

## Advanced Micro Devices, Inc

## Legacy worse but growth products solidly on track

Reiterate Rating: BUY | PO: 195.00 USD | Price: 172.06 USD

## Reiterate Buy on data center/AI strength

Inline Q4 but Q1 sales outlook of \$5.4bn (+1% YoY, -12% QoQ) was slightly worse than our recent preview of \$5.5bn and consensus at \$5.8bn. Weak outlook is primarily in programmable chips, gaming and PC, deeper than expected. Most importantly, data center strongly on track and point to continued share gains against INTC, and the start of AI ramp and positioning against NVDA. 1) Q4 server CPU up ~15-20% QoQ, well above INTC up 5-10% QoQ, 2) AI accelerator forecast taken up to over \$3.5bn vs \$2bn prior. Overall we raise AMD CY24/25E data center sales by 5-6% to \$12bn/\$15.9bn, which now includes MI300 product at \$4bn/\$6.7bn vs \$3.6bn/\$6bn prior. Tweak CY24/25E pf-EPS down by 6%/3% to \$3.62/\$5.07 but reiterate \$195 PO on unchanged 38x CY25E P/E, consistent with our 1-2x PEG ratio framework.

## Likes: data center on track to approach 50% of sales

Despite a sluggish traditional server capex environment, we forecast AMD data center sales growth to accelerate to 85% YoY in CY24 (vs. 7% last year), and contribute 50% of sales exiting CY24 versus <30% of sales in the last few years. While NVDA remains our top pick and likely to maintain its 75%+ share in AI accelerators, we do expect AMD to achieve 5-10% share in a growing TAM that we forecast could be \$160bn+ by CY27E. Recovery in embedded markets and slowdown in game console also accretive for GM.

## Risks: premium valuation, lumpy legacy segments

AMD has greater share gain potential in AI accelerators, but its implied valuation at 48x/34x CY24/25 implied PE is well above peer NVDA's 32x/21x, in our estimates. Higher multiple enhances AMD's stock volatility. Second, if INTC is able to regain its footing in manufacturing (more likely in 2H25 and beyond), it could blunt the advantage AMD has enjoyed with its TSMC partnership. Last, AMD non data center segments remain exposed to cyclical pressure and lumpiness.

Estimates (Dec) (US\$)	2022A	2023A	2024E	2025E	2026E
EPS	3.50	2.65	3.62	5.07	6.35
GAAP EPS	0.84	0.53	1.35	2.82	4.12
EPS Change (YoY)	25.0%	-24.3%	36.6%	40.1%	25.2%
Consensus EPS (Bloomberg)			3.92	5.28	7.31
DPS	0	0	0	0	0
Valuation (Dec)					
P/E	49.2x	64.9x	47.5x	33.9x	27.1x
GAAP P/E	204.8x	324.6x	127.5x	61.0x	41.8x
EV / EBITDA*	26.5x	33.6x	29.2x	22.9x	19.5x
Free Cash Flow Yield*	1.1%	0.4%	1.0%	2.6%	2.8%

\* For full definitions of *IQmethod*<sup>SM</sup> measures, see page 14.

30 January 2024

## Equity

## Key Changes

(US\$)	Previous	Current
2024E Rev (m)	26,559.6	25,830.7
2025E Rev (m)	31,253.4	30,764.4
2026E Rev (m)	35,345.5	35,235.5
2024E EPS	3.83	3.62
2025E EPS	5.20	5.07
2026E EPS	6.34	6.35

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## Stock Data

Price	172.06 USD
Price Objective	195.00 USD
Date Established	29-Jan-2024
Investment Opinion	C-1-9
52-Week Range	72.03 USD - 184.92 USD
Mkt Val (mn) / Shares Out (mn)	277,963 USD / 1,615.5
Free Float	1165.0%
Average Daily Value (mn)	13281.15 USD
BofA Ticker / Exchange	AMD / NAS
Bloomberg / Reuters	AMD US / AMD.OQ
ROE (2024E)	10.1%
Net Dbt to Eqty (Dec-2023A)	-2.6%
ESGMeter™	High

ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company. For full details, refer to "BofA ESGMeter Methodology".

CPU – Central Processing Unit

GPU – Graphics Processing Unit

TAM – Total Addressable Market

FPGA – Field-Programmable Gate Array

INTC – Intel; AMD – Advanced Micro Devices

ARM – Arm Holdings; NVDA – NVIDIA

TSMC – Taiwan Semiconductor Manufacturing Company

PC – Personal Computer

AI – Artificial Intelligence

HPC – High Performance Computing

OEM – Original Equipment Manufacturer

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Timestamp: 30 January 2024 11:26PM EST

# iQprofile<sup>SM</sup> Advanced Micro Devices, Inc

## iQmethod<sup>SM</sup> – Bus Performance\*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	15.8%	6.9%	9.1%	11.7%	13.1%
Return on Equity	17.7%	7.8%	10.1%	12.9%	14.4%
Operating Margin	26.9%	21.4%	25.9%	30.6%	33.6%
Free Cash Flow	3,115	1,121	2,807	7,241	7,773

## iQmethod<sup>SM</sup> – Quality of Earnings\*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	0.6x	0.4x	0.6x	1.0x	0.8x
Asset Replacement Ratio	0.1x	0.2x	0.2x	0.3x	0.3x
Tax Rate	13.0%	13.0%	13.0%	13.0%	13.0%
Net Debt-to-Equity Ratio	-4.3%	-2.6%	-5.5%	-14.2%	-21.4%
Interest Cover	NM	45.8x	NM	NM	NM

## Income Statement Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	23,601	22,680	25,831	30,764	35,236
% Change	43.6%	-3.9%	13.9%	19.1%	14.5%
Gross Profit	12,273	11,436	13,705	17,072	20,070
% Change	54.7%	-6.8%	19.8%	24.6%	17.6%
EBITDA	10,519	8,280	9,518	12,172	14,293
% Change	135.0%	-21.3%	15.0%	27.9%	17.4%
Net Interest & Other Income	(18)	90	92	92	92
<b>Net Income (Adjusted)</b>	<b>5,499</b>	<b>4,304</b>	<b>5,905</b>	<b>8,281</b>	<b>10,386</b>
<b>% Change</b>	<b>59.8%</b>	<b>-21.7%</b>	<b>37.2%</b>	<b>40.2%</b>	<b>25.4%</b>

## Free Cash Flow Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	5,504	4,302	5,901	8,277	10,388
Depreciation & Amortization	4,174	3,426	2,829	2,755	2,450
Change in Working Capital	(1,182)	(2,613)	(2,269)	(51)	(1,248)
Deferred Taxation Charge	(342)	0	0	0	0
Other Adjustments, Net	(4,589)	(3,448)	(3,073)	(3,046)	(3,023)
Capital Expenditure	(450)	(546)	(582)	(693)	(794)
<b>Free Cash Flow</b>	<b>3,115</b>	<b>1,121</b>	<b>2,807</b>	<b>7,241</b>	<b>7,773</b>
<b>% Change</b>	<b>-3.3%</b>	<b>-64.0%</b>	<b>150.4%</b>	<b>158.0%</b>	<b>7.3%</b>
Share / Issue Repurchase	167	265	0	0	0
Cost of Dividends Paid	0	0	0	0	0
Change in Debt	679	0	0	0	0

## Balance Sheet Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	4,835	3,933	5,808	12,117	18,958
Trade Receivables	4,126	5,376	7,020	7,089	8,058
Other Current Assets	6,058	7,459	8,643	8,530	9,051
Property, Plant & Equipment	1,513	1,589	2,166	2,928	4,096
Other Non-Current Assets	51,048	49,528	49,528	49,528	49,528
<b>Total Assets</b>	<b>67,580</b>	<b>67,885</b>	<b>73,165</b>	<b>80,192</b>	<b>89,691</b>
Short-Term Debt	0	751	751	751	751
Other Current Liabilities	6,369	5,938	6,497	6,402	6,645
Long-Term Debt	2,467	1,717	1,717	1,717	1,717
Other Non-Current Liabilities	3,994	3,587	3,587	3,587	3,587
<b>Total Liabilities</b>	<b>12,830</b>	<b>11,993</b>	<b>12,552</b>	<b>12,457</b>	<b>12,700</b>
<b>Total Equity</b>	<b>54,750</b>	<b>55,892</b>	<b>60,613</b>	<b>67,735</b>	<b>76,992</b>
<b>Total Equity &amp; Liabilities</b>	<b>67,580</b>	<b>67,885</b>	<b>73,165</b>	<b>80,192</b>	<b>89,691</b>

\* For full definitions of iQmethod<sup>SM</sup> measures, see page 14.

## Company Sector

Semiconductors

## Company Description

Advanced Micro Devices is one of the largest suppliers of PC microprocessors and graphics processors worldwide to computing OEMs. The company's main product lines include desktop, notebook, server, graphics processors and embedded/semi-custom chips.

