

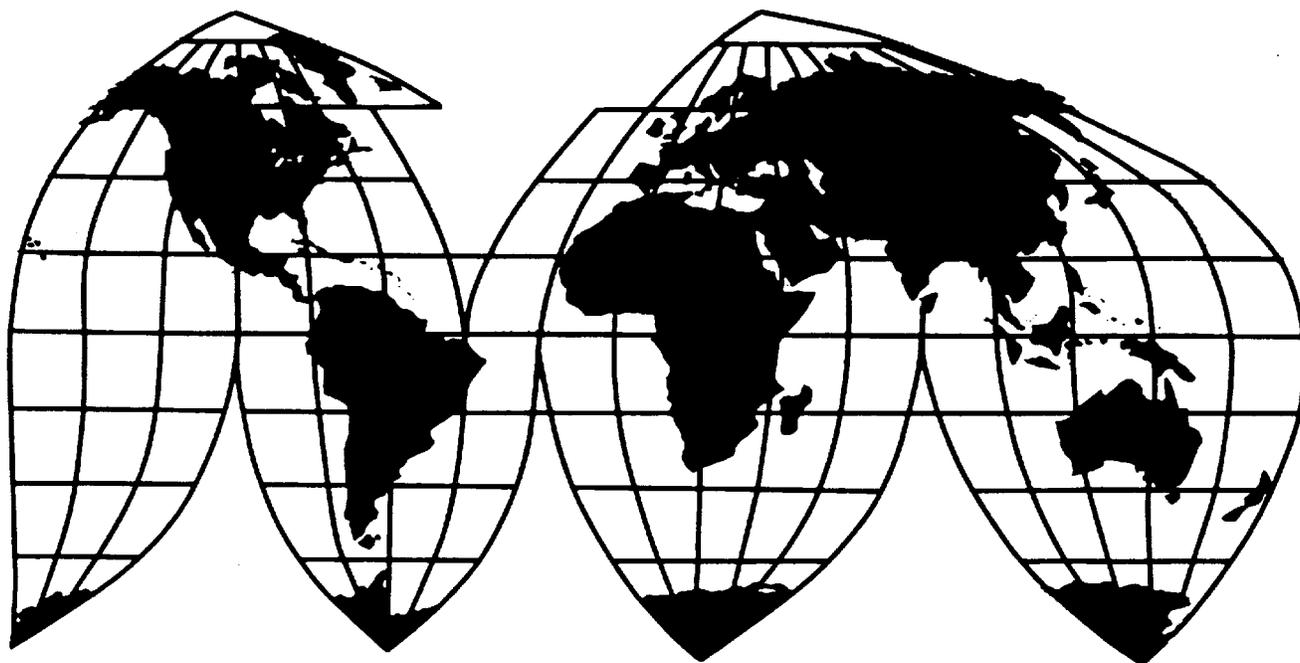
# DRAMs and DRAM Modules From Korea

Investigation No. 701-TA-431 (Remand)

Publication 3871

July 2006

**U.S. International Trade Commission**



Washington, DC 20436

# U.S. International Trade Commission

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## VIEWS OF THE COMMISSION

### I. BACKGROUND

In August 2003, the Commission unanimously determined that an industry in the United States was materially injured by reason of subsidized imports of dynamic random access memory semiconductors (“DRAMs”) and DRAM modules from the Republic of Korea (“Korea”).<sup>1</sup> Hynix Semiconductor, Inc., a foreign producer and exporter of subject merchandise, and Hynix America, Inc., a U.S. importer of subject merchandise (collectively “Hynix”), subsequently filed suit in the U.S. Court of International Trade challenging the Commission’s determination.

On April 13, 2006, the CIT issued an opinion affirming the Commission’s determination in part and remanding it in part.<sup>2</sup> The Court affirmed the Commission’s analysis of subject import volume,<sup>3</sup> subject import price effects,<sup>4</sup> and the impact of subject imports insofar as it pertained to: (1) consideration of the business cycle and the conditions of competition;<sup>5</sup> (2) the impact factors considered;<sup>6</sup> (3) consideration of non-subject imports as an alternate cause of injury;<sup>7</sup> and (4) consideration of management decisions of petitioner Micron Technology Inc. (“Micron”).<sup>8</sup> The Court, however, concluded that the Commission did not sufficiently explain its finding that the subject imports caused material injury to the domestic DRAMs industry notwithstanding slowing growth in demand. Consequently, it remanded the matter to the Commission for further consideration of the causal nexus between the subject imports and declines in the rate of growth in underlying demand for DRAMs. The Court stated that on remand the Commission must either: (1) further explain the conclusion it made in its original determination that changes in demand are unrelated to changes in price in the DRAMs industry; (2) provide record evidence indicating that the decline in underlying demand was not such a predominant cause of the domestic industry’s problems as to prevent the subject imports from causing material injury; or (3) conduct further investigation to determine the effect of the drop in underlying demand.<sup>9</sup>

