United States District Court
Northern District of California

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

MARC GARCIAGUIRRE, et al.,

Plaintiffs,

v.

SAMSUNG ELECTRONICS CO., LTD., et al.,

Defendants.

Case No. 26-cv-06345-NW

ORDER DENYING MOTION TO DISMISS; GRANTING ADMINISTRATIVE MOTION TO CONTINUE EARLY CASE DEADLINES

Re: ECF Nos. 58, 65

This antitrust, putative class action concerns: the market for dynamic random-access memory ("DRAM"); the downturn of demand for DRAM in late 2022; the subsequent generational disruption of artificial intelligence ("AI") that "drove buyers to acquire memory in volumes the industry had not seen"; and how the three DRAM-industry oligopolists[1]—Defendants Samsung Electronics Co., Ltd. and Samsung Semiconductor, Inc. (together, "Samsung"), SK Hynix America Inc. and SK Hynix America Inc. (together, "SK Hynix"), and Micron Technology, Inc. ("Micron")—responded. *See* ECF No. 1. The named Plaintiffs are seventeen consumers and small businesses from five states. *Id.* ¶¶ 20–36. They allege that Defendants "simultaneously cut production, coordinated a pivot to HBM [(high bandwidth memory, as opposed to conventional DRAM)] and exit from DDR3 and DDR4 [markets], and otherwise decreased and locked up conventional DRAM supply . . . contrary to all economic and business logic," and that they did so over and over again. *Id.* ¶ 2.

Defendants move to dismiss, arguing that each Defendant, independently, made "rational" choices "consistent with [their own] independent self-interest." ECF No. 58 at 15. The crux of

[1] In their joint motion to dismiss, Defendants agree that "[b]ecause the DRAM industry comprises a few large participants, it is an 'oligopoly.'" ECF No. 58 at 9.

the parties' arguments is whether, as Defendants contend, this case is a rerun of *In re Dynamic Random Access Memory (DRAM) Indirect Purchaser Antitrust Litig.*, 28 F.4th 42, 54 (9th Cir. 2022) (hereinafter "*DRAM II*"), in which the Ninth Circuit affirmed dismissal of claims against these same Defendants based on a 2016–2018 supply restriction. *See* ECF No. 58 at 7–8. The Court finds that it is not, and DENIES Defendants' motion to dismiss.

I. BACKGROUND[2]

A. DRAM and How It Is Sold

"DRAM—Dynamic Random Access Memory—is a semiconductor chip that provides temporary, high-speed data storage for electronic processors." ECF No. 1 ¶ 52. "It is the 'working memory' of every computing device: the active workspace where processors read and write data during operation." *Id.* The complaint divides DRAM into two categories: conventional DRAM and HBM. Conventional DRAM is "standardized memory built to industry specifications and sold for ordinary purposes," such as the DDR3, DDR4, and DDR5 generation modules built for computers; LPDDR memory for phones; and server memory for data centers. *Id.* ¶ 4. As the Court explains further below, HBM is a specialized form of DRAM used "for artificial-intelligence accelerators." *Id.*; *see, infra*, § I.C.

Conventional DRAM is sold through several channels: to large original-equipment manufacturers ("OEMs") such as Dell, HP, Lenovo, and Apple; to data center operators such as Amazon, Google, Microsoft, and Meta; and to "memory module assemblers," such as Kingston, Corsair, and G.Skill, who in turn sell to smaller OEMs, retailers, or directly to consumers. *Id.* ¶ 66. For 30 years, from 1996 to 2026, Micron (but not Samsung nor SK Hynix) also competed in the "direct-to-consumer" portion of the market via its in-house brand, Crucial. *Id.* ¶¶ 306–21.

B. The DRAM Industry and Defendants' Conduct Pre-2022

"In the 1990s, approximately twenty firms manufactured DRAM." *Id.* ¶ 73. From 1998 to 2002, the three Defendants here (together with two other DRAM manufacturers) formed a

[2] The facts are drawn from Plaintiffs' complaint, the well-pleaded allegations of which the Court takes as true for the purposes of a motion to dismiss. *See, e.g.*, *Manzarek v. St. Paul Fire & Marine Ins. Co.*, 519 F.3d 1025, 1031 (9th Cir. 2008).

criminal cartel to fix DRAM prices. *Id.* ¶ 216. An investigation by the U.S. Department of Justice ("DOJ") resulted in guilty pleas from four companies, which included: a $185 million fine paid by Hynix; a $300 million fine paid by Samsung; and the prosecutions of numerous executives – including five Samsung executives, one of whom "served eight months in federal prison, [and] was subsequently promoted to President of Samsung Germany in 2009 and then to President of Samsung Europe in 2014." *Id.* ¶¶ 220–21, 224–25. Micron participated in the cartel but received immunity for cooperating as a whistleblower. *Id.* ¶ 223.

Beginning in the 1990s, "a relentless cycle of capital-intensive competition drove consolidation" in the DRAM industry, with Samsung, SK Hynix, and Micron absorbing failed companies and emerging "as an unassailable triopoly." *Id.* ¶ 73. As of the third quarter of 2025, the Defendants "control[ed] over 91% of global DRAM revenue." *Id.* ¶ 72. SK Hynix and Samsung held about the same share of global revenue (33.2% and 32.6%, respectively), while Micron held slightly less at 25.7%. *Id.* Small, specialty manufacturers and a few Chinese firms held the remaining ~8%. *Id.* ¶ 74.

