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科技脉动 | Asia Pacific

存储——一次健康的重置

修正周期得以延续的必要条件。DRAM 是 AI 扩张的主要瓶颈，但市场对本轮周期持续性的担忧正在上升。我们认为，从当前阶段来看，估值倍数扩张可能成为更重要的回报驱动因素。我们大幅上调了三星电子和 SK 海力士的悲观情境假设。

此次股价表现的“重置”并不意味着周期已经结束。我们的核心判断是，周期仍在加速，盈利上修依然强劲，且可持续性优于市场普遍预期。盈利上修支撑了此次上涨——存储公司盈利预测的上调幅度与股价涨幅基本一致——而长期协议则为估值重估提供了支撑。

从长期视角看存储周期：若参照历史 DRAM 周期的持续时间，我们预计到年末可能接近周期高点；而要实现估值重估，需要：（1）供给端保持克制；（2）需求需在长期内转化为具有韧性的经济回报。以往周期的问题并不在于需求，而在于供给纪律始终难以维持。当前的共识是，在供给纪律不足的基础上叠加 AI 的结构需求，将带来更长周期和更高峰值。

存储价格终将回落——随着当前投资计划在 2027 年下半年起逐步投产，**周期必然反转**，但 AI 需求的价格弹性可能不同。更低的 DRAM 价格将降低 AI 推理成本，使 AI 部署更加经济，从而创造新增需求，而不仅仅是降低既有消费电子设备的成本。

上涨空间有多大？自 2 月以来，存储价格已接近翻倍，交付周期显著拉长。其背后的核心驱动是长期协议约束下的实际产能受限。若未来 3-5 年内长期协议占总供给的比例提升至 70% 以上，我们认为，从理论上讲，DRAM 公司的估值可由当前约 5 倍市盈率重估至至少 8-10 倍市盈率。这一判断基于一个简单测算：70% 以上的 2027 年每股收益按更接近市场平均的估值水平（过去 5 年滚动 10-14 倍市盈率）定价，其余约 30% 未被长期协议覆盖的收益按历史周期高点的 5 倍市盈率计算。

对股价的影响：我们预计 2026 年第三季度 DRAM 价格将上涨超过 20-30%，足以维持同比增速继续加快。定价权正转化为盈利上修，从而支撑估值倍数（基于 2027 年预期盈利为 5.2 倍市盈率）保持稳定，尽管过去两个月股价已上涨 70-134%，这一过程并非源于贴现率变化。我们分别将 SK 海力士和三星电子的悲观情境估值上调了 175% 和 58%（[上调悲观情境假设](#)）。

This translated report is made available for convenience only and is based on the original research report published in English. In the event of any discrepancy between the translation and the original research report, the content in the original research report will prevail. The original research report can be found here: [Tech Bytes: Memory – A Healthy Reset \(10 Jun 2026\)](#).

本翻译报告仅供参考之便，基于以英文发表的原版研究报告。如果翻译与原版研究报告有任何不一致之处，以原版研究报告中的内容为准。原版研究报告可在此处查看：[Tech Bytes: Memory – A Healthy Reset \(10 Jun 2026\)](#)。

MORGAN STANLEY & CO. INTERNATIONAL PLC+

金荣燦

股票分析师

Shawn.Kim@morganstanley.com

+44 20 7677-1018

MORGAN STANLEY ASIA LIMITED+

刘端

股票分析师

Duan.Liu@morganstanley.com

+852 2239-7357

MORGAN STANLEY & CO. INTERNATIONAL PLC+

黄敬恬

股票分析师

Cindy.Huang@morganstanley.com

+44 20 7425-2915

MORGAN STANLEY & CO. INTERNATIONAL PLC, SEOUL BRANCH+

金贵哲

股票分析师

Ryan.G.Kim@morganstanley.com

+82 2 399-4939

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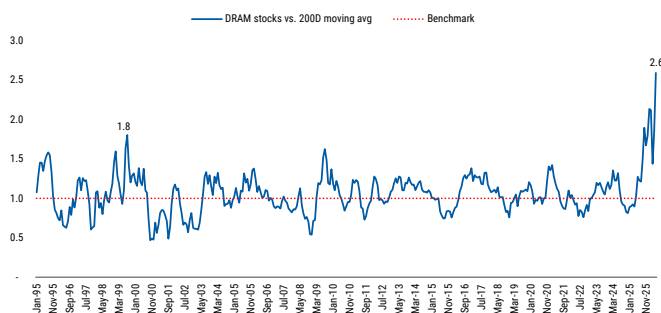
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良性重置

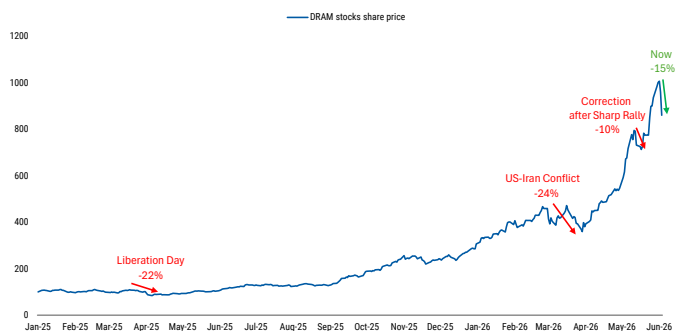
自3月低点以来，市场几乎未曾以如此速度线性上涨。在我们看来，本轮回调既不可避免，也属于健康调整——若存储牛市要延续至年末，这样的修正也是必要的。此前存储板块股价呈现抛物线式上涨，同时叠加杠杆ETF敞口扩大、对冲基金及零售投资者持仓拥挤度创纪录。此次价格层面的重置并不意味着周期结束。相反，我们更倾向于认为，这是一轮周期延续所需的必要调整——自2022年秋季生成式AI推出以来，类似调整已出现过三次。我们对年末保持建设性判断，主要基于：（1）AI需求仍然强劲；（2）洁净室与EUV设备限制供给增长；（3）长期协议推动盈利与自由现金流实现更具韧性的增长。我们认为周期尚未见顶，但也承认基本面加速阶段的同比变化终将触顶，股价通常对此提前反应。