## Investment Rationale

We rate AMD Buy. It serves a \$80bn+ addressable market opportunity in PC, server, high-end gaming, deep-learning and related markets where AMD has less than 30% value share currently. Additionally, AMD has developed competitive AI products, including formidable accelerators that can carve out mid-single digit share in a multi-hundred \$bn market.

## Stock Data

Average Daily Volume 78,727,400

## Quarterly Earnings Estimates

	2023	2024
Q1	0.60A	0.59E
Q2	0.58A	0.61E
Q3	0.70A	1.04E
Q4	0.77A	1.38E

# Earnings Summary

## Sales

- DecQ sales of \$6.2bn, +6.3% QoQ/+10.2% YoY, BEAT Street by 0.6%
- Record data center and embedded segment sales offset by lower client and gaming revenue
- Gained server share, launched next-gen Instinct AI accelerators

## Data Center

- Data Center sales of \$2.3bn MISSED Street by 0.5%, +42.8% QoQ/+37.9% YoY
- Server CPU sales of \$1.8bn grew 20.4% QoQ/21.1% YoY
  - o Gained share in 2023, driven by DD% growth in 4<sup>th</sup> Gen EPYC processor sales and demand for 3<sup>rd</sup> Gen EPYC processor portfolio
- Data Center GPU sales of \$407mn grew 1028.1% QoQ/+583.6% YoY
  - o Faster ramp for MI300X at AI customers
  - o Prior guided was flattish sales QoQ in Q1, exceeding \$2bn for 2024. Now expect to grow QoQ in Q1, and exceed \$3.5bn for 2024
- Sales accelerated through the year, robust demand for EPYC server CPUs across cloud, enterprise, and AI customers
- Cloud overall demand environment still soft
  - o Working closely with MSFT, Oracle, Meta and other cloud customers on Instinct GPU deployments
- North American hyperscalers expanded 4<sup>th</sup>-Gen EPYC deployments for internal workloads and public instances
- More than 800 EPYC CPU-based public cloud instances available in 2023
- Enterprise sales grew DD% in DecQ, expanding production deployments for 2024
- Strong customer traction with upcoming Turin family of EPYC processors

## Client

- Client sales of \$1.5bn MISSED Street by 4.4%, +0.6% QoQ/+61.8% YoY
- Desktop/Notebook Processors sales of \$1.4bn grew 0.9% QoQ/+63% YoY
- Chipsets and IP sales of \$76mn fell 4.8% QoQ/grew 43% YoY
- Ryzen CPUs power more than 90% of AI-enabled PCs currently in the market
- Customer momentum for Strix is strong, with 1<sup>st</sup> notebooks to launch later in 2024
- PC TAM to grow modestly YoY in 2024, weighted to back half as AI PCs ramp

## Embedded

- Embedded sales of \$1.1bn were INLINE with Street, -15% QoQ/-24.3% YoY
- Customers worked down inventory levels
- Expect overall embedded demand to remain soft in 1H24E as inventory normalizes
- \$10bn design wins in 2023
- Expect low DD QoQ decline in Q1
- Going through bottoming process

## Gaming

- Gaming sales of \$1.4bn BEAT Street by 9.5%, -9.2% QoQ/-16.8% YoY
- GPU sales of \$237mn grew 0.3% QoQ/10.6% YoY
- Game Console SoC sales of \$1.1bn fell -16.4% QoQ/-27% YoY
- Expect annual sales to decline by significant DD% YoY in 2024
- Expect Q1 gaming down over 30% QoQ

## Gross Margin

- GM of 50.8% MISSED Street estimates by 72bps, down 29bps QoQ/27bps YoY

## Operating Margin

- OpM of 22.9% MISSED Street by 38bps, +89bps QoQ/+35bps YoY

## EPS



- Diluted EPS of \$0.77 per share MISSED Street estimates by 0.7%, +10% QoQ/+11.4% YoY

#### Guidance

- Guided sales of \$5.4bn +/- \$300mn
- Gross Margin guided to 52%

#### Outlook

- Market for data center AI accelerators to grow to \$400bn in 2027
- MI300 to be fastest revenue ramp of any product in AMD's history, aided by use of chiplet architecture
  - o Sales to increase every Q from now through the end of 2024, more 2H weighted
- Inference will exceed training growth over the next couple of years
- CPU business to grow overall, depending on macro and capex trends
  - o Some of larger customers now planning refresh cycles

# Summary of model changes

## Exhibit 1: Summary of AMD model changes

We change FY24/25E sales by -2.7%/-1.6% and EPS by -5.6%/-2.5% to \$3.62/\$5.07

	Sales (\$mn)			Non-GAAP EPS (ex. SBC)		
	Old	NEW	delta	Old	NEW	delta
1Q23	\$5,353	\$5,353	\$0	\$0.60	\$0.60	\$0.00
2Q23	\$5,359	\$5,359	\$0	\$0.58	\$0.58	\$0.00
3Q23	\$5,800	\$5,800	\$0	\$0.70	\$0.70	\$0.00
4Q23	\$6,126	\$6,168	\$42	\$0.77	\$0.77	(\$0.00)
<b>FY23</b>	<b>\$22,638</b>	<b>\$22,680</b>	<b>\$42</b>	<b>\$2.65</b>	<b>\$2.65</b>	<b>(\$0.00)</b>
YoY%	-4.1%	-3.9%	0.2%	-24.3%	-24.4%	-0.1%
1Q24E	\$5,525	\$5,406	(\$119)	\$0.61	\$0.59	(\$0.02)
2Q24E	\$6,072	\$5,479	(\$593)	\$0.78	\$0.61	(\$0.17)
3Q24E	\$7,100	\$6,891	(\$209)	\$1.10	\$1.04	(\$0.07)
4Q24E	\$7,863	\$8,054	\$192	\$1.34	\$1.38	\$0.04
<b>FY24E</b>	<b>\$26,560</b>	<b>\$25,831</b>	<b>(\$729)</b>	<b>\$3.83</b>	<b>\$3.62</b>	<b>(\$0.21)</b>
YoY%	17.3%	13.9%	-2.7%	44.5%	36.6%	-5.6%
1Q25E	\$7,566	\$7,395	(\$170)	\$1.23	\$1.17	(\$0.06)
2Q25E	\$7,608	\$7,471	(\$137)	\$1.24	\$1.19	(\$0.05)
3Q25E	\$7,843	\$7,764	(\$78)	\$1.31	\$1.30	(\$0.01)
4Q25E	\$8,237	\$8,134	(\$103)	\$1.42	\$1.41	(\$0.02)
<b>FY25E</b>	<b>\$31,253</b>	<b>\$30,764</b>	<b>(\$489)</b>	<b>\$5.20</b>	<b>\$5.07</b>	<b>(\$0.13)</b>
YoY%	17.7%	19.1%	-1.6%	35.6%	40.1%	-2.5%

Source: BofA Global Research estimates, company report

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# Q4 reported vs. expectations