On May 10, 2006, the Commission published a notice in the Federal Register instituting this remand proceeding.<sup>10</sup> The Commission stated it was not reopening the record of the proceeding for the submission of new factual information, but provided parties to the investigation with the opportunity to submit comments concerning the issue on which the Court had remanded the Commission’s original

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<sup>1</sup> DRAMs and DRAM Modules from the Republic of Korea, Inv. No. 701-TA-431 (Final), USITC Pub. 3616 (Aug. 2003) (“Original Determination”). At the time of the determination, there were four sitting Commissioners. Commissioners Koplman, Hillman, and Okun voted in the affirmative. Commissioner Miller did not participate. Id., USITC Pub. 3616 at inside cover, 1.

<sup>2</sup> Hynix Semiconductor, Inc. v. United States, Slip Op. 06-52 (Ct. Int’l Trade Apr. 13, 2006) (“Hynix Slip Op.”).

<sup>3</sup> Hynix Slip Op. at 6-11.

<sup>4</sup> Hynix Slip Op. at 11-18.

<sup>5</sup> Hynix Slip Op. at 19-23.

<sup>6</sup> Hynix Slip Op. at 24-26.

<sup>7</sup> Hynix Slip Op. at 31-33.

<sup>8</sup> Hynix Slip Op. at 33-34.

<sup>9</sup> Hynix Slip Op. at 40-41; Order at 1.

<sup>10</sup> 71 Fed. Reg. 27278 (May 10, 2006).

determination.<sup>11</sup> Micron, Hynix, and Qimonda North America Corp. (“Qimonda”)<sup>12</sup> each submitted comments.<sup>13</sup>

For the reasons stated below, we determine on remand that, at the time of the original determination, the domestic industry producing DRAMs and DRAM modules was materially injured by reason of subsidized imports from Korea.<sup>14</sup>

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<sup>11</sup> 71 Fed. Reg. at 27278.

<sup>12</sup> Qimonda, a domestic producer of DRAMs, was formerly known as Infineon North America Corp.

<sup>13</sup> Hynix asserts in its comments several objections to the Commission’s remand procedures. Hynix first objects to the Commission not reopening the record on remand. The CIT’s opinion commits to the Commission’s discretion whether to reopen the record. See Hynix Slip Op. at 41. Because the original record contains extensive information on the issues that are within the scope of the remand, we have exercised our discretion not to reopen the record. Indeed, Hynix does not claim that the record should be reopened so that it can submit new factual material. Instead, Hynix apparently desires the record reopened so that it can submit new economic analysis – in other words, new interpretations of the existing factual record. However, we believe that our action permitting the parties to file comments on remand provided them with ample opportunity to provide their interpretations of the existing factual record. Indeed, Hynix was not deterred from providing in its comments what purports to be a further economic analysis based upon the existing record.

Hynix also complains that the 20-page limit that the Commission established for remand comments did not permit it sufficiently to brief the issues on remand. We believe that 20 pages of briefing are entirely sufficient for argument concerning what is but one of five distinct impact issues addressed by the CIT.

We further observe that Hynix’s complaint about the insufficiency of the page limits is ill-placed in light of its decision to devote four of the 20 pages of its comments to a discussion of how nonsubject import underselling was computed in the original determination. The CIT has affirmed the Commission’s original analyses of both price underselling and the impact of non-subject imports. See Hynix Slip Op. at 15-18, 31-33. Consequently, these were not issues the CIT directed the Commission to address on remand. In the Federal Register notice concerning these remand proceedings, the Commission expressly stated that the parties’ comments “may not address any issue other than the impact on the domestic industry of changes in the rate of growth in DRAM demand.” 71 Fed. Reg. at 27278. Because Section F and Exhibit 4 to Hynix’s comments violate these instructions, we have disregarded them.

Micron has requested that we disregard Section E and Exhibit 3 of Hynix’s Remand Comments as well as Section F and Exhibit 4. See Letter from Gilbert Kaplan to Marilyn Abbott (June 5, 2006). Section E and Exhibit 3 of Hynix’s Remand Comments pertain to a variance analysis that purports to measure the effects on the domestic industry of reductions in demand growth. Hynix’s argument concerning the variance analysis is pertinent to the scope of the proceedings, and we discuss it below.

Micron has alternatively requested that we disregard all exhibits to Hynix’s remand comments on the grounds that they exceed the 20-page limit. We have considered Exhibits 1, 2, and 3. Because we are disregarding the four pages of Section F, the material we are considering from Hynix’s Remand Comments consists of 19 pages, which is under the 20-page limit established in the Federal Register notice.

