Global Memory Tech

Weekly theme: Samsung's 3Q results, global forecast updates, de-spec impact

Industry Overview

Samsung's earnings and outlook confirm super-cycle

Samsung Electronics (SEC) reported preliminary 3Q OP of W107tn, broadly in line with our estimate and consensus. However, this still confirms the memory super-cycle. Ahead of the 29 Oct earnings call, our analysis highlights three factors: DRAM and NAND contributed >100% of total OP, offsetting large losses in smartphones and foundry; memory ASP still rose by 20%+ QoQ after prices more than doubled in 1H; and OPM remained high at 70%+/- (DRAM: 75%; NAND: 65%). We also expect OP to increase further in 4Q vs 3Q and in 2027 vs 2026. SEC's shareholder returns (dividends and buybacks) remain high, potentially exceeding W150tn pa using 50%+ of 2027-28, equivalent to 8-10% of market cap. Memory capex will continue to rise (our assumptions: W67tn/W85tn/W92tn in 2026/27/28 vs W43tn in 2025), but we estimate annual FCF of W300tn+ in 2027-28. In our view, this also supports the super-cycle thesis.

Fine-tune global forecasts for higher NAND ASP

We updated our global memory forecasts to reflect stronger-than-expected NAND ASP. Micron's Aug-end quarter NAND ASP rose by ~30% QoQ (vs consensus of 10-20%). We also see upbeat 3Q NAND ASP trends at Korean and Japanese chipmakers, with increases of more than 20% QoQ. Against this backdrop, we raise our NAND ASP assumptions by 4% for 2H26 and 2027-28. For 3Q, we lifted our global forecast for the QoQ ASP change by 5ppt to +20%, from +15%. Although NAND spot prices have fallen since August (1Tb: down more than 10%), we continue to see strength in contract prices, led by high-end eSSD, boot-drive, etc. Overall, our latest industry model indicates that the global memory market will reach US$2.1tn in 2030, vs US$0.9tn+/- in 2026. We leave our DRAM assumptions unchanged, with ASP still rising through 4Q and the quarters of 2027. Taiwan tech companies' September sales were broadly strong, led by Nanya Tech and Phison Electronics. Based on August results, our BofA memory indicator remained well above the 2017/22 peak levels (179 vs 120-130; mid-cycle).

De-spec could be growth catalyst rather than concern

We acknowledge that some chipmakers may supply 8-hi HBM4 (8 x 3GB DRAM die = 24GB) for Rubin GPU next year, vs the current mainstream 12-hi configuration (36GB). As Rubin typically requires 8 units of HBM, a shift to 8-hi would reduce memory content from 288GB (8 x 36GB) to 192GB (8 x 24GB). However, we do not view this as memory de-spec or a demand cut, for three reasons: 1) total GPU shipments could rise quickly in response to the HBM shortage; 2) the incremental GPUs require additional memory – SOCAMM using LPDDR5 and key value cache eSSD – to be used with the counterpart logic processor CPU (e.g., Vera CPU); and 3) Big Tech should pay a price premium for 8-hi as a legacy memory vs 12-hi. Overall, the shift to 8-hi from 12-hi could support higher GPU volumes and, consequently, additional orders for SOCAMM and eSSD. We therefore see 8-hi-based de-spec as another growth catalyst for memory. That said, we have not observed any meaningful wafer input for 8-hi HBM4. As a result, 8-hi HBM4 volume will

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Exhibit 1: 2030 DRAM+NAND sales likely US$2tn
BofA global memory forecasts

YoY	26E	27E	28E	30E
DRAM $bn	573	917	1,025	1,396
NAND $bn	367	498	513	654
DRAM sales	328%	60%	12%	21%
NAND sales	353%	36%	3%	17%
DRAM ASP	242%	34%	-5%	3%
NAND ASP	276%	14%	-13%	1%
DRAM bit	25%	19%	18%	17%
NAND bit	20%	19%	18%	16%
DRAM capex	70%	37%	5%	3%
NAND capex	57%	25%	10%	2%
DRAM capa	12%	11%	14%	5%
NAND capa	5%	7%	7%	5%

Source: BofA Global Research estimates
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Exhibit 2: DDR5 up WoW vs NAND decline
Spot-market price trend

US$	Current	WoW	QoQ	YoY
16Gb DDR5	58.6	1%	23%	603%
16Gb DDR4	83.6	0%	8%	474%
8Gb DDR4	46.4	0%	24%	605%
1Tb NAND	30.2	-1%	25%	418%

Source: DRAMeXchange
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likely remain small in 1H27 or even 3Q, given the manufacturing cycle of 6+ months.

Global memory forecasts

Exhibit 2: 2030 TAM can reach US$2.1tn (DRAM+NAND); the annual run-rate closely approaching US$1.0tn as of 3Q26 (US$282bn; four-quarter equivalent: near-US$1.0tn); 2026 ASP or contract prices rose 3-4x YoY, vs volume growth of 20%+; record-high ASP is sustainable, with limited price cuts through 2030 amid globally tight supply and strong AI chip demand; annual bit growth should remain in the high teens in 2026-30

Global memory forecast summary – top-down approach

	1Q26	2Q26	3Q26E	4Q26E	1Q27E	2Q27E	3Q27E	4Q27E	2023	2024	2025	2026E	2027E	2028E	2029E	2030E
Revenue US$bn																
DRAM	83.4	130.6	171.0	188.0	202.7	218.0	240.9	255.5	47.3	87.9	133.8	572.9	917.1	1,024.8	1,158.5	1,396.1
NAND	48.4	85.7	111.5	121.5	121.8	121.7	126.0	128.3	42.4	78.1	81.0	367.2	497.8	513.3	558.5	654.4
DRAM+NAND total	**131.8**	**216.3**	**282.5**	**309.5**	**324.5**	**339.7**	**366.9**	**383.8**	**89.7**	**166.0**	**214.8**	**940.1**	**1,414.9**	**1,538.1**	**1,717.0**	**2,050.5**
% QoQ																
DRAM	77%	56%	31%	10%	8%	8%	11%	6%								
NAND	82%	77%	30%	9%	0%	0%	4%	2%								
DRAM/NAND total	**79%**	**64%**	**31%**	**10%**	**5%**	**5%**	**8%**	**5%**								
% YoY																
DRAM	256%	363%	388%	299%	143%	67%	41%	36%	-39%	86%	52%	328%	60%	12%	13%	21%
NAND	216%	370%	432%	359%	152%	42%	13%	6%	-37%	84%	4%	353%	36%	3%	9%	17%
DRAM/NAND total	**241%**	**366%**	**404%**	**320%**	**146%**	**57%**	**30%**	**24%**	**-38%**	**85%**	**29%**	**338%**	**50%**	**9%**	**12%**	**19%**
Blended ASP US$/unit																
DRAM 8Gb equiv	8.1	11.8	14.6	15.7	16.5	17.0	17.3	17.4	1.8	2.9	3.7	12.7	17.1	16.2	15.4	15.8
NAND 256Gb equiv	5.4	8.9	10.7	11.1	11.1	10.7	10.2	9.9	1.6	2.6	2.4	9.2	10.4	9.1	8.5	8.6
% QoQ																
DRAM ASP	73%	46%	23%	8%	5%	3%	2%	1%								
NAND ASP	87%	67%	20%	3%	0%	-3%	-5%	-3%								
% YoY																
DRAM ASP	155%	267%	307%	236%	104%	44%	19%	11%	-45%	62%	29%	242%	34%	-5%	-5%	3%
NAND ASP	130%	310%	364%	285%	106%	20%	-5%	-11%	-46%	65%	-8%	276%	14%	-13%	-7%	1%
Shipments bn units																
DRAM 8Gb equiv	10.3	11.0	11.7	12.0	12.3	12.8	13.9	14.6	26.7	30.6	36.0	45.1	53.7	63.3	75.3	88.1
NAND 256Gb equiv	9.0	9.6	10.4	11.0	11.0	11.4	12.4	13.0	26.6	29.5	33.2	40.0	47.7	56.3	65.9	76.4
% QoQ																
DRAM bit growth	2%	7%	6%	2%	3%	4%	8%	5%								
NAND bit growth	-2%	6%	8%	6%	0%	3%	9%	5%								
% YoY																
DRAM bit growth	40%	26%	20%	19%	19%	16%	18%	22%	10%	15%	18%	25%	19%	18%	19%	17%
NAND bit growth	38%	14%	15%	19%	22%	18%	19%	18%	18%	11%	13%	20%	19%	18%	17%	16%
Capacity 300mm k wpm																
DRAM wafer capacity	2,028	2,071	2,141	2,200	2,222	2,284	2,374	2,499	1,615	1,747	1,887	2,110	2,345	2,684	2,871	3,015
NAND wafer capacity	1,685	1,712	1,726	1,755	1,787	1,824	1,851	1,894	1,835	1,775	1,638	1,720	1,839	1,963	2,061	2,164
DRAM+NAND total	**3,713**	**3,783**	**3,867**	**3,955**	**4,009**	**4,108**	**4,225**	**4,393**	**3,450**	**3,522**	**3,525**	**3,830**	**4,184**	**4,646**	**4,932**	**5,179**
% QoQ																
DRAM capacity total	3%	2%	3%	3%	1%	3%	4%	5%								
NAND capacity total	2%	2%	1%	2%	2%	2%	1%	2%								
DRAM/NAND total	2%	2%	2%	2%	1%	2%	3%	4%								
% YoY																
DRAM capacity	11%	12%	13%	11%	10%	10%	11%	14%	4%	8%	8%	12%	11%	14%	7%	5%
NAND capacity	2%	6%	6%	6%	6%	7%	7%	8%	4%	-3%	-8%	5%	7%	7%	5%	5%
DRAM+NAND total	**7%**	**9%**	**10%**	**9%**	**8%**	**9%**	**9%**	**11%**	**4%**	**2%**	**0%**	**9%**	**9%**	**11%**	**6%**	**5%**
Capex spending																
DRAM	25.3	24.3	23.3	24.3	30.6	32.0	34.6	36.0	28.8	43.6	57.3	97.2	133.2	139.9	166.5	171.5
NAND	8.0	8.3	8.7	9.7	11.2	10.8	10.4	10.8	20.5	22.7	22.1	34.7	43.2	47.3	52.0	53.1
Total (DRAM+NAND)	**33.2**	**32.6**	**32.0**	**34.0**	**41.9**	**42.8**	**45.0**	**46.8**	**49.3**	**66.4**	**79.4**	**131.9**	**176.4**	**187.2**	**218.5**	**224.5**
QoQ/YoY in capex																
DRAM	63%	-4%	-4%	4%	26%	4%	8%	4%	-17%	51%	31%	70%	37%	5%	19%	3%
NAND	29%	4%	4%	12%	16%	-4%	-4%	4%	-30%	11%	-3%	57%	25%	10%	10%	2%
Total (DRAM+NAND)	**53%**	**-2%**	**-2%**	**6%**	**23%**	**2%**	**5%**	**4%**	**-23%**	**35%**	**20%**	**66%**	**34%**	**6%**	**17%**	**3%**

Source: Companies' reports, BofA Global Research estimates

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Exhibit 3: Our higher 2026-28E NAND revenue estimates (up 3-4%) are mostly based on stronger 3Q26 ASP assumptions (up 20% QoQ vs 15% previously); nil revisions to our DRAM forecast as we already assumed solid ASP increase in 2H26

