is expected to commence production in late 1997. It is presently contemplated that the manufacturing facility will, over time, require $1 billion to complete its construction and finance operations."*

Petitioner, citing a Lehman Brothers report,[9] states that TSMC, "the largest producer of semiconductors in Taiwan," is also building two new large fabs.[10] Petitioner further stated that:

---

[8] (...continued)
and not SRAMs. . . pursuant to an agreement with Toshiba Corporation" (Jan. 27, 1998, and Feb. 13, 1998, submissions of Kaye, Scholer, Fierman, Hays & Handler, p. 3 and p. 1, respectively).

[9] *Chips Down, Longer Term Prospects Remain Promising; Taiwan Semiconductor Industry Review and Outlook*, Sept. 4, 1996. See petition, exhibit 14.

[10] "Currently, TSMC manufacturers (sic) over 110,000 top-quality, high yield 6-inch wafers per month in its Fab I and Fab II facilities, and 8-inch wafers in Fab III. In 1994, TSMC produced nearly 20% of the world's IC foundry market, making TSMC the number one foundry in the world. The company is continuing to be aggressive in addressing worldwide demand for semiconductor manufacturing capacity. In 1995, TSMC invested several billion dollars in is (sic) state-of-the-art Fab IV and Fab V which together will have a potential monthly output of 60,000 8-inch wafers in 1997. All these will ensure TSMC's continued leadership position in the global foundry business." Http://www.tsmc.com.tw/Image/statueng.html, Apr. 4, 1997.

"TSMC works as a foundry[11] for sales of SRAMs and other semiconductors through other companies, including Integrated Silicon Solutions Inc. ("ISSI"). TSMC's Fab IV was expected to begin commercial production by the end of 1996.[12] Another fab, TSMC Fab V, is also under construction.[13] ISSI's rapidly expanding sales of Taiwanese SRAMs in the United States will increase as a result of these significant expansions of its Taiwanese foundry partner, TSMC. . . ."

The Commission's questionnaires in these investigations requested information from foreign producers regarding plans to add, expand, curtail, or shut down production capacity and/or production of SRAMs or SRAM modules in Taiwan. In addition, the Commission's questionnaires requested information regarding constraints that set limits on production capabilities in Taiwan. The following comments were received:

***

Changed circumstances.--"No."[14]

Production constraints.--"Constraints include, other than quality issue, difficulty in further capacity/cleanroom expansion. Typical long-term production plan and material/equipment supply results in ***'s inability to convert capacity into SRAM production, and its commitment in logic, non-volatile memory, and foundry production."

---

[11] TSMC is a joint venture between the government of Taiwan, Philips Electronics, N.V., and other private investors. TSMC's charter prevents it from designing or making its own brand-name IC end products. "For this reason, TSMC is a partner, and not a competitor, for other semiconductor companies." See http://www.tsmc.com.tw/Image/introeng.html.

[12] Fab IV began volume production in February 1997. "Fab IV has gone through a series of pilot productions during the past three months, and has achieved a high yield rate of over 90%. . . . From the outset, Fab IV will utilize state-of-the art 0.45um and 0.35um process technology in the manufacture of **16M DRAM and various kinds of logic products** (emphasis added) for customers, and the new fab will upgrade to 0.25um technology next year. Moreover, production at Fab IV will quickly expand to full capacity. The company expects to reach production output of 22,000 8-inch wafers per month by the end of this year, and to reach full capacity of 30,000 wafers per month by the end of 1998." See http://www.tsmc.com/tw/News/ne970129.html.

[13] "Fab V, TSMC's third 8-inch fab, is scheduled to begin ramping-up in October 1997, with a projected total monthly output of 30,000 8-inch wafers. . . . To keep pace with market demand and to gain market share, TSMC says it is doing everything possible to expand the capacity of Fab I, II and II and to expedite construction of Fab IV and V. . . . In addition, plans are underway for a sixth and seventh fab. 'With these expansion plans, TSMC will increase its capacity by some 30% a year in order to maintain our position as the world's leading pure foundry,' said Donald Brooks, TSMC president." TSMC press release issued Nov. 1, 1995.

TSMC is also engaged in a joint venture with Altera Corp., Analog Devices, Inc., and ISSI in building a new wafer fabrication facility in the United States--in Camas, WA. The new $1.2 billion facility will operate as an independent company named WaferTech. Groundbreaking took place in July 1996 and production is expected to begin in the second quarter of 1998. The fab is intended to use 0.35 micron technology initially, shifting to 0.25 micron, and eventually to 0.18 micron. By the end of 1998, WaferTech is scheduled to produce 10,000 8-inch wafers per month. At full production, by the end of 1999, it will reach a monthly output of 30,000 8-inch wafers.

[14] See, ***.

***

Changed circumstances.--"None of ***'s fabrication production capacity is dedicated specifically to SRAMs. In *** business, *** produces a wide range of integrated circuits *** customers. First, *** has entered into the joint ventures ***. . . foundry service wafer fabrication companies. Each has (or will have) an 8" wafer fabrication facility. . .*** began production in *** 1996.[15] *** is scheduled for production in *** 1998. *** initiated *** in 1997 but ***.[16] The ultimate capacity of these three joint ventures will be determined by equipment, configuration and process mix decision that have not been made in all instances. No capacity will be dedicated to SRAMs, however. In addition, the Commission should note that several of the venturers in these enterprises will have first call on capacity, and are principally engaged in the logic circuits business, not memories. *** does not have the ability to determine the product mix that will eventually be chosen and designed by its *** customers.

"(O)ver the next decade *** plans to build at least one 8" wafer IC fab with an eventual monthly capacity of 50,000 wafers, and five 12" (or larger) wafer fabs, each with an eventual monthly capacity expected to be in excess of 20,000 wafers. As in the case with the other foundry service fabs, no capacity is dedicated to SRAMs and *** does not have the ability to determine the product mix that will eventually be chosen and designed by its foundry customers after these fabs are constructed."

Production constraints.--"Factors that limit production capabilities include the volume of orders from foundry customers and the process mix produced over a given time frame. Some foundry processes are more complex or include more steps, therefore taking longer than others to produce a finished wafer. Increased investment, apart form producing additional fabs, does not relieve these constraints."

***

Changed circumstances.--"*** plans to increase its production capacity, but installation will not be completed for another two years and the products involved will not be SRAM or other memory products."

Production constraints.--"SRAM production is limited by available machinery. *** plans product mix in advance and machinery and equipment are installed accordingly. Shifting production from one product to another would reduce utilization of such machinery and equipment. *** has strategic concerns on the production of memory products because their prices are not stable. *** mainly produces ***."

***

Changed circumstances.--"*** has no plan to invest additional capital equipment at present. However, the allocation of production quantity among the product mix is subject to change over time."

Production constraints.--"Total wafer fabrication capacity: need invest money in equipment. Process technology: need advanced technology to get smaller die. Assembly & testing capacity: need to buy more tester & related equipment."

---

[15] *** (*** importer's QR, Dec. 15, 1997, p. 3).

[16] *** (*** supplemental QR, Jan. 22, 1998, pp. 3-4).

Data were obtained from seven producers[17] in Taiwan in response to the Commission's foreign producer questionnaires relating to SRAM and SRAM module operations in Taiwan. The data are presented in table VII-2.

VII-2
SRAMs and SRAM modules: Taiwan's capacity, production, inventories, capacity utilization, and shipments, 1994-97 and projected 1998

* * * * * * *

U.S. IMPORTERS' INVENTORIES

End-of-period inventories held by U.S. importers of SRAMs and SRAM modules are shown in tables VII-3.

Table VII-3
SRAMs and SRAM modules: End-of-period inventories of U.S. "imports,"[1] by origin of dice, 1994-97

* * * * * * *

[17] The foreign producers include Etron Technology, ISSI (Taiwan), Mosel-Vitelic, Taiwan Semiconductor Manufacturing, United Microelectronics, U-Tron Technology, and Winbond Electronics. Two additional firms identified as SRAM producers in Taiwan did not respond to the Commission's questionnaires and include Hualon Microelectronics and Vanguard International Semiconductor.

APPENDIX A

FEDERAL REGISTER NOTICES

bearings (other than tapered roller bearings) and parts thereof from France, Germany, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom, and the period May 1, 1990, through April 30, 1991. The revised weighted-average margins are as follows:

Company	BBs	CRBs	SPBs
France			
SKF	8.56	(1)	(3)
SNR	8.08	18.37	(2)
Germany			
FAG	20.10	7.83	1.05
INA	19.90	1.23	(1)
SKF	12.08	5.10	0.82
Italy			
FAG	7.50	(1)	.....
SKF	8.78	(3)	.....
Japan			
Fujino	1.83	(2)	(2)
IJK	1.89	(3)	(2)
Izumoto	12.14	(2)	(2)
Koyo Seiko	6.95	1.39	(3)
Nachi	7.90	22.61	(1)
Nakai	6.47	(2)	(2)
Nankai	9.41	(2)	(2)
NTN	2.42	2.78	0.51
Showa	7.51	(2)	(2)
Singapore			
NMB/Pelmec	4.49	.....	.....
Sweden			
SKF	7.67	4.18	.....
Thailand			
NMB/Pelmec	0.498	.....	.....
United Kingdom			
Barden Corporation	0.85	(1)	.....
FAG	48.97	(3)	.....
RHP Bearings	16.75	50.39	.....
SKF	8.33	(1)	.....

(1) No U.S. sales during the review period.
(2) No review requested.
(3) No change to the last published margin. See AFBs II, 57 FR 28360, as amended by 57 FR 32969 and 57 FR 59080.

The above rates will become the new antidumping duty deposit rates for firms that have not had a deposit rate established for them in subsequent reviews.

Accordingly, the Department will determine and the U.S. Customs Service will assess appropriate antidumping duties on entries of the subject merchandise made by firms covered by these reviews. Individual differences between United States price and foreign market value may vary from the percentages listed above. The Department has already issued appraisement instructions to the Customs Service for certain companies whose margins have not changed from those announced in AFBs II and the two previous amendments. For companies covered by these amended results, the Department will issue appraisement instructions to the U.S. Customs Service after publication of these amended final results of reviews.

This notice is published pursuant to section 751(a) of the Tariff Act.

Dated: February 11, 1998.

Robert S. LaRussa,

Assistant Secretary for Import Administration.

[FR Doc. 98–4542 Filed 2–20–98; 8:45 am]

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DEPARTMENT OF COMMERCE

International Trade Administration

[A–583–827]

Notice of Final Determination of Sales at Less Than Fair Value: Static Random Access Memory Semiconductors From Taiwan

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

EFFECTIVE DATE: February 23, 1998.

FOR FURTHER INFORMATION CONTACT: Shawn Thompson at (202) 482–1776, or David Genovese at (202) 482–0498,

Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, D.C. 20230.

Applicable Statute and Regulations

Unless otherwise indicated, all citations to the Tariff Act of 1930, as amended (the Act), are references to the provisions effective January 1, 1995, the effective date of the amendments made to the Act by the Uruguay Round Agreements Act (URAA). In addition, unless otherwise indicated, all citations to the Department's regulations are to the regulations codified at 19 CFR Part 353 (April 1, 1996).

Final Determination

We determine that static random access memory semiconductors (SRAMs) from Taiwan are being sold in the United States at less than fair value (LTFV), as provided in section 735 of the Act. The estimated margins are shown in the "Suspension of Liquidation" section of this notice.

Case History

Since the preliminary determination in this investigation on September 23, 1997 (*see Notice of Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination: Static Random Access Memory Semiconductors from Taiwan,* 62 FR 51442 (Oct. 1, 1997)), the following events have occurred:

In September 1997, we issued supplemental questionnaires to Integrated Silicon Solution Inc. (ISSI) and United Microelectronics Corporation (UMC). We received responses to these questionnaires in October 1997.

On October 14, 1997, Taiwan Semiconductor Manufacturing Company Ltd. (TSMC) requested that the Department reconsider its preliminary determination to exclude TSMC as a respondent in this investigation. On October 29, 1997, we informed TSMC that we were not altering our decision and that we would not verify the information submitted by TSMC. For further discussion of this issue, see the memorandum to the file from James Maeder, dated October 29, 1997, and *Comment 4* in the "Interested Party Comments" section of this notice.

On October 15, 1997, a U.S.-based producer of subject merchandise, Galvantech, Inc. (Galvantech), requested that the Department accept and verify a questionnaire response from it. On October 22, 1997, we denied Galvantech's request. For further discussion, see *Comment 3* in the "Interested Party Comments" section of this notice.

On October 17, 1997, an interested party in this investigation, Texas Instruments-Acer Incorporated (TI-Acer), claimed that it had not received the antidumping duty questionnaire issued to it in April 1997. Thus, TI-Acer requested that the Department make no final determination for it on the basis of facts available. On October 22, 1997, we provided TI-Acer with a copy of the courier's delivery record which indicated that TI-Acer had, in fact, received the questionnaire.

In October and November 1997, we verified the questionnaire responses of the following respondents: Alliance Semiconductor Corp. (Alliance), ISSI, UMC, and Winbond Electronics Corporation (Winbond).

In November and December 1997, the respondents submitted revised sales databases at the Department's request. In addition, Alliance, ISSI and UMC submitted revised cost databases.

On November 19, 1997, TI-Acer submitted its case brief in which it reiterated its assertion that it did not receive a questionnaire. On December 9, 1997, we provided TI-Acer with an additional copy of the courier's delivery record demonstrating that the questionnaire had been received by a TI-Acer official. TI-Acer responded to this letter on December 18, 1997. For further discussion, see *Comment 5* in the "Interested Party Comments" section of this notice.

The petitioner (*i.e.*, Micron Technology, Inc.), the four respondents, Galvantech, and TSMC submitted case briefs on December 23 and 24, 1997, and rebuttal briefs on January 7 and 8, 1998. In addition, five interested parties, Compaq Computer Corporation (Compaq), Cypress Semiconductor Corporation (Cypress), Digital Equipment Corporation (Digital), Integrated Device Technology (IDT), and Motorola Inc. (Motorola) submitted rebuttal briefs on January 7, 1998.

On January 7, 1998, the authorities on Taiwan submitted comments on the appropriate treatment of stock distributions to company employees. The petitioner responded to these comments on January 12, 1998. The Department held a public hearing on January 13, 1998.

Scope of Investigation

The products covered by this investigation are synchronous, asynchronous, and specialty SRAMs from Taiwan, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or die, uncut die and cut die. Processed wafers produced in Taiwan, but packaged, or assembled into memory modules, in a third country, are included in the scope; processed wafers produced in a third country and assembled or packaged in Taiwan are not included in the scope.

The scope of this investigation includes modules containing SRAMs. Such modules include single in-line processing modules (SIPs), single in-line memory modules (SIMMs), dual in-line memory modules (DIMMs), memory cards, or other collections of SRAMs, whether unmounted or mounted on a circuit board.

We have determined that the scope of this investigation does not include SRAMs that are physically integrated with other components of a motherboard in such a manner as to constitute one inseparable amalgam (*i.e.*, SRAMs soldered onto motherboards). For a detailed discussion of our determination on this issue, see *Comment 2* in the "Interested Party Comments" section of this notice and the memorandum to Louis Apple from the Team dated February 13, 1998.

The SRAMs within the scope of this investigation are currently classifiable under the subheadings 8542.13.8037 through 8542.13.8049, 8473.30.10 through 8473.30.90, and 8542.13.8005 of the Harmonized Tariff Schedule of the United States (HTSUS). Although the HTSUS subheadings are provided for convenience and customs purposes, the written description of the scope of this investigation is dispositive.

Period of Investigation

The period of this investigation (POI) for all respondents is January 1, 1996, through December 31, 1996.

Facts Available

Three interested parties in this investigation, Advanced Microelectronics Products Inc. (Advanced Microelectronics), Best Integrated Technology, Inc. (BIT), and TI-Acer, failed to provide timely responses to the Department's requests for information. Specifically, Advanced Microelectronics and BIT did not respond at all to the Department's questionnaire issued in April 1997, while TI-Acer provided a partial response five months after the due date.

TI-Acer informed the Department after the preliminary determination that it had not received the questionnaire. Moreover, TI-Acer asserted that it is not a producer of subject merchandise. As such, TI-Acer argued that it should not be assigned a margin based on facts available. However, because there is evidence on the record which

demonstrates that the questionnaire was delivered to TI-Acer's offices in Taiwan and that a TI-Acer company official actually signed for this document, and because TI-Acer filed its partial response five months after the original due date, we do not find TI-Acer's arguments persuasive. For further discussion, see *Comment 5* in the "Interested Party Comments" section of this notice, below.

Section 776(a)(2) of the Act provides that if an interested party 1) withholds information that has been requested by the Department, 2) fails to provide such information in a timely manner or in the form or manner requested, 3) significantly impedes a determination under the antidumping statute, or 4) provides such information but the information cannot be verified, the Department shall, subject to subsections 782(c)(1) and (e) of the Act, use facts otherwise available in reaching the applicable determination. Because Advanced Microelectronics, BIT, and TI-Acer failed to respond to the Department's questionnaire in a timely manner and because subsections (c)(1) and (e) do not apply with respect to these companies, we must use facts otherwise available to calculate their dumping margins.

Section 776(b) of the Act provides that adverse inferences may be used when a party has failed to cooperate by not acting to the best of its ability to comply with requests for information. *See also* Statement of Administrative Action accompanying the URAA, H.R. Rep. No. 316, 103d Cong., 2d Sess. 870 (SAA). The failure of Advanced Microelectronics, BIT, and TI-Acer to reply to the Department's questionnaire or to provide a satisfactory explanation of their conduct demonstrates that they have failed to act to the best of their ability in this investigation. Thus, the Department has determined that, in selecting among the facts otherwise available to these companies, an adverse inference is warranted.

In accordance with our standard practice, as adverse facts available, we are assigning to Advanced Microelectronics, BIT, and TI-Acer the higher of: 1) the highest margin stated in the notice of initiation; or 2) the highest margin calculated for any respondent in this investigation. In this case, this margin is 113.85 percent, which is the highest margin stated in the notice of initiation.

Section 776(c) of the Act provides that, when the Department relies on secondary information (such as the petition) in using the facts otherwise available, it must, to the extent practicable, corroborate that information from independent sources that are reasonably at its disposal. When analyzing the petition, the Department reviewed all of the data the petitioner relied upon in calculating the estimated dumping margins, and adjusted those calculations where necessary. *See* Initiation Checklist, dated March 17, 1997. These estimated dumping margins were based on a comparison of constructed value (CV) to U.S. price, the latter of which was based on price quotations offered by two companies in Taiwan. The estimated dumping margins, as recalculated by the Department, ranged from 93.54 to 113.85 percent. For purposes of corroboration, the Department re-examined the price information provided in the petition in light of information developed during the investigation and found that it has probative value. *See* the memorandum to Louis Apple from the Team dated September 23, 1997, for a detailed explanation of corroboration of the information in the petition.

Time Period for Cost and Price Comparisons

Section 777A(d) of the Act states that in an investigation, the Department will compare the weighted average of the normal values to the weighted average of the export prices or constructed export prices. Generally, the Department will compare sales and conduct the sales below cost test using annual averages. However, where prices have moved significantly over the course of the POI, it has been the Department's practice to use shorter time periods. *See, e.g., Final Determination of Sales at Less Than Fair Value: Erasable Programmable Read Only Memories (EPROMs) from Japan,* 51 FR 39680, 39682 (Oct. 30, 1986) (*EPROMs from Japan*), *Final Determination of Sales at Less Than Fair Value: Dynamic Random Access Memory Semiconductors of One Megabit and Above From the Republic of* Korea, 58 FR 15467, 15476 (Mar. 23, 1993) (*DRAMs from Korea*).

We invited comments from interested parties regarding this issue. An analysis of these comments revealed that the petitioner and three of the four respondents agreed that the SRAM market experienced a significant and consistent price and cost decline during the POI. Accordingly, in recognition of the significant and consistent price decline in the SRAM market during the POI, the Department has compared prices and conducted the sales below cost test using quarterly data[1]. *See Comment 10* in the "Interested Party Comments" of this notice for further discussion.

Fair Value Comparisons

To determine whether sales of SRAMs from Taiwan to the United States were made at less than fair value, we compared the EP or CEP, as appropriate, to the Normal Value (NV), as described in the "Export Price and Constructed Export Price" and "Normal Value" sections of this notice, below. In accordance with section 777A(d)(1)(A)(i) of the Act, we calculated weighted-average EPs and CEPs for comparison to weighted-average NVs.

In order to determine whether we should base price-averaging groups on customer types, we conducted an analysis of the prices submitted by the respondents. This analysis does not indicate that there was a consistent and uniform difference in prices between customer types. Accordingly, we have not based price comparisons on customer types.

On January 8, 1998, the Court of Appeals of the Federal Circuit issued a decision in *Cemex* v. *United States,* 1998 WL 3626 (Fed. Cir.). In that case, based on the pre-URAA version of the Act, the Court discussed the appropriateness of using CV as the basis for foreign market value when the Department finds home market sales to be outside the ordinary course of trade. This issue was not raised by any party in this proceeding. However the URAA amended the definition of sales outside the "ordinary course of trade" to include sales below cost. *See* section 771(15) of the Act. Because the Court's decision was issued so close to the deadline for completing this investigation, we have not had sufficient time to evaluate and apply the decision to the facts of this post-URAA case. For these reasons, we have determined to continue to apply our policy regarding the use of CV when we have disregarded below-cost sales from the calculation of normal value.

Consequently, in making our comparisons, in accordance with section 771(16) of the Act, we considered all products sold in the home market fitting the description specified in the "Scope of Investigation" section of this notice, above, to be foreign like products for purposes of determining appropriate product comparisons to U.S. sales. Regarding

[1] In accordance with section 773(b)(2)(D) of the Act, we conducted the recovery of cost test using annual cost data.

ISSI and UMC, where there were no sales of identical merchandise in the home market to compare to U.S. sales, we compared U.S. sales to the most similar foreign like product, based on the characteristics listed in Sections B and C of the Department's antidumping questionnaire. Regarding Winbond, we were unable to make price-to-price comparisons involving non-identical products because Winbond did not provide reliable difference in merchandise (difmer) information. Therefore, we based the margin for U.S. products with no corresponding identical home market match on facts available. As facts available, we used the highest non-aberrant margin calculated for any of Winbond's other U.S. sales. *See Comment 25* in the "Interested Party Comments" section of this notice for further discussion. Regarding Alliance, because we found no home market sales at prices above the COP, we made no price-to-price comparisons. *See* the "Normal Value" section of this notice, below, for further discussion.

Moreover, Alliance and ISSI did not report certain costs of production which were contemporaneous (*i.e.*, in the same or a prior quarter) with their U.S. sales, and ISSI did not report cost or difmer information for one product sold in the United States. Because there is insufficient information on the record to calculate a margin for these products, we based the margin for them on facts available. As facts available, we used the highest non-aberrant margin calculated for any of that respondent's other sales. For further discussion, see *Comment 7* in the "Interested Party Comments" section of this notice.

Level of Trade and Constructed Export Price Offset

In the preliminary determination, the Department determined that there was sufficient evidence on the record to justify a CEP offset for each of the four respondents. We found no evidence at verification to warrant a change from that preliminary determination. Accordingly, we have made a CEP offset for each of the respondents in this final determination. For further discussion, see *Comment 6* in the "Interested Party Comments" section of this notice and the memorandum to the file from the Team, dated February 13, 1998.

Export Price and Constructed Export Price

For UMC and Winbond, we used the EP methodology, in accordance with section 772(a) of the Act, when the subject merchandise was sold directly to the first unaffiliated purchaser in the United States prior to importation and the CEP methodology was not otherwise indicated.

In addition, for all companies, where sales to the first unaffiliated purchaser took place after importation into the United States, we used CEP methodology, in accordance with section 772(b) of the Act.

We made the following company-specific adjustments:

A. Alliance

We calculated CEP based on packed, FOB U.S. warehouse prices to unaffiliated purchasers in the United States. We adjusted gross unit price for billing adjustments and freight revenue. We made deductions, where appropriate, for discounts. We also made deductions for international freight (including air freight and U.S. Customs merchandise processing fees) and U.S. inland freight to the customer, where appropriate, pursuant to section 772(c)(2)(A) of the Act.

In accordance with section 772(d) of the Act, we made additional deductions for commissions, warranty and credit expenses, indirect selling expenses, inventory carrying costs, U.S. repacking expenses and U.S. further manufacturing costs.

Pursuant to section 772(d)(3) of the Act, gross unit price was further reduced by an amount for profit, to arrive at CEP.

With regard to modules which were further-manufactured in the United States, we have based CEP on the net price of the modules rather than the net price of the individual SRAMs included in the modules.

B. ISSI

We calculated CEP based on packed, FOB U.S. warehouse prices to unaffiliated purchasers in the United States. We made deductions from the gross unit price, where appropriate, for discounts. We also made deductions for foreign inland freight, pre-sale warehousing expenses, foreign and U.S. inland insurance, foreign brokerage and handling, and international freight (including air freight, U.S. customs merchandise processing fees, and U.S. inland freight to ISSI's U.S. office), where appropriate, pursuant to section 772(c)(2)(A) of the Act.

In accordance with section 772(d) of the Act, we made additional deductions for commissions, credit expenses, indirect selling expenses, inventory carrying costs, and U.S. repacking expenses. Regarding credit expenses, we found that ISSI had not received either full or partial payment for certain sales as of the date of verification. Consequently, we used the last day of ISSI's U.S. sales verification as the date of payment for any unpaid amount and recalculated credit expenses accordingly. For further discussion, see *Comment 11* in the "Interested Party Comments" section of this notice.

Pursuant to section 772(d)(3) of the Act, gross unit price was further reduced by an amount for profit, to arrive at CEP.

C. UMC

We calculated EP and CEP based on packed, FOB prices to unaffiliated purchasers in the United States. We adjusted the gross unit price for billing adjustments and freight charges. We made deductions from the gross unit price, where appropriate, for discounts. We also made deductions for foreign inland freight, foreign brokerage and handling, and international freight, where appropriate, pursuant to section 772(c)(2)(A) of the Act.

We made additional deductions from CEP, in accordance with section 772(d) of the Act, for commissions, warranty and credit expenses, indirect selling expenses, and inventory carrying costs. Regarding credit expenses, we found that UMC had not received payment for certain sales as of the date of verification. Consequently, we used the last day of UMC's U.S. sales verification as the date of payment for those sales and recalculated credit expenses accordingly.

Pursuant to section 772(d)(3) of the Act, gross unit price was further reduced by an amount for profit, to arrive at CEP.

D. Winbond

We calculated EP and CEP based on packed, FOB or delivered prices to unaffiliated purchasers in the United States. We made deductions from the gross unit price, where appropriate, for discounts. We also made deductions for foreign inland freight, pre-sale warehousing expenses, foreign inland insurance, foreign brokerage and handling, international freight (including air freight, U.S. inland freight from the port to Winbond's U.S. warehouse, and U.S. brokerage and handling fees), international insurance, U.S. Customs merchandise processing fees, and U.S. inland freight to customer, where appropriate, pursuant to section 772(c)(2)(A) of the Act.

We made additional deductions from CEP, in accordance with section 772(d) of the Act, for commissions, credit expenses, advertising expenses, warranty expenses, technical service expenses, indirect selling expenses,

inventory carrying costs, and U.S. repacking expenses.

Pursuant to section 772(d)(3) of the Act, gross unit price was further reduced by an amount for profit, to arrive at CEP.

Normal Value

In order to determine whether there was a sufficient volume of sales in the home market to serve as a viable basis for calculating NV (*i.e.*, the aggregate volume of home market sales of the foreign like product is greater than five percent of the aggregate volume of U.S. sales), we compared each respondent's volume of home market sales of the foreign like product to the volume of U.S. sales of the subject merchandise, in accordance with section 773(a)(1)(C)(i) of the Act. Because each respondent's aggregate volume of home market sales of the foreign like product was greater than five percent of its aggregate volume of U.S. sales for the subject merchandise, we determined that there was a sufficient volume of home market sales.

Because UMC and Winbond reported home market sales to affiliated parties, as defined by section 771(4)(B) of the Act, during the POI, we tested these sales to ensure that the affiliated party sales were made at "arm's-length" prices, in accordance with our practice. (*See Notice of Final Determination of Sales at Less Than Fair Value: Certain Cold-Rolled Carbon Steel Flat Products from Argentina*, 58 FR 37062, 37077 (Appendix II) (July 9, 1993).) To conduct this test, we compared the gross unit prices of sales to affiliated and unaffiliated customers net of all movement charges, discounts, rebates, and packing, where appropriate. Based on the results of that test, we disregarded sales from UMC and Winbond to their affiliated parties when they were not made at "arm's-length" prices.

Based on the cost allegation contained in the petition, the Department found reasonable grounds to believe or suspect that sales in the home market were made at prices below the cost of producing the merchandise, in accordance with section 773(b)(1) of the Act. As a result, the Department initiated an investigation to determine whether the respondents made home market sales during the POI at prices below their respective COPs, within the meaning of section 773(b) of the Act.

We calculated the COP based on the sum of each respondent's cost of materials and fabrication for the foreign like product, plus amounts for selling, general, and administrative expenses (SG&A) and packing costs, in accordance with section 773(b)(3) of the Act. General expenses include items such as research and development (R&D) expenses, and interest expenses.

Where possible, we used the respondents' reported weighted-average COPs for each quarter of the POI, adjusted as discussed below. In cases where there was no production within the same quarter as a given sale, we referred to the most recent prior quarter for which costs had been reported. In cases where there was no cost reported for either the same quarter as the sale, or a prior quarter, we based the margin for those sales of the products in question on facts available. *See Comment 7* in the "Interested Party Comments" of this notice for further discussion.

We compared the weighted-average quarterly COP figures to home market prices of the foreign like product, less any applicable movement charges and discounts, as required under section 773(b) of the Act, in order to determine whether these sales had been made at prices below their respective COPs.

In determining whether to disregard home market sales made at prices below the COP, we examined: (1) whether, within an extended period of time, such sales were made in substantial quantities; and (2) whether such sales were made at prices which permitted the recovery of all costs within a reasonable period of time in the ordinary course of trade.

Where 20 percent or more of a respondent's sales of a given foreign like product were made at prices below the COP, we found that the below-cost sales of that model were made in "substantial quantities" within an extended period of time, in accordance with section 773(b)(2)(B) and (C) of the Act. To determine whether prices were such as to provide for recovery of costs within a reasonable period of time, we tested whether the prices which were below the per-unit COP at the time of the sale were above the weighted-average per-unit COP for the POI, in accordance with section 773(b)(2)(D) of the Act. If such sales were found to be below the weighted-average per-unit COP for the POI, we disregarded them in determining NV.

In accordance with section 773(e) of the Act, we calculated CV based on the sum of each respondent's cost of materials, fabrication costs, SG&A, profit, and U.S. packing costs. In accordance with section 773(e)(2)(A) of the Act, we based SG&A and profit on the amounts incurred and realized by each respondent in connection with the production and sale of the foreign like product in the ordinary course of trade, for consumption in the foreign country. Where respondents made no home market sales in the ordinary course of trade (*i.e.*, all sales were found to be below cost), we based SG&A and profit on one of the alternatives under section 773(e)(2)(B) of the Act. Specifically, we based SG&A and profit on the weighted-average of the SG&A and profit computed for those respondents with home market sales of the foreign like product made in the ordinary course of trade. For further discussion, *see Comment 11* in the "Interested Party Comments" section of this notice.

Company-specific calculations are discussed below.

A. Alliance

We relied on the reported per-unit COPs and CVs except as follows.

1. For COP, we revised the reported R&D expenses to allocate total annual semiconductor R&D expenses over total annual semiconductor cost of sales (*see Comment 9*).

2. For CV, we based SG&A and profit on the weighted-average SG&A and profit experience of the three other respondents (*see Comment 11*).

Because all of Alliance's home market sales were made at prices below the COP, we based NV on CV. In addition to the adjustments to CV reported above, in accordance with section 773(a)(7)(B) of the Act, we granted a CEP offset adjustment and reduced CV by the amount of weight-averaged home market indirect selling expenses and commissions incurred by those respondents with sales above the COP up to the amount of indirect expenses which were deducted from the starting price under section 772(d)(1)(D) of the Act.

B. ISSI

We relied on the reported per-unit COPs and CVs except as follows.

1. We revised the reported R&D expenses to allocate total annual semiconductor R&D expenses over total annual semiconductor cost of sales (*see Comment 9*). Additionally, we offset R&D expenses with R&D revenue (*see Comment 16*).

2. We revised the reported general and administrative (G&A) expense ratio to include physical inventory loss and loss from disposal of property, plant and equipment (*see Comment 14*) and to eliminate the double counting of marine insurance (*see Comment 15*).

3. We revised the cost of sales denominator used for the G&A and R&D expense ratios by using the cost of sales from the audited income statement.

For those comparison products for which there were sales made at prices

above the COP, we based NV on delivered prices to home market customers. We made deductions for discounts, foreign inland freight, and insurance, where appropriate, pursuant to section 773(a)(6)(B) of the Act. We also made circumstance-of-sale adjustments for credit expenses and bank charges, pursuant to section 773(a)(6)(C)(iii) of the Act.

We deducted home market indirect selling expenses, including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with section 773(a)(7)(B) of the Act. In addition, we deducted home market packing costs and added U.S. packing costs, in accordance with section 773(a)(6) of the Act. Where appropriate, we made adjustments to NV to account for differences in physical characteristics of the merchandise, in accordance with section 773(a)(6)(C)(ii) of the Act and 19 CFR section 353.57. Where applicable, in accordance with 19 CFR section 353.56(b)(1), we offset any commission paid on a U.S. sale by reducing the NV by any home market commissions and indirect selling expenses remaining after the deduction for the CEP offset, up to the amount of the U.S. commission.

Where NV was based on CV, we deducted from CV the weighted-average home market direct selling expenses. In accordance with section 773(a)(7)(B) of the Act, we granted a CEP offset adjustment and reduced NV by the amount of commissions and indirect selling expenses incurred by ISSI in Taiwan on sales of SRAMs in Taiwan, up to the amount of commissions and indirect selling expenses incurred on U.S. sales which were deducted from the starting price.

C. UMC

We relied on the reported per-unit COPs and CVs except as follows.

1. We increased the cost of manufacturing (COM) to include the market value of bonuses paid to directors, supervisors, and employees (*see Comment 8*).

2. We revised the reported costs for wafers supplied by an affiliated party to reflect the COP of the affiliate and the startup adjustment claimed by UMC (*see Comment 20*).

3. We revised the reported R&D expenses to allocate total annual semiconductor R&D expenses over total annual semiconductor cost of sales (*see Comment 9*).

4. We removed from G&A foreign exchange gains and losses generated by accounts receivable and another source.

5. We added bonuses to the cost of sales used in the denominator in the G&A, R&D and interest expense ratios.

For those comparison products where there were sales made at prices above the COP, we based NV on delivered and FOB prices to home market customers. For home market price-to-EP comparisons, we adjusted the gross unit price for billing adjustments, where appropriate. We made deductions, where appropriate, for discounts, export duties, and foreign inland freight, in accordance with section 773(a)(6)(B) of the Act. Pursuant to section 773(a)(6)(C)(iii) of the Act and 19 CFR section 353.56(a)(2), we made circumstance-of-sale adjustments, where appropriate, for differences in warranty and credit expenses. We did not allow an adjustment for home market commissions because we determined that they were not made at "arm's length." See the memorandum to Louis Apple from the Team dated September 23, 1997, for a detailed explanation.

For home market price-to-CEP comparisons, we adjusted the gross unit price for billing adjustments, where appropriate. We made deductions, where appropriate, for discounts, export duties, and foreign inland freight, pursuant to section 773(a)(6)(B) of the Act. We also made deductions for warranty and credit expenses. We deducted home market indirect selling expenses, including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with section 773(a)(7)(B) of the Act. Where applicable, in accordance with 19 CFR section 353.56(b), we offset any commission paid on a U.S. sale by reducing the NV by any home market indirect selling expenses remaining after the deduction for the CEP offset, up to the amount of the U.S. commission.

For all price-to-price comparisons, we deducted home market packing costs and added U.S. packing costs, in accordance with section 773(a)(6) of the Act. In addition, where appropriate, we made adjustments to NV to account for differences in physical characteristics of the merchandise, in accordance with 773(a)(6)(C)(ii) of the Act and 19 CFR section 353.57.

Where CV was compared to EP, we made circumstance-of-sale adjustments, where appropriate, for credit and warranty expenses and U.S. commissions in accordance with sections 773(a)(6)(C)(iii) and (a)(8) of the Act. In accordance with 19 CFR section 353.56(b)(i), we reduced NV by the amount of indirect selling expenses incurred by UMC in Taiwan on sales of SRAMs in Taiwan, up to the amount of U.S. commissions.

Where CV was compared to CEP, we made circumstance-of-sale adjustments, where appropriate, for credit and warranty expenses. We also deducted indirect selling expenses, up to the amount of commissions and indirect selling expenses incurred on U.S. sales, in accordance with 773(a)(7)(B) of the Act.

D. Winbond

We relied on the reported per-unit COPs and CVs except as follows.

1. We increased the COM to include the market value of bonuses paid to directors, supervisors, and employees (*see Comment 8*).

2. We revised the reported R&D expenses to allocate total annual semiconductor R&D expenses over total annual semiconductor cost of sales (*see Comment 9*).

3. We adjusted G&A expenses to include the unrecovered fire loss (*see Comment 27*), bank charges, and other miscellaneous expenses. Additionally, we excluded foreign exchange gains and losses on sales transactions.

4. We added bonuses to the cost of sales used in the denominators in the G&A, R&D and interest expense ratios (*see Comment 28*).

5. We increased Winbond's second quarter COM to include an unreconciled difference between its accounting records and its reported costs (*see Comment 24*).

6. We revised the COM for two products to reflect the standard cost and variance at the time of production.

Furthermore, we found at verification that, for all products, Winbond had misclassified certain variable overhead costs as fixed overhead. Because we do not have sufficient data on the record to appropriately reclassify these costs, we are unable to make difmer adjustments based on Winbond's reported variable costs. Therefore, we based the margin for all sales requiring a difmer adjustment on facts available. For further discussion, *see Comment 25* in the "Interested Party Comments" section of this notice.

Regarding EP sales, because there were no identical comparison products sold in the home market at prices above the COP, we made no EP to home market price or EP to CV comparisons. Regarding CEP, for those identical comparison products for which there were sales made at prices above the COP, we based NV on delivered prices to home market customers. We made deductions from gross unit price for discounts, import duties and development fees paid on sales to

customers outside of duty free zones. We deducted home market movement charges including pre-sale warehouse expenses, foreign inland freight, brokerage and handling charges, and inland insurance, where appropriate, in accordance with section 773(a)(6)(B) of the Act. We also made circumstance-of-sale adjustments for credit expenses (offset by the interest revenue actually received by the respondent), direct advertising expenses, warranty expenses, and post-sale payments to a third-party customer, pursuant to section 773(a)(6)(C)(iii) of the Act. We made no separate adjustment for technical service expenses, as they were included as part of R&D expenses. *See Comment 30.*

We deducted home market indirect selling expenses, including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with section 773(a)(7)(B) of the Act. Where applicable, in accordance with 19 CFR section 353.56(b), we offset any commission paid on a U.S. sale by reducing the NV by any home market indirect selling expenses remaining after the deduction for the CEP offset, up to the amount of the U.S. commission. In addition, we deducted home market packing costs and added U.S. packing costs, in accordance with section 773(a)(6) of the Act.

Where CV was compared to CEP, we deducted from CV the weighted-average home market direct selling expenses. In accordance with section 773(a)(7)(B) of the Act, we granted a CEP offset adjustment and reduced normal value by the amount of indirect selling expenses, including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales which were deducted from the starting price.

Currency Conversion

We made currency conversions into U.S. dollars based on the official exchange rates in effect on the dates of the U.S. sales as certified by the Federal Reserve Bank. Section 773A(a) of the Act directs the Department to use a daily exchange rate in order to convert foreign currencies into U.S. dollars unless the daily rate involves a fluctuation. It is the Department's practice to find that a fluctuation exists when the daily exchange rate differs from the benchmark rate by 2.25 percent. The benchmark is defined as the moving average of rates for the past 40 business days. When we determine that a fluctuation exists, we substitute the benchmark rate for the daily rate, in accordance with established practice. Further, section 773A(b) directs the Department to allow a 60-day adjustment period when a currency has undergone a sustained movement. A sustained movement has occurred when the weekly average of actual daily rates exceeds the weekly average of benchmark rates by more than five percent for eight consecutive weeks. *See Change in Policy Regarding Currency Conversions,* 61 FR 9434 (March 8, 1996). Such an adjustment period is required only when a foreign currency is appreciating against the U.S. dollar. The use of an adjustment period was not warranted in this case because the New Taiwan Dollar did not undergo a sustained movement.

Verification

As provided in section 782(i) of the Act, we verified the information submitted by the respondents for use in our final determination. We used standard verification procedures, including examination of relevant accounting and production records and original source documents provided by the respondents.

Interested Party Comments

General Issues

Comment 1: U.S. Companies as Producers

Alliance, ISSI, and Galvantech argue that, as U.S. producers of subject merchandise, they should be excluded from this investigation. Specifically, these companies contend that: 1) the Department has found that the design is the essential component of the SRAMs under investigation; and 2) because their designs are developed in the United States, the SRAMs incorporating these designs are necessarily of U.S. origin.

Furthermore, Alliance, ISSI, and Galvantech maintain that the decision on origin of the subject merchandise set forth in the current scope definition (*i.e.*, where the wafer is produced) clearly conflicts with the Department's preliminary decision on who constitutes the producer in this case (*i.e.*, who controls the design). These companies state that continuing to define what constitutes subject merchandise by the origin of the wafer would lead to the treatment of U.S. companies as foreign producers, even when their home market is indisputably the United States and they have no foreign facilities. According to these companies, this result is contrary to the plain language of the dumping law, which was intended to reach foreign, not U.S., producers.

Alliance argues that the Department should harmonize its respondent and scope determinations by narrowly amending the scope of the case to exclude SRAMs from Taiwan that are imported by a U.S. design company that: 1) designed the chips in the United States; 2) controlled their production from the United States; and 3) either will use them itself or will market them from the United States. Alliance contends that this exclusion would not create a loophole that would diminish the effectiveness of any order in this case, because firms meeting the above requirements would add significant value in the United States.

According to the petitioner, Alliance, ISSI, and Galvantech have confused the Department's practice on two separate issues: 1) determining country of origin for dumping purposes; and 2) selecting the proper producer and exporter. The petitioner notes that, in past semiconductor cases, the Department has consistently based country of origin for dumping purposes on the place of wafer fabrication. Moreover, the petitioner states that the Department has not hesitated to include U.S. companies as respondents provided, as here, the elements of the Department's test for tolling are satisfied. As support for this contention, the petitioner cites several cases including *Notice of Final Determination of Sales at Less Than Fair Value: Polyvinyl Alcohol from Taiwan,* 61 FR 14064 (Mar. 29, 1996) (*PVA from Taiwan*) and *Notice of Final Determination of Sales at Less Than Fair Value: Ferrovanadium and Nitrided Vanadium from the Russian Federation,* 60 FR 27957 (May 26, 1995) (*Ferrovanadium from Russia*).

According to the petitioner, the Department dealt with an identical issue in the 1993–1994 administrative reviews of the antidumping duty orders on carbon steel flat products. Specifically, the petitioner cites a December 1994 memorandum issued in those cases, where the Department stated that "the choice of respondent would be based on the party which controls the sale of the subject merchandise, including U.S. parties which subcontract part of the production process in a foreign country . . ." *See* "Discussion Memorandum: A Proposed Alternative to Current Tolling Methodology in the Current Antidumping (AD) Reviews of Carbon Steel Flat Products" from Joseph A. Spetrini, Deputy Assistant Secretary for Compliance to Susan G. Esserman, Assistant Secretary for Import Administration, dated December 12,

1994. The petitioner further notes that the analysis in those cases was consistent with the current regulation on tolling, which states that the Department will not consider a subcontractor to be the manufacturer or producer, regardless of the proportion of production attributable to the subcontracted operation or the location of the subcontractor or owner of the goods. *See* 19 CFR section 351.401(h).