Exhibit 1: DRAM股票相对200日均线表现



资料来源: Factset, 摩根士丹利研究部

Exhibit 2: DRAM股票: 上涨过程中的主要回撤



资料来源: Factset, 摩根士丹利研究部

历史上抛物线式上涨后的调整具有一定参考意义。这类走势并不意味着存储牛市结束，但相关板块通常也难以迅速反弹，修复过程往往需要时间。今年早些时候的商品板块（黄金/白银、稀土、工业金属、能源等）亦呈现类似特征。我们强调，即便处于长期牛市，商品资产依然可能出现较高波动。

韩国市场方面，我们观察到，历史上触发熔断机制后的市场表现偏积极：次日上涨概率约为75%，中期进一步提升至约87-88%。这表明，尽管短期波动可能持续，但风险回报比正逐步改善，特别是在三星电子与SK海力士当前远期市盈率约为5.2倍与4.7倍的背景下。

Exhibit 3: 三星电子: KOSPI熔断事件后的回报

Event	1st trading day	1D	1W	1M	3M
Dotcom Bubble	17/04/2000	9.4%	9.6%	12.0%	36.8%
Dotcom Bubble	18/09/2000	4.8%	-4.3%	-1.8%	-12.1%
Dotcom Bubble	12/09/2001	6.2%	1.5%	-13.3%	60.1%
Covid-19	13/03/2020	0.0%	-8.7%	-6.3%	8.7%
Covid-19	19/03/2020	5.7%	9.3%	13.2%	21.5%
Yen Carry Unwind Scare	06/08/2024	3.0%	3.0%	5.0%	-19.0%
US-Iran Conflict	04/03/2026	11.3%	0.8%	10.2%	109.3%
US-Iran Conflict	09/03/2026	8.3%	5.8%	3.6%	89.6%
	Hit Ratio %	87.5%	75.0%	62.5%	75.0%
	Mean Return %	6.1%	2.1%	2.8%	36.9%
	Max Return %	11.3%	9.6%	13.2%	109.3%
	Min Return %	0.0%	-8.7%	-13.3%	-19.0%
	Median Return %	5.9%	2.3%	4.3%	29.2%

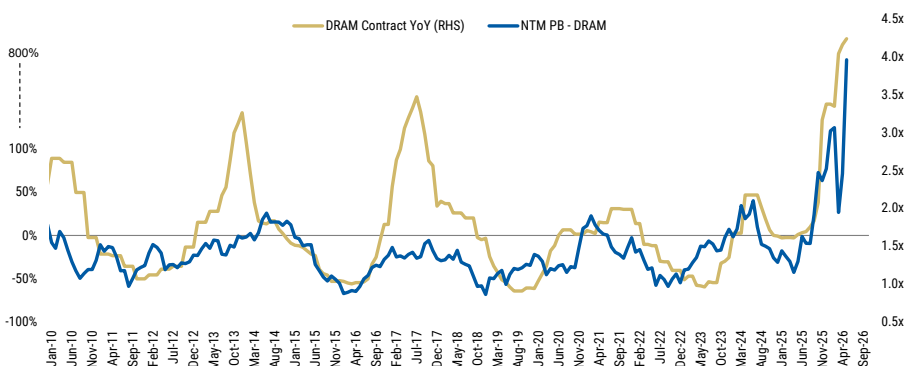
资料来源: Factset, 摩根士丹利研究部

存储周期：长期视角

若按历史DRAM周期长度推算，我们或将在年末附近接近周期高点。过去上行周期通常约持续6个季度，随后供需紧张缓解（即价格同比增速回落），而股价通常提前约4个月见顶。但考虑到AI agent需求（自2026年1月起加速），周期顶部可能仍需数个季度才会到来。估值重估的核心前提包括：（1）供给端保持克制；（2）需求能够转化为长期可持续的经济回报。

- 过往周期的问题从不在需求端（除2008年全球金融危机及2021年疫情初期冲击外），而在供给端，行业在填补需求缺口时往往过度扩张，导致产能过剩。
- 决定周期拐点的关键在于供给纪律，而这一点历史上从未持续实现。在供给纪律不足的背景下叠加结构性需求，只会拉长周期并抬高峰值，这也是当前市场共识。

Exhibit 4: DRAM长期周期（同比）



资料来源：TrendForce, Factset, 摩根士丹利研究部

有何不同？智能需求对比消费电子需求。存储器已由消费电子配件转变为“智能生产”的核心投入要素。更高HBM带宽、更大DRAM/NAND容量意味着单位时间内可产出更多“智能”或token。随着模型规模扩大、上下文长度延长及多用户并行运行更多AI agent，这一需求与传统PC/智能手机的固定市场规模截然不同。

- AI推理需求呈指数级增长，AI agent仍处初期阶段，远未饱和
- 存储正在持续从PC/手机等个人设备向AI基础设施迁移
- 每一代GPU的瓶颈均在于存储而非算力。单位AI系统的DRAM容量正提升4-7倍（从A100的80GB提升至Rubin GPU/Superchip的288-768GB），而AI芯片出货正以约60%的年化速度增长

存储价格终将回落，周期亦将反转，随着现有投资产能自2027年下半年逐步释放。但本轮需求以AI基础设施为主，周期属性更长、可见性更强，这使得厂商在扩产上更具谨慎性。管理层指引亦显示，新增产能将更具节奏控制。