Near the tail-end of this consolidation, from August 2016 to August 2018, DRAM prices spiked by 165%. *Id.* ¶ 227. On April 27, 2018, a class action was filed in this District alleging that Samsung, SK Hynix, and Micron had conspired to fix DRAM prices during that time. *Id.* ¶ 228 (referring to *In re DRAM Antitrust Litigation*, Case No. 18-cv-02518-JSW). The district court (White, J.) initially dismissed those claims with leave to amend, then dismissed with prejudice, and that dismissal was affirmed by the Ninth Circuit in 2022. *See In re Dynamic Random Access Memory Indirect Purchaser Litig.*, No. 18-cv-2518-JSW (KAW), 2020 WL 8459279, at *1 (N.D. Cal. Nov. 24, 2020) (hereinafter "*DRAM I*"), *aff'd sub nom. DRAM II*, 28 F.4th 42 (9th Cir. 2022). Plaintiffs do not seek to re-litigate the 2016–2018 price spike and claim that this case is unlike *DRAM I* and *DRAM II* because the complaint here alleges different conduct: "simultaneous production cuts, coordinated capacity reallocation, coordinated product-line exits, used-equipment withdrawal by Samsung and SK Hynix, and [the introduction of] parallel customer vetting." ECF No. 1 ¶ 230.

C. The DRAM "Winter," AI-Induced Demand, and the Alleged Conspiracy

Plaintiffs' complaint alleges essentially four courses of parallel conduct, each relating to the core allegation that Defendants artificially restricted the supply of conventional DRAM. The four alleged courses of conduct are: "simultaneous production cuts" from October 26, 2022, to April 7, 2023; a "coordinated pivot to HBM" beginning in March 2023; a "coordinated exit from DDR4 and DDR3" from 2024 to 2025; and a "refusal to [re-]expand conventional DRAM supply" after Q3 2025. *Id.* ¶¶ 235–50, 251–58, 259–71, 272–302. Plaintiffs also offer many related allegations as circumstantial evidence of one or more agreements between Defendants to coordinate this conduct.

"In late 2022, DRAM demand was weak and prices were falling." *Id.* ¶ 7. Defendants refer to this downturn in demand as the "DRAM 'Winter' of 2022-2023." ECF No. 58. According to Plaintiffs' allegations, in the first quarter of 2023, Samsung reported an operating loss of $3.51 billion in its semiconductor division; SK Hynix reported an operating loss of $2.61 billion; and Micron reported a net loss of $5.833 billion for its fiscal year ending August 31, 2023. *See id.* ¶ 241; ECF No. 58 (Defendants' conversion of South Korean Won to U.S. Dollar).

"On October 26, 2022, SK Hynix announced substantial reductions in capital expenditure" and "production cuts of relatively low-margin products and a year-over-year reduction in DRAM." ECF No. 1 ¶ 235. Three weeks later, on November 16, 2022, Micron Technology announced that it was reducing DRAM production. *Id.* ¶ 236. Samsung had historically weathered downturns without production cuts, such as from 2008 to 2009 and in 2019; in January 2023, it stated that "there will be no artificial production cut in its memory semiconductor production." *Id.* ¶¶ 359–60. Industry analysts expected Samsung to use the downturn to "draw on its deep pockets and superior profit margins to gain market share from smaller peers." *Id.* ¶ 238. It did not do so, instead reversing course and announcing production cuts on April 7, 2023. *Id.* ¶ 240.

In 2023, the AI boom began in earnest. Beginning in 2023, "all three Defendants simultaneously redirected a significant portion of manufacturing capacity and capital expenditure from commodity DRAM to High Bandwidth Memory ('HBM'), a specialized high-margin DRAM

product used in AI accelerators[.]" *Id.* ¶ 251. "HBM consists of multiple DRAM dies[3] vertically stacked and interconnected." *Id.* ¶ 148. HBM manufacturing is uniquely resource-intensive, and because it consumes "multiple dies per finished unit," it "requires approximately three to four times the silicon wafer area per gigabyte compared to conventional DDR5 DRAM." *Id.* ¶ 150. It is sold "exclusively to a narrow set of AI accelerator customers," and "cannot be used in place of DDR5 in a PC, server, smartphone, or any other commodity DRAM application." *Id.* ¶¶ 150–54, 253. As the complaint puts it, HBM "sacrifices everything for bandwidth." *Id.* ¶ 193. Plaintiffs do not allege the exact timeframe in which Samsung, SK Hynix, and Micron reallocated production capacity from conventional DRAM to HBM, but allege that all three Defendants did so and increased "the share of capacity dedicated to HBM by approximately tenfold." *Id.* ¶ 257.

These cuts reduced inventory and drove up prices. On July 27, 2023, Samsung publicly stated that "[l]ooking to the second half of the year, the market is expected to gradually move toward stability" and "improve" for it "from the previous quarter . . . in anticipation of robust demand for AI applications" leading to "higher-than-guided DRAM shipments." *Id.* ¶ 244. Samsung reported accelerated "inventory depletion of DRAM" by January 2024. Prices began increasing, and a "global memory shortage" began materializing. *Id.* ¶¶ 247–50. By the third quarter of 2025, conventional DRAM prices had increased 171.8% in one year. *Id.* ¶ 272.

As of the filing of the complaint, Defendants nonetheless projected an "output restraint going forward . . . beyond calendar year 2026." *Id.* ¶ 250. Plaintiffs allege that Defendants undertook several measures in coordination during that time. In 2024, Samsung and SK Hynix retired and shut down older generation DDR3 production lines, and all three Defendants announced, between April and June 2025, that they would "wind down mainstream DDR4 production." *Id.* ¶¶ 259–60. At this time, DDR4 remained in wide use; the collective announcements caused DDR3 and DDR4 prices to surge, leading to "panic buying" by major

[3] Neither Plaintiffs' complaint nor the parties' materials explain what a "die" is in the context of DRAM, other than that it is a preliminary unit in the manufacture of DRAM and that there is one unit per conventional DRAM chip, and multiple (about three) per HBM chip. *See* ECF No. 1 ¶¶ 157–49, 253. The Court understands that a "die" is an individual, etched, semiconductor wafer, but to the extent this understanding is incomplete, it does not affect this Court's analysis.