DOC Position

We agree with the petitioner. The Department's current policy on subcontracted operations is to consider as the manufacturer the entity which controls the production and sale of the subject merchandise. *See, e.g., Notice of Final Determination of Sales at Less Than Fair Value. Certain Forged Stainless Steel Flanges from India,* 58 FR 68853, 68855 (Dec. 29, 1993) (*Flanges from India*). Although the new regulations are not in effect for purposes of this case, they codify this practice. According to 19 CFR 351.401(h), the Department—

> * * * will not consider a toller or subcontractor to be a manufacturer or producer where the toller or subcontractor does not acquire ownership, and does not control the relevant sale, of the subject merchandise or foreign like product.

Nowhere in either our practice or in this regulation is there a prohibition against selecting U.S. companies as producers, nor is this the first case where we have treated U.S. companies as such.[2] Indeed, we note that Alliance agreed with our respondent selection analysis at the public hearing in this case, when it stated that U.S. companies can be respondents in dumping cases if their products are within the scope. *See* page 92 of the transcript of the public hearing, dated January 22, 1998. Because the U.S. design houses control the production of the subject merchandise, as well as its ultimate sale, we find that they are the appropriate respondents here. *See* the memorandum to Louis Apple from the Team, dated September 23, 1997, regarding Treatment of Foundry Sales and the Elimination of TSMC as a Respondent for a more detailed analysis concerning this issue.

Regarding the respondents' arguments on the country of origin of their products, we disagree that the design alone confers origin. At the design stage, the SRAMs in question are merely ideas, not physical products (*i.e.*, merchandise). These designs do not become actual merchandise until they are translated onto wafers. As such, while the design may be the essential component in the finished product, the design itself is *not* merchandise.

Consistent with our past practice, we find that the place of wafer fabrication is determinative as to country of origin. *See, e.g., DRAMs from Korea.* Because the wafers in question are fabricated in Taiwan, we find that they constitute subject merchandise within the meaning of the Act. Consequently, we are continuing to treat them as such for purposes of the final determination.

Comment 2: Scope of the Investigation

The petitioner argues that the Department should clarify that the scope of the order on SRAMs from Taiwan includes the SRAM content of motherboards for personal computers. The petitioner contends that if SRAMs incorporated on motherboards are not included in the scope of the order, the respondents will shift a significant volume of SRAMs into the production of motherboards in Taiwan that are destined for the United States, thereby avoiding paying duties on the SRAMs.

In addition, argues the petitioner, while motherboards viewed as a whole may be considered to fall within a class or kind of merchandise separate from SRAMs, the placement of SRAMs on a motherboard does not diminish their separate identity or function, and should not insulate them from antidumping duties. The petitioner contends that its position is supported by: 1) the Department's practice regarding combined or aggregated products; 2) analogous principles of Customs Service classification; and 3) the Department's inherent authority to craft an antidumping order that forestalls potential circumvention of an order.

The petitioner also argues that the Customs Service can administer, without undue difficulty, an antidumping duty order that covers SRAMs carried on non-subject merchandise.

At the public hearing held by the Department, the petitioner asserted that there are fundamental differences between the scope language in *DRAMs from Korea* and the scope language in this investigation that distinguish the two cases. The petitioner first argues that the scope language in DRAMs from Korea "said that the modules had to be limited to where the function of the board was memory. That limitation does not exist in this case." *See* the transcript of the public hearing, dated January 22, 1998, at page 162. The petitioner further argues that "[i]n the DRAM case, it says that 'modules which contain additional items which alter the function of the module to something other than memory are not covered modules.' That's a fundamental difference between these two scopes that was very carefully written and very carefully put into the scope of these two cases." *See* the hearing transcript at page 163.

IDT and Cypress agree with the petitioner, arguing that SRAMs on a motherboard are no less SRAMs than those imported separately and that the Department's failure to cover such imports would provide an incentive to foreign SRAM producers to shift their sales to motherboard producers in Taiwan and elsewhere.

Alliance, ISSI, UMC, Winbond, Motorola, Compaq, and Digital oppose the petitioner's position. Alliance, Compaq, and Digital argue that the petitioner's circumvention concerns are unfounded. They note that the Department determined in *DRAMs from Korea* that DRAMs physically integrated with the other components of a motherboard in a manner that made them part of an inseparable amalgam posed no circumvention risk and that the same holds true in this case.

In addition, Alliance, Compaq, Digital, UMC, and Winbond argue that, contrary to the petitioner's assertion, SRAMs affixed to a motherboard do not retain their separate functional identities. Rather, explains Alliance, SRAMs are integrated onto motherboards by soldering, are interconnected with other motherboard elements by intricate electronic circuitry, and become part of a complex electronic processing unit representing an inseparable amalgam constituting a different class or kind of merchandise that is outside the scope of the investigation.

Finally, UMC, Compaq and Digital argue that the petitioner's proposal is unworkable from an administrative standpoint, since it would require motherboard manufacturers to track all SRAMs placed in every motherboard throughout the world. Compaq and Digital note that they cannot determine the value of Taiwan SRAMs incorporated in a particular motherboard. In addition, ISSI, Compaq, and Digital argue that the petitioner's proposal would be unadministrable by the Customs Service because the SRAM content of a motherboard cannot be determined by physical inspection and also because the petitioner has provided no realistic proposition as to how the Customs Service might carry out the petitioner's proposal on an entry-by-entry basis, given the enormous volume of trade in motherboards.

With regard to the petitioner's assertion that the scope of the language

[2] *See, e.g., PVA from Taiwan.*

in *DRAMs from Korea* is fundamentally different from the scope language in this investigation, Compaq and Digital argue that the language is quite similar and that there is no "doubt that literally the language in this Notice of Investigation and in the preliminary referred to certain modules, and those are memory modules, not any kind of board on which other elements are stuffed." *See* the hearing transcript at page 172.

DOC Position

We disagree with the petitioner. The petitioner's argument that the scope of the investigation as defined in the preliminary determination should be interpreted to encompass the SRAM content of motherboards is unpersuasive for three basic reasons. First, the SRAM content of motherboards (when affixed to the motherboard) was not expressly or implicitly referenced in the scope language used in this investigation. Second, just as we found in the investigation of *DRAMs from Korea,* the petitioner's claims about potential circumvention of the order with SRAMs soldered onto motherboards are inseparable. Third, it is not appropriate for an antidumping duty order to cover the input content of a downstream product. As the Department found in *DRAMs from Korea,* a case in which a nearly identical proposal was rejected by the Department, when a DRAM is physically integrated with a motherboard, it becomes a component part of the motherboard (an inseparable amalgam). As there has been no request to include motherboards within the scope of this investigation, the SRAM content of motherboards (when physically integrated with the motherboard) cannot be covered.

As to the first point, we disagree with the petitioner's assertion that the differences between the scope language in *DRAMs From Korea* and the language in this case are so fundamental that the differences can be interpreted to mean that SRAMs soldered onto motherboards are included within the scope of this investigation. The SRAM scope language relied upon by the petitioner includes within the scope of this investigation "other collection[s] of SRAMs;" as the petitioner notes in its argument, this refers specifically to modules whether mounted or unmounted on a circuit board. There is similar scope language in *DRAMs From Korea.* In that case, we interpreted the language as not extending to modules which contain additional items which alter the function of the module to something other than memory. Such an interpretation, applied to this case, indicates clearly that the SRAM content of motherboards is not within the scope of this investigation.

We found in *DRAMs From Korea* that memory boards whose sole function was memory were included within the definition of memory modules; however, we further concluded that other boards, such as video graphic adapter boards and cards were not included because they contained additional items which altered the function of the modules to something other than memory. Consequently, at the time of the final determination, we added language to the *DRAMs From Korea* scope in order that these other, enhanced, boards be specifically excluded. Since the issue of such enhanced boards was not raised in this case, we did not find it necessary to include an express exclusion for such products. Thus, the absence of such language should not be interpreted to permit the inclusion of products which do not fall under the rubric of "other collections of SRAMs."

As to the second point, the petitioner argued in *DRAMs from Korea* that unremovable DRAMs on motherboards should be included in the scope of the order to counter the potential for circumvention of the order. We stated in our determination that we considered it "infeasible that a party would import motherboards with the intention of removing the integrated DRAM content and, therefore, consider it unreasonable to expect that any order arising from this investigation could be evaded in such a fashion." *See* the memorandum to Joseph Spetrini from Richard Moreland, dated March 15, 1993, at page 13, attached as Exhibit 1 to Winbond's submission of January 7, 1998. We find it equally infeasible that an importer would import SRAMs soldered onto a motherboard for the sole purpose of removing those SRAMs for individual resale thereby circumventing the antidumping duty order.

As to the third point, our statute does not provide a basis for assessing duties on the input content of a downstream product. *See* Senate Rep. 100–71, 100th Congress, 1st Sess. 98 (1987) (in which the report notes both the general rule and the "major input" exception, which applies only in an investigation or review of a downstream product). Thus, where an SRAM loses its separate identity by being incorporated into a downstream product, and where the investigation covers SRAMs but does not cover the downstream product, there can be no basis for assessing duties against the SRAMs incorporated in the downstream product.

For a more detailed discussion regarding this issue, see the memorandum to Louis Apple from the Team, dated February 13, 1998.

Comment 3: Selection of Dumping Margin for Galvantech

Galvantech argues that, if the Department does not exclude its products from the scope of the investigation, the Department should assign Galvantech the margin calculated for ISSI for purposes of the final determination. According to Galvantech, 19 U.S.C. § 1677(e) requires the Department to determine an importer's margin based on the most reliable information available. Galvantech asserts that, in this case, ISSI's margin is the most reliable information applicable to Galvantech because both companies fabricate wafers using the same foundry under similar foundry agreements. Galvantech asserts that the all others rate is less reliable because it does not contain any information related to either Galvantech or its foundry.

The petitioner asserts that Galvantech is not entitled to ISSI's margin as facts available. According to the petitioner, Galvantech provides no compelling reason for the Department to abandon its standard practice in this investigation and assign one individual respondent's rate to a non-participating producer. The petitioner notes that, because Galvantech neither submitted a questionnaire response nor participated in verification, the Department has no basis to determine that Galvantech is more similarly situated to ISSI than to Alliance, another design house without a fabrication facility (*i.e.,* "fabless") that received a preliminary dumping margin which exceeded the all others rate.

DOC Position

We agree with the petitioner that Galvantech should not be assigned ISSI's margin. The Department's practice in this area is to assign the all others rate to any company not specifically investigated in a proceeding. *See, e.g., Notice of Final Determination of Sales at Less Than Fair Value: Certain Steel Concrete Reinforcing Bars from Turkey,* 62 FR 9737, 9742 (Mar. 4, 1997) (*Rebar from Turkey*). Consistent with this practice, we have assigned Galvantech the all others rate because it was not a respondent in this investigation.

We note that the all others rate is not intended to set the rate at which antidumping duties are ultimately assessed on entries of subject merchandise. Rather, the all others rate merely establishes the level of antidumping duty deposits required on future entries. Prior to the time that

actual duty assessments are made, each exporter, importer or producer of subject merchandise has the right to request that the Department conduct an administrative review of its actual entries and determine its dumping liability on a company-specific basis. In the event that an antidumping duty order is issued in this case, Galvantech will have an opportunity to request such an administrative review.

Comment 4: Exclusion of TSMC as a Respondent

TSMC argues that the decision to exclude it as a respondent in this investigation is not supported by evidence on the record, and is contrary to applicable laws, regulations, precedent, and requirements for procedural fairness.

Specifically, TSMC cites 19 CFR section 351.401(h),[3] stating that TSMC qualifies as both a manufacturer and an interested party because evidence on the record establishes that TSMC acquires ownership of the subject merchandise and that design houses do not control TSMC's sales of subject merchandise.[4]

In addition, TSMC contends that the Department based its decision on erroneous information, including the following: (1) design houses perform all of the R&D for SRAMs; (2) design houses tell the foundries what and how much to produce; (3) TSMC has no right to sell wafers to any party other than the design house unless it fails to pay for the wafers; (4) design houses own and provide masks for the production process; and (5) masks are considered to be inputs into the production of SRAMs. TSMC argues that it is a proper respondent because it performs all process R&D, freely negotiates production quantities and types, freely contracts to supply merchandise exclusively to particular design houses, and makes and maintains possession of virtually all masks used in its fabrication facilities (also known as "fabs"). Moreover, TSMC characterizes masks as equipment used in the wafer fabrication process, rather than raw material inputs.

TSMC also states that, based on the facts on the record and the Department's practice of granting manufacturer status to, and calculating individual margins for, producers that manufacture and sell custom-made products, it should be considered the producer of the subject merchandise. TSMC cites the following cases in support of its position: *Flanges from India, Notice of Final Determination of Sales at Less Than Fair Value: Engineered Process Gas Turbo-Compressor Systems, Whether Assembled or Unassembled, and Whether Complete or Incomplete, from Japan,* 62 FR 24394 (May 5, 1997), *Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from France, Germany, Italy, Japan, Singapore, and the United Kingdom: Final Results of Antidumping Duty Administrative Reviews,* 54 FR 18992, 19012 (May 3, 1989) (*AFBs*), *Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof from France, Germany, Italy, Japan, Singapore, and the United Kingdom: Final Results of Antidumping Duty Administrative Reviews,* 62 FR 2081 (Jan. 15, 1997), *Certain Corrosion-Resistant Carbon Steel Flat Products and Certain Cut-to-Length Carbon Steel Plate from Canada: Preliminary Results of Antidumping Duty Administrative Reviews,* 61 FR 51891 (Oct. 4, 1996), *Notice of Final Determination of Sales at Less Than Fair Value: Large Newspaper Printing Presses and Components Thereof, Whether Assembled or Unassembled, from Japan,* 61 FR 38139 (July 23, 1996), *Mechanical Transfer Presses from Japan; Final Results of Antidumping Administrative Review,* 62 FR 11820 (Mar. 13, 1997), and *Large Power Transformers from Japan; Final Results of Antidumping Duty Administrative Review,* 56 FR 29215 (June 26, 1991). In addition, TSMC cites *Sweaters Wholly or in Chief Weight of Man-Made Fiber from Taiwan; Final Results of Changed Circumstances Antidumping Duty Administrative Review,* 58 FR 32644 (June 11, 1993), claiming that, as in that case, the Department should grant TSMC manufacturer status because it bought raw materials used to produce subject merchandise, controlled the process of manufacture, and performed processing on the subject merchandise.

TSMC claims that, by making the decision to exclude it at the preliminary determination and, therefore, to not verify it, the Department denied any meaningful opportunity for TSMC to present its case. Finally, TSMC argues that, if the Department upholds its decision that the design house is the producer of the subject merchandise, the Department should also find that TSMC's products (*i.e.*, SRAM wafers) are of U.S. origin. Accordingly, TSMC argues that the Department should exclude its wafers from the scope of the investigation.

The petitioner states that the Department properly excluded TSMC as a respondent for the following reasons: (1) the Department properly determined that TSMC is not a proper producer or exporter based on applicable law and regulations regarding "tolling"; (2) the Department's decision is fully grounded in the record with respect to each element of an affirmative finding of tolling between TSMC and its design houses; (3) the cases cited by TSMC are distinguishable from the instant case, as described in the memorandum to Louis Apple from the Team, dated September 23, 1997; and (4) TSMC was afforded due process not only because the memorandum to Louis Apple from the Team, dated May 15, 1997, regarding respondent selection, implied that TSMC would not be considered a proper respondent if all of its sales were made through foundry agreements, but also because all interested parties were given an opportunity to comment on this issue after the preliminary determination.

DOC Position

We agree with the petitioner. The preliminary determination to exclude TSMC as a respondent in this investigation was made after taking into account the evidence on the record, and was in accordance with applicable law, regulations, and precedent. Regarding TSMC's claim that the Department based its decision on erroneous information, we continue to reach the central conclusions set forth in our decision memorandum on this issue. See the memorandum to Louis Apple from the Team, dated September 23, 1997, regarding Treatment of Foundry Sales and the Elimination of TSMC as a Respondent. As we stated in this memorandum,

> Regarding control over production in this case, after reviewing and analyzing the information submitted by respondents, including the contracts between the design houses and the foundries, we believe that the entity controlling the wafer design in effect controls production in the SRAMs industry. The design house performs all of the research and development for the SRAM that is to be produced. It produces, or arranges and pays for the production of, the design mask. At all stages of production, it retains ownership of the design and design mask. The design house then subcontracts the production of processed wafers with a foundry and provides the foundry with the design mask. It tells the foundry what and how much to make. The foundry agrees to dedicate a certain amount of its production capacity to the production of the processed wafers for the design house. The foundry has no right to sell those wafers to any party other than the design house unless the design house fails to pay for the wafers. Once the design house takes possession of the processed

[3] TSMC cites to the new regulations as a codification of current Department practice.

[4] TSMC considers the relevant sale to be its sale of SRAM wafers to its design house customers in the United States and Taiwan. However, the Department preliminarily determined that the relevant sale in a foundry agreement is the ultimate sale of SRAMs made by the design house.

wafers, it arranges for the subsequent steps in the production process. The design of the processed wafer is not only an important part of the finished product, it is a substantial element of production and imparts the essential features of the product. The design defines the ultimate characteristics and performance of the subject merchandise and delineates the purposes for which it can be used. The foundries manufactured processed SRAMs wafers using the proprietary designs of the design houses during the POI. As such, they did not control the production of the wafers in question, but merely translated the design of other companies into actual products.

We agree with TSMC that there are certain factual errors in the memorandum of September 23, 1997, but disagree as to the significance of these errors. With regard to the first alleged "error" identified by TSMC, we agree that the process R&D is performed by the foundry, but note that the design houses are responsible for all product-related R&D as well as the proprietary designs. These steps impart the essential features of the product and define its ultimate characteristics and performance. With regard to the second alleged "error," we agree that the production quantities and types are negotiated between the foundry and the design houses; this fact neither supports nor undermines a finding that the design houses are the producers of the subject merchandise. With regard to the third alleged "error," we note that TSMC does not dispute the finding that the foundry has no right to sell wafers to any party other than the design house unless the design house fails to pay for the wafers. With regard to the fourth alleged "error," while it may be true that the masks are produced and retained for a limited time by the foundry, the party that provides the design imparts the essential features of both the mask and the product; indeed, the design house controls the use of the mask just as much as it controls the use of the finished product (in that TSMC is obligated at some point to destroy the mask to prevent unauthorized reuse). With regard to the fifth alleged "error," we do not find the characterization of the masks as either "inputs" or "equipment" to be a relevant distinction in this case.

With regard to TSMC's argument that this case is analogous to cases in which the Department has found the manufacturer of a "custom-made" product to be the producer, we note that the decision memorandum concluded with the finding that "[t]he design of the processed wafer is not only an important part of the finished product, it is a substantial element of production and imparts the essential features of the product. The design defines the ultimate characteristics and performance of the subject merchandise and delineates the purposes for which it can be used." This case is not analogous to cases in which the purchaser merely provides product specifications to the manufacturer. Moreover, we find unpersuasive TSMC's reference to *AFBs.* The issue discussed by the Department in the cited portion of the notice was whether certain custom-designed bearings were within the scope of the investigation. The Department did not discuss the question of whether the bearing designer, as opposed to the bearing manufacturer, should be considered to be the respondent.

Finally, with regard to TSMC's argument that its wafers should not be covered by the scope of the investigation, we find that these wafers constitute subject merchandise. As subject merchandise, we find that they are properly included in the scope. For further discussion, see *Comment 1,* above.

Comment 5: Facts Available for TI–Acer

For the preliminary determination, the Department assigned TI–Acer a margin based on adverse facts available because it did not respond to the antidumping questionnaire. TI–Acer argues that the Department should not assign it a dumping margin based on adverse facts available because TI–Acer has no record of receiving the questionnaire. Rather, TI–Acer asserts that the Department should apply the all others rate, consistent with both previous legal decisions and the Department's treatment of other companies in this investigation. (*See Queen's Flowers de Colombia v. United States,* Slip Op. 97–120 (CIT Aug. 25, 1997) (*Queen's Flowers*), where the Court of International Trade found that the use of facts available was unwarranted when a respondent did not receive the questionnaire, and the Department's preliminary determination in this investigation, where the Department applied the all others rate to a company that could not be located.) TI–Acer claims that it should be subject to the all others rate because it is not a producer of subject merchandise and section 735(c)(1)(B)(i)(II) of the Act states that the all others rate is applied to all exporters and producers not individually investigated.

DOC Position

We disagree with TI–Acer's assertion that the Department should assign it the all others rate. In *Queen's Flowers,* the Department found that the application of facts available was unwarranted because the questionnaire was delivered to the wrong address. However, in this case the questionnaire was sent to TI–Acer's correct address and, according to records obtained from the courier, was accepted by TI–Acer. *See* the Department's letters addressed to TI–Acer dated October 22 and December 9, 1997.

Regarding TI–Acer's assertion that it should be assigned the all others rate under section 735(c)(1)(B)(i)(II) of the Act because it was not individually investigated, we note that our investigation of TI–Acer began with the issuance of the questionnaire. Because TI–Acer did not file a timely questionnaire response, we were unable to determine that it was not a significant producer or exporter of subject merchandise and, consequently, to determine that it did not warrant individual investigation. For this reason, we found that TI–Acer failed to act to the best of its ability and applied adverse facts available to it for the preliminary determination. Since the time of the preliminary determination we have not received any information which would cause us to change this decision. Accordingly, we have assigned a dumping margin to this company based on adverse facts available for purposes of the final determination. This margin, 113.85 percent, is the highest margin stated in the notice of initiation.

Comment 6: CEP Offset

The petitioner contends that the Department should make no CEP offset adjustment for any respondent for purposes of the final determination. The petitioner asserts that the Department's practice of determining the number and comparability of levels of trade after making all adjustments to CEP, but before adjusting NV, makes CEP offsets virtually automatic. According to the petitioner, under both the plain terms of the statute and the intent of Congress, such adjustments should be the exception, not the rule. The petitioner notes that it raised the same argument in another case and that the issue is being litigated. *See Dynamic Random Access Memory Semiconductors of One Megabit or Above From the Republic of Korea; Final Results of Antidumping Duty Administrative Review,* 62 FR 965 (Jan. 7, 1997) (*1994–1995 DRAMs Review*).

In addition to this general argument, the petitioner asserts that the Department specifically erred in granting a CEP offset adjustment to UMC because UMC neither requested an adjustment nor demonstrated that it was entitled to one. According to the

petitioner, the Department's practice is to require respondents to affirmatively request adjustments in their favor and to demonstrate entitlement for these adjustments. As support for this position, the petitioner cites *Mechanical Transfer Presses From Japan; Final Results of Antidumping Administrative Review*, 61 FR 52910 (Oct. 9, 1996) (*Mechanical Transfer Presses*) and *Cold-Rolled Carbon Steel Flat Products from the Netherlands; Final Results of Antidumping Administrative Review*, 62 FR 18476 (April 15, 1997) (*Cold-Rolled Carbon Steel Flat Products*).

The respondents disagree, noting that the statute requires that a level of trade analysis be performed only after adjustment is made for U.S. selling expenses. *See* 19 U.S.C. § 1677b(a)(7)(A). The respondents further state that the Department's practice in this area is both clear and consistent with the statute. As support for this proposition, the respondents cite the *1994–1995 DRAMs Review*, where the Department stated that the level of trade will be evaluated based on the price after adjustments are made under section 772(d) of the Act. The respondents maintain that there is nothing new in the law or the facts of this investigation to suggest that the Department should reexamine its practice of beginning its level of trade analysis after adjusting for U.S. expenses.

The respondents further assert that the Department properly interpreted its statutory mandate by granting CEP offset adjustments in this case. Specifically, the respondents assert that they have supported their claims for these adjustments in their questionnaire responses and the Department verified the basis for these claims.

Regarding the offset granted to UMC, UMC argues that nothing in the statute imposes an obligation on a respondent to claim a CEP offset. Nonetheless, UMC states that it effectively asked the Department for the equivalent of an offset when it requested that the Department find two levels of trade in the home market and the United States.

Moreover, UMC asserts that the cases cited by the petitioner (*i.e., Mechanical Transfer Presses* and *Cold-Rolled Carbon Steel Flat Products*) do not apply here, as the former involved a company which submitted no information showing a difference in selling functions and the latter involved a company which made inconsistent statements involving level of trade in its questionnaire responses. UMC states that, since the beginning of the case, it has consistently provided information showing that it qualifies for a CEP offset. Consequently, UMC states that the statute leaves the Department with no choice but to grant one.

DOC Position

We agree with the respondents. As we stated in the *1994–1995 DRAMs Review*, the Department has—

> consistently stated that, in those cases where a level of trade comparison is warranted and possible, then for CEP sales the level of trade will be evaluated based on the price after adjustments are made under section 772(d) of the Act (see *Large Newspaper Printing Presses and Components Thereof, Whether Assembled or Unassembled, From Japan; Notice of Final Determination of Sales at Less Than Fair Value*, 61 FR 38139, 38143 (July 23, 1996). In every case decided under the revised antidumping statute, we have consistently adhered to this interpretation of the SAA and of the Act. *See, e.g., Aramid Fiber Formed of Poly para-Phenylene Terephthalamide from the Netherlands; Preliminary Results of Antidumping Duty Administrative Review*, 61 FR 15766, 15768 (April 9, 1996); *Certain Stainless Steel Wire Rods from France; Preliminary Result of Antidumping Duty Administrative Review*, FR 8915, 8916 (March 9, 1996); *Antifriction Bearings (Other Than Tapered Roller Bearings) and parts Thereof from France, et. al., Preliminary Results of Antidumping Duty Administrative Review*, 61 FR 25713, 35718–23 (July 8, 1996).

The Department's practice in this area is clear. Accordingly, consistent with this practice, we performed our level of trade analysis only after adjusting for selling expenses deducted from CEP starting price pursuant to section 772(d) of the Act. Based on our analysis, we determined that each respondent sold SRAMs during the POI at a level of trade in the home market which was different, and more advanced, than the level of trade at which it sold SRAMs in the United States.

Because there is insufficient information on the record to make a level of trade adjustment for any respondent in this case, we have granted a CEP offset adjustment for purposes of the final determination, in accordance with section 773(a)(7)(B) of the Act. Each of the respondents, including UMC, provided sufficient data to justify this adjustment,

Comment 7: Use of Production Costs Incurred After the Quarter of Sale

The petitioner argues that the Department should compare home market sales with quarterly costs for the same or a prior quarter when performing the cost test, rather than using costs incurred in subsequent quarters. The petitioner asserts that use of actual production costs is particularly important in this case, because the Department found that there was a significant and consistent price and cost decline which requires the use of quarterly data. The petitioner contends that the Department should use facts available for those sales where the respondents have not provided actual cost data. As facts available, the petitioner argues that the Department should use the weighted-average dumping margin calculated for all other sales by that respondent.

ISSI does not dispute the use of quarterly costs incurred in the same or a prior quarter as the quarter of sale. However, ISSI contends that, when those costs are not on the record, the Department should use either: (1) The reported costs from the closest subsequent quarter in which production occurred (*i.e.*, the methodology employed in the preliminary determination); or (2) the weighted-average margin calculated for ISSI's other sales. According to ISSI, the latter methodology is the Department's practice when adverse facts available is not warranted.

Alliance argues that the petitioner's arguments do not apply, because it supplied all of the data requested by the Department.

DOC Position

We agree with the petitioner, in part. We requested that all respondents provide cost data in the same quarter as the quarter of their home market and U.S. sales, or, when production did not occur in that quarter, to provide cost data for the most recent prior quarter in which production did occur. UMC and Winbond complied with these requests. Accordingly, we have used their cost data for purposes of the final determination. However, Alliance and ISSI did not submit production costs on this basis for a small number of products. Moreover, ISSI did not report production costs at all for one product. Because we afforded respondents the opportunity to report their actual costs for these products and Alliance and ISSI failed to do so, we have based the dumping margins for the associated sales on facts available.

Regarding Alliance, as facts available, we have used the weighted-average dumping margin calculated for all of Alliance's other sales. We have determined that this methodology is appropriate, given that, after the preliminary determination, Alliance was not given an express opportunity (unlike the other respondents, including ISSI) to provide the necessary data.

Regarding ISSI, we have determined that, contrary to the petitioner's neutral facts available methodology, an adverse assumption is appropriate. Because ISSI

has not explained why it was unable to provide the requested data, we find that ISSI has failed to cooperate to the best of its ability in complying with our requests for this information. Accordingly, as adverse facts available, we have used the highest non-aberrant margin calculated for any of ISSI's other U.S. sales, consistent with our treatment of ISSI's unreported costs in the preliminary determination.

Comment 8: Cash and Stock Bonus Distributions to Directors, Supervisors, and Employees

UMC and Winbond argue that cash and shares of company stock given to their employees are distributions of profits that should not be included in the calculations of COP or CV. These respondents argue that these distributions are not recorded on their audited financial statements as an expense, but as direct reductions to retained earnings. In addition, Winbond argues that its distributions are paid out of post-tax earnings and are, therefore, not tax-deductible. The respondents note that section 773(f)(1)(A) of the Act states that COP and CV shall normally be calculated based on the books and records of the exporter or producer of the merchandise if such records are kept in accordance with the generally accepted accounting principles (GAAP) of the exporting country, and if such records reasonably reflect the costs associated with the production of the merchandise under investigation. The respondents claim that these requirements are met by their consistent treatment of these stock distributions as reductions to retained earnings, in accordance with Taiwan GAAP.

The respondents argue that the distributions are analogous to dividends, which the Department has previously excluded from COP and CV. Specifically, Winbond maintains that, as with dividends, the company shareholders alone have the ability to authorize these payments. In support of its position, Winbond presented a letter from its Taiwanese attorneys which argues that cash and stock distributions to employees are treated as equivalent to dividends. Winbond also claims that English versions of its financial statements refer to the employee stock distributions as "bonus shares" in a short-hand, casual manner, which is factually inaccurate and prejudicial. Winbond argues that readers of its financial statements understand that such distributions are actually a transfer of wealth from shareholders to employees. Winbond also presented a letter from its auditing firm which stated that the distributions were issued from equity, rather than company capital, and, as such, are more akin to preferred stock than bonuses under U.S. GAAP.

Winbond argues that the Department has consistently held that payments made by a company on behalf of its owners are not costs of production, even if they are carried on the company's books. In support of its position, Winbond cites to *Final Determination of Sales at Less Than Fair Value: Fresh Cut Roses from Colombia,* 60 FR 6980, 7000 (Feb. 6, 1995) (*Colombian Roses*) and *Final Determination of Sales at Less Than Fair Value: Fresh Kiwifruit from New Zealand,* 57 FR 13695, 13704 (April 17, 1992) (*New Zealand Kiwifruit*). Winbond also cites to *Final Determination of Sales at Less Than Fair Value: Oil Country Tubular Goods from Austria,* 60 FR 33551, 33557 (June 28, 1995) (*Austrian OCTG*), claiming that the bonus distributions are similar to dividends which were recorded in the equity section of the balance sheet rather than on the income statement.

Likewise, UMC argues that the recipients of its distributions are in a similar position to shareholders who receive dividends. UMC notes that the value of company stock varies with its performance and the recipients of distributions and dividends both share the economic risk the company faces. UMC argues that company stock distributed to employees represents a conveyance of ownership rights, and thus these distributions are more akin to dividends than to the cash distributed as bonuses to employees in *Porcelain-on-Steel Cookware from Mexico: Notice of Final Results of Antidumping Duty Administrative Review,* 62 FR 25908, 25914 (May 12, 1997) (*Mexican Cookware*).

The respondents claim that treating employee stock distributions as a cost of production would be contrary to Department practice. UMC cites *Notice of Final Results of Antidumping Duty Administrative Review: Ferrosilicon from Brazil,* 62 FR 43504, 43511 (August 14, 1997) (*Ferrosilicon from Brazil*), where the Department treated "social contributions" for employees as a type of federal income tax and excluded the costs from the calculation of G&A expenses. Similarly, Winbond cites the Department's treatment of the enterprise tax in *Final Determination of Sales at Less Than Fair Value: High Information Content Flat Panel Display Screen and Glass Therefor from Japan,* 56 FR 32376, 32392 (July 16, 1991) (*Flat Panel Displays from Japan*), where the tax was levied on the basis of corporate income and unrelated to the COP.

Finally, the respondents argue that, should the Department decide to include employee stock distributions in COP and CV, the stock should be valued at par rather than at market value. The respondents claim that the par value more accurately reflects the cost of the transaction, as reflected in their accounting records. However, UMC asserts that, if the Department uses market value, it should discount the value of the distributions for associated risk factors because to do otherwise would overstate their value. Finally, arguing that the Department's calculation was incorrect under U.S. GAAP, Winbond presented a calculation prepared by its auditors setting forth their calculation of the market value of the distributions.

The authorities on Taiwan argue that the record in this case provides substantial evidence that stock distributions bear no relationship to production costs and have been properly classified as adjustments to retained earnings. The authorities on Taiwan state that this evidence includes: (1) A clear record of prior accounting treatment; (2) the fact that the existence and amount of stock distributions are ultimately controlled by shareholders; (3) the fact that stock bonuses are not tax deductible; and (4) the fact that the market value of the stock can and has fluctuated significantly.

The petitioner argues that the Department correctly classified the stock distributions in question as bonuses and properly included them in COP and CV. The petitioner points out that the Department's questionnaire requires respondents to report all compensation to employees, including bonuses. Moreover, the petitioner argues that, not only does U.S. GAAP prohibit companies from excluding stock bonuses from the income statement, but also excluding a significant portion of employee remuneration from the cost calculation fails to reasonably reflect the costs associated with the production of subject merchandise. Therefore, according to the petitioner, it is appropriate for the Department to adjust the costs as recorded in the respondents' normal books and records.

The petitioner points to an article prepared by ING Barings in March 1996 which states that net margins for some Taiwan electronics corporations "are deceptively high * * * due to the way employee bonus shares are distributed and the way accounting is treated." *See* the petitioner's letter dated September 3, 1997. According to the petitioner, the ING Barings report notes that the Taiwan GAAP treatment of such

bonuses permits companies to retain key employees while giving the appearance of high profitability, and characterizes such bonuses as a hidden cost not reflected in the income statement.

The petitioner asserts that the respondents' arguments regarding the control and authorization of bonuses by company shareholders are irrelevant and that such arguments do not change the fact that these amounts represent a cost of labor. The petitioner claims that stock and cash payments represent compensation by UMC and Winbond to their employees because they are paid in return for work performed for the company. The petitioner notes that U.S. GAAP states that, with regard to stock options, "Employees provide services to the entity—not directly to the individual stockholders—as consideration for their options * * * To omit such costs would give a misleading picture of the entity's financial performance." *See* Statement of Financial Accounting Standards (SFAS) No. 123, issued by the Financial Accounting Standards Board (FASB) in October 1995, at paragraph 90.

The petitioner argues that the Department has previously found that payments to employees, in whatever form, are a part of the compensation paid to employees and should be treated no differently than salaries or other employee benefits because they flow directly to a factor of production. *See Mexican Cookware.* The petitioner claims that the Department did not conclude in *Mexican Cookware* that if the bonuses had been made in the form of stock then they should be excluded from cost, despite the respondents' arguments to the contrary.

According to the petitioner, stock bonuses should be included in COP and CV at the market value. The petitioner argues that the par value of stock is purely nominal, with no relationship to the stock's actual value. The petitioner notes that the par value of stock for all companies in Taiwan is set at NT$10 and that the use of par value ignores the economic substance of the transaction. The petitioner points out that U.S. GAAP rejects the use of par value and instead requires that bonuses be recorded at the market value on the date the stock or stock option is granted.

DOC Position

We agree with the petitioner. The amounts distributed by UMC and Winbond to their directors, supervisors, and employees, whether in the form of stock or cash, represent compensation for services which the individual has provided to the company. Therefore, in accordance with section 773(f)(1)(A) of the Act, we have determined that it is appropriate to include these amounts in the calculation of COP and CV.

We acknowledge that the respondents' treatment of these distributions as reductions to equity is in accordance with Taiwan GAAP. However, we find that this treatment is contrary to the requirements of section 773(f)(1)(A) of the Act, as it does not reasonably reflect the respondents' cost of production, because the stock transferred to employees in exchange for their labor is a cost to the company that is not reflected in the reported COPs and CVs.

Specifically, we disagree with the respondents' classification of these payments as dividends. First, we note that they are identified on the respondents' English version audited financial statements as bonuses. Second, we note that the distribution arrangement is set forth in each company's articles of incorporation, is known to the individuals that seek employment at UMC or Winbond and is considered by each company's management when setting wage and salary levels.[5]

Authorization by the stockholders does not mean that the distributions are not a cost to the company; we note that the company is foregoing the opportunity to acquire capital by issuing or selling those shares to investors at the market price. The economic substance of the distributions is that the directors, supervisors and employees have performed services for the company and the stock and cash distributions are provided to them as additional compensation for their services. Under U.S. GAAP, these distributions would be reported as an expense on the income statement and not as a deduction from retained earnings.

We disagree with the respondents' claims that the inclusion of these amounts in COP and CV contradicts Department's normal practice and is contrary to our findings in *Mexican Cookware.* The Department addressed the issue of profit-sharing in *Mexican Cookware*, where profit-sharing was accounted for in a similar manner. In *Mexican Cookware* we stated that profit-sharing is distinct from dividends in that the profit-sharing distributions represent a legal obligation to a productive factor in the manufacturing process and not a distribution to the owners of the company. Dividends paid to shareholders would not be considered a cost by the Department. In *Mexican Cookware,* as in this case, the distributions were to employees in exchange for their services on behalf of the company. It is irrelevant that company employees who receive stock bonuses obtain ownership rights and will thereafter share an economic risk with other shareholders.

Furthermore, we disagree with Winbond's interpretation of the Department's practice, as presented in *Colombian Roses, New Zealand Kiwifruit,* and *Austrian OCTG.* In *Colombian Roses,* the amounts paid out by the respondent were excluded because the recipient of the payments did not perform any service for the company. In the instant case, however, the stock distributions made by UMC and Winbond are compensation to company employees for their services. Similarly, in *New Zealand Kiwifruit* the Department excluded from COP costs which were determined to be the owner's personal expenses. Contrary to Winbond's claim, the *New Zealand Kiwifruit* decision does not indicate that the Department excluded costs which were recorded in the respondent's accounting records. Finally, we note that *Austrian OCTG* supports the Department's decision in this case, because in *Austrian OCTG* the Department noted that "profit sharing plans are directly related to wages and salaries. Profit distributions to employees are treated in a manner similar to bonuses * * * these mandatory payments represent compensation to the employees for their efforts in the production of merchandise and the administration of the company." The same circumstances exist here and our treatment of employee stock distributions is entirely consistent with the decision made in *Austrian OCTG.* Finally, regarding Winbond's attempts to compare its stock distributions to the dividends paid out in *Austrian OCTG,* we note that stock distributions can be easily distinguished from dividends, as discussed in *Mexican Cookware.*

We find that the respondents' cites to *Ferrosilicon from Brazil* and *Flat Panel Displays from Japan* are equally misplaced. In those cases the amounts were charges by the government to the company, rather than amounts authorized by the board of directors and paid by the company to its employees.

Regarding the respondents' claim that we should value the stock distributions at par value (which reflects the amount at which they are recorded in the

[5] For example, UMC announces on its Internet home page, under the heading of "Employment opportunities—Compensation" that a "fixed portion of surplus profit is passed to employees as either cash or UMC shares." Winbond announces on its home page that its compensation and benefits include "holiday bonuses" and "profit sharing."

companies' financial statements), we disagree. Because the par value of company stock in Taiwan is set under the Company Law at NT$10 for each company, we find that the stock's par value does not represent the value of the distribution to the employees. As described in Intermediate Accounting (8th Edition, Kieso & Weygandt, 1995) at 739, par value "has but one real significance; it establishes the maximum responsibility of a stockholder in the event of insolvency or other involuntary dissolution. Par value is thus not 'value' in the ordinary sense of word."

We agree with the petitioner that these distributions should be valued at fair market value. Under U.S. GAAP, as directed by the FASB in SFAS No. 123, shares of stock awarded to employees should be valued at the fair value of the stock at the grant date. The SFAS also directs that, "If an award is for past services, the related compensation cost shall be recognized in the period in which it is granted." In the instant case, the stock distributed by UMC and Winbond in the current year was for service of the prior year. Under U.S. GAAP, it is appropriate to recognize the compensation cost in the period when it was granted. Therefore, the stock bonus granted during 1996 for 1995 service should be recognized as a cost during 1996.

As to the determination of fair market value, because the employee stock bonuses were authorized by UMC and Winbond shareholders at the annual shareholders' meetings, our preference would be to value the stock at the market price on those dates. However, since the dates of those meetings are not on the case record, we have valued the stock distributions on the dates of issuance. This is a reasonable surrogate because employees do not receive the stock until the date of issuance and, thus, the value of what they are receiving is not fixed until that date. We note that using the closing stock price on the date of issuance accounts for market risk associated with the distribution. We disagree with the calculation prepared by Winbond's auditors because that calculation incorrectly values Winbond stock at the company's fiscal year end, rather than the grant date specified under U.S. GAAP.

We also disagree with the arguments raised by the authorities on Taiwan. The record supports the Department's determination that the cash and stock distributions represent compensation to directors, supervisors, and employees and, therefore, they are a cost within the meaning of section 773(f)(1)(A) of the Act, despite the accounting treatment prescribed by Taiwan GAAP. We acknowledge the existence of the specific items that the government of Taiwan points to as evidence, but we disagree with the government of Taiwan's conclusion that these items support the exclusion of the cash and stock distributions from the respondents' COP and CV.

Comment 9: Research and Development Expenses

Each of the four respondents argues that the Department improperly allocated semiconductor R&D expenses to all semiconductor products in the preliminary determination.

Alliance claims that such an allocation is inappropriate because companies without fabrication facilities, such as Alliance, engage in R&D for circuit design of new products, rather than in the process R&D pursued by companies that fabricate SRAM wafers. Alliance refers to a letter from Professor Bruce A. Wooley which states that, "[I]n the case of circuit design techniques there is virtually no cross-fertilization among various classes of memories." *See* exhibit one of Alliance's submission dated September 15, 1997. Alliance claims that the articles proffered by the petitioner to support its claim that R&D conducted in one area benefits other areas mainly relate to process technology which may benefit a variety of products and to the incorporation of separate designs on a single chip; they do not address whether design technology from one type of memory product benefits the design of another. Alliance argues that both its verified R&D information and the fact that the company separates product-specific R&D for accounting purposes demonstrate that the R&D conducted by Alliance is product-specific design R&D, which does not benefit all products. Alliance argues that, if the Department determines that cross-fertilization of design R&D among memory products does occur, it should still not aggregate product-specific R&D for logic products with product-specific R&D for memory products.

In addition, argues Alliance, if the Department allocates R&D expenses over all SRAM products, it should calculate the R&D expense factor using the costs incurred during the POI, rather than the company's fiscal year. Alliance claims that the Department's intention in the preliminary determination was to "allocate the total amount of semiconductor R&D for the POI over the total cost of sales of semiconductor products sold during the POI, using an annual ratio." Alliance argues that the Department incorrectly calculated its R&D ratio using data from its fiscal year, rather than the expenses incurred during the POI.

ISSI claims that the methodology followed by the Department in previous cases where it allocated all semiconductor R&D expenses to all semiconductor products does not apply to ISSI because it is a non-integrated, U.S.-owned and controlled, fabless semiconductor producer. *See e.g., Dynamic Random Access Memory Semiconductors from Korea: Final Results of Antidumping Duty Administrative Review,* 61 FR, 20216, 20217 (May 6, 1996). ISSI asserts that the Department should accept its R&D expense allocation methodology because ISSI performs largely design R&D which, unlike process R&D, is specific to a given product category and has no application or benefit to other product groups. ISSI notes that it separated and allocated design R&D expenses into the distinct, non-overlapping product areas of volatile memory (*i.e.,* DRAMs and SRAMs), non-volatile memory, and logic.

UMC argues that the Department should allocate process and design R&D only for memory products to SRAMs, not total semiconductor R&D to all semiconductors. UMC contends that, while it may be appropriate to allocate process R&D across all semiconductor products in some instances, it is not appropriate to use this methodology with product-specific design R&D. Moreover, UMC argues that the Department's practice is to use product-specific costs and cites to the Court of International Trade's decision in *Micron Technology, Inc.* v. *U.S.* 893 F. Supp. 21, 27 (CIT, 1995) (*Micron Technology*). UMC argues that the CIT stated in *Micron Technology* that R&D costs may not be allocated on an aggregate basis unless there is substantial evidence demonstrating that the subject merchandise benefits from R&D expenditures earmarked for non-subject merchandise. UMC states that, in this case, there is no credible evidence on the record demonstrating that the subject merchandise benefits from non-subject R&D (*i.e.,* there are no specific instances on the record of cross-fertilization of R&D across product lines). In addition, UMC claims that a number of detailed statements on the record by semiconductor experts unanimously conclude that there is virtually no benefit accruing to memory products from R&D performed on non-memory products.