与此同时，AI需求的价格弹性或不同于以往。更低的DRAM价格将降低推理成本、推动AI部署，从而创造新增需求并扩大市场空间，而不仅仅是降低既有设备成本。

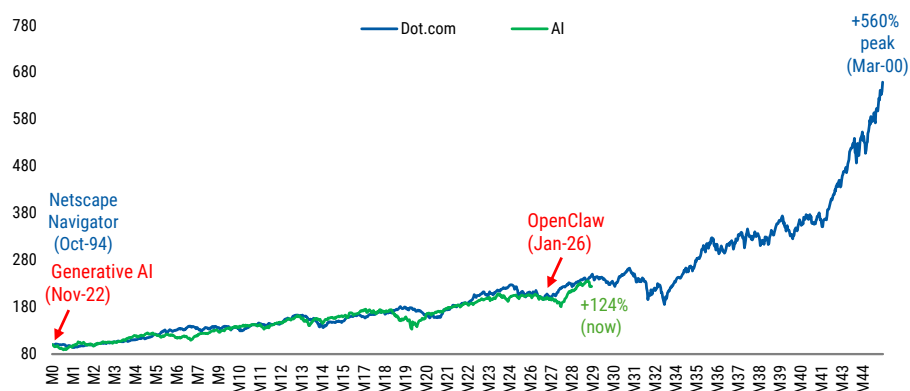
关于泡沫

泡沫可以维持很长时间。在互联网建设周期中，我们曾经历过两年出色的股价表现，而

我们认为今年至少还可能再有一年。如果回看互联网建设周期，生成式AI相当于互联网时代的Netscape Navigator，其在1994年底推出，此后4年纳斯达克上涨149%，并在第5年（1999年）上涨86%。生成式AI在2022年底推出，目前已进入第3年，纳斯达克上涨122%。2000年3月互联网泡沫见顶可以由以下因素解释：（1）基本面层面，互联网流量增长的变化率从每3个月翻倍下降至每年翻倍——这一放缓并未反映在估值中；（2）Y2K之前的宽松货币环境（M2增长超过10%）在油价飙升后被美联储收紧流动性。随后纳斯达克下跌85%，并回归至1996年中期的水平。

很难准确预测当前需求泡沫中有多少能够在长期持续。代理式AI带来了token生成的跃迁——在OpenClaw推出前两个月增长约20%，而在其2026年1月推出后增长超过120%。显然，当前市场受到短期因素的扭曲，但哪些属于基础需求，哪些属于扭曲，仍有待区分。

Exhibit 5: AI vs. 互联网：技术出现以来纳斯达克表现



资料来源：Factset，摩根士丹利研究部

关键风险

当前阶段存储周期面临多种风险。技术将持续演进，竞争与供给将回归常态，存储股亦然。尽管这些情况在短期内发生的概率较低，但仍值得指出，因为一旦出现，将足以改变我们对行业的积极判断。

- **技术效率出现突破**，从而显著降低存储/HBM使用，或出现绕过存储的路径。我们不包括存储压缩，因为其一直存在，但也承认行业始终在寻找绕过瓶颈的方法。
- **AI竞争降温**：前沿大模型与超大规模AI基础设施投资的五大驱动需要继续维持高位
- **AI需求变化率偏离轨道**，不再呈指数增长。ARR（年化运行率）是衡量企业API合同使用情况和代理式编码工具采用的重要指标，也反映未来业务增长路径
- **“芯片通胀”及其宏观影响**：问题不在于存储价格是否已经上涨到影响层面，而在于成本是否会通过渠道缓慢传导，使得当其完全显现时，价格冲击已是两年前的事件。[Global Technology: Chipflation – Navigating A Memory Crisis \(2 Jun 2026\)](#).
- **市场流动性**：从变化率来看流动性再次趋紧，中国也在主动放缓货币供给增长，叠加更高油价和强势美元，流动性环境相较一季度更趋紧，而流动性通常领先股市约3个月。

AI CPU 与存储的牛市逻辑逐步显现

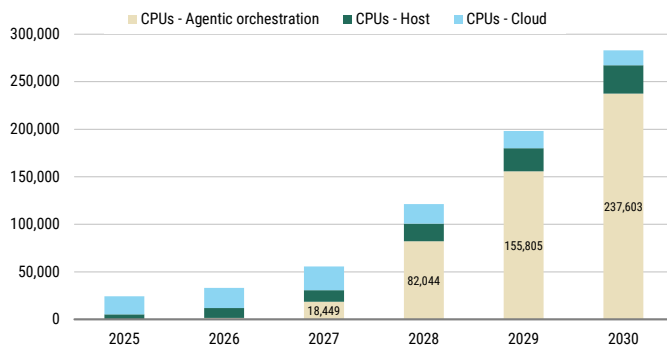
在GTC Taipei与Computex 2026之后，**代理式AI CPU**这一逻辑已从“预测阶段”进入“验证阶段”。近期管理层表态正在将我们的服务器CPU与存储潜在市场规模（TAM）推向更偏向牛市情境。此前我们框架(*Agentic AI - The Surge Begins*) 基于的集群CPU与GPU配比正得到验证：主要芯片公司的表述均表明，从训练时代的配比向代理式AI负载下的接近平价转变，同时每个代理的token强度出现跃迁式提升。这支持了我们2830亿美元服务器CPU TAM牛市情境的高端区间。

我们认为对存储的影响偏上行。最新一代调度型CPU向原生LPDDR（移动DRAM）迁移，叠加单个代理更高的token消耗，共同支撑单CPU所需的更高DRAM容量——这是我们框架中的关键“摆动因素”。据此我们上调了增量DRAM需求的估计（此前约为74EB基准情境/221EB牛市情境）。

当智能在上下文发生端生成时，将带来显著的增量上行空间。数据中心正在向笔记本电脑、智能手机以及家庭端下沉。因此，无论何时何地，只要存在上下文，智能就将在该处生成——我们认为上行潜力很可能来自边缘设备，例如在Computex上推出的代理式AI PC，其所搭载的存储向量目前并未纳入服务器附属框架。以每台AI PC配备128GB统一LPDDR5x为例，我们认为这将成为我们存储TAM的重要潜在上行来源。