## Exhibit 2: AMD reported 4Q23 earnings compared to our/Consensus expectations

AMD reported Q4 revenues/EPS in-line with the Street

	Dec-22	Sep-23	Dec-23						
			Guidance	Cons	BofA	Reported	Delta (vs cons)	QoQ	YoY
<b>Sales (\$mn)</b>	<b>\$5,599</b>	<b>\$5,800</b>	<b>\$6,100 +/- 300</b>	<b>\$6,131</b>	<b>\$6,126</b>	<b>\$6,168</b>	<b>0.6%</b>	<b>6.3%</b>	<b>10.2%</b>
QoQ%	0.6%	8.2%		5.7%	5.6%	6.3%			
<b>Data Center</b>	<b>1,655</b>	<b>1,598</b>		<b>2,294</b>	<b>2,332</b>	<b>2,282</b>	<b>(0.5%)</b>	<b>42.8%</b>	<b>37.9%</b>
Server CPU	1,483	1,492			1,845	1,736		16.4%	17.1%
Data Center GPU	60	31			407	441		1,319.4%	640.9%
FPGA & Adoptive SoC	90	35			29	45		28.6%	NA
Pensando	23	40			50	60		NA	NA
<b>Client</b>	<b>903</b>	<b>1,453</b>		<b>1,529</b>	<b>1,488</b>	<b>1,461</b>	<b>(4.4%)</b>	<b>0.6%</b>	<b>61.8%</b>
Desktop and Notebook Processors	850	1,374			1,407	1,386		0.9%	63.0%
Chipsets & IP (includes Samsung)	53	79			81	76		(4.8%)	43.0%
<b>Embedded</b>	<b>1,397</b>	<b>1,243</b>		<b>1,057</b>	<b>1,033</b>	<b>1,057</b>	<b>0.0%</b>	<b>(15.0%)</b>	<b>(24.3%)</b>
<b>Gaming</b>	<b>1,644</b>	<b>1,506</b>		<b>1,251</b>	<b>1,274</b>	<b>1,368</b>	<b>9.4%</b>	<b>(9.2%)</b>	<b>(16.8%)</b>
Gaming GPU	94	152			237	170		11.7%	81.0%
Game Console SoC	1,550	1,354			1,038	1,198		(11.5%)	(22.7%)
<b>Gross Margin % (Non-GAAP)</b>	<b>51.1%</b>	<b>51.1%</b>	<b>51.5%</b>	<b>51.5%</b>	<b>51.5%</b>	<b>50.8%</b>	<b>(72)</b>	<b>(29)</b>	<b>(27)</b>
Gross Profit	2859	2963		3,158	3,154	3,133	(0.8%)	5.7%	9.6%
R&D	1366	1507			1,537	1,511		0.3%	10.6%
SG&A	590	576			589	644		11.8%	9.2%
Opex Total (Non-GAAP)	1602	1697	1,740	1,732	1,740	1,727	(0.3%)	1.8%	7.8%
Operating Income	1262	1276		1,427	1,414	1,412	(1.0%)		
<b>Op Margin % (Non-GAAP)</b>	<b>22.5%</b>	<b>22.0%</b>		<b>23.3%</b>	<b>23.1%</b>	<b>22.9%</b>	<b>(38)</b>	<b>89</b>	<b>35</b>
Financial Income	18	29			29	23			
Pretax Income	1280	1305			1,443	1,435			
Tax expense	167	170			188	186			
Tax rate	13.0%	13.0%	13%		13.0%	13.0%		(651.5%)	(852.0%)
Net Income (Non-GAAP)	1113	1135			1,255	1,249			
<b>Diluted EPS (Non-GAAP)</b>	<b>\$0.69</b>	<b>\$0.70</b>		<b>\$0.77</b>	<b>\$0.77</b>	<b>\$0.77</b>	<b>(0.7%)</b>	<b>10.0%</b>	<b>11.4%</b>
Diluted Shares	1,618	1,629	1,630		1,630	1,630		0.0%	0.7%

Source: BofA Global Research estimates, company report, Bloomberg, Visible Alpha

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# Q1 guidance vs. expectations

## Exhibit 3: AMD 1Q24 guide compared to our/Consensus expectations

AMD guided Q1 revenues ~\$380mn below Street, GM guided 20bp above. Implied EPS 10c below Street at \$0.59

	Dec-23	Mar-24E			
	Reported	BofA	Cons	Guidance	New BofA
<b>Sales (\$mn)</b>	<b>\$6,168</b>	<b>\$5,525</b>	<b>\$5,778</b>	<b>\$5,400 +/- 300</b>	<b>\$5,406</b>
QoQ%	6.3%	-9.8%	-5.8%		-12.4%
<b>Data Center</b>	<b>2,282</b>	<b>2,139</b>	<b>2,214</b>		<b>2,299</b>
Server CPU	1,736	1,600			1,523
Data Center GPU	441	447			668
FPGA & Adoptive SoC	45	29			45
Pensando	60	63			63
<b>Client</b>	<b>1,461</b>	<b>1,247</b>	<b>1,390</b>		<b>1,305</b>
Desktop and Notebook Processors	1,386	1,167			1,235
Chipsets & IP (includes Samsung)	76	81			71
<b>Embedded</b>	<b>1,057</b>	<b>922</b>	<b>987</b>		<b>938</b>
<b>Gaming</b>	<b>1,368</b>	<b>1,216</b>	<b>1,134</b>		<b>865</b>
Gaming GPU	170	236			151
Game Console SoC	1,198	980			713
<b>Gross Margin %</b>	<b>50.8%</b>	<b>51.6%</b>	<b>51.8%</b>	<b>52.0%</b>	<b>52.0%</b>
Gross Profit	3133	2,850	2,994		2811
R&D	1511	1,545			1524
SG&A	644	580			634
Opex Total	1727	1,739	1,726	1,730	1730
Operating Income	1412	1,111	1,268		1081
<b>Op Margin %</b>	<b>22.9%</b>	<b>20.1%</b>	<b>22.0%</b>		<b>20.0%</b>
Financial Income	23	29			23
Pretax Income	1435	1,140			1104
Tax expense	186	149			143
Tax rate	13.0%	13.0%		13%	13.0%
Net Income	1249	992			960
Diluted EPS	<b>\$0.77</b>	<b>\$0.61</b>	<b>\$0.69</b>		<b>\$0.59</b>
Diluted Shares	1,630	1,629		1,630	1,630

Source: BofA Global Research estimates, company report, Bloomberg, Visible Alpha

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# Balance sheet, cash flow snapshot

## Exhibit 4: Summary of balance sheet and cash flow statement

Net cash decreased QoQ; inventory dollars decreased while days decreased QoQ

	4Q22	1Q23	2Q23	3Q23	4Q23		
	Dec-22	Mar-23	Jun-23	Sep-23	Dec-23	QoQ	YoY
<b>Total Cash</b>	<b>\$5,855</b>	<b>\$5,939</b>	<b>\$6,285</b>	<b>\$5,785</b>	<b>\$5,773</b>	<b>-0.2%</b>	<b>-1.4%</b>
ST Debt	\$0	\$0	\$753	\$752	\$751		
LT Debt	\$2,467	\$2,467	\$2,107	\$1,715	\$1,717		
Total Debt	\$2,467	\$2,467	\$2,860	\$2,467	\$2,468	<b>0.0%</b>	<b>0.0%</b>
Net Cash	\$3,388	\$3,472	\$3,425	\$3,318	\$3,305	-0.4%	-2.4%
<b>Net Cash/Share</b>	<b>\$2.09</b>	<b>\$2.16</b>	<b>\$2.11</b>	<b>\$2.04</b>	<b>\$2.03</b>	<b>-0.4%</b>	<b>-3.2%</b>
DSO	67.1	68.7	73.2	79.3	79.3	0.0%	18.3%
DPO	71.0	76.5	86.7	66.9	57.4	-14.2%	-19.1%
<b>Inventory \$</b>	<b>3,771</b>	<b>\$4,235</b>	<b>\$4,567</b>	<b>\$4,445</b>	<b>\$4,351</b>	<b>-2.1%</b>	<b>15.4%</b>
Inventory Turns	3.4	2.8	2.6	2.7	3.0		
<b>Inventory Days</b>	<b>107.7</b>	<b>129.1</b>	<b>142.9</b>	<b>132.9</b>	<b>121.9</b>	<b>(11.0)</b>	<b>14.2</b>
Cash Conversion days	103.7	121.2	129.4	145.2	143.8		
<b>Cash Flow from Ops</b>	<b>\$567</b>	<b>\$486</b>	<b>\$379</b>	<b>\$421</b>	<b>\$381</b>	<b>-9.5%</b>	<b>-32.8%</b>
Capex	(124)	(\$158)	(\$125)	(\$124)	(\$139)		
<b>Free cash flow</b>	<b>\$443</b>	<b>\$328</b>	<b>\$254</b>	<b>\$297</b>	<b>\$242</b>	<b>-18.5%</b>	<b>-45.4%</b>

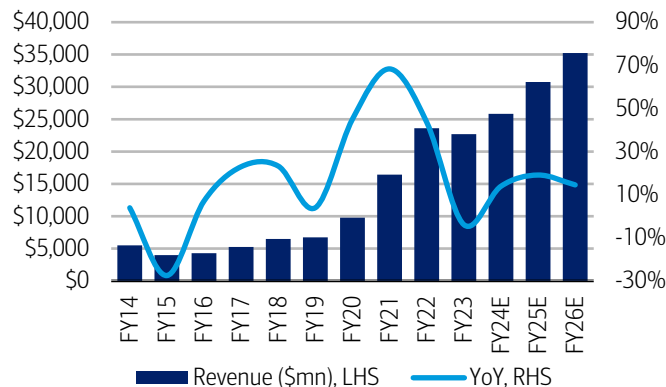
Source: BofA Global Research estimates, company report

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# Key charts

**Chart 1: AMD annual revenue and YoY growth**

AMD to grow sales towards \$35bn by 2026E

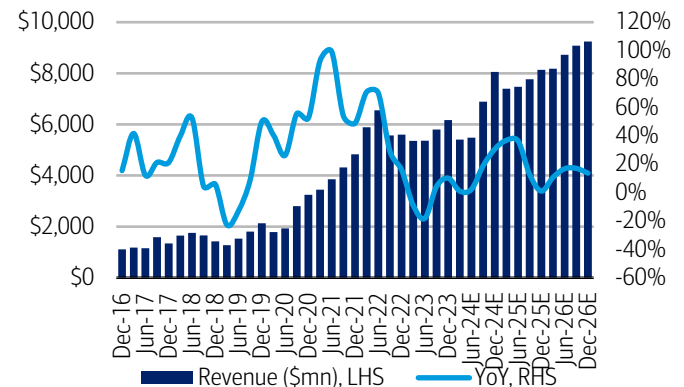


Source: BofA Global Research estimates, company report

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**Chart 2: AMD quarterly revenue and YoY growth**