Furthermore, argues UMC, the Department should differentiate the Taiwan SRAM industry from its Korean counterpart, in that most Korean firms

are highly integrated, while much of the Taiwan industry consists of segmented production. UMC argues that product design R&D is far more likely to lead to cross-fertilization among products when it is performed by an integrated firm rather than by a non-integrated firm. Accordingly, UMC argues that a finding of cross-fertilization of R&D in the Korean industry may have little or no application here. Moreover, UMC maintains that in its accounting records it segregates process R&D from product design R&D which relates only to specific types of integrated circuits. UMC claims that there is no cross-fertilization between its R&D for SRAM product design and R&D for product design for other types of integrated circuit devices. UMC argues that, if the Department determines that design R&D costs for non-subject merchandise do, in fact, cross-fertilize SRAM design R&D, then a distinction must be drawn between design R&D for memory and design R&D for non-memory (*i.e.*, logic) products.

Winbond asserts that the Department's R&D allocation at the preliminary determination significantly overstated its COP. According to Winbond, its other product lines have an entirely different engineering focus and are segregated from Winbond's SRAM R&D activities both organizationally and in its accounting system. Winbond asserts that it tracks in its accounting records all R&D expenses by category, such as product design or process R&D, and further by product type and project.

Winbond argues that the antidumping law requires the use of product-specific costs. Winbond argues further that, as a legal matter, there is no evidence on the record to overcome the verified fact that cross-fertilization does not occur at Winbond. Winbond contends that the allocation of R&D on a company-wide basis fails to account for the fluctuation of logic R&D and the stability of SRAM R&D. In addition, Winbond notes that the focus of logic product R&D is the end product's specific function, whereas SRAM R&D focuses on the reduction in cell size, a completely different and more discrete goal. Moreover, Winbond asserts that it is unreasonable to include Winbond's logic product R&D costs in the allocation factor since R&D spending on logic products was vastly higher in 1996 than R&D spending for SRAMs.

The petitioner agrees with the Department's treatment of R&D expenses in its preliminary determination. The petitioner argues that contrary to ISSI's and Alliance's assertions, the allocation methodology used in Korean DRAMs applies in this case. The petitioner states that the respondents fail to appreciate that in Korean DRAMs, process R&D was considered to be part of overhead and that only product R&D of the type incurred by ISSI and Alliance was at issue. Furthermore, in Korean DRAMs, the Department allocated all product semiconductor R&D over all semiconductor production.

The petitioner criticizes the letters submitted on behalf of the respondents, stating that each is entitled to no more weight on the basis of their credentials than are those submitted on behalf of the petitioner or the Department. The petitioner claims that information on the record, such as the expert testimony of Mr. Cloud of Micron and Dr. Murzy Jhabvala of the National Aeronautics and Space Administration (NASA), as well as numerous magazine articles, supports its claim that cross-fertilization occurs among R&D projects conducted for various semiconductor products. The petitioner notes that ISSI itself allocated SRAM and DRAM R&D over memory cost of sales, thereby implicitly assuming cross-fertilization of SRAM and DRAM R&D.

In addition, the petitioner maintains that the Department's methodology was appropriate because R&D is supported by revenues from the complete range of products sold, not solely by the revenues of a particular product on which an R&D project is focused. Accordingly, the petitioner argues, it is most appropriate to allocate all semiconductor R&D over the base that sustains it (*i.e.*, over all semiconductor production). Moreover, the petitioner argues that the respondents' maintenance of product-specific accounting categorization by project does not prove that R&D conducted for one type of semiconductor cannot benefit the development of another type.

DOC Position

We agree with the petitioner. We find that there is cross-fertilization of scientific ideas between the R&D activities of semiconductor products. Processing advancements for one semiconductor product can benefit other types of semiconductor products (including logic and memory). Furthermore, design improvements, although undertaken for a specific product, can, and often do, become incorporated into the design of other semiconductors, whether they are logic or memory devices. We find that it is appropriate to allocate the cost of all semiconductor R&D to all semiconductor products, given that scientific ideas developed in one semiconductor area can be and have been utilized in the development of other semiconductor products. Therefore, for purposes of the final determination, we have calculated R&D for SRAMs using the ratio of total semiconductor R&D to total semiconductor cost of sales for the annual period that most closely corresponds to the POI.

Due to the forward-looking nature of R&D activities, the Department cannot identify every instance where SRAM R&D may influence logic products or where logic R&D may influence SRAM products, but the Department's own expert has identified areas where R&D from one type of semiconductor product has influenced another semiconductor product. Dr. Murzy Jhabvala, a semiconductor device engineer at NASA with twenty-four years of experience, was invited by the Department to express his views regarding cross-fertilization of R&D efforts in the semiconductor industry. He has stated that "it is reasonable and realistic to contend that R&D from one area (*e.g.*, bipolar) applies and benefits R&D efforts in another area (*e.g.*, MOS memory)." Dr. Jhabvala went on to state that—

> SRAMs represent along with DRAMs the culmination of semiconductor research and development. Both families of devices have benefitted from the advances in photolithographic techniques to print the fine geometries (the state-of-the-art steppers) required for the high density of transistors. . . . Clearly, three distinct areas of semiconductor technology are converging to benefit the SRAM device performance. There are other instances where previous technology and the efforts expended to develop that technology occurs in the SRAM technology. Some examples of these are the use of thin film transistors (TFTs) in SRAMs, advanced metal interconnect systems, anisotropic etching and filling techniques for trenching and planarization (CMP) and implant technology for retrograde wells.

See memo from Peter Scholl to the file dated September 16, 1997, placing letters from Dr. Jhabvala on the record.[6]

The Department has also identified through published magazine articles examples of cross-fertilization in the semiconductor industry. *See, e.g.*, "A 250–MHz Skewed-Clock Pipelined Data

[6] In letters dated January 23 and 28, 1998, the respondents expressed concern that the Department might consider information from the Korean SRAM record or a memorandum from Dr. Jhabvala placed on the record on January 15, 1998, (*i.e.*, after the public hearing in this case) which the parties did not have any opportunity to comment upon. We agree that the parties have not had an opportunity to comment upon this memorandum. Therefore, we have not considered it or any information on the Korean SRAMs record in our final determination. We note that we have quoted from Dr. Jhabvala's pre-verification comments on the record in this case.

Buffer," *Institute of Electrical and Electronics Engineers Journal of Solid State Circuits,* March 1996; and "A 1–Mb 2 Tr/b Nonvolatile CAM Based on Flash Memory Technologies," *Institute of Electrical and Electronics Engineers Journal of Solid State Circuits,* November 1996. We also noted numerous published articles in the *Institute of Electrical and Electronics Engineers Journal of Solid State Circuits* which described how significant advancements in the advanced semiconductor integrated circuit (ASIC)/logic product area have had important ramifications for chip design in the memory areas. The articles described how multilayer metal design development categorized as logic/ASIC R&D will permit companies to build chips that are smaller, faster and more power-efficient. The articles concluded that the research will be used in the future to improve microprocessors, memory and mixed-signal devices. As an example, one article entitled "The Challenges of Embedded DRAM in ASICs: A Manufacturing Economics Point of View," *Dataquest Interactive,* August 25, 1997, discussed the technical challenges of embedding memory into ASICs, which illustrated the overlap in design and process technology between logic and memory circuits. This article noted on page two that "[b]oth the fast SRAM and the 'pseudo-DRAM' structures are actually subsets of the process flow for advanced logic, so designing and constructing SLI ASICs are a natural extension and do not really add much to the per-wafer cost of the process." The articles were attached as exhibits to the letter submitted by the petitioner on October 15, 1997.

We reviewed the views of the respondents' expert on this subject and found them to be of less probative value than the cases cited above, as the published articles refute Dr. Wooley's assertion that there is no cross-fertilization among circuit design techniques. In fact, Dr. Wooley, writing on behalf of ISSI, agrees that there can be cross-fertilization in the development of process technologies among various classes of memories. This assertion also refutes the other respondents' claims that there is no cross-fertilization in the development of process technologies.

Moreover, contrary to the respondents' assertion, the methodology we are applying does calculate product-specific costs. Where expenditures benefit more than one product, it is the Department's practice to *allocate* those costs to all the products which are benefitted. Therefore, as semiconductor R&D benefits all semiconductor products, we have allocated semiconductor R&D to all semiconductor products.

We also disagree with the respondents' assertion that the methodology employed by the Department should be based on respondents' normal accounting records. While we do not disagree that each R&D project is accounted for separately in each of the respondents' respective books and records, we note that the existence of separate accounting records does not necessarily preclude the phenomenon of cross-fertilization of scientific ideas. Since accounting records do not address the critical issue of whether ideas from research in one area benefit another area, we do not find this argument persuasive.

We also found unpersuasive the following arguments presented by respondents: (1) That SRAMs are a mature product that cannot benefit from R&D performed in other areas; (2) that logic R&D is more complex than memory R&D; (3) that logic R&D is unique to an application; and (4) that logic R&D involves high level architecture and functionality which is different from SRAM R&D (which focuses on shrinking cell size, increasing capacity and efficiency). The record shows that the primary focus for SRAM and DRAM R&D is reducing die size and increasing speed, which will benefit from the metal multilayer design R&D being conducted in connection with logic/ASIC products. Moreover, the issue is not whether application-specific design R&D for logic products can be used for SRAMs, but rather whether what is learned from logic/ASIC product R&D can be used to improve SRAM performance. We also disagree with Winbond's arguments that, since it has more logic product lines than memory product lines, more employees for logic R&D than SRAM R&D and proportionally more expenses for the logic product line than the SRAM product line, it follows that no logic R&D should be assigned to SRAMs. When applied to the cost of manufacturing, the ratio of total semiconductor R&D to the total semiconductor cost of sales results in proportional amounts of R&D for each specific product. Our methodology assigns R&D costs to products in proportion to the amount sold during the period. If 75 percent of the cost of products sold were logic products then logic products would receive 75 percent of the R&D costs incurred during the period. This in no way assigns SRAMs an unreasonable portion of R&D costs.

Based on the foregoing, for purposes of the final determination, we have calculated R&D for SRAMs using the ratio of total semiconductor R&D to total semiconductor cost of sales for the annual period that most closely corresponds to the POI.

Company-Specific Issues

A. Alliance

Comment 10: Time Period for Cost and Price Comparisons

In the preliminary determination, the Department compared prices and conducted the sales below cost test using quarterly data. Alliance argues that for the final determination the Department should compare prices and conduct the sales below cost test using annual data. Alliance gives three reasons in support of its argument.

First, Alliance argues that there is no regulatory requirement that the Department compare prices and costs on a quarterly basis and that it is clearly envisioned that the Department will use annual averages unless there is a strong reason to do otherwise. Alliance argues that, in this case, there is no such reason. Moreover, Alliance argues, while the Department has used quarterly data in some previous semiconductor cases, the Department has recognized that it must apply the most reasonable methodology for each respondent based upon its price and cost trends. Alliance cites to *DRAMs From Korea* at 15476, where the Department used monthly averages for one respondent and POI averages for another.

Second, Alliance argues that its structure as a fabless company that subcontracts various phases of SRAM production makes the use of annual costs appropriate. Alliance states that integrated producers have large fixed costs that tend to mute changes in total costs from one quarter to another and that they tend to have declining costs over time due to the learning curve. By contrast, argues Alliance, its costs of production consist almost completely of variable costs, which vary greatly from quarter to quarter according to volume and other factors. Moreover, Alliance maintains that, because its costs consist primarily of payments to subcontractors, they do not steadily trend downward over time.

Third, Alliance argues that the Department has established that, where cost or pricing factors vary erratically from quarter to quarter, it is more appropriate to use annual comparisons to smooth out the aberrational results. In support of this argument, Alliance cites to a number of cases, including *Color Television Receivers From the Republic of Korea; Final Results of Antidumping*

Duty Administrative Review, 55 FR 26225, 26228 (June 27, 1990), *Final Determination of Sales at Less Than Fair Value; Color Picture Tubes From Canada*, 52 FR 44161, 44167 (Nov. 18, 1987), *Final Determination of Sales at Less Than Fair Value; Color Picture Tubes From Japan*, 52 FR 44171, 44182 (Nov. 18, 1987), and *Final Determination of Sales at Less Than Fair Value; Sweaters Wholly or In Chief Weight of Man-Made Fiber From Taiwan*, 55 FR 34585, 34598 (Aug. 23, 1990).

Moreover, Alliance also notes that the Department often uses annual averages in seasonal industries to avoid magnifying the impact of costs that vary from quarter to quarter. Alliance cites to *Grey Portland Cement and Clinker From Mexico; Final Results of Antidumping Duty Administrative Review*, 58 FR 47253, 47255 (Sept. 8, 1993), and *Circular Welded Non-Alloy Steel Pipe and Tube From Mexico; Final Results of Antidumping Duty Administrative Review*, 62 FR 37014, 37020 (July 10, 1997), in support of this contention.

Accordingly, Alliance argues that, given the extreme variability of its prices and costs in different quarters, it is more reasonable for the Department to use annual, rather than quarterly, figures for Alliance, regardless of whether prices declined in general over the POI.

Finally, Alliance notes that the Department's statement in its preliminary determination that "all parties agree" that there was "a significant and consistent price decline during the POI" is false. Alliance contends that its position has always been that its costs and prices during the POI were marked by aberrational, short-term price or cost fluctuations.

The petitioner argues that the Department's decision to use quarterly rather than annual averages was both in accordance with the regulations and based on an established dynamic in the semiconductor industry—that costs and prices generally decline from quarter to quarter. According to the petitioner, all of the parties in this investigation except Alliance have accepted this principle. The petitioner contends that the Department is not obligated to deviate from a rational, well-established industry benchmark simply on the basis that a particular respondent prefers an alternative approach that may lower its margin. The petitioner notes that declining market prices affect all of the respondents (including Alliance) and that, therefore, the Department's approach at the preliminary determination was fair and reasonable.

With regard to Alliance's argument that, as a fabless company, its costs are mostly variable, and hence vary more than the costs of integrated producers, which are mostly fixed, the petitioner notes that ISSI, another fabless company, did not share Alliance's views. The petitioner states that the Department's decision was based on an established consensus regarding declining market prices and that this phenomenon affected the behavior of all of the respondents (including Alliance), as well as the petitioner. The petitioner further states that basing the Department's decision on such a broad phenomenon of market behavior is an eminently fair and reasonable approach, and that the Department acted well within its discretion.

In addition, the petitioner notes that none of the cases cited by Alliance to demonstrate that the Department uses annual comparisons when costs or prices vary from quarter to quarter involve the semiconductor industry, which tends to exhibit discernible price and cost declines. Rather, the petitioner notes that many of the cases Alliance cites involve industries impacted by seasonal price or cost fluctuations, patterns not present in the semiconductor industry.

DOC Position

We disagree with Alliance. The Department's practice is to calculate weighted-averages over a shorter period of time when normal values, export prices, or constructed export prices have moved significantly over the POI. *See, e.g., EPROMs from Japan* and *DRAMs from Korea;* see also 19 CFR section 351.414(d)(3) of the Department's new regulations. In this case, demand for SRAMs decreased dramatically during the POI, causing worldwide SRAM prices to decrease dramatically. As SRAM producers, all respondents, including Alliance, were directly affected by this decrease in prices, whether they were fabless or integrated producers. Moreover, while Alliance may not have agreed with the other respondents that there was a significant and consistent price decline during the POI, Alliance concedes that there was a "worldwide drop in demand and falling prices that occurred in 1996" for SRAMs. *See* Alliance's submission of December 23, 1997, at page 47.

In addition, none of the cases cited by Alliance involve instances in which prices and cost were declining over the POI. Rather, they focus on instances where the Department used annual averages to smooth out quarterly or seasonal fluctuations in costs. Moreover, none of those cases involved the semiconductor industry, which, as the Department has recognized through its practice of using shorter averaging periods, is subject to declining prices and costs. Indeed, Alliance fails adequately to distinguish the cases relied on by the Department at the preliminary determination (*i.e., EPROMs from Japan* and *DRAMs from Korea*) from the facts in this case. Alliance does cite to *DRAMs from Korea* to argue that the Department recognizes that it must apply the methodology that makes the most sense for each respondent, based upon its price and cost trends. However, in that case, the Department determined that it was more appropriate to use monthly weighted-average prices for foreign market value (*i.e.*, normal value) for one respondent since those averages were more representative of its pricing than POI averages. *See DRAMs from Korea*, comment 29. Similarly, in this case, given the significant decrease in the price of SRAMs that occurred throughout the POI, we have determined that quarterly averages result in a more accurate comparison of pricing behavior during the POI than do annual averages.

Accordingly, we made quarterly weighted-average price and cost comparisons for all respondents, including Alliance, for the final determination.

Comment 11: General Expenses and Profit for Constructed Value

Alliance argues that the methodology employed by the Department to calculate Alliance's CV value at the preliminary determination was contrary to the letter and intent of the statute. Alliance notes that the statue provides three alternatives for determining SG&A and profit when a respondent's own data may not be used and argues that the lack of a hierarchy implies that the chosen methodology should produce the most accurate and fair result possible. Alliance claims that, because it has cooperated fully in this investigation, the Department's selected methodology should not be adverse in nature.

Alliance argues that the Department's use of the weighted-average SG&A expenses of the other three respondents to calculate CV is unreasonable. Alliance claims that the statute requires the use of actual SG&A expense data, that such data is available for Alliance, and that this data was verified by the Department.

Alliance argues that the fact that all of its home market sales were found to be below cost does not suggest that its SG&A expenses would have been higher

had these sales been above cost. Alliance argues that its cost data was considered acceptable for purposes of the below-cost test and should also be accepted for purposes of calculating CV. Alliance claims that the costs incurred by UMC and Winbond are very different from its own SG&A expenses because they perform more steps in the SRAM production process, including wafer fabrication, and have a larger corporate bureaucracy to manage those facilities. Additionally, Alliance argues that its R&D activities are for product development alone, while UMC and Winbond have both product and process R&D activities. Alliance argues that the process R&D costs reported by other respondents are part of their cost of manufacturing and that these costs would already be included in the price paid by Alliance for wafers, since it does not have its own wafer fabrication facilities. Alliance argues that, if the Department calculates Alliance's R&D expenses using cost data from the other Taiwan respondents, it should also exclude that portion of R&D expenses incurred on behalf of wafer fabrication process developments since Alliance's costs would not include such activities.

Alliance also claims that the Department's use of the weighted-average profit rate of the other three respondents to calculate CV is likewise unreasonable. According to Alliance, the rationale behind basing profit on the data of other respondents appears to be that the other respondents are similarly situated and that their profits reflect those which Alliance would earn in the home market if its sales were made in the ordinary course of trade. However, Alliance claims that neither the results of its relatively few sales to its developing Taiwan export market, nor the profits of Taiwan producers operating in their own home market, are indicative of Alliance's normal profit experience. Moreover, Alliance claims that the profit rate assigned by the Department includes the profits of two companies, UMC and Winbond, which have entirely different cost structures. Alliance argues that the foundry operations of UMC and Winbond involve high fixed costs, whereas Alliance's costs are largely variable. Alliance maintains that basing its profit rate on the experience of UMC and Winbond, both of which fabricate their own SRAM wafers, has the effect of double-counting profit; UMC and Winbond earn a higher profit because their costs do not include the profit markup that Alliance, a fabless producer, must pay for fabricated wafers. Finally, Alliance argues that its costs are based on accounting under U.S. GAAP, while UMC and Winbond follow Taiwan GAAP. Accordingly, Alliance claims that the only reasonable method for determining CV profit is to use the profit of either its own SRAM product line or the overall company, for the fiscal year ending March 30, 1996. Alliance argues that both of these approaches would be consistent with the Department's methodology, contemporaneous to the POI, and reasonably specific to subject merchandise.

The petitioner argues that the Department is not required to justify the methodology selected for determining Alliance's SG&A expenses and profit as the most reasonable alternative. The petitioner claims that the statute clearly indicates a preference for the Department to base SG&A expenses and profit, if possible, on amounts normally incurred or realized on above-cost home market sales. Moreover, the petitioner maintains that the statute intends for CV profit to correspond to normal rates of profit for the respondent or industry in the comparison foreign market and that Alliance's suggested methodology fails to meet this requirement. Specifically, the petitioner notes that Alliance's overall company profits result from sales to all markets, with the United States representing Alliance's dominant market.

According to the petitioner, there is no evidence that the differences in corporate strategy identified by Alliance render the other companies' profit rates unrepresentative of Taiwan SRAM producers in the context of this case. Moreover, the petitioner claims that Alliance has not suggested any means to establish that a profit rate that includes the integrated producers' profits somehow "double-counts" profits. Consequently, the petitioner argues that it is proper to include all types of SRAM producers in the calculation of the weighted-average profit rate. Finally, the petitioner notes that Alliance's 1996 fiscal year data only overlaps with three months of the POI and, thus, is only marginally contemporaneous.

The petitioner argues that Alliance's arguments regarding the methodology to be used for SG&A expenses depend on the assertion that Alliance would have incurred the same level of expenses on its home market sales irrespective of whether those sales were made at prices above or below COP. The petitioner contends that such an argument flies in the face of the statutory scheme, which directs the Department to use SG&A expenses for sales made in the ordinary course of trade. Moreover, the petitioner claims that Alliance's argument is flawed because it allocates its reported home market indirect selling expenses among semiconductor products on the basis of sales revenue. The petitioner notes that, if Alliance's home market sales had been made at significantly higher prices, then the allocated selling expenses would have been proportionately increased.

DOC Position

We disagree with Alliance, in part. Pursuant to section 773(e)(2)(A) of the Act, the Department will calculate SG&A expenses and profit based on the actual amounts incurred and realized by the company in connection with the production and sale of the foreign like product, in the ordinary course of trade, for consumption in the home market. Where a respondent's own SG&A expense and profit data are not available, section 773(e)(2)(B) of the Act provides the Department with three alternatives for calculating CV. In the instant case, Alliance's own SG&A expense and profit data may not be used because all of its home market sales failed the cost test, and hence, pursuant to section 771(15) of the Act, are not sales in the ordinary course of trade.

For purposes of the preliminary determination, we calculated Alliance's CV using the alternative methodology described in section 773(e)(2)(B)(ii) of the Act. This approach involved basing SG&A expenses and profit on the weighted-average data of the other three respondents. Because R&D expenses are included in general expenses, we also based R&D expenses on the same methodology used to determine SG&A expenses.

For our final determination, we have considered several alternatives which are available for calculating Alliance's CV under section 773(e)(2)(B) of the Act, including the methodology used for the preliminary determination and the alternatives proposed by Alliance. The SAA at 840 (170) indicates that the Act does not establish a hierarchy or preference among the alternatives under section 773(e)(2)(B) of the Act and that the selection of an alternative will be made on a case-by-case basis. The methodology which we used for the preliminary determination is one of the three alternatives provided for in the Act and provides a reasonable basis on which to base SG&A expenses and profit for Alliance's CV.

As discussed below, Alliance's proposed alternatives have significant flaws that make them less desirable choices for use as Alliance's SG&A expenses and profit. The method we used in the preliminary determination provides a reasonable methodology on

which to base Alliance's SG&A expenses and profit. Accordingly, we have used this approach for calculating Alliance's CV for the final determination because it reflects the experience of the other Taiwanese SRAM producers. Although we recognize that there may be differences in organizational structure and strategy among the respondents, the differences identified by Alliance do not preclude us from choosing one of the alternatives provided for in the Act.

We believe that the methodologies offered by Alliance for calculating profit have significant flaws. First, with respect to Alliance's suggestion that the Department use Alliance's own SRAM product line data for the fiscal year ended March 31, 1996, we verified cost and price information for the three months of this period, January through March 1996, that fell within the POI and found significant quantities of below-cost sales. Based on these findings, we have no reason to believe that the amounts reported by Alliance as SRAM profits for the March 31, 1996, fiscal year would provide a reasonable measure of profit due to the fact that the figure includes a number of sales known to be outside the ordinary course of trade, as well as significant potential for other such sales during the first nine months of the fiscal year. Moreover, data is available for the profit calculation that is more contemporaneous than the respondent's proposed period. Second, with respect to Alliance's suggestion that we base profit on its overall operations for the fiscal year ended March 31, 1996, this data includes sales to markets other than the home market. In addition, this data includes sales of products which are outside the general category of SRAMs. Again, we have data that is more contemporaneous than the data offered under this proposal.

We disagree with Alliance's assertion that the Department should use its SG&A expenses for the calculation of CV. The Act directs the Department to use an alternative methodology for these expenses when a respondent's actual data are not available. As stated above, Alliance did not make any home market SRAM sales in the ordinary course of trade and therefore its actual data may not be used.

With respect to Alliance's argument regarding our treatment of process R&D expenses, we believe that including these expenses in the weighted-average SG&A rate calculated for our final determination would double count the actual amount of the expense. Process R&D costs would normally be accounted for as part of the cost of the wafer which Alliance purchases from its supplier. Thus, for our final determination, we have excluded process R&D expenses from Alliance's SG&A expenses.

B. ISSI

Comment 12: Commission Expenses

According to the petitioner, the Department discovered at verification that ISSI failed to report commission expenses on sales to its U.S. distributor customers. The petitioner maintains that the Department should base the amount of the commissions for these customers on facts available because the information presented at verification was not a minor correction. As facts available, the petitioner argues that the Department should use the highest commission rate paid on sales to any other customer.

ISSI contends that its failure to report distributor commissions was a ministerial error of small magnitude. Specifically, ISSI asserts that these commissions: 1) represent only a fraction of the total commissions paid; 2) are recorded in a different manner in its accounting system; and 3) were thoroughly verified by the Department. Moreover, ISSI argues that it is a cooperative respondent that has done nothing in this investigation that would justify adverse inferences. As such, ISSI contends that the Department should use the commission expense data on the record for purposes of the final determination.

DOC Position

We agree with ISSI. We find that ISSI's failure to report commissions on sales to distributor customers was the result of an inadvertent error which was minor in nature. Because it is the Department's practice to accept such minor corrections arising from verification, we have used ISSI's verified commission rate for purposes of the final determination. *See, e.g., Rebar from Turkey* and *Notice of Final Determination of Sales at Less Than Fair Value: Bicycles From the People's Republic of China,* 61 FR 19026, 19044 (April 30, 1996) *(Bicycles from the PRC).*

Comment 13: Date of Payment

The Department noted at verification that ISSI had not received full or partial payment for a small number of U.S. sales. According to ISSI, the Department should assign these sales the average payment period for ISSI's other U.S. sales, rather than using the date of the final determination. Alternatively, ISSI asserts that the Department should calculate a weighted-average payment date for each sale where partial payment was received, using both the date of the partial payment and the date of verification. ISSI argues that to use the date of the final determination would be inappropriate because to do so would be to make the adverse assumption that its outstanding receivables have not been collected.

The petitioner asserts that the Department's standard practice in situations involving unpaid sales is to calculate the credit period using the date of the final determination as a proxy for the actual date of payment. *See Final Determination of Sales at Less Than Fair Value: Stainless Steel Wire Rods From France,* 58 FR 68865 (Dec. 29, 1993). According to the petitioner, the Department should follow its standard practice in this case because ISSI has provided no compelling reason to depart from it. Specifically, the petitioner notes that ISSI has provided no reason to assume that the payments in question will be received prior to the final determination. Indeed, the petitioner maintains, it is equally likely that payment will be received after this date. Moreover, the petitioner asserts that, given the long time since the end of the POI, it is unclear that using the date of the final determination represents an adverse inference.

Regarding ISSI's suggestion that the Department use an average payment period, the petitioner asserts that this method would be no more accurate. The petitioner notes that the sales in question have unusually long payment periods which would be excluded entirely from the calculation of the average.

DOC Position

The Department's recent practice regarding this issue has been to use the last day of verification as the date of payment for all unpaid sales. *See Brass Sheet and Strip from Sweden; Final Results of Antidumping Administrative Review* 60 FR 3617, 3620 (Jan. 18, 1995). Accordingly, we have used the last day of ISSI's U.S. verification as the date of payment for all unpaid transactions or portions thereof.

Comment 14: Non-operating expenses

The petitioner argues that the Department should include non-operating expenses incurred by ISSI-Taiwan in the calculation of ISSI's G&A expense. The petitioner argues that failure to include these expenses in ISSI's total G&A expenses conflicts with the Department's established practice concerning the classification of such expenses and results in a distortion of the reported cost of production for ISSI.

ISSI does not dispute that the Department should capture the loss on

disposal of property, plant and equipment and physical inventory loss, but argues that the cost should be included as part of financial expense. ISSI stated that the expenses were classified with other non-operating expenses in its audited records. Therefore, ISSI contends that the Department should follow its normal practice of adhering to a firm's recording of costs in its financial statements, in accordance with the GAAP of its home country, when such principles are not distortive.

DOC Position

We agree with the petitioner that these expenses should be included in the calculation of ISSI's total G&A expenses. We disagree with the respondent that these expenses should be classified as financial expenses because disposal of property, plant, and equipment and physical inventory losses relate to the general activities of the company and not to financing activities. *See Notice of Final Determination of Sales at Less Than Fair Value: Small Diameter Circular Seamless Carbon and Alloy Steel, Standard Line and Pressure Pipe From Italy*, 60 FR 31981, 31989 (June 19, 1995). Inclusion of these expenses in financing expense would not reasonably reflect the costs associated with the production of the merchandise. Accordingly, we have adjusted the G&A expense ratio to include these items.

Comment 15: Double-Counting of Marine Insurance Expenses

According to ISSI, the Department discovered during verification that ISSI reported marine insurance expenses both as part of G&A and as a separate movement expense in its U.S. sales listing. ISSI asserts that the Department should reduce G&A by the amount of these expenses in order to avoid double-counting.

The petitioner disagrees, stating that the burden is on the respondent to submit accurate information. According to the petitioner, the discovery of this error at verification indicates that ISSI's response may contain additional errors which were not discovered due to the limited time available at verification. Consequently, the petitioner asserts that the Department should make no adjustment to G&A for purposes of the final determination because it is unable to adjust for the undetected inaccuracies in ISSI's response.

DOC Position

The Department conducted thorough verifications of ISSI's sales and cost data. Based on these verifications, we have deemed the respondent's data to be reliable for use in the final determination. We do not believe that these data contain material inaccuracies, as the petitioner suggests.

Because it is the Department's practice to correct minor errors found during the course of verification *(see, e.g., Rebar From Turkey* and *Bicycles From the PRC)*, we have made the appropriate correction to ISSI's G&A expenses for purposes of the final determination.

Comment 16: Offset to R&D Expenses

ISSI argues that the Department should include an offset for R&D revenue in its calculation of ISSI's R&D expense.

DOC Position

We agree with ISSI that the R&D revenue should be included as an offset in the R&D expense ratio calculation, because the corresponding costs are included in ISSI's R&D expense. Consequently, we have granted this offset for purposes of the final determination.

C. UMC

Comment 17: Calculation of the CV Profit Rate

UMC argues that the Department erred in its choice of methodology for the computation of profit in calculating CV. UMC explains that the Department computed UMC's CV profit by first calculating a profit percentage for each home market transaction in the ordinary course of trade, then weight-averaging the percentages by quantity to determine the overall CV profit rate. UMC argues that this methodology was a departure from the Department's normal practice of calculating a CV profit rate based on the total revenue and total cost of home market sales transacted in the ordinary course of trade. In support of its position, UMC cites to *Certain Stainless Steel Wire Rods from France: Final Results of Antidumping Duty Administrative Review*, 62 Fed. Reg. 7206, 7209–7210 (Feb. 18, 1997) *(SSWR from France)* and *Certain Hot-Rolled Lead and Bismuth Carbon Steel Products from the United Kingdom: Final Results of Antidumping Duty Administrative Review*, 61 Fed. Reg. 56514, 56514 (Nov. 1, 1996) (Lead and Bismuth from the U.K.). UMC contends that in *Lead and Bismuth from the U.K.* the Department recognized that weight-averaging individual profit percentages by quantity introduces serious distortions into the calculation of CV profit.

The petitioner argues that the methodology used at the preliminary determination does not produce a serious distortion of the CV profit in this case. The petitioner contends that use of this methodology is appropriate, because a small number of expensive-to-produce, low profit sales of higher-density SRAMs will not artificially pull down the overall profit rate that applies to the large majority of sales. Thus, the petitioner argues that this methodology more realistically calculates a per-unit profit rate that is applied to all CV sales comparisons.

DOC Position

We agree with UMC. It is the Department's normal practice to divide total home market profits by total home market costs when calculating the profit ratio. As noted in *SSWR from France* and *Lead and Bismuth from the U.K.*, the methodology employed by the Department in the preliminary determination has the effect of distorting the respondent's CV profit rate. Accordingly, for the final determination, we calculated profit based on total home market profits and total home market costs for sales made in the ordinary course of trade.

Moreover, because CV profit was calculated in the same fashion for ISSI at the preliminary determination, we have also made the corresponding change to ISSI's calculations.

Comment 18: Substantial Quantities Test

UMC argues that the Department made an error in performing the substantial quantities portion of the sales below cost test. UMC maintains that, in a case where quarterly costs are used, sales can only be disregarded if: (1) the sale price is below the quarterly average cost; (2) the sale price is below the annual average cost; and (3) the quantity of such sales meets the substantial quantities threshold of 20 percent on a product-specific basis. UMC alleges that the Department failed to correctly apply the third part of this test. Specifically, UMC states that the Department conducted the substantial quantities test only on an annual average cost basis when in fact it should have conducted the test on an annual average cost *and* quarterly average cost basis.

According to the petitioner, UMC's assertion that the Department is required, under section 773(b)(1) of the Act, to examine the volume of sales against the 20 percent threshold on the basis of the volume of sales made in each quarter is without merit. The petitioner states that section 773(b)(2)(C)(i) of the Act provides that the substantial quantities test is satisfied

if the volume of such sales represents 20 percent or more of the volume of sales under consideration for the determination of normal value. The petitioner notes that section 773(b)(2)(B) of the Act provides that the term "extended period of time" means a period that is normally one year, but not less than six months. Thus, argues the petitioner, the Department correctly determined that a given product was below cost in substantial quantities if the volume of below cost sales was at least 20 percent of the volume during the twelve-month POI.

DOC Position

We agree with the petitioner. Section 773(b) of the Act states that the Department will disregard sales made at less than the cost of production if such sales were made within an extended period of time in substantial quantities (*see* section 773(b)(1)(A)). The Act defines "extended period of time" as normally one year but not less than six months (*see* section 773(b)(2)(B) of the Act). Because the Act states that "an extended period of time" can not be less than six months, we cannot follow UMC's recommendation and perform the substantial quantities test on a quarterly basis.

Accordingly, we have made no changes to the substantial quantities test for purposes of the final determination.

Comment 19: Startup Adjustment

UMC claims that the Department should continue the approach taken in its preliminary determination in accepting its claimed startup adjustment, because it has met the threshold criteria. According to UMC, the technical factors limiting production at its affiliate's new facility included process qualification to qualify both new equipment technology and new process technology. Additionally, UMC notes that the startup period involved the qualification of individual products and the fine tuning of new equipment to allow it to work efficiently with the existing equipment.

UMC claims that a company will not meet its practicable level of operations until the fab has achieved the level of "cleanness" to operate properly (which requires a certain amount of time) and it also has achieved a critical mass of product qualifications. UMC argues that the initial product qualification phase, which involves test runs and evaluations to build a stable of products that the new fab is qualified to produce, is a significant technical factor which impedes production during the startup phase.

Although UMC's claimed startup adjustment reflects a startup period that does not include the entire year, UMC argues that the new fab was actually in a startup phase at least through the end of 1996. UMC bases its claim on the quantity of wafer starts and wafers out in relation to the quantity of wafers processed in May 1997 and at the time of the cost verification. UMC notes that low product yields are one of a number of factors that the Department can consider as evidence of the extent to which technical factors affect production levels. UMC also argues that, although the same number of production processes were available for sale to customers in December 1996 as were in place in June of that year, the number available at September 1997 demonstrates that the company was still in startup mode at the end of 1996 and that the startup adjustment claimed is conservative.

The petitioner asserts that UMC's request for a startup adjustment should be denied since UMC failed to demonstrate that its production levels were limited by technical factors. The petitioner acknowledges that the product qualification process contributed to UMC's low production levels, but claims that the qualification process does not represent a "technical difficulty." The petitioner argues that the statute directs the Department to "consider factors unrelated to startup operations that might affect the volume of production processed, such as demand, seasonality, or business cycles" in determining whether commercial production levels have been achieved. *See* section 773(f)(1)(C)(ii) of the Act. The petitioner claims that customer demand was the only factor that may have limited production volumes and points out that demand is not a technical factor. The petitioner notes that the SAA at 836 (166) states that "to determine when a company reaches commercial production levels, Commerce will consider first the actual production experience of the merchandise in question. Production levels will be measured based on units processed." The petitioner claims that yields improve continually throughout a product's life cycle beyond the point at which commercial production can be said to have begun and thus yields are irrelevant to the startup analysis. Finally, the petitioner argues that, even if technical factors did limit production to some extent, commercial production at the new facility began sooner than claimed by UMC.

DOC Position

We have accepted UMC's claimed startup adjustment. UMC produced subject merchandise during the POI using SRAM wafers obtained from its affiliate's new facility and provided the Department with a number of technical factors that limited the new facility's production levels, including the development of process parameters, cleaning of the fabrication facility, and installation, adjustment, calibration, and testing of new equipment. These technical factors appear to have restricted production of SRAM wafers through the startup period, after which time the new facility achieved commercial production levels that are characteristic of the producer. Although UMC claims that product qualification represents another technical factor that limited production levels during the startup period, we agree with the petitioner that this process is a normal part of operations that is often performed for new products the company plans to produce. Moreover, it does not appear that product qualification, which involved UMC's producing small quantities of products for customer approval while bringing the new facility up to normal levels of production, represents a technical difficulty that resulted in the underutilization of the facility.

While we agree with UMC that production yields may indicate the existence of technical factors that limited production output, the SAA at 836 (166) directs us to examine the units processed in determining the claimed startup period. Accordingly, our determination of the startup period was based, in large part, on a review of the wafer starts at the new facility during the POI, which represents the best measure of the facility's ability to produce at commercial production levels. We concluded that the number of wafer starts during the startup period did not meet commercial production levels that are characteristic of the producer. Consequently, we determined that the claimed startup period did, in fact, end when commercial production reached a level that was characteristic of UMC's non-startup experience.

While the petitioner argues that an absence of customer demand may have contributed to the low production levels during the claimed startup period, evidence on the record suggests that the demand for the type of SRAM wafers produced at the new facility was as high during the claimed startup period as it was during the remainder of the POI. Moreover, even if demand had been greater during the claimed startup period, there is no evidence that UMC could have more quickly achieved production levels at the new facility that are characteristic of the producer, merchandise, or industry.

Comment 20: Calculation of Credit Expense

UMC argues that the Department incorrectly computed UMC's imputed credit expense adjustment using a 365 day year. In its response, UMC reported its imputed credit expense based on a 360 day year. UMC alleges that the Department's computation of UMC's imputed credit expense based on a 365 day year was inconsistent with section 773(f)(1)(A) of the Act and the Department's longstanding practice as outlined in the *Import Administration Antidumping Manual* ((1994) Chapter 8, p. 36).

DOC Position

We disagree with UMC. Section 773(f)(1)(A) of the Act directs the Department to calculate costs based on the records of the exporter or producer of the merchandise. The expense in question, however, is an imputed expense which is not kept by UMC in its records. Thus, we note that UMC does not record imputed credit expense in its accounting system based on a 360 day year. The Department is not required to compute this expense based on 360 days, instead of the standard 365, merely because UMC chose to report it in that manner in its submissions.

In addition, we note that UMC itself was inconsistent in its credit calculations, in that it calculated its accounts receivable turnover rate using a 365 day year. Accordingly, for the final determination, we have continued to calculate UMC's imputed credit expense using a 365 day year.

Comment 21: Ministerial Errors Acknowledged by the Department

UMC notes that in its memorandum of October 20, 1997, the Department acknowledged that it made several ministerial errors in the calculations performed at the preliminary determination for UMC. UMC requests that the Department correct these ministerial errors in its final determination.

DOC Position

We agree. We have made the appropriate corrections for purposes of the final determination.

D. Winbond

Comment 22: Treatment of Winbond's EP sales

Winbond argues that its EP transactions were outside the ordinary course of trade and should be disregarded for purposes of the final determination. Winbond cites to *Final Determination of Sales at Less Than Fair Value: Coated Groundwood Paper from France*, 56 FR 56380 (Nov. 4, 1991) (*Coated Groundwood Paper*) and *Colombian Roses* at 7004 as instances where the Department disregarded U.S. sales when the volume of such sales was insignificant or when the sales were atypical and not part of the respondent's ordinary business practice. Including such sales, according to Winbond, has the potential to undermine the fairness of the dumping comparisons.

According to the petitioner, the term "outside the ordinary course of trade" applies only to home market sales, and, nonetheless, Winbond has not demonstrated that its EP sales are outside the ordinary course of trade. The petitioner asserts that, although it is true that the Department may disregard certain U.S. sales if the volume of such sales is insignificant, Winbond has not demonstrated that these particular sales were low volume sales. Furthermore, the petitioner maintains that Winbond has not established, as required in *Colombian Roses*, that the inclusion of these sales would undermine the fairness of the comparison. The petitioner states that the Department should use its discretionary authority and retain Winbond's EP sales.

DOC Position

We agree with the petitioner. Although the ordinary course of trade provision does not apply to U.S. transactions, the Department does have the discretion to exclude U.S. sales from its analysis. *See, e.g., Coated Groundwood Paper* and *Colombian Roses*. However, there is no requirement in either the Act or the regulations that we do so merely because there are small quantities of a particular type of sale. In this case, Winbond has no provided compelling reason to disregard its EP sales. Accordingly, we have used them for purposes of the final determination.

Comment 23: Reliance on Winbond's Cost Data

According to the petitioner, the cost verification report raises substantial questions regarding the overall reliability of Winbond's cost response. Specifically, the petitioner argues that: (1) Winbond failed to provide the reconciliation between its reported total cost of manufacturing and the costs in its cost accounting system, as requested in the cost verification outline; and (2) Winbond first revealed at the cost verification that, contrary to the explicit questionnaire instructions, not only had it reported sales quantities rather than production quantities, but it also was unable to provide the requested production quantity data at verification. The petitioner argues that, due to these limitations, the Department should consider using partial facts available in calculating Winbond's COP and CV.

Winbond argues that it was cooperative and that the Department successfully verified the overall reliability of its submitted sales and cost data, including the requested reconciliations. Winbond argues that it successfully reconciled its total reported COM to its total costs in its accounting system and that the importance of certain reconciling amounts has been over-emphasized. Winbond maintains that it was entirely appropriate to report sales quantities rather than production quantities, because, if it had used the finished goods input quantity, it would have overstated production volumes and distorted costs.

DOC Position

We agree with the petitioner, in part. We agree that the unsubstantiated reconciling item found at verification should be included in the cost for that quarter and we have done so. Not only did we request in the verification agenda that Winbond reconcile the total costs in its cost accounting system to total COM reported on its cost tapes, but we also requested numerous times during the verification process that Winbond reconcile its costs. We compared the submitted costs to the costs recorded in Winbond's normal books and records and found the difference noted above. Although Winbond attempted to explain this difference, it was unable to provide requested documentation (*e.g.*, invoices) to support its assertion.

However, we disagree with the petitioner that the sales quantities reported in the COP and CV data warrant an adjustment to Winbond's reported per-unit COPs and CVs. Because the variances Winbond applied to its standard costs were correctly calculated using production quantities, Winbond's per-unit COPs and CVs were not affected by the incorrect quantities. Consequently, we have not adjusted COP or CV to account for the quantity difference. For further discussion, see the memorandum to Louis Apple from the Team, dated February 13, 1998.