OEMs. *Id.* ¶¶ 261– 69. The result was so extreme for DDR4 that "older, slower DDR4 came to cost more per gigabyte than newer, faster DDR5." *Id.* ¶ 270.

Prices continued to increase. At the "contract" (*i.e.*, non-retail) level, independent reporting found about a 50% increase DRAM price in Q4 2025, 93% in Q1 2026, and 58% in Q2 2026.[4] *Id.* ¶ 272. Similar reporting found that retail DRAM prices increased 500% since early October 2025. *Id.* In sum, Plaintiffs allege a 697% price increase for conventional DRAM over an eighteen-month period. *Id.* ¶ 8, 272. Plaintiffs allege that "despite these extraordinary prices—the single most powerful supply signal the DRAM industry has ever produced—not one of the three Defendants expanded or announced plans to meaningfully expand commodity DRAM production capacity." *Id.* ¶ 275. Instead, they delayed pre-planned manufacturing facility construction, "limited" their additions of lithography systems required for making DRAM, and continued to expand HBM production. *Id.* ¶¶ 287–98. This was in contrast to the few remaining small DRAM competitors that immediately began expanding their output by late 2025 or early 2026. *Id.* ¶¶ 299–302. And Defendants' conduct occurred despite the fact that, by the first quarter of 2026, consumer memory prices were so high that "the profitability of conventional DRAM had overtaken that of HBM." *Id.* ¶ 325.

Throughout these periods of allegedly coordinated conduct, Defendants made several decisions that Plaintiffs point to as further supporting their conspiracy allegation. First, in October 2025, both "Samsung and SK Hynix reportedly signed preliminary agreements to supply OpenAI's 'Stargate' data center project with up to 900,000 DRAM wafers per month," a commitment that would dedicate "40% of total worldwide DRAM output . . . to a single customer." *Id.* ¶ 303. At nearly the same time, on December 3, 2025—"with consumer DRAM prices at historic highs"—Micron announced that it would close its direct-to-consumer brand, Crucial. *Id.* ¶¶ 306, 322, 325. In so doing, Micron surrendered a 30-year-old, profitable brand that was "one of the most recognized retail memory brands in the world," and that was generating multibillion-dollar revenues. *See id.* ¶¶ 307–21. As another example, Plaintiffs allege that

[4] The data allegations stop there, as Plaintiffs filed their complaint on June 25, 2026.

"Defendants made sure customers felt the cuts acutely" by introducing "customer vetting procedures for DRAM orders" in January 2026. *Id.* ¶ 330. Defendants allegedly "question[ed] customers about end-user identity, order quantities, and the 'reality' of reported demand." *Id.* ¶ 330. Finally, Plaintiffs point to various public statements made by Defendants signaling coordinated restraint. *See id.* ¶¶ 335–51.

D. The Complaint

On June 25, 2026, Plaintiffs filed their complaint in this action, alleging that, since October 2022, Defendants have "maintained a continuing agreement, combination, or conspiracy in restraint of trade in the market for conventional DRAM, in violation of Section 1 of the Sherman Act." *Id.* ¶¶ 481–82. Plaintiffs also bring claims under antitrust and consumer protection statutes of California, Florida, Minnesota, New York, and Wisconsin. *Id.* ¶¶ 493, 503, 519, 531, 542.

II. LEGAL STANDARD

Federal Rule of Civil Procedure 12(b)(6) is designed to "test[] the legal sufficiency of a claim." *Navarro v. Block*, 250 F.3d 729, 732 (9th Cir. 2001). A dismissal under Rule 12(b)(6) for failure to state a claim can be based on either (1) the lack of a cognizable legal theory or (2) insufficient facts to support a cognizable legal claim. *Balistreri v. Pacifica Police Dep't*, 901 F.2d 696, 699 (9th Cir. 1990). When analyzing a complaint under Rule 12(b)(6), the well-pled factual allegations are taken as true and construed in the light most favorable to the nonmoving party. *Cousins v. Lockyer*, 568 F.3d 1063, 1067 (9th Cir. 2009). Legal conclusions couched as factual allegations are not entitled to the assumption of truth and therefore are insufficient to defeat a motion to dismiss for failure to state a claim. *Ashcroft v. Iqbal*, 556 U.S. 662, 680 (2009); *In re Cutera Sec. Litig.*, 610 F.3d 1103, 1108 (9th Cir. 2010).

As set forth in *DRAM II*:

> Section 1 of the Sherman Act prohibits "[e]very contract, combination in the form of trust otherwise, or conspiracy, in restraint of trade or commerce among the several States or with foreign nations." 15 U.S.C. § 1. To plead a section 1 claim, plaintiff must allege specific facts to show" (1) a contract, combination, or conspiracy among two or more persons or distinct business entities; (2) by which the persons or entities intended to harm or restrain trade or commerce; (3) which actually injures competition.

28 F.4th at 46. The parties agree that here, as in *DRAM I* and *DRAM II*, the relevant framework "is the distinction between a conspiracy and conscious parallelism." *DRAM I*, 2020 WL 8459279, at *4. "The crucial question prompting Section 1 liability is whether the challenged anticompetitive conduct stems from [lawful] independent decision or from an agreement, tacit or express." *DRAM II*, 28 F. 4th at 46 (internal quotation marks, alterations, and citations omitted). The "lines between conscious parallelism and conspiracy may blur," and the problem of distinguishing between them is particularly acute in oligopolistic markets, where "conscious parallelism is practically unavoidable." *DRAM I*, 2020 WL 8459279, at *4.

> Therefore, to state a plausible Section 1 claim, plaintiffs must include additional factual allegations that place that parallel conduct in a context suggesting a preceding agreement. In other words, plaintiffs must allege something more than conduct merely consistent with agreement in order to "nudge[ ] their claims across the line from conceivable to plausible."

DRAM II, 28 F. 4th at 47 (quoting *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 570 (2007)).