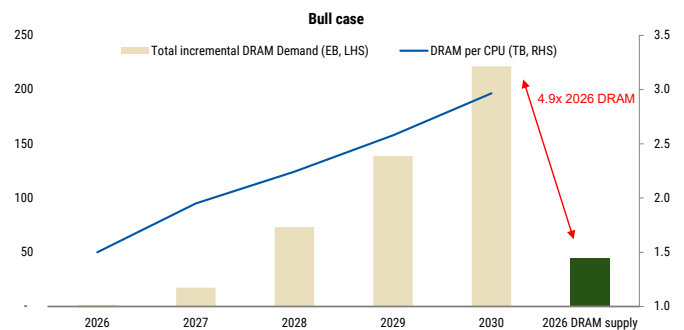
- **代理将部署在本地，因为所有数据都在本地**（包括安全数据、专有数据以及用户/企业相关的全部技能）。
- **代理将通过不断迭代来完成的任务，使用各种不同工具。**所需的计算量……由于其可以长时间自主运行，并且不是单次响应查询，其计算量已呈指数级增长。
- **这不再是人使用工具，而是代理使用工具——人偶尔使用工具，而代理是持续且高速地使用工具。**为数字代理提供PC以及对GPU和存储的访问能力。

Exhibit 6: 我们预计，代理式AI CPU的TAM将在2026–2030财年期间实现251%的CAGR



资料来源：摩根士丹利研究部预测

Exhibit 7: 我们预计随着调度型CPU机架规模化扩展，新增DRAM需求将达到约221EB



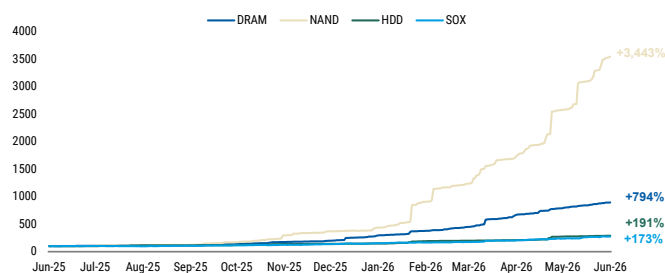
资料来源：摩根士丹利研究部预测

企业观点

- **英伟达 (Joseph Moore覆盖)**：CEO黄仁勋表示：“今天的CPU是为人类设计的，而Vera是为代理而设计的。” Vera Rubin已全面量产，其供应链规模为Grace Blackwell的两倍；Vera被定位为专为代理式AI及强化学习负载打造的CPU，相较传统x86服务器CPU，宣称效率提升约2倍、性能提升约50%。黄仁勋强调单线程性能优先于核心数量，并指出Vera可部署于GPU头节点、存储服务器以及调度节点。

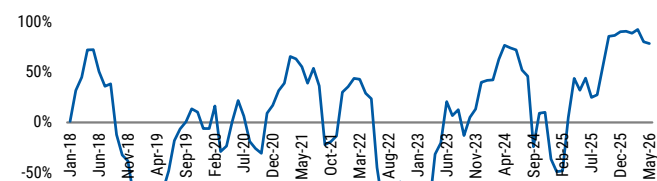
- **英特尔 (Joseph Moore覆盖)**：CEO陈立武 (Lip-Bu Tan) 表示，**CPU:GPU的配置比例已从前沿模型训练阶段的1:8转向代理式AI负载下的1:1或更高水平**，因为CPU在推理过程中承担调度职责，一个代理所消耗的token量可高达单轮推理的约1,000倍。英特尔推出Xeon 6+ (Clearwater Forest, Intel 18A工艺, 288个E核, 576MB三级缓存)，宣称单机架最多可支持150,000个代理，并预览了与鸿海合作的机架级“智能中心 (Intelligence Center)”设计，同时确认大核产品Diamond Rapids推迟至2027年。
- **Arm (Lee Simpson覆盖)**：Arm在头部超大规模云厂中的CPU算力占比约为50%，其AGI CPU客户需求在2027-2028财年合计已超过20亿美元（为Arm Everywhere所指规模的两倍以上），该AGI CPU为其与Meta共同开发、用于代理式基础设施。Arm发布了两款AGI-CPU机架参考设计：一款为36kW风冷机架（8,160个核心），另一款为200kW液冷机架（45,696个核心），同时其数据中心特许权使用费同比增长超过一倍。
- **高通 (Joseph Moore覆盖)**：CEO Cristiano Amon将2026年定义为“代理之年”，指出代理式AI正从仅基于提示词的交互模式，转向在手机、PC、汽车、机器人、工业系统及云端执行实际行动。高通发布Dragonfly，正式进入高性能数据中心服务器市场，同时推出面向Windows笔记本的新Snapdragon C平台，以及Dragonwing IQ10机器人参考设计。

Exhibit 8: 过去一年市场一致预期未来十二个月EPS走势



S资料来源: Factset, 摩根士丹利研究部

Exhibit 9: 自2018年以来存储板块盈利上修的广度



资料来源: Factset, 摩根士丹利研究部

存储渠道调研

DRAM

- SemiAnalysis指出，Rubin NVL72平台的SOCAMM内存配置已从每机架55TB下调至28TB(新闻)。这一规格下调与我们的渠道调研一致。然而，我们的渠道调研亦显示，英伟达整体存储订单规模并未缩减，这表明DRAM短缺尚未进入“双重下单”阶段（详见Joe Moore的评论：[Weekly: NVDA memory cuts? And Apr SIA](#)）。
- HBM定价谈判仍在进行中，预计自2027年起价格同比将上调至少50-100%。2026年HBM价格已在去年年初通过年度合同锁定，我们预计2026年下半年短期内不会发生变化。
- 我们预计2026年第三季度价格仍将继续上涨，初期报价或有约20%的环比提升，但我们已观察到消费电子客户在2026年第二季度提价后开始削减订单。因此，我们预计第三季度AI与非AI产品的趋势将出现分化。
- 长期协议谈判仍在推进。在AI需求增长及结构性供给短缺（预计持续至2028年）的背景下，部分供应商已开始下调对超大规模云客户的供货承诺，以在季度定价谈判中争取更大灵活性。
- 我们预计AI相关产品在产能分配中的占比将持续提升，从今年的50%以上升至明年的接近70%。除新增产能供给外，受AI需求持续偏紧影响，消费电子及模组厂商可能仍将面临订单挤压。