Comment 24: Winbond's Difmer Adjustment

Winbond argues that the Department should accept its submitted difmer data without adjustment, because these difmer data were appropriate and classified in accordance with its cost accounting system. Winbond argues that, contrary to statements in the Department's cost verification report, it

could only report its fixed costs based on uniform budgeted ratios and that such ratios were the most valid and manageable approach for segregating cost elements. Winbond argues that its methodology separates the cost elements and does not significantly alter the amount of the difmer adjustment. Moreover, Winbond states that the vast majority of its U.S. sales had identical matches in the home market, making the distinction between variable and fixed costs less important than in cases involving more comparisons with similar merchandise.

DOC Position

We disagree. Although Winbond's accounting system classifies all costs other than direct materials and labor as fixed costs, at verification we were able to calculate the depreciation expense for specific products from Winbond's standard cost sheets. A comparison of the depreciation expense calculated at verification to those reported by Winbond shows that the reported depreciation amounts, and therefore the difmer data, were not accurate.

Because the reported difmer data cannot be relied upon, we have based the margin for all U.S. sales without an identical home market match on adverse facts available. As adverse facts available, we have selected the highest non-aberrant margin from the price-to-price or price-to-CV comparisons which were performed for Winbond. In selecting this margin, we sought a margin that is sufficiently adverse so as to effectuate the statutory purposes of the adverse facts available rule to induce respondents to provide the Department with complete and accurate information in a timely manner. We also sought a margin that is indicative of Winbond's customary selling practices and is rationally related to the transactions to which the adverse facts available are being applied. To that end, we selected a margin for sales of a product that involved a substantial commercial quantity and fell within the mainstream of Winbond's transactions based on quantity. Finally, we found nothing on the record to indicate that the sales of the product we selected were not transacted in a normal manner.

Comment 25: Use of Annual Profit for CV

Winbond claims that the Department should have used quarterly, rather than annual, profit in calculating CV. Winbond asserts that using annual profit creates the same distortions that the Department tried to avoid by using quarterly price and cost comparisons. Winbond cites to page 843 of the SAA which indicates that, when CV is used for normal value and "costs are rapidly changing, it may be appropriate to use shorter periods, such as quarters or months, which may allow a more appropriate association of costs with sales prices." Winbond claims that the Department's use of annual profit in conjunction with quarterly cost and sales data overstates profit significantly in the down-market periods.

The petitioner argues that an annual profit rate is appropriate because it reflects not only the quarterly cost of manufacture but also those annual, often non-recurring costs such as G&A, interest and selling expenses, which must be calculated on an annual basis to ensure that all such costs are captured in the COP. The petitioner notes that neither the statute nor the SAA specifies the period over which profit should be calculated.

Moreover, the petitioner asserts that the use of quarterly averages to capture the lower profits in quarters where more sales are made below cost, as suggested by Winbond, could lead to the use of a zero profit rate if all of the respondent's sales in a given quarter were below cost. This approach, according to the petitioner, is contrary to the clear statutory intent that the Department include a positive profit figure for CV.

DOC Position

We agree with the petitioner. The Department applies the average profit rate for the POI or period of review (POR) even when the cost calculation period is less than a year. *See, e.g., 1994–1995 DRAMs Review, Certain Fresh Cut Flowers From Colombia; Final Results and Partial Rescission of Antidumping Duty Administrative Review,* 62 FR 53287, 53295 (Oct. 14, 1997) and *Silicon Metal from Brazil; Final Results of Antidumping Duty Administration Review,* 61 FR 46763, 46774 (Sept. 5, 1996).

We disagree with Winbond that the use of annual profit distorts the analysis. First, a difference between the quarterly profits and the annual average profit does not automatically mean that a distortion exists. In fact, there is no evidence on the record that indicates such a distortion. Second, profit remains a function of the relationship between price and cost, regardless of whether there is a downward trend of prices or a stable period of prices and costs. The parties commented on matching sales on a quarterly basis (*see* the "Time Period for Cost and Price Comparisons" section of this notice, above). In their comments, the parties indicated that both prices and costs generally decreased during the POI. The profit figures used by the Department measure the weighted-average amount by which prices exceeded costs. Third, the use of annual profit mitigates fluctuations in profits and, therefore, represents a truer picture of profit.

Furthermore, we disagree that the SAA at page 843 (173) provides any guidance. The SAA indicates that "shorter periods may allow for a more appropriate association of *costs* with sales prices," but is silent as to the profit to be added to those costs.

Comment 26: Unrecoverable Fire Loss Expenses

Winbond argues that the Department distorted its G&A expenses by including expenses associated with a fire at an incomplete facility which is now being reconstructed to produce DRAMs. Winbond argues that it recorded the unrecovered portion of the fire loss as a non-operating expense; that the facility was not operational; and that, therefore, the costs associated with the fire are not relevant to the COP and CV of subject merchandise. Winbond asserts that, even if the Department were to conclude that the fire loss was related to 1996 SRAM production, the costs should be excluded from G&A because they were extraordinary.

The petitioner argues that the Department correctly included Winbond's unrecovered portion of the fire loss in Winbond's cost of production. The petitioner argues that Winbond's assertion that the facility was not being constructed to produce the subject merchandise is contrary to strong evidence on the record. The petitioner cites two published articles which state that the facility was constructed for the production of SRAMs. The petitioner argues that the unrecoverable fire loss was appropriately included in G&A because, under Winbond's own standard accounting practice, the uncompensated fire loss was recorded as a current cost. The petitioner argues further that the Department has included in COP and CV losses which were not reimbursed by insurance. *See Final Determination of Sales at Less Than Fair Value: Fresh and Chilled Atlantic Salmon from Norway,* 56 FR 7661, 7670 (Hofa Comment 5) (Feb. 15, 1991) (*Salmon from Norway*).

DOC Position

We agree with the petitioner. The uncompensated fire loss should be included in Winbond's G&A expense for this period because the expense incurred (*i.e.,* the capital) relates to the company as a whole. The fact that

Winbond is reconstructing the facility to produce DRAMs is irrelevant.

Moreover, we disagree with Winbond's assertion that the fire was an extraordinary event. Winbond has offered no support for this assertion. Moreover, evidence on the record contradicts this claim. Fires at semiconductor production facilities have been neither unusual nor infrequent. Specifically, we note that fires occurred at the following semiconductor facilities during the past 16 months: (1) United Integrated Circuits Company, January 1998; (2) Advanced Microelectronics, November 1997; (3) United Integrated Circuits Company, October 1997; (4) Charted Semiconductor Manufacturing Pte. Ltd., September 1997; and (5) Winbond, October 1996. Thus, we are unconvinced that the fire at Winbond's facility was an extraordinary event. As in other cases, we are including the unrecovered or uninsured portion of loss as a G&A expense. *See e.g., Salmon from Norway.*

Comment 27: Denominator for G&A and Interest Expense

Winbond argues that the Department erred by not revising the denominator used to calculate its G&A, R&D and interest expense rates to reflect the bonuses and royalties which were added to COM.

DOC Position

We agree. In the preliminary determination, we increased Winbond's reported COM to include bonuses and royalty expenses. However, we failed to revise the denominator used to calculate Winbond's G&A and interest expense rates which we applied to the revised COM. We have made the appropriate correction for purposes of the final determination.

Comment 28: Net Interest Expense

Winbond argues that the Department failed to account for its actual net interest income in the preliminary determination. Winbond argues that the Department deprived it of the benefit of its actual net interest income, and, thus, overstated its COP and CV. Winbond asserts that the statute does not require the Department to disregard cost offsets merely because the results benefit the respondent.

The petitioner argues that there is no basis for the Department to allow Winbond to offset its actual production costs with net financial income. The petitioner argues that the Department followed its long-standing practice by treating Winbond's negative financial cost as zero.

DOC Position

We agree with the petitioner. It is the Department's normal practice to allow short-term interest income to offset financial costs up to the amount of such financial costs. *See Porcelain on Steel Cookware from Mexico; Final Results of Antidumping Duty Administrative Review,* 61 FR 54616, 54621 (Oct. 21, 1996). Using total short-term interest income to reduce production costs, as suggested by Winbond, would permit companies with large short-term investment activity to sell their products below COP. The application of excess interest income to production costs would distort a company's actual costs. When calculating COP and CV, the Department includes interest earned on working capital, not interest earned on long-term financing activities. *See Final Results of Antidumping Duty Administrative Review: Porcelain on Steel Cookware from Mexico,* 60 FR 2378, 2379, (Jan. 9, 1995); *Final Results of Antidumping Duty Administrative Review: Porcelain on Steel Cookware from Mexico,* 58 FR 43327, 43332, (Aug. 16, 1993); *Final Determination of Sales at Less Than Fair Value: Steel Wire Rope from Korea,* 58 FR 11029, 11038, (Feb. 23, 1993); and *Final Results of Antidumping Duty Administrative Review: Frozen Concentrated Orange Juice from Brazil,* 55 FR 26721, (June 29, 1990).

Comment 29: Royalty Payments and Technical Services

Winbond argues that in the preliminary dumping analysis the Department double-counted its royalty and technical service expenses.

DOC Position

We agree. We double counted these expenses at the preliminary determination by adding both the royalty and the revised total R&D (which included both the royalty and technical service expenses) in COP and CV. Consequently, we have corrected this error for purposes of the final determination.

Continuation of Suspension of Liquidation

In accordance with section 733(d)(1) and 735(c)(4)(B) of the Act, we are directing the Customs Service to continue to suspend liquidation of all entries of SRAMs from Taiwan, that are entered, or withdrawn from warehouse, for consumption on or after October 1, 1997 (the date of publication of the preliminary determination in the **Federal Register**). The Customs Service shall continue to require a cash deposit or posting of a bond equal to the estimated amount by which the normal value exceeds the U.S. price as shown below. These suspension of liquidation instructions will remain in effect until further notice. The weighted-average dumping margins are as follows:

Manufacturer/producer/exporter	Margin percentage
Advanced Microelectronics	113.85
Alliance	50.58
BIT	113.85
ISSI	7.59
TI-Acer	113.85
UMC	93.87
Winbond	102.88
All Others	41.98

Pursuant to section 735(c)(5)(A) of the Act, the Department has excluded the margins determined entirely under section 776 of the Act from the calculation of the "All Others Rate."

ITC Notification

In accordance with section 735(d) of the Act, we have notified the International Trade Commission (ITC) of our determination. As our final determination is affirmative, the ITC will, within 45 days, determine whether these imports are materially injuring, or threaten material injury to, the U.S. industry. If the ITC determines that material injury, or threat of material injury does not exist, the proceeding will be terminated and all securities posted will be refunded or canceled. If the ITC determines that such injury does exist, the Department will issue an antidumping duty order directing Customs officials to assess antidumping duties on all imports of the subject merchandise entered for consumption on or after the effective date of the suspension of liquidation.

This determination is published pursuant to section 735(d) of the Act.

Dated: February 13, 1998.

Robert S. LaRussa,

Assistant Secretary for Import Administration.

[FR Doc. 98–4360 Filed 2–20–98; 8:45 am]

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DEPARTMENT OF COMMERCE

International Trade Administration

[A-580-828]

Notice of Final Determination of Sales at Less Than Fair Value: Static Random Access Memory Semiconductors From the Republic of Korea

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

EFFECTIVE DATE: February 23, 1998.

FOR FURTHER INFORMATION CONTACT: Robert Blankenbaker or Thomas F. Futtner, Office of AD/CVD Enforcement 4, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, D.C. 20230; telephone: (202) 482-0989 or (202) 482-3814.

APPLICABLE STATUTE: Unless otherwise indicated, all citations to the statute are references to the provisions effective January 1, 1995, the effective date of the amendments made to the Tariff Act of 1930, as amended (the Act), by the Uruguay Round Agreements Act (URAA). In addition, unless otherwise indicated, all citations to the Department's regulations are to 19 CFR part 353 (April 1, 1996).

SUPPLEMENTARY INFORMATION:

Final Determination

We determine that static random access memory semiconductors (SRAMs) from the Republic of Korea are being sold in the United States at less than fair value (LTFV), as provided in section 735 of the Act. The estimated margins are shown in the "Suspension of Liquidation" section of this notice.

Case History

Since the preliminary determination in this investigation (Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination: Static Random Access Memory Semiconductors from the Republic of Korea, 62 FR 51437 (October 1, 1997)), the following events have occurred: In November and December of 1997, we verified the Samsung Electronics Co. Ltd. ("Samsung"), and Hyundai Electronics Industries Co. Ltd. ("Hyundai"), questionnaire responses. On December 17, 1997, the Department issued its report on the verification findings for Hyundai. On December 18, 1997, the Department issued its report on the verification findings for Samsung.

The petitioner and the respondents, Hyundai, Samsung and LG Semicon Co. Ltd. ("LGS"), submitted case briefs on December 30, 1997, and rebuttal briefs on January 5, 1998. In addition, five interested parties, Compaq Computer Corporation ("Compaq"), Cypress Semiconductor Corporation ("Cypress"), Digital Equipment Corporation ("Digital"), Integrated Device Technology ("IDT"), and Motorola, Inc. ("Motorola"), submitted rebuttal briefs on January 7, 1998. We held a public hearing on January 16, 1998.

Scope of Investigation

The products covered by this investigation are synchronous, asynchronous, and specialty SRAMs from Korea, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or die, uncut die, and cut die. Processed wafers produced in Korea, but packaged, or assembled into memory modules, in a third country, are included in the scope; processed wafers produced in a third country and assembled or packaged in Korea are not included in the scope.

The scope of this investigation includes modules containing SRAMs. Such modules include single in-line processing modules ("SIPs"), single in-line memory modules ("SIMMs"), dual in-line memory modules ("DIMMs"), memory cards, or other collections of SRAMs, whether unmounted or mounted on a circuit board.

We have determined that the scope of this investigation does not include SRAMs that are physically integrated with other components of a motherboard in such a manner as to constitute one inseparable amalgam (*i.e.*, SRAMs soldered onto motherboards). For a detailed discussion of our determination on this issue, see *Comment* 6 in the "Interested Party Comments" section of this notice and the memorandum to Louis Apple from Tom Futtner dated February 13, 1998.

The SRAMs within the scope of this investigation are currently classified under the subheadings 8542.13.8037 through 8542.13.8049, 8473.30.10 through 8473.30.90, and 8542.13.8005 of the Harmonized Tariff Schedule of the United States ("HTSUS"). Although the HTSUS subheadings are provided for convenience and customs purposes, the written description of the scope of this investigation is dispositive.

Period of Investigation

The period of investigation ("POI") is January 1, 1996, through December 31, 1996.

Facts Available

On June 16, 1997, LGS, notified the Department that it was withdrawing from further participation in this investigation. For purposes of the preliminary determination, the Department assigned an adverse facts available rate of 55.36 percent. This margin was higher than the preliminary margin calculated for either respondent in this investigation.

Section 776(a)(2) of the Act provides that "if an interested party or any other person: (A) Withholds information that has been requested by the administering authority; (B) fails to provide such information by the deadlines for the submission of the information or in the form and manner requested, subject to subsections (c)(1) and (e) of section 782; (C) significantly impedes a proceeding under this title; or (D) provides such information but the information cannot be verified as provided in section 782(i), the administering authority shall, subject to section 782(d), use the facts otherwise available in reaching the applicable determination under this title."

In addition, section 776(b) of the Act provides that if the Department finds that an interested party "has failed to cooperate by not acting to the best of its ability to comply with a request for information," the Department may use information that is adverse to the interests of the party as the facts otherwise available. The statute also provides that such an adverse inference may be based on secondary information, including information drawn from the petition. (See also Statement of Administrative Action accompanying the URAA, H.R. Rep. No. 316, 103d Cong., 2d Sess. 870 (SAA).) The failure of LG to reply to the Department's questionnaire or to provide a satisfactory explanation of their conduct demonstrates that they have failed to act to the best of their ability in this investigation. Thus, the Department has determined that, in selecting among the facts otherwise available to these companies, an adverse inference is warranted.

In accordance with our standard practice, as adverse facts available, we are assigning to LG the higher of: (1) The highest margin stated in the notice of initiation; or (2) the highest margin calculated for any respondent in this investigation. In this case, this margin is 55.36 percent, which is the highest margin stated in the notice of initiation.

Section 776(c) of the Act provides that, when the Department relies on secondary information (such as the petition) in using the facts otherwise

available, it must, to the extent practicable, corroborate that information from independent sources that are reasonably at its disposal. When analyzing the petition, the Department reviewed all of the data the petitioner relied upon in calculating the estimated dumping margins, and adjusted those calculations where necessary. (See Initiation Checklist, dated March 17, 1997.) These estimated dumping margins were based on a comparison of constructed value (CV) to U.S. price, the latter of which was based on price quotations offered one company in Korea. The estimated dumping margin, as recalculated by the Department, was 55.36 percent. For purposes of corroboration, the Department re-examined the price information provided in the petition in light of information developed during the investigation and found that it has probative value. (See the Memorandum to Tom Futtner from the Team dated September 23, 1997, for a detailed explanation of corroboration of the information in the petition.)

Time Period for Cost and Price Comparisons

Section 777A(d) of the Act states that in an investigation, the Department will compare the weighted average of the normal values to the weighted average of the export prices or constructed export prices. Generally, the Department will compare sales and conduct the sales below cost of production test using annual averages. However, when prices have moved significantly over the course of the POI, it has been the Department's practice to use shorter time periods. See, e.g., Final Determination of Sales at Less Than Fair Value: Erasable Programmable Read Only Memories (EPROMs) from Japan, 51 FR 39680, 39682 (October 30, 1986), Final Determination of Sales at Less Than Fair Value: Dynamic Random Access Memory Semiconductors of One Megabit and Above From the Republic of Korea, 58 FR 15467, 15476 (March 23, 1993) ("DRAMs Final Determination").

We invited comments from interested parties regarding this issue. An analysis of these comments revealed that all parties agreed that the SRAMs market experienced a significant and consistent price decline during the POI. Accordingly, in recognition of the significant and consistent price declines in the SRAMs market during the POI, the Department has compared prices and conducted the sales below cost of production test using quarterly instead of annual data.

Normal Value Comparisons

To determine whether sales of SRAMs from the Republic of Korea to the United States were made at less than normal value, we compared the Constructed Export Price (CEP) and Export Price (EP) to the Normal Value (NV), as described in the "Constructed Export Price", "Export Price" and "Normal Value" sections of this notice, below. In accordance with section 777A(d)(1)(A)(i) of the Act, we calculated weighted-average CEPs and EPs for comparison to weighted-average NVs.

In order to determine whether we should base price-averaging groups on customer types, we conducted an analysis of the prices submitted by the respondents. This analysis does not indicate that there was a consistent and uniform difference in prices between customer types. Accordingly, we have not based price comparisons on customer types.

On January 8, 1998, the Court of Appeals for the Federal Circuit issued a decision in *CEMEX* v. *United States*, 1998 WL 3626 (Fed. Cir.). In that case, based on the pre-URAA version of the Act, the Court discussed the appropriateness of using constructed value (CV) as the basis for foreign market value when the Department finds home market sales to be outside the ordinary course of trade. The Uruguay Round Agreements Act (URAA) amended the definition of sales outside the ordinary course of trade to include sales below cost. See Section 771(15) of the Act. Because the court's decision was issued so close to the deadline for completing this final determination, we have not had sufficient time to evaluate and apply the decision to the facts of this post-URAA case. For these reasons, we have determined to continue to apply our policy regarding the use of CV when we have disregarded below-cost sales from the calculation of normal value.

In making our comparisons, in accordance with section 771(16) of the Act, we considered all products sold in the home market, fitting the description specified in the "Scope of Investigation" section of this notice, above, to be foreign like products for purposes of determining appropriate product comparisons to U.S. sales. Where there were no sales of identical merchandise in the home market to compare to U.S. sales, we compared U.S. sales to the next most similar foreign like product, based on the characteristics listed in Sections B and C of the Department's antidumping questionnaire.

Level of Trade and Constructed Export Price Offset

In the preliminary determination, the Department determined that there was sufficient evidence on the record to establish a distinction in level of trade between the U.S. CEP sales and the home market sales used for normal value as well as to justify a CEP offset for each of the two respondents. We found no evidence at verification to warrant a change from that preliminary determination. Accordingly, we have made a CEP offset for each of the respondents in this final determination. For further discussion, see "General Comment 5" in the "Interested Party Comments" section of this notice.

Constructed Export Price

A. Hyundai

We used CEP in accordance with section 772(b) of the Act, because the sales to unaffiliated purchasers were made after importation. We calculated CEP based on packed prices, f.o.b. the U.S. affiliate's warehouse to the first unaffiliated purchaser in the United States. We made the following deductions from the starting price ("gross unit price"): foreign inland freight, brokerage and handling; international freight; and U.S. brokerage, handling and inland freight. We made additional deductions, in accordance with section 772(d) (1) and (2) of the Act, for: commissions; credit, inventory carrying costs, and other indirect and direct selling expenses; and bank and extended test charges. Pursuant to section 772(d)(3) of the Act, the price was further reduced by an amount for profit, to arrive at the CEP. The amount of profit deducted was calculated in accordance with section 772(f) of the Act.

B. Samsung

We used CEP in accordance with section 772(b) of the Act, because the sales to unaffiliated purchasers were made after importation. We calculated CEP based on packed prices, f.o.b. the U.S. affiliate's warehouse to the first unaffiliated purchaser in the United States. We made the following deductions from the starting price ("gross unit price"): Foreign inland freight, brokerage, handling, and banking charges; international freight and insurance; and U.S. inland freight, brokerage, handling, insurance, and banking charges. We made additional deductions, in accordance with section 772(d) (1) and (2) of the Act for commissions, credit, advertising, and royalty expenses; inventory carrying costs and other direct and indirect

selling expenses. We also deducted U.S. repacking costs. Pursuant to section 772(d)(3) of the Act, the price was further reduced by an amount for profit, to arrive at the CEP. The amount of profit deducted was calculated in accordance with section 772(f) of the Act.

Export Price

For the Export Price (EP) sales by Samsung, we made deductions from the gross unit price for the following expenses: foreign inland freight, brokerage, handling, and banking charges; international freight and insurance; and U.S. inland freight, brokerage, handling, and banking charges.

Normal Value

In order to determine whether there was a sufficient volume of sales in the home market to serve as a viable basis for calculating NV, we compared each respondent's aggregate volume of home market sales of the foreign like product to the aggregate volume of U.S. sales of the subject merchandise, in accordance with section 773(a)(1)(C) of the Act. Each respondent's aggregate volume of home market sales of the foreign like product was greater than five percent of its aggregate volume of U.S. sales of the subject merchandise. Accordingly, we determined that the home market was viable for each respondent.

Based on a cost allegation presented in the petition, the Department found reasonable grounds to believe or suspect that home market sales by Samsung and Hyundai were made at prices below their respective costs of production ("COPs"). As a result, the Department initiated an investigation to determine whether either respondent made home market sales during the POI at prices below its COP, within the meaning of section 773(b) of the Act.

We calculated COP as the sum of each respondent's cost of materials and fabrication for the foreign like product, plus amounts for SG&A and packing costs, in accordance with section 773(b)(3) of the Act. We used the respondents' reported COPs, adjusted as discussed below, to compute quarterly weighted-average COPs for the POI. We compared the weighted-average COPs to home market sales of the foreign like product as required under section 773(b) of the Act in order to determine whether these sales had been made at prices below COP. On a product-specific basis, we compared COPs to the home market prices, less any applicable movement charges, discounts, and packing expenses.

In determining whether to disregard home market sales made at prices below the COP, we examined whether: (1) Within an extended period of time, such sales were made in substantial quantities; and (2) such sales were made at prices which permitted the recovery of all costs within a reasonable period of time in the normal course of trade. When 20 percent or more of a respondent's sales of a given product during the POI were at prices below the COP, we found that sales of that model were made below cost in "substantial quantities" within an extended period of time, in accordance with section 773(b)(2) (B) and (C) of the Act. To determine whether prices provided for recovery of costs within a reasonable period of time, we tested whether the prices which were below the per unit cost of production at the time of the sale were above the weighted average per unit cost of production for the POI, in accordance with section 773(b)(2)(D) of the Act. When we found that a substantial quantity of sales during the POI were below cost and not at prices that provided for recovery of costs within a reasonable period of time, we disregarded the below cost sales in the calculation of NV.

When NV was based on prices, we made appropriate adjustments to those prices. First, we deducted home market inland freight and home market packing costs and we added U.S. packing costs.

When there were differences in the merchandise to be compared, we made adjustments in accordance with section 773(a)(6)(C)(ii) of the Act to account for those differences. When appropriate, we made circumstance-of-sale adjustments in accordance with section 773(a)(6)(C)(iii) of the Act. For purposes of CEP sales comparisons, we deducted home market indirect expenses.

When there were no above cost home market sales for comparison, NV was based on CV. In accordance with section 773(e)(1) of the Act, we calculated CV based on the sum of each respondent's cost of materials, fabrication, SG&A, profit, and U.S. packing costs. In accordance with section 773(e)(2)(A) of the Act, we based SG&A expenses and profit on the amounts incurred and realized by each respondent in connection with the production and sale of the foreign like product in the ordinary course of trade, for consumption in the foreign country.

Although we generally relied, in our COP and CV calculation, on the data submitted by respondents, we made adjustments in the allocation of both research and development ("R&D"), the treatment of foreign exchange gains and losses, G&A expenses and interest expense as discussed below.

Hyundai

For those comparison products for which there were sales above the COP, we based NV on delivered prices to home market customers. We made deductions for inland freight, imputed credit expenses and banking charges, and home market direct and indirect selling expenses. As indirect selling expenses, we included inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with 19 CFR 353.56(b)(2).

For all price-to-price comparisons, we deducted home market packing costs and added U.S. packing costs, in accordance with section 773(a)(6) of the Act. In addition, where appropriate, we made adjustments to NV to account for differences in physical characteristics of the merchandise, in accordance with 773(a)(6)(C)(ii) of the Act and 19 CFR 353.57.

For price-to-CV comparisons, we made deductions, where appropriate, for credit expenses and banking charges. We also deducted home market indirect selling expenses, including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with 19 CFR 353.56(b)(2).

Samsung

For those comparisons for which there were sales above the COP, we based NV on delivered prices to home market customers. We made deductions for inland freight, imputed credit, advertising, and royalty expenses, and home market direct and indirect selling expenses. For indirect selling expenses, we included inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses and commissions incurred on U.S. sales, in accordance with 19 CFR 353.56(b)(2). In the case of letter-of-credit sales, we added in the amount of any duty drawback.

In accordance with section 773(e)(1) of the Act, we calculated CV based on the sum of the respondent's cost of materials, fabrication, SG&A, profit and U.S. packing costs. In accordance with section 773(e)(2)(A) of the Act, we based SG&A and profit on the amounts incurred and realized by the respondent in connection with the production and sale of the foreign like product in the ordinary course of trade, for consumption in the home market.

Currency Conversion

We made currency conversions into U.S. dollars based on the official exchange rates in effect on the dates of the U.S. sales as certified by the Federal Reserve Bank. Section 773A(a) of the Act directs the Department to use a daily exchange rate in order to convert foreign currencies into U.S. dollars unless the daily rate involves a fluctuation. It is the Department's practice to find that a fluctuation exists when the daily exchange rate differs from the benchmark rate by 2.25 percent. The benchmark is defined as the moving average of rates for the past 40 business days. When we determine that a fluctuation exists, we substitute the benchmark rate for the daily rate, in accordance with established practice. Further, section 773A(b) directs the Department to allow a 60-day adjustment period when a currency has undergone a sustained movement. A sustained movement has occurred when the weekly average of actual daily rates exceeds the weekly average of benchmark rates by more than five percent for eight consecutive weeks. See Change in Policy Regarding Currency Conversions, 61 FR 9434 (March 8, 1996). Such an adjustment period is required only when a foreign currency is appreciating against the U.S. dollar. The use of an adjustment period was not warranted in this case because the Korean Won did not undergo a sustained movement.

Verification

As provided in section 782(i) of the Act, we verified the information submitted by Hyundai and Samsung for use in our final determination. We used standard verification procedures, including examination of relevant accounting and production records and original source documents provided by respondents. The verification team included a semiconductor product expert. The Department has placed on the record in Room B–099 the following verification reports: (1) December 19, 1997, "Verification of Cost of Production and Constructed Value Data Less Than Normal Value Investigation of Static Random Access Memory Semiconductors (SRAMS) from Korea-Samsung Electronics Co. Ltd." (Samsung Cost Verification Report); (2) December 18, 1997, "Verification of Home Market Sales Response of Samsung Electronics Company (SEC) in the Antidumping Investigation of Static Random Access Memory Semiconductors (SRAMS) from the Republic of Korea" (Samsung Home Market Sales Verification Report); (3) December 12, 1997, "Verification of U.S. Sales Response of Samsung Semiconductor, Inc. in the Antidumping Investigation of Static Random Access Memory Semiconductors (SRAMS) from the Republic of Korea" (Samsung U.S. Sales Verification Report); (4) December 16, 1997, "Verification of Cost of Production and Constructed Value Data Less Than Normal Value Investigation of Static Random Access Memory Semiconductors (SRAMS) from Korea-Hyundai Electronics Industries Co. Ltd." (Hyundai Cost Verification Report); (5) December 16, 1997, "Verification of Home Market Sales Questionnaire Responses of Hyundai Electronics Industries in the Antidumping Investigation of Static Random Access Memory Semiconductors (SRAMS) from the Republic of Korea" (Hyundai Home Market Sales Verification Report); and (6) December 16, 1997, "Verification of the U.S. Sales Questionnaire of Hyundai Electronics Industries, Static Random Access Memory Semiconductors (SRAMS) from the Republic of Korea" (Hyundai U.S. Sales Verification Report).

General Comments

Comment 1: Depreciation. The petitioner contends that the Department should continue to use the same depreciation adjustment used in the preliminary determination because of the following: (1) Samsung and Hyundai avoided losses on their income statements by changing the amount of depreciation recorded; and (2) the auditors notes to the financial statements for both respondents confirms that their reported depreciation understates their actual costs. As argued by the petitioner, the object of making such an adjustment is to counteract the effort by respondents to appear to be showing a profit when prices fell below costs during 1996.

Samsung states that the Department adjusted the reported depreciation expenses based on an erroneous assumption that Samsung changed its depreciation methodology for equipment and machinery in 1996. As argued by Samsung, the change was only a change in accounting estimate, and not a change in accounting principle. Samsung also states that the adjustment is not warranted since the reported expenses reasonably reflected costs and were appropriately reported in the audited financial statements as required by and consistent with the Korean generally accepted accounting principles (GAAP). Since its reported depreciation expenses are conservative compared with depreciation expenses taken by other semiconductor manufacturers, Samsung contends these expenses cannot be considered unreasonable and distortive of costs. Further, Samsung maintains that the accounting methods used to estimate the change in useful life of the equipment are prospective, under both U.S. and Korean GAAP. They also do not require any adjustment for the cumulative effect of the change from the date of purchase since there has been no change in accounting principle, which would require that the value of the assets be restated. If the Department does continue to adjust depreciation, Samsung argues that it must cumulatively restate the effect of the change based on the data submitted before verification which was fully verified.

Hyundai argues that the Department should not have adjusted the company's depreciation expense and methodology. According to Hyundai, the reported depreciation expenses and methodology are fully consistent with Korean GAAP. Specifically, Hyundai maintains that if the auditor's opinion attached to its financial statements documents that all elements of the financial statement, including depreciation, were fully prepared in accordance with Korean GAAP. As further claimed by Hyundai, the reported depreciation expenses also reasonably reflected the cost of producing SRAMS. For example, the five year useful life period used by Hyundai in 1996 is appropriate for semiconductor equipment. Finally, Hyundai claims the depreciation expenses as reported are fully consistent with the company's historical accounting methodology.

DOC Position. We agree with the petitioner in part. Historically both respondents have been inconsistent in their approach to special depreciation. For example, both respondents took advantage of the special depreciation option available to them under the Korean Corporate Income tax law in 1995. However, no special depreciation was taken during this current investigation.

It is the Department's normal practice to use costs recorded in the books and records of the respondent. Section 773(f)(1)(A) of the Act states that cost "shall normally be calculated based on the records of the exporter or producer of the merchandise, if such records are kept in accordance with the generally accepted accounting principles of the exporting country (or the producing country where appropriate) and reasonably reflect the costs associated with production and sale of the

merchandise." Further, as explained in the SAA, "[t]he exporter or producer will be expected to demonstrate that it has historically utilized such allocations, particularly with regard to the establishment of appropriate amortization and depreciation periods and allowances for capital expenditures and other development costs." (SAA at 834.)

In contrast to the previous year, both respondents, for this POI, elected not to take special depreciation. This represents a failure to report depreciation expenses in a systematic and rational matter. As a result, disproportionately greater costs were attributed to products manufactured from when the special depreciation was taken than subsequent period when it was not taken. See DRAMs Final Determination. Therefore, for the final determination, we are making an adjustment to the respondents' reported depreciation. We are adding only special depreciation to the reported cost of production.

Comment 2: Interest expense. The petitioner maintains that using tangible fixed assets as the basis for allocating interest expenses is more appropriate to measure costs than using either total assets or cost of sales because of the respondents' heavy use of debt to finance the purchase of tangible fixed assets and because a larger proportion of total fixed assets is related to the semiconductor line of business than to other lines of business.

Samsung and Hyundai state that the Department incorrectly allocated interest expenses on the basis of fixed assets and not on the cost of goods sold. As argued by both respondents, the Department has a long-standing practice of allocating interest expense based on the cost of goods sold. Samsung argues that allocating interest based on fixed assets overstates financing costs since it does not account for income generated by the semiconductor division. Samsung contends that if the Department continues to allocate interest based on assets, it should use total assets rather than fixed assets because the Department would fail to account for the total investment required by its various business units by limiting the allocation base to fixed assets and would not account for the value of fixed assets used up in prior years by allocating interest based on the historical value of fixed assets. Hyundai also maintains that if the Department continues to allocate interest based on fixed assets, the Department, first, should use Cost of Goods Sold ("COGS") to allocate total consolidated corporate interest to Hyundai, then Hyundai's total interest can be allocated to SRAMs based upon the ratio of semiconductor fixed assets to total fixed assets based on the net book value of the assets rather than the acquisition cost.

DOC Position. We agree with the respondents that interest expense should be allocated based on COGS. In our preliminary determination, we allocated interest expense among the various operating units according to the proportional share of fixed assets. We have reconsidered this issue for the final determination and concluded that because the COGS includes a proportional amount of the depreciation of the assets used in the production of the merchandise, allocation of financing expenses on the basis of COGS distributes proportionately more interest expense to those products having higher capital investment. Moreover, we note that it has been the Department's longstanding policy to allocate interest expense on the basis of the COGS of the merchandise subject to investigation. We also note that, for the 1995–1996 administrative review of DRAMs, we have allocated interest expenses based on COGS consistent with the methodology in this case. Therefore, interest expense will be allocated over COGS since it reasonably apportions the interest expenses between SRAMs and other products.

Comment 3: Research & Development. Hyundai argues that the Department overstated R&D expenses by allocating a portion of non-memory R&D expense to SRAMs. According to Hyundai, the preliminary determination deviates from the long-standing practice of calculating product-specific R&D and of excluding R&D relating to non-subject merchandise from its CV calculations. Additionally, the antidumping statute precludes the Department from attributing expenses relating to non-subject merchandise to SRAMs. Moreover, Hyundai states that the *Micron* case requires the Department to provide substantial evidence justifying its departure from its practice. As such, Hyundai argues that the record in the instant case does not support the Department's preliminary determination. For example, Hyundai claims the September 8, 1997, Memorandum from Dr. Murzy Jhabvala to Thomas Futtner, "Cross Fertilization of Research and Development of Semiconductor Memory Devices" ("September 8, 1997 Jhabvala Memo") and the Micron submissions, used by the Department in the Preliminary Determination, do not support an assumption of cross-fertilization.

Hyundai also asserts that its organizational structure and accounting records clearly distinguish between R&D expenditures for memory and non-memory products. Hyundai maintains that cross fertilization of memory and non-memory R&D is extremely unlikely considering the fundamental differences in product design, marketing and production.

Samsung argues that R&D costs related to non-memory products should be excluded because R&D performed for micro and logic products do not benefit memory products such as SRAMs. Samsung disagrees with the Department's position, stated in the preliminary determination, that all R&D conducted for semiconductor products benefits all semiconductor products and, therefore, aggregate R&D costs should be allocated to all semiconductor products for purpose of determining the cost of production and CV. Samsung cites the cases Carbon Steel Flat Products From France (See Certain Carbon Steel Flat Products from France; Final Determination of Sales at Less than Fair Value 58 FR 37125 (July 9, 1993) and Cell Site Transceivers from Japan (see Cell Site Transceivers From Japan; Final Determination of Sales at Less than Fair Value 49 FR 43080 (October 26, 1984), as examples of past cases that the Department has required R&D be calculated on a product-specific basis. Samsung also cites *Micron*, in which the court ordered the Department to "recalculate Samsung's Cost of Production for the LTFV by allocating Research & Development costs on a product-specific basis." (See *Micron Technology, Inc.* v. *U.S.* 893 F.Supp 21 (CIT 1995)). Furthermore, Samsung contends the Department's finding that R&D expenses incurred for non-memory merchandise benefits SRAMs is not supported by the record.

Samsung argues that the R&D costs relating to SRAMs consist of efforts to apply state-of-the art technology to reduce the size of circuits utilized in the subject merchandise. Samsung further states that only after a new generation of memory products has been developed are the technologies developed for memory products applied to develop customer and market specific logic devices. These later devices use existing, mature, process and manufacturing technologies. The R&D that Samsung conducts to develop new memory products might benefit the later developed micro products. Thus, the flow of R&D may be from memory to micro and application specific products, but not vice-versa. Samsung asserts that it is primarily a memory products company, with a one-way flow of R&D from memory to micro products.

Samsung disagrees with the statement prepared by Dr. Murzy Jhabvala of the National Aeronautics and Space Administration. Samsung claims that the statement does not provide enough evidence to refute what the CIT has already ruled upon. Samsung claims that Dr. Jhabvala's assertion that R&D in a given area of semiconductors, such as micro devices, is widely disseminated and read by all micro engineers, says nothing about whether the results of that research benefit development or production of memory products. Samsung further contends that his memorandum does not explain how "cross fertilization" takes place and purportedly benefits the development or production of DRAMs (or SRAMs).

Furthermore, Samsung argues that Dr. Jhabvala's December 18, 1997 memorandum does not support the Department's view that R&D expenses on ASIC and logic devices could benefit the development or production of SRAMs. Samsung claims that the issue before the Department is how to allocate the pool of R&D costs, and whether some or all of the expenses should be allocated to SRAMs production. Moreover, Samsung asserts, Dr. Jhabvala's memorandum does not demonstrate how the work performed on non-memory projects benefit SRAMs.

Samsung concludes that because non-memory R&D does not benefit SRAMs or any other memory products, those expenses cannot be properly allocated to the cost of producing SRAMs. Samsung recognizes that there is limited cross-fertilization of R&D within memory products and its methodology already accounts for any possible cross fertilization concerns. Samsung states that there is no need to include totally unrelated R&D undertaken for micro or logic products in the memory related production costs.

Samsung refers to a letter from Professor Bruce A. Wooley which states that, "[I]n the case of circuit design techniques there is virtually no cross-fertilization among various classes of memories." (See Samsung submission dated September 29, 1997.) Samsung claims that the articles proffered by the petitioner to support its claim that R&D conducted in one area benefits other areas mainly relate to process technology which may benefit a variety of products and to the incorporation of separate designs on a single chip; they do not address whether design technology from one type of memory product benefits the design of another. Samsung argues that both its verified R&D information and the fact that the company separates product-specific R&D for accounting purposes demonstrate that the R&D conducted by Samsung is product-specific design R&D, which does not benefit all products. Samsung argues that, if the Department determines that cross-fertilization of design R&D among memory products does occur, it should still not aggregate product-specific R&D for logic products with product-specific R&D for memory products.

In response to Samsung's and Hyundai's assertions, the petitioner states that the Department properly allocated all semiconductor R&D over all semiconductor production. As argued by the petitioner, there is already sufficient evidence on the record to support the Department's determination that there is significant cross-fertilization among the different areas of semiconductor design and development. Moreover, petitioner contends that logic R&D benefits SRAMs R&D expenses. Petitioner also claims that since new R&D expenses for application-specific integrated circuits (ASICs) do not benefit current production of any product, it must be allocated over all current semiconductor production. Finally, petitioner states that the presence of separate accounts for separate R&D projects does not contradict cross-fertilization.

DOC Position. We agree with the petitioner and have allocated all semiconductor R&D expenses over the total semiconductor cost of goods sold. In the DRAMs Final Determination, the Department recalculated respondents' reported R&D expense based on the ratio of each company's total semiconductor expenses to the total semiconductor costs of goods sales. As we stated in the DRAMs Final Determination:

> * * * Semiconductors present unique problems related to R&D. Because the general underlying technology is the same for all semiconductor products, the benefits from the results of R&D, even if intended to advance the design or manufacture of a specific product, provide an intrinsic benefit to other semiconductor products. It is impossible to measure the extent to which R&D benefits one semiconductor product relative to another. Thus, identification of specific R&D costs with any one product causes overstating or understating of these costs in relation to the benefits that product derived from the total R&D expenditures for semiconductors * * *.
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> (See Dynamic Random Access Memory Semiconductors of One Megabit or Above From the Republic of Korea; Final Determination of Sales at Less Than Fair Value 58 FR 15470 (March 23, 1993.))

Subsequent to the Department's final determination, Micron and the three respondents, Samsung, LG and Hyundai filed lawsuits with the Court of International Trade challenging that determination. Thereafter, in *Micron Technologies, Inc.* v. *United States*, 893 F.Supp. 21 (CIT 1995), the Court remanded to the Department the allocation of R&D expenses. The Court stated that the Department had failed to place on the record any evidence of cross-fertilization in the semiconductor industry. Therefore, the Court instructed the Department to recalculate respondents' cost of production by allocating research and development (R&D) expenses on a product-specific basis. In the remand results, the Department did so and the remand was affirmed. CIT No. 93–06–00318, Slip Op. 95–175 (October 27, 1995).

In the 1992–1994 DRAMs review, LG Semicon (LG) argued that the Department should not have included R&D expenses of non-DRAM products in the DRAM R&D. See Dynamic Random Access Memory Semiconductor of One Megabit or Above From the Republic of Korea; Final Results of Review 61 FR 20217 (May 6, 1996) ("1992–1994 DRAMs review"). According to LG, the Department identified and verified product-specific expenses in its accounting system. Therefore, LG argued that the Department's decision to include non-DRAM R&D was inconsistent with the *Micron* decision. In the 1992–1994 DRAMs Review final results, the Department stated:

> * * * At verification, we confirmed that each R&D project is accounted for separately in each of the respondent's respective books and records. Separate accounting, however, does not necessarily mean that cross-fertilization of scientific ideas does not occur. Moreover, the CIT specifically stated in *Micron Technology* that the Department did not "direct the court to any record evidence of R&D cross-fertilization in the semiconductor industry." *Micron Technology*, 893 F. Supp., at 27. In this review, the Department has provided such information. See Memorandum from Karen Park to Holly Kuga regarding Cross-Fertilization of R&D for DRAMs, August 14, 1995 (cross-fertilization memo). The cross-fertilization memo includes pages from verification exhibits, a memorandum from a non-partisan expert from the semiconductor industry, as well as information from certain articles widely read by experts in the DRAM R&D field demonstrating the existence of cross-fertilization of R&D in the DRAM industry * * *
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> Dynamic Random Access Memory Semiconductor of One Megabit or Above From the Republic of Korea; Final Results of Review 61 FR 20218 (May 6, 1996).

Due to the forward-looking nature of the R&D activities, the Department, in this investigation, cannot identify every instance where SRAM R&D may influence logic products or where logic R&D may influence SRAM products, but

the Department's own semiconductor expert has identified areas where R&D from one type of semiconductor product has influenced another semiconductor product in the past. Dr. Murzy Jhabvala, a semiconductor device engineer at NASA with twenty-four years experience, was asked by the Department to state his views regarding cross-fertilization of R&D efforts in the semiconductor industry. In a July 14, 1995 Memorandum to Holly Kuga, " Cross Fertilization of Research and Development Efforts in the Semiconductor Industry," Dr. Jhabvala stated that "it is reasonable and realistic to contend that R&D from one area (*e.g.*, bipolar) applies and benefits R&D efforts in another area (*e.g.*, MOS memory)." Dr. Jhabvala also stated that:

> SRAMs represent along with DRAMs the culmination of semiconductor research and development. Both families of devices have benefitted from the advances in photo lithographic techniques to print the fine geometries (the state-of-the-art steppers) required for the high density of transistors * * *. Clearly, three distinct areas of semiconductor technology are converging to benefit the SRAM device performance. There are other instances where previous technology and the efforts expended to develop that technology occurs in the SRAM technology. Some examples of these are the use of thin film transistors (TFTs) in SRAMs, advanced metal interconnect systems, anisotropic etching and filling techniques for trenching and planarization (CMP) and implant technology for retrograde wells.