Global memory forecast revisions – top-down analysis

	1Q26	2Q26	3Q26E	4Q26E	1Q27E	2Q27E	3Q27E	4Q27E	2021	2022	2023	2024	2025	2026E	2027E	2028E
DRAM (8Gb equiv)																
Sales (US$bn)																
New	83.4	130.6	171.0	188.0	202.7	218.0	240.9	255.5	92.1	77.7	47.3	87.9	133.8	572.9	917.1	1,024.8
Old	83.4	130.6	171.0	188.0	202.7	218.0	240.9	255.5	92.1	77.7	47.3	87.9	133.8	572.9	917.1	1,024.8
Diff	nm	nm	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	nm	nm	nm	nm	nm	0.0%	0.0%	0.0%
Shipments (bn units)																
New	10.3	11.0	11.7	12.0	12.3	12.8	13.9	14.6	24.1	24.2	26.7	30.6	36.0	45.1	53.7	63.3
Old	10.3	11.0	11.7	12.0	12.3	12.8	13.9	14.6	24.1	24.2	26.7	30.6	36.0	45.1	53.7	63.3
Diff	nm	nm	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	nm	nm	nm	nm	nm	0.0%	0.0%	0.0%
Bit growth - sequential																
New	2.2%	7.0%	6.4%	2.1%	2.7%	4.2%	8.3%	5.3%	23.3%	0.3%	10.3%	14.8%	17.6%	25.2%	19.1%	17.8%
Old	2.2%	7.0%	6.4%	2.1%	2.7%	4.2%	8.3%	5.3%	23.3%	0.3%	10.3%	14.8%	17.6%	25.2%	19.1%	17.8%
Diff	nm	nm	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	nm	nm	nm	nm	nm	0.0%	0.0%	0.0%
ASP chg - sequential																
New	73.2%	46.3%	23.1%	7.7%	5.0%	3.2%	2.0%	0.7%	14.2%	-16.0%	-44.8%	61.8%	29.4%	241.9%	34.5%	-5.2%
Old	73.2%	46.3%	23.1%	7.7%	5.0%	3.2%	2.0%	0.7%	14.2%	-16.0%	-44.8%	61.8%	29.4%	241.9%	34.5%	-5.2%
Diff	nm	nm	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	nm	nm	nm	nm	nm	0.0%	0.0%	0.0%
Blended ASP (US$)																
New	8.1	11.8	14.6	15.7	16.5	17.0	17.3	17.4	3.8	3.2	1.8	2.9	3.7	12.7	17.1	16.2
Old	8.1	11.8	14.6	15.7	16.5	17.0	17.3	17.4	3.8	3.2	1.8	2.9	3.7	12.7	17.1	16.2
Diff	nm	nm	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	nm	nm	nm	nm	nm	0.0%	0.0%	0.0%
NAND (256Gb equiv)																
Sales (US$bn)																
New	48.4	85.7	111.5	121.5	121.8	121.7	126.0	128.3	73.3	67.3	42.4	78.1	81.0	367.2	497.8	513.3
Old	48.4	85.7	106.9	116.5	116.7	116.6	120.7	123.0	73.3	67.3	42.4	78.1	81.0	357.5	477.0	491.9
Diff	nm	nm	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	nm	nm	nm	nm	nm	2.7%	4.3%	4.3%
Shipments (bn units)																
New	9.0	9.6	10.4	11.0	11.0	11.4	12.4	13.0	21.3	22.6	26.6	29.5	33.2	40.0	47.7	56.3
Old	9.0	9.6	10.4	11.0	11.0	11.4	12.4	13.0	21.3	22.6	26.6	29.5	33.2	40.0	47.7	56.3
Diff	nm	nm	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	nm	nm	nm	nm	nm	0.0%	0.0%	0.0%
Bit growth - sequential																
New	-2.2%	6.3%	8.4%	5.8%	0.1%	3.1%	9.0%	5.0%	37.8%	6.1%	17.6%	11.2%	12.5%	20.4%	19.3%	18.0%
Old	-2.2%	6.3%	8.4%	5.8%	0.1%	3.1%	9.0%	5.0%	37.8%	6.1%	17.6%	11.2%	12.5%	20.4%	19.3%	18.0%
Diff	nm	nm	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	nm	nm	nm	nm	nm	0.0%	0.0%	0.0%
ASP chg - sequential																
New	86.6%	66.8%	20.0%	3.0%	0.1%	-3.1%	-5.0%	-3.0%	-9.1%	-13.5%	-46.4%	65.5%	-7.8%	276.5%	13.6%	-12.6%
Old	86.6%	66.8%	15.0%	3.0%	0.1%	-3.1%	-5.0%	-3.0%	-9.1%	-13.5%	-46.4%	65.5%	-7.8%	266.5%	11.9%	-12.6%
Diff	nm	nm	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	nm	nm	nm	nm	nm	10.0%	1.8%	0.0%
Blended ASP (US$)																
New	5.4	8.9	10.7	11.1	11.1	10.7	10.2	9.9	3.4	3.0	1.6	2.6	2.4	9.2	10.4	9.1
Old	5.4	8.9	10.3	10.6	10.6	10.3	9.8	9.5	3.4	3.0	1.6	2.6	2.4	8.9	10.0	8.7
Diff	nm	nm	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	nm	nm	nm	nm	nm	2.7%	4.3%	4.3%

Source: BofA Global Research estimates, industry data. Chg = change. Equiv = equivalent

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Rubin Ultra and Vera Rubin NVL72 despec tables

Exhibit 4: NVIDIA's original Rubin Ultra roadmap contemplated 16 HBM4 stacks with roughly 1TB of memory capacity. However, ongoing HBM supply constraints have shifted industry expectations toward lower-memory configurations, including 8-stack HBM4E 12-Hi (~288GB) or 8-stack HBM4E 8-Hi (~192GB) designs. We believe the lower-memory configurations should improve affordability and ultimately enable higher shipment volumes.
Rubin Ultra's new spec shows 192GB/288GB vs original roadmap of 1TB

Stage	HBM type	# of HBM units	Stack height	DRAM die density	HBM capacity	Remarks	Source
Original roadmap (2025)	HBM4E	16	16-Hi	~32Gb	~1TB	Initial Rubin Ultra concept targeting maximum memory capacity and performance.	NVIDIA GTC 2025 keynote
Baseline design (1H26)	HBM4E	8	12-Hi	~24Gb	~288GB	NVIDIA's primary Rubin Ultra design through 1H26.	TrendForce (Aug 2026)
Current leading alternative	HBM4E	8	8-Hi	~24Gb	~192GB	Lower-memory option being evaluated due to HBM supply constraints and HBM4E qualification risks.	SemiAnalysis; corroborated by TrendForce
Alternative under evaluation	HBM4	8	12-Hi	~24Gb	~288GB	Maintains capacity by using HBM4 rather than HBM4E.	TrendForce (Aug 2026)
Alternative under evaluation	HBM4	8	8-Hi	~24Gb	~192GB	Lowest-memory option currently under consideration.	TrendForce (Aug 2026)
Current Vera Rubin	HBM4	8	12-Hi	~24Gb	288GB	Current-generation reference platform.	NVIDIA GTC 2025 roadmap

Source: Company, media reports, BofA Global Research

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Exhibit 5: According to recent media reports, Vera Rubin NVL72's HBM content remains unchanged at approximately 20.7TB per rack. The main revision relates to CPU-attached DRAM (SOCAMM), with expectations reduced to ~27TB per rack from an initial ~55TB. Despite the lower configuration, total DRAM capacity would still be roughly 50% higher than Blackwell GB300 NVL72 (~18TB).
Rubin NVL72 rack server spec comparison original spec vs street assumption

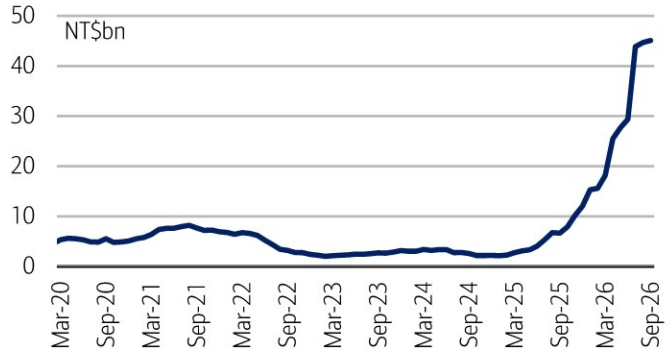
Parameter	GB300 NVL72	Rubin NVL72 (Old NVIDIA spec)	Rubin NVL72 (Street speculation)
System type	Giant superchip	Giant superchip	Giant superchip
Use case	Training & inference	Training & inference	Training & inference
Launch	2H25 (exp)	2H26 (exp)	2H26 (exp)
GPU count	72 Blackwell GPUs	72 Rubin GPUs	72 Rubin GPUs
CPU count	36 Grace CPUs	36 Vera CPUs	36 Vera CPUs
HBM (per GPU)	288GB HBM3e	288GB HBM4	288GB HBM4
Total HBM per rack	~20TB	~20–20.7TB	~20–20.7TB *(unchanged)*
DRAM per CPU	~500GB LPDDR5X (implied)	1.5TB LPDDR5X	~750GB LPDDR5X
Total DRAM per rack	~18TB	~54–55TB	~27–28TB
DRAM vs GB300	Base	~3x higher (initial plan)	~50% higher (revised)

Source: Company, media reports, BofA Global Research

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Taiwan sales and Korea exports

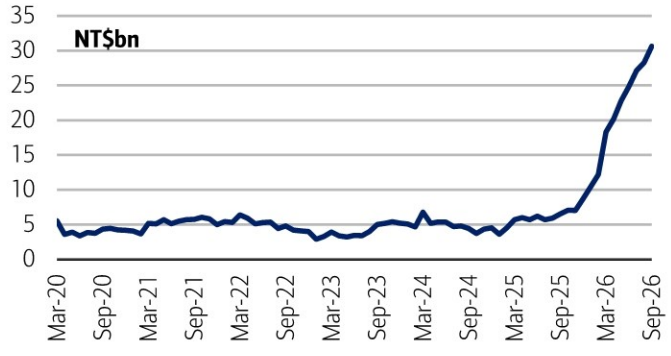
Exhibit 7: Exceptionally strong sales growth continued in 3Q26 (NT$134bn; up 62% QoQ and 612% YoY)
Nanya Tech – Monthly sales trend



Source: Company

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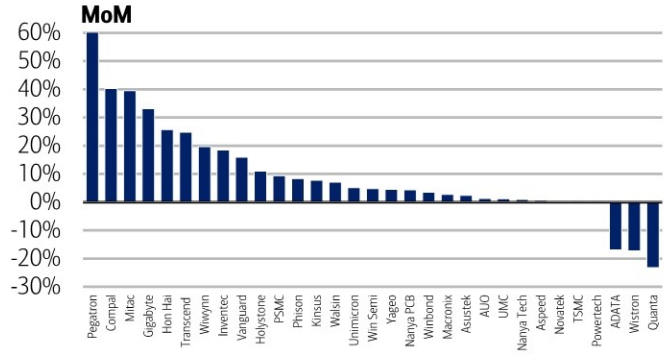
Exhibit 8: Also robust growth see in 3Q26 (NT$86bn; up 27% QoQ and 375% YoY)
Phison – Monthly sales trend