<sup>14</sup> The subject matter of this remand proceeding is similar in several respects to that of a section 129 consistency proceeding that the Commission recently concluded with respect to the DRAMs investigation. In that proceeding, we issued a determination under section 129(a)(4) of the Uruguay Round Agreements Act, 19 U.S.C. § 3538(a)(4), that rendered the Commission’s original determination not inconsistent with the findings of a World Trade Organization dispute resolution panel pursuant to a request from the United States Trade Representative. DRAMs and DRAM Modules from Korea, Inv. No. 701-TA-431 (Section 129 Consistency Determination), USITC Pub. 3839 (Feb. 2006).

Neither the section 129 determination nor the comments the parties filed in the section 129 proceeding are a part of the record of this remand proceeding. See 71 Fed. Reg. at 27278. It is, however, a matter of public record that the general issue discussed in the section 129 opinion – the effect on the domestic industry of changes in the rate of growth of demand during the original investigation – parallels the issue on which the Court has remanded the Commission.

(continued...)

## II. ANALYSIS

### A. DRAM Demand Trends During the Period of Investigation

As previously discussed, the only issue on which the Court remanded the Commission's original determination concerned its analysis of changes in the rate of growth of demand as an alternative cause of injury. The Court affirmed the Commission in all other respects. Consequently, on remand we are only considering the effects of changes in demand. We reaffirm the original determination in all other respects.<sup>15</sup>

In the original determination, the Commission found that apparent domestic consumption for DRAM products increased by a lower rate during the latter portion of the period of investigation than it did during the earlier portion. It stated that "[t]his slowing in the growth of apparent domestic consumption in the latter portion of the period of investigation may be due in part to a decline in the quantity of personal computers sold; 2001 is reported to be the first year for which the number of personal computers sold declined rather than increased." However, it found that "[h]istorically, there appears to be no clear correlation between growth of the DRAMs market and price movements."<sup>16</sup>

In its opinion, the Court characterized the Commission as finding: (1) that declines in the rate of growth in demand for DRAMs during the latter portion of the period of investigation may have been due in part to a decline in the quantity of personal computers sold; (2) these declines "played some role" in the price declines that occurred during the period of investigation; and (3) the role was not significant because there appears to be no clear correlation between growth in the DRAMs market and price movements.<sup>17</sup> It concluded that the third of these findings was not supported by substantial evidence.

A fundamental reason that the Court did not sustain the finding was that it concluded that the Commission cited data pertaining to DRAM output as representative of DRAM demand. According to the Court, "it is unclear why data related to output growth should be interpreted as illustrating demand growth, especially in light of the ITC's recognition of the chronic disequilibrium between supply and demand in the DRAMs industry."<sup>18</sup> Consequently, before we can address the Court's inquiries concerning the relationship between DRAM prices and DRAM demand, we must ascertain the most appropriate measure of DRAMs demand. The Court's opinion does not purport to resolve this issue. Certain portions of the opinion suggest that demand for end products that incorporate DRAMs, such as

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<sup>14</sup>(...continued)

Nevertheless, as the Court itself emphasizes, the specific inquiries it has directed the Commission to address on remand differ in some particulars from those the Commission addressed in the section 129 opinion. See Hynix Slip Op. at 40 n.12. We have heeded the Court's instruction not to reiterate that opinion. Nevertheless, several specific issues we address in this opinion overlap with specific issues we addressed in the section 129 opinion, and the arguments the parties submitted to the Commission on remand concerning these issues largely reiterate the arguments that they submitted in the section 129 proceeding. Our analysis of such issues below consequently closely tracks the analysis found in the section 129 opinion.

<sup>15</sup> Chairman Pearson, Vice Chairman Aranoff, and Commissioner Lane were not members of the Commission at the time of the original determination and did not participate in that determination. They have reviewed de novo the record from the original determination. For purposes of this remand proceeding, they have adopted all findings from the original determination that have not been elaborated upon in this remand opinion.

<sup>16</sup> Original Determination, USITC Pub. 3616 at 24-25 (footnotes omitted).

<sup>17</sup> Hynix Slip Op. at 36-37.

<sup>18</sup> Hynix Slip Op. at 36-37 (emphasis in original).

personal computers, may serve as a useful proxy for DRAM demand.<sup>19</sup> Other portions of the opinion indicate that the Commission may reasonably conclude that apparent consumption data provide the most useful measurement of demand.<sup>20</sup>

We find, following our usual practice, that the most useful measure for DRAM demand is apparent U.S. consumption. There are several elementary reasons why apparent consumption provides a better measure of demand than does PC consumption. Apparent consumption reflects the quantity of DRAM bits actually shipped or captively consumed in a particular year. PC consumption does not. Indeed, while the largest end use of DRAMs is in computer equipment, computer equipment is not the sole use for DRAMs, and PCs are not the only type of computer equipment in which DRAMs are used.<sup>21</sup> Moreover, memory requirements (*i.e.*, the bits of DRAM used) per PC were not constant, but increased over the period of investigation.<sup>22</sup> Indeed, memory per PC increased particularly sharply during 2001, the year in which PC shipments fell.<sup>23</sup>

We next examine the data in the record concerning apparent U.S. consumption of DRAMs. In the original investigation, the Commission used bits as the basic measure of DRAM quantity, because total bits are a uniform measure of DRAM products.<sup>24</sup> In their remand submissions, the parties again acknowledged that bits are the standard measure of quantity used in the DRAMs industry.<sup>25</sup> We consequently continue to use bits as the basic measure of quantity.