(See "September 8, 1997 Jhabvala Memo.")

Furthermore, Dr. Jhabvala also participated in the verification of Samsung's R&D expenses. After interviewing several of Samsung's R&D engineers, Dr. Jhabvala concluded that "the most accurate and most consistent method to reflect the appropriate R&D expense for any semiconductor device is to obtain a ratio by dividing all semiconductor R&D by the cost to fabricate all semiconductor sold in a given period." (December 19, 1997, Memorandum from Murzy Jhabvala to the File, "Examination of Research and Development Expenses and Samsung Electronic Corporation ").

We reviewed the views of Samsung's expert on this subject and found them to be of less probative value than the cases cited above, as Jhabvala's articles refute Dr. Wooley's assertion that there is no cross-fertilization among circuit design techniques. In fact, Dr. Wooley agrees that there can be cross-fertilization in the development of process technologies among various classes of memories. This assertion also refutes the claims that there is no cross-fertilization in the development of process technologies.

The respondents argue we should follow their normal accounting records which categorize R&D expenses by project and product. While we do not disagree that each R&D project is accounted for separately in each of the respondents' respective books and records, we do not find this argument persuasive since accounting records do not address the critical issue of whether R&D in one area benefits another area. Therefore, we do not believe that the R&D expenses associated with these records reasonably reflect the appropriate cost of producing the subject merchandise.

Finally, contrary to the respondents' assertion, the methodology we are applying does calculate product-specific costs. It is the Department's practice where costs benefit more than one product to allocate those costs to all the products which they benefit. This practice is consistent with section 773(f)(1)(A) of the Act because we have determined that the product-specific R&D accounts do not reasonably reflect the costs associated with the production and sale of SRAMs. Therefore, as semiconductor R&D benefits all semiconductor products, we allocated semiconductor R&D to all semiconductor products.

Comment 4: Foreign exchange loss. The petitioner argues that current period foreign exchange losses on long-term debt should be included in cost of production since the Department's practice and U.S. and international accounting standards all require that current period foreign exchange losses on long-term debt be included in cost of production and the Department's past practice has been to disregard Korea's local accounting standard that called for deferring current period foreign exchange losses on long-term debt.

Samsung contends that its methodology is consistent with Korean GAAP and with the Department's past practice of amortizing foreign exchange losses relating to debt over the life of the loan. Samsung further maintains that its methodology does not exclude the foreign exchange losses but rather amortizes them over the life of the loans and does not distort the dumping calculation. Samsung argues that foreign exchange losses should not be treated like interest because they are not functionally equivalent to interest.

Hyundai maintains that its treatment of unrealized foreign exchange losses is in accordance with Korean GAAP and reasonably reflects the cost of production. Hyundai argues that Korean GAAP provides for the recognition of such gains or losses when they are actually incurred and unrealized long-term foreign currency translation losses do not represent an actual cost to them. Hyundai further contends that the Department should reject Micron's contention that the losses be treated as interest expenses and be allocated over fixed assets because such foreign exchange losses on long-term debt are not current interest expenses, but rather reflect fluctuations in exchange rates associated with year end valuation of foreign currency liabilities.

DOC Position. We agree with the petitioner, in part, and have included the amortized portion of foreign exchange losses on long-term debt in the cost of production as part of interest expense. The translation gains and losses at issue are related to the cost of acquiring and maintaining debt. These costs are related to production and are properly included in the calculation of financing expense as a part of COP. In previous cases, we have found that translation losses represent an increase in the actual amount of cash needed by respondents to retire their foreign currency denominated loan balances. (See Notice of Final Determination of Sales at Less than Fair Value: Fresh Cut Roses from Ecuador, 24 FR 7019, 7039, (Feb. 6, 1995).) Furthermore, the Department has amortized these expenses over the remaining life of the companies' loans in the past. (See Notice of Final Determination of Sales at Less Than Fair Value: Certain Steel Concrete Reinforcing Bars From Turkey, 62 FR 9737, 9743, (March 4, 1997).) We have verified deferred foreign exchange translation gains and losses for both respondents. See Samsung Cost Verification Report and Hyundai Cost Verification Report. To reasonably reflect the cost of producing and selling the subject merchandise, it is necessary that the respondents' cost reflect the additional financial burden represented by the additional cash need to retire foreign currency denominated loans. Therefore, for the final determination, the Department amortized deferred foreign exchange translation gains and losses over the average remaining life of the loans on a straight-line basis and included the amortized portion in net interest expense.

Comment 5: CEP Offset. The petitioner contends that the Department should make no CEP offset adjustment for any respondent for purposes of the final determination. The petitioner asserts that the Department's practice of determining the number and comparability of levels of trade after making all adjustments to CEP, but before adjusting NV, makes CEP offsets virtually automatic. According to the petitioner, under both the plain terms of

the statute and the intent of Congress, such adjustments should be the exception, not the rule. The petitioner notes that it raised the same argument in another case and that the issue is now before the courts. (See Dynamic Random Access Memory Semiconductors of One Megabit or Above From the Republic of Korea; Final Results of Antidumping Duty Administrative Review 62 FR 965 (Jan. 7, 1997) ("DRAMs 1994–1995 review").

Hyundai disagrees, noting that the statute requires that a level of trade analysis be performed only after adjustment is made for U.S. selling expenses. Hyundai further states that the Department has rejected similar arguments made in the second and third review of DRAMS. As support for this proposition, Hyundai cites to the second review, where the Department stated that the level of trade will be evaluated based on the price after adjustments are made under section 772(d) of the Tariff Act. Hyundai maintains there is nothing new in the law or the facts of this investigation to suggest that the Department should reexamine its practice of beginning its level of trade analysis after adjusting for U.S. expenses

Samsung also disagrees with the petitioners' argument that the Department should not grant the CEP offset. Samsung cites to the second and third reviews of DRAMs in which the Department rejected identical arguments by the petitioner and stated "while the petitioner is correct in noting that the starting price for calculating the Constructed Export Price (CEP) is that of the subsequent resale by the affiliated importer to an unaffiliated buyer, the Act, as amended by the URAA, and the SAA clearly specifies that the relevant sale for our level of trade (LOT) analysis is the CEP transaction between the exporter and the importer." (See Dynamic Random Access Memory from Korea, 62 FR 39809, 39821 (July 24, 1997) ("DRAMs 1995–1995 review"). Samsung states that the statute, the SAA, the Department's regulations and the Department's practice in every case decided under the new law all mandate that in making the LOT determination, the Department should compare normal value to CEP.

Samsung also claims that the new regulations issued by the Department formally codify this policy. 19 CFR 351.412 (c) (ii) states that for purposes of the LOT analysis, the Department will "[i]n the case of constructed export price, the export price as adjusted under section 772(d) of the Act." (See Antidumping Duties; Countervailing Duties; Final Rule, 62 FR 27296, 27414 (May 19, 1997). Samsung contends that the SAA instructs the Department "to establish normal value based on home market sales at the same LOT as the CEP or the starting price for the export price". Samsung asserts that the petitioner has failed to offer any evidence that the Department's level of trade analysis is incorrect and should disregard the petitioner's argument.

Samsung further claims that for CEP sales, use of the starting price, which is the sale to the first unaffiliated customer in the United States, is inappropriate because the starting price of CEP sales includes expenses associated with economic activity in the United States.

DOC Position. The statute and SAA both support analyzing the level of trade of CEP sales at the constructed export level price, i.e. after expenses associated with economic activities in the United States have been deducted pursuant to section 772(d) of the Act. As we stated in the second *DRAMs* review, the Department has:

> * * * Consistently stated that, in those cases where a level of trade comparison is warranted and possible, then for CEP sales the level of trade will be evaluated based on the price after adjustments are made under section 772(d) of the Act (see Large Newspaper Printing Presses and Components Thereof, Whether Assembled or Unassembled, From Japan; Notice of Final Determination of Sales at Less Than Fair Value, 61 FR 38139, 38143 (July 23, 1996). In every case decided under the revised antidumping statute, we have consistently adhered to this interpretation of the SAA and of the Act. See, e.g., Aramid Fiber Formed of Poly Para-Phenylene Terephthalamide from the Netherlands; Preliminary Results of Antidumping Duty Administrative Review, 61 FR 15766, 15768 (April 9, 1996); Certain Stainless Steel Wire Rods from France; Preliminary Result of Antidumping Duty Administrative Review, FR 8915, 8916 (March 9, 1996); Antifriction Bearings (Other Than Tapered Roller Bearings) and parts Thereof from France, et al., Preliminary Results of Antidumping Duty Administrative Review, 61 FR 25713, 35718–23 (July 8, 1996)'.
>
> Dynamic Random Access Memory Semiconductors of One Megabit or Above From the Republic of Korea; Final Results of Antidumping Duty Administrative Review 62 FR 965, January 7, 1997).)

Consistent with this practice, we performed our level of trade analysis of CEP sales only after adjusting for selling expenses incurred in the United States. Based on our analysis, we determined that each respondent sold SRAMs during the POI at a level of trade in the home market which was different, and more advanced, than the level of trade of the CEP sales of SRAMs in the United States. In addition, we did not have the data necessary to consider whether a level of trade adjustment was appropriate.

Because Samsung and Hyundai provided sufficient data to justify CEP offset adjustments, we have continued to grant these adjustments.

Comment 6: Scope of the Investigation. The petitioner argues that the Department should clarify that the scope of the order on SRAMs from Korea includes the SRAM content of motherboards for personal computers. The petitioner contends that if SRAMs incorporated on motherboards are not included in the scope of the order, the respondents will shift a significant volume of SRAMs into the production of motherboards in Korea that are destined for the United States, thereby avoiding paying duties on the SRAMs.

In addition, argues the petitioner, while motherboards viewed as a whole may be considered to fall within a class or kind of merchandise separate from SRAMs, the placement of SRAMs on a motherboard does not diminish their separate identity or function, and should not insulate them from antidumping duties. The petitioner contends that its position is supported by: (1) The Department's practice regarding combined or aggregated products; (2) analogous principles of Customs Service classification; and (3) the Department's inherent authority to craft an antidumping order that forestalls potential circumvention of an order.

The petitioner also argues that the Customs Service can administer, without undue difficulty, an antidumping duty order that covers SRAMs carried on non-subject merchandise.

At the public hearing held by the Department, the petitioner asserted that there are fundamental differences between the scope language in the DRAMs Final Determination and the scope language in this investigation that distinguish the two cases. The petitioner first argues distinguishes this investigation from the DRAMs Final Determination, because in this case there "is no limitation to the function of memory." See January 16, 1998, Hearing on SRAMs from Korea, Transcript dated January 22, 1998, at page 225. The petitioner further argues that, in the DRAM case the function of the product was memory, which is not the case in this investigation. See January 16, 1998, Hearing on SRAMs from Korea, Transcript dated January 22, 1998, at page 225.

IDT and Cypress agree with the petitioner, arguing that SRAMs on a motherboard are no less SRAMs than

those imported separately and that the Department's failure to cover such imports would provide an incentive to foreign SRAM producers to shift their sales to motherboard producers in Taiwan and elsewhere.

Hyundai, Motorola, Compaq, and Digital opposed the petitioner's position. Compaq, and Digital argue that the petitioner's circumvention concerns are unfounded. They note that the Department determined in the DRAMs Final Determination that DRAMs physically integrated with the other components of a motherboard in a manner that made them part of an inseparable amalgam (*i.e.*, a motherboard) posed no circumvention risk and that the same holds true in this case.

In addition, Compaq and Digital argue that, contrary to the petitioner's assertion, SRAMs affixed to a motherboard do not retain their separate functional identities. In this case, SRAMs are integrated onto motherboards by soldering, are interconnected with other motherboard elements by intricate electronic circuitry, and become part of a complex electronic processing unit representing an inseparable amalgam (*i.e.*, a motherboard) constituting a different class or kind of merchandise that is outside the scope of the investigation.

Hyundai disputes petitioner's contention that the memory function of SRAMs is not altered by the placement of chips on a motherboard. According to Hyundai, the same statement could be made of any product installed in a finished product. For example, Hyundai argues that the Department has not determined that the scope of the antifriction bearings antidumping duty orders should be extended to include the ball bearing content of imported automobiles. Finally, Compaq and Digital argue that the petitioner's proposal is unworkable from an administrative standpoint, since it would require motherboard manufacturers to track all SRAMs placed in every motherboard throughout the world. Compaq and Digital note that they cannot determine the value of Korea SRAMs incorporated in a particular motherboard. In addition, Compaq, and Digital argue that the petitioner's proposal would be unadministrable by the Customs Service because the SRAM content of a motherboard cannot be determined by physical inspection and because the petitioner has provided no realistic proposition as to how the Customs Service might carry out the petitioner's proposal on an entry-by-entry basis, given the enormous volume of trade in motherboards.

With regard to the petitioner's assertion that the scope of the language in DRAMs Final Determination is fundamentally different from the scope language in this investigation, Compaq and Digital argue that the language is quite similar and that there is no "doubt that literally the language in this Notice of Investigation and in the preliminary referred to certain modules, and those are memory modules, not any kind of board on which other elements are stuffed." See January 16, 1998, Hearing on SRAMs from Korea, Transcript dated January 22, 1998, at page 203.

DOC Position. We disagree with the petitioner. The petitioner's argument that the scope of the investigation as defined in the preliminary determination should be interpreted to encompass the SRAM content of motherboards is unpersuasive for three basic reasons. First, the SRAM content of motherboards (when affixed to the motherboard) was not expressly or implicitly referenced in the scope language used, to date, in this investigation. Second, just as we found in the DRAMs Final Determination, the petitioner's claims about potential circumvention of the order are groundless. Third, it is not appropriate for an antidumping duty order to cover the input content of a downstream product. As the Department found in DRAMS Final Determination, a case in which a nearly identical proposal was rejected by the Department, when a DRAM is physically integrated with a motherboard, it becomes a component part of the motherboard (an inseparable amalgam). As there has been no request to include motherboards within the scope of this investigation, the SRAM content of motherboards (when physically integrated with the motherboard) cannot be covered.

As to the first point, we disagree with the petitioner's assertion that the differences between the scope language in DRAMs From Korea and the language in this case are so fundamental that the differences can be interpreted to mean that SRAMs soldered onto motherboards are included within the scope of this investigation. The SRAM scope language relied upon by the petitioner includes within the scope of this investigation "other collection[s] of SRAMs;" as the petitioner notes in its argument, this refers specifically to modules whether mounted or unmounted on a circuit board. There is similar scope language in DRAMs From Korea. In that case, we interpreted the language as not extending to modules which contain additional items which alter the function of the module to something other than memory. Such an interpretation, applied to this case, indicates clearly that the SRAM content of motherboards is not within the scope of this investigation.

We found in DRAMs From Korea that memory boards whose sole function was memory were included within the definition of memory modules; however, we further concluded that other boards, such as video graphic adapter boards and cards were not included because they contained additional items which altered the function of the modules to something other than memory. Consequently, at the time of the final determination, we added language to the DRAMs From Korea scope in order that these other, enhanced, boards be specifically excluded. Since the issue of such enhanced boards was not raised in this case, we did not find it necessary to include an express exclusion for such products. Thus, the absence of such language should not be interpreted to permit the inclusion of products which do not fall under the rubric of "other collections of SRAMs."

As to the second point, the petitioner argued in DRAMS Final Determination that unremovable DRAMs on motherboards should be included in the scope of the order to counter the potential for circumvention of the order. We stated in that determination that we considered it "infeasible that a party would import motherboards with the intention of removing the integrated DRAM content and, therefore, consider it unreasonable to expect that any order arising from this investigation could be evaded in such a fashion." (See DRAMS Final Determination, Case Number A-580-812, "Memorandum to Joseph Spetrini from Richard Moreland", dated March 15, 1993, at page 13). We find it equally infeasible that an importer would import SRAMs soldered onto a motherboard for the sole purpose of removing those SRAMs for individual resale thereby circumventing the antidumping duty order.

As to the third point, our statute does not provide a basis for assessing duties on the input content of a downstream product. See Senate Rep. 100-71, 100th Congress, 1st Sess. 98 (1987) (in which the report notes both the general rule and the "major input" exception, which applies only in an investigation or review of a downstream product). Thus, where an SRAM loses its separate identity by being incorporated into a downstream product, and where the investigation covers SRAMs but does not cover the downstream product, there can be no basis for assessing

duties against the SRAMs incorporated in the downstream product.

For a more detailed discussion regarding this issue, see the Memorandum to Louis Apple from the Team, dated February 13, 1998.

Comment 7: Calculation of CV Profit. Petitioner maintains that the Department erroneously included in its calculation of CV profit sales that failed both prongs of the cost test. Samsung disagrees and argues that the Department, for the purposes of calculating CV profit, should not have disregarded sales below costs which have not otherwise been excluded from the calculation of normal value. Furthermore, petitioner argues that the Department should revise its computer program to ensure that only sales that are above quarterly costs at the time of sale are included in the calculation. According to petitioner, sales that fail the cost test, but pass the "cost recovery test" under section 773(b)(2)(D), are deemed to have zero profit even if they are not excluded from normal value. As a result, an erroneous CV profit rate was calculated by the Department. Therefore, the Department should correct the programming language.

Samsung asserts that the Department inadvertently included sales of models that were found to be one hundred percent below costs in the calculation of CV profit. It argues that the Department's longstanding practice is to exclude from the pool of sales used to calculate CV profit only those sales which have been disregarded in the cost test.

DOC Position. We agree with Samsung. It is the Department's practice to exclude any home market sales that failed the cost test from the pool of sales used to calculate CV profit. According to the SAA, the Department "will base amounts for SGA and profit only on amounts incurred and realized in connection with sales in the ordinary course of trade . . . Commerce may ignore sales it disregards as a basis for normal value, such as those sales disregarded because they are made at below-cost prices." *See* SAA at 839. The Department has revised its preliminary calculations to include in the CV profit only those sales which have not been disregarded as the basis for normal value.

Company Specific Issues

A. Petitioner

Comment 1: Untimely Clerical Error Allegation. Petitioner alleges that the Department accepted an untimely clerical error submission from Samsung. Samsung's clerical error allegation was that the Department inadvertently set inventory carrying costs to zero.

DOC Position. We agree with the petitioner. Samsung's submission was dated after the deadline to submit any allegations for clerical errors pursuant to the preliminary determination. However, the Department had already determined that inventory carrying cost had been set to zero prior to the Samsung submission. Therefore, for this final determination, we have revised the computer program, accordingly.

Comment 2: Cost Test Methodology. Petitioner claims that the Department inappropriately compared U.S. models to the next most similar model in the home market when all of the home market sales of the identical or most similar product made during a given quarter failed the cost test. Petitioner claims that if all of the sales made during a given quarter fail the cost test, the Department should make comparisons to CV, rather than going to the next most similar model, even if more than 80 percent of the sales of that home market model were made above cost during the POI.

DOC Position. Section 773(b)(1) instructs the Department to disregard sales below cost when they "(A) have been made within an extended period of time in substantial quantities; and (B) were not at prices which permit recovery of all costs within a reasonable period of time." To measure cost recovery of each below-cost sale, the Department compares each below-cost price to the annual cost of production of that model, and disregards those sales whose price is lower than the annual cost of production. The Department defines the extended period of time and the cost recovery period as the POI. To measure whether sales have been made in substantial quantities over an extended period of time, the Department determines the quantity of sales that were made below cost during the POI. If 80 percent or more of the sales during the POI were made above cost, then the Department uses all sales, above and below cost, to determine normal value. If less than 80 percent of the sales during the POI were above cost, then the Department uses only the above-cost sales to determine normal value.

Therefore, in cases where comparisons are made on a POI-basis, the Department calculates a weighted-average normal value for all models that had at least one sale above cost during the POI. It resorts to CV only when there are no sales of identical or similar merchandise or when all sales of a comparison product fail the cost test.

Comment 3: Depreciation Ratio Adjustment. Petitioner claims that the Department applied the wrong depreciation ratio adjustment for components to Samsung's modules.

DOC Position. We agree with petitioner. We inadvertently applied the wrong depreciation ratio and therefore, have made the adjustment for the final determination. (See Comment 1.)

Comment 4: Overwritten Data. Petitioner alleges, and Hyundai and Samsung concur, that the cost test results are applied to the original sales database in such a way that the cost test data set inappropriately overwrites the data in the original data set.

DOC Position. We agree with petitioner, Hyundai and Samsung, and have made the appropriate corrections to our calculations.

Comment 5: Adjustment to Fabrication Costs. Petitioner argues that the evidence on the record clearly has demonstrated that Samsung shifted costs from the production of SRAMs to the production of non-subject merchandise. Therefore, petitioner requests that the Department make an adjustment to Samsung's fabrication costs. Petitioner claims the verification team missed the demonstrable under-reporting of costs of the SRAMs. The team did not do the following: (1) Verify the entire production of a sample cost center; (2) ask to see the entire production quantities of subject and non-subject merchandise; (3) examine all costs; (4) determine if the allocation of costs between subject and non-subject merchandise was reasonable. Petitioner also developed a cost model to demonstrate how Samsung's costs were allocated away from SRAMs to uncovered merchandise. In a parallel argument, petitioner also alleges that Samsung was unable to provide contemporaneous "written" records of its non letter-of-credit home market sales. Although it contained price and quantity information, Samsung's computer-generated sales listing does not constitute a verifiable document and permits the manipulation of past prices.

Samsung argues that it did not shift costs from SRAMs to non-subject merchandise. Citing the verification report, Samsung argues that the Department did the following: (1) Examined and differentiated between the allocation of costs for SRAMs and non-subject merchandise; (2) reconciled the allocation of the processing costs between subject and non-subject merchandise using actual data from the cost system and the cost submission; (3) tied the reported product costs to the financial statements; (4) tested the allocations and the standard machine and labor hours; and (5) summarized

that all costs were reconciled to the financial statements.

DOC Position. We agree with Samsung and have not made an adjustment to fabrication costs. Regarding Samsung's costs, the Department conducted an extensive verification. See Samsung Cost Verification Report. Moreover, contrary to the petitioner's allegation, the Department verified the entire cost of several cost centers as well as production quantities. We determined that the allocation of costs between subject and non-subject merchandise was reasonable, as based on Samsung's actual accounting records. We examined these issues during the overall cost reconciliation and the verification of major cost components, such as materials, labor, and overhead. Furthermore, the Department reconciled the total accumulated costs for each cost center to the total cost of manufacturing for Samsung. Therefore, the Department fully verified and reconciled all reported costs.

In regard to petitioner's cost model, we note that it was based on three faulty assumptions: (1) That all models produced on a given line have the same processing times; (2) that all models produced on the same line have the same yields; and (3) that the total products processed on a given line will equal the rated capacity for the product. The Department examined standard times and yields in detail and verified that there are differences among products. Also, actual throughput will vary from rated capacity depending on the operation and utilization of the resources of the line. For these reasons, we do not find that petitioner's cost model provides a substantial basis for disregarding our verification findings

With respect to the sales verification allegation, the Department examined at length Samsung's computerized record keeping system. The fact that Samsung did not state the price of the merchandise on the shipping orders is irrelevant. The Department successfully conducted extensive sales traces on both pre-selected and surprise sales to verify prices and received voluminous documentation for each sale, from shipping orders to bank receipts, which were then tracked into the sales ledgers and then tied to the audited financial statements. This process was clearly described in the verification report. As noted in the verification report, the Department found no discrepancies or omissions in Samsung's reporting. See Samsung Cost Verification Report. For these reasons, we are not making changes to Samsung's sales response except as noted elsewhere in this notice.

B. Samsung

Comment 1: Double-Counting of Duty Drawback. Samsung claims that the Department double-counted the duty drawback for local letter of credit sales by adding duty drawback to the sales value in the determination of revenue in the CEP profit calculation. Samsung argues, that the Department, however, also reduced direct selling expenses, which were deducted from Korean revenues, by the amount of duty drawback. As a result, duty drawback was double-counted.

DOC Position. We disagree with Samsung. We did not inadvertently double-count duty drawback in the calculation for U.S. and home market revenue.

Comment 2: Use of Consolidated Financial Statements. Samsung argues that the Department's use of its unconsolidated financial statements for determining interest expense is appropriate in this case since the use of the unconsolidated financial statements is consistent with the DRAMs Final Determination investigation and the first administrative review of 1992–1994 DRAMs review. It further contends that calculating the interest expense based on the consolidated financial statements would distort the interest expense calculation because it is not possible for Samsung to break out the short-term interest income which would be used to offset interest expense on the consolidated basis. However, Samsung maintains that the requisite data is on the record and has been verified if the Department decides to use the consolidated financial statements to calculate the interest expense.

DOC Position. We disagree with Samsung. It is a longstanding Department policy to use consolidated interest expense because this practice recognizes the fungible nature of invested capital resources within a consolidated group of companies. See Kaplan, Kamarck and Parker Cost Analysis under the Antidumping Law, 21 Geo. Wash. J. Int'l L & Econ., 357, 387 (1988). The Department previously used the unconsolidated financial statements for the DRAMs investigation and the first and second reviews because the consolidated financial statements were not available at that time. For this final determination, we have used the used the interest expense as recorded in Samsung's consolidated financial statement.

Comment 3: Guaranty Fees. Samsung maintains it did not include guaranty fees in its interest expense because these fees were included in the G&A calculation. If the fees are an interest expense, Samsung argues that they should be deducted from G&A to avoid double-counting.

DOC Position. We have not reclassified guaranty fees from G&A expense to interest expense as it would have no impact on the submitted costs.

Comment 4: Revised Interest Expense. Samsung claims that the Department erroneously calculated the revised interest expense as a percentage of the variable TOTAL, which includes the cost of manufacturing (COM), G&A and R&D. It maintains that the revised interest adjustment factor was based on COGS which does not include G&A or R&D, and, therefore, the revised interest factor should be calculated as a percentage of COM.

DOC Position. We agree and have revised our calculations in our computer program

Comment 5: CV Profit Rate Methodology. Samsung claims that the Department erroneously calculated the overall CV profit rate by first computing the transaction specific profit rate for each home market sale, then weight-averaging the transaction specific rates based on sale quantity to compute the overall CV profit rate. It claims that the Department's standard practice is to calculate the CV profit rate by dividing the total home market profit by the total home market cost to derive a profit ratio. It quotes Certain Stainless Steel Wire Rods from France, 62 FR 7206, 7209 (February 18, 1997) and Certain Hot-Rolled Lead and Bismuth Carbon Steel Products from the United Kingdom, 61 FR 56514 (November 1, 1996), as saying that the method used in the preliminary determination seriously distorts the dumping calculation. For the final determination, the Department should use its normal methodology for calculating CV profit.

Petitioner states that it is more appropriate to calculate CV profit using the methodology in the preliminary determination. Further, petitioner notes that the two cases cited by Samsung did not make a judgement as to the general applicability of the CV profit methodology. Instead, the Department in these two above-cited cases only acknowledged that it was changing the programming language and not revising its overall CV profit methodology.

DOC Position. We agree with Samsung. For this final determination, we have used the normal methodology used to calculate the CV profit rate for both Samsung and Hyundai. It measures more accurately the actual profit for sales of the foreign like product made in the ordinary course of trade. Therefore, for the final determination, the CV profit ratio was calculated by dividing total

home market profit by total home market costs, for each respondent, as both respondents had above-cost sales in the home market.

C. Hyundai

Comment 1: CV Profit on a Quarterly Basis. Hyundai argues that the Department must calculate CV profit on no longer than a quarterly basis. For the purposes of the preliminary determination, the Department recognized that prices during the POI declined significantly and, therefore, used quarterly data for the comparisons of prices and sales below cost test. However, the Department did not calculate profit for CV on a quarterly basis. Hyundai further argues that declining prices, in turn affect the profit rates earned on sales during the period of investigation. Since the antidumping comparison is based on matching comparable products in a comparable period, the Department should also apply the appropriate quarterly profit rates in the calculation of CV.

Petitioner contends that the Department properly used the annual profit figure in the CV calculation. The annual profit rate is the correct figure since it reflects not only the quarterly cost of manufacture but also those annual costs, such as general and administrative and financing expenses, which are non-recurring and must be calculated on an annual basis to ensure that all costs are captured in the cost of production.

DOC Position. We agree with the petitioner. The Department applies the average profit rate for the POI or period of review (POR) even when the cost calculation period is less than a year. See, e.g., Certain Fresh Cut Flowers From Colombia; Final Results and Partial Rescission of Antidumping Duty Administrative Review, 62 FR 53287, 53295 (Oct. 14, 1997) and Silicon Metal from Brazil; Final Results of Antidumping Duty Administration Review, 61 FR 46763, 46774 (Sept. 5, 1996). The calculation of profit as an average for the period of investigation or review is implied by the statute's guidance as to the recovery of cost test. Section 773(e)(2)(A) of the Act mandates that the Department use the actual amounts for profit in connection with the production and sale of the foreign like product in the ordinary course of trade. Moreover, section 773(b)(2)(D) of the Act directs us to perform the recovery of cost test on a POI basis. Therefore, in order to be consistent we must calculate profit on the same basis as the basis used to determine whether sales were made in the ordinary course of trade.

Comment 2: Reversal of Bad Debt. Hyundai contends that the reversal of bad debt should be used to offset G&A expense. Hyundai submitted a revised G&A calculation at verification to reflect this reversal of bad debt. Hyundai states that the reversal of the allowance for bad debt is classified under non-operating income in its financial statements.

DOC Position. We agree with Hyundai. The allowance for bad debt is properly classified as a non-operating general expense. The revised G&A calculation was properly submitted prior to the beginning of verification. We have made the appropriate changes for the final determination.

D. LG Semicon

Comment 1: Facts Available. LG argues that the Department should not use a facts available rate based on information supplied by the petitioner that has been determined to be inaccurate in the course of the Department's investigation. LG contends that because the petition was based on Samsung's data, and since Samsung received an estimated margin in the preliminary determination significantly different than the petition rate, the petition data cannot be used as facts available. LG maintains that to assign it a rate of 55.36 percent nullifies the subsequent investigation which led to Samsung having a 1.59 percent margin. LG cites the case of *D & L Supply Co.* v *United States* 113 F.3d 1220 (1997), in which the Federal Circuit ruled that the Department should use the best information provisions of the Act "to determine current margins as accurately as possible."

Petitioner contends that the Department properly assigned a facts available rate to LG based on corroborated information from the petition since LG refused to participate in the investigation. The Department should not give preferential treatment to LG, a non-cooperative respondent, by assigning as facts available a margin calculated for a participating respondent. Petitioner disputes LG's contention that the petition data was "seriously flawed." Petitioner argues that the Department compared Samsung's actual prices with the petitioner's home market and U.S. price quotes, and found them sufficiently "close." LG had full opportunity to present its own data and receive its own calculated dumping margin based on that data if it disagreed with the data presented in the petition. LG chose not to cooperate.

DOC Position. We agree with petitioner. We have assigned an adverse facts available rate due to LG's refusal to provide information pursuant to the investigation. Section 776(a)(2) of the Act provides that if an interested party: (1) Withholds information that has been requested by the Department; (2) fails to provide such information in a timely manner or in the form or manner requested, subject to subsections 782(c)(1) and (e) of the Act; (3) significantly impedes a determination under the antidumping statute; or (4) provides such information but the information cannot be verified, the Department shall use the facts otherwise available in reaching the applicable determination. At the time of LG's withdrawal from the investigation, the Department did not consider LG to be an insignificant supplier to the U.S. market and did not excuse the company from responding to the questionnaire. Because LG failed to respond to the Department's questionnaire, we recommend using the facts otherwise available to calculate their dumping margins.

When a party fails to cooperate to the best of its ability, the Department may make an adverse inference when selecting from the facts otherwise available, and pursuant to Section 776(b) of the Act such an inference may be based on information in the petition. Section 776(c) of the Act provides that, when the Department relies on secondary information (such as the petition) in using the facts otherwise available, it must, to the extent practicable, corroborate that information from independent sources that are reasonably at its disposal. When analyzing the petition, the Department reviewed all of the data the petitioner relied upon in calculating the estimated dumping margins, and adjusted those calculations where necessary. These estimated dumping margins were based on a comparison of CV to U.S. price, the latter of which was based on price quotations offered by Samsung. For purposes of corroboration, the Department re-examined the price information provided in the petition in light of information developed during the investigation and found that it had probative value. See September 23, 1997, Memorandum from the Team to Tom Futtner. In this case, the Department corroborated the sales information contained in the petition by comparing it to Samsung's actual data. The Department found that the petition prices reasonably reflected Samsung's actual reported prices during this investigation. While Samsung's calculated, weighted-average margin differs from the weighted-average

margin based on the petition information, that difference is a result of the more complete data-set provided by Samsung. Within that data-set, we have confirmed that some of Samsung's product-specific margins exceed the 55.36 percentage rate calculated in the petition. Thus, because the petition rate is not contradicted by the evidence gathered during the investigation, we continue to find it of probative value in drawing an adverse inference concerning dumping by LG.

LG's reliance on *D&L Supply* is misplaced. *D&L Supply* dealt with a situation in which the Department attempted to rely on a calculated margin from a prior review when that calculated margin had been revised as a result of litigation. The Federal Circuit held that continued use of the judicially invalidated rate was erroneous. That situation is significantly different from the present case. In this case, the petition was based on data from one respondent and the Department has calculated a different weighted-average dumping margin for that respondent. A petition rate is normally based on a limited selection of the products and prices at which subject merchandise has been sold during the period of the investigation. Only by participation in the investigation will the Department obtain, for each individual respondent, more complete data on the products and prices sold by the respondents throughout the period of investigation. Based on the complete universe of products and prices for each respondent, the Department calculates a weighted-average dumping margin for the respondent. Of course, each respondent's products and prices will be different and, typically, different from that contained in the petition. However, it is only by cooperating in the investigation that the Department obtains the data to determine the extent to which a respondent's product-mix and price-mix differs from the information contained in the petition. Finally, LG argues that Samsung's reported U.S. and home market prices were different from those used in the petition. It further maintains that had Samsung's reported prices been used, the result would have lowered the margin. However, the prices cited in the petition represented a reasonable estimate of Samsung's prices based on the information available at the time the petition was filed. Corroboration of the petition does not require the substitution if actual reported numbers where the Department finds that the information originally submitted has probative value. Because the Department has found that the petition prices were probative of the level of dumping which may have taken place during the period of investigation, we have continued to rely on it in this final determination.

Continuation of Suspension of Liquidation

In accordance with section 733(d)(1) and 735(c)(4)(B) of the Act, we are directing the Customs Service to continue to suspend liquidation of all entries of SRAMs from Korea that are entered, or withdrawn from warehouse, for consumption on or after October 1, 1997 (the date of publication of the preliminary determination in the **Federal Register**). The Customs Service shall continue to require a cash deposit or posting of a bond equal to the estimated amount by which the normal value exceeds the U.S. price as shown below. These suspension of liquidation instructions will remain in effect until further notice. The weighted-average dumping margins are as follows:

Manufacturer/producer/exporter	Margin percentage
Samsung Electronics Co. Ltd ...	1.00
Hyundai Electronics Co. Ltd	5.08
LG Semicon Co. Ltd	55.36
All others rate	5.08

ITC Notification

In accordance with section 735(d) of the Act, we have notified the International Trade Commission (ITC) of our determination. As our final determination is affirmative, the ITC will, within 45 days, determine whether these imports are materially injuring, or threaten material injury to, the U.S. industry. If the ITC determines that material injury, or threat of material injury does not exist, the proceeding will be terminated and all securities posted will be refunded or canceled. If the ITC determines that such injury does exist, the Department will issue an antidumping duty order directing Customs officials to assess antidumping duties on all imports of the subject merchandise entered for consumption on or after the effective date of the suspension of liquidation.

This determination is published pursuant to section 735(d) of the Act.

Dated: February 13, 1998.

Robert S. LaRussa,

Assistant Secretary for Import Administration.

[FR Doc. 98–4537 Filed 2–20–98; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

[A–307–813]

Notice of Final Determination of Sales at Less Than Fair Value: Steel Wire Rod from Venezuela

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

ACTION: Final determination of sales at less than fair value.

SUMMARY: The Department has made a final affirmative determination in this antidumping duty investigation. Because the respondent, C.V.G. Siderurgica del Orinoco, C.A., did not permit verification of its questionnaire responses, the margin in this determination is based on the facts available, in accordance with section 776(a)(2) of the Tariff Act of 1930, as amended. As facts available, we have applied the highest margin derived from the petition.

EFFECTIVE DATE: February 23, 1998.

FOR FURTHER INFORMATION CONTACT: David J. Goldberger or Daniel Manzoni, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, D.C. 20230; telephone: (202) 482–4136 or (202) 482–1121, respectively.

The Applicable Statute

Unless otherwise indicated, all citations to the Tariff Act of 1930, as amended ("the Act"), are references to the provisions effective January 1, 1995, the effective date of the amendments made to the Act by the Uruguay Round Agreements Act ("URAA"). In addition, unless otherwise indicated, all citations to the Department's regulations are references to the provisions codified at 19 CFR Part 353 (April 1997). Although the Department's new regulations, codified at 19 CFR 351 (62 FR 27296: May 19, 1997), do not govern this investigation, citations to those regulations are provided, where appropriate, to explain current Departmental practice.

Final Determination

We determine that steel wire rod ("SWR") from Venezuela is being, or is likely to be, sold in the United States at less than fair value ("LTFV"), as provided in section 735(b) of the Act. The estimated margin is shown in the "Suspension of Liquidation" section of this notice.

present MMS conclusions regarding the significance of those effects. Environmental Assessments are used as a basis for determining whether or not approval of the proposals constitutes major Federal actions that significantly affect the qualify of the human environment in the sense of NEPA Section 102(2)(C). A FONSI is prepared in those instances where the MMS finds that approval will not result in significant effects on the quality of the human environment. The FONSI briefly presents the basis for that finding and includes a summary or copy of the EA.

This notice constitutes the public notice of availability of environmental documents required under the NEPA Regulations.

Dated: April 28, 1997.

Chris C. Oynes,

Regional Director, Gulf of Mexico, OCS Region.

[FR Doc. 97-11874 Filed 5-6-97; 8:45 am]

BILLING CODE 4310-MR-M

INTERNATIONAL TRADE COMMISSION

[Investigations Nos. 731-TA-761-762 (Preliminary)]

Static Random Access Memory Semiconductors From the Republic of Korea and Taiwan

Determinations

On the basis of the record [1] developed in the subject investigations, the United States International Trade Commission determines, pursuant to section 733(a) of the Tariff Act of 1930 (the Act),[2] that there is a reasonable indication that an industry in the United States is materially injured by reason of imports from the Republic of Korea (Korea) [3] and Taiwan [4] of static random access memory semiconductors (SRAMs),[5] that are alleged to be sold in the United States at less than fair value (LTFV).

Pursuant to section 207.18 of the Commission's rules, as amended,[6] the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling which will be published in the **Federal Register** as provided in section 207.21 of the Commission's rules upon notice from the Department of Commerce (Commerce) of an affirmative preliminary determination in the investigations under section 733(b) of the Act, or, if the preliminary determination is negative, upon notice of an affirmative final determination in that investigation under section 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Industrial users, and, if the merchandise under investigation is sold at the retail level, representative consumer organizations have the right to appear as parties in Commission antidumping and countervailing duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations.

Background

On February 25, 1997, a petition was filed with the Commission and the Department of Commerce by Micron Technology, Inc., Boise, ID, alleging that an industry in the United States is materially injured and threatened with material injury by reason of LTFV imports of SRAMs from the Republic of Korea and Taiwan. Accordingly, effective February 25, 1997, the Commission instituted antidumping Investigations Nos. 731-TA-761-762 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the **Federal Register** of March 5, 1997.[7] The conference was held in Washington, DC, on March 18, 1997, and all persons who requested the opportunity were permitted to appear in person or by counsel.

The Commission transmitted its determination in this investigation to the Secretary of Commerce on April 11, 1997. The views of the Commission are contained in USITC Publication 3036 (April 1997), entitled "Static Random Access Memory Semiconductors from the Republic of Korea and Taiwan: Investigations Nos. 731-TA-761-762 (Preliminary)."

By order of the Commission.

Issued: April 28, 1997.

Donna R. Koehnke,

Secretary.

[FR Doc. 97-11861 Filed 5-6-97; 8:45 am]

BILLING CODE 7020-02-P

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

[2] 19 U.S.C. § 1673b(a).

[3] Chairman Miller not participating.

[4] Chairman Miller and Commissioner Crawford not participating.

[5] The imported products subject to these investigations are synchronous, asynchronous, and specialty SRAMs, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or dice, uncut dice, and cut dice. Processed wafers produced in Korea and Taiwan, but packaged or assembled into memory modules in a third country, are included in the scope; wafers produced in a third country and assembled or packaged in Korea or Taiwan are not included in the scope. The scope of the investigations also includes modules containing SRAMs. Such modules include single in-line memory modules (SIPs), single in-line memory modules (SIMMs), dual in-line memory modules (DIMMs), memory cards, or other collections of SRAMs, whether unmounted or mounted on a circuit board. The SRAMs subject to these investigations are provided for in subheadings 8542.13.80 and 8473.30.10 through 8473.30.90 of the Harmonized Tariff Schedule of the United States.

[6] 61 FR 37818 (July 22, 1996).

[7] 62 FR 10073.

INTERNATIONAL TRADE COMMISSION

[Investigation No. 731-TA-750 (Final)]

Vector Supercomputers From Japan

AGENCY: United States International Trade Commission.

ACTION: Scheduling of the final phase of an antidumping investigation.

SUMMARY: The Commission hereby gives notice of the scheduling of the final phase of antidumping investigation No. 731-TA-750 (Final) under section 735(b) of the Tariff Act of 1930 (19 U.S.C. § 1673d(b)) (the Act) to determine whether an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of less-than-fair-value imports from Japan of vector supercomputers, provided for in heading 8471 of the Harmonized Tariff Schedule of the United States.[1]

For further information concerning the conduct of this phase of the investigation, hearing procedures, and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A through E (19 CFR part 201), and part 207, subparts A and C (19 CFR part 207), as amended by 61 FR 37818, July 22, 1996.

EFFECTIVE DATE: April 1, 1997.

[1] For purposes of this investigation, Commerce has defined the subject merchandise as "all vector supercomputers, whether new or used, and whether in assembled or unassembled form, as well as vector supercomputer spare parts, repair parts, upgrades, and system software shipped to fulfill the requirements of a contract for the sale and, if included, maintenance of a vector supercomputer. A vector supercomputer is any computer with a vector hardware unit as an integral part of its central processing unit boards."

data are credible. Therefore, the Department should rely on adverse facts available for S&J.

DOC Position

At verification we were able to reconcile S&J unaudited financial statements to its 1996 tax return (*see* S&J Cost Verification Report (July 23, 1997)). Therefore, because we were able to tie S&J's financial statements to an independent outside source, we have determined that there is no evidence on the record to indicate the information on the financial statements is unreliable. *See Mexican Flowers,* 60 FR at 49569.

Comment 19: Non-Mandatory Respondents

Petitioner suggests that the Department calculate a margin for non-mandatory respondents using the results of each of the four mandatory respondents, except those with zero dumping margins.

DOC Position

Non-mandatory respondents will be subject to the "all others" deposit rate, which we have calculated based on the weighted average of margins calculated for mandatory respondents—excluding zero and *de minimis* margins. (*see* March 13, 1997, Decision Memo)

Comment 20: Critical Circumstances

Petitioner argues that the Department should find that critical circumstances exist with respect to K. Ticho. Petitioner contends that a timely allegation of critical circumstances was made in the petition and that K. Ticho failed to respond to the Department's questionnaire. Therefore, as facts available, the Department should determine that critical circumstances exist with respect to K. Ticho.