Source: Company

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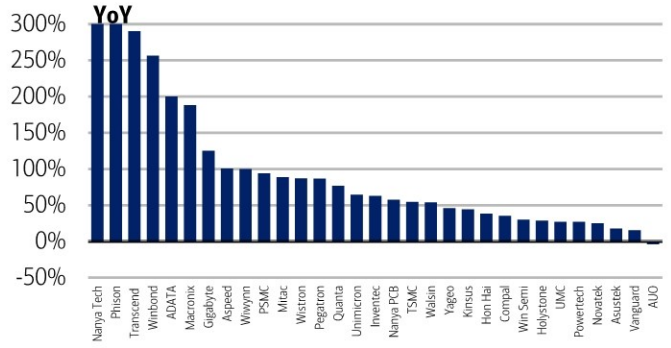
Exhibit 9: Broadly strong MoM recovery with notable growth from Pegatron (+143%), Hon Hai (+26%), Phison (+8%), Wiwynn (+20%)
Taiwan tech companies' MoM monthly sales (Sep-2026)



***Pegatron up 143%; axis scaled to show more relative comparison**
Source: Companies

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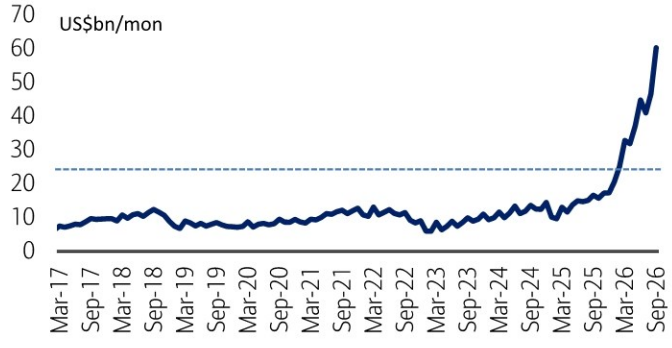
Exhibit 10: Robust YoY rebound across the board – TSMC up 55%, Nanya Tech up 577%, Phison up 370%, Unimicron up 65%, Quanta up 77%
Taiwan tech companies' YoY monthly sales (Sep-2026)



Source: Companies

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Exhibit 10: Significant MoM growth in Sept (+29%), resulting in a new record-high in Sep (US$60bn), which is around 4x higher than month-average in 2025; mostly driven by HBM4, DDR5 and rush order
Korea semis exports - US$bn/month



Source: MoTIR

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Exhibit 12: Robust YoY growth in Sept (+263%) and strong trend should likely continue throughout 4Q26
Korea semis exports - YoY change in monthly US$bn



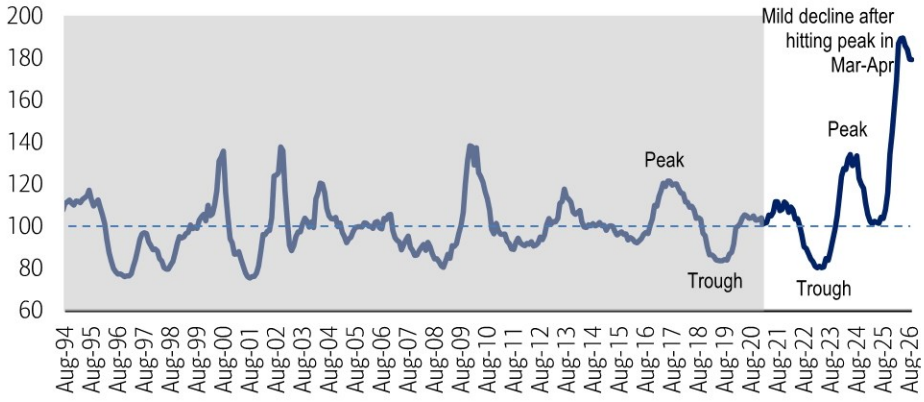
Source: MoTIR

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BofA Memory Indicator

Exhibit 12: The BofA Memory Indicator still presents super-cycle – much higher than 2017-18 peak level; of course, it slightly declined to 179 in Aug-26 (due to lower YoY growth) after hitting peak of 190 in Mar/Apr-26, driven by exceptionally strong DRAM/NAND spot pricing, rising ASPs and billings, along with Korea's ~200%+ export growth.

BofA Memory Indicator – back to upturn level since Oct-2025 and hit highest peak in Mar/Apr-26 (back-tested)



Note: Our indicator had previously been capped at ~140, but the recent unprecedented surge—driven by memory spot prices, ASPs, and billings—has led us to raise the ceiling (up to 240 levels) to reflect a more accurate relative comparison. This exceptional strength is further validated by strong earnings from memory chipmakers.

Source: DRAMeXchange, WSTS, MoTIR Korea, BofA Global Research

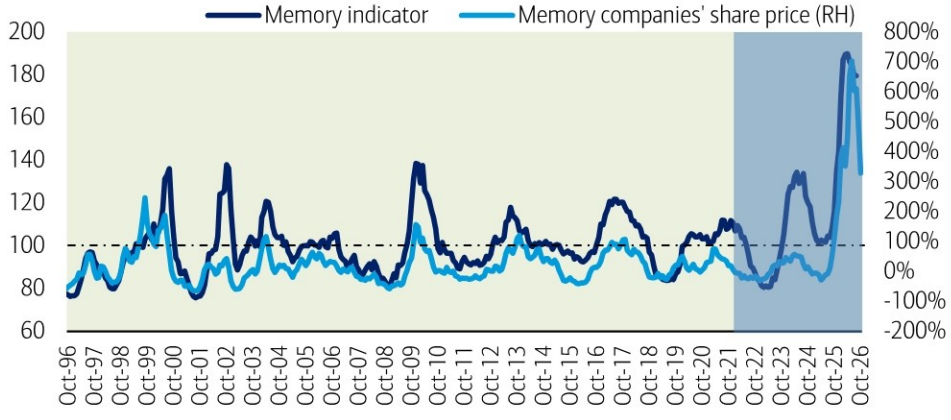
*The shaded area represents back-tested results from January 1991 to March 2021. The unshaded area represents actual performance since April 2021. This performance is back-tested up to March-2021, and does not represent the actual performance of any account or fund. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

Disclaimer: The BofA Memory Indicator is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This indicator was not created to act as a benchmark. For methodology, see the 5 Aug 2024 Global Memory Tech report.

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Exhibit 13: Sharp correction in memory companies' stock prices in Jul-Aug due to memory peak-out concerns, global uncertainty and AI concerns, but steady recovery seen in Sep-early Oct

BofA Memory Indicator is highly correlated with stock performance (back-tested)



Note: Memory companies share price is average of Samsung, Hynix, Micron, and Nanya share price YoY changes

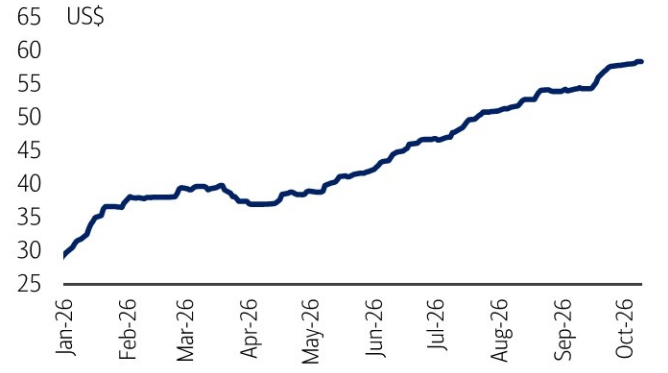
Source: Bloomberg, BofA Global Research

The light green shaded area represents back-tested results from January 1991 to March 2021. The blue shaded area represents actual data since April 2021. This performance is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. For methodology, see the 5 Aug 2024 Global Memory Tech report.

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Key 6 memory price charts

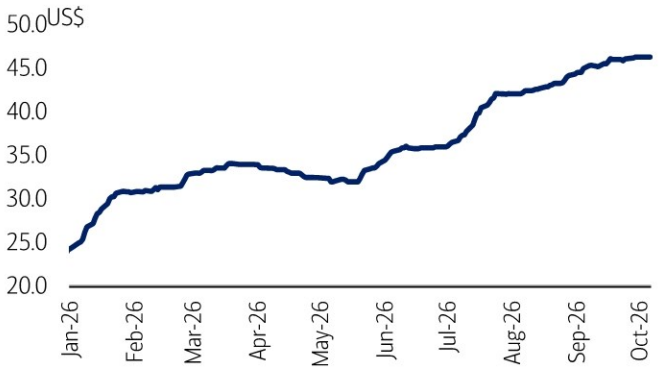
Exhibit 15: DDR5 spot prices increased slightly this week to a fresh all-time high of $58, with pricing now up nearly 100% YTD, further extending the robust rally that started in 4Q25
16Gb DDR5 spot price – daily, Jan '26 - Oct '26



Source: DRAMeXchange

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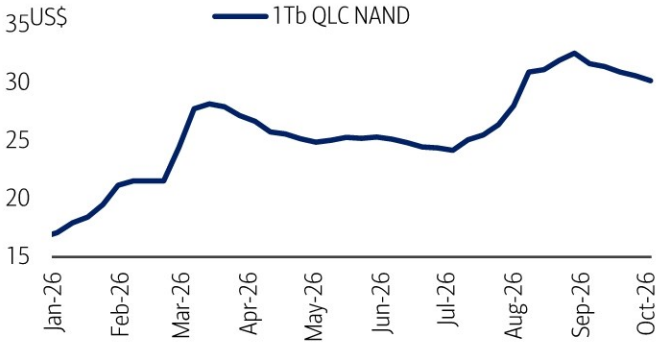
Exhibit 15: 8Gb DDR4 spot prices remained stable at around $45, with no signs of a downturn yet
8Gb DDR4 spot price trend, Jan '26 - Oct '26



Source: DRAMeXchange

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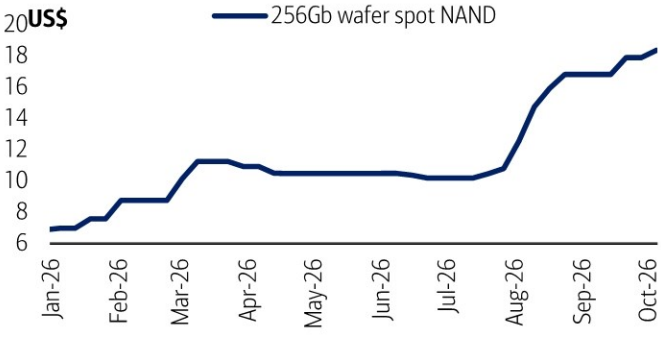
Exhibit 16: NAND spot prices softened through Sep and early-Oct after recovering from July through August.
1Tb NAND wafer spot price – weekly, Jan '26 - Oct '26



Source: DRAMeXchange

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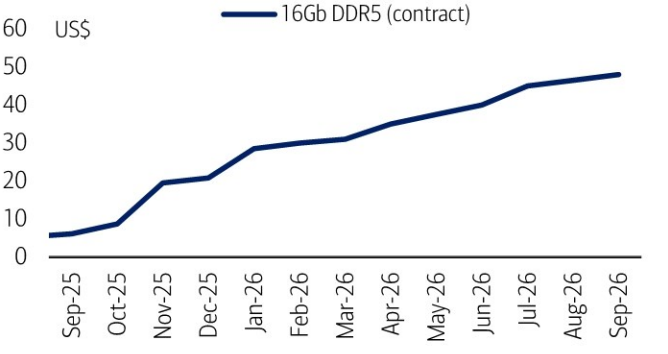
Exhibit 17: In contrast, low-density NAND wafer contract price rebounded sharply through Aug-Sep and early-Oct as well
256Gb NAND wafer spot price – weekly, Jan '26 - Oct '26