AMD sales growth should moderate in 2024E

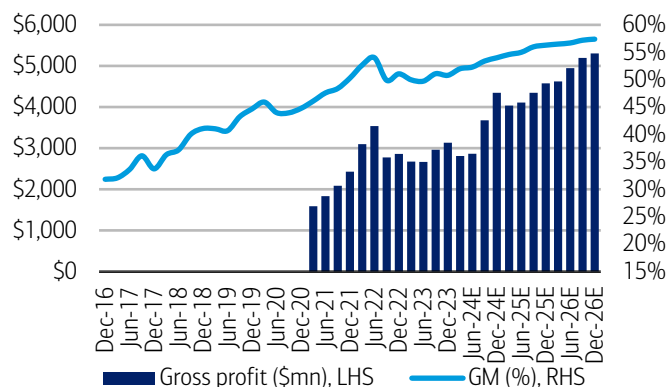


Source: BofA Global Research estimates, company report

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**Chart 3: AMD quarterly gross profit and GM%**

We see path for AMD gross margins to increase over time

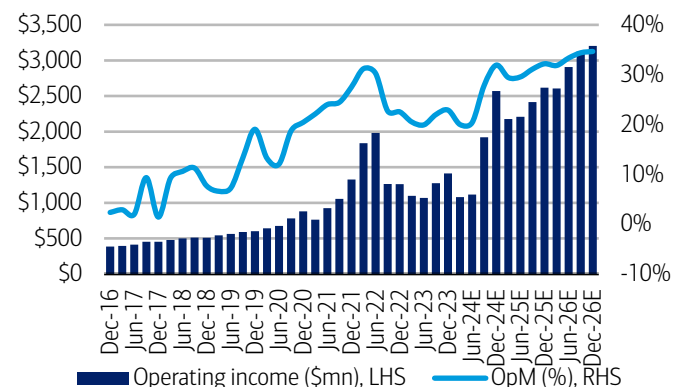


Source: BofA Global Research estimates, company report

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**Chart 4: AMD quarterly operating income and OpM%**

We see path towards increasing operating margin over time

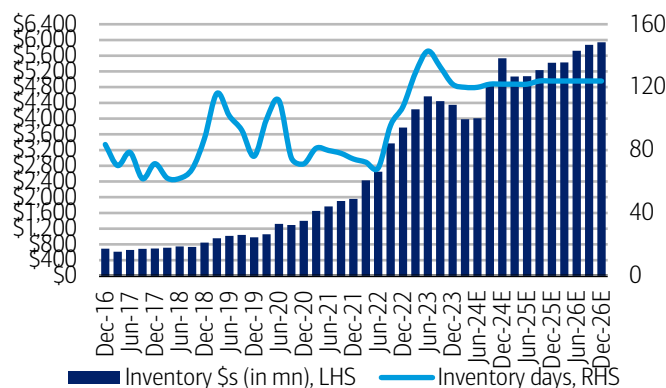


Source: BofA Global Research estimates, company report

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**Chart 5: AMD quarterly inventory dollars and days**

We expect inventory days to remain stable

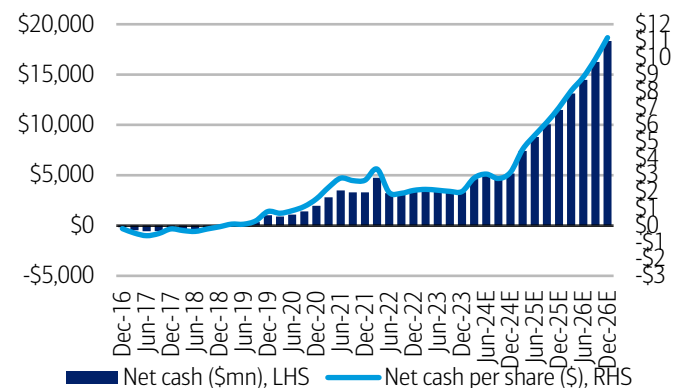


Source: BofA Global Research estimates, company report

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**Chart 6: AMD quarterly net cash and net cash per share**

We see net cash per share approaching \$10+ by Dec 2026

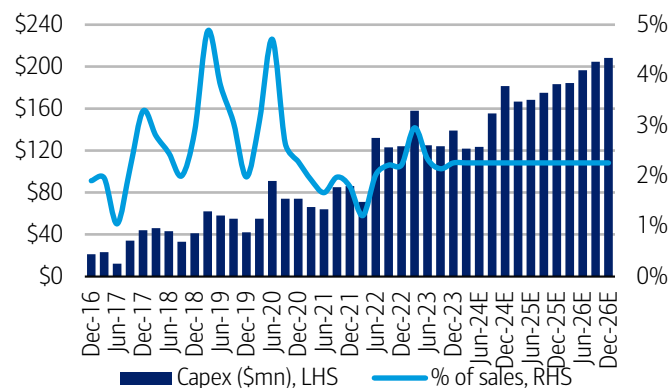


Source: BofA Global Research estimates, company report

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**Chart 7: AMD quarterly capex and YoY growth**

We see capex as a % of sales stable at 1-3%

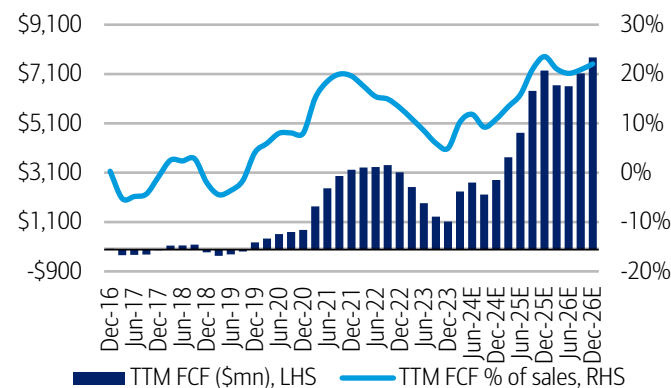


Source: BofA Global Research estimates, company report

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**Chart 8: AMD quarterly TTM FCF and TTM FCF as a % of sales**

We expect consistent FCF generation



Source: BofA Global Research estimates, company report

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## Exhibit 5: AMD – Income statement (\$mn)