DOC Position

We agree with petitioner. Because K. Ticho failed to respond to the Department's questionnaire, we have used the facts available as the basis for determining whether critical circumstances exist. The facts available margin (40.28%) exceeds the threshold for imputing knowledge of dumping to the importers of the merchandise. In addition, we have adversely inferred, as the facts available, a massive increase in imports from K. Ticho. We, therefore, determine that critical circumstances exist for K. Ticho, and will issue appropriate instructions to the Customs service.

We also determine that critical circumstances exist for Romp. As with K. Ticho, the final dumping margin for Romp exceeds 15%, the minimum benchmark established sales to impute importer knowledge of dumping and resultant injury. Also, because we have determined that the reported quantity and value of POI sales are unreliable, we are also adversely inferring, as facts available, a massive increase in imports from Romp.

Continuation of Suspension of Liquidation

In accordance with section 733(d)(1) and 735(c)(4)(B) of the Act, we are directing the Customs Service to continue to suspend liquidation of all entries of CR nails from Taiwan, that are entered, or withdrawn from warehouse, for consumption on or after May 12, 1997 (the date of publication of the preliminary determination in the **Federal Register**), except as noted below. With respect to entries of CR nails from Taiwan, manufactured and exported by K. Ticho or Romp in accordance with section 735(c) of the Act, we are directing Customs Service to continue suspension of liquidation on all entries that are entered, or withdrawn from warehouse, for consumption on or after February 10, 1997, which is 90 days prior to the date of publication of the preliminary determination. The Customs Service shall continue to require a cash deposit or posting of a bond equal to the estimated amount by which the normal value exceeds the export price as shown below.

In accordance with section 735(a)(4) of the Act, because we have calculated zero or *de minimis* rates for Unicatch, and Lei Chu, we will instruct Customs to terminate suspension of liquidation of entries of CR nails manufactured by these companies and to liquidate such entries without regard to antidumping duties. We note that pursuant to 19 CFR 353.21, these companies will be excluded from any antidumping order resulting from an affirmative finding of material injury by the International Trade Commission. These suspension of liquidation instructions will remain in effect until further notice.

The weighted-average dumping margins are as follows:

Manufacturer/producer/exporter	Margin percentage	Critical circumstances
Unicatch	0.00	No.
Lei Chu	0.07 (De Minimis)	No.
S&J	5.36	No.
Romp	40.28	Yes.
K. Ticho	40.28	Yes.
All Others	5.36	No.

Pursuant to section 733(d)(1)(A) and section 735(c)(5) of the Act, the Department has not included zero or de minimis weighted-average dumping margins, or margins determined entirely under section 776 of the Act, in the calculation of the "all others" rate.

ITC Notification

In accordance with section 735(d) of the Act, we have notified the International Trade Commission ("ITC") of our determination. As our final determination is affirmative, the ITC will, within 45 days, determine whether these imports are materially injuring, or threaten material injury to, the U.S. industry. If the ITC determines that material injury, or threat of material injury does not exist, the proceeding will be terminated and all securities posted will be refunded or canceled. If the ITC determines that such injury does exist, the Department will issue an antidumping duty order directing Customs officials to assess antidumping duties on all imports of the subject merchandise entered for consumption on or after the effective date of the suspension of liquidation.

This determination is published pursuant to section 735(d) of the Act.

Dated: September 24, 1997.

Robert S. LaRussa,

Assistant Secretary for Import Administration.

[FR Doc. 97-26045 Filed 9-30-97; 8:45 am]

BILLING CODE 3510-DS-P

DEPARTMENT OF COMMERCE

International Trade Administration

[A-580-828]

Notice of Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination: Static Random Access Memory Semiconductors From the Republic of Korea

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

EFFECTIVE DATE: October 1, 1997.

FOR FURTHER INFORMATION CONTACT: Robert Blankenbaker or Rebecca Woodings, Office of AD/CVD Enforcement II, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, D.C. 20230; telephone: (202) 482-0989 or (202) 482-0651.

The Applicable Statute

Unless otherwise indicated, all citations to the Tariff Act of 1930, as

amended ("the Act"), are references to the provisions effective January 1, 1995, the effective date of the amendments made to the Act by the Uruguay Round Agreements Act ("URAA"). In addition, unless otherwise indicated, all citations to the Department's regulations are to 19 CFR part 353 (1997).

Preliminary Determination

We preliminarily determine that static random access memory semiconductors ("SRAMs") from the Republic of Korea ("Korea") are being, or are likely to be, sold in the United States at less than fair value ("LTFV"), as provided in section 733 of the Act. The estimated margins of sales at LTFV are shown in the "Suspension of Liquidation" section of this notice.

Case History

Since the initiation of this investigation (*Notice of Initiation of Antidumping Duty Investigation: Static Random access Memory Semiconductors From the Republic of Korea*, 62 FR 13596 (March 21, 1997)), the following events have occurred:

In an April 1, 1997 letter to the Department, LG Semicon Co. Ltd. ("LGS") requested exclusion from participation as a mandatory respondent in this investigation. In the request, LGS argued that it was an extremely small exporter of SRAMs and it accounted for only a small fraction of U.S. SRAM imports from Korea during the period of investigation.

On April 4, 1997, Samsung Electronics Co. Ltd. ("Samsung") requested that the Department limit its analysis in this proceeding to sales of identical merchandise. On April 16, 1997, the Department determined that it would not limit its analysis to only sales of identical merchandise. The department concluded that the reporting of a very small number of sales of similar merchandise would not impose an undue burden on either Samsung or the Department. (*See* Memorandum form Thomas Futtner to Louis Apple dated April 16, 1997.)

On April 11, 1997, the United States International Trade Commission ("ITC") notified the Department of its affirmative preliminary determination. (*See* ITC Investigations No. 731–TA–761–762). The ITC found that there is a reasonable indication that an industry in the United States is materially injured by reason of imports of SRAMs from Korea.

On April 16, 1997, we presented the Section A–E questionnaire to Hyundai Electronics Industries Co. Ltd. ("Hyundai"), LGS, and Samsung.

On April 25, 1997, Samsung respected that the Department not require the reporting of the following: (1) Sales of SRAMs that were further processed by Samsung's U.S. subsidiary prior to sale in the United States; (2) export price ("EP") sales to the United States; and (3) sales of 64K SRAMs. on April 28, 1997, Hyundai also requested to be excused from section E of the questionnaire, which required the reporting of further processed ("FP") sales. On May 8, 1997, the Department excluded the reporting of FP sales (Section E of the questionnaire) for Samsung and Hyundai, and requested that Samsung report EP sales and sales of 64K SRAMs in the United States. The Department concluded that the value of the FP sales at issue did not justify the extensive expenditure of Department resources that analyzing the sales would have required, whereas the analysis of EP and 64K sales would be both less complex and less burdensome. *See* Memorandum from Thomas Futtner to Louis Apple dated May 8, 1997.

On May 14, 1997, Hyundai, LGS, and Samsung submitted their Section A questionnaire responses. On June 16, 1997, Hyundai and Samsung submitted their Section B–D questionnaire responses.

In a June 16, 1997, letter submitted to the Department, LGS notified the Department that it was withdrawing from further participation in the investigation. In the letter, LGS stated its SRAM sales had declined substantially. LGS explained that, as a result, it had decided to cease U.S. SRAM sales and withdraw from the investigation "rather than incur the enormous burden in time and expense of further participation in the Department's investigation."

On July 7, 1997, at the request of the petitioner, we postponed the preliminary determination to September 23, 1997. *See Notice of Postponement of Preliminary Determination of Sales at Less Than Fair Value: Static Random Access Memory Semiconductors from Korea and Taiwan*, 62 FR 36260 (July 7, 1997). On July 31, 1997, the petitioner provided requested a clarification of the scope language in the notice of initiation.

Postponement of Final Determination

On September 10, 1997, Hyundai requested, pursuant to section 735(a)(2)(B) of the Act, that in the event of an affirmative preliminary determination in this investigation, the Department postpone its final determination until not later than 125 days after the date of publication of the affirmative preliminary determination in the **Federal Register**. In accordance with section 735(a)(2)(A) of the Act and 19 CFR 353.20(b), inasmuch as: (1) Our preliminary determination is affirmative; (2) Hyundai accounts for a significant proportion of exports of the subject merchandise under investigation; and (3) we are not aware of the existence of any compelling reasons for denying the request, we are granting Hyundai's request and postponing the final determination. Suspension of liquidation will be extended accordingly.

Facts Available

As discussed above, LGS withdrew from the investigation and declined to answer the Department's Section B–E questionnaire. Section 776(a)(2) of the Act provides that if an interested party: (1) Withholds information that has been requested by the Department; (2) fails to provide such information in a timely manner or in the form or manner requested; (3) significantly impedes an antidumping investigation; or (4) provides such information but the information cannot be verified, the Department is required to use facts otherwise available (subject to subsections 782(c)(1) and (e)) to make its determination. Because LGS failed to respond to the Department's questionnaire, and because subsections (c)(1) and (e) do not apply with respect to LGS, we must use facts otherwise available to calculate its dumping margin.

Section 776(b) provides that adverse inferences may be used against a party that has failed to cooperate by not acting to the best of its ability to comply with requests for information. *See also* the Statement of Administrative Action accompanying the URAA, H.R. Doc. No. 316, 103d Cong., 2d Sess. 870 (1994) ("SAA"). LGS's decision not to reply to the Department's questionnaire demonstrates that LGS has failed to cooperate to the best of its ability in this investigation. Therefore, the Department has determined that, in selecting among the facts otherwise available for LGS, an adverse inference is warranted.

Section 776(b) states that an adverse inference may include reliance on information derived from the petition or any other information placed on the record. *See also* SAA at 829–831. Section 776(c) of the Act provides that, when the Department relies on secondary information (such as the petition) in using the facts otherwise available, it must, to the extent practicable, corroborate that information from independent sources that are reasonably at its disposal. When analyzing the petition, the Department

reviewed all of the data the petitioner relied upon in calculating the estimated dumping margin, and adjusted those calculations where necessary. *See* Initiation Checklist, dated March 17, 1997. The estimated dumping margin was based on a comparison of constructed value to a price quotation in the U.S. market offered by Samsung. The estimated dumping margin, as recalculated by the Department, was 55.36 percent.

For purposes of corroboration, the Department re-examined the price information provided in the petition in light of information developed during the investigation and found that it has probative value. *See* Memorandum from the Team to Tom Futtner dated September 23, 1997, for a detailed explanation of corroboration of the information in the petition.

Therefore, as adverse facts available, we are assigning to LGS to margin stated in the notice of initiation, 55.36 percent. This margin is higher than the margin calculated for either respondents in this investigation.

Scope of Investigation

The products covered by this investigation are synchronous, asynchronous, and specialty SRAMs from Korea, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or die, uncut die, and cut die. Processed wafers produced in Korea, but packaged, or assembled into memory modules, in a third country, are included in the scope; processed wafers produced in a third country and assembled or packaged in Korea are not included in the scope.

The scope of this investigation includes modules containing SRAMs. Such modules include single in-line processing modules ("SIPs"), single in-line memory modules ("SIMMs"), dual in-line memory modules ("DIMMs"), memory cards, or other collections of SRAMs, whether unmounted or mounted on a circuit board.

The SRAMs within the scope of this investigation are classifiable under the subheadings 8542.13.8037 through 8542.13.8049, 8473.30.10 through 8473.30.90, and 8542.13.8005 of the Harmonized Tariff Schedule of the United States ("HTSUS"). Although the HTSUS subheadings are provided for convenience and customs purposes, our written description of the scope of this investigation is dispositive.

Period of Investigation

The period of investigation ("POI") is January 1, 1996 through December 31, 1996.

Fair Value Comparisons

To determine whether sales of SRAMs from Korea to the United States were made at less than fair value, we compared the United Price ("USP") to the Normal Value ("NV"), as described in the "United States Price" and "Normal Value" sections of this notice, below. In accordance with section 777A(d)(1)(A)(i) of the Act, we calculated weighted-average USPs for comparison to weighted-average NVs.

In making our comparisons, in accordance with section 771(16) of the Act, we considered all products sold in the home market, fitting the description specified in the "Scope of Investigation" section of this notice, above, to be foreign like products for purposes of determining appropriate product comparisons to U.S. sales. Where there were no sales of identical merchandise in the home market to compare to U.S. sales, we compared U.S. sales to the next most similar foreign like product, based on the characteristics listed in Appendix III of the Department's antidumping questionnaire.

Level of Trade and Constructed Export Price (CEP) Offset

In accordance with section 773(a)(1)(B) of the Act, to the extent practical, we determined NV based on sales in the comparison market at the same level of trade as the EP or CEP sales. The NV level of trade is that of the starting-price sales in the comparison market or, when NV is based on constructed value ("CV"), that of the sales from which we derive selling, general and administrative ("SG&A") expenses and profit. For EP, it is also the level of the starting-price sale, which is usually from exporter to importer. For CEP, it is the level of the constructed sale from the exporter to the importer.

To determine whether NV sales are at a different level of trade than EP or CEP sales, we examined stages in the marketing process and selling functions along the chain of distribution between the producer and the unaffiliated customer. If the comparison-market sales are at a different level of trade, and the difference affects price comparability, as manifested in a pattern of consistent price differences between the sales on which NV is based and comparison-market sales at the level of trade of the export transaction, we make a level of trade adjustment under section 773(a)(7)(A) of the Act. Finally, for CEP sales, if the NV level is more remote from the factory than the CEP level and there is no basis for determining whether the difference in the levels between NV and CEP affects price comparability, we adjust NV under section 773(a)(7)(B) of the Act (the CEP offset provision). *See Certain Welded Carbon Steel Standard Pipes and Tubes From India: Preliminary Results of New Shipper Antidumping Duty Administrative Review;* 62 FR 23760, 23761 (May 1, 1997).

We reviewed the questionnaire responses of both respondents to establish whether there were sales at different levels of trade based on marketing stages, selling functions performed, and services offered to each customer or customer class. For both respondents, we identified one level of trade in the home market with direct sales by the foreign producers to unaffiliated domestic customers. These direct sales were made by both respondents to original equipment manufacturers ("OEMs") and to distributors. All sales, whether made to OEM customers or to distributors, were made at the same marketing stage and involved the same selling functions. For the U.S. market, all U.S. sales for Hyundai and some sales by Samsung were reported as CEP sales. We examined the marketing stage and selling functions performed by the Korean companies for U.S. CEP sales, after the adjustment required by section 772(d) of the Act, and preliminarily determine that they are at a different level of trade from the Korean companies' home market sales because the CEP represents a different marketing stage with fewer selling functions. For instance, the CEP does not include any general promotion, marketing activities, or price negotiations.

Because we compared CEP sales to home market sales at a different level of trade, we examined whether a level of trade adjustment may be appropriate. In this case, both respondents only sold at one level of trade in the home market; therefore, there is no basis upon which either respondent can demonstrate a consistent pattern of price differences between levels of trade. Further, we do not have information which would allow us to examine pricing patterns based on the respondents' sales of other products and there is no other record information on which such an analysis could be based. Because the data available do not provide an appropriate basis for making a level of trade adjustment and the level of trade in the home market is a more advanced stage of distribution than the level of trade of the CEP sales, a CEP offset is appropriate. Therefore, we have accepted both respondents' claims for a CEP offset, pursuant to section 773(a)(7)(B) of the Act.

Time Period for Cost and Price Comparisons

Section 777A(d) of the Act states that in an investigation, the Department will compare the weighted average of the NVs to the weighted average of the EPs/CEPs. Generally, the Department will compare sales and conduct the sales below cost testing using annual averages. However, where prices have moved significantly over the course of the POI, it has been the Department's practice to use shorter time periods. *See, e.g., Final Determination of Sales at Less Than Fair Value: Erasable Programmable Read Only Memories (EPROMs) from Japan;* 51 FR 39680, 39682 (October 30, 1986); *Final Determination of Sales at Less Than Fair Value: Dynamic Random Access Memory Semiconductors of One Megabit and Above From the Republic of Korea;* 58 FR 15467, 15476 (March 23, 1993).

We invited comments from interested parties regarding this issue. An analysis of these comments revealed that all parties agreed that the SRAMs market experienced a significant and consistent price decline during the POI. Accordingly, in recognition of the significant and consistent price declines in the SRAMs market during the POI, the Department has compared prices and conducted the sales below cost test using quarterly data. In accordance with section 773(b)(2)(D) of the Act, we conducted the recovery of cost test using annual cost data.

United States Price

Hyundai

We calculated CEP for Hyundai, in accordance with sections 772(b), (c), and (d) of the Act. We found that CEP is warranted because all U.S. sales activities associated with U.S. sales took place in the United States through a wholly-owned subsidiary of Hyundai. We calculated CEP based on the price to the first unaffiliated customer in the United States. We made deductions from the gross unit price for the following expenses: foreign inland freight, brokerage, and handling; international freight and insurance; and U.S. brokerage, handling and inland freight.

Pursuant to section 772(d) (1) and (2) of the Act, we also made deductions for commissions; credit, inventory carrying costs, and other indirect and direct selling expenses; and bank and extended test charges. Finally, we made an adjustment for CEP profit in accordance with section 772(d)(3) of the Act.

Samsung

We calculated CEP for Samsung, in accordance with sections 772 (b), (c), and (d) of the Act. We found that CEP is warranted for some U.S. sales because these sales took place in the United States through a wholly-owned subsidiary of Samsung. We calculated CEP based on the price to the first unaffiliated customer in the United States. We made deductions from the gross unit price for the following expenses: foreign inland freight, brokerage, handling, and banking charges; international freight and insurance; and U.S. inland freight, brokerage, handling, insurance, and banking charges.

Pursuant to section 772(d) (1) and (2) of the Act, we also made deductions for commissioners, credit, advertising, cooperative, and royalty expenses; inventory carrying costs and other direct and indirect selling expenses. We also deducted U.S. repacking costs. Finally, we made an adjustment for CEP profit in accordance with section 772(d)(3) of the Act.

For the EP sales by Samsung, we made deductions from the gross unit price for the following expenses: foreign inland freight, brokerage, handling, and banking charges; international freight and insurance; and U.S. inland freight, brokerage, handling, and banking charges.

Normal Value

In order to determine whether there was a sufficient volume of sales in the home market to serve as a viable basis for calculating NV, we compared each respondent's aggregate volume of home market sales of the foreign like product to the aggregate volume of U.S. sales of the subject merchandise, in accordance with section 773(a)(1)(C) of the Act. Each respondent's aggregate volume of home market sales of the foreign like product was greater than five percent of its aggregate volume of U.S. sales of the subject merchandise. Accordingly, we determined that its home market was viable for each respondent.

Based on a cost allegation presented in the petition, the Department found reasonable grounds to believe or suspect that sales by both respondents in their home market were made at prices below their respective costs of production ("COPs"). As a result, the Department initiated an investigation to determine whether either respondent made home market sales during the POI at prices below its COP, within the meaning of section 773(b) of the Act.

We calculated COP as the sum of each respondent's cost of materials and fabrication for the foreign like product, plus amounts for SG&A and packing costs, in accordance with section 773(b)(3) of the Act. We used the respondents' reported COP, adjusted as discussed below, to compute quarterly weighted-average COP of the POI. We compared the weighted-average COPs to home market sales of the foreign like product as required under section 773(b) of the Act in order to determine whether these sales had been made at prices below COP. On a product-specific basis, we compared COP to the home market prices, less any applicable movement charges, discounts, and packing expenses.

In determining whether to disregard home market sales made at prices below the COP, we examined whether: (1) Within an extended period of time, such sales were made in substantial quantities; and (2) such sales were made at prices which permitted recovery of all costs within a reasonable period of time in the normal course of trade. Where 20 percent or more of a respondent's sales of given product during the POI were at prices below the COP, we found that sales of that model were made in "substantial quantities" within an extended period of time, in accordance with section 773(b)(2) (B) and (C). To determine whether prices were such as to provide for recovery of costs within a reasonable period of time, we tested whether the prices which were below the per unit cost of production at the time of the sale were above the weighted average per unit cost of production for the POI, in accordance with section 773(b)(2)(D). Where we found that a substantial quantity of sales during the POI were below cost and not at prices that provided for recovery of costs within a reasonable period of time, we disregarded the below cost sales.

Where NV was calculated using prices to unaffiliated customers, we made appropriate adjustments to those prices. First, we deducted home market inland freight and home market packing costs. Where there were differences in the merchandise to be compared, we made adjustments in accordance with section 773(a)(6)(C)(ii) of the Act to account for those differences. Where appropriate, we made circumstances-of-sale adjustments in accordance with section 773(a)(6)(C)(iii) of the Act. For purposes of CEP sales comparisons, we deducted home market indirect expenses up to allowable levels. For purposes of CEP and EP sales comparisons, we added U.S. packing costs in accordance with section 773(a)(6)(A) of the Act.

Where there was no above cost home market sale for comparison, NV was based on CV. In accordance with section

773(e)(1) of the Act, we calculated CV based on the sum of each respondent's cost of materials, fabrication, SG&A, profit, and U.S. packing costs. In accordance with section 773(e)(2)(A) of the Act, we based SG&A expenses and profit on the amounts incurred and realized by each respondent in connection with the production and sale of the foreign like product in the ordinary course of trade, for consumption in the foreign country.

Although we generally relied, in our COP and CV calculation, on the data submitted by respondents, we made adjustments in the allocation of both research and development ("R&D") and interest expense. Adjustments common to both companies are detailed immediately, below, followed by company-specific comments.

For both companies, we allocated all semiconductor R&D over all semiconductor cost of goods sold. *See* Decision Memorandum dated September 23, 1997. We concluded that R&D related to semiconductors benefits all semiconductor products, and that allocation of R&D on a product-specific basis was not appropriate. In support of our methodology, we have placed on the record information regarding cross-fertilization of semiconductor R&D.

In our Section D cost questionnaire, we requested that respondents allocate interest expense over the total cost of goods sold. However, we subsequently determined that this allocation methodology does not appropriately recognize the expenses related to capital investment necessary for semiconductors as compared to other lines of business. Therefore, we allocated net interest expense on the basis of proportional fixed assets for both companies. The Court of International Trade has upheld the Department's methodology of allocating interest expenses on the basis of semiconductor fixed assets. *See Micron Technology, Inc.* v. *United States,* 893 F. Supp. 21, 30 (June 12, 1995).

Finally, we adjusted both respondents' depreciation expenses to reflect their historical depreciation methodologies. We based our adjustments on the fact that, in 1996, both Samsung and Hyundai chose not to record certain accelerated depreciation expenses that, according to their financial statements, they had relied upon in the previous year. In switching to alternative methods for recognizing depreciation expense, the companies did not retroactively restate the bases of their assets, but instead used the net book value of the assets as of the date of the change. Thus, the companies failed to report depreciation expense in a systematic and rational manner over the useful lives of their assets. As a result, disproportionately greater costs were attributed to products manufactured before the change than subsequent to it. *See Final Determination of Sales at Less Than Fair Value: Dynamic Random Access Memory Semiconductors of One Megabit and Above From the Republic of Korea;* 58 FR 15467.15479 (March 23, 1993).

In adjusting the depreciation expenses by Samsung and Hyundai, we relied on the same accelerated depreciation methods used by the companies in 1995. The current record does not contain information with respect to what the appropriate depreciation expenses would be after taking into account the restated bases of the companies' assets. Our use of Samsung's and Hyundai's historical depreciation methods in adjusting reported depreciation expense for COP and CV is consistent with the statutory preference for use of cost allocation methods that have been historically relied upon by respondents. *See* section 773(f)(i)(A) of the Act and SAA at 834.

Hyundai

For those comparison products for which there were sales above the COP, we based NV on delivered prices to home market customers. We made deductions for inland freight, imputed credit expenses and banking charges, and home market direct and indirect selling expenses. As indirect selling expenses, we including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with 19 CFR 353.56(b)(2).

For all price-to-price comparisons, we deducted home market packing costs and added U.S. packing costs, in accordance with section 773(a)(6) of the Act. In addition, where appropriate, we made adjustments to NV to account for differences in physical characteristics of the merchandise, in accordance with 773(a)(6)(C)(ii) of the Act and 19 CFR 353.57.

For price-to-CV comparisons, we made deductions, where appropriate, for credit expenses and banking charges. We also deducted home market indirect selling expenses, including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with 19 CFR 353.56(b)(2).

Samsung

For those comparisons for which there were sales above the COP, we based NV on delivered prices to home market customers. We made deductions for inland freight, imputed credit, advertising, and royalty expenses, and home market direct and indirect selling expenses. As indirect selling expenses, we including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses and commissions incurred on U.S. sales, in accordance with 19 CFR 353.56(b)(2). In the case of letter-of-credit sales, we added in the amount of any duty-drawback.

Currency Conversion

We made currency conversions into U.S. dollars based on the official exchange rates in effect on the dates of the U.S. sales as certified by the Federal Reserve Bank. Section 773A(a) directs the Department to use a daily exchange rate in order to convert foreign currencies into U.S. dollars unless the daily rate involves a fluctuation. It is the Department's practice to find that a fluctuation exists when the daily exchange rate differs from the benchmark rate by 2.25 percent. The benchmark is defined as the moving average of rates for the past 40 business days. When we determine a fluctuation to have existed, we substitute the benchmark rate for the daily rate, in accordance with established practice. *See Policy Bulletin 96–1: Currency Conversions,* 61 FR 9434 (March 8, 1996).

Section 773A(b) directs the Department to allow a 60-day adjustment period when a currency has undergone a sustained movement. A sustained movement has occurred when the weekly average of actual daily rates exceeds the weekly average of benchmark rates by more than five percent for eight consecutive weeks. For an explanation of this methodology, *see id.* Such an adjustment period is required only when a foreign currency is appreciating against the U.S. dollar. The use of an adjustment period was not warranted in this case because the Korean Won did not undergo a sustained movement.

Verification

As provided in section 782(i) of the Act, we will verify all information used in making our final determination.

Suspension of Liquidation

In accordance with section 733(d) of the Act, we are directing the Customs Service to suspend liquidation of entries of subject merchandise from Korea, as defined in the "Scope of Investigation" section of this notice, with the exception of subject merchandise that is the product of Samsung. Suspension

will apply to products that are entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice in the **Federal Register**. For these entries, the Customs Service will require a cash deposit or posting of a bond equal to the weighted-average amount by which the normal value exceeds the export price as shown below. These suspension of liquidation instructions will remain in effect until further notice. The weighted-average dumping margins are as follows:

Exporter/manufacturer	Weighted-average percent margin
Samsung	[1] 1.59
Hyundai	3.38
LG Semicon [2]	[2] 55.36
All others	3.38

[1] De minimis.
[2] Facts Available Rate.

ITC Notification

In accordance with section 733(f) of the Act, we have notified the ITC of our determination. If our final determination is affirmative, the ITC will determine before the later of 120 days after the date of this preliminary determination or 45 days after our final determination whether these imports are materially injuring, or threatening material injury to, a U.S. industry.

Public Comment

Case briefs or other written comments in at least six copies must be submitted to the Assistant Secretary for Import Administration no later than December 29, 1997; and rebuttal briefs, no latter than January 5, 1997. A list of authorities used and an executive summary of issues should accompany any briefs submitted to the Department. The summary should be limited to five pages total, including footnotes. In accordance with section 774 of the Act, we will hold a public hearing, if requested, to give interested parties an opportunity to comment on arguments raised in case or rebuttal briefs. Tentatively, the hearing will be held on January 7, 1998; time and room to be determined; at the U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, D.C. 20230. Parties should confirm by telephone the time, date, and place of the hearing 48 hours before the scheduled time.

Interested parties who wish to request a hearing, or to participate if one is requested, must submit a written request to the Assistant Secretary for Import Administration, U.S. Department of Commerce, Room 1870, within ten days of the publication of this notice. Requests should contain: (1) the party's name, address, and telephone number; (2) the number of participants; and (3) a list of the issues to be discussed. Oral presentations will be limited to issues raised in the briefs. If this investigation proceeds normally, we will make our final determination by February 5, 1998.

This determination is published pursuant to sections 773(f) and 777(i) of the Act.

Dated: September 23, 1997.

Robert S. LaRussa,

Assistant Secretary for Import Administration.

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DEPARTMENT OF COMMERCE

International Trade Administration

[A-583-827]

Notice of Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination: Static Random Access Memory Semiconductors From Taiwan

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

EFFECTIVE DATE: October 1, 1997.

FOR FURTHER INFORMATION CONTACT: Shawn Thompson or David Genovese, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, D.C. 20230; telephone: (202) 482-1776 or (202) 482-0498, respectively.

The Applicable Statute

Unless otherwise indicated, all citations to the Tariff Act of 1930, as amended (the Act), are references to the provisions effective January 1, 1995, the effective date of the amendments made to the Act by the Uruguay Round Agreements Act (URAA). In addition, unless otherwise indicated, all citations to the Department's regulations are to the regulations codified at 19 CFR part 353 (April 1, 1996).

Preliminary Determination

We preliminarily determine that static random access memory semiconductors (SRAMs) from Taiwan are being, or are likely to be, sold in the United States at less than fair value (LTFV), as provided in section 733 of the Act. The estimated margins of sales at LTFV are shown in the "Suspension of Liquidation" section of this notice.

Case History

Since the initiation of this investigation *(Notice of Initiation of Antidumping Duty Investigations: SRAMs from the Republic of Korea and Taiwan* (62 FR 13596, March 21, 1997)), the following events have occurred:

During March and April 1997, the Department obtained information from the American Institute in Taiwan identifying potential producers and/or exporters of the subject merchandise to the United States. Based on this information, in April 1997, the Department issued antidumping questionnaires to 22 companies.[1]

Also in April 1997, the United States International Trade Commission (ITC) issued an affirmative preliminary injury determination in this case (*see* ITC Investigation No. 731-TA-761-762).

In May 1997, the Department received responses to Section A of the questionnaire from 18 of the 22 companies. Three of the remaining companies, Advanced Microelectronics, BIT, and Texas-Instruments, did not submit responses to Section A. Therefore, we have assigned a margin to these companies based on facts available. (See the "Facts Available" section below, for further discussion.) Regarding the fourth company, Lien Hsing, we were notified by one of the respondents in this investigation that it had received the questionnaire addressed to Lien Hsing, but that it was unaware of the existence of this company. Because Lien Hsing never received the Department's questionnaire and we found no way in which to locate and serve it with the questionnaire, no adverse inference is warranted with respect to it.

Based on the information received from the 18 responding companies, in May 1997, the Department determined that it did not have the administrative resources to investigate all known producers and/or exporters of SRAMs

[1] These companies are as follows: (1) Advanced Microelectronics Products Inc. (Advanced Microelectronics); (2) Alliance Semiconductor Corp. (Alliance); (3) Asia Specific Technology Limited; (4) Best Integrated Technology, Inc. (BIT); (5) Chia Hsin Livestock Corp.; (6) E-CMOS Technology Corporation; (7) Etron Technology, Inc.; (8) G-Link Technology Corp.; (9) Holtek Microelectronics Inc.; (10) Hualon Microelectronics Corporation; (11) Integrated Silicon Solution (Taiwan) Inc. (ISSI); (12) Kes Rood Technology Taiwan Ltd.; (13) Lien Hsing Integrated Circuits (Lien Hsing); (14) Macronix International Co., Ltd.; (15) Mosel-Vitelic, Inc.; (16) Taiwan Memory Technology, Inc.; (17) Taiwan Semiconductor Manufacturing Corporation (TSMC); (18) Texas Instruments-Acer Inc. (Texas Instruments); (19) United Microelectronics Corporation (UMC); (20) Utron Technology, Inc.; (21) Vanguard International Semiconductor Corporation; and (22) Winbond Electronics Corporation (Winbond).

during the period of investigation (POI). Accordingly, we decided to limit the number of mandatory respondents in this investigation to the five companies that we believed had the largest sales volumes of SRAMs to the United States during the POI, pursuant to section 777A(c) of the Act. These companies are Alliance, ISSI, TSMC, UMC, and Winbond (hereinafter "respondents"). For a more detailed discussion regarding this issue, see the memorandum to Louis Apple from the Team, dated May 21, 1997.

Respondents submitted questionnaire responses in June 1997. We issued supplemental questionnaires to these companies in July 1997, and received responses to these questionnaires in August 1997. Based on a review of these responses, we have excluded TSMC from our analysis in this investigation. For a discussion of this issue, see the memorandum to Louis Apple from the Team, dated September 23, 1997.

Pursuant to section 735(a)(2)(A) of the Act, on August 14, 1997, one of the respondents, Winbond, requested that, in the event of an affirmative preliminary determination in this investigation, the Department postponed its final determination until no later than 135 days after the publication of this notice in the **Federal Register**. For further discussion, see the "Postponement of Final Determination and Extension of Provisional Measures" section of this notice.

In September 1997, Alliance submitted revised sales and cost databases at the Department's request.

Facts Available

Three interested parties in this investigation, Advanced Microelectronics, BIT, and Texas Instruments, failed to respond to the Department's requests for information. Specifically, these companies did not provide a response to the Department's questionnaire issued in April 1997.

Section 776(a)(2) of the Act provides that if an interested party: (1) Withholds information that has been requested by the Department, (2) fails to provide such information in a timely manner or in the form or manner requested, (3) significantly impedes a determination under the antidumping statute, or (4) provides such information but the information cannot be verified, the Department shall, subject to subsections 782(c)(1) and (e) of the Act, use facts otherwise available in reaching the applicable determination. Because Advanced Microelectronics, BIT, and Texas Instruments failed to respond to the Department's questionnaire and because subsections (c)(1) and (e) do not apply with respect to these companies, we must use facts otherwise available to calculate their dumping margins.

Section 776(b) of the Act provides that adverse inferences may be used against a party that has failed to cooperate by not acting to the best of its ability to comply with requests for information. *See also* Statement of Administrative Action accompanying the URAA, H.R. Rep. No. 316, 103d Cong., 2d Sess. 870 (SAA). The failure of Advanced Microelectronics, BIT, and Texas Instruments to reply to the Department's questionnaires or to provide a satisfactory explanation of their conduct demonstrates that they have failed to act to the best of their ability in this investigation. Thus, the Department has determined that, in selecting among the facts otherwise available to these companies, an adverse inference is warranted. As facts otherwise available, we are assigning to Advanced Microelectronics, BIT, and Texas Instruments the highest margin stated in the notice of initiation, 113.85 percent.

Section 776(c) of the Act provides that, when the Department relies on secondary information (such as the petition) in using the facts otherwise available, it must, to the extent practicable, corroborate that information from independent sources that are reasonably at its disposal. When analyzing the petition, the Department reviewed all of the data the petitioner relied upon in calculating the estimated dumping margins, and adjusted those calculations where necessary. *See* Initiation Checklist, dated March 17, 1997. These estimated dumping margins were based on a comparison of constructed value (CV) to U.S. price, the latter of which was based on price quotations offered by two Taiwanese companies. The estimated dumping margins, as recalculated by the Department, ranged from 93.54 to 113.85 percent. For purposes of corroboration, the Department re-examined the price information provided in the petition in light of information developed during the investigation and found that it has probative value. *See* the memorandum from the Team to Louis Apple dated September 23, 1997, for a detailed explanation of corroboration of the information in the petition.

Therefore, as adverse facts available, we are assigning to Advanced Microelectronics, BIT, and Texas Instruments the highest margin stated in the notice of initiation, 113.85 percent. This margin is higher than the margin calculated for any respondent in this investigation.

Postponement of Final Determination and Extension of Provisional Measures

Two of the respondents, Winbond and Alliance, requested on September 11 and 18, 1997, respectively, that, in the event of an affirmative preliminary determination in this investigation, the Department postpone its final determination until no later than 135 days after the publication of this notice in the **Federal Register**, pursuant to section 735(a)(2)(A) of the Act. In accordance with 19 CFR section 353.20(b), because (1) our preliminary determination is affirmative, (2) Winbond and Alliance account for a significant proportion of exports of the subject merchandise, and (3) no compelling reasons for denial exist, we are granting respondents' request and are postponing the final determination until no later than 135 days after the publication of this notice in the **Federal Register**. Suspension of liquidation will be extended accordingly (*see Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination: Open-End Spun Rayon Singles Yarn From Austria*, 62 FR 14399, 14400 (March 26, 1997); *Final Determination of Sales at Less Than Fair Value: Certain Pasta From Italy*, 61 FR 30326 (June 14, 1996)).

Scope of Investigation

The products covered by this investigation are synchronous, asynchronous, and specialty SRAMs from Taiwan, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or die, uncut die and cut die. Processed wafers produced in Taiwan, but packaged, or assembled into memory modules, in a third country, are included in the scope; processed wafers produced in a third country and assembled or packaged in Taiwan are not included in the scope.

The scope of this investigation includes modules containing SRAMs. Such modules include single in-line processing modules (SIPs), single in-line memory modules (SIMMs), dual in-line memory modules (DIMMs), memory cards, or other collections of SRAMs, whether unmounted or mounted on a circuit board.

The SRAMs within the scope of this investigation are classifiable under the subheadings 8542.13.8037 through 8542.13.8049, 8473.30.10 through 8473.30.90, and 8542.13.8005 of the Harmonized Tariff Schedule of the United States (HTSUS). Although the HTSUS subheading is provided for convenience and customs purposes, our

written description of the scope of this investigation is dispositive.

Period of Investigation

The POI is January 1, 1996, through December 31, 1996.

Time Period for Cost and Price Comparisons

Section 777A(d) of the Act states that in an investigation, the Department will compare the weighted average of the normal values to the weighted average of the export prices/constructed export prices. Generally, the Department will compare sales and conduct the sales below cost test using annual averages. However, where prices have moved significantly over the course of the POI, it has been the Department's practice to use shorter time periods. *See, e.g., Final Determination of Sales at Less Than Fair Value: Erasable Programmable Read Only Memories (EPROMs) from Japan*, 51 FR 39680, 39682 (October 30, 1986), *Final Determination of Sales at Less Than Fair Value: Dynamic Random Access Memory Semiconductors of One Megabit and Above From the Republic of Korea*, 58 FR 15467, 15476 (March 23, 1993).

We invited comments from interested parties regarding this issue. An analysis of these comments revealed that all parties agreed that the SRAMs market experienced a significant and consistent price decline during the POI. Accordingly, in recognition of the significant and consistent price declines in the SRAMs market during the POI, the Department has compared prices and conducted the sales below cost test using quarterly data.[2]

Treatment of Foundry Sales and Elimination of TSMC as a Respondent

During the course of this investigation, we found that two of the five companies we had selected to be respondents, UMC and TSMC, acted as foundries for SRAMs design houses. As foundries, they manufactured processed SRAMs wafers according to designs provided by the design houses. Two of these design houses, Alliance and ISSI, were also selected to be respondents. The design houses arranged for the probing, testing, and assembly of the processed wafers into individual SRAMs that were subsequently sold to unaffiliated downstream purchasers.

At the time we selected respondents, we had not determined conclusively how the transaction between a design house and its foundry should be treated. *See* the memorandum from the Team to Louis Apple, dated May 15, 1997. We noted that, when the Department had had an opportunity to perform a thorough analysis of the respondents' responses to our questionnaire, the Department may conclude that the appropriate sales transaction to analyze is not the sale from the foundry to the design house, but the subsequent downstream sale of the encapsulated SRAMs to the United States.

When considering this issue for purposes of this determination, we determined that it was necessary to decide which entity, the foundry or the design house, was the manufacturer of the subject merchandise, and which entity controlled the ultimate sale of it. For guidance in making this determination, we relied on the Department's policy expressed in our proposed regulations which, while they are not our final regulations, state our policy on this issue. The proposed regulations state that: "[w]here a party owning the components of subject merchandise has a subcontractor manufacture or assemble that merchandise for a fee, the Department will consider the owner to be the manufacturer, because that party has ultimate control over how the merchandise is produced and the manner in which it is ultimately sold. The Department will not consider the subcontractor to be the manufacturer or producer regardless of the proportion of production attributable to the subcontracted operation or the location of the subcontractor or owner of the good." *See Notice of Proposed Rulemaking and Request for Public Comment: Antidumping Duties; Countervailing Duties*, 61 FR 7308, 7330 (February 26, 1996).

We also reviewed section 351.401(h) of the Department's regulations which, while not applicable to this investigation, codifies past practice and current policy. Section 351.401(h) states that the Department "will not consider a toller or subcontractor to be a manufacturer or producer where the toller or subcontractor does not acquire ownership, and does not control the relevant sale of, the subject merchandise or foreign like product."

In reviewing and analyzing the information submitted by respondents concerning the relationship between the design houses and their foundries, we have found the following: the design house performs all of the product research and development for the SRAMs that are to be produced. The design house produces, or arranges and pays for the production of, the design mask. At all stages of production, it retains ownership of the proprietary design and design mask. The design house then subcontracts the production of processed wafers with a foundry and provides the foundry with the design mask. Design houses tell the foundry what and how much to make. The foundry agrees to dedicate a certain amount of its production capacity to the production of the processed wafers for the design house. The foundry has no right to sell those wafers to any party other than the design house unless the design house fails to pay for the wafers. Once the design house takes possession of the processed wafers, it arranges for the subsequent steps in the production process (*i.e.*, probing, testing, and assembly), then sells the encapsulated SRAMs to downstream customers.

The design of the processed wafer is not only an important part of the finished product, it is a substantial element of production and imparts the essential features of the product. The design defines the ultimate characteristics and performance of the subject merchandise and delineates the purposes for which it can be used. The foundries manufactured processed SRAMs wafers using the proprietary designs of the design houses during the POI. As such, they did not control the production of the processed wafers in question, but rather merely translated the design of other companies into actual products.

For purposes of this investigation, we have determined that the entity that controls and owns the SRAMs design, *i.e.*, the design house, controls the production, and ultimate sale, of the subject merchandise. Consequently, we have determined to disregard the foundry sales of UMC and TSMC for purposes of this investigation. Moreover, because all of TSMC's sales during the POI were foundry sales, we have determined that it should no longer be considered a respondent in this investigation. For a more detailed analysis of this decision, *see* the memorandum from the Team to Louis Apple, dated September 23, 1997, concerning the Treatment of Foundry Sales and the Elimination of TSMC as a Respondent.

Fair Value Comparisons

To determine whether sales of SRAMs from Taiwan to the United States were made at less than fair value, we compared the United States Price (USP) to the Normal Value (NV), as described in the "United States Price" and "Normal Value" sections of this notice, below. In accordance with section 777A(d)(1)(A)(i) of the Act, we

[2] In accordance with section 773(b)(2)(D) of the Act, we conducted the recovery of cost test using annual cost data.

calculated weighted-average USPs for comparison to weighted-average NVs.

In order to determine whether or not we should base price-averaging groups on customer types, we conducted an analysis of the prices submitted by respondents. This analysis does not indicate that there was a consistent and uniform difference in prices between customer types. Accordingly, we have not based price comparisons on customer types.

In making our comparisons, in accordance with section 771(16) of the Act, we considered all products sold in the home market, fitting the description specified in the "Scope of Investigation" section of this notice, above, to be foreign like products for purposes of determining appropriate product comparisons to U.S. sales. Where there were no sales of identical merchandise in the home market to compare to U.S. sales, we compared U.S. sales to the next most similar foreign like product, based on the characteristics listed in Sections B and C of the Department's antidumping questionnaire.

Regarding Alliance, because we found no home market sales at prices above the COP, we made no price-to-price comparisons. *See* the "Normal Value" section of this notice, below, for further discussion.

Regarding ISSI, because this company did not report cost or difference in merchandise information for certain products sold in the United States, there is insufficient information on the record to calculate a margin for these products. Accordingly, we based the margin for the sales in question on facts available. As facts available, we used the highest non-aberrational margin calculated for any other product.

Level of Trade and Constructed Export Price (CEP) Offset

In accordance with section 773(a)(1)(B) of the Act, to the extent practicable, we determined NV based on sales in the comparison market at the same level of trade as the export price (EP) or CEP. The NV level of trade is that of the starting-price sales in the comparison market or, when NV is based on CV, that of the sales from which we derive selling, general and administrative (SG&A) expenses and profit. For EP, it is also the level of the starting-price sale, which is usually from exporter to importer. For CEP, it is the level of the constructed sale from the exporter to the importer.

To determine whether NV sales are at a different level of trade than EP or CEP, we examined stages in the marketing process and selling functions along the chain of distribution between the producer and the unaffiliated customer. If the comparison-market sales are at a different level of trade, and the difference affects price comparability, as manifested in a pattern of consistent price differences between the sales on which NV is based and comparison-market sales at the level of trade of the export transaction, we make a level of trade adjustment under section 773(a)(7)(A) of the Act. Finally, for CEP sales, if the NV level is more remote from the factory than the CEP level and there is no basis for determining whether the difference in the levels between NV and CEP affects price comparability, we adjust NV under section 773(a)(7)(B) of the Act (the CEP offset provision). *See Certain Welded Carbon Steel Standard Pipes and Tubes From India: Preliminary Results of New Shipper Antidumping Duty Administrative Review*, 62 FR 23760, 23761 (May 1, 1997).

