

US Semiconductors

State of the union: big-tech results next gut-check for AI semis

Industry Overview

More of the same thus far in '24

SOX index up 4% YTD (vs. SPX up 2.5%), led by strength across “planet AI” including data-center exposed chip stocks (on avg. up 7% YTD), memory/storage (up 7%) and semicap equipment (up 6%). This has been offset by continued weakness in more cyclical markets including auto/industrial semis (-7% YTD), smartphones (-4%) and SMidcaps (-1%), as detailed on Pg. 2. TSMC and ASML results/guide provides a compelling view of high-performance computing growth well into CY25E, but weakness at TXN and INTC was a sharp reminder that cyclical headwinds still persist across PC, enterprise, telco, industrial and now auto end markets.

AMD headline report next week, we see muted Q1

Several big tech names report next week (MSFT, Alphabet, Amazon, Meta, Apple), and their views on capex/AI monetization could be critical to continued outperformance of data center/AI stocks. As reference we forecast about 20% YoY growth in CY24 cloud capex, though flag the growing pool of AI capex at state entities and small-mid-size data-center operators (such as Coreweave, or Equinix who last week announced fully-managed NVDA DGX private cloud service for enterprises). Results from enterprise software leader ServiceNow (covered by Brad Sills) suggest strong enterprise gen AI adoption, where related products drove its largest net new annualized contract value contribution. Within our coverage AMD will be the headliner next week, reporting post-close on Tuesday. As detailed in our preview (linked [here](#)), we see an inline Q4, but Q1 outlook possibly below expectations, driven by PC, Xilinx FPGA/embedded (auto/industrial inventory correction), enterprise headwinds. AMD stock could also be at risk of some n-t profit taking after its parabolic 80%+ move up in the last 3 months, over 2x vs SOX and 4x vs SPX. However, we believe as long as management keeps the focus on server CPU share gains and MI300 AI ramp, the stock could recover soon as it offers an attractive alternative to NVDA in a rapidly expanding AI market.

CHIPS grants imminent, benefit INTC, TXN, MU, Semicaps

Media reports suggest we could soon (within Q1) see headlines of several large grants from US CHIPS Act (\$39bn in total including \$11bn for mature node). Most impactful for INTC (also holds foundry day event on Feb-21), TXN (Capital management upside Feb-1), MU, WOLF and others. In our view the most important beneficiaries could be semicap equipment stocks, though tool orders are more likely to impact CY25 than CY24 wafer fab equipment spending (more meaningful for CY25 demand).

Seasonality favors SOX, catalysts well into March

Despite mixed news, we believe seasonality favors SOX, with the index up 700bps+ on an average in CQ1 since 2010, 440bps ahead of the SPX. The outperformance has often then reversed in Q2/Q3. Catalysts continue as we head towards NVDA's earnings (Feb-21) and then its GPU Tech conference (GTC) during week of March 18 which also includes analyst events at AVGO and SNPS, all with solid AI-driven growth trends.

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 8 to 11. Analyst Certification on page 7. Price Objective Basis/Risk on page 5.

12651540

Timestamp: 29 January 2024 06:00AM EST

29 January 2024

Equity
United States
Semiconductors

Vivek Arya
Research Analyst
BofAS
+1 646 855 1755
vivek.arya@bofa.com

Blake Friedman
Research Analyst
BofAS
+1 646 556 1850
blake.friedman@bofa.com

Duksan Jang
Research Analyst
BofAS
+1 646 556 4825
duksan.jang@bofa.com

Lauren Guy
Research Analyst
BofAS
+1 646 855 4273
lauren.guy2@bofa.com

AI: Artificial Intelligence

AMAT: Applied Materials

AMD: Advanced Micro Devices

ASML: ASML Holding

AVGO: Broadcom

INTC: Intel

KLAC: KLA Corporation

LRCX: Lam Research

MCHP: Microchip

MRVL: Marvell

MSFT: Microsoft

NVDA: Nvidia

NXPI: NXP Semiconductor

ON: onsemi

PC: Personal Computer

SOX: Philadelphia Semiconductor Index

SPX: S&P 500 Index

TXN: Texas Instruments

WFE: Wafer fab equipment

YTD: Year to-date

SNPS: Synopsys

Weekly wrap: mixed results

The SOX (flat week-to-date) modestly underperformed the SPX (+1% week-to-date) through the first week of earnings. TSMC's results highlighted industry optimism following a down '23 (guided '24 semis ex-memory sales up >10% YoY), though initial semis reports reflect continued market headwinds. Decelerating industrial demand, emerging autos weakness, and PC/data center seasonality drove several guides below Street (TXN, STM, INTC). While we continue to expect 8%-10%+, growth is likely to be 2H weighted (similar to semicaps/WFE demand) driven by continued AI infra investment, rebound from auto/industrial inventory corrections, and seasonal upturn in smartphones/PCs. Up next week are several semis in smartphone (SWKS, QRVQ, QCOM, TER, Apple), auto/industrial (WOLF, MCHP, MTSI, ALGM, TXN capital mgmt), and AMD.