NAND

- 2026年第三季度合约价格预计将环比进一步上涨约30%，主要由企业级SSD（eSSD）驱动。现货价格走势相对温和，原因在于消费电子市场在消化前期快速上涨的价格方面已面临挑战。
- 根据产业反馈，HBF产品前景仍呈分化态势。云服务提供商担忧，若将NAND裸片与GPU封装在一起，其耐久性问题可能显著缩短GPU的使用周期，因此当前来看eSSD可能是更优/更安全的解决方案。有客户则对将HBF技术应用于智能手机及边缘设备表现出兴趣，以更好兼容其AI应用。
- 我们预计AI NAND需求有望在迈向2027年过程中实现至少50%的同比bit增长，主要由CSP在KV Cache卸载方面的需求驱动，同时QLC SSD扩容也在响应HDD侧供给短缺。代理式AI机架亦有望提升AI NAND的TAM，我们预计每个托盘将配置2-8TB的eSSD缓冲，而随着2027年机架出货规模的逐步放量，这一需求驱动亦将愈发显著。

英伟达AI PC

在台北GTC大会上，黄仁勋发布了RTX Spark，这是英伟达首款面向Windows个人电脑的系统级芯片，也是其进入消费级个人电脑芯片领域的尝试，对标苹果自研芯片和高通骁龙X2。黄仁勋将个人电脑定位为从“工具”向“伙伴”演进——你提出需求，电脑就完成任务。关键点在于，代理式AI将成为主要交互界面，并成为算力的最大使用者，其中很大一部分计算将在本地设备上运行，而非在云端。本地执行可以将敏感上下文保留在

设备中，支持持续运行的后台代理，相较完全依赖云端的方案降低延迟。

对存储而言，这意味着单设备所需的内存容量更高，因为在设备上运行大模型需要较大的内存池。RTX Spark配备一颗20核Grace架构处理器（10个Cortex-X925核心和10个Cortex-A725核心，由英伟达与联发科共同开发），以及一颗Blackwell架构图形处理单元（6,144个CUDA核心），支持最高128GB统一LPDDR5X内存，最高300GB/秒内存带宽，采用台积电3纳米工艺。该平台可在设备端运行1200亿参数规模的模型。NAND存储取决于整机厂和具体型号——华硕ProArt在P16机型中提供2TB固态硬盘，在P14机型中提供1TB，并预留额外扩展插槽，而大多数其他方案尚未确认。

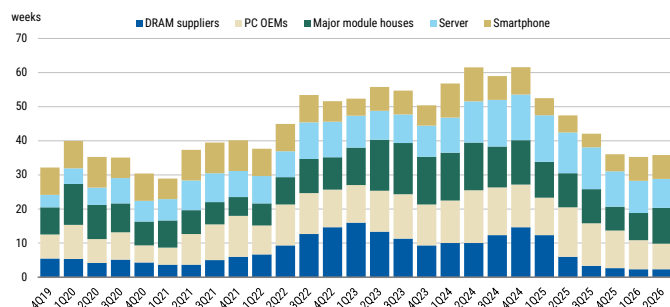
在定价方面，[我们硬件团队预计](#)最高配置的笔记本价格可能超过3000美元，同时也将提供台式机形态。初步调研显示，未来三年累计[出货量可能低于1000万台](#)，而在较高定价背景下，全球PC市场年度TAM约为2.7亿台。

存储拐点信号

我们监测四项信号，作为周期中的早期拐点指标：

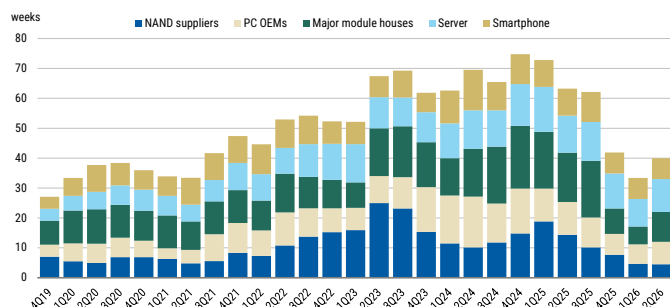
1. **DRAM价格延续强势。**我们预计，长期协议将在未来2-3年改变存储价格高波动的特征。在经历2025年第四季度至2026年第二季度的大幅上涨后，我们预计DRAM和NAND价格的环比涨幅都将收窄至约8-13%。我们并不将此视为拐点信号，相反，我们认为长期协议能够通过预付款将价格锁定在较高水平，从而为存储企业带来更强的稳定性、提升盈利可预测性，并通过更好的供给管理降低过度扩产的风险。[\(LTAs – How They Are Affecting Memory\)](#)
2. **库存调整周期。**在2026年第二季度初，供应商库存仍处于历史低位，DRAM仅为2-3周，NAND为4-5周。服务器客户尽管下单激进，仍在持续消化库存，而其余终端客户库存水平仍较为健康。在上行周期中，向PC、服务器和智能手机制造商交付芯片的交付周期通常会拉长。这会促使这些客户下单超过实际需求，并囤积库存，以防交付周期进一步拉长并演变为真正的短缺。我们认为这对消费类客户而言仍是一个持续存在的问题，因为他们正面临价格大幅上涨与供给分配有限之间的权衡。
3. **资本开支预算下调，而资本强度上升。**存储行业通常要么供给过多，要么供给不足。该行业既具竞争性，也具有理性，因此应当会对价格失衡阶段作出反应。面对库存上升以及盈利能力下行的前景，芯片制造商会降低产能扩张速度，以匹配需求。2019年DRAM资本开支下降了23%，2020年持平，而2015年下行周期的资本开支仅下降9%。不过，AI需求可能会在未来下行周期中维持资本开支的绝对水平高企，并促使企业要求更高的回报率，以证明这些投资的合理性。
4. **盈利持续上修与估值扩张。**市场往往走在实际盈利上修之前，而我们认为，在HBM价格谈判推进过程中，盈利仍有进一步上行空间。我们的敏感性分析[\(见此\)](#)表明，市场尚未对存储供应商由长期协议支撑的盈利和自由现金流赋予任何有意义的市盈率溢价。举例而言，若我们对长期协议支撑的盈利给予10倍市盈率，并假设大宗存储产品的长期协议覆盖率为70%，则在其他条件不变的情况下，三星电子/海力士的2027年市盈率可由当前的5倍扩张至约8.5倍。