Only one of the respondents in this investigation, UMC, claimed that its home market sales were made at different levels of trade. Specifically, UMC claimed that its sales of branded SRAMs products to original equipment manufacturers (OEMs) and distributors were made at two distinct levels of trade because it provided greater customer support to, and performed more significant marketing functions for, its OEM customers. In particular, UMC stated that it met with OEM customers to assist them in qualifying UMC's products for particular applications and to discuss how UMC's products may meet the customer's current and future needs. Regarding marketing functions, UMC stated that its salesmen make regular on-site visits to OEM customers and attend trade shows primarily targeted at OEMs. However, UMC does not attend similar shows targeted at distributors.

We examined the selling activities at each reported marketing stage and found that there was no substantive difference in the selling functions performed by UMC at either of its claimed marketing stages. Consequently, we determine that only one level of trade exists with respect to sales made by UMC to all customers. For a detailed explanation of this analysis, see the memorandum from the Team to Louis Apple, dated September 23, 1997.

Because we have found that only one level of trade existed in the home market for all respondents during the POI, we conducted an analysis to determine whether a CEP offset was warranted for each respondent. In order to determine whether NV was established at a level of trade which constituted a more advanced state of distribution than the level of trade of the CEP, we compared the selling functions performed for home market sales with those performed with respect to the CEP (*i.e.*, excluding economic activities occurring in the United States). We found that all respondents performed most of the selling functions and services related to U.S. sales at their sales offices in the United States, and therefore, these selling functions are associated with those expenses which we deduct from the CEP starting price, as specified in section 772(d) of the Act. Regarding home market sales, respondents performed largely the same selling functions for sales to unaffiliated customers as were performed in the United States. Therefore, their sales in Taiwan were at a more advanced stage of marketing and distribution (*i.e.*, more remote from the factory) than the constructed U.S. level of trade, which represents an ex-factory price after the deduction of expenses associated with U.S. selling activities. However, because the respondents sell at only one home market level of trade, the difference in the level of trade cannot be quantified. Because the difference in the level of trade cannot be quantified, but the home market is at a more advanced level of trade, we have granted a CEP offset to all respondents.

United States Price

For UMC and Winbond, we based USP on EP, in accordance with section 772(a) of the Act, when the subject merchandise was sold directly to the first unaffiliated purchaser in the United States prior to importation because CEP methodology was not otherwise indicated.

In addition, for all companies, where sales to the first unaffiliated purchaser took place after importation into the United States, we based USP on CEP, in accordance with section 772(b) of the Act.

We made company-specific adjustments as follows:

A. Alliance

We calculated CEP based on packed, FOB U.S. warehouse prices, to unaffiliated purchasers in the United States. We corrected gross unit price for clerical errors identified in Alliance's narrative response. We made deductions from the gross unit price, where appropriate, for discounts. We also made deductions for international freight (including air freight and U.S. Customs merchandise processing fees), where appropriate, pursuant to section 772(c)(2)(A) of the Act.

In accordance with section 772(d) (1) and (2) of the Act, we made additional

deductions for commissions, warranty and credit expenses, indirect selling expenses, inventory carrying costs, U.S. repacking expenses and U.S. further manufacturing costs. Regarding credit expenses, Alliance reported that it had not received payment for certain sales as of the date of its latest questionnaire response. As such, we based the date of payment for those sales on the date of the preliminary determination and recalculated credit expenses accordingly.

Pursuant to section 772(d)(3) of the Act, gross unit price was further reduced by an amount for profit, to arrive at CEP. In accordance with section 772(f) of the Act, the CEP profit rate was calculated using the expenses incurred by Alliance on its sales of the subject merchandise in the United States and foreign like product in the home market and the profit associated with those sales.

With regard to modules which were further-manufactured in the United States, we have based USP on the net price of the modules rather than the net price of the individual SRAMs included in the modules.

B. ISSI

We calculated CEP based on packed, FOB U.S. warehouse prices, to unaffiliated purchasers in the United States. We made deductions from the gross unit price, where appropriate, for discounts. We also made deductions for foreign inland freight, pre-sale warehousing expenses, foreign and U.S. inland insurance, foreign brokerage and handling, and international freight (including air freight, U.S. customs merchandise processing fees, and U.S. inland freight to ISSI's U.S. office), where appropriate, pursuant to section 772(c)(2)(A) of the Act.

In accordance with section 772(d)(1) of the Act, we made additional deductions for commissions, credit expenses, indirect selling expenses, inventory carrying costs, and U.S. repacking expenses. We recalculated credit expenses using the interest rate paid by ISSI (Taiwan) on its borrowings denominated in U.S. dollars. In addition, where ISSI had not received payment for certain sales as of the date of its latest questionnaire response, we based the date of payment for those sales on the date of the preliminary determination and recalculated credit expenses accordingly.

Pursuant to section 772(d)(3) of the Act, gross unit price was further reduced by an amount for profit, to arrive at CEP. In accordance with section 772(f) of the Act, the CEP profit rate was calculated using the expenses incurred by ISSI and its affiliate on their sales of the subject merchandise in the United States and foreign like product in the home market and the profit associated with those sales.

C. UMC

We calculated EP and CEP based on packed, FOB prices, to unaffiliated purchasers in the United States. We adjusted the gross unit price for billing adjustments and freight charges. We made deductions from the gross unit price, where appropriate, for discounts. We also made deductions for foreign inland freight, foreign brokerage and handling, and international freight, where appropriate, pursuant to section 772(c)(2)(A) of the Act.

Where USP was based on CEP, we made additional deductions, in accordance with section 772(d)(1) of the Act, for commissions, warranty and credit expenses, indirect selling expenses, and inventory carrying costs. Regarding credit expenses, UMC reported that it had not received payment for certain sales as of the date of its latest questionnaire response. Consequently, we based the date of payment for those sales on the date of the preliminary determination and recalculated credit expenses accordingly.

Pursuant to section 772(d)(3) of the Act, gross unit price was further reduced by an amount for profit, to arrive at CEP. In accordance with section 772(f) of the Act, the CEP profit rate was calculated using the expenses incurred by UMC and its affiliates on their sales of the subject merchandise in the United States and foreign like product in the home market and the profit associated with those sales.

D. Winbond

We calculated EP and CEP based on packed, delivered and FOB prices to unaffiliated purchasers in the United States. We made deductions from the gross unit price, where appropriate, for discounts. We also made deductions for foreign inland freight, pre-sale warehousing expenses, foreign inland insurance, foreign brokerage and handling, international freight (including air freight, U.S. inland freight from the port to Winbond's U.S. warehouse, U.S. brokerage and handling fees, and customs fees), international insurance, U.S. customs merchandise processing fees, and U.S. inland freight to customer, where appropriate, pursuant to section 772(c)(2)(A) of the Act.

Where USP was based on CEP, we made additional deductions, in accordance with section 772(d)(1) of the Act, for commissions, credit expenses, advertising expenses, warranty expenses, technical service expenses, indirect selling expenses, inventory carrying costs, and U.S. repacking expenses.

Pursuant to section 772(d)(3) of the Act, gross unit price was further reduced by an amount for profit, to arrive at CEP. In accordance with section 772(f) of the Act, the CEP profit rate was calculated using the expenses incurred by Winbond and its affiliates on their sales of the subject merchandise in the United States and foreign like product in the home market and the profit associated with those sales.

Normal Value

In order to determine whether there is a sufficient volume of sales in the home market to serve as a viable basis for calculating NV (*i.e.*, the aggregate volume of home market sales of the foreign like product is greater than five percent of the aggregate volume of U.S. sales), we compared each respondent's volume of home market sales of the foreign like product to the volume of U.S. sales of the subject merchandise, in accordance with section 773(a)(1)(C) of the Act. Because each respondent's aggregate volume of home market sales of the foreign like product was greater than five percent of its aggregate volume of U.S. sales for the subject merchandise, we determined that the home market was viable for each respondent.

Because UMC and Winbond reported home market sales to an affiliated party during the POI, as defined by section 771(4)(B) of the Act, we tested these sales to ensure that the affiliated party sales were at "arm's length," in accordance with our practice. To conduct this test, we compared the gross unit prices of sales to affiliated and unaffiliated customers net of all movement charges, discounts and rebates, and packing, where appropriate. Based on the results of that test, we used the sales from UMC and Winbond to their affiliated parties because they were made at "arm's length."

Based on the cost allegation contained in the petition, the Department found reasonable grounds to believe or suspect that sales in the home market were made at prices below the cost of producing the merchandise, in accordance with section 773(b)(1) of the Act. As a result, the Department initiated an investigation to determine whether the respondents made home market sales during the POI at prices below their respective COPs within the meaning of section 773(b) of the Act.

We calculated the COP based on the sum of each respondent's cost of materials and fabrication for the foreign like product, plus amounts for SG&A and packing costs, in accordance with section 773(b)(3) of the Act.

Where possible, we used the respondents' reported COP amounts, adjusted as discussed below, to compute quarterly weighted-average COPs during the POI. In cases where there was no production within the same quarter as a given sale, we referred to the most recent quarter, prior to the sale, for which costs had been reported. In cases where there was no cost reported for either the same quarter as the sale, or a prior quarter, we used the reported costs from the closest subsequent quarter in which production occurred.

In their calculation of research and development expenses (R&D), three of the respondents, Alliance, ISSI, and Winbond, excluded from their calculation R&D incurred on certain semiconductor products. The fourth respondent, UMC, calculated R&D on a quarterly basis. For all respondents, we revised the R&D ratios to allocate the total amount of semiconductor R&D for the POI over the total cost of sales of semiconductor products sold during the POI, using an annual ratio. *See* the Concurrence memorandum from James Maeder to Louis Apple, dated September 23, 1997, for further discussion. We preliminarily determine that R&D related to semiconductors benefits all semiconductor products, and that allocation of R&D on a product-specific basis was not appropriate. In support of our methodology, we have placed on the record information regarding cross-fertilization of semiconductor R&D.

We compared the weighted-average quarterly COP figures to home market sales of the foreign like product as required under section 773(b) of the Act, in order to determine whether these sales had been made at prices below COP. On a product-specific basis, we compared the COP to the home market prices, less any applicable movement charges and discounts.

In determining whether to disregard home market sales made at prices below the COP, we examined (1) whether, within an extended period of time, such sales were made in substantial quantities, and (2) whether such sales were made at prices which permitted the recovery of all costs within a reasonable period of time in the normal course of trade.

Where 20 percent or more of a respondent's sales of a given product were at prices below the COP, we found that sales of that model were made in "substantial quantities" within an extended period of time, in accordance with section 773(b)(2) (B) and (C) of the Act. To determine whether prices were such as to provide for recovery of costs within a reasonable period of time, we tested whether the prices which were below the per unit cost of production at the time of the sale were above the weighted-average per-unit cost of production for the POI, in accordance with section 773(b)(2)(D). If they were, we disregarded below cost sales in determining NV.

In accordance with section 773(e) of the Act, we calculated CV based on the sum of each respondent's cost of materials, fabrication, SG&A, profit, and U.S. packing costs. In accordance with section 773(e)(2)(A) of the Act, we based SG&A expenses and profit on the amounts incurred and realized by each respondent in connection with the production and sale of the foreign like product in the ordinary course of trade, for consumption in the foreign country. Where respondents made no home market sales in the ordinary course of trade (*i.e.*, all sales were found to be below cost), we based profit and SG&A expenses on the weighted average of the profit and SG&A data computed for those respondents with home market sales of the foreign like product made in the ordinary course of trade.

We deducted from CV weighted-average home market direct selling expenses incurred on sales made in the ordinary course of trade. Where a company had no sales above COP, we based home market direct selling expenses on the weighted average selling expense data computed for those respondents with home market sales of the foreign like product in the ordinary course of trade. Company-specific calculations are discussed below.

A. Alliance

We relied on the reported COP and CV amounts except as noted above. Additionally, we did not rely on amounts reported by Alliance for SG&A and profit since all of Alliance's sales were made below the cost of production.

Because all of Alliance's home market sales were sold below COP, we based NV on CV. In addition to the adjustments to CV reported above, in accordance with section 773(a)(7)(B) of the Act, we granted a CEP offset adjustment and reduced CV by the amount of weight-averaged home market indirect selling expenses and commissions incurred by respondents with sales above the COP up to the amount of indirect expenses deducted from the CEP under 772(d)(1)(D).

B. ISSI

We relied on respondent's reported COP and CV amounts except as noted above. Additionally, we revised the reported general and administrative and R&D expense ratios to use the cost of sales figure from the audited financial statements as the denominator in these equations.

For those comparison products for which there were sales at prices above the COP, we based NV on delivered prices to home market customers. We made deductions for discounts, foreign inland freight, and insurance, where appropriate, pursuant to section 773(a)(6)(B) of the Act. We also made deductions for credit expenses and bank charges, pursuant to section 773(a)(6)(C)(iii) of the Act. Regarding credit expenses, ISSI reported that it had not received payment for certain sales as of the date of its latest questionnaire response. As such, we based the date of payment for those sales on the date of the preliminary determination and recalculated credit expenses accordingly.

We deducted home market indirect selling expenses, including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with section 773(a)(7)(B) of the Act. In addition, we deducted home market packing costs and added U.S. packing costs, in accordance with section 773(a)(6) of the Act. Where appropriate, we made adjustments to NV to account for differences in physical characteristics of the merchandise, in accordance with 773(a)(6)(C)(ii) of the Act and 19 CFR 353.57. Where applicable, in accordance with 19 CFR section 353.56(b)(1), we offset any commission paid on a U.S. sale by reducing the NV by any home market commissions and indirect selling expenses remaining after the deduction for the CEP offset.

Where NV was based on CV, we deducted from CV the weighted-average home market direct selling expenses. In accordance with section 773(a)(7)(B) of the Act, we granted a CEP offset adjustment and reduced normal value by the amount of commissions and indirect selling expenses incurred by ISSI in Taiwan on sales of SRAMs in Taiwan, up to the amount of commissions and indirect selling expenses incurred on U.S. sales deducted from the CEP, in accordance with section 773(a)(7)(B) of the Act.

C. UMC

We relied on respondent's COP and CV amounts except as noted above.

Additionally, we calculated 1996 bonuses to directors, supervisors, and employees and included them in the cost of manufacturing. We revised the reported general and administrative expense to exclude foreign exchange gains. We revised the reported net financing expense ratio to include net foreign exchange gains related to accounts payable.

UMC has claimed a startup adjustment for a new fabrication facility under section 773(f)(1)(C)(ii) and (iii) of the Act. We conducted an analysis of the facts and have preliminarily granted the claimed startup adjustment. The SAA specifies two conditions for the application of a startup cost adjustment:

(1) The company used new production facilities or was producing a new product that required substantial additional investment; and

(2) Production levels were limited by technical factors associated with the initial phase of commercial production.

UMC appears to have met these threshold criteria by opening and using a new production facility whose production levels were limited by technical factors associated with the initial phase of production. In accordance with the Act, we replaced the unit production costs incurred during the startup period with the unit production costs incurred at the end of the startup period. This resulted in the exclusion of some costs which were incurred during the startup period from the actual cost calculation. The difference between the actual costs incurred and the costs calculated for purposes of the startup adjustment was amortized over the useful life of the machinery, subsequent to the startup phase. We also capitalized certain pre-production costs which were incurred before the new fabrication facility began production. We amortized these pre-production costs, beginning with the first month in which production took place, over the useful life of the machinery. *See* the memorandum to Louis Apple from Chris Marsh, dated September 23, 1997, for a detailed discussion of this issue.

For those comparison products for which there were sales at prices above the COP, we based NV on delivered and FOB prices to home market customers. For home market price-to-EP comparisons, we made deductions, where appropriate, for discounts, export duties, and foreign inland freight, in accordance with section 773(a)(6)(B) of the Act. Pursuant to section 773 (a)(6)(C)(iii) of the Act and 19 CFR section 353.56(a)(2), we made circumstance of sale adjustments, where appropriate, for differences in warranty and credit expenses. We did not allow an adjustment for home market commissions because we determined that they were not at "arm's length." *See* the memorandum to Louis Apple from the Team dated September 23, 1997, for a detailed explanation.

For home market price-to-CEP comparisons, we made deductions, where appropriate, for discounts, export duties, and foreign inland freight, pursuant to section 773(a)(6)(B) of the Act. We also made deductions for warranty and credit expenses. We deducted home market indirect selling expenses, including inventory carrying costs, and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with 773(a)(7)(B) of the Act. Where applicable, in accordance with 19 CFR 353.56(b), we offset any commission paid on a U.S. sale by reducing the NV by any home market indirect selling expenses remaining after the deduction for the CEP offset.

For all price-to-price comparisons, we deducted home market packing costs and added U.S. packing costs, in accordance with section 773(a)(6) of the Act. In addition, where appropriate, we made adjustments to NV to account for differences in physical characteristics of the merchandise, in accordance with 773(a)(6)(C)(ii) of the Act.

Where CV was compared to EP, we made circumstance of sale adjustments, where appropriate, for credit and warranty expenses and U.S. commissions in accordance with sections 773 (a)(6)(C)(iii) and (a)(8) of the Act. In accordance with section 773(a)(7)(B) of the Act, we granted a CEP offset adjustment and reduced normal value by the amount of commissions and indirect selling expenses incurred by UMC in Taiwan on sales of SRAMs in Taiwan, up to the amount of commissions and indirect selling expenses incurred on U.S. sales deducted from the CEP.

Where CV was compared to CEP, we deducted from CV, where appropriate, credit and warranty expenses. We also deducted indirect selling expenses, including inventory carrying costs and other indirect selling expenses, up to the amount of commissions and indirect selling expenses incurred on U.S. sales, in accordance with 773(a)(7)(B) of the Act.

D. Winbond

We relied on the reported COP and CV amounts except as noted above. Additionally, we reclassified production technology royalty expenses reported in the Sections B and C of our questionnaire as a cost of manufacturing. We included 1996 bonuses to directors, supervisors, and employees in the cost of manufacturing. We revised the reported general and administrative expense to exclude foreign exchange gains and to include miscellaneous income and expense. We revised the reported net financing expense ratio to include net foreign exchange gains related to accounts payable.

For those comparison products for which there were sales at prices above the COP, we based NV on delivered prices to home market customers.

For home market price-to-EP comparisons, we made deductions, where appropriate, for discounts, import duties and development fees paid on sales to customers outside of duty free zones, and home market movement charges including pre-sale warehouse expenses, foreign inland freight, brokerage and handling charges, and inland insurance. Pursuant to section 773 (a)(6)(C)(iii) of the Act, we made circumstance of sale adjustments, where appropriate, for differences in credit expenses (offset by the interest revenue actually received by the respondent), direct advertising expenses, warranty expenses, technical service expenses, and post-sale payments to a third-party customer.

For home market price-to-CEP comparisons, we made deductions for discounts, import duties and development fees paid on sales to customers outside of duty free zones, and home market movement charges including pre-sale warehouse expenses, foreign inland freight, brokerage and handling charges, and inland insurance, where appropriate, in accordance with section 773(a)(6)(B) of the Act. We also made deductions for credit expenses (offset by the interest revenue actually received by the respondent), direct advertising expenses, warranty expenses, technical service expenses, and post-sale payments to a third-party customer, pursuant to section 773(a)(6)(C)(iii) of the Act.

We deducted home market indirect selling expenses, including inventory carrying costs, other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales, in accordance with section 773(a)(7)(B) of the Act. Where applicable, in accordance with 19 CFR section 353.56(b), we offset any commission paid on a U.S. sale by reducing the NV by any home market indirect selling expenses remaining after the deduction for the CEP offset.

For all price-to-price comparisons, we deducted home market packing costs and added U.S. packing costs, in

accordance with section 773(a)(6) of the Act. In addition, where appropriate, we made adjustments to NV to account for differences in physical characteristics of the merchandise, in accordance with section 773(a)(6)(C)(ii) of the Act.

Where CV was compared to EP, we deducted from CV the weighted-average home market direct selling expenses and added the weighted-average U.S. product-specific direct selling expenses in accordance with section 773 (a)(6)(C)(iii) of the Act.

Where CV was compared to CEP, we deducted from CV the weighted-average home market direct selling expenses. In accordance with section 773(a)(7)(B) of the Act, we granted a CEP offset adjustment and reduced normal value by the amount of indirect selling expenses, including inventory carrying costs and other indirect selling expenses, up to the amount of indirect selling expenses incurred on U.S. sales deducted from the CEP.

Currency Conversion

We made currency conversions into U.S. dollars based on the official exchange rates in effect on the dates of the U.S. sales as certified by the Federal Reserve Bank.

Section 773A(a) directs the Department to use a daily exchange rate in order to convert foreign currencies into U.S. dollars unless the daily rate involves a fluctuation. It is the Department's practice to find that a fluctuation exists when the daily exchange rate differs from the benchmark rate by 2.25 percent. The benchmark is defined as the moving average of rates for the past 40 business days. When we determine a fluctuation to have existed, we substitute the benchmark rate for the daily rate, in accordance with established practice. Further, section 773A(b) directs the Department to allow a 60-day adjustment period when a currency has undergone a sustained movement. A sustained movement has occurred when the weekly average of actual daily rates exceeds the weekly average of benchmark rates by more than five percent for eight consecutive weeks. (For an explanation of this method, see *Policy Bulletin 96-1: Currency Conversions* (61 FR 9434, March 8, 1996).) Such an adjustment period is required only when a foreign currency is appreciating against the U.S. dollar. The use of an adjustment period was not warranted in this case because the New Taiwan dollar did not undergo a sustained movement.

Verification

As provided in section 782(i) of the Act, we will verify all information determined to be acceptable for use in making our final determination.

Suspension of Liquidation

In accordance with section 733(d) of the Act, we are directing the Customs Service to suspend liquidation of all imports of subject merchandise that are entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice in the **Federal Register**. We will instruct the Customs Service to require a cash deposit or the posting of a bond equal to the weighted-average amount by which the NV exceeds the U.S. price, as indicated in the chart below. These suspension of liquidation instructions will remain in effect until further notice. The weighted-average dumping margins are as follows:

Exporter/manufacturer	Weighted-average margin percentage
Advanced Microelectronics	113.85
Alliance	59.06
BIT	113.85
ISSI	10.96
Texas Instruments	113.85
UMC	63.36
Winbond	94.10
All Others	41.30

Pursuant to section 735(c)(5)(A) of the Act, the Department has excluded the margins determined entirely under section 776 of the Act from the calculation of the "All Others Rate."

ITC Notification

In accordance with section 733(f) of the Act, we have notified the ITC of our determination. If our final determination is affirmative, the ITC will determine before the later of 120 days after the date of this preliminary determination or 45 days after our final determination whether these imports are materially injuring, or threaten material injury to, the U.S. industry.

Public Comment

Case briefs or other written comments in at least ten copies must be submitted to the Assistant Secretary for Import Administration no later than December 18, 1997, and rebuttal briefs no later than December 22, 1997. A list of authorities used and an executive summary of issues should accompany any briefs submitted to the Department. Such summary should be limited to five pages total, including footnotes. In accordance with section 774 of the Act, we will hold a public hearing, if requested, to afford interested parties an opportunity to comment on arguments raised in case or rebuttal briefs. Tentatively, the hearing will be held on December 23, 1997, time and room to be determined, at the U.S. Department of Commerce, 14th Street and Constitution Avenue, N.W., Washington, D.C. 20230. Parties should confirm by telephone the time, date, and place of the hearing 48 hours before the scheduled time.

Interested parties who wish to request a hearing, or to participate if one is requested, must submit a written request to the Assistant Secretary for Import Administration, U.S. Department of Commerce, Room 1870, within ten days of the publication of this notice. Requests should contain: (1) The party's name, address, and telephone number; (2) the number of participants; and (3) a list of the issues to be discussed. Oral presentations will be limited to issues raised in the briefs. If this investigation proceeds normally, we will make our final determination by no later than 135 days after the publication of this notice in the **Federal Register**.

This determination is published pursuant to section 733(d) of the Act.

Dated: September 23, 1997.

Robert S. LaRussa,

Assistant Secretary for Import Administration.

[FR Doc. 97-25943 Filed 9-30-97; 8:45 am]

BILLING CODE 3510-DS-P

DEPARTMENT OF COMMERCE

International Trade Administration

[A-421-701]

Brass Sheet and Strip From the Netherlands: Final Results of Antidumping Duty Administrative Review

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

ACTION: Notice of final results of antidumping duty administrative review.

SUMMARY: On May 12, 1997, the Department of Commerce (the Department) published the preliminary results of the administrative review of the antidumping duty order on brass sheet and strip from the Netherlands. This review covers sales to the United States by one manufacturer/exporter, Outokumpu Copper Strip B.V. (OBV), and its U.S. affiliate, Outokumpu Copper (USA), Inc., of the subject merchandise during the period of

Corrections

Federal Register
Vol. 62, No. 195
Wednesday, October 8, 1997

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

DEPARTMENT OF COMMERCE

International Trade Administration

[A–580–828]

Notice of Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination: Static Random Access Memory Semiconductors From the Republic of Korea

Correction

In notice document 97–25942, beginning on page 51437, in the issue of Wednesday, October 1, 1997, make the following correction:

On page 51438, in the second column, in the fifth paragraph, in the seventh line, "125" should read "135".

BILLING CODE 1505-01-D

DEPARTMENT OF JUSTICE

Immigration and Naturalization Service

8 CFR Part 274a

[INS No. 1818-96]

RIN 1115-AE94

Interim Designation of Acceptable Documents for Employment Verification.

Correction

In rule document 97–25920 beginning on page 51001 in the issue of Tuesday, September 30, 1997, make the following corrections:

1. On page 51001, in the first column, under the heading "SUMMARY", in the sixth line from the bottom, "notice" should read "action".

2. On page 51001, in the third column, in the first paragraph, in the seventeenth line, "this" should read "that".

3. On page 51002, in the first column, under the heading "**Background on Document Reduction**", in the eleventh line, "and" should read "or".

4. On page 51002, in the same column, under the same heading, in the thirteenth line, "9 CFR" should read " 8 CFR".

5. On page 51002, in the same column, under the same heading, in the fourteenth line, "and" should read "the".

6. On page 51002, in the second column, in the second paragraph, in the second line, "and" should read "or".

7. On page 51002, in the third column, in paragraph (A)(4), in the fourth line, "766)" should read "766".

8. On page 51003, in the first column, in the second paragraph, in the third line from the bottom, "to" should read "not".

9 On page 51003, in the second column, in the first complete paragraph, in the third line, "conditions on"specific document" should read "conditions on" a specific document".

10. On page 51004, in the first column, in the second line, "numbered" should read "number".

11. On page 51004, in the second column, under the heading "Interim Rule", in the fifteenth line, "that" should read "the".

12. On page 51004, in the second column, in the paragraph 2(1)(a), in the ninth line, "its" should read "is".

13. On page 51005, in the second column, under the heading "Executive Order 12866", in the third line, "service," should read "Service,".

14. On page 51005, in the third column, under the heading "**PART 274a--CONTROL OF EMPLOYMENT OF ALIENS**", in paragraph 2(c), in line one, "(b)(11)((vi)" should read "(b)(1)(vi),".

BILLING CODE 1505-01-D

below, explaining the commitments in non-technical language; and (2) seeks to identify the potential benefits and limitations of foreign commitments. The Commission will examine sector-specific commitments scheduled by Bulgaria, the Czech Republic, Hungary, Iceland, Liechtenstein, Norway, Poland, Romania, the Slovak Republic, Slovenia, Switzerland, and Turkey, with respect to the following industries:

- Distribution services (defined as wholesaling, retailing, and franchising services);
- Education services;
- Communication services (defined as enhanced telecommunication, courier, and audiovisual services);
- Health care services;
- Professional services (defined as accounting, advertising, and legal services);
- Architectural, engineering, and construction (AEC) services;
- Land-based transport services (defined as rail and trucking services); and
- Travel and tourism services.

In addition, the Commission will examine horizontal commitments relevant to the specified industries, such as those regarding investment and temporary entry and stay of foreign workers. As requested by the USTR, the Commission plans to deliver its report to the USTR by September 18, 1998.

The investigation follows Commission investigation No. 332–374, General Agreement on Trade in Services: Examination of the Schedule of Commitments Submitted by Asia Pacific Trading Partners, requested by the USTR on November 13, 1996; investigation No. 332–367, General Agreement on Trade in Services: Examination of South American Trading Partners' Schedules of Commitments, requested by the USTR on April 9, 1996; and Commission investigation No. 332–358, General Agreement on Trade in Services: Examination of Major Trading Partners' Schedules of Commitments, requested by the USTR on December 28, 1994. In those reports, the Commission examined the commitments scheduled by selected trading partners with respect to the industries delineated above. The results of investigation No. 332–374 were published in August 1997 in USITC Publication 3053. The results of investigation No. 332–367 were published in December 1996 in USITC Publication 3007. The results of investigation No. 332–358 were published in December 1995 in USITC Publication 2940. These publications are available on the ITC Internet server (http://www.usitc.gov or ftp://ftp.usitc.gov).

PUBLIC HEARING: A public hearing in connection with the investigation will be held at the U.S. International Trade Commission Building, 500 E Street SW, Washington, DC, beginning at 9:30 a.m. on April 8, 1998. All persons shall have the right to appear, by counsel or in person, to present information and to be heard. Requests to appear at the public hearing should be filed with the Secretary, United States International Trade Commission, 500 E Street SW, Washington, DC 20436, no later than 5:15 p.m., March 25, 1998. Any prehearing briefs (original and 14 copies) should be filed not later than 5:15 p.m., March 25, 1998. The deadline for filing post-hearing briefs or statements is 5:15 p.m., April 22, 1998. In the event that, as of the close of business on March 25, 1998, no witnesses are scheduled to appear at the hearing, the hearing will be canceled. Any person interested in attending the hearing as an observer or non-participant may call the Secretary to the Commission (202–205–1816) after March 25, 1998, to determine whether the hearing will be held.

WRITTEN SUBMISSIONS: In lieu of or in addition to participating in the hearing, interested parties are invited to submit written statements concerning the matters to be addressed by the Commission in its report on this investigation. Commercial or financial information that a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of section § 201.6 of the Commission's Rules of Practice and Procedure (19 C.F.R. 201.6). All written submissions, except for confidential business information, will be made available in the Office of the Secretary of the Commission for inspection by interested parties. To be assured of consideration by the Commission, written statements relating to the Commission's report should be submitted to the Commission at the earliest practical date and should be received no later than the close of business on April 22, 1998. All submissions should be addressed to the Secretary, United States International Trade Commission, 500 E Street SW, Washington, DC 20436.

Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000.

Issued: October 7, 1997.

By order of the Commission.

Donna R. Koehnke,

Secretary.

[FR Doc. 97–27489 Filed 10–15–97; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigations Nos. 731–TA–761 and 762 (Final)]

Static Random Access Memory Semiconductors From the Republic of Korea and Taiwan

AGENCY: United States International Trade Commission; Commerce.

ACTION: Scheduling of the final phase of antidumping investigations.

SUMMARY: The Commission hereby gives notice of the scheduling of the final phase of antidumping investigations No. 731–TA–761 and 762 (Final) under section 735(b) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)) (the Act) to determine whether an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of less-than-fair-value imports from the Republic of Korea (Korea) and Taiwan of static random access memory semiconductors (SRAMs).[1]

For further information concerning the conduct of this phase of the investigations, hearing procedures, and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A through E (19 CFR part 201), and part 207,

[1] The products covered by these investigations are synchronous, asynchronous, and specialty SRAMs from Korea and Taiwan, whether assembled or unassembled. Assembled SRAMs include all package types. Unassembled SRAMs include processed wafers or die, uncut die, and cut die. Processed wafers produced in Korea or Taiwan, but packaged, or assembled into memory modules, in a third country, are included in the scope; processed wafers produced in a third country and assembled or packaged in Korea or Taiwan are not included in the scope.

The scope of these investigations includes modules containing SRAMs. Such modules include single in-line processing modules (SIPs), single in-line memory modules (SIMMs), dual in-line memory modules (DIMMs), memory cards, or other collections of SRAMs, whether unmounted or mounted on a circuit board.

The SRAMs within the scope of these investigations are classified in statistical reporting numbers 8542.13.8037 through 8542.13.8049, 8473.30.1000 through 8473.30.9000, and 8542.13.8005 of the Harmonized Tariff Schedule of the United States (HTSUS). Although the HTSUS statistical reporting numbers are provided for convenience and customs purposes, the written description of the scope of these investigations is dispositive.

subparts A and C (19 CFR part 207), as amended by 62 FR 39438, July 23, 1997.

EFFECTIVE DATE: September 25, 1997.

FOR FURTHER INFORMATION CONTACT: Diane J. Mazur (202–205–3184), Office of Investigations, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202–205–1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000. General information concerning the Commission may also be obtained by accessing its internet server (http://www.usitc.gov or ftp://ftp.usitc.gov).

SUPPLEMENTARY INFORMATION:

Background

The final phase of these investigations is being scheduled as a result of affirmative preliminary determinations by the Department of Commerce that imports of SRAMs from Korea and Taiwan are being sold in the United States at less than fair value within the meaning of section 733 of the Act (19 U.S.C. § 1673b). The investigations were requested in a petition filed on February 25, 1997, by Micron Technology, Inc., Boise, ID.

Participation in the Investigations and Public Service List

Persons, including industrial users of the subject merchandise and, if the merchandise is sold at the retail level, representative consumer organizations, wishing to participate in the final phase of these investigations as parties must file an entry of appearance with the Secretary to the Commission, as provided in section 201.11 of the Commission's rules, no later than 21 days prior to the hearing date specified in this notice. A party that filed a notice of appearance during the preliminary phase of the investigations need not file an additional notice of appearance during this final phase. The Secretary will maintain a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations.

Limited Disclosure of Business Proprietary Information (BPI) Under an Administrative Protective Order (APO) and BPI Service List

Pursuant to section 207.7(a) of the Commission's rules, the Secretary will make BPI gathered in the final phase of these investigations available to authorized applicants under the APO issued in the investigations, provided that the application is made no later than 21 days prior to the hearing date specified in this notice. Authorized applicants must represent interested parties, as defined by 19 U.S.C. 1677(9), who are parties to the investigations. A party granted access to BPI in the preliminary phase of the investigations need not reapply for such access. A separate service list will be maintained by the Secretary for those parties authorized to receive BPI under the APO.

Staff Report

The prehearing staff report in the final phase of these investigations will be placed in the nonpublic record on February 3, 1998, and a public version will be issued thereafter, pursuant to section 207.22 of the Commission's rules.

Hearing

The Commission will hold a hearing in connection with the final phase of these investigations beginning at 9:30 a.m. on February 18, 1998, at the U.S. International Trade Commission Building. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission on or before February 10, 1998. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the hearing. All parties and nonparties desiring to appear at the hearing and make oral presentations should attend a prehearing conference to be held at 9:30 a.m. on February 12, 1998, at the U.S. International Trade Commission Building. Oral testimony and written materials to be submitted at the public hearing are governed by sections 201.6(b)(2), 201.13(f), and 207.24 of the Commission's rules. Parties must submit any request to present a portion of their hearing testimony *in camera* no later than 7 days prior to the date of the hearing .

Written Submissions

Each party who is an interested party shall submit a prehearing brief to the Commission. Prehearing briefs must conform with the provisions of section 207.23 of the Commission's rules; the deadline for filing is February 10, 1998. Parties may also file written testimony in connection with their presentation at the hearing, as provided in section 207.24 of the Commission's rules, and posthearing briefs, which must conform with the provisions of section 207.25 of the Commission's rules.

The deadline for filing posthearing briefs is February 26, 1998; witness testimony must be filed no later than three days before the hearing. 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 investigations on or before February 26, 1998. On March 19, 1998, the Commission will make available to parties all information on which they have not had an opportunity to comment. Parties may submit final comments on this information on or before March 23, 1998, but such final comments must not contain new factual information and must otherwise comply with section 207.30 of the Commission's rules. All written submissions must conform with the provisions of section 201.8 of the Commission's rules; any submissions that contain BPI must also conform with the requirements of sections 201.6, 207.3, and 207.7 of the Commission's rules.

In accordance with sections 201.16(c) and 207.3 of the Commission's rules, each document filed by a party to the investigations must be served on all other parties to the investigations (as identified by either the public or BPI service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

Authority: These investigations are being conducted under authority of title VII of the Tariff Act of 1930; this notice is published pursuant to section 207.21 of the Commission's rules.

By order of the Commission.

Issued: October 9, 1997.

Donna R. Koehnke,

Secretary.

[FR Doc. 97–27493 Filed 10–15–97; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 731–TA–750 (Final)]

Vector Supercomputers From Japan

Determination

On the basis of the record [1] developed in the subject investigation, the United States International Trade Commission determines,[2] pursuant to section 735(b) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)) (the Act), that an industry in the United States is threatened with material injury by reason of imports from Japan of vector supercomputers,

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

[2] Commissioner Crawford not participating.

APPENDIX B

LIST OF WITNESSES APPEARING AT HEARING

CALENDAR OF HEARING

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

Subject:	Static Random Access Memory Semiconductors from the Republic of Korea and Taiwan
Inv. Nos.:	731-TA-761 and 762 (Final)
Date and Time:	February 18, 1998 - 9:30 a.m.

Sessions were held in connection with these investigations in the Main Hearing Room, 500 E Street, SW, Washington, DC.

OPENING REMARKS

Petitioner (**Gilbert B. Kaplan**, Hale and Dorr LLP)
Respondents (**David P. Houlihan**, White & Case, LLP)
Respondents (**Lawrence R. Walders**, Graham & James LLP)

In Support of the Imposition of Antidumping Duties:

Hale and Dorr LLP
Washington, DC
on behalf of

Micron Technology, Incorporated ("Micron")

Eugene H. Cloud, Vice President, Marketing, Micron Technology, Incorporated

Michael Black, Product Marketing Manager for Commodity SRAMs, Micron Technology, Incorporated

Richard Bruneau, Director of Marketing, Memory Products Division, Cypress Semiconductor Corporation

William Franciscovich, Director of SRAM Marketing, Integrated Device Technology, Incorporated

-MORE-

In Support of the Imposition of Antidumping Duties--Continued:

William F. Finan, Managing Director, Horst, Frisch, Clowery & Finan (Economic Consulting Firm)

Bonnie B. Byers, Trade Economist, Hale and Dorr LLP

Gilbert B. Kaplan)
)--OF COUNSEL
Michael D. Esch)

In Opposition to the Imposition of Antidumping Duties:

PANEL 1

Covington & Burling
Washington, DC
on behalf of

Motorola Incorporated

Timothy Harr, Senior Counselor, Motorola, Incorporated

Harvey M. Applebaum--OF COUNSEL

PANEL 2

Graham & James LLP
Washington, DC
on behalf of

Hyundai Electronics Industries Company, Limited
Hyundai Electronics America

Lawrence R. Walders--OF COUNSEL

-MORE-

In Opposition to the Imposition of Antidumping Duties--Continued:

PANEL 2--Cont'd

Kaye, Scholer, Fierman, Hays & Handler, LLP
Washington, DC
on behalf of

LG Semicon Company, Limited
LG Semicon America, Incorporated

Michael P. House--OF COUNSEL

PANEL 3

White & Case, LLP
Washington, DC
on behalf of

Integrated Silicon Solution, Incorporated
Taiwan Semiconductor Industry Association

Gary Fischer, Chief Financial Officer,
Integrated Silicon Solution, Incorporated

Jodi Shelton, Managing Director,
Fabless Semiconductor Association

John G. Reilly, Economic Consultant, Nathan Associates

David P. Houlihan)
Richard G. King)--OF COUNSEL
Robert G. Gosselink)

-MORE-

In Opposition to the Imposition of Antidumping Duties--Continued:

PANEL 3--Cont'd

Weil, Gotshal & Manges, LLP
Washington, DC
on behalf of

Alliance Semiconductor Corporation

Charles Alvarez, Chief Financial Officer,
Alliance Semiconductor Corporation

M. Jean Anderson)
)--OF COUNSEL
Gregory Husisian)

-END-

APPENDIX C

SUMMARY TABLE

Table C-1
SRAMs and SRAM modules: Summary data concerning the U.S. market, 1994-97

(Quantity=*billion bits, except where noted*; value=*1,000 dollars*; unit values and unit production costs are per *million bits*; period changes=*percent, except where noted*)

Item	Reported data				Period changes			
	1994	1995	1996	1997	1994-97	1994-95	1995-96	1996-97
U.S. consumption quantity:								
Amount	85,988	143,784	168,779	244,608	+184.5	+67.2	+17.4	+44.9
"Domestic" product share[1]	48.9	39.8	36.9	34.0	-14.9	-9.1	-2.9	-2.9
"Imported" product share:[1]								
LTFV Korean dice	***	***	***	***	***	***	***	***
Taiwan dice	***	***	***	***	***	***	***	***
Subtotal, subject	***	***	***	***	***	***	***	***
Non-LTFV Korean dice	***	***	***	***	***	***	***	***
3rd-source dice	27.5	32.5	36.0	38.2	+10.7	+4.9	+3.5	+2.2
Total	51.1	60.2	63.1	66.0	+14.9	+9.1	+2.9	+2.9
U.S. consumption value:								
Amount	1,242,187	2,337,347	1,912,038	1,475,533	+18.8	+88.2	-18.2	-22.8
"Domestic" product share[1]	51.4	46.2	50.6	51.0	-0.4	-5.2	+4.4	+0.4
"Imported" product share:[1]								
LTFV Korean dice	***	***	***	***	***	***	***	***
Taiwan dice	***	***	***	***	***	***	***	***
Subtotal, subject	***	***	***	***	***	***	***	***
Non-LTFV Korean dice	***	***	***	***	***	***	***	***
3rd-source dice	28.5	31.0	30.4	30.6	+2.1	+2.5	-0.5	+0.2
Total	48.6	53.8	49.4	49.0	+0.4	+5.2	-4.4	-0.4
"Imported" product made from--								
LTFV Korean dice:								
U.S. shipments quantity	***	***	***	***	***	***	***	***
U.S. shipments value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity	***	***	***	***	***	***	***	***
Taiwan dice:								
U.S. shipments quantity	***	***	***	***	***	***	***	***
U.S. shipments value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity[3]	***	***	***	***	***	***	***	***
Subject dice:								
U.S. shipments quantity	***	***	***	***	***	***	***	***
U.S. shipments value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity[3]	***	***	***	***	***	***	***	***
Non-LTFV Korean dice:								
U.S. shipments quantity	***	***	***	***	***	***	***	***
U.S. shipments value	***	***	***	***	***	***	***	***
Unit value	***	***	***	***	***	***	***	***
Ending inventory quantity[3]	***	***	***	***	***	***	***	***
3rd source dice:								
U.S. shipments quantity	23,674	46,672	60,729	93,481	+294.9	+97.1	+30.1	+53.9
U.S. shipments value	353,540	723,617	581,629	451,497	+27.7	+104.7	-19.6	-22.4
Unit value	$14.93	$15.50	$9.58	$4.83	-67.7	+3.8	-38.2	-49.6
Ending inventory quantity	2,012	5,056	8,395	9,007	+347.7	+151.3	+66.0	+7.3
All "foreign" dice:								
U.S. shipments quantity	43,974	86,557	106,526	161,427	+267.1	+96.8	+23.1	+51.5
U.S. shipments value	603,329	1,257,795	944,510	723,017	+19.8	+108.5	-24.9	-23.5
Unit value	$13.72	$14.53	$8.87	$4.48	-67.4	+5.9	-39.0	-49.5
Ending inventory quantity[3]	6,086	13,521	20,165	27,578	+353.2	+122.2	+49.1	+36.8

--See footnotes at end of table.