The Ninth Circuit found that the "higher standard is warranted by practical considerations in antitrust cases, where proceeding to discovery 'frequently causes substantial expenditures and gives the plaintiff the opportunity to extort large settlements even where he does not have much of a case.'" *Id.* (quoting *Kendall v. Visa U.S.A., Inc.*, 518 F.3d 1042, 1047 (2008). "In the absence of direct evidence of an agreement, certain plus factors may elevate allegations of parallel conduct to plausibly suggest the existence of a conspiracy." *Id.* (citing *In re Musical Instr. and Equip. Antitrust Litig.*, 798 F.3d 1186, 1194 (9th Cir. 2015). Plus factors often include "economic actions and outcomes that are largely inconsistent with unilateral conduct but largely consistent with explicitly coordinated action." *Id.* But they may also include certain non-economic factors, such as statements by the defendants, the exchange of information among them, or their prior history of antitrust conspiracy. *See id.* at 50, 53. "Under the *Twombly* standard, plus factors serve as the 'something more' to place parallel conduct 'in a context that raises a suggestion of a preceding agreement.'" *Id.* (quoting *Twombly*, 550 U.S. at 557).

The bottom line is that to survive a motion to dismiss, "a complaint must contain sufficient factual matter, accepted as true, to 'state a claim to relief that is plausible on its face.'" *PLS.Com,*

LLC v. Nat'l Ass'n of Realtors, 32 F.4th 824, 831 (9th Cir. 2022) (quoting *Iqbal*, 556 U.S. at 678, and *Twombly*, 550 U.S. at 570). "The inference of a conspiracy need not be more plausible than an inference of independent conduct." *DRAM I*, 2020 WL 8459279, at *5. And "the factual allegations need not exclude the possibility of independent conduct," but they must "suggest facts inconsistent with such conduct." *Id.*

III. DISCUSSION

The parties agree on the relevant analytical framework for Plaintiffs' claims. Plaintiffs do not plead facts directly showing a preceding agreement but rely on the "parallel conduct" framework. *See, e.g.*, ECF No. 62 at 16. This analysis requires the Court to examine Plaintiffs' allegations in three parts.

As a threshold matter the Court must determine whether Plaintiffs have plausibly pleaded parallel conduct by Samsung, SK Hynix, and Micron. *See DRAM II*, 28 F. 4th at 47. Next, plaintiffs must include additional factual allegations (*i.e.*, "plus factors") that place that parallel conduct in a context that suggests a preceding agreement. *Id.* Finally, "Plaintiffs' proffered plus factors must be evaluated holistically to determine whether they state a conspiracy claim." *Id.* at 53. The Court addresses each of these steps and the parties' associated arguments.[5]

A. Plaintiffs Adequately Allege Several Instances of Parallel Conduct

Parallel conduct, generally, is exemplified by "competitors adopting similar policies around the same time in response to similar market conditions." *Musical Instr.*, 798 F.3d 1186, 1193 (9th Cir. 2015). There is no "firm temporal limitation" on parallel conduct. *See Jones v. Micron Tech. Inc*, 400 F. Supp. 3d 897, 916 (N.D. Cal. 2019).[6] Here, Defendants argue that the gaps of time in the conduct at issue are so long that they belie parallel action. *See* ECF No. 58 at

[5] The Court does not separately address Plaintiffs' claims under California, Florida, Minnesota, New York, and Wisconsin law. "Judicial interpretations of federal antitrust law do not necessarily control how this Court interprets state antitrust law[.]" *Jones v. Micron Tech. Inc.*, 400 F. Supp. 3d 897, 922 (N.D. Cal. 2019). But for the purposes of the motion before the Court, the parties agree that Plaintiffs' state claims "rise and fall with the Sherman Act claim." *Compare* ECF No. 58 at 29–30 *with* ECF No. 62 at 17 n.2.

[6] *Jones* later became *DRAM I*, and the *Jones* order is Judge White's initial decision granting in part and denying in part, with leave to amend, Samsung, SK Hynix, and Micron's motions to dismiss.

15–17. The Court disagrees.

Plaintiffs' core allegation of parallel conduct is that Defendants reduced DRAM output in late 2022 or early 2023. They allege that SK Hynix and Micron announced production cuts within three weeks of each other (October 26, 2022 and November 16, 2022). ECF No. 1 ¶¶ 235–36. Defendants gloss over that clear allegation. And while Samsung's announcement came about four and a half months later (*id.* ¶ 240), and is not as tightly temporally parallel as the three-week gap in SK Hynix and Micron's announcements, the roughly one-quarter lag is not such an unreasonably long delay that it defeats an allegation of parallel conduct on a motion to dismiss. *See, e.g.*, *Jones v. Micron Tech. Inc*, 400 F. Supp. 3d at 916 (finding parallel conduct where Samsung cut output in one quarter and its rivals followed the following quarter).

Plaintiffs allege many other examples of purported coordination, described above, including other instances of arguably parallel conduct by Defendants. *See, generally*, § I.C. The parties' arguments touch on several of these—namely, the pivot to HBM and "coordinated exit" of older generation DRAM—and so the Court addresses them briefly.

First, Plaintiffs allege that "[b]eginning in approximately 2023," each of the three Defendants "simultaneously redirected manufacturing capacity and capital expenditure from" conventional DRAM to HBM. ECF No. 1 ¶ 444. Standing alone, an allegation that conduct is "simultaneous" is conclusory, but Plaintiffs allege other facts sufficiently related to the pivot to HBM such that the Court draws the inference, as it must at the pleading stage, in Plaintiffs' favor that this pivot began for all Defendants in early-to-mid 2023, and continued apace from there. *See id.* ¶¶ 251–58. This conduct is relevant both to how Defendants chose to cut conventional DRAM supply and provides additional independent context for Plaintiffs allegations of parallel conduct.