Source: DRAMeXchange

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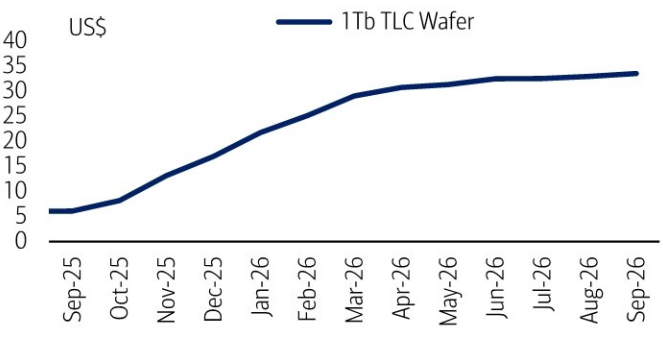
Exhibit 18: Sept contract price up further MoM (+3%); no sign for price cut even after 500%+ rally YoY
16Gb DDR5 contract price trend, Sep '25- Sep '26



Source: TrendForce

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Exhibit 19: Sept contract price up (+2% MoM) despite muted spot or the sharp rally in 4Q25-1Q26
1Tb NAND wafer contract price trend, Sep '25- Sep '26

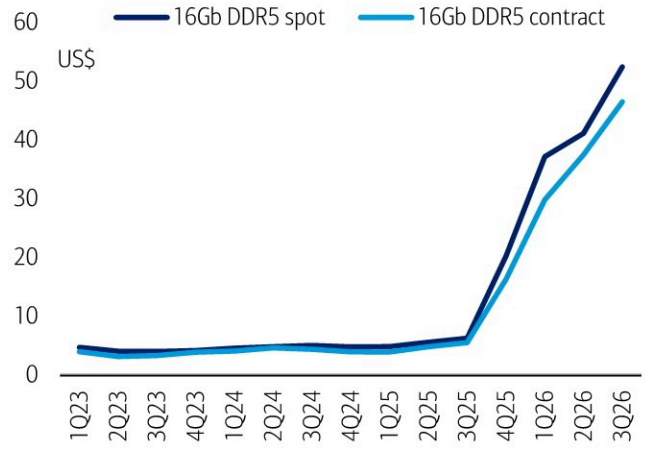


Source: TrendForce

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Quarterly average price trend

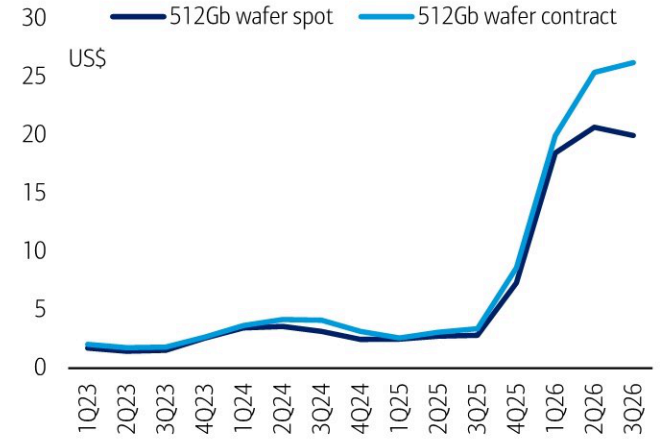
Exhibit 21: DRAM spot and contract prices reached record highs of ~$48–55, with gains moderating in 2Q–3Q26 after the sharp rally seen in 4Q25–1Q26.
DRAM spot and contract price - quarterly average trend



Source: DRAMeXchange, TrendForce

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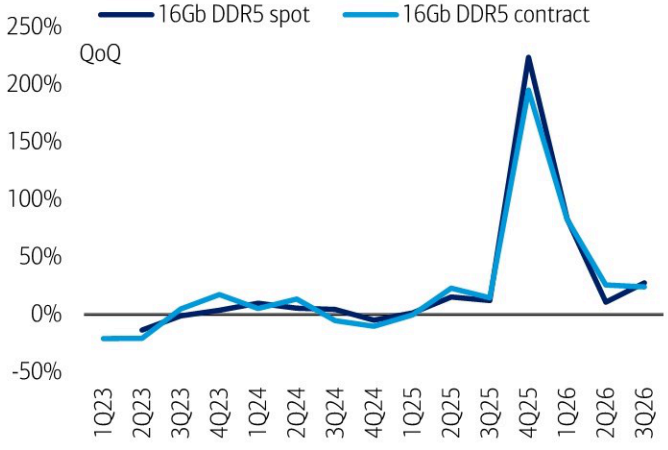
Exhibit 22: NAND wafer contract prices have surged significantly ahead of spot prices, with now at record-high levels; spot slightly corrected
NAND wafer spot and contract price - quarterly average trend



Source: DRAMeXchange, TrendForce

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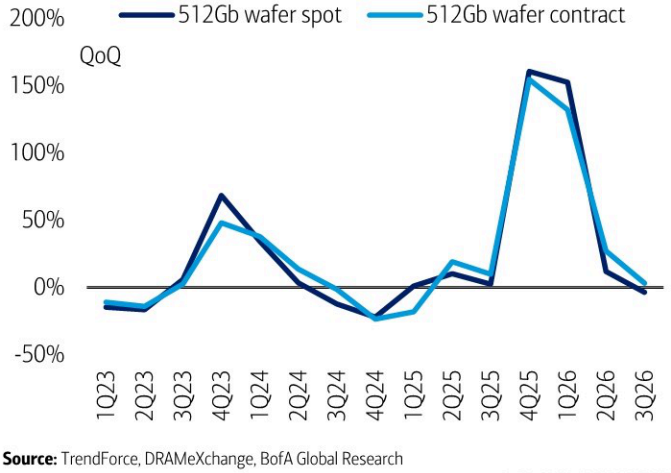
Exhibit 22: Momentum remained positive at +20-30% QoQ in 3Q26, improving from 2Q26 levels but well below the exceptional rally seen in 4Q25–1Q26.
PC DRAM spot / contract prices (quarter-avg) – QoQ change



Source: TrendForce, DRAMeXchange, BofA Global Research

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Exhibit 23: Prices were broadly flat in 3Q26, versus +15-30% QoQ growth in 2Q26, following the sharp ~150% rallies seen in both 4Q25 and 1Q26.
NAND spot / contract prices (quarter-avg) – QoQ change



Source: TrendForce, DRAMeXchange, BofA Global Research

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Memory spot price long term trend

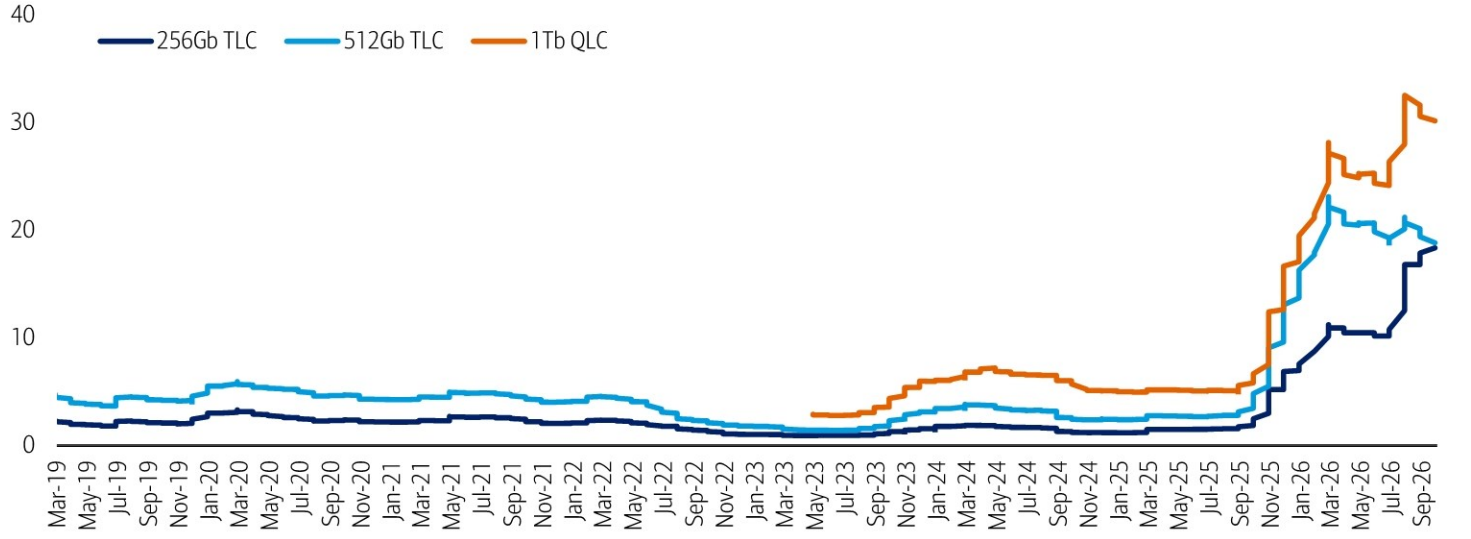
Exhibit 24: DRAM spot prices rebounded gradually through June/July/Aug/Sep, to hit all-time high levels. Prices have reached multi-decade highs, with 16Gb DDR5 (for PC) at ~$58 and DDR4 at ~$85, driven by supply reallocation toward HBM and server DRAM—well above the prior ~$10 peak in Oct-17
DRAM spot price – long-term trend (2000-2026)



Source: DRAMeXchange

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Exhibit 26: NAND wafer prices (512Gb and 1Tb) softened in September and early-Oct after a sharp August rebound; notably prices remained flat to slightly lower through 2Q26, following the exceptionally strong rally across 4Q25 and 1Q26. However, 256Gb NAND wafer price recovered in Sep-26 and early-Oct
NAND wafer spot price – long-term trend (2019-2026)

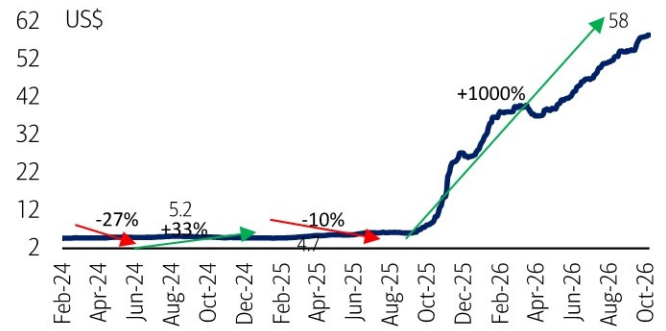


Source: DRAMeXchange

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DRAM spot and contract price trend

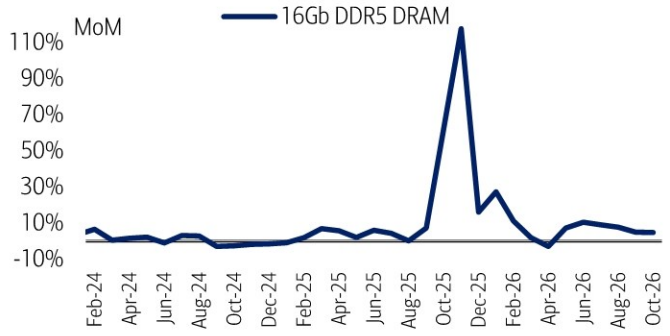
Exhibit 27: Price recovery extended from May to Sep and early-Oct, reaching a record high of $58, driven by sharp gains in Oct (+70%), Nov (+60%), and Jan (+25%), before moderating during Feb–Apr.
16Gb DDR5 spot price – daily, Feb '24 - Oct '26