Exhibit 10: DRAM库存



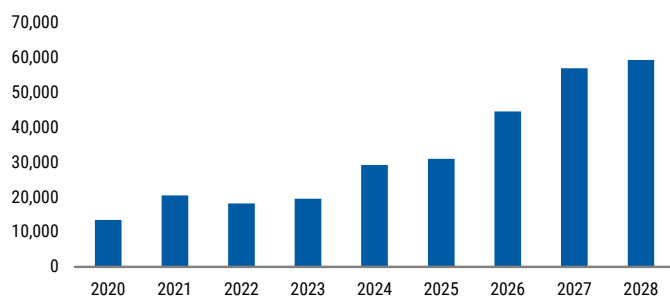
资料来源: TrendForce预测, 摩根士丹利研究部

Exhibit 11: NAND库存



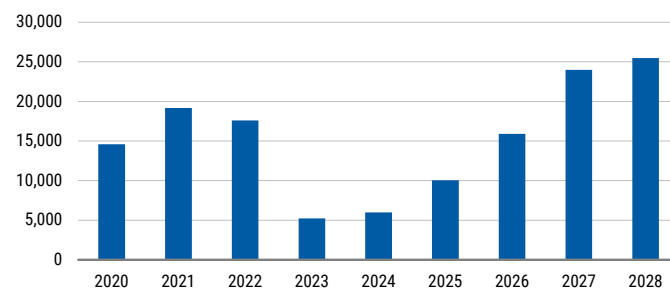
资料来源: TrendForce预测, 摩根士丹利研究部

Exhibit 12: DRAM资本开支 (百万美元)



资料来源: TrendForce预测, 摩根士丹利研究部

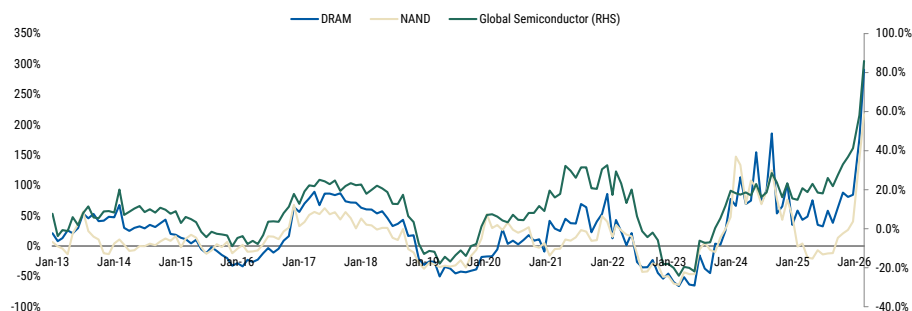
Exhibit 13: NAND资本开支 (百万美元)



资料来源: TrendForce预测, 摩根士丹利研究部

Exhibit 14:

半导体周期背景下的DRAM——以收入同比衡量, 存储行业与DRAM高度相关, 而DRAM所处阶段较NAND更为领先



资料来源: SIA

上调悲观情境假设

随着2027年持续短缺的可见度日益清晰, 我们上调了悲观情境假设, 改为假设下行周期将在2028年出现, 而不再沿用原先回归至1倍市净率下行周期的假设。在悲观情境下, 我们假设, 由于AI资本开支暂停, 或行业供给追赶快于预期, 标准化存储价格将同比下降30-50%。从长期看, 我们假设HBM利润率将因市场竞争降至约40%, DRAM利润率将回落至20-30%, 而NAND利润率将如上一轮周期那样回归至低双位数水平。

因此, 我们基于剩余收益模型得出的新悲观情境估值为: SK海力士110万韩元, 对应2027年预期市盈率2.4倍; 三星电子 (005930.KS) 19万韩元, 三星电子优先股

(005935.KS) 15.2万韩元，对应2027年预期市盈率3.1倍。

Valuation Methodology and Risks

SK hynix (000660.KS)

Base case, residual income valuation model. We assume a cost of equity of 11.5% (5% risk-free rate, 6.5% risk premium, 1.0 beta) and a terminal growth rate of 3%.

Risks to Upside

- ASP growth re-acceleration
- Preemptive production cuts or disruption
- Sharp demand improvements
- Significant increase in capital returns

Risks to Downside

- End demand turning weaker than expected
- Rising competition for DDR5, causing overspending on the supply side.
- Inventories remaining elevated at cloud and Chinese smartphone customers.

Samsung Electronics (005930.KS)

Our base case price target is derived from our residual income valuation model. At our price target, the 2027e P/B multiple would be c.2x, in line with the stock's commodity cycle peak of 2.0x. We assume an 11.5% cost of equity, based on a beta of 1.0, and our terminal growth rate assumption is 3%.