Zooming out, the SOX index is up 4% YTD (vs. SPX up 2.5%), led by strength across "planet AI" including data-center exposed chip stocks (on avg. up 7% YTD), memory/storage (up 7%) and semicap equipment (up 6%). This has been offset by continued weakness in more cyclical markets including auto/industrial semis (-7% YTD), smartphones (-4%) and SMidcaps (-1%). TSMC and ASML results/guide provides a compelling view of high-performance computing growth well into CY25E, but weakness at TXN and INTC was a sharp reminder that cyclical headwinds still persist across PC, enterprise, telco, industrial and now auto end markets.

Exhibit 1: Summary of stock performance by major end market

Semis performance YTD mix, with compute/semicap/memory outperformance offset by other markets

Sub-sector	YTD	Q4'23	Q3'23	Q2'23	Q1'23	2023	2022
Compute/Networking/EDA	7.0%	26.2%	-2.9%	22.1%	36.2%	103.5%	-13.6%
Smartphones	-3.6%	18.7%	-8.2%	-9.6%	26.1%	22.7%	-17.6%
Auto/Industrial/IoT	-7.2%	6.5%	-9.5%	2.6%	28.8%	26.0%	4.9%
Semicap	5.5%	19.7%	-7.5%	14.0%	21.1%	53.3%	-20.2%
Memory/Storage	6.8%	23.2%	11.6%	-0.4%	21.9%	66.3%	-39.6%
SMidcaps	-1.0%	12.2%	-8.1%	17.5%	16.6%	39.2%	167.8%
SOX Index	4.0%	21.6%	-6.5%	13.7%	27.6%	64.9%	-18.1%
S&P 500 Index	2.5%	11.2%	-3.6%	8.3%	7.0%	24.2%	-13.8%
Nasdaq Index	3.0%	13.6%	-4.1%	12.8%	16.8%	43.4%	-21.9%

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Auto/industrial: Corrections ongoing

TXN rev guide missed on cyclical weakness. DecQ was TXN's first period of auto weakness, with sales down mid-single digits QoQ (vs up mid-single digits in SepQ), while industrial continued to weaken (down mid-teens QoQ vs down MSD in SepQ). STM reported auto demand stable (likely helped by SiC exposure) despite cut at ADAS customer (likely MBL) and sees auto growth of MSD% in CY24E. Commentary from auto OEMs Tesla/Hyundai suggest EV demand slowdown a concern, with TSLA volume production growth to be "well below" from ~38% YoY in CY23. Hyundai saw EV demand weaken in Q4 and expects 12% YoY unit growth in CY24E vs 28% YoY for hybrid.

Auto/industrial stocks: non-consensus but require patience

We continue to like NXPI (top pick) and ON, though expect weak Q1, below-consensus outlook when they report the week of Feb-5 (see our related [preview](#)). Auto/industrial semis offer important diversification away from planet AI, at more compelling valuations (17-18x estimate-adjusted and 13-14x current forward PE for NXPI/ON), but stocks could require patience especially as/until investors continue to find comfort in data center/AI semis. Industrial/auto chips benefitted most from pricing/non-cancelable contracts and tight supply from CY20-1H23 but are now seeing the other side with industrial correction that began late '23 and auto chip inventory correction that could just be starting now. Weak demand and frequent price cuts at EV innovation leader Tesla are concerning, and perhaps leading indicator for auto chip recovery sentiment. Upcoming US elections and potential for greater US/China friction/tariffs etc. could

further impact the timing of any cyclical recovery, and keep attention focused on data-center semis that are more dependent on domestic cloud spending.

Semicaps: resilient on CHIPS grants, AI, CY25E recovery

Despite weak CY23 WFE, at-best 0-5% YoY CY24 WFE recovery, just inline Q1 outlook from LRCX, and misses from ASML/KLAC, semicap stocks remain resilient. History shows that semicap equipment stocks are more sensitive to performance of data center semis, and less to absolute WFE changes.

There appears to be some industry debate on actual CY23 WFE baseline, with different companies suggesting a number between low 80s to mid \$80bn. Even though both companies are more confident of CY24 WFE at high \$80bn level, the CY23 baseline impacts the way one thinks of growth as being either flattish or up mid-single digit, with greater 2H recovery.

LRCX in line Q4/Q1, though company recorded DRAM sales in DecQ, benefitting from AI-focused HBM/DDR5 spending. Leading edge spend/NAND to recover closer to 2H24/CY25, sentiment shared by ASML (flattish YoY CY24 guide, robust booking activity on EUV demand). KLAC Q1 miss (-6% below Street) related to Samsung fab pushout, though can offset with other projects in future quarters. Like peers, KLAC optimistic about leading edge/memory demand in 2H24. Look to INTC IFS day (Feb-21) as possible catalyst for the group.