AMD reported \$6.2bn in sales and \$0.77 in EPS in Q4

FY(Dec)	1Q23 Mar-23	2Q23 Jun-23	3Q23 Sep-23	4Q23 Dec-23	1Q24E Mar-24E	2Q24E Jun-24E	3Q24E Sep-24E	4Q24E Dec-24E	1Q25E Mar-25E	2Q25E Jun-25E	3Q25E Sep-25E	4Q25E Dec-25E	FY23 Dec-23	FY24E Dec-24E	FY25E Dec-25E	FY26E Dec-26E
<b>Net revenue</b>	<b>\$5,353</b>	<b>\$5,359</b>	<b>\$5,800</b>	<b>\$6,168</b>	<b>\$5,406</b>	<b>\$5,479</b>	<b>\$6,891</b>	<b>\$8,054</b>	<b>\$7,395</b>	<b>\$7,471</b>	<b>\$7,764</b>	<b>\$8,134</b>	<b>\$22,680</b>	<b>\$25,831</b>	<b>\$30,764</b>	<b>\$35,236</b>
QoQ%	-4.4%	0.1%	8.2%	6.3%	-12.4%	1.4%	25.8%	16.9%	-8.2%	1.0%	3.9%	4.8%				
YoY%	-9.1%	-18.2%	4.2%	10.2%	1.0%	2.2%	18.8%	30.6%	36.8%	36.3%	12.7%	1.0%	-3.9%	13.9%	19.1%	14.5%
Cost of sales	2,994	2,916	3,053	3,257	2,817	2,836	3,434	3,927	3,580	3,584	3,639	3,777	12,220	13,014	14,580	16,053
Gross Profit (Non-GAAP, ex SBC)	2,675	2,665	2,963	3,133	2,811	2,865	3,680	4,349	4,037	4,109	4,348	4,579	11,436	13,705	17,072	20,070
R&D Expense	1,411	1,443	1,507	1,511	1,524	1,539	1,547	1,562	1,633	1,649	1,674	1,699	5,872	6,172	6,654	7,096
SG&A Expense	585	547	576	644	634	638	641	644	657	680	687	690	2,352	2,556	2,713	2,843
Licensing gain	(10)	(8)	(10)	(6)	0	0	0	0	0	0	0	0	(34)	0	0	0
Total Opex (Non-GAAP, ex SBC)	1,587	1,605	1,697	1,727	1,730	1,749	1,759	1,778	1,861	1,901	1,932	1,961	6,616	7,016	7,655	8,228
Operating Income (Non-GAAP, ex. SBC)	1098	1068	1276	1412	1081	1117	1920	2571	2176	2208	2415	2618	4854	6688	9418	11842
Interest expense	(25)	(28)	(26)	(27)	(27)	(27)	(27)	(27)	(27)	(27)	(27)	(27)	(106)	(108)	(108)	(108)
Net financial Income (Non-GAAP)	17	21	29	23	23	23	23	23	23	23	23	23	90	92	92	92
Pre-Tax Income (Non-GAAP)	1115	1089	1305	1435	1104	1140	1943	2594	2199	2231	2438	2641	4944	6780	9510	11934
Tax Expense (Non-GAAP)	145	141	170	186	143	148	252	336	285	289	316	342	642	879	1233	1547
Net income GAAP	(139)	27	299	667	29	60	767	1340	993	1021	1203	1382	854	2197	4599	6732
Net income (Non-GAAP, ex. SBC)	970	948	1135	1249	960	992	1691	2258	1914	1942	2122	2299	4302	5901	8277	10388
EPS (GAAP, diluted)	(\$0.09)	\$0.02	\$0.18	\$0.41	\$0.02	\$0.04	\$0.47	\$0.82	\$0.61	\$0.63	\$0.74	\$0.85	\$0.53	\$1.35	\$2.82	\$4.12
<b>EPS (Non-GAAP, diluted ex. SBC)</b>	<b>\$0.60</b>	<b>\$0.58</b>	<b>\$0.70</b>	<b>\$0.77</b>	<b>\$0.59</b>	<b>\$0.61</b>	<b>\$1.04</b>	<b>\$1.38</b>	<b>\$1.17</b>	<b>\$1.19</b>	<b>\$1.30</b>	<b>\$1.41</b>	<b>\$2.65</b>	<b>\$3.62</b>	<b>\$5.07</b>	<b>\$6.35</b>
Diluted Shares (GAAP)	1,611	1,627	1,629	1,628	1,629	1,629	1,630	1,630	1,631	1,631	1,632	1,632	1,624	1,629	1,632	1,634
Diluted Shares (Non-GAAP)	1,611	1,627	1,629	1,630	1,630	1,631	1,631	1,632	1,633	1,633	1,634	1,634	1,624	1,631	1,633	1,636
Adjusted EBITDA	1120	1177	1400	1515	977	1021	1979	2757	2142	2181	2415	2650	5212	6734	9388	11509
Interest coverage	43.9x	38.1x	49.1x	52.3x	40.0x	41.4x	71.1x	95.2x	80.6x	81.8x	89.5x	97.0x	45.8x	61.9x	87.2x	109.7x
<b>Non-GAAP Margins (%)</b>																
<b>Gross Margin</b>	<b>50.0%</b>	<b>49.7%</b>	<b>51.1%</b>	<b>50.8%</b>	<b>52.0%</b>	<b>52.3%</b>	<b>53.4%</b>	<b>54.0%</b>	<b>54.6%</b>	<b>55.0%</b>	<b>56.0%</b>	<b>56.3%</b>	<b>50.4%</b>	<b>53.1%</b>	<b>55.5%</b>	<b>57.0%</b>
R&D	26.4%	26.9%	26.0%	24.5%	28.2%	28.1%	22.4%	19.4%	22.1%	22.1%	21.6%	20.9%	25.9%	23.9%	21.6%	20.1%
SG&A	10.9%	10.2%	9.9%	10.4%	11.7%	11.6%	9.3%	8.0%	8.9%	9.1%	8.8%	8.5%	10.4%	9.9%	8.8%	8.1%
<b>Op Margin</b>	<b>20.5%</b>	<b>19.9%</b>	<b>22.0%</b>	<b>22.9%</b>	<b>20.0%</b>	<b>20.4%</b>	<b>27.9%</b>	<b>31.9%</b>	<b>29.4%</b>	<b>29.6%</b>	<b>31.1%</b>	<b>32.2%</b>	<b>21.4%</b>	<b>25.9%</b>	<b>30.6%</b>	<b>33.6%</b>
Tax rate	13.0%	12.9%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%
Net Income	18.1%	17.7%	19.6%	20.2%	17.8%	18.1%	24.5%	28.0%	25.9%	26.0%	27.3%	28.3%	19.0%	22.8%	26.9%	29.5%

Source: BofA Global Research estimates, company report

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**Exhibit 6: Segment Model (\$mn)**