Risks to Upside

- New technological developments, especially in memory and foldable displays
- Longer-lasting memory up-cycle from AI and hyperscale data center growth

Risks to Downside

- Product and memory cycle, including Apple and new Chinese smartphone competition
- Earnings growth concentration in semiconductors

Samsung Electronics (005935.KS)

Our price target for the preferred shares is based on our PT for the common shares and our assumption that the preferred shares' trade at a 20% discount to the common shares, based on the past 2-year average. We assume an 11.5% cost of equity, based on a beta of 1.0, and our terminal growth rate assumption is 3%.

Risks to Upside

- New technology developments, especially in memory and foldable displays
- Longer-lasting memory up-cycle from AI and hyperscale data center growth
- Further narrowing of discount to common shares

Risks to Downside

- Product and memory cycle, including Apple and new Chinese smartphone competition
- Earnings growth concentration in semiconductors

- Deepening of discount to common shares

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Global Stock Ratings Distribution

(as of May 31, 2026)

The Stock Ratings described below apply to Morgan Stanley's Fundamental Equity Research and do not apply to Debt Research produced by the Firm.

For disclosure purposes only (in accordance with FINRA requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

Stock Rating Category	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1542	42%	465	51%	30%	707	43%
Equal-weight/Hold	1571	43%	369	40%	23%	723	44%
Not-Rated/Hold	3	0%	0	0%	0%	1	0%
Underweight/Sell	551	15%	86	9%	16%	201	12%
Total	3,667		920			1632	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

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Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

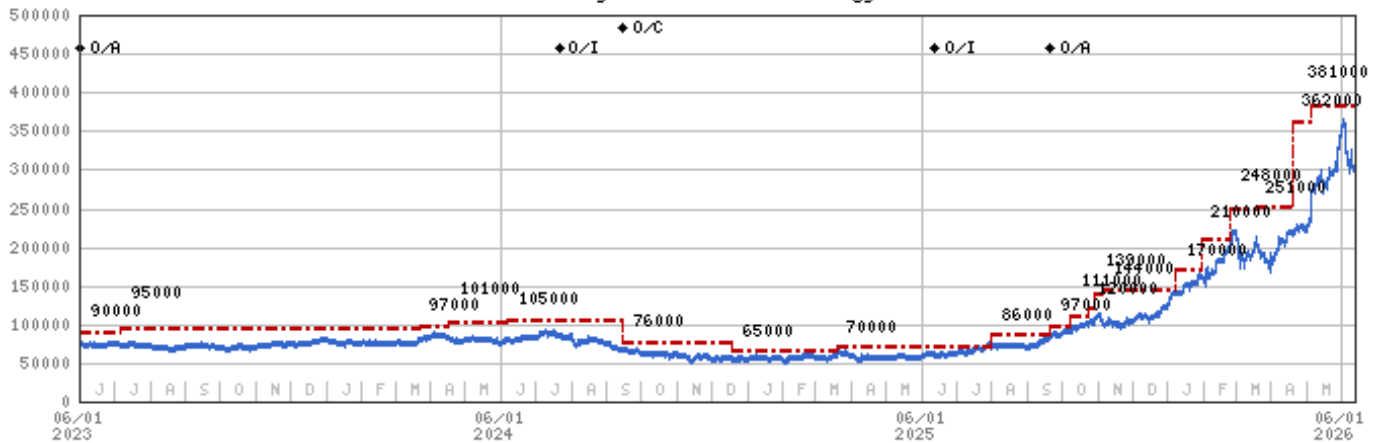
In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Stock Price, Price Target and Rating History (See Rating Definitions)

Samsung Electronics (005930.KS) - As of 06/12/26 GMT in KRW
 Industry : S. Korea Technology



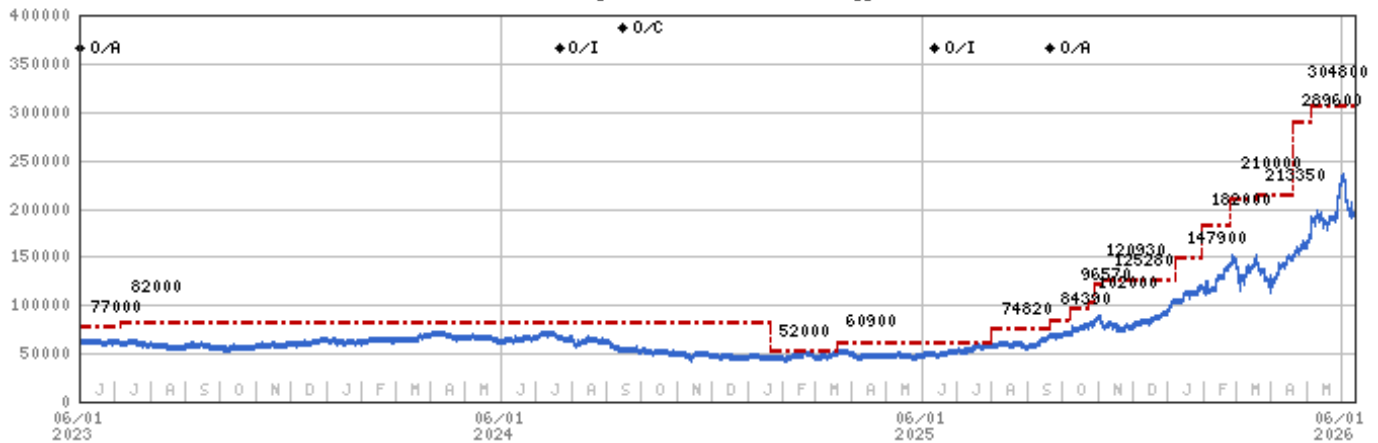
Stock Rating History: 6/1/21 : O/A; 7/19/21 : O/I; 8/12/21 : O/C; 10/4/22 : O/A; 7/21/24 : O/I; 9/15/24 : O/C; 6/13/25 : O/I; 9/21/25 : O/A