Source: DRAMeXchange

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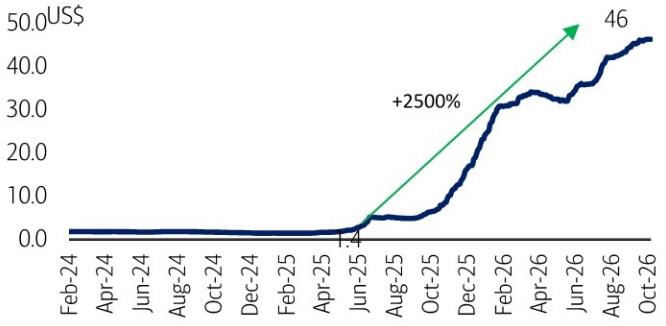
Exhibit 27: Still up 4-5% each in Sep/early-Oct following a modest uptick observed through May/Jun/Jul/Aug (+7-10%)
16Gb DDR5 spot month-average price – MoM change, Feb '24 - Oct '26



Source: DRAMeXchange

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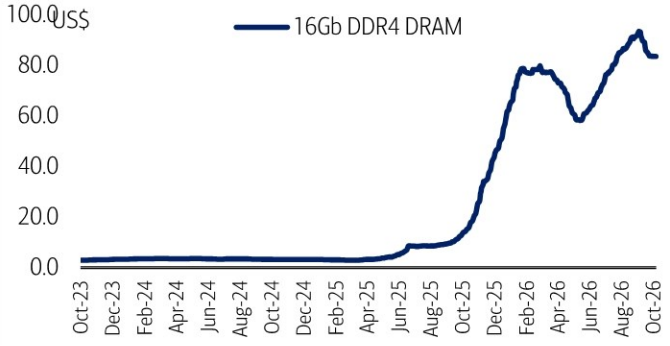
Exhibit 28: 8Gb DDR4 spot prices stable at $45 level, still well above the prior ~$10 peak in October 2017, driven by ongoing supply cuts from major vendors
8Gb DDR4 spot price trend, Feb '24 - Oct '26



Source: DRAMeXchange

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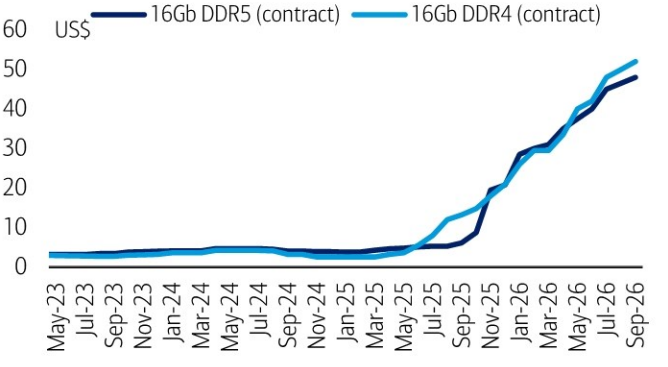
Exhibit 29: Remained flat in early-Oct, but price down 10% after hitting peak in early-Sep, price still ~2000% above the Oct-25 low (~$3)
16Gb DDR4 spot price trend, Oct '23 - Oct '26



Source: DRAMeXchange

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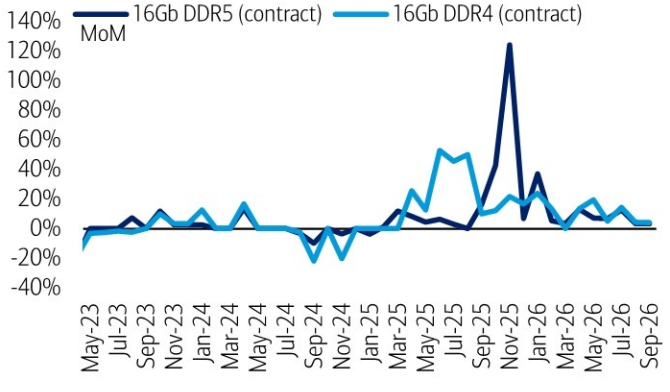
Exhibit 30: DDR4 and DDR5 (16Gb) contract prices are similar at US$50 level – DDR5 price premium no longer exists due to DDR4 shortage
16Gb DDR5 vs 16Gb DDR4 contract price trend, May '23- Sep '26



Source: TrendForce

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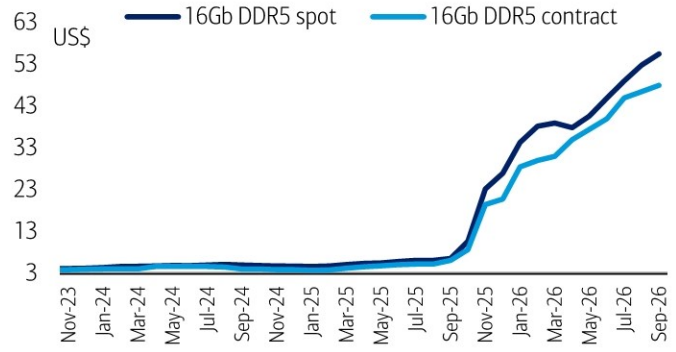
Exhibit 31: DDR5 and DDR4 contract prices up only low-single in Aug/Sep vs +10-15% MoM in July; price strong through 2H25-1H26
16Gb DDR5 vs 16Gb DDR4 contract price change - MoM, May '23- Sep'26



Source: TrendForce

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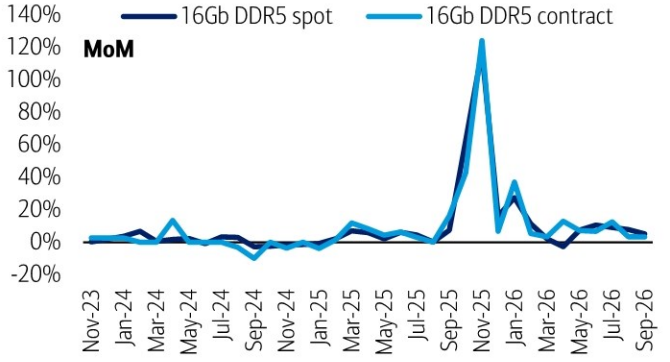
Exhibit 32: 16Gb DDR5 spot and contract prices are in the range of US$50-55 vs historical range of US$3-5
16Gb DDR5 spot vs contract price trend (US$), Nov '23-Sep '26



Source: DRAMeXchange, TrendForce

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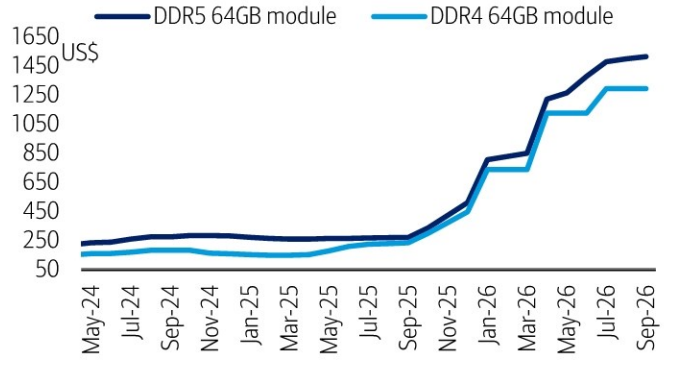
Exhibit 33: Sep price broadly flat following Jun-Aug recovery; prices had witnessed a sharp rally in Oct–Dec'25
16Gb DDR5 spot vs contract price trend – MoM change, Nov '23-Sep '26



Source: DRAMeXchange, TrendForce

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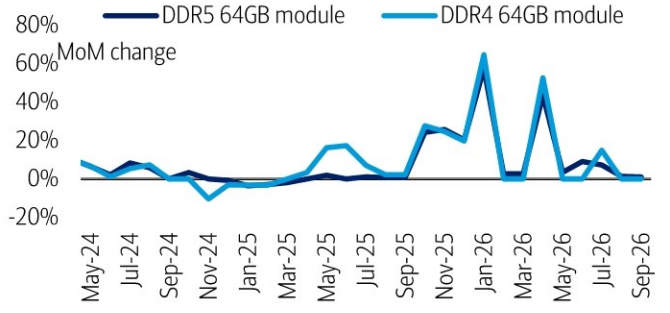
Exhibit 34: Current price of 64GB DDR4/DDR5 modules hit all-time high of more than US$1,000 level (DDR5: US$1,515, DDR4: US$1,295)
Server DRAM contract price trend – DDR5 vs DDR4 modules, May'24-Sep'26



Source: TrendForce

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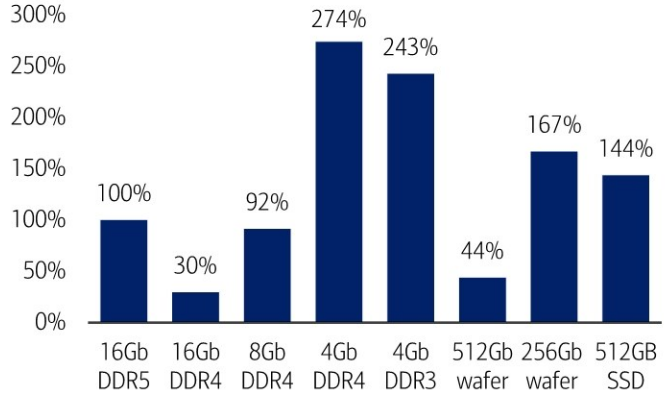
Exhibit 35: DDR5/DDR4 server contract prices remained broadly flat in Aug/Sep after recovering +7-15% MoM in July, remained stable in May/Jun-26
MoM change of server DRAM contract prices, May'24-Sep'26



Source: TrendForce

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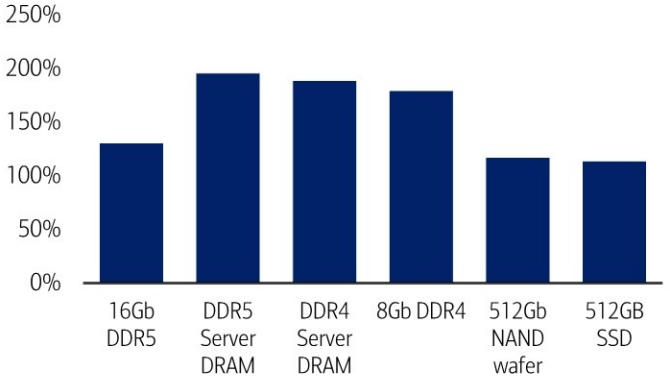
Exhibit 37: DRAM and NAND spot price overall up 100%+ YTD,
YTD change of DRAM and NAND spot price



Source: DRAMeXchange, TrendForce, BofA Global Research

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Exhibit 38: DRAM and NAND contract price overall up 100-200%YTD,
YTD change of DRAM and NAND contract price

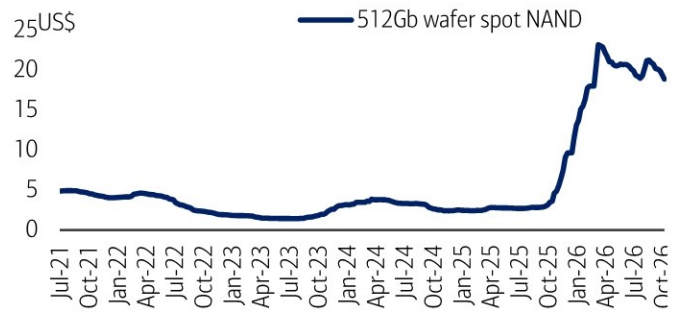


Source: DRAMeXchange, TrendForce, BofA Global Research

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NAND spot and contract price trend