Second, Plaintiffs' contentions as to a "coordinated exit" from older generation DRAM are mixed. As to the alleged exit from DDR3, the complaint clearly alleges Samsung and SK Hynix retired their DDR3 production lines in 2024. It admits that "Micron, by contrast, continued to produce limited quantities of DDR3." *Id.* ¶ 259. Indeed, Plaintiffs nowhere allege that Micron *ever* stopped producing DDR3 and, accordingly, such conduct is neither parallel temporally nor parallel in kind. Rather, it is consistent with an ordinary, industry phase-out of two-generation old

technology. But Plaintiffs' allegations as to DDR4 are stronger – they allege that, "in 2025, and all between approximately April and June, all three Defendants announced they would wind down mainstream DDR4 production." *Id.* ¶ 260. This is sufficient to allege parallel conduct. Accordingly, the Court does not consider Plaintiffs' DDR3-related allegations in the remainder of its analysis but does consider Defendants' decision to wind down DDR4 production.

Finally, Plaintiffs allege that up to the filing of this action, "not one of the three Defendants expanded or announced plans to meaningfully expand commodity DRAM production capacity." *Id.* ¶ 275. Plaintiffs allege various specific decisions that Defendants made in parallel, most notably the delay of construction of new conventional DRAM manufacturing fabs, the lock-up of significant DRAM production for AI customers, and the simultaneous introduction of non-AI customer vetting practices. *See id.* ¶¶ 275, ¶¶ 287–303, 325, 330. While this "refusal to expand" is not "conduct" on its own, it is the other side of the coin of Defendants' 2022–2023 decisions to restrict DRAM supply, and the Court considers these decisions as relevant to the "plus factors," below.

In sum, the Court is persuaded that Plaintiffs have adequately alleged parallel conduct in at least three ways: initial decisions by each Defendant to restrict DRAM supply; parallel pivots to HBM production at the expense of DRAM production; and parallel exits from DDR4 production. Defendants' overarching counterargument that this conduct might be consistent with "obvious independent explanation[s]," (ECF No. 58 at 16–17), does not mean that the conduct is not *parallel*; that question is properly addressed at the next step of the analysis: the "plus factors" Plaintiffs allege.

B. Plaintiffs Have Adequately Alleged Several "Plus Factors" in Their Favor

Plaintiffs allege eight[7] plus factors, some economic and some non-economic, asserting that: (1) Defendants acted against their own self-interest when they pivoted from DRAM to HBM

[7] Although Plaintiffs argue that they have alleged eleven plus factors, Defendants argue that "five are simply variations" of the same plus factor: "that Defendants allegedly acted against their economic self-interest by producing more HBM and less conventional DRAM." *See* ECF No. 63 at 8. The Court agrees with Defendants in part, finding that some factors are merely restatements of others, and lays out the eight plus factors as it considers them here.

production, including a) by locking up supply for AI customers while refusing long-term contracts for conventional customers and b), as to Micron, by shutting down its conventional DRAM retail brand, Crucial, and c) by refusing to expand DRAM supply when market conditions improved; (2) Defendants acted against their own self-interest when they halted or delayed the construction of new, pre-announced manufacturing fabs; (3) Defendants acted against their own self-interest by shutting down production of DDR4 generation memory; (4) Defendants simultaneously introduced customer vetting to promote information exchange among the Defendants; (5) Defendants made public statements that "served as assurances" of the conspiracy; (6) Defendants met at industry conferences "before each move"; (7) the conventional DRAM market is conducive to conspiracy; and (8) Defendants were previously convicted for price-fixing the same product. The Court addresses each in turn.

1. Pivot from DRAM to HBM, and Related Conduct

When a defendant acts against its self-interest, that may reflect an unlawful prior agreement. But in "an interdependent market," where there is possibility of "conscious parallelism," so long as an action (such as raising prices) "can be easily readjusted without persistent negative consequences, one firm can risk being the first to raise prices [or cut supply], confident that if its price [or cut] *is* followed, all firms will benefit," this action against self-interest alone is not sufficient. *See Musical Instr.*, 798 F.3d at 1195. Rather, the action must be "extreme action against self-interest" – action "so perilous in the absence of advance agreement that no reasonable firm would make the challenged move without such an agreement." *Id.* Plaintiffs argue that the pivot from DRAM to HBM, and the related AI supply lockup, closure of Crucial, and refusal to re-expand into DRAM constitute such action. The Court finds that, while in general a pivot from DRAM to HBM might not be sufficient, the related conduct tips this factor over the edge to weigh in Plaintiffs' favor.

Plaintiffs' core allegation is that Defendants diverted manufacturing and investment from conventional DRAM, a more profitable product, to HBM, a less profitable product. *See* ECF No. 1 ¶¶ 251–58, 365–82. Standing alone, this action is insufficient. In particular, the Court agrees with Defendants' criticism here that, by the complaint's own allegations, at the time of the pivot in

2023 and 2024, DRAM prices were still rising from the 2022 downturn and HBM was *more* profitable than DRAM. *See* ECF No. 1 ¶¶ 12; 375–76.[8] Investing in an up-and-coming market is always a risk, but it is not the kind of "perilous move" that "no reasonable firm would make . . . without [a prior] agreement." *See Musical Instr.*, 798 F.3d at 1195. The Court similarly agrees with Defendants that the bare decision to restrict DRAM supply and forgo competition with one another is insufficient. As the Ninth Circuit held in *DRAM II*, such actions are "consistent with Defendants, as competitors in a highly concentrated market, reacting to the same market pressures and taking parallel action to serve their interests." *DRAM II*, 28 F. 4th at 49–50, 53.