The Commission collected data in its final phase investigation for the period January 1, 2000 through March 31, 2003. The apparent consumption data for this period are based on information the Commission received in response to its producers' and importers' questionnaires.<sup>26</sup> These data indicate that U.S. apparent consumption, as measured in gigabits,<sup>27</sup> increased from 98.8 million in 2000 to 146.7 million in 2001 and to 186.9 million in 2002. Apparent consumption during first quarter (or "interim") 2003 of 55.3 million gigabits was higher than that of interim 2002, which was 42.8 million gigabits.<sup>28</sup>

The data the Commission collected for its final determination indicate that U.S. apparent consumption rose during each calendar year that the Commission collected data, and that the rate of increase was higher from 2000 to 2001 (48.6 percent), than from 2001 to 2002 (27.4 percent).<sup>29</sup>

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<sup>19</sup> See Hynix Slip Op. at 36, 40.

<sup>20</sup> See Hynix Slip Op. at 39 ("domestic consumption is a more common proxy for demand than output").

<sup>21</sup> Confidential Report ("CR") at I-10, Public Report ("PR") at I-8. See also Hynix Prehearing Brief, ex. 22, Table 6-4.

<sup>22</sup> CR at II-6, PR at II-4.

<sup>23</sup> See Micron Posthearing Brief, ex. 2 at 34 (de Dios & Associates data).

<sup>24</sup> Original Determination, USITC Pub. 3616 at 20. The Commission acknowledged that there were some difficulties with the use of bits, as total bits are a function of chip density and product mix, each of which changes over time. *Id.*

<sup>25</sup> *E.g.* Micron Remand Comments at 3; Hynix Remand Comments at 5 ("The industry unanimously agrees that 'bits' represents a convenient uniform measure of DRAM trends that allow one to aggregate across different products over time."), 7 ("the best measure of the quantity of DRAM is total 'bits'").

<sup>26</sup> See CR/PR, Table IV-4.

<sup>27</sup> For purposes of this opinion, a gigabit is one billion bits.

<sup>28</sup> Original Determination, USITC Pub. 3616 at 15, citing CR/PR, Table IV-4.

<sup>29</sup> CR/PR, Table C-1. The annual increase in gigabits was also higher in 2001 (a 48.0 million increase over 2000) than it was in 2002 (a 40.1 million increase over 2001). *Id.*

Additionally, data that the Commission collected for its preliminary determination indicate that U.S. apparent consumption increased by 67.2 percent from 1999 to 2000.<sup>30</sup>

Consequently, the apparent consumption data the Commission collected in its preliminary and final phase investigation indicate that DRAM demand growth was less rapid in 2002 than in the immediately prior years, as the Commission found in the original investigation. They do not indicate that demand fell in an absolute sense during any portion of the period of investigation. To the contrary, demand increased by 47.9 million gigabits in 2001 and by 40.2 million gigabits in 2002.<sup>31</sup>

We have also examined available data concerning DRAM demand during a longer time frame. In addition to the U.S. apparent consumption data the Commission collected concerning the period from 1999 through interim 2003, the record contains a longer series of apparent consumption data that Hynix submitted. The longer series, which measures worldwide DRAM bit consumption and pricing since 1990, indicates that annual growth in worldwide consumption reached a low for the 1990-2002 period of 48 percent in 1993. Annual growth ranged between 73 and 77 percent between 1994 and 1996, reached a period high of 98 percent in 1997, and then declined to 88 percent in 1998, 77 percent in 1999, 73 percent in 2000, 60 percent in 2001, and 49 percent in 2002.<sup>32</sup> The worldwide data in the longer time series do not cover the same series of transactions as the data compiled from Commission questionnaires, nor do they track particularly closely the Commission's data relating to U.S. apparent consumption during the period of investigation. Nevertheless, in their remand comments both Hynix and Micron have referred to worldwide consumption data as being probative of general trends in U.S. consumption, particularly prior to the period for which the Commission collected data.<sup>33</sup> To the extent that the worldwide data are indicative of general U.S. trends, they suggest that the rate of growth in U.S. apparent consumption for DRAMs during the period of investigation was lower than that of the immediately preceding years. They do not establish, however, that the rate of growth in U.S. apparent consumption throughout the period of investigation, particularly in 2001, was at a historic low or deviated significantly from low points of previous cyclical demand cycles. In any event, the questionnaire data collected by the Commission indicate that apparent consumption grew at a higher rate in 2001 than in 2002.