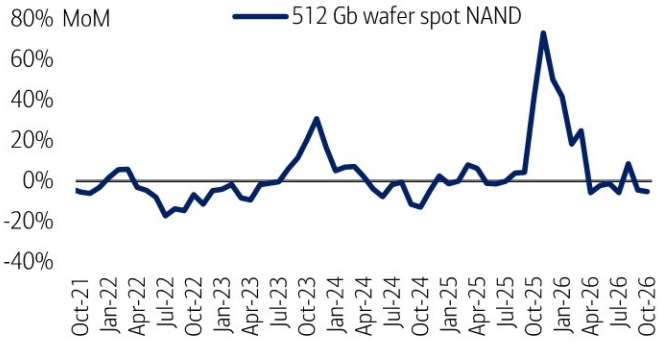
Exhibit 38: NAND spot prices softened in Sept and early-Oct, following a sharp recovery in Aug; remained largely flat to slightly weaker through 2Q26; prices are still up 40-50% YTD and nearly 8x above the February 2025 trough
512Gb NAND wafer spot price – weekly, Jul'21 - Oct'26



Source: DRAMeXchange

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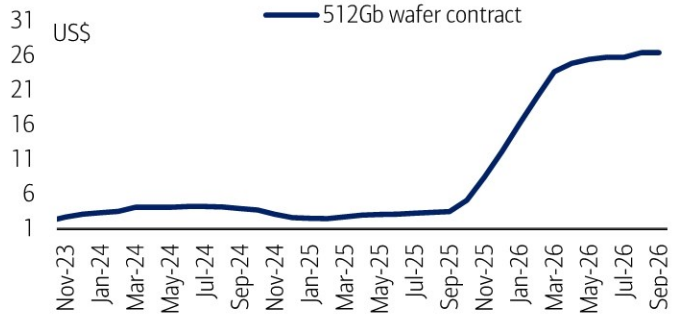
Exhibit 39: Down 4-5% in Sep and early-Oct following a sharp recovery in Aug (+8%). Remained subdued through Apr-Jul (down 2-5%) following strong 4Q25 (+150%) and 1Q26 (+80%) rally.
512Gb NAND wafer spot average – MoM change, Oct'21 - Oct'26



Source: DRAMeXchange

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Exhibit 40: Current contract price at ~$27, around 10x vs Feb-25 bottom of $2.5; prices significantly up in 4Q25/1H26 and remained broadly stable thereafter
NAND wafer contract price trend, Nov '23-Sep '26



Source: TrendForce, DRAMeXchange, BofA Global Research

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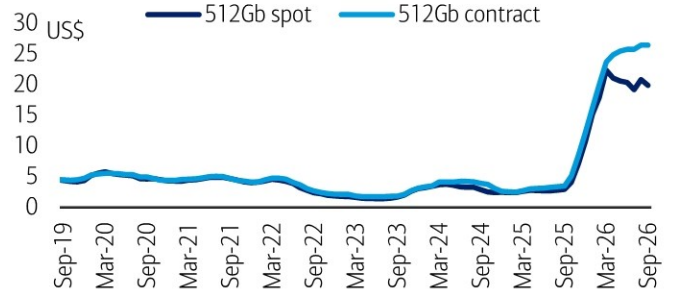
Exhibit 41: Only low-single digit recovery observed through Apr-Sep following Jan/Feb/Mar'26 rally (up 20-30% MoM) and Oct/Nov/Dec upturn (up 40-60% MoM)
MoM change of NAND contract price (512Gb wafer), Nov '23-Sep '26



Source: DRAMeXchange, TrendForce, BofA Global Research

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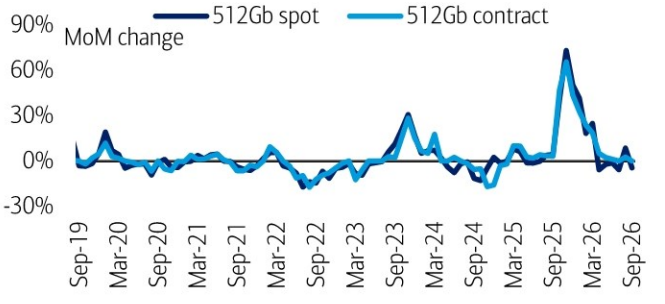
Exhibit 42: Current NAND contract price still near record-high level vs modest correction for spot; that said, the contract prices are still a few times higher than 2025 summer level
512Gb NAND wafer spot vs contract price trend (US$), Sep'19 - Sep'26



Source: DRAMeXchange, TrendForce

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Exhibit 43: NAND contract price flat in Sep vs spot fell 4% MoM post Aug recovery and normalizing in Apr-Jul; strong rally seen in Oct'25 – Dec'25 (up 40-50% per month) and Jan-Mar'26 (20-30% per month)
512Gb NAND spot vs contract price trend – MoM change, Sep'19 - Sep'26

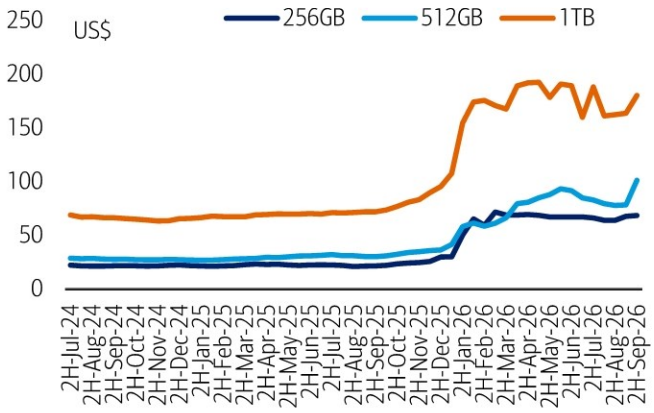


Source: DRAMeXchange, TrendForce

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SSD and panel price trend

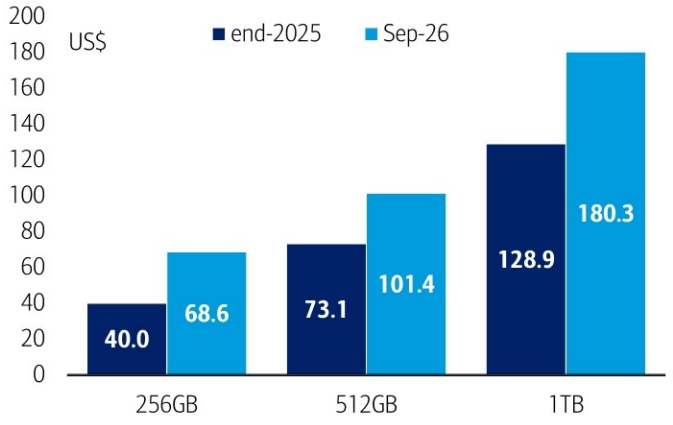
Exhibit 44: Sep SSD prices sharply up vs Aug correction; strong rally witnessed in 1H26 following 2025 gradual recovery
Client SSD price trend – mostly for PC (not server), Jun'24 - Sep'26



Note: SSD prices are as of 14 Sep 2026, reported by DRAMeXchange. TB = terabyte.
Source: DRAMeXchange

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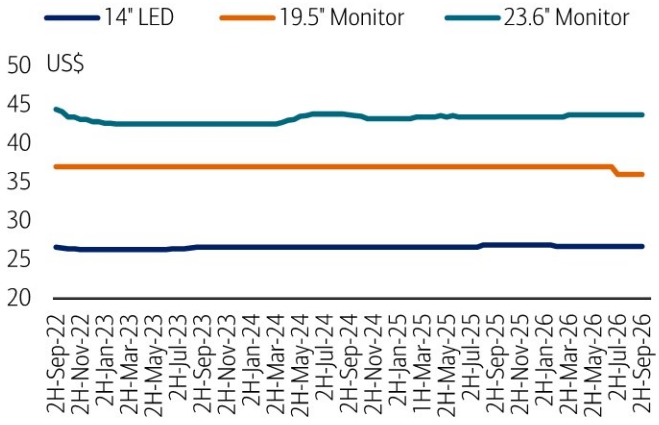
Exhibit 45: Sep prices have more than doubled compared to end-2025 levels, while the 2025 increase was more modest at around 35–40%
Client SSD (for PC) price comparison – current vs. end-2025



Note: SSD prices are as of 14 Sep 2026, reported by DRAMeXchange
Source: DRAMeXchange

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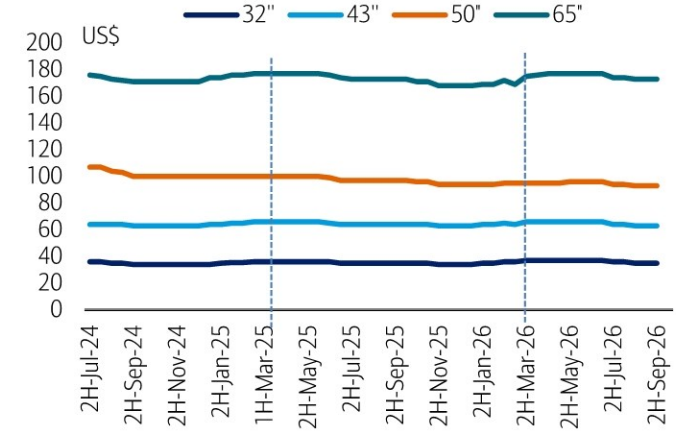
Exhibit 46: Broadly stable YTD – more China dominant supply vs minimal from Korea
LCD IT panel price trend – US$/panel, Sep '22-Sep '26



Note: Panel price update from WitsView as of 21 Aug 2026
Source: WitsView

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Exhibit 47: Prices slightly up through 1H26 vs slightly down in Jul-Aug and flat in Sep; prices remained broadly flat through 2025
LCD TV panel price trend – US$/panel, Jul '24-Sep '26



Note: Panel price update from WitsView as of 21 Aug 2026
Source: WitsView

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Valuation and stock performance

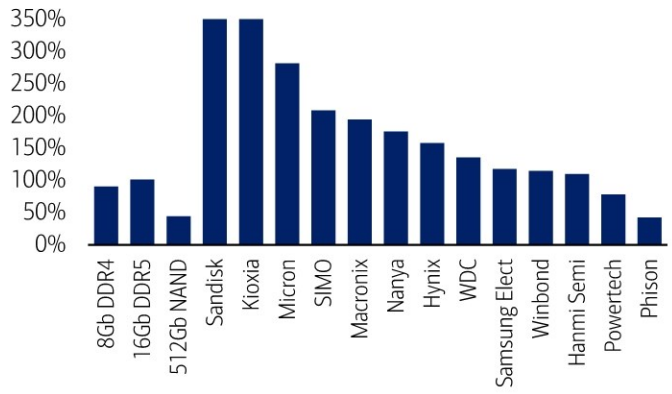
Exhibit 48: Memory stocks have softened in October following a moderate recovery through Aug-Sep. However, fundamentals remain firmly intact, supported by robust HBM demand, tight memory supply conditions, and continued expansion in hyperscaler AI CapEx. Despite the recent pullback, most DRAM names continue to trade at relatively undemanding valuations of roughly 5-7x 2026-27 earnings, well below broader AI semiconductor peers
Valuation comparison among memory and semiconductor supply chain stocks