But Plaintiffs here allege further details as to *how* Defendants made that pivot, and these allegations cast this activity in a different light. First, according to the complaint, all three of the Defendants signed long-term contract agreements committing to locking in extraordinary amounts of HBM supply. *See* ECF No. 1 ¶¶ 256–57. And while entering into long-term contracts for HBM, Samsung and SK Hynix reportedly refused to enter into long-term agreements with major DRAM customers. *See id.* ¶ 415. Meanwhile, Micron announced on December 3, 2025, that it would shutter Crucial, its highly profitable direct-to-consumer conventional DRAM brand, at a time when DRAM was surpassing HBM in profitability and "at the peak of a price spike." *Id.* ¶¶ 322–27. These decisions go beyond merely reducing supply internally or raising prices, which are decisions that "can be easily readjusted without persistent negative consequences." *See Musical Instr.*, 798 F.3d at 1195. The moves Defendants made here are difficult if not impossible to unwind, and meant that when conventional DRAM supply was so low that it did surpass HBM profits, none of the Defendants could pivot back: by the time of the filing of the complaint, "despite these extraordinary prices—the single most powerful supply signal the DRAM industry has ever produced—not one of the three Defendants expanded or announced plans to meaningfully

[8] As reflected in the parties' arguments at the hearing, the analysis of profitability is complicated by the parties' use of different metrics (*e.g.*, price per gigabyte; price per wafer) and Plaintiffs' allegation that the three-to-one ratio of bits required for HBM manufacture over DRAM manufacture means that HBM must command a significantly higher revenue premium. *See* ECF No. 1 ¶¶ 148, 150. The Court cannot resolve any disputes about the profitability of HBM at the pleading stage. Viewing the allegations in the light most favorable to Plaintiffs, however, they assert that sometime between Q2 2025 and the end of Q1 2026, the crossover point occurred. *Id.* ¶¶ 375–76.

expand commodity DRAM production capacity." *Id.* ¶¶ 272–75.

These significant moves—years-long lock-up agreements, the shuttering of a three-decade-old, highly profitable brand, and the failure to make or announce any moves to take advantage of record-high prices—are the sort that at the pleading stage, it appears no reasonable firm would make without a prior agreement. These are not the kinds of actions that "are more likely explained by lawful, unchoreographed free-market behavior in a concentrated industry." *Contra DRAM II*, F. 4th at 54. This plus factor tips in Plaintiffs' favor.

2. Halting or Delaying New DRAM Capacity

Plaintiffs also allege that during the 2023 to 2025 time period, Defendants Samsung and Micron delayed or halted the production of multiple DRAM manufacturing plants. ECF No. 1 ¶¶ 292–94. This economic action is judged by the same standard as the first plus factor discussed above, but the Court addresses it separately because Plaintiffs do not tie it explicitly to the pivot to HBM. *See id.* This factor weighs in Plaintiffs' favor for the same reasons as above and because, as the Ninth Circuit has explained in the petroleum market,

> Changes in refinery capacity are not readily reversible. Once a company is committed to reducing its capacity it cannot easily recover if the other companies do not follow its lead. Thus, it is unlikely that a firm would undertake a reduction in its refinery capacity without some advance agreement from competitors.

In re Coordinated Pretrial Proc. in Petroleum Prods. Antitrust Litig., 906 F.2d 432, 463 (9th Cir. 1990). The Court views the commitment to build or not build manufacturing capacity as analogous. Accordingly, this plus factor similarly supports a plausible inference of conspiracy.

3. Exiting DDR4 Memory Production

Plaintiffs' next alleged plus factor is the coordinated exit from DDR4 memory production. *See* ECF No. ¶¶ 259–70. Defendants' counterargument is that the industry had moved on to DDR5, and that each Defendant made the independent and rational decision to depreciate an older-generation product. *See* ECF No. 58 at 20; ECF No. 63 at 13. But Plaintiffs' well-pleaded factual allegations, which the Court takes as true at the pleading stage, discredit Defendants' argument. This is readily apparent in contrasting the DDR3 allegations with DDR4. As explained above, while Plaintiffs' allegations as to DDR3 are consistent with an ordinary, industry phase-out

of two-generation old technology, the DDR4 allegations are not. For example, Plaintiffs allege that the DDR4 decision was made within the same quarter by each Defendant, contrary to Defendants' argument that they "exited that product on different timelines." *Compare* ECF No. 1 ¶ 259–60, *with* ECF No. 63 at 13. And Plaintiffs allege that DDR4 "remained in wide use," triggering "panic buying" by major OEMs and a price inversion so extreme that the "older, slower DDR4 came to cost more per gigabyte than newer, faster DDR5." *Id.* ¶¶ 261–70. Apart from pointing to a ramp-up of production from Chinese manufacturers without citing the complaint, Defendants offer no rationale for their sudden, rapid, and coordinated exit from DDR4. *See* ECF No. 63 at 13.[9] Accordingly, taking Plaintiffs' allegations as true, the exit from DDR4 appears inconsistent with independent market decisions and consistent with a prior agreement. This plus factor supports a plausible inference of conspiracy.

4. Introduction of Near-Identical Customer-Vetting Practices

Turning to the first factor that is not a flavor of action-against-self-interest,[10] Plaintiffs allege that in January 2026, each Defendant "simultaneously implemented enhanced due diligence and customer vetting procedures for DRAM orders." ECF No. 1 ¶ 330. Plaintiffs point to comments from a "GPU and server supplier executive—a customer of Defendants—confirm[ing] the coordinated nature of the policing." *Id.* The executive stated that "[t]he three companies became stricter and asked us about who we will supply to, how much quantity, and if the demand of our customers [is] real." *Id.* ¶ 331. The Court agrees with Plaintiffs that the imposition of "stricter customer vetting at the same time" and "adopt[ion of] the same order-vetting questions" is "difficult to explain absent coordination" and "gives each Defendant a structured view of who is

[9] At the hearing, Defendants reiterated that Chinese manufacturers were subject to export controls for more advanced DDR5 memory as opposed to DDR4 memory. *See* ECF No. 1 ¶ 74. But the assertion that Defendants feared competition from Chinese manufacturers is not in the complaint and so the Court cannot consider it on a motion to dismiss. Further Defendants' contention on this point seems suspect given the complaint's allegation that these manufacturers held approximately 5% or less of global DRAM capacity. *See* ECF No. 1 ¶ 74.