## **B. Whether There Was a Relationship between Demand Changes and Pricing Changes**

Having determined that the data in the record on U.S. apparent consumption provide the most accurate measurement of U.S. demand for DRAMs during the period of investigation, we next examine

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<sup>30</sup> DRAMs and DRAM Modules from Korea, Inv. No. 701-TA-431 (Preliminary), USITC Pub. 3569 at C-3 (Dec. 2002).

<sup>31</sup> CR/PR, Table C-1. Furthermore, the record does not indicate that there is a direct relationship between changes in PC consumption and changes in DRAM consumption. The rate of growth of U.S. apparent DRAM consumption was higher in 2001, a year in which PC consumption declined, than it was during 2002, when PC consumption increased. Compare id. with Hynix Posthearing Brief, ex. 1 at 25. Consequently, even if the growth in PC demand declined at an unprecedented level in 2001, it does not follow that DRAM demand declined similarly. Instead, the record indicates otherwise.

<sup>32</sup> Hynix Prehearing Brief, ex. 17, figure 8-20 (McCleary report).

<sup>33</sup> See Hynix Remand Comments at 7; Micron Remand Comments at 4-5. It should be emphasized that in the original investigation, Hynix cited this consumption data as indicative of worldwide demand, not worldwide output. See Hynix Prehearing Brief at 62. (We reference the McCleary report data rather than these data, which were compiled by Hynix's marketing staff, because the McCleary data were not prepared by a party to this proceeding. Nevertheless, the Hynix data concerning annual worldwide demand growth rates are within two percentage points of those in the McCleary report for all years covered by the former data set except 2002. Compare id. with Hynix Prehearing Brief, ex. 17, figure 8-20.)

those apparent consumption data to ascertain whether there was a correlation between changes in U.S. demand and changes in U.S. prices for DRAMs. It is true that, in the original determination, the Commission found as a general matter that DRAM demand increases on an annual basis.<sup>34</sup> The Commission further found that prices for a particular DRAM product tend to decline during the product's life cycle, as production costs decrease and yields decline.<sup>35</sup>

The general findings that DRAM demand tends to increase and prices decline over time do not, however, indicate whether there is a correlation between demand and prices. Nor do they indicate whether or how changes in the rate of growth of demand affect prices. To ascertain whether such a relationship exists, we again refer to the apparent consumption and pricing data in the record. We also focus, as Hynix itself suggests, on changes in the rate of growth of demand.<sup>36</sup>

The data the Commission gathered in its final phase investigation indicate that the growth of U.S. apparent consumption of DRAM products in 2001 was 21.2 percentage points higher than the growth of apparent consumption in DRAM products in 2002. Data the Commission collected for its preliminary phase investigation suggest that the growth of U.S. apparent consumption of DRAM products in 2000 was approximately 19 to 21 percentage points higher than the growth of apparent consumption of DRAM products in 2001.<sup>37</sup> If the proposition that pricing is a function of changes in the rate of growth of demand were correct, one would expect to see relatively steady declines in prices throughout 2001 and 2002, since the rate of growth of U.S. apparent consumption declined by a roughly equal amount during each year. This is not what occurred. Instead, the Commission found in its final determination that "[t]he parties agreed that the price decline in 2001 was the most severe in DRAMs history," with price declines commonly exceeding 70 percent.<sup>38</sup> By contrast, price declines did not occur in 2002 for all products and, when prices declined, the rate of decline was far more modest than it was during 2001.<sup>39</sup> Thus, the annual pricing data collected by the Commission do not indicate that there was a correlation between price declines and changes in the rate of growth in U.S. consumption.<sup>40</sup>

We have also examined several additional factors that the Court's opinion indicates may be relevant to an analysis of whether there is a relationship between demand growth and price. The Court's opinion indicates that the Commission should address the declines in the rate of demand growth during

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<sup>34</sup> Original Determination, USITC Pub. 3616 at 15.

<sup>35</sup> Original Determination, USITC Pub. 3616 at 16.

<sup>36</sup> See Hynix Remand Comments at 5.

<sup>37</sup> The rate of growth of apparent consumption the Commission calculated for 2000 in the preliminary determination was 21.2 percentage points higher than the rate of growth of apparent consumption that the Commission calculated for 2001 in the preliminary determination, Preliminary Determination, USITC Pub. 3569 at C-3. This rate of growth for 2000 was 18.6 percentage points higher than the rate of growth of apparent consumption that the Commission calculated for 2001 in the final determination. Compare id. with Original Determination, USITC Pub. 3616 at C-3.

<sup>38</sup> Original Determination, USITC Pub. 3616 at 24.