	Ticker	Rating	Price	Mcap	P/E			P/Book			EV/EBITDA		EV/Sales		ROE			Div. yield	
			(Local)	($bn)	FY26E	FY27E	FY28E	FY26E	FY27E	FY28E	FY27E	FY28E	FY27E	FY28E	FY26E	FY27E	FY28E	FY27E	FY28E
Memory/DRAM																			
SK Hynix	HXSCF	C-1-7	1,723,000	916.2	4.9	4.8	4.7	3.2	2.1	1.6	3.0	2.9	2.4	2.2	98.2%	52.9%	38.1%	4.4%	5.5%
Samsung	SSNLF	C-1-7	268,500	1,142.9	6.2	4.6	4.7	2.7	1.8	1.4	2.9	2.9	1.8	1.7	52.4%	46.1%	32.9%	4.0%	4.1%
Micron	MU	C-1-7	1,088.00	1,228.8	14.4	6.3	5.5	8.9	4.5	3.0	4.9	4.4	4.1	3.6	89.7%	95.8%	68.8%	0.1%	0.1%
Nanya	NNYAF	B-1-7	532.00	57.7	7.5	5.5	6.8	3.8	2.5	2.1	3.3	4.1	2.5	2.6	72.7%	54.5%	33.1%	7.3%	7.3%
Memory/NAND																			
Kioxia	XIYUF	C-1-9	17,900	186.3	5.6	4.2	3.4	5.0	2.3	1.4	2.6	2.1	2.2	1.8	144.4%	74.2%	50.5%	0.0%	0.0%
Sandisk	SNDK	C-1-9	1,692.42	244.6	n/a	7.2	6.8	15.9	4.6	2.7	5.0	4.6	4.2	3.9	88.0%	103.2%	52.1%	0.0%	0.0%
Western Digital	WDC	C-1-7	405.42	151.8	n/a	21.1	12.8	16.7	9.7	5.6	14.2	9.3	8.0	5.3	54.9%	61.3%	58.5%	0.1%	0.1%
SIMO	SIMO	C-1-7	285.78	9.7	24.5	26.8	21.7	7.9	6.4	5.2	18.7	15.2	4.5	3.9	39.1%	27.2%	27.4%	1.0%	1.1%
Phison	PISNF	C-1-8	2,060.00	14.3	5.7	9.7	15.2	3.4	2.8	2.6	6.1	9.5	1.4	1.6	92.3%	37.0%	20.7%	5.6%	0.0%
US/Taiwan semis																			
NVIDIA	NVDA	C-1-7	237.47	5,723.0	26.1	15.1	10.2	19.8	11.3	7.1	12.9	9.1	8.6	6.2	96.8%	90.7%	77.6%	0.5%	0.6%
AMD	AMD	C-1-9	645.86	1,054.4	84.8	39.7	26.2	14.1	10.3	7.3	31.1	20.5	11.5	8.0	18.3%	31.0%	34.8%	0.0%	0.0%
Broadcom	AVGO	C-1-7	376.51	1,797.3	32.5	20.2	12.1	16.4	10.4	6.2	15.8	9.5	10.6	6.3	60.0%	65.1%	66.3%	0.8%	0.8%
Intel	INTC	C-1-9	113.12	597.8	77.0	56.3	38.7	4.6	4.2	3.8	19.9	15.6	7.9	6.8	5.9%	7.9%	10.6%	0.0%	0.0%
Arm	ARM	C-2-9	294.37	314.4	132.6	100.1	75.7	29.0	21.4	15.7	75.8	56.6	37.6	29.1	25.1%	25.0%	24.5%	0.0%	0.0%
Qualcomm	QCOM	C-3-7	177.12	189.1	16.9	16.7	14.3	6.4	6.1	5.2	13.5	11.8	4.4	3.9	44.4%	36.9%	38.0%	2.0%	2.0%
TSMC	TSMWF	B-1-7	2,550	2,078.6	23.1	16.4	13.6	8.4	5.8	4.2	11.0	9.3	8.2	6.9	43.0%	42.0%	36.1%	0.9%	0.9%
MediaTek	MDTKF	C-1-7	4,690	236.6	68.4	28.5	11.8	17.3	11.5	6.4	22.7	9.7	5.7	2.9	26.1%	48.1%	69.3%	2.8%	6.8%
Equipment																			
ASML	ASMLF	B-1-7	1,610.20	699.6	38.8	27.5	18.9	22.7	17.1	11.9	21.9	15.4	10.4	7.9	68.0%	70.6%	73.6%	0.9%	1.2%
AMAT	AMAT	C-1-7	520.65	413.2	40.8	28.1	22.2	14.7	10.3	7.4	24.0	19.1	8.9	7.4	41.9%	42.9%	38.2%	0.5%	0.5%
Lam	LRCX	C-1-7	329.51	412.4	56.6	35.7	28.0	33.0	18.1	13.2	29.0	24.0	12.0	9.8	65.7%	65.5%	54.0%	0.4%	0.4%
TEL	TOELF	C-1-7	12,190	180.4	35.4	25.7	20.3	10.7	8.6	7.0	17.9	14.4	6.7	5.4	33.6%	37.3%	38.1%	2.0%	2.5%
Hanmi Semi	HNSIF	C-1-7	264,500	19.0	78.1	43.7	24.8	26.9	17.9	11.3	32.5	18.3	17.8	10.7	39.4%	48.9%	55.7%	0.8%	1.2%
BESI	BESVF	C-2-7	175.75	16.0	37.8	25.4	18.2	17.8	14.3	11.8	19.9	14.3	10.0	7.6	61.7%	63.2%	71.7%	3.9%	5.6%
ASMPT	ASMVF	C-1-7	163.80	8.8	38.7	24.7	17.4	3.8	3.5	3.1	15.1	11.2	2.4	1.8	10.1%	14.7%	18.7%	1.6%	2.0%

Source: Company reports, BofA Global Research estimates; Mcap = market capitalization, ROE = return on equity, Div = dividend. Price as of latest close.

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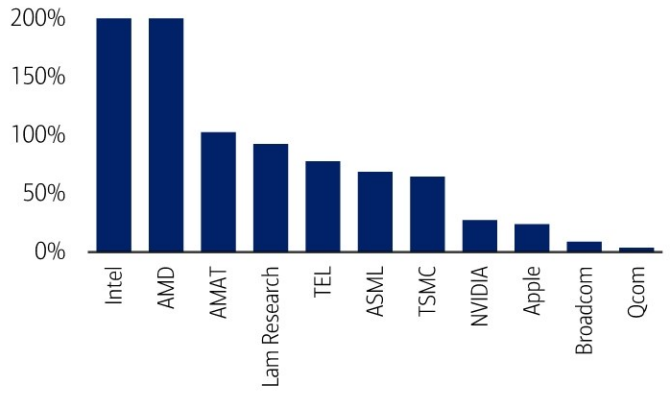
Exhibit 50: Memory stocks were mixed this week, with Micron rallying following strong earnings while Samsung Electronics and SK Hynix traded more cautiously; despite the recent divergence, share prices remain well above end-2025 levels.
Memory companies – 2026 YTD stock performance comparison



SanDisk and Kioxia shows above 400% YTD return
Source: Bloomberg, DRAMeXchange

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Exhibit 51: CPU names such as Intel and AMD outperforming other US big tech names such as NVIDIA/Apple/QCOM
Global major tech companies – 2026 YTD stock performance comparison



Source: Bloomberg

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Glossary

ASP: Average selling price
CPU: Central processing unit
DDR4/5: 4th/5th gen double-data rate DRAM
DRAM: Dynamic random-access memory
eSSD: Enterprise solid-state drive
GB: Gigabyte
GPU: Graphics processing unit
HBM: High bandwidth memory
HBM4: 6th gen of HBM
LPDDR5: Low-power DDR5
NAND: Not-AND memory
OPM: Operating profit margin
SOCAMM: Small-outline compression attached memory module
Tb: Terabit

Stocks mentioned

Prices and ratings for stocks mentioned in this report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
SSNLF	005930 KS	Samsung common	W 268500	C-1-7
SSNHZ	SMSN LI	Samsung Elec -G	US$ 4826	B-1-7
SSNNF	005935 KS	Samsung preferred	W 198000	C-1-7

Source: BofA Global Research

Price objective basis & risk

Samsung Electronics (SSNLF / SSNHZ)
Our PO of W500,000 is based on 9x 2027-28E P/E. This fair P/E of 9x is derived from upper band of previous peak cycle (7-10x, long-term historical average: low-teens) and bottom of proven foundry peer's 2009-2025 P/E band (10-20x), to be conservative (SEC's low EPS growth after 2026 upturn). Our GDR PO of US$9,300 is automatically calculated at an FX rate of near-W1.3k/USD.

Downside risks are mostly related to US Big Tech' unexpected capex cut, excess supply

of global memory following 2026-27 capex increase, potential competition with China chipmakers, and market-share loss to Asia/US peers.

Upside risks could come from stronger AI chip demand (from US Big Tech), market-share gains at the expense of Asia/US and even China competitors, more LTAs (long-term agreements) with OEMs/hyperscalers even for 2030, and significantly increasing shareholder returns using record-high FCF generation.

Samsung Electronics Preferred (SSNNF)
Samsung Electronics (SEC) has two types of shares, common and preferred. Our PO of W340,000 for the preferred shares is based on a 32% fair discount to the common shares, given no voting rights. However, the dividend amount is almost the same for both types. This offers a higher yield for the preferred shares vs the common. The discount ratio (preferred share price vs common) was c.10% in 2021-22, but it rose to near-20% in 2024-25 (undervalued vs the common) and 30%+ in 1H26. Having SEC's preferred shares also suggests a direct exposure to memory super-cycle given SEC's global leadership in DRAM, HBM and NAND.

Common share PO of W500,000 is based on 9x 2027-28E P/E. This fair P/E of 9x is derived from upper band of previous peak cycle (7-10x, long-term historical average: low-teens) and bottom of proven foundry peer's 2009-2025 P/E band (10-20x), to be conservative (SEC's low EPS growth after 2026 upturn).

Downside risks are mostly related to US Big Tech' unexpected capex cut, excess supply of global memory following 2026-27 capex increase, potential competition with China chipmakers, and market-share loss to Asia/US peers.

Upside risks could come from stronger AI chip demand (from US Big Tech), market-share gains at the expense of Asia/US and even China competitors, more LTAs (long-term agreements) with OEMs/hyperscalers even for 2030, and significantly increasing shareholder returns using record-high FCF generation.

Analyst Certification

We, Simon Woo, CFA and Matt Shin, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Special Disclosures

BofA Securities is currently acting as financial advisor to One Investment Management Ltd in connection with the proposed acquisition with PayPay Corporation, a subsidiary of SoftBank Group Corp., of shares of T&D Financial Life Insurance Company, a consolidated subsidiary of T&D Holdings, Inc., which was announced on June 4, 2026.

BofA Securities is currently acting as joint financial advisor to ABB Ltd in connection with the sale of its Robotics Division to SoftBank Group Corp, which was announced on October 8, 2025.