[10] For other factors, there is no strict guidance as to what counts and what does not. The Court is guided by the core inquiry of whether the alleged plus factor is "largely inconsistent with unilateral conduct but largely consistent with explicitly coordinated action," such that it "place[s] parallel conduct in a context that raises a suggestion of a preceding agreement." *DRAM II*, 28 F. 4th at 47.

purchasing DRAM and in what quantities," thereby serving "an analogous function" to the monitoring methods used by the Defendants' cartel from 1998 to 2002. *Id.* ¶¶ 331–34 ("The customer policing bears a direct resemblance to the monitoring mechanisms of the 1998–2002 cartel.").

Defendants' counterarguments on this factor are not persuasive. First, they argue that there is an "obvious and non-conspiratorial explanation for this conduct: booming AI demand had consumed available capacity," necessitating this vetting. ECF No. 63 at 15. But there is a mismatch in time for this explanation – Defendants introduced their vetting practices in January 2026: after the initial boom began in 2023, after the HBM pivot, and after or at the time when conventional DRAM profits surpassed HBM profits. *See* ECF No. 1 ¶¶ 12; 375–76. Nor does this rationale explain why the Defendants introduced the substantively the same vetting questions at the same time, as Plaintiffs allege. Second, Defendants argue that Plaintiffs "never allege that any of Defendants exchanged [the] vetting information." ECF No. 63 at 15. But requiring Plaintiffs to allege evidence of Defendants' exchange of information, *i.e.*, direct evidence of the conspiracy, is not the standard for a plus factor to weigh in Plaintiffs' favor.[11] Alleged conduct need only be "largely inconsistent with unilateral conduct but largely consistent with explicitly coordinated action," such that it "place[s] parallel conduct in a context that raises a suggestion of a preceding agreement." *DRAM II*, 28 F. 4th at 47. Plaintiffs' allegations as to this plus factor meet that bar, and the Court finds the allegations strongly support a plausible inference of conspiracy.

5. Public Statements

Plaintiffs also allege a wide variety of public statements by the Defendants, mostly to investors, regarding intended or forecasted changes in supply and capital expenditure. *See* ECF No. 1 ¶¶ 235, 337, 340–42, 385–86. But as Defendants correctly point out, the fact that Defendants made predictive public statements to investors is not unusual and is not inconsistent with unilateral conduct; rather, "[i]f no conspiracy existed, Defendants would likely make the

[11] Indeed, if Plaintiffs had direct evidence of an agreement to implement and exchange customer vetting information, they would not need to be pursuing a circumstantial, parallel conduct claim in the first place.

same public statements about their observations, predictions, and strategies for the future, particularly in response to investor and analyst questions." *DRAM II*, 28 F.4th at 50. For example, the Ninth Circuit in *DRAM II* declined to give weight to the allegation that Micron statement, in March 2016, that "it would be foolish [for Micron] to be the first ones to take capacity off" where the answer was given "in response to an analyst's question about the possibility of supply cuts in the DRAM industry." *Id.*

In response, Plaintiffs note that under other Ninth Circuit authority, public statements can constitute a plus factor, and that a "knowing wink [between competitors] can mean more than words." ECF No. 62 at 25 (citing *Esco Corp. v. United States*, 340 F.2d 1000, 1007 (9th Cir. 1965) and *Petroleum Prods.*, 906 F.2d at 447). As *DRAM II* did not overrule (or even cite) *Esco Corp.* or *Petroleum Prods.*, this Court is bound by all three decisions.[12] The narrow overlap appears to be that, while public statements can count as a plus factor even if they are not explicit (*e.g.*, a "knowing wink"), they must be the sorts of statements that a defendant would not likely make absent some sort of agreement in the background. To this end, Plaintiffs highlight two statements by Micron and SK Hynix that they argue went beyond ordinary public statements, serving "as assurances" to co-conspirators. Neither distinguishes this case from *DRAM II*.

Plaintiffs' strongest allegation is Micron's September 29, 2022 public statement to investors, before any of the supply cuts by Defendants, that Micron's "output will be ramped in line with industry demand growth," and that its "goal [was] to maintain stable bit supply share as well as supply discipline." ECF No. 1 ¶ 341. Four weeks later, SK Hynix introduced the first cuts. *Id.* ¶ 235. The Court agrees with Defendants, however, that *DRAM II* considered similar statements (about "capital discipline") and a similar one-month call-and-response pattern, yet found the statements insufficient. *DRAM II*, 28 F. 4th at 50–51. Plaintiffs' other allegation, about SK Hynix's written shareholder-return policy, is even closer to *DRAM II*. *Compare id.* with ECF No. 1 ¶ 385. Accordingly, this factor does not support a plausible inference of conspiracy.

[12] Plaintiffs suggest, but do not state outright, that *DRAM II* is "inconsistent with longstanding Ninth Circuit precedent," namely, *Esco Corp.*, on this point. *See* ECF No. 62 at 25. But to the extent there is any tension between *Esco Corp.* and *DRAM II* that cannot be reconciled, that is not for this Court to resolve.

6. Meetings at Industry Conferences

Plaintiffs next allege that Defendants' "executives gathered before each move," namely at industry conferences. *See* ECF No. 62 at 26; ECF No. 1 ¶¶ 402–05. Defendants counter that, as the Ninth Circuit reiterated in *DRAM II*, "trade associations often serve legitimate functions, and courts are reluctant to infer conspiracy from gathering information about pricing and competition in the industry at such meetings." *DRAM II*, 28 F.4th at 52. Plaintiffs argue that the deficiency in *DRAM II* was that "the plaintiffs did not allege facts demonstrating that Defendants actually communicated or exchanged information at these trade association meetings," and that they have done so here by alleging "the gatherings, the dates, and the executives at issue." ECF No. 62 at 26. The Court agrees with Plaintiffs that the factual allegations here go beyond what the Ninth Circuit considered in *Dram II*, but also agrees with Defendants' reading of *DRAM II*, that seemingly all but forecloses a trial court from giving any weight to trade conference meetings unless plaintiffs can identify the information defendants actually exchanged or that they "entered an agreement to coordinate supply decisions while there." *DRAM II*, 28 F. 4th at 52. Under these circumstances, this Court does not rely on this factor as a basis for a plausible inference of Defendants' conspiracy.