<sup>39</sup> CR/PR, Tables V-1-17.

<sup>40</sup> We rely principally on the apparent consumption and pricing data the Commission itself collected during the period of investigation to examine whether there was a relationship between changes in demand growth and changes in pricing. By contrast, the Court appears to perceive that findings in the Commission's original determination concerning the relationship between price and volume were based largely on data for periods prior to the period of investigation. See Hynix Slip Op. at 40-41. We nevertheless observe that the longer time series data in the record also fail to show a correlation between pricing changes and changes in consumption. For example, prices declined by 60 percent in 1997, where the rate of growth of consumption was 21 percentage points higher than the previous year, but declined by only 16 percent in 1999, where the rate of growth of consumption was 11 percentage points lower than the previous year. Hynix Prehearing Brief, ex. 17, figure 8-20.

the original period of investigation in conjunction with other conditions of competition, particularly what it describes as the “boom/bust” cycle.<sup>41</sup> The Court’s apparent concern is that what it has characterized elsewhere in its opinion as an “unprecedented drop in underlying demand”<sup>42</sup> exacerbated the effects of the business cycle in such a manner as to cause much greater declines in industry performance than would be expected during a “normal” cycle.

However, as we found above, information in the record indicates that there was not an unprecedented drop in demand for DRAMs in 2001.<sup>43</sup> Moreover, if demand trends did in fact exacerbate the effect of the boom/bust cycle, one would expect that the rate of price declines would accelerate as demand growth continued to slow. This is not what occurred, since prices declined much more severely in 2001 than in 2002, although demand growth declined by approximately the same rate each year.

The Court also inquired whether the price declines could be a function of overproduction by the domestic industry.<sup>44</sup> As previously discussed, the absolute level of DRAM demand increased during the period of investigation, although the rate of growth of demand declined. Domestic production, however, did not increase commensurately with demand. In terms of the measurement of domestic production the Commission used in the original investigation, thousands of wafer starts, domestic production actually declined from 2000 to 2001, and in 2002 was still below the 2000 level.<sup>45</sup> The domestic industry’s U.S. shipments, as measured in gigabits, increased in both 2001 and 2002, but the increase each year was less than that year’s growth in apparent U.S. consumption.<sup>46</sup> Moreover, during this period, the relatively modest rate in U.S. shipment growth was not accompanied by a growth in U.S. producers’ inventories. The domestic industry’s inventory levels of cased DRAMs relative to shipments were at their period peak in 2000, the first year of the period of investigation, and then fluctuated at lower levels during subsequent years when the rate of increase in demand slowed.<sup>47</sup> The reason that domestic supplies were increasing at less than the rate of domestic demand can be explained by a fact that the Commission emphasized in its original determination: the domestic industry’s response to subject import competition was to idle production capacity, which declined from 2000 to 2002.<sup>48</sup> Because the record indicates that domestic DRAM production did not outpace DRAM demand over the period of investigation, overproduction by the domestic industry cannot be a cause of the pricing declines observed during the period of investigation.

The Court additionally expressed the concern that “high output growth rates and falling prices could indicate technological advancements that lead to decreased unit costs. Such a development would similarly result in increased output and reductions in price, but in no way would evidence a non-

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<sup>41</sup> Hynix Slip Op. at 40 n.12.

<sup>42</sup> Hynix Slip Op. at 40.

<sup>43</sup> This finding also disposes of Hynix’s principal argument, which is that the rapid decline in prices in 2001 reflect an unprecedented drop in PC shipments that year. As discussed above, PC shipments are not an appropriate measure of DRAM demand. When apparent consumption, an appropriate measure of DRAM demand, is used, the record does not support Hynix’s position that there is a correlation between DRAM demand growth and DRAM pricing.

<sup>44</sup> See Hynix Slip Op. at 38.

<sup>45</sup> CR/PR, Table C-1.

<sup>46</sup> CR/PR, Table C-1.

<sup>47</sup> CR/PR, Table III-7. Cased DRAMs constituted the \*\*\* proportion of total inventories of DRAMs and DRAM modules during the period of investigation. Id.

<sup>48</sup> Original Determination, USITC Pub. 3616 at 26.

correlative relationship between demand and price.”<sup>49</sup> To respond to the Court’s inquiry, we have examined to what extent the decline in prices during the period of investigation might be a reflection of declining costs. Staff did not collect per unit financial data in the original investigation because of concerns that such data would not be useful in light of changes in product mix.<sup>50</sup> Aggregate data, however, indicate that during the period of investigation, sales revenues declined at a far greater rate than cost of goods sold (“COGS”). Indeed, the ratio of COGS to net sales increased from \*\*\* percent in 2000 to \*\*\* percent in 2001 and remained at an elevated level, \*\*\* percent, in 2002.<sup>51</sup> Consequently, the price decline was not a reflection of commensurate decreases in input costs. Nor did it reflect high output growth rates. As previously discussed, output declined in terms of wafer starts and in terms of gigabits grew at a lower rate than U.S. demand. Consequently, the data concerning cost trends do not support a conclusion that price changes and changes in the rate of growth of demand are correlated.