Price Target History: 5/18/21 : 93000; 6/8/21 : 98000; 8/12/21 : 89000; 9/15/21 : 95000; 12/3/21 : 97000; 3/18/22 : 95000; 4/28/22 : 85000; 6/10/22 : 80000; 7/5/22 : 75000; 7/22/22 : 70000; 9/17/22 : 68000; 3/21/23 : 70000; 5/30/23 : 90000; 7/7/23 : 95000; 3/22/24 : 97000; 4/16/24 : 101000; 6/6/24 : 105000; 9/15/24 : 76000; 12/18/24 : 65000; 3/19/25 : 70000; 8/1/25 : 86000; 9/21/25 : 97000; 10/8/25 : 111000; 10/23/25 : 120000; 10/30/25 : 139000; 11/5/25 : 144000; 1/8/26 : 170000; 1/30/26 : 210000; 2/24/26 : 248000; 3/18/26 : 251000; 4/19/26 : 362000; 5/6/26 : 381000

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) —
 Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
 Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.
 Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Samsung Electronics (005935.KS) - As of 06/12/26 GMT in KRW
 Industry : S. Korea Technology



Stock Rating History: 6/1/21 : O/A; 7/19/21 : O/I; 8/12/21 : O/C; 10/4/22 : O/A; 7/21/24 : O/I; 9/15/24 : O/C; 6/13/25 : O/I; 9/21/25 : O/A

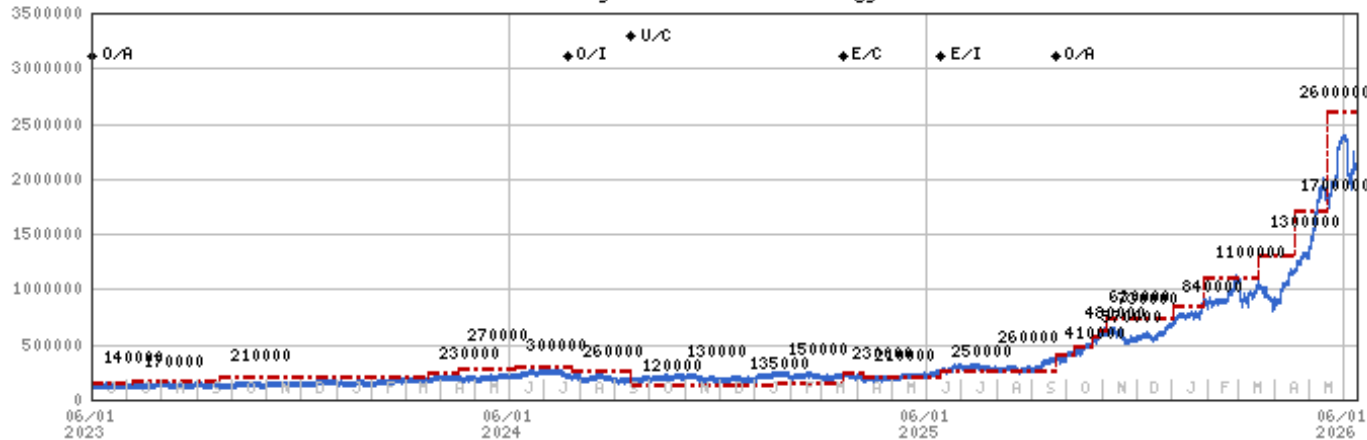
Price Target History: 5/18/21 : 80000; 6/8/21 : 84000; 8/12/21 : 77000; 9/15/21 : 82000; 12/3/21 : 83000; 3/18/22 : 82000; 4/28/22 : 73000; 6/10/22 : 69000; 7/5/22 : 65000; 7/22/22 : 60000; 9/17/22 : 58000; 3/21/23 : 60000; 5/30/23 : 77000; 7/7/23 : 82000; 1/20/25 : 52000; 3/19/25 : 60900; 8/1/25 : 74820; 9/21/25 : 84390; 10/8/25 : 96570; 10/23/25 : 102000; 10/30/25 : 120930; 11/5/25 : 125280; 1/8/26 : 147900; 1/30/26 : 182000; 2/24/26 : 210000; 3/18/26 : 213350; 4/19/26 : 289600; 5/6/26 : 304800

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target -- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) — Stock Price (Covered by Current Analyst) ■
 Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
 Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

SK hynix (000660.KS) - As of 06/12/26 GMT in KRW
Industry : S. Korea Technology



Stock Rating History: 6/1/21 : O/A; 7/19/21 : O/I; 8/12/21 : U/C; 12/3/21 : E/C; 2/11/22 : O/C; 7/22/22 : E/C; 10/4/22 : O/A; 7/21/24 : O/I; 9/15/24 : U/C; 3/19/25 : E/C; 6/13/25 : E/I; 9/21/25 : O/A

Price Target History: 5/18/21 : 1460000; 6/8/21 : 1560000; 8/12/21 : 80000; 9/15/21 : 88000; 12/3/21 : 110000; 12/23/21 : 125000; 1/24/22 : 130000; 1/28/22 : 136000; 2/11/22 : 155000; 3/18/22 : 150000; 4/27/22 : 130000; 6/10/22 : 120000; 7/5/22 : 110000; 7/22/22 : 105000; 10/4/22 : 130000; 12/7/22 : 120000; 3/21/23 : 110000; 5/30/23 : 140000; 7/7/23 : 170000; 9/21/23 : 210000; 3/22/24 : 230000; 4/16/24 : 270000; 6/6/24 : 300000; 7/25/24 : 260000; 9/15/24 : 120000; 10/24/24 : 130000; 12/18/24 : 135000; 1/20/25 : 150000; 3/19/25 : 230000; 4/7/25 : 210000; 6/13/25 : 250000; 7/24/25 : 260000; 9/21/25 : 410000; 10/8/25 : 480000; 10/23/25 : 570000; 10/29/25 : 630000; 11/5/25 : 730000; 1/2/26 : 840000; 1/30/26 : 1100000; 3/18/26 : 1300000; 4/19/26 : 1700000; 5/18/26 : 2600000

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) --- Stock Price (Covered by Current Analyst) ---
Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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