Table C-1--*Continued*
SRAMs and SRAM modules: Summary data concerning the U.S. market, 1994-97

(Quantity=*billion bits, except where noted*; value=*1,000 dollars*; unit values and unit production costs are per *million bits*; period changes=*percent, except where noted*)

Item	Reported data				Period changes			
	1994	1995	1996	1997	1994-97	1994-95	1995-96	1996-97
"Domestic" product made from U.S. dice or from 3rd-source dice assembled in the United States:								
U.S. shipments:								
Quantity	42,014	57,227	62,253	83,181	+98.0	+36.2	+8.8	+33.6
Value	638,859	1,079,552	967,528	752,516	+17.8	+69.0	-10.4	-22.2
Unit value	$15.20	$18.86	$15.54	$9.05	-40.5	+24.1	-17.6	-41.8
Export shipments:								
Quantity	18,431	26,803	30,250	52,403	+184.3	+45.4	+12.9	+73.2
Exports/shipments[1]	30.5	31.9	32.7	38.6	+8.2	+1.4	+0.8	+5.9
Value	250,294	505,768	291,008	262,964	+5.1	+102.1	-42.5	-9.6
Unit value	$13.58	$18.87	$9.62	$5.02	-63.0	+39.0	-49.0	-47.8
Ending inventory quantity	11,729	16,759	31,952	45,580	+288.6	+42.9	+90.7	+42.6
U.S. producers'--								
Average capacity (*1,000 wafers*)	773	1,052	1,064	1,075	+39.1	+36.2	+1.1	+1.0
Wafer starts (*1,000 wafers*)	591	738	742	717	+21.3	+24.8	+0.5	-3.3
Capacity utilization[1]	76.5	70.1	69.7	66.7	-9.8	-6.4	-0.4	-3.0
Production quantity of uncased SRAMs	63,904	84,366	126,317	167,663	+162.4	+32.0	+49.7	+32.7
Production workers	2,134	2,626	2,601	2,393	+12.1	+23.1	-1.0	-8.0
Hours worked (*1,000s*)	4,263	5,225	5,232	4,867	+14.2	+22.6	+0.1	-7.0
Wages paid (*$1,000*)	92,213	118,580	118,858	121,535	+31.8	+28.6	+0.2	+2.3
Hourly wages	$21.63	$22.70	$22.72	$24.97	+15.4	+4.9	+0.1	+9.9
Financial data for **SRAM producers**:								
Net sales value	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***
R&D expenses	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***
Captial expenditures	236,088	541,357	511,139	245,419	4.0	129.3	-5.6	-52.0
COGS/sales[1]	***	***	***	***	***	***	***	***
Operating income or (loss)/sales[1]	***	***	***	***	***	***	***	***
Financial data for **fabless SRAM producers**:								
Net sales value	***	***	***	***	***	***	***	***
Cost of goods sold (COGS)	***	***	***	***	***	***	***	***
Gross profit or (loss)	***	***	***	***	***	***	***	***
R&D expenses	***	***	***	***	***	***	***	***
SG&A expenses	***	***	***	***	***	***	***	***
Operating income or (loss)	***	***	***	***	***	***	***	***
Captial expenditures	***	***	***	***	***	***	***	***
COGS/sales[1]	***	***	***	***	***	***	***	***
Operating income or (loss)/sales[1]	***	***	***	***	***	***	***	***

[1] 'Reported data' are in percent and 'period changes' are in percentage-point.
[2] A decrease of less than 0.05 percentage points.
[3] Data differ from those presented in table VII-3 because table VII-3 contains only inventories of "imports," i.e., product inventoried in the form in which it was imported, whereas the data presented herein include inventories of the U.S. assembled SRAM products containing dice fabricated in Taiwan and Korea (since they are considered "imported product"). The amount of the inventories included herein and excluded from table VII-3 are small, amounting to 8 billion bits from Taiwan in 1995, 70 billion bits from Taiwan in 1996, *** billion bits from non-LTFV Korea in 1994, and *** billion bits from non-LTFV Korea in 1996.

Note.--Period changes are derived from the unrounded data. Because of rounding, figures may not add to the totals shown. Unit values and other ratios are calculated from the unrounded figures, using data of firms supplying both numerator and denominator information.

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

APPENDIX D

GLOSSARY OF TERMS

GLOSSARY OF TERMS[1]

Access time.--Time interval between the instant that a piece of information is sent and the instant it returns.

Assembly.--The series of operations after fabrication in which the wafer is separated into individual chips and mounted and connected to a package.

BiCMOS.--A circuit containing both bipolar and CMOS transistors.

Bipolar transistor.--A transistor consisting of an emitter, base, and collector, whose action depends on the injection of minority carriers from the base by the collector.

Bit.--Short for "Binary Digit." The smallest piece of data (a "1" or "0") that a computer recognizes. Combinations of 1s and 0s are used to represent characters and numbers.

Byte.--A number of bits, usually eight, that represent one numeric or alphabetic character.

Cased SRAM.--SRAMs that have undergone both the fabrication and assembly/test stages. At this point, the individual SRAMs have been separated from the wafer, electrically tested, and encapsulated into a package. The package is usually of molded plastic and includes a lead frame and metal leads which will allow the SRAM to be physically attached to a printed circuit board with other components to form a finished product.

Chip.--A single piece of semiconductor material onto which specific electrical circuits have been fabricated; refers to a semiconductor that has not yet been packaged. Also called "die."

CMOS (complementary metal oxide semiconductor).--Negative and positive channel MOS transistors on the same chip.

CPU (central processing unit).--The computer module in charge of retrieving, decoding, and executing instructions.

CVD (chemical vapor deposition).--A method for depositing some of the layers which function as dielectrics, conductors, or semiconductors. A chemical containing atoms of the material to be deposited reacts with another chemical, liberating the desired material, which deposits on the wafer while by-products of the reaction are removed from the reaction chamber.

Deposition.--Process in which layers are formed as the result of a chemical reaction in which the desired layer material is formed and coats the wafer surface.

Die.--A single piece of semiconductor material onto which specific electrical circuits have been fabricated; refers to a semiconductor that has not yet been packaged. Also called a "chip."

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[1] Sourced principally from: Peter Van Zant, *Microchip Fabrication: A Practical Guide to Semiconductor Processing* (New York, NY: McGraw-Hill, 1997), pp. 587-605, and Commission publications.

Diffusion.--A process used in semiconductor production which introduces minute amounts on impurities (dopants) into a substrate material such as silicon or germanium and permits the impurity to spread into the substrate. The precess is very dependent on temperature and time.

DIP (dual in-line package).--A chip package with leads extending along two opposite edges of the package.

Dopant.--An element that alters the conductivity of a semiconductor by contributing either a hole or electron to the conduction process.

DRAM (dynamic random access memory).--Memory device for the storage of digital information. The information is stored in a volatile state.

Etch.--A process for removing material in a specific area through a wet or dry chemical reaction or by physical removal, such as by sputter etch.

"Fabless" firms.--"Fabless" companies concentrate on the semiconductor design stage. The fabrication stage is contracted out by the fabless company to a "foundry" producer. The foundry producer fabricates the SRAM, including any prototyping and test run, using the fabless companies' design. The assembly stage is also contracted out by the fabless company and can be conducted by the foundry or by a third party.

Fabrication.--Integrated circuit manufacturing processes.

Ion implantation.--Introduction of selected impurities (dopants) by means of high-voltage ion bombardment to achieve desired electronic properties in defined areas.

Kilobit.--One thousand (actually 1,024) bits of information.

Lithography.--Process of pattern transfer: when light is utilized, it is termed photolithography; and when patterns are small enough to be measured in microns, it is referred to as microlithography.

Logic.--The circuits used to control operation of integrated circuit devices.

Mask.--A glass plate covered with an array of patterns used in the photomasking process. Each pattern consists of opaque and clear areas that respectively prevent or allow light through. Masks are aligned with existing patterns on silicon wafers and used to expose photoresist. Mask patterns may be formed in emulsion, chrome, iron oxide, silicon, or a number of other opaque materials.

Megabit.--One million (actually 1,048,576) bits of information.

Microcontroller.--An integrated circuit consisting of memory, logic, and other circuitry that is designed to perform a limited of preset circuit functions.

Module.--A packaging arrangement consisting of chips mounted on a printed circuit board. Modules are less susceptible to damage during installation than individual chips and require less board space. SRAM modules can easily be "plugged" into and removed from sockets in electronic applications such as desktop computers. In contrast, individual cased SRAMs need to be soldered to a main circuit board in applications and then cannot be easily removed or replaced.

Overall yield.--The percentage of functioning packaged chips from a wafer related to the number of dice mapped onto the wafer. Overall yield is the product of fabrication yield, sort yield, and assembly yields.

Package.--Protective container for a semiconductor chip (generally plastic or ceramic) having electrical leads for external connections.

Photoresist.--The light-sensitive film spun onto wafers and exposed using high-intensity light through a mask. The exposed (or unexposed, depending on its polarity) photoresist is dissolved with developers, leaving a pattern of photoresist which allows etching to take place in some areas while preventing it in others.

RAM (random access memory).--A type of circuitry used in memory integrated circuits. Compared with other types of memory circuitry, RAM provides the fastest capabilities for storing and retrieving digital information. However, RAM circuits are not suited to certain applications because, unlike circuits based on read only memory (ROM) circuitry, they need to be connected to a source of electrical power to retain stored information. They are thus characterized as "volatile" memory circuits. RAM devices temporarily store information.

Reticle.--An exposure mask with only a portion of complete die pattern.

ROM (read only memory).--A type of circuitry used in memory integrated circuits. ROM circuits are designed only to give back prestored information. This information is specifically designed into the chip memory array during fabrication. Unlike random access memory (RAM) circuitry, ROM circuits store information permanently and do not need to be recharged. They are thus characterized as "nonvolatile" memory circuits. However, they provide slower capabilities for storing and retrieving information than RAM circuits.

Semiconductor.--An electronic device whose main functioning part is made from a material (usually silicon, the "semiconductor") whose conductivity ranges between that of a conductor and that of an insulator. Semiconductor devices achieve amplification and rapid on-off switching by moving electronic charges along controlled paths inside a solid block of semiconductor material (hence the name "solid state").

Silicon.--A nonmetallic element used in the semiconductor industry as a substrate for multiple layers of material, built to form electrical circuits. Silicon is grown from a crystal to form a cylinder-shaped "log." Slicing the logs into sections about 1/40 of an inch thick creates bare wafers.

Static RAM (static random access memory).--Fast read-write memory cell based on transistors.

Substrate.--The underlying material upon which a device, circuit, or epitaxial layer is fabricated.

Transistor.--A semiconductor device that uses a stream of charge carriers to produce active electronic effects. The name was coined from the electrical characteristic of "transfer resistance."

Uncased SRAM.--SRAMs that have completed the fabrication stage but have not yet undergone assembly and final testing. Uncased SRAMs may still be incorporated on a wafer or may have been separated into individual chips. Many companies that perform fabrication, which is extremely capital intensive, contract out the more labor intensive assembly and test stages to locations in Southeast Asia.

Volatile memory circuit.--A memory circuit that loses its data when power to the chip is lost.

Wafer.--A thin, usually round slice of a semiconductor material, from which chips are made.

Wafer fabrication.--The series of manufacturing operations in which the circuit or device is put in and on the wafer.

APPENDIX E

QUESTIONNAIRE COMMENTS ON PRODUCT COMPARISONS

CHARACTERISTICS AND USES COMPARISONS

The Commission's questionnaires in the final phase of these investigations requested comments regarding the differences and similarities in the physical characteristics and uses of "fast" and "slow" SRAMs and SRAM modules. The following comments were received:

***

Characteristics.--"SRAMs above and below 15ns share identical physical characteristics. Actually, a single SRAM will normally cover a range of speed grades. *** follows a common industry practice of targeting SRAM production to yield at a faster speed grade, knowing that the part can be sold in slower applications. A particular part can typically be sold in a range of four speed grades. For example, *** currently sells a 2M, 54Kx32 synchronous pipeline burst SRAM, a part which is yielded at 7.5ns. The same part is sold and labeled for 7.5ns, 8.5ns, 10ns, 11ns, and 15ns applications. In 1994, a *** 15ns part was labeled and shipped for 15ns, 20ns, 25ns, 35ns, and 45ns applications. SRAMs in the slow and fast groupings share identical physical characteristics and are often the exact same part. This answer is true for any other speed grade point."

Functions.--"The functions of SRAMs are identical whether the SRAM is faster or slower than 15ns. As noted in the preceding answer, specific parts could straddle the 15ns speed point by three to four speed grades. This is true for any other speed grade point as well. The function of the SRAM is to provide memory capacity for the microprocessor. So long as the SRAM meets the minimum speed requirements, a faster SRAM will provide the same function as the slower SRAM."

***

Characteristics.--"Fast SRAM focus on performance - fast access time. Some slow SRAM offer low power feature. Depending on application, they may not be interchangeable."

Functions.--"From speed point of view, fast SRAM can replace slow SRAM. From power consumption point of view, fast SRAM cannot replace slow SRAM."

***

Characteristics.--"Fast and slow SRAMs may have many physical similarities: e.g., if a similar production process, such as 2-poly, 2-metal CMOS, is used; or if the density, such as 256k, is similar. Fast and slow SRAMs (indeed, any two different SRAMs) will have many physical differences: e.g., design layout and die size."

Functions.--"The functions of fast and slow SRAMs typically are similar, although there are differences in performance (access speed and power consumption being the most notable). Different package types will prevent interchangeability. If package types are similar, fast SRAMs often may be substituted for slow SRAMs."

***

Characteristics.--"SRAMs whether fast or slow are essentially the same product, the only differences being a minor variation in die size and package types . . . Differences: Power, speed, package, (Fast - SOJ; Slow - SOP). Similarity: Configuration, pin-out, maybe package."

Functions.--"Fast SRAMs are used in applications where access time is one of the most important factors. Slow SRAMs are used in applications where power is the most important factor . . . many slow SRAMs offer low power consumption characteristics. The operation of the devices is essentially the same as the fast SRAM except they consume less power, and have much slower access timing. However, fast SRAMs are now also used in low power applications."

***

Characteristics.--"Fast and slow uncased are physically similar in density, memory organization, process technology, cell size and die size. They differ in speed, operating current and standby current."

Functions.--"Fast and slow SRAMs are used for data storage for data processors. Fast SRAMs may be substituted for slow in non-power sensitive applications."

***

Characteristics.--"Slow SRAM cannot be substituted for fast, but fast could possibly be substituted for slow if low power consumption is not required."

Functions.--"Slow SRAM has a battery back-up current specified while fast SRAM does not have this specification."

***

Characteristics.--"There are some differences in power dissipation, pinout, and package characteristics between fast and slow SRAMs. Some SRAMs are differentiated by speed alone. There are both similarities and differences in circuit design techniques."

Functions.--"Most synchronous SRAM functionalities are specific to fast SRAMs. Within the synchronous SRAM product family, there are many different types of synchronous functionalities; i.e., Burst, Flow Through, Late Write, Double Data Rate, etc. All synchronous SRAMs perform basically the same function, the main difference being speed and physical characteristics. In limited cases, *** has substituted fast SRAMs for slow SRAMs where the fast SRAMs have all the other device characteristics of the slow SRAMs and has passed all of ***'s component qualification and applications testing."

***

Characteristics.--"No physical differences. Slow and fast SRAMs can be obtained in similar packaging."

Functions.--"Faster devices can generate noise internally and they are more susceptible to external noise. Faster devices also consume more power. Slower SRAMs cannot be used in higher performance applications. Faster SRAMs consume more power and may have more soft errors in "noisy" environments."

***

Characteristics.--"Pinouts and interface protocol frequently differ between fast and slow SRAM. The parts are not interchangeable."

Functions.--"The core function is similar. In all our applications, fast SRAMs cannot be substituted for slow SRAMs or vice-versa. All of ***'s applications are timing sensitive."

MANUFACTURING COMPARISONS

The Commission's questionnaires in the final phase of these investigations requested comments regarding the differences and similarities in the manufacturing processes used in the production of fast and slow SRAMs. The following comments were received:

***

"The production process for SRAMs faster than 15ns is identical to the production process for SRAMs slower than 15ns. The speed of the SRAM does not modify the process technology, production inputs, machinery and equipment, or skilled labor required to produce uncased SRAMs. All inputs used to produce SRAMs of greater than 15ns, are also used to produce SRAMs of less than 15ns. All SRAMs are produced on a silicon wafer. The primary piece of equipment used to form the transistors and interconnects is the stepper. The stepper uses lithographic techniques to project the pattern onto the wafer. Mask sets are used to form the circuit design. Mask sets are specific to each specific SRAM product. Reductions in line widths projected by the steppers allow an increase in the number of chips on a wafer and an increase in the speed of the SRAM. As steppers of smaller line widths are available, the state-of-the-art steppers are used to produce the faster SRAMs and other SRAMs, because the yield of SRAMs per wafer significantly reduces the cost per SRAM die. In other words, the same equipment and production techniques are used to produce SRAMs that are faster than 15ns and SRAMs that are slower than 15ns."

***

"Fast and slow SRAMs share similar memory cell technologies and overall wafer process flows. Typically SRAMs currently in high volume production use 4 transistor cells with poly-silicon resistor loads. Most SRAMs are produced with CMOS processes regardless of whether they are fast or slow. The very fastest SRAMs (speeds faster than 10ns) that are in high volume production often use BiCMOS technology, which adds bipolar transistors to the same base process."

"The packaging for fast and slow SRAMs is often quite different. Slow SRAMs are usually low-power, requiring under one half watt of power in operation. Fast SRAMs often use considerably more than one watt. This extra power generates substantial heat, and requires different, more costly packaging than normally used for slow SRAMs."

COMPETITION

The Commission's questionnaires in the final phase of these investigations requested comments regarding under what, if any, circumstances fast and slow SRAMs and fast and slow SRAM modules compete for sales with each other. The following comments were received:

***

"Fast and slow can compete with each other in non-power sensitive applications, such as telecom switches operating at 5 volts. *** has marketed fast SRAMs into these applications at the 64K, 1Meg and 4Meg densities."

***

"Fast and slow SRAMs do not compete as they cannot be substituted."

***

"Fast SRAMs compete directly for sales with slow SRAMs. All SRAM manufacturers, including ***, target production of SRAMs at higher speed grade yields, knowing that the part can and will be sold in applications that do not require the higher speed. If a manufacturer's SRAM part yields at 35ns, for a speed grade range of 15/20/25/35/45, that manufacturer is foregoing sales of that part, which no manufacturer can afford to do. SRAM producers, including ***, therefore produce parts at the fast end of a speed grade range and market the parts in both fast and slow applications."

***

"Slow SRAM cannot replace fast SRAM. If power consumption is no issue, fast SRAM can replace slow SRAM. For example, 15ns device typically can replace 35, 70, or 100ns device."

***

"Generally fast and slow SRAMs do not compete at ***. These products are not interchangeable at *** unless customers make major design changes in their applications and performance target."

***

"No alternative products are suitable for substitution. The decision between fast and slow SRAMs is made based on functionality of the product during design, about 12-18 months before SRAM is purchased."

APPENDIX F

COMPAS PRESENTATION

ASSUMPTIONS

The COMPAS model is a supply and demand model that assumes that domestic and imported products are less than perfect substitutes. Such models, also known as Armington models, are relatively standard in applied trade policy analysis and are used extensively for the analysis of trade policy changes both in partial and general equilibrium. Based on the discussion contained in Part II of this report, the staff selects a range of estimates that represent price-supply, price-demand, and product-substitution relationships (i.e., supply elasticity, demand elasticity, and substitution elasticity) in the U.S. SRAM market. The model uses these estimates with data on market shares, Commerce's estimated margin of dumping, transportation costs, and current tariffs to analyze the likely effect of unfair pricing of subject imports on the U.S. like product industry.

FINDINGS[1]

Estimated effects of the subject imports on the U.S. SRAM industry are as follows: 2.4 percent to 5.4 percent reduction in revenue, 2.0 percent to 4.4 percent reduction in output, and 0.2 percent to 0.9 percent reduction in price. Specifically, estimated effects by country are shown below:

	Revenue	Price	Volume
Korea.....	0.0 to 0.9	0.0 to 0.1	0.0 to 0.6
Taiwan.....	2.4 to 4.5	0.2 to 0.8	2.0 to 3.8
Total.....	2.4 to 5.4	0.2 to 0.9	2.0 to 4.4

More detailed effects of the dumping and the modeling assumptions used for the full range of scenarios are shown in tables F-1 to F-5.

[1] Estimates are based on 1997 data.

Table F-1
The effects of LTFV pricing of imports from Korea (Hyundai and all other)

* * * * * * *

Table F-2
The effects of LTFV pricing of imports from Korea (LG Semicon)

* * * * * * *

Table F-3
The effects of LTFV pricing of imports from Taiwan (ISSI)

* * * * * * *

Table F-4
The effects of LTFV pricing of imports from Taiwan (Alliance)

* * * * * * *

Table F-5
The effects of LTFV pricing of imports from Taiwan (all others)

* * * * * * *

APPENDIX G

ADDITIONAL DATA ON "DOMESTIC" SRAMs BY PRODUCT TYPE

Table G-1
Uncased SRAMs: Shipments by U.S. producers, by types, 1994-97

* * * * * * *

Table G-2
Cased SRAMs: Shipments of "domestic" product by U.S. producers and importers, by types, 1994-97

* * * * * * *

Table G-3
SRAM modules: Shipments of "domestic" product by U.S. producers and importers, by types, 1994-97

* * * * * * *

APPENDIX H

ADDITIONAL DATA ON IMPORTS, IMPORT DATA COMPILED FROM OFFICIAL STATISTICS OF THE U.S. DEPARTMENT OF COMMERCE, AND MARKET SHARES BY FIRMS

DESCRIPTION OF TABLES

U.S. imports by types.--This appendix contains the following tables relating to types of U.S. imports as compiled from Commission questionnaires:

H-1 U.S. imports, by sources, for uncased SRAMs.

H-2 U.S. imports, by sources, for cased SRAMs.

H-3 U.S. imports, by sources, for SRAM modules.

Official import statistics.--This appendix also contains the following tables pertaining to imports as compiled by the Department of Commerce:

H-4 Official import statistics for all densities of cased SRAMs.

H-5 Official import statistics for cased SRAMs not over 40K.

H-6 Official import statistics for cased SRAMs over 40K but not over 80K.

H-7 Official import statistics for cased SRAMs over 80K but not over 300K.

H-8 Official import statistics for cased SRAMs over 300K but not over 3Meg.

H-9 Official import statistics for cased SRAMs over 3Meg.

Market shares.--The following table contains data relating to market shares by firm using data compiled from Commission questionnaires:

H-10 U.S. apparent consumption and market shares, by firms.

Table H-1
Uncased SRAMs: U.S. imports, by sources, 1994-97

* * * * * * *

Table H-2
Cased SRAMs: U.S. imports, by sources and by origin of dice, 1994-97

Item	1994	1995	1996	1997
	Quantity (*billion bits*)			
Korea:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Subtotal	***	***	***	***
Taiwan:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Subtotal	***	***	***	***
3rd sources:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Subtotal	***	***	***	***
Total, all imports	85,309	151,274	174,378	253,228
	Quantity (*1,000 units*)			
Korea:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Subtotal	***	***	***	***
Taiwan:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Subtotal	***	***	***	***
3rd sources:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Subtotal	***	***	***	***
Total, all imports	276,687	431,663	369,043	398,300

--See footnotes at end of table.

Table H-2--*Continued*
Cased SRAMs: U.S. imports, by sources and by origin of dice, 1994-97

Item	1994	1995	1996	1997
	Value (*1,000 dollars*)			
Korea:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Subtotal	***	***	***	***
Taiwan:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Subtotal	***	***	***	***
3rd sources:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Subtotal	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Subtotal	***	***	***	***
Total, all imports	963,831	1,975,951	1,672,654	1,291,596
	Unit value (*per million bits*)			
Korea:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Average	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Average	***	***	***	***
Taiwan:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Average	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Average	***	***	***	***
3rd sources:				
LTFV Korean dice	***	***	***	***
Taiwan dice	***	***	***	***
Average	***	***	***	***
Non-LTFV Korean dice	***	***	***	***
U.S. dice	***	***	***	***
3rd-source dice	***	***	***	***
Average	***	***	***	***
Average, all imports	$11.30	$13.06	$9.60	$5.08

[1] Not available.
[2] Not applicable.

Note.--Because of rounding, figures may not add to the totals shown. Unit values are calculated using unrounded data of firms supplying both quantity and value information.

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

Table H-3
SRAM modules: U.S. imports, by sources and by origin of dice, 1994-97

* * * * * * *

Table H-4
Cased SRAMs: Total U.S. imports for consumption, by principal sources, 1994-97

Source	1994	1995	1996	1997
	Quantity (1,000 units)			
Korea	66,466	101,614	77,726	75,381
Taiwan	56,053	101,373	78,130	73,362
Subtotal	122,520	202,987	155,855	148,743
Japan	62,697	98,010	91,176	110,325
Malaysia	44,232	81,538	56,298	36,600
Philippines	13,662	3,789	15,425	83,460
Thailand	38,131	35,782	37,557	23,863
Indonesia	78	16,859	30,670	17,665
All other	7,689	22,156	26,045	21,052
Subtotal	166,490	258,134	257,170	292,964
Total	289,009	461,121	413,026	441,708
	Quantity (estimated billion bits)			
Korea	21,894	112,120	55,453	67,328
Taiwan	15,221	31,624	33,985	31,405
Subtotal	37,114	143,744	89,438	98,733
Japan	44,414	66,650	80,182	111,781
Malaysia	13,248	28,127	29,256	20,025
Philippines	727	1,201	4,366	17,411
Thailand	5,973	6,311	8,109	4,607
Indonesia	17	2,536	6,097	6,551
All other	3,374	7,721	13,080	19,584
Subtotal	67,753	112,546	141,090	179,958
Total	104,867	256,290	230,529	278,691
	Value ($1,000)			
Korea	228,581	465,820	357,974	260,695
Taiwan	104,143	209,242	153,130	107,108
Subtotal	332,724	675,062	511,105	367,803
Japan	383,768	755,100	603,158	443,987
Malaysia	176,498	259,148	223,381	131,286
Philippines	41,338	18,358	28,790	114,176
Thailand	58,785	55,663	83,097	51,054
Indonesia	293	21,617	36,832	24,487
All other	23,067	105,421	133,545	248,151
Subtotal	683,749	1,215,307	1,108,804	1,013,141
Total	1,016,473	1,890,368	1,619,908	1,380,944
	Average unit value (dollars per unit)			
Korea	$3.44	$4.58	$4.61	$3.46
Taiwan	1.86	2.06	1.96	1.46
Average	2.72	3.33	3.28	2.47
Japan	6.12	7.70	6.62	4.02
Malaysia	3.99	3.18	3.97	3.59
Philippines	3.03	4.84	1.87	1.37
Thailand	1.54	1.56	2.21	2.14
Indonesia	3.73	1.28	1.20	1.39
All other	3.00	4.76	5.13	11.79
Average	4.11	4.71	4.31	3.46
Average	3.52	4.10	3.92	3.13

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table H-5
Cased SRAMs not over 40,000 bits (HTS item 8542.13.8037): U.S. imports for consumption, by principal sources, 1994-97

Source	1994	1995	1996	1997
	Quantity (1,000 units)			
Korea	10,317	5,305	8,320	5,956
Taiwan	1,598	2,244	2,634	854
Subtotal	11,915	7,548	10,954	6,810
Japan	3,777	11,884	8,609	6,639
Malaysia	5,070	6,339	6,186	9,883
Philippines	13,076	2,660	4,652	20,729
Thailand	8,642	8,802	8,015	8,733
Indonesia	(	2,347	11,971	9,445
All other	3,020	5,552	8,648	5,987
Subtotal	33,586	37,584	48,081	61,416
Total	45,501	45,132	59,035	68,226
	Quantity (estimated billion bits)			
Korea	169	87	136	98
Taiwan	26	37	43	14
Subtotal	195	124	179	112
Japan	62	195	141	109
Malaysia	83	104	101	162
Philippines	214	44	76	340
Thailand	142	144	131	143
Indonesia	(	38	196	155
All other	49	91	142	98
Subtotal	550	616	788	1,006
Total	745	739	967	1,118
	Value ($1,000)			
Korea	14,812	16,860	22,605	11,491
Taiwan	2,803	7,777	2,246	2,011
Subtotal	17,615	24,637	24,851	13,502
Japan	11,488	58,708	33,221	7,248
Malaysia	24,177	30,702	28,525	26,845
Philippines	33,039	10,113	8,649	25,994
Thailand	12,276	13,293	15,795	19,730
Indonesia	2	3,029	14,293	13,157
All other	5,861	7,617	8,737	12,086
Subtotal	86,844	123,463	109,220	105,060
Total	104,459	148,099	134,071	118,562
	Average unit value (dollars per unit)			
Korea	$1.44	$3.18	$2.72	$1.93
Taiwan	1.75	3.47	0.85	2.35
Average	1.48	3.26	2.27	1.98
Japan	3.04	4.94	3.86	1.09
Malaysia	4.77	4.84	4.61	2.72
Philippines	2.53	3.80	1.86	1.25
Thailand	1.42	1.51	1.97	2.26
Indonesia	4.11	1.29	1.19	1.39
All other	1.94	1.37	1.01	2.02
Average	2.59	3.28	2.27	1.71
Average	2.30	3.28	2.27	1.74

(1) Fewer than 500 units or 500 million bits.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table H-6
Cased SRAMs over 40,000 bits but not over 80,000 bits (HTS item 8542.13.8038): U.S. imports for consumption, by principal sources, 1994-97

Source	1994	1995	1996	1997
	Quantity (1,000 units)			
Korea	14,829	12,619	6,702	7,432
Taiwan	4,682	6,183	4,197	2,087
Subtotal	19,511	18,802	10,899	9,518
Japan	8,898	5,835	2,697	5,927
Malaysia	5,995	5,996	4,780	1,456
Philippines	37	45	1,256	8,846
Thailand	14,804	11,435	9,217	6,842
Indonesia	15	6,712	4,479	1,115
All other	606	1,425	1,665	612
Subtotal	30,355	31,448	24,093	24,797
Total	49,865	50,250	34,993	34,316
	Quantity (estimated billion bits)			
Korea	972	827	439	487
Taiwan	307	405	275	137
Subtotal	1,279	1,232	714	624
Japan	583	382	177	388
Malaysia	393	393	313	95
Philippines	2	3	82	580
Thailand	970	749	604	448
Indonesia	1	440	294	73
All other	40	93	109	40
Subtotal	1,989	2,061	1,579	1,625
Total	3,268	3,293	2,293	2,249
	Value ($1,000)			
Korea	22,538	20,255	10,318	9,855
Taiwan	6,243	8,769	7,251	2,827
Subtotal	28,780	29,024	17,569	12,682
Japan	20,480	19,836	8,302	11,652
Malaysia	12,614	13,779	13,662	5,969
Philippines	218	221	1,628	10,597
Thailand	20,767	16,837	19,503	14,661
Indonesia	126	8,629	5,543	1,493
All other	3,539	6,242	8,823	1,793
Subtotal	57,743	65,543	57,462	46,165
Total	86,524	94,567	75,031	58,846
	Average unit value (dollars per unit)			
Korea	$1.52	$1.61	$1.54	$1.33
Taiwan	1.33	1.42	1.73	1.35
Average	1.48	1.54	1.61	1.33
Japan	2.30	3.40	3.08	1.97
Malaysia	2.10	2.30	2.86	4.10
Philippines	5.97	4.97	1.30	1.20
Thailand	1.40	1.47	2.12	2.14
Indonesia	8.40	1.29	1.24	1.34
All other	5.84	4.38	5.30	2.93
Average	1.90	2.08	2.38	1.86
Average	1.74	1.88	2.14	1.71

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table H-7
Cased SRAMs over 80,000 bits but not over 300,000 bits (HTS item 8542.13.8039): U.S. imports for consumption, by principal sources, 1994-97

Source	1994	1995	1996	1997
	Quantity (1,000 units)			
Korea	32,003	39,568	33,475	25,291
Taiwan	48,077	88,225	63,118	62,920
Subtotal	80,080	127,792	96,593	88,211
Japan	27,687	41,002	35,272	38,063
Malaysia	28,871	59,455	31,503	14,453
Philippines	322	531	7,738	52,047
Thailand	13,629	14,052	18,096	7,011
Indonesia	63	7,786	12,176	2,103
All other	3,193	12,765	8,403	6,384
Subtotal	73,764	135,590	113,187	120,062
Total	153,845	263,383	209,780	208,273
	Quantity (estimated billion bits)			
Korea	8,389	10,372	8,775	6,630
Taiwan	12,603	23,128	16,546	16,494
Subtotal	20,993	33,500	25,321	23,124
Japan	7,258	10,748	9,246	9,978
Malaysia	7,568	15,586	8,258	3,789
Philippines	84	139	2,028	13,644
Thailand	3,573	3,684	4,744	1,838
Indonesia	17	2,041	3,192	551
All other	837	3,346	2,203	1,674
Subtotal	19,337	35,544	29,671	31,473
Total	40,329	69,044	54,993	54,597
	Value ($1,000)			
Korea	92,599	104,957	85,056	45,265
Taiwan	92,325	175,306	114,399	74,347
Subtotal	184,925	280,263	199,455	119,612
Japan	101,521	139,160	116,448	74,346
Malaysia	87,775	148,479	91,685	54,484
Philippines	3,521	1,771	10,837	68,889
Thailand	18,453	17,392	39,033	14,077
Indonesia	164	9,909	14,608	3,075
All other	9,143	25,125	16,408	12,821
Subtotal	220,576	341,836	289,019	227,692
Total	405,501	622,100	488,474	347,304
	Average unit value (dollars per unit)			
Korea	$2.89	$2.65	$2.54	$1.79
Taiwan	1.92	1.99	1.81	1.18
Average	2.31	2.19	2.06	1.36
Japan	3.67	3.39	3.30	1.95
Malaysia	3.04	2.50	2.91	3.77
Philippines	10.93	3.33	1.40	1.32
Thailand	1.35	1.24	2.16	2.01
Indonesia	2.60	1.27	1.20	1.46
All other	2.86	1.97	1.95	2.01
Average	2.99	2.52	2.55	1.90
Average	2.64	2.36	2.33	1.67

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table H-8
Cased SRAMs over 300,000 bits but not over 3,000,000 bits (HTS item 8542.13.8041): U.S. imports for consumption, by principal sources, 1994-97

Source	1994	1995	1996	1997
	Quantity (1,000 units)			
Korea	8,786	27,700	25,154	30,855
Taiwan	1,588	3,864	5,654	5,492
Subtotal	10,374	31,564	30,808	36,348
Japan	18,800	35,998	38,291	49,024
Malaysia	4,215	9,484	12,307	9,652
Philippines	174	429	1,737	1,598
Thailand	1,031	1,489	2,209	1,047
Indonesia	(	14	2,025	5,001
All other	397	1,953	6,614	5,285
Subtotal	24,617	49,368	63,184	71,608
Total	34,991	80,932	93,991	107,956
	Quantity (estimated billion bits)			
Korea	10,134	31,950	29,013	35,590
Taiwan	1,832	4,457	6,521	6,335
Subtotal	11,966	36,407	35,535	41,925
Japan	21,685	41,522	44,167	56,546
Malaysia	4,861	10,940	14,195	11,133
Philippines	201	495	2,003	1,844
Thailand	1,189	1,717	2,548	1,207
Indonesia	(	17	2,336	5,769
All other	458	2,252	7,629	6,096
Subtotal	28,394	56,942	72,878	82,595
Total	40,360	93,349	108,413	124,520
	Value ($1,000)			
Korea	71,361	176,770	161,841	112,145
Taiwan	2,421	14,836	22,946	19,592
Subtotal	73,783	191,606	184,787	131,737
Japan	181,034	459,872	323,628	223,845
Malaysia	51,638	62,843	85,460	35,786
Philippines	3,121	4,990	5,877	8,027
Thailand	7,196	8,109	8,753	2,397
Indonesia	1	50	2,293	6,758
All other	3,330	61,109	89,245	107,655
Subtotal	246,322	596,973	515,256	384,467
Total	320,104	788,579	700,043	516,204
	Average unit value (dollars per unit)			
Korea	$8.12	$6.38	$6.43	$3.63
Taiwan	1.52	3.84	4.06	3.57
Average	7.11	6.07	6.00	3.62
Japan	9.63	12.77	8.45	4.57
Malaysia	12.25	6.63	6.94	3.71
Philippines	17.95	11.64	3.38	5.02
Thailand	6.98	5.45	3.96	2.29
Indonesia	35.13	3.45	1.13	1.35
All other	8.39	31.29	13.49	20.37
Average	10.01	12.09	8.15	5.37
Average	9.15	9.74	7.45	4.78

(1) Fewer than 500 units or 500 million bits.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table H-9
Cased SRAMs over 3,000,000 bits (HTS item 8542.13.8049): U.S. imports for consumption, by principal sources, 1994-97

Source	1994	1995	1996	1997
	Quantity (1,000 units)			
Korea	531	16,423	4,074	5,847
Taiwan	108	858	2,527	2,009
Subtotal	639	17,281	6,602	7,856
Japan	3,535	3,291	6,307	10,671
Malaysia	82	263	1,523	1,155
Philippines	54	124	42	239
Thailand	23	4	20	231
Indonesia	0	0	19	1
All other	474	462	715	2,784
Subtotal	4,168	4,144	8,625	15,082
Total	4,808	21,425	15,226	22,938
	Quantity (estimated billion bits)			
Korea	2,229	68,884	17,089	24,524
Taiwan	453	3,597	10,600	8,425
Subtotal	2,682	72,481	27,689	32,949
Japan	14,827	13,803	26,452	44,759
Malaysia	342	1,105	6,388	4,846
Philippines	225	520	176	1,003
Thailand	98	17	82	970
Indonesia	0	0	79	3
All other	1,990	1,938	2,997	11,677
Subtotal	17,483	17,383	36,174	63,258
Total	20,164	89,864	63,863	96,207
	Value ($1,000)			
Korea	27,271	146,978	78,154	81,939
Taiwan	351	2,553	6,288	8,331
Subtotal	27,622	149,531	84,443	90,270
Japan	69,246	77,525	121,558	126,897
Malaysia	293	3,345	4,050	8,202
Philippines	1,439	1,262	1,799	669
Thailand	92	31	12	188
Indonesia	0	0	95	4
All other	1,193	5,329	10,332	113,797
Subtotal	72,263	87,492	137,846	249,758
Total	99,885	237,023	222,289	340,028
	Average unit value (dollars per unit)			
Korea	$51.31	$8.95	$19.18	$14.01
Taiwan	3.25	2.98	2.49	4.15
Average	43.20	8.65	12.79	11.49
Japan	19.59	23.56	19.27	11.89
Malaysia	3.59	12.70	2.66	7.10
Philippines	26.78	10.18	42.98	2.80
Thailand	3.93	7.86	0.64	0.82
Indonesia	(	(	4.99	5.25
All other	2.51	11.53	14.46	40.88
Average	17.34	21.11	15.98	16.56
Average	20.78	11.06	14.60	14.82

(1) Not applicable.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table H-10
SRAMs and SRAM modules: Apparent U.S. consumption and market shares, by firms, 1994-97

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APPENDIX I

RESULTS OF OPERATIONS FOR THE "FABLESS" PRODUCERS

OPERATIONS OF FABLESS SRAM PRODUCERS

The Commission requested the U.S. firms that do not engage in actual wafer fabrication, but rather design the wafer and purchase the fabricated wafer product of SRAM foundries, to provide their results of operations. As shown in table I-1, the producers[1] had operating income margins over *** percent in 1994 and over *** percent in 1995 but then incurred operating losses in 1996 and 1997 as sales values decreased.

***. All five companies incurred operating losses in 1996, and only *** in 1997 (table I-2). *** reported in its questionnaire response that it had recorded a reserve for adjustment of inventory to the lower of cost or market price.[2] The amounts incurred for SRAMs were *** in 1995, *** in 1996, and *** in 1997. This adjustment had a major effect on the operating income margin for both *** and the combined companies for 1996 and a lesser effect for 1995 and 1997. Without the adjustment, *** operating income (loss) margin would have been *** percent in 1995, *** percent in 1996, and *** percent in 1997; and for the combined companies, *** percent in 1995, *** percent in 1996, and *** percent in 1997.

Table I-1
Results of operations of U.S. fabless SRAM producers, calendar years 1994-97

* * * * * * *

Table I-2
Results of operations of U.S. fabless SRAM producers, by firms, calendar years 1994-97

* * * * * * *

CAPITAL EXPENDITURES, RESEARCH AND DEVELOPMENT EXPENSES, AND INVESTMENT IN PRODUCTIVE FACILITIES

Capital expenditures, research and development expenses, and the original cost and book value of property, plant, and equipment used in the production of SRAMs by the fabless producers are shown in table I-3. Capital expenditures almost tripled in 1995 compared to 1994, but then decreased in 1996 before increasing in 1997. Research and development expenses increased in 1995 compared to 1994 and remained comparable to 1995 in 1996 and 1997. The original cost of fixed assets increased each year for the reporting companies, reflecting their continued investment in new equipment and facilities.

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[1] The producers and their fiscal year ends are ***. The producers were asked to provide their data on a calendar year basis and no exceptions were noted in the questionnaires.

[2] In accordance with Miller's GAAP Guide, "when the utility of the goods in the ordinary course of business is no longer as good as their cost, a departure from the cost principle of measuring the inventory is required . . . the difference should be recognized by a charge to income in the current period. The write-down of inventory to market usually is reflected in cost of goods sold, unless the amount is unusually material, in which case the loss should be identified separately in the income statement."

Table I-3
Value of assets, capital expenditures, and research and development expenses of U.S. fabless producers of SRAMs, calendar years 1994-97

* * * * * * *

CAPITAL AND INVESTMENT

The fabless producers' comments regarding any actual or potential negative effects of imports of SRAMs from Korea and Taiwan on their firms' growth, investment, ability to raise capital, and/or development and production efforts (including efforts to develop a derivative or more advanced version of the product) are presented in appendix L.

APPENDIX J

RESULTS OF OPERATIONS OF MODULE ASSEMBLER

SRAM MODULE ASSEMBLER OPERATIONS

The Commission requested the U.S. firms that assemble modules to provide their results of operations. *** [1]. As shown in table J-1, net sales ***.

Table J-1
Results of operations of ***, a U.S. assembler of SRAM modules, calendar years 1994-97

* * * * * * *

[1] ***.

APPENDIX K

DOMESTIC VALUE ADDED FOR PRODUCERS, "FABLESS" PRODUCERS, AND MODULE ASSEMBLER

DOMESTIC VALUE ADDED DETAIL COMPUTATIONS

The producers that fabricate dice in the United States, the fabless producers, and the assemblers were requested to provide the domestic value added to 256K and 1 Meg SRAMs on a unit basis for their last full year of production and to provide the source[1] of production costs. Data were computed by Commision staff on an overall SRAM basis for ***. The detail computations[2] are on the following pages.

DOMESTIC VALUE ADDED TO SRAMS

* * * * * * *

[1] The abbreviations used for the source countries are Germany - GRM, Hong Kong - HK, Japan - JN, Korea - KO, Malaysia - MLY, Netherlands - NTH, Scotland - SC, Singapore - SNG, Taiwan - TWN, Thailand - TLD, United Kingdom - UK, and United States - US.

[2] Some of the producers combined production processes; if so, the value of the combined processes is included in the last process, e.g., wafer sorting may include wafer mask and wafer fabrication.

APPENDIX L

EFFECTS OF IMPORTS ON PRODUCERS' EXISTING DEVELOPMENT AND PRODUCTION EFFORTS, GROWTH, INVESTMENT, AND ABILITY TO RAISE CAPITAL

The Commission requested U.S. producers to describe any actual or anticipated negative effects of imports of SRAMs from Korea and Taiwan on their growth, investment, ability to raise capital, or existing development and production efforts, including efforts to develop a derivative or more advanced version of the product. The comments of the responding producers were as follows:

1. Since January 1, 1994, has your firm experienced any actual negative effects on its return on investment or its growth, investment, ability to raise capital, existing development and production efforts (including efforts to develop a derivative or more advanced version of the product), or the scale of capital investments as a result of imports of SRAMs and SRAM modules from Taiwan and Korea?

Fabricators

* * * * * * *

Fabless producers

* * * * * * *

2. Does your firm anticipate any negative impact of imports of SRAMs and SRAM modules from Taiwan and Korea?

Fabricators

* * * * * * *

Fabless producers

* * * * * * *

3. Has any negative impact reported by your firm been reduced as a result of the initiation or conduct of these antidumping investigations?

Fabricators

* * * * * * *

Fabless producers

* * * * * * *