7. Market Structure

The market structure here is substantially similar to *DRAM II* – an oligopoly, then holding "approximately 96% of the global DRAM market" and now holding a 91.5% share. *Compare DRAM II*, 28 F. 4th at 45, *with* ECF No. 1 ¶¶ 72–74. The only difference appears to be that, in 2016, Samsung held roughly a one-half market share, with SK Hynix and Micron trailing, while now Samsung and SK Hynix each hold roughly a one-third market share, with Micron trailing slightly. *Id.* While this change in market division in some ways supports Plaintiffs' allegations, for example because actions by SK Hynix and Micron are no longer simple "follow-the-leader" moves, the fundamental oligopolistic structure is neutral in the analysis. *See, e.g.*, *Jones*, 400 F. Supp. 3d at 922 ("conscious parallelism [is] endemic to an oligopoly"); *DRAM II*, 28 F.4th at 52 ("On balance, this factual allegation is consistent with both parties' explanations.").

8. Defendants' Historic Behavior

Finally, as did the plaintiffs in *DRAM II*, Plaintiffs raise Defendants' criminal price-fixing history. ECF No. 1 ¶¶ 220-25. Defendants counter only that the now-20-year-old history should no longer count as a plus factor because Plaintiffs do not tie it to the conduct at issue. ECF No. 63 at 17. But *DRAM II* rejected this argument, and this Court does as well. "While the prior conspiracy among Defendants occurred approximately twenty years ago, the present allegations involve the same alleged coordination and actors." *DRAM II*, 28 F. 4th at 53. This plus factor supports Plaintiffs' claims of a current, similar conspiracy.

C. Upon a Holistic Review, Plaintiffs' Complaint Plausibly States a Claim

In the end, no one factor is determinative. "Plaintiffs' proffered plus factors must be evaluated holistically to determine whether they state a conspiracy claim. The character and effect of a conspiracy are not to be judged by dismembering it and viewing its separate parts, but only by looking at it as a whole." *DRAM II*, 28 F. 4th at 53 (internal quotation marks and citations omitted). Moreover, while the holistic approach should not "transform common business practices that are consistent with innocent conscious parallelism" into evidence of a conspiracy, it may be used as "a tool to discern meaning from the collective weight of otherwise unremarkable allegations." *See In re Passenger Vehicle Replacement Tires Antitrust Litig.*, 767 F. Supp. 3d 681, 742 (N.D. Ohio 2025).

Plaintiffs' allegations here paint a different picture from the case in *DRAM I* and *DRAM II*. In *Dram I* Judge White explained that plaintiffs' allegations as a whole evinced a "'follow the leader' strategy where the dominant market player increases prices or reduces output with the hope that others follow suit[.]" *DRAM I*, 2020 WL 8459279, at *11 (lamenting the harm that "conscious parallelism" causes, but explaining that "the harm is endemic to oligopolistic markets and does not require a conspiracy to maintain."). But here, Plaintiffs' allegations tell a different story: riskier supply cuts initiated by SK Hynix and Micron, not by a single market leader; perilous decisions that locked away the ability to unwind the cuts if others were not in sync; a refusal, at least through the time of the complaint, to cash-in on a nearly 700% price increase; near-identical and unusual customer-vetting practices instituted by each Defendant at the same

time; and all this performed by actors with a history of similar conspiratorial behavior.

During the hearing Defendants quoted the late Honorable Judge Posner who famously wrote, "[c]ompetitors in concentrated markets watch each other like hawks." *In re Text Messaging Antitrust Litig.*, 782 F.3d 867, 875 (7th Cir. 2015). But Plaintiffs' allegations go beyond hawks watching each other; their contentions are more akin to hawks flying in formation – an activity that hawks ordinarily do not do. In other words, while it is possible that each of Defendants' decisions, even ones made near-simultaneously, was made independently by each Defendant, "at the motion to dismiss stage, a § 1 plaintiff need not allege a fact pattern that tends to exclude the possibility of lawful, independent conduct." *SmileDirectClub, LLC v. Tippins*, 31 F.4th 1110, 1118 (9th Cir. 2022). Rather, to state a plausible claim via circumstantial evidence, Plaintiffs need only plead facts that are "largely" (*i.e.*, not necessarily entirely) "inconsistent with unilateral conduct but largely consistent with explicitly coordinated action." *DRAM II*, 28 F. 4th at 47. The Court finds Plaintiffs have done so here.

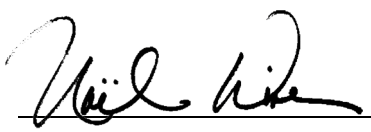
IV. CONCLUSION

For the forgoing reasons, Defendants' motion to dismiss is DENIED. Defendants' answers shall be due **no later than December 7, 2026**.

On October 23, 2026, Defendants filed an administrative motion seeking to continue initial case deadlines, including the initial case management conference. ECF No. 65. Plaintiffs have not filed an opposition. Because the Court reset the parties' argument by approximately three weeks, the Court will continue the parties' initial case deadlines concomitantly. Defendants' motion is GRANTED, and the initial case management conference in this matter is reset for Tuesday, January 12, 2027 at 9:00 a.m.

IT IS SO ORDERED.

Dated: November 14, 2026



Noël Wise
United States District Judge