We now expect AMD sales to grow about +14% in 2024

**Segment Model (\$m)**

	1Q23	2Q23	3Q23	4Q23	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E	FY23	FY24E	FY25E	FY26E
Revenues	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E	Dec-23	Dec-24E	Dec-25E	Dec-26E
<b>Data Center</b>	<b>\$1,295</b>	<b>\$1,321</b>	<b>\$1,598</b>	<b>\$2,282</b>	<b>\$2,299</b>	<b>\$2,543</b>	<b>\$3,160</b>	<b>\$4,001</b>	<b>\$3,755</b>	<b>\$3,893</b>	<b>\$4,016</b>	<b>\$4,262</b>	<b>\$6,496</b>	<b>\$12,003</b>	<b>\$15,926</b>	<b>\$19,866</b>
Server CPU	\$1,137	\$1,190	\$1,492	\$1,736	\$1,523	\$1,716	\$2,053	\$2,176	\$2,078	\$2,092	\$2,148	\$2,194	\$5,555	\$7,467	\$8,512	\$9,272
Data Center GPU	\$15	\$16	\$31	\$441	\$668	\$711	\$962	\$1,672	\$1,514	\$1,627	\$1,685	\$1,876	\$503	\$4,013	\$6,702	\$9,656
FPGA & Adaptive SoC	\$105	\$64	\$35	\$45	\$45	\$46	\$57	\$59	\$60	\$61	\$63	\$65	\$249	\$207	\$249	\$280
Pensando	\$38	\$51	\$40	\$60	\$63	\$71	\$88	\$93	\$103	\$113	\$120	\$127	\$189	\$315	\$463	\$658
<b>Client</b>	<b>\$739</b>	<b>\$998</b>	<b>\$1,453</b>	<b>\$1,461</b>	<b>\$1,305</b>	<b>\$1,345</b>	<b>\$1,555</b>	<b>\$1,623</b>	<b>\$1,525</b>	<b>\$1,510</b>	<b>\$1,605</b>	<b>\$1,666</b>	<b>\$4,651</b>	<b>\$5,827</b>	<b>\$6,306</b>	<b>\$6,570</b>
Desktop and Notebook Processors	\$689	\$938	\$1,374	\$1,386	\$1,235	\$1,270	\$1,473	\$1,537	\$1,434	\$1,423	\$1,518	\$1,577	\$4,387	\$5,515	\$5,953	\$6,216
Chipsets & IP (includes Samsung)	\$50	\$60	\$79	\$76	\$71	\$75	\$81	\$86	\$91	\$86	\$87	\$88	\$264	\$312	\$353	\$353
<b>Embedded</b>	<b>\$1,562</b>	<b>\$1,459</b>	<b>\$1,243</b>	<b>\$1,057</b>	<b>\$938</b>	<b>\$950</b>	<b>\$1,257</b>	<b>\$1,357</b>	<b>\$1,292</b>	<b>\$1,284</b>	<b>\$1,310</b>	<b>\$1,354</b>	<b>\$5,321</b>	<b>\$4,501</b>	<b>\$5,240</b>	<b>\$5,622</b>
Xilinx (excl. Data Center)	\$1,466	\$1,367	\$1,155	\$983	\$865	\$870	\$1,174	\$1,274	\$1,210	\$1,198	\$1,222	\$1,265	\$4,972	\$4,183	\$4,896	\$5,259
Embedded (legacy AMD)	\$96	\$92	\$88	\$74	\$72	\$80	\$82	\$83	\$82	\$86	\$88	\$89	\$349	\$318	\$345	\$363
<b>Gaming</b>	<b>\$1,757</b>	<b>\$1,581</b>	<b>\$1,506</b>	<b>\$1,368</b>	<b>\$865</b>	<b>\$642</b>	<b>\$920</b>	<b>\$1,074</b>	<b>\$823</b>	<b>\$784</b>	<b>\$833</b>	<b>\$852</b>	<b>\$6,212</b>	<b>\$3,500</b>	<b>\$3,293</b>	<b>\$3,177</b>
Gaming GPU	\$128	\$127	\$152	\$170	\$151	\$143	\$141	\$178	\$158	\$152	\$179	\$209	\$576	\$612	\$698	\$840
Game Console SoC	\$1,629	\$1,454	\$1,354	\$1,198	\$713	\$499	\$779	\$896	\$666	\$632	\$654	\$643	\$5,636	\$2,888	\$2,595	\$2,337
<b>Total</b>	<b>\$5,353</b>	<b>\$5,359</b>	<b>\$5,800</b>	<b>\$6,168</b>	<b>\$5,406</b>	<b>\$5,479</b>	<b>\$6,891</b>	<b>\$8,054</b>	<b>\$7,395</b>	<b>\$7,471</b>	<b>\$7,764</b>	<b>\$8,134</b>	<b>\$22,680</b>	<b>\$25,831</b>	<b>\$30,764</b>	<b>\$35,236</b>
<b>QoQ (%)</b>																
Data Center	-21.8%	2.0%	21.0%	42.8%	0.7%	10.6%	24.3%	26.6%	-6.1%	3.7%	3.1%	6.1%				
Client	-18.2%	35.0%	45.6%	0.6%	-10.7%	3.0%	15.6%	4.4%	-6.0%	-1.0%	6.3%	3.8%				
Embedded	11.8%	-6.6%	-14.8%	-15.0%	-11.3%	1.3%	32.3%	8.0%	-4.8%	-0.6%	2.1%	3.3%				
Gaming	6.9%	-10.0%	-4.7%	-9.2%	-36.8%	-25.8%	43.3%	16.7%	-23.3%	-4.8%	6.3%	2.3%				
<b>Total</b>	<b>-4.4%</b>	<b>0.1%</b>	<b>8.2%</b>	<b>6.3%</b>	<b>-12.4%</b>	<b>1.4%</b>	<b>25.8%</b>	<b>16.9%</b>	<b>-8.2%</b>	<b>1.0%</b>	<b>3.9%</b>	<b>4.8%</b>				
<b>YoY (%)</b>																
Data Center	0.2%	-11.1%	-0.7%	37.9%	77.5%	92.5%	97.8%	75.3%	63.4%	53.1%	27.1%	6.5%	7.5%	84.8%	32.7%	24.7%
Client	-65.2%	-53.6%	42.2%	61.8%	76.6%	34.7%	7.0%	11.1%	16.9%	12.3%	3.3%	2.7%	-25.0%	25.3%	8.2%	4.2%
Embedded	0.0%	0.0%	0.0%	0.0%	-40.0%	-34.9%	1.1%	28.4%	37.8%	35.2%	4.3%	-0.2%	16.9%	-15.4%	16.4%	7.3%
Gaming	-6.3%	-4.5%	-7.7%	-16.8%	-50.8%	-59.4%	-38.9%	-21.5%	-4.8%	22.1%	-9.4%	-20.6%	-8.7%	-43.7%	-5.9%	-3.5%
<b>Total</b>	<b>-4.4%</b>	<b>0.1%</b>	<b>8.2%</b>	<b>6.3%</b>	<b>-12.4%</b>	<b>1.4%</b>	<b>25.8%</b>	<b>16.9%</b>	<b>-8.2%</b>	<b>1.0%</b>	<b>3.9%</b>	<b>4.8%</b>	<b>-3.9%</b>	<b>13.9%</b>	<b>19.1%</b>	<b>14.5%</b>
<b>% of sales</b>																
Data Center	24.2%	24.7%	27.6%	37.0%	42.5%	46.4%	45.9%	49.7%	50.8%	52.1%	51.7%	52.4%	28.6%	46.5%	51.8%	56.4%
Client	13.8%	18.6%	25.1%	23.7%	24.1%	24.5%	22.6%	20.1%	20.6%	20.2%	20.7%	20.5%	20.5%	22.6%	20.5%	18.6%
Embedded	29.2%	27.2%	21.4%	17.1%	17.3%	17.3%	18.2%	16.9%	17.5%	17.2%	16.9%	16.6%	23.5%	17.4%	17.0%	16.0%
Gaming	32.8%	29.5%	26.0%	22.2%	16.0%	11.7%	13.3%	13.3%	11.1%	10.5%	10.7%	10.5%	27.4%	13.5%	10.7%	9.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>OpM (%)</b>																
Data Center	11.4%	11.1%	19.1%	29.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
Client	-23.3%	-6.9%	9.6%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
Embedded	51.1%	51.9%	49.2%	43.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
Gaming	17.9%	14.2%	13.8%	16.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
<b>Total</b>	<b>20.5%</b>	<b>19.9%</b>	<b>22.0%</b>	<b>22.9%</b>	<b>20.0%</b>	<b>20.4%</b>	<b>27.9%</b>	<b>31.9%</b>	<b>29.4%</b>	<b>29.6%</b>	<b>31.1%</b>	<b>32.2%</b>				

Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH



**Exhibit 7: Balance sheet (\$mn)**

Cash and equiv decreased to \$5.8bn in Q4

<b>Bal. Sheet (\$m)</b>	<b>1Q23</b>	<b>2Q23</b>	<b>3Q23</b>	<b>4Q23</b>	<b>1Q24E</b>	<b>2Q24E</b>	<b>3Q24E</b>	<b>4Q24E</b>	<b>1Q25E</b>	<b>2Q25E</b>	<b>3Q25E</b>	<b>4Q25E</b>	<b>FY24E</b>	<b>FY25E</b>	<b>FY26E</b>
<b>FY (Dec)</b>	<b>Mar-23</b>	<b>Jun-23</b>	<b>Sep-23</b>	<b>Dec-23</b>	<b>Mar-24E</b>	<b>Jun-24E</b>	<b>Sep-24E</b>	<b>Dec-24E</b>	<b>Mar-25E</b>	<b>Jun-25E</b>	<b>Sep-25E</b>	<b>Dec-25E</b>	<b>Dec-24E</b>	<b>Dec-25E</b>	<b>Dec-26E</b>
<b>Assets</b>															
Cash & eqv.	5,939	6,285	5,785	5,773	7,086	7,471	7,044	7,648	9,881	11,258	12,528	13,957	7,648	13,957	20,798
Acc. Receiv.	4,040	4,312	5,054	5,376	4,712	4,776	6,006	7,020	6,446	6,512	6,767	7,089	7,020	7,089	8,058
Inventories	4,235	4,567	4,445	4,351	3,985	4,010	4,876	5,535	5,071	5,077	5,234	5,422	5,535	5,422	5,943
<b>Total cur. assets</b>	<b>15,658</b>	<b>16,505</b>	<b>16,688</b>	<b>16,768</b>	<b>17,051</b>	<b>17,525</b>	<b>19,194</b>	<b>21,471</b>	<b>22,665</b>	<b>24,114</b>	<b>25,797</b>	<b>27,736</b>	<b>21,471</b>	<b>27,736</b>	<b>36,067</b>
PP&E (net)	1,500	1,541	1,566	1,589	1,825	2,054	2,160	2,166	2,376	2,582	2,767	2,928	2,166	2,928	4,096
Investments	84	90	93	99	99	99	99	99	99	99	99	99	99	99	99
Intangibles	23,291	22,598	21,950	21,363	21,363	21,363	21,363	21,363	21,363	21,363	21,363	21,363	21,363	21,363	21,363
Goodwill	24,177	24,177	24,186	24,262	24,262	24,262	24,262	24,262	24,262	24,262	24,262	24,262	24,262	24,262	24,262
<b>Total Assets</b>	<b>67,634</b>	<b>67,967</b>	<b>67,626</b>	<b>67,885</b>	<b>68,403</b>	<b>69,107</b>	<b>70,882</b>	<b>73,165</b>	<b>74,569</b>	<b>76,224</b>	<b>78,093</b>	<b>80,192</b>	<b>73,165</b>	<b>80,192</b>	<b>89,691</b>
<b>Liab. &amp; Stock Eq.</b>															
Current liabilities:															
Accounts Pay.	2,871	3,092	2,570	2,418	2,277	2,289	2,666	2,977	2,758	2,761	2,795	2,882	2,977	2,882	3,125
Accrued liab.	3,167	2,971	3,376	3,082	3,082	3,082	3,082	3,082	3,082	3,082	3,082	3,082	3,082	3,082	3,082
Deferred inc.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total current liab.</b>	<b>6,577</b>	<b>7,572</b>	<b>7,627</b>	<b>6,689</b>	<b>6,548</b>	<b>6,560</b>	<b>6,937</b>	<b>7,248</b>	<b>7,029</b>	<b>7,032</b>	<b>7,066</b>	<b>7,153</b>	<b>7,248</b>	<b>7,153</b>	<b>7,396</b>
LT Debt	2,467	2,107	1,715	1,717	1,717	1,717	1,717	1,717	1,717	1,717	1,717	1,717	1,717	1,717	1,717
Other LT Liab.	2,255	1,787	2,162	2,385	2,385	2,385	2,385	2,385	2,385	2,385	2,385	2,385	2,385	2,385	2,385
<b>Total stock. eq.</b>	<b>54,694</b>	<b>55,136</b>	<b>54,970</b>	<b>55,892</b>	<b>56,552</b>	<b>57,243</b>	<b>58,642</b>	<b>60,613</b>	<b>62,236</b>	<b>63,888</b>	<b>65,722</b>	<b>67,735</b>	<b>60,613</b>	<b>67,735</b>	<b>76,992</b>
<b>Total Liab. &amp; Eq.</b>	<b>67,634</b>	<b>67,967</b>	<b>67,626</b>	<b>67,885</b>	<b>68,403</b>	<b>69,107</b>	<b>70,882</b>	<b>73,165</b>	<b>74,569</b>	<b>76,224</b>	<b>78,093</b>	<b>80,192</b>	<b>73,165</b>	<b>80,192</b>	<b>89,691</b>
<b>Key Metrics</b>															
Cash & equivalents	5,939	6,285	5,785	5,773	7,086	7,471	7,044	7,648	9,881	11,258	12,528	13,957	7,648	13,957	20,798
Short-term debt	\$0	\$753	\$752	\$751	\$751	\$751	\$751	\$751	\$751	\$751	\$751	\$751	\$751	\$751	\$751
Long-term debt	\$2,467	\$2,107	\$1,715	\$1,717	\$1,717	\$1,717	\$1,717	\$1,717	\$1,717	\$1,717	\$1,717	\$1,717	\$1,717	\$1,717	\$1,717
Net Cash	\$3,472	\$3,425	\$3,318	\$3,305	\$4,618	\$5,003	\$4,576	\$5,180	\$7,413	\$8,790	\$10,060	\$11,489	\$2,468	\$2,468	\$2,468
<b>Net Cash/Share</b>	<b>\$2.16</b>	<b>\$2.11</b>	<b>\$2.04</b>	<b>\$2.03</b>	<b>\$2.83</b>	<b>\$3.07</b>	<b>\$2.80</b>	<b>\$3.17</b>	<b>\$4.54</b>	<b>\$5.38</b>	<b>\$6.16</b>	<b>\$7.03</b>	<b>\$3.17</b>	<b>\$7.03</b>	<b>\$11.20</b>
Book value/share	\$33.95	\$33.89	\$33.74	\$34.29	\$34.69	\$35.10	\$35.94	\$37.14	\$38.12	\$39.12	\$40.23	\$41.45			
Tang. book val./sh.	\$18.94	\$19.03	\$18.90	\$19.41	\$19.81	\$20.22	\$21.07	\$22.27	\$23.26	\$24.26	\$25.38	\$26.60			
Days Sales Out.	68.7	73.2	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3	79.3			
Payables Days	76.5	86.7	66.9	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4	57.4			
Inventory Turns	2.8	2.6	2.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9	2.9			
Inventory Days	129.1	142.9	132.9	121.9	119.9	119.9	121.9	121.9	121.9	121.9	123.9	123.9			
Cash conv. days	121.2	129.4	145.2	143.8	141.8	141.8	143.8	143.8	143.8	143.8	145.8	145.8			