We have also examined the contemporaneous statements by U.S. producers of DRAMs that Hynix contends are admissions that declines in the rate of demand growth during 2001 caused the record declines in prices that year. We do not concur with Hynix’s interpretation of these statements. At most, the statements indicate that imbalances between supply and demand in 2001 caused price declines that year. This is consistent with the general “boom/bust” cycle characteristic of the DRAM industry; as stated above, the information in the record does not indicate that declines in the rate of DRAM growth in 2001 and 2002 deviated significantly from the declines observed during previous cycles in the DRAMs market. While one would expect declines in pricing when the domestic industry has reached the low point of the business cycle, the Court has upheld the Commission’s conclusion in the original determination that neither the DRAMs business cycle nor the product cycle could explain the unprecedented severity of the price declines that occurred from 2000 to 2001.<sup>52</sup> By the same token, none of the industry statements that Hynix cites purports to explain why prices declined at a much greater rate in 2001 than in 2002, although the rate by which demand slowed was similar during each of these years.<sup>53</sup>

Consequently, the data in the record do not indicate that there is a correlation between changes in the rate of DRAM demand growth and changes in DRAM pricing, or that the severe declines in DRAM prices observed during the period of investigation, particularly in 2001, can be explained by changes in the rate of DRAM demand growth. In light of this, we do not find, and do not consider the original determination to have found, that demand changes by themselves were an independent cause of price declines.<sup>54</sup> In any event, after engaging in the further analysis on remand directed by the Court, we

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<sup>49</sup> Hynix Slip Op. at 38.

<sup>50</sup> See CR at VI-1, PR at VI-1.

<sup>51</sup> CR/PR, Table VI-1.

<sup>52</sup> Hynix Slip Op. at 23.

<sup>53</sup> Indeed, two of the three statements appeared in 2001 annual reports, and thus could not have examined developments after 2001. See Hynix Prehearing Brief, ex. 8 (Micron 2001 year in review); Hynix Prehearing Brief at 63 (Infineon 2001 annual report, which discussed the firm’s worldwide operations, and did not specifically discuss the U.S. market). The third statement, which was made in June 2003 and suggested that there was still a supply/demand imbalance at that time, is inconsistent with Hynix’s own theory that demand and prices recovered by 2003. Compare Hynix Posthearing Brief, ex. 13, Fair Disclosure Financial Network Report, at 19 with Hynix Remand Comments at 8.

<sup>54</sup> In advancing the contrary proposition, Hynix’s comments contain a variance analysis which purports to show that virtually all the decline in prices in 2001 was attributable to declines in demand growth. We find that several serious flaws in Hynix’s analysis render it devoid of probative value.

The principal flaw underlying Hynix’s analysis is that it purports to compare the U.S. DRAM industry’s actual output against a hypothetical output that Hynix contends U.S. DRAMs producers could have achieved had

(continued...)

conclude that any effect demand trends had on pricing was limited to the interaction of supply and demand, in the context of the business cycle. The Court has already upheld the Commission's finding that the operation of the DRAMs business cycle cannot explain the unprecedented severity of the price declines that occurred during the original period of investigation.<sup>55</sup>

### **C. Whether the Subject Imports Caused Material Injury to the Domestic Industry**

Because the record does not indicate a correlation between the rate of DRAM demand growth and changes in DRAM pricing, we conclude that the decline in the rate of DRAM demand growth during the period of investigation was not an independent cause of the price depression we observed.

Nevertheless, even if we were to assume arguendo that the decline in demand growth played a significant role in the price declines, which it did not, we would still conclude that the subject imports were a legally significant cause of material injury to the domestic DRAMs industry. In its opinion, the Court emphasized that the Commission need not isolate the effects of factors other than subject imports that are contributing to injury.<sup>56</sup> Moreover, the Commission "need not . . . apportion relative amounts of causation" among the various factors contributing to injury.<sup>57</sup> Consequently, even under the assumption we make for purposes of this discussion that changes in the rate of growth in demand played a significant role in price declines, we need not calculate (in either an absolute or relative sense) the contribution of this factor to the DRAM industry's injury, nor compare the contribution of this factor to the subject imports, as long as our examination indicates that the contribution of subject imports to the injury was not merely incidental, tangential, or trivial.<sup>58</sup>

In the original determination, the Commission identified the increasing incidence of underselling of the domestic like product from 2000 to 2002 by the subject imports as playing a significant role in the

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<sup>54</sup>(...continued)