APR - Semiconductor Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Alchip	ALCPF	3661 TT	Haas Liu
	All Ring	XNQNF	6187 TT	Haas Liu
	AMEC	XRTOF	688012 CH	Dai Shen
	ASE Technology Holding	XSRIF	3711 TT	Haas Liu
	ASE Technology Holding -ADR	ASX	ASX US	Haas Liu
	ASMPT	ASMVF	522 HK	Simon Woo, CFA
	Aspeed	XLKMF	5274 TT	Mike Yang
	Chroma ATE	CRMJF	2360 TT	Haas Liu
	Doosan Corp	DOSAF	000150 KS	Simon Woo, CFA
	eMemory	XYLWF	3529 TT	Mike Yang
	GigaDevice	XGXIF	603986 CH	Daley Li, CFA
	Global Unichip Corp.	GBUHF	3443 TT	Haas Liu
	Grand Process Technology Corp	XZOWF	3131 TT	Haas Liu
	Hanmi Semiconductor	HNSIF	042700 KS	Simon Woo, CFA
	Hon Precision	XXPIF	7769 TT	Haas Liu
	Horizon Robotics	HRZRF	9660 HK	Daley Li, CFA
	Iluvatar CoreX	XSIBF	9903 HK	Daley Li, CFA
	Ingenic	XISCF	300223 CH	Dai Shen
	InnoScience Technology	XSCHF	2577 HK	Daley Li, CFA
	JCET Group Co Ltd	XJIEF	600584 CH	Dai Shen
	King Yuan Electronics Corp.	KYUFF	2449 TT	Haas Liu
	Kinik	KIKCF	1560 TT	Haas Liu
	Macronix International	MXICF	2337 TT	Dai Shen
	MediaTek	MDTKF	2454 TT	Haas Liu
	Montage Technology	XRDFF	688008 CH	Daley Li, CFA
	MPI Corporation	XMJCF	6223 TT	Mike Yang
	Nanya Technology	NNYAF	2408 TT	Simon Woo, CFA
	NCE Power	XVFFF	605111 CH	Daley Li, CFA
	OmniVision	XXHQF	603501 CH	Dai Shen
	Phison Electronics	PISNF	8299 TT	Simon Woo, CFA
	Powerchip Semiconductor Manufacturing Co	XCHPF	6770 TT	Haas Liu
	Powertech Technology	PWOGF	6239 TT	Simon Woo, CFA
	Rockchip	XRPXF	603893 CH	Daley Li, CFA
	Samsung C&T	XCDTF	028260 KS	Simon Woo, CFA
	Samsung Elec -G	SSNHZ	SMSN LI	Simon Woo, CFA
	Samsung Electronics	SSNLF	005930 KS	Simon Woo, CFA
	Samsung Electronics Preferred	SSNNF	005935 KS	Simon Woo, CFA
	Silergy Corp.	SLEGF	6415 TT	Mike Yang
	Silicon Motion	SIMO	SIMO US	Simon Woo, CFA
	SK Hynix	HXSCF	000660 KS	Simon Woo, CFA
	SK Hynix ADR	SKHY	SKHY US	Simon Woo, CFA
	SK Square	SKSQF	402340 KS	Simon Woo, CFA
	Taiwan Semiconductor Manufacturing Co.	TSM	TSM US	Haas Liu
	Taiwan Semiconductor Manufacturing Co.	TSMWF	2330 TT	Haas Liu
	Vanguard International Semiconductor Co	VGILF	5347 TT	Haas Liu
	Winbond Electronics	WBEKF	2344 TT	Dai Shen
	WinWay Technology	XWCLF	6515 TT	Mike Yang
	WT Microelectronics	XZOPF	3036 TT	Mike Yang
NEUTRAL				
	ASMedia Technology Inc.	XZSFF	5269 TT	Mike Yang
	Black Sesame Intl Holding	BSIHF	2533 HK	Daley Li, CFA
	Hangzhou Silan Microelectronics	XDFRF	600460 CH	Daley Li, CFA
	Lion Electronics	XDHFF	605358 CH	Dai Shen
	MetaX	XMEZF	688802 CH	Daley Li, CFA
	Novatek	NVKMF	3034 TT	Mike Yang
	Realtek	RLTKF	2379 TT	Haas Liu
	Shenzhen Goodix	XQPLF	603160 CH	Daley Li, CFA
	Soulbrain	XSBOF	357780 KS	Simon Woo, CFA
	VeriSilicon	XMLZF	688521 CH	Daley Li, CFA
UNDERPERFORM				
	Crystal Clear	XPPTF	300655 CH	Dai Shen
	Faraday	FDYTF	3035 TT	Haas Liu
	GlobalWafers	XWLFF	6488 TT	Mike Yang

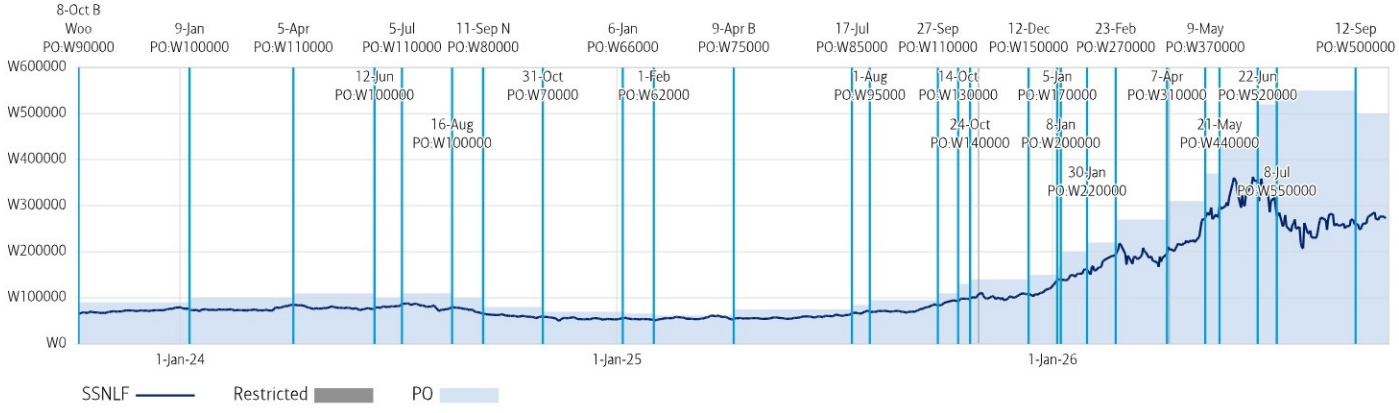
APR - Semiconductor Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Hua Hong Grace	HHUSF	1347 HK	Dai Shen
	LX Semicon	XLXSF	108320 KS	Simon Woo, CFA
	M31 Technology	XMTZF	6643 TT	Mike Yang
	Maxscend	XMXSF	300782 CH	Daley Li, CFA
	Parade	PRDWF	4966 TT	Mike Yang
	United Microelectronics Corp.	XUMIF	2303 TT	Haas Liu
	United Microelectronics Corp.	UMC	UMC US	Haas Liu
	Win Semiconductors	WSMIF	3105 TT	Haas Liu
	Wonik IPS	XRHQF	240810 KS	Simon Woo, CFA

Disclosures

Important Disclosures

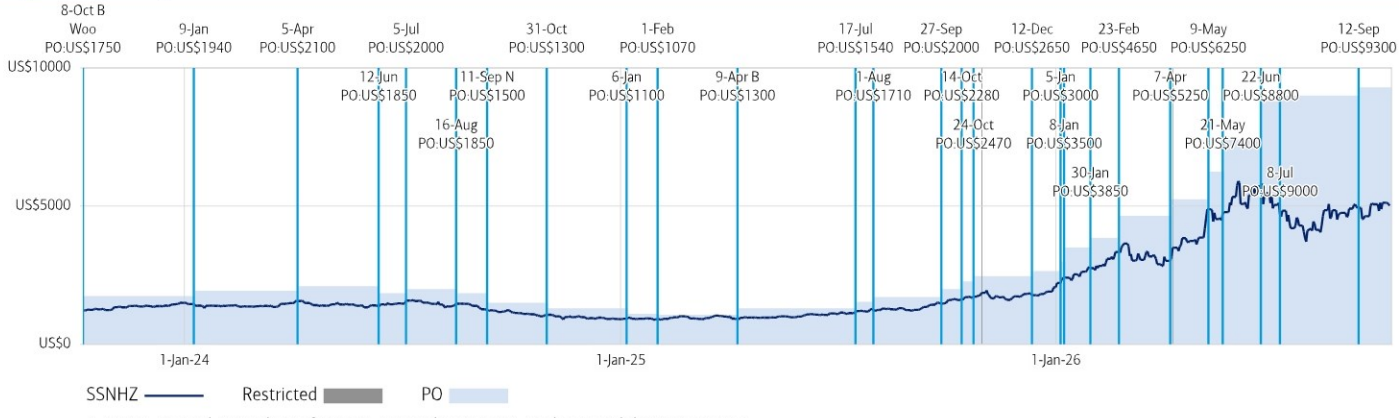
Samsung common (SSNLF) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

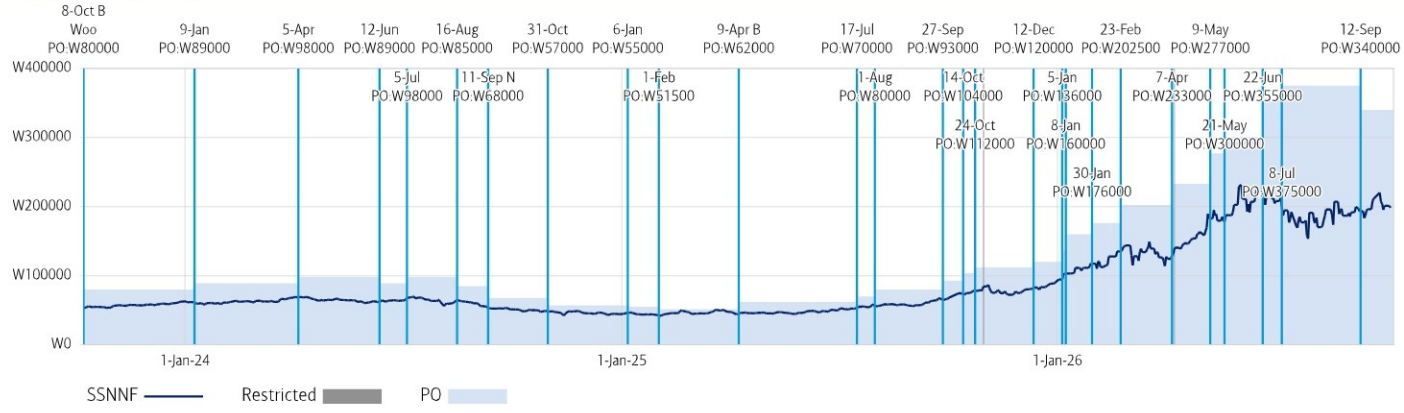
Samsung Elec -G (SSNHZ) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Samsung preferred (SSNNF) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Equity Investment Rating Distribution: Electrical Equipment Group (as of 30 Sep 2026)

Coverage Universe	Count	Percent	Inv. Banking Relationships [R1]	Count	Percent
Buy	18	66.67%	Buy	10	55.56%
Hold	3	11.11%	Hold	2	66.67%
Sell	6	22.22%	Sell	2	33.33%

Equity Investment Rating Distribution: Technology Group (as of 30 Sep 2026)

Coverage Universe	Count	Percent	Inv. Banking Relationships [R1]	Count	Percent
Buy	255	62.04%	Buy	157	61.57%
Hold	82	19.95%	Hold	46	56.10%
Sell	74	18.00%	Sell	31	41.89%

Equity Investment Rating Distribution: Global Group (as of 30 Sep 2026)

Coverage Universe	Count	Percent	Inv. Banking Relationships [R1]	Count	Percent
Buy	2057	57.03%	Buy	1386	67.38%
Hold	806	22.35%	Hold	563	69.85%
Sell	744	20.63%	Sell	446	59.95%

[R1] Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. VOLATILITY RISK RATINGS, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. INVESTMENT RATINGS reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster[R2]
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

[R2]Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. *Coverage Cluster* is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

Price Charts for the securities referenced in this research report are available on the Price Charts website, or call 1-800-MERRILL to have them mailed.
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