Source: BofA Global Research estimates, company report

**Exhibit 8: AMD – Cash flow statement (\$mn)**

AMD is a strong and consistent generator of free cash flow

Cash Flow Statement (\$m)																	
	1Q23	2Q23	3Q23	4Q23	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E		FY23	FY24E	FY25E	FY26E
FY (Dec)	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E		Dec-23	Dec-24E	Dec-25E	Dec-26E
Cash Flow - Operations																	
Net income	(139)	27	299	667	29	60	767	1340	993	1021	1203	1382		854	2197	4599	6732
Global Foundries charges	(447)	(308)	(212)	(219)	(216)	(216)	(216)	(216)	(216)	(216)	(216)	(216)		(1186)	(864)	(864)	(864)
Equity Investments	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
Depreciation, Amortization	955	849	823	799	592	600	755	882	662	669	695	728		3426	2829	2755	2450
Stock Compensation	310	348	353	374	374	374	374	374	374	374	374	374		1385	1496	1496	1496
Changes In																	
Accounts receivable	86	(272)	(743)	(321)	664	(64)	(1231)	(1014)	574	(66)	(256)	(322)		(1250)	(1644)	(69)	(969)
Inventories	(464)	(332)	122	94	366	(25)	(866)	(660)	464	(6)	(157)	(188)		(580)	(1184)	114	(522)
Prepaid exp., other	0	(46)	(143)	(92)	0	0	0	0	0	0	0	0		(281)	0	0	0
Accounts payables	25	236	(547)	(952)	(141)	12	377	312	(219)	3	34	87		(1238)	559	(95)	242
Cash Flow from Operations	\$486	\$379	\$421	\$381	\$1,667	\$742	(\$39)	\$1,019	\$2,632	\$1,779	\$1,678	\$1,846		\$1,667	\$3,389	\$7,935	\$8,567
Cash Flows - Investing																	
Capex Spending	(158)	(125)	(124)	(139)	(122)	(123)	(155)	(182)	(167)	(168)	(175)	(183)		(546)	(582)	(693)	(794)
Security Purchases	0	(312)	(496)	(410)	0	0	0	0	0	0	0	0		(1218)	0	0	0
Security Sales	0	0	746	770	0	0	0	0	0	0	0	0		1516	0	0	0
Cash Flow from Investing	(\$1,237)	(\$438)	\$102	\$150	(\$122)	(\$123)	(\$155)	(\$182)	(\$167)	(\$168)	(\$175)	(\$183)		(\$1,423)	(\$582)	(\$693)	(\$794)
Cash Flows - Financing																	
Debt Issuance	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
Debt Repayments	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
Share Repurchases	(617)	0	(511)	(233)	(233)	(233)	(233)	(233)	(233)	(233)	(233)	(233)		(1361)	(932)	(932)	(932)
Cash Flow from Financing	(\$259)	\$75	(\$803)	(\$159)	(\$233)	(\$233)	(\$233)	(\$233)	(\$233)	(\$233)	(\$233)	(\$233)		(\$1,146)	(\$932)	(\$932)	(\$932)
Change in Cash & Eqv.	(1010)	16	(280)	372	1313	385	(427)	604	2233	1377	1270	1429		(902)	1875	6309	6841
Beginning cash & equivalents	4835	3825	3841	3561	3933	5246	5631	5204	5808	8041	9418	10688		4835	3933	5808	12117
Ending cash & equivalents	3825	3841	3561	3933	5246	5631	5204	5808	8041	9418	10688	12117		3933	5808	12117	18958
Free cash flow	\$328	\$254	\$297	\$242	\$1,546	\$618	(\$194)	\$837	\$2,466	\$1,610	\$1,503	\$1,662		\$1,121	\$2,807	\$7,241	\$7,773
FCF/sh	\$0.20	\$0.16	\$0.18	\$0.15	\$0.95	\$0.38	(\$0.12)	\$0.51	\$1.51	\$0.99	\$0.92	\$1.02		\$0.69	\$1.72	\$4.43	\$4.75
TTM FCF	\$2,519	\$1,867	\$1,322	\$1,121	\$2,339	\$2,703	\$2,212	\$2,807	\$3,727	\$4,719	\$6,416	\$7,241					
TTM FCF/sh	\$1.56	\$1.15	\$0.81	\$0.69	\$1.43	\$1.66	\$1.36	\$1.72	\$2.28	\$2.89	\$3.93	\$4.43					

Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH



## Price objective basis & risk

### Advanced Micro Devices, Inc (AMD)

Our \$195 PO is based on 38x our 2025E non-GAAP EPS, which is towards the middle of AMD's historical 17x-64x range, justified by AI upside offset by slowdown in cyclical embedded/console markets.

Downside risks: 1) M&A integration risks, 2) Strong competition from larger names, 3) Lumpy nature of consumer and enterprise spending that could create delays in acceptance and success of new products, 4) High reliance on one outsourced manufacturing partner, 5) Maturity of current game console cycle.

### NVIDIA Corporation (NVDA, C-1-7, \$627.74)

Our \$700 PO is based on 27x CY25E PE ex cash, within NVDA's historical 26x-69x forward year PE range, justified given stronger growth opportunities ahead as gaming cycle troughs and data center demand potentially faces strong, long-term demand dynamics.

Downside risks to our price objective are: 1) weakness in consumer driven gaming market, 2) Competition with major public firms, internal cloud projects and other private companies in accelerated computing markets, 3) Larger than expected impact from restrictions on compute shipments to China, or additional restrictions placed on activity in the region, 4) Lumpy and unpredictable sales in new enterprise, data center, and autos markets, 5) Potential for decelerating capital returns.