2001 U.S. apparent consumption increased by 75 percent. We discern no basis for Hynix's central assumption that 75 percent growth in demand would have been normal or anticipated for 2001. Hynix provides no material from the record indicating that any domestic producer was anticipating a 75 percent growth in DRAM demand in 2001. For a domestic producer to project a 75 percent growth rate in 2001 would have been highly surprising given that: (1) material collected for the Commission's preliminary determination, discussed above, indicated that the DRAM demand increased by substantially less than 75 percent in 2000 and (2) historically, annual DRAM demand increases fluctuated considerably. See Hynix Prehearing Brief, ex. 17, figure 8-20. Hynix similarly fails to justify its assumption that under normal conditions, not only the U.S. industry's domestic shipments, but also its export shipments, should have increased by 75 percent. Because Hynix's calculations are premised on a purely conjectural assumption, the calculations themselves have no basis in fact.

There are also computational difficulties with Hynix's analysis. Hynix contends that without demand reductions, U.S. producers' total shipments in 2001 would have been 39,175,541 gigabits higher than they were. Hynix Remand Comments, ex. 3. Aside from the fact that this calculation is based on the unfounded assumption that demand in 2001 should have increased by 75 percent, this figure assigns to demand declines reductions in shipments that Hynix's own calculations acknowledge were attributable to increases in market penetration of subject and nonsubject imports. Because the 39,175,541 gigabit figure does not accurately represent shipments lost because of changes in demand, the pricing calculations that Hynix purports to derive from this figure are similarly devoid of factual or logical basis.

<sup>55</sup> Hynix Slip Op. at 23.

<sup>56</sup> Hynix Slip Op. at 30.

<sup>57</sup> Hynix Slip Op. at 34.

<sup>58</sup> See Hynix Slip Op. at 30, quoting Nippon Steel Corp. v. USITC, 345 F.3d 1379, 1381 (Fed. Cir. 2003).

price declines observed during the period of investigation.<sup>59</sup> We emphasize that during 2001, the year with the sharpest declines in prices, the frequency of underselling by subject imports was higher than it was during 2000.<sup>60</sup> The Commission further found in the original determination that the increasing frequency of underselling from 2000 to 2002 corresponded with the substantial declines in prices for the domestic like product that occurred over the same period and that the subject imports thereby caused substantial price depression.<sup>61</sup> The Court specifically affirmed this finding.<sup>62</sup>

As a corollary of the price depression finding the Court has upheld, the Commission observed that “[i]n the absence of significant quantities of subject Korean product competing in the same product types at relatively low prices, domestic prices would have been substantially higher.”<sup>63</sup> The conclusion that domestic prices “would have been substantially higher” in the absence of the subject imports has direct consequences for the impact analysis. Substantially higher prices would have resulted in substantially greater sales revenues for the domestic industry. A major factor underlying the Commission’s analysis of impact in the original determination was its finding that the domestic industry’s “financial performance worsened precipitously” and that the domestic industry sustained large operating losses in 2001 and 2002. The principal factor leading to the decline in operating performance was lower sales revenues, which in turn were a result of price declines.<sup>64</sup> Subject imports were a significant cause of these price declines. Consequently, even if we assume arguendo that changes in the growth of demand contributed to price declines, the subject imports independently contributed to the price declines because of their increasing volumes and pervasive underselling, and thereby contributed materially to the revenue declines which led to the domestic industry’s severe operating losses. Consequently, under the legal principles articulated by the Court, the requisite causal nexus exists between the subject imports and the material injury sustained by the domestic DRAMs industry even if we were to assume that declines in the growth of demand contributed to pricing declines.

### III. CONCLUSION

In the section above, we have elaborated upon the analysis the Commission provided in the original determination concerning the effects of a decline in the rate of growth in demand during the period of investigation. In this elaboration, we have clarified the grounds of the Commission’s original determination to address those inquiries the Court posed in its remand order.

Our clarification, however, does not require us to modify any of the ultimate conclusions on subject import volume, price effects of the subject imports, or impact of the subject imports on the domestic industry that the Commission made in the original opinion. Accordingly, we continue to determine that, as of the time of the original determination, the domestic industry producing DRAMs and DRAM modules was materially injured by reason of subsidized imports from Korea.

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<sup>59</sup> Original Determination, USITC Pub. 3616 at 25.

<sup>60</sup> CR/PR, Table V-18. Data for the four particular pricing products that were available in the market for substantial periods of time in both 2000 and 2001 similarly show that the aggregated frequency of underselling for those products was higher in 2001 than in 2000. See id. (data for products 1, 2, 6, and 7).

<sup>61</sup> Original Determination, USITC Pub. 3616 at 25.

<sup>62</sup> Hynix Slip Op. at 17-18.

<sup>63</sup> Original Determination, USITC Pub. 3616 at 25.

<sup>64</sup> Original Determination, USITC Pub. 3616 at 26-27.