## Analyst Certification

I, Vivek Arya, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

### US - Semiconductors and Semiconductor Capital Equipment Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
<b>BUY</b>				
	Advanced Micro Devices, Inc	AMD	AMD US	Vivek Arya
	Analog Devices Inc.	ADI	ADI US	Vivek Arya
	Applied Materials, Inc.	AMAT	AMAT US	Vivek Arya
	Arm Holdings	ARM	ARM US	Vivek Arya
	Broadcom Inc	AVGO	AVGO US	Vivek Arya
	Cadence	CDNS	CDNS US	Vivek Arya
	Camtek	CAMT	CAMT US	Vivek Arya
	KLA Corporation	KLAC	KLAC US	Vivek Arya
	Lam Research Corp.	LRCX	LRCX US	Vivek Arya
	M/A-Com	MTSI	MTSI US	Vivek Arya
	Marvell Technology Group Ltd.	MRVL	MRVL US	Vivek Arya
	Microchip	MCHP	MCHP US	Vivek Arya
	Micron Technology, Inc	MU	MU US	Vivek Arya
	Nova	NVMI	NVMI US	Vivek Arya
	NVIDIA Corporation	NVDA	NVDA US	Vivek Arya
	NXP Semiconductors NV	NXPI	NXPI US	Vivek Arya
	onsemi	ON	ON US	Vivek Arya
	Synopsys	SNPS	SNPS US	Vivek Arya
<b>NEUTRAL</b>				
	Advanced Energy Industries	AEIS	AEIS US	Duksan Jang
	Allegro MicroSystems	ALGM	ALGM US	Blake Friedman
	Axcelis Technologies	ACLS	ACLS US	Duksan Jang
	Coherent Corp	COHR	COHR US	Vivek Arya
	GlobalFoundries	GFS	GFS US	Vivek Arya



**US - Semiconductors and Semiconductor Capital Equipment Coverage Cluster**

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Intel	INTC	INTC US	Vivek Arya
	Lattice Semiconductor	LSCC	LSCC US	Blake Friedman
	Texas Instruments Inc.	TXN	TXN US	Vivek Arya
<b>UNDERPERFORM</b>				
	Ambarella	AMBA	AMBA US	Vivek Arya
	Credo Technology	CRDO	CRDO US	Vivek Arya
	Lumentum Holdings	LITE	LITE US	Vivek Arya
	Qorvo Inc.	QRVO	QRVO US	Vivek Arya
	Skyworks Solutions, Inc.	SWKS	SWKS US	Vivek Arya
	Teradyne	TER	TER US	Vivek Arya
	Wolfspeed Inc	WOLF	WOLF US	Vivek Arya

**iQmethod<sup>SM</sup> Measures Definitions****Business Performance**

Return On Capital Employed

Return On Equity

Operating Margin

Earnings Growth

Free Cash Flow

**Quality of Earnings**

Cash Realization Ratio

Asset Replacement Ratio

Tax Rate

Net Debt-To-Equity Ratio

Interest Cover

**Valuation Toolkit**

Price / Earnings Ratio

Price / Book Value

Dividend Yield

Free Cash Flow Yield

Enterprise Value / Sales

EV / EBITDA

**Numerator**

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income

Operating Profit

Expected 5 Year CAGR From Latest Actual

Cash Flow From Operations – Total Capex

**Numerator**

Cash Flow From Operations

Capex

Tax Charge

Net Debt = Total Debt – Cash &amp; Equivalents

EBIT

**Numerator**

Current Share Price

Current Share Price

Annualised Declared Cash Dividend

Cash Flow From Operations – Total Capex

EV = Current Share Price × Current Shares + Minority Equity + Net Debt +

Other LT Liabilities

Enterprise Value

**Denominator**

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill

Amortization

Shareholders' Equity

Sales

N/A

N/A

**Denominator**

Net Income

Depreciation

Pre-Tax Income

Total Equity

Interest Expense

**Denominator**

Diluted Earnings Per Share (Basis As Specified)

Shareholders' Equity / Current Basic Shares

Current Share Price

Market Cap = Current Share Price × Current Basic Shares

Sales

Basic EBIT + Depreciation + Amortization

iQmethod<sup>SM</sup> is the set of BofA Global Research standard measures that serve to maintain global consistency under three broad headings: Business Performance, Quality of Earnings, and validations. The key features of iQmethod are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

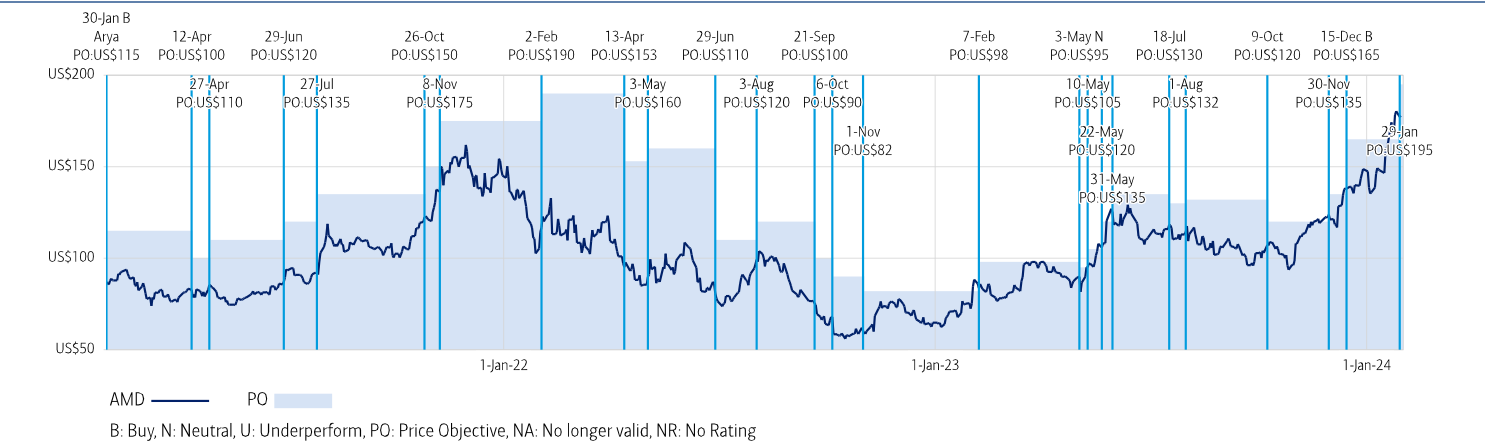
iQdatabase<sup>®</sup> is our real-time global research database that is sourced directly from our equity analysts' earnings models and includes forecasted as well as historical data for income statements, balance sheets, and cash flow statements for companies covered by BofA Global Research.

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# Disclosures

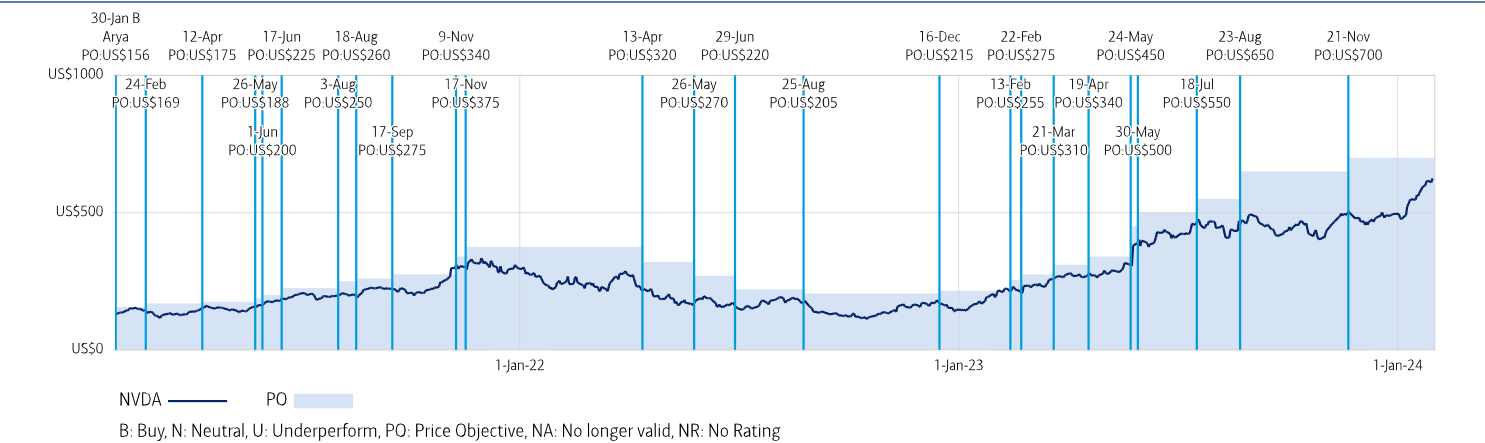
## Important Disclosures

### Advanced Micro (AMD) Price Chart



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.

### NVIDIA (NVDA) Price Chart



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: Technology Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	215	53.09%	Buy	111	51.63%
Hold	97	23.95%	Hold	45	46.39%
Sell	93	22.96%	Sell	24	25.81%

### Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships <sup>R1</sup>	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

<sup>R1</sup> 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 <sup>R2</sup>
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

<sup>R2</sup>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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