We continue to like this sector (KLAC top pick, also like AMAT, LRCX, NVMI) on headline benefits from upcoming large CHIPS grants; China spending resiliency (though subject to US election/restriction noise); 2H memory spending recovery (more DRAM than NAND) and large tech inflections/rising WFE intensity in leading-edge (Gate All Around or GAA, back side power) into CY25E.

INTC results weak, we continue to prefer AI infrastructure

INTC Q1 miss (\$12.7bn vs. \$14.2bn expected) partially related to “non-core assets” (Mobileye, PSG/Altera), though core x86 PC/server business remains muted, with foundry business turning as certain contracts roll-off. Net-net, read through negative for AMD (reports Jan-30), but note AMD’s stronger position in the accelerator market could offset any x86/FPGA related headwinds. We expect investors more focused on upside to previous CY24 data center GPU guide of \$2bn, with consensus closer to ~\$3bn-\$4bn (see preview). AI infrastructure continues to remain our preferred market, expecting the investment cycle to last through CY25 (top pick NVDA, also like AVGO, MRVL, AMD).

Several big tech names reports next week (MSFT, Alphabet, Amazon, Meta, Apple), and their views on capex/AI monetization could be critical to continued outperformance of data center/AI stocks. As reference we forecast about 20% YoY growth in CY24 cloud capex, though flag the growing pool of AI capex at state entities and small-mid-size data-center operators (such as Coreweave, or Equinix who last week announced fully-managed NVDA DGX private cloud service for enterprises). Results from enterprise software leader ServiceNow (covered by Brad Sills) suggest strong enterprise gen AI adoption, where related products drove its largest net new annualized contract value contribution.

Exhibit 2: Summary of performance by stocks and end markets

Semis have slightly outperformed the SPX YTD, led by performance in compute stocks

	YTD	Q4'23	Q3'23	Q2'23	Q1'23	2023	2022
SOX	4.0%	21.6%	-6.5%	13.7%	27.6%	64.9%	-18.1%
SPX	2.5%	11.2%	-3.6%	8.3%	7.0%	24.2%	-13.8%
Nasdaq	3.0%	13.6%	-4.1%	12.8%	16.8%	43.4%	-21.9%
Compute/EDA							
NVDA	23.2%	13.8%	2.8%	52.3%	90.1%	238.9%	-5.6%
INTC	-13.1%	41.4%	6.3%	2.4%	23.6%	90.1%	-36.6%
AVGO	7.9%	34.4%	-4.2%	35.2%	14.7%	99.6%	-3.6%



Exhibit 2: Summary of performance by stocks and end markets

Semis have slightly outperformed the SPX YTD, led by performance in compute stocks

	YTD	Q4'23	Q3'23	Q2'23	Q1'23	2023	2022
AMD	20.2%	43.4%	-9.7%	16.2%	51.3%	127.6%	-31.9%
MRVL	12.8%	11.4%	-9.5%	38.1%	16.9%	62.8%	-50.5%
SNPS	2.6%	12.2%	5.4%	12.7%	21.0%	61.3%	4.8%
CDNS	6.7%	16.2%	-0.1%	11.6%	30.8%	69.6%	12.7%
MPWR	-4.7%	36.5%	-14.5%	7.9%	41.6%	78.4%	1.5%
Average	7.0%	26.2%	-2.9%	22.1%	36.2%	103.5%	-13.6%
Smartphones							
QCOM	4.2%	30.2%	-6.7%	-6.7%	16.0%	31.6%	-30.2%
SWKS	-7.0%	14.0%	-10.9%	-6.2%	29.5%	23.4%	-24.0%
QRVO	-7.9%	18.0%	-6.4%	0.5%	12.1%	24.2%	-35.1%
CRUS	-3.8%	12.5%	-8.7%	-25.9%	46.9%	11.7%	18.9%
Average	-3.6%	18.7%	-8.2%	-9.6%	26.1%	22.7%	-17.6%
Auto/Industrial/IoT							
TXN	-3.7%	7.2%	-11.7%	-3.2%	12.6%	3.2%	-1.3%
ADI	-2.3%	13.4%	-10.1%	-1.2%	20.2%	21.1%	12.2%
NXPI	-6.3%	14.9%	-2.3%	9.8%	18.0%	45.3%	-18.1%
IFX	-9.1%	20.6%	-17.0%	0.3%	32.5%	33.0%	-7.6%
MCHP	-3.6%	15.5%	-12.9%	6.9%	19.3%	28.4%	-3.8%
STM	-8.7%	10.4%	-10.1%	-6.9%	48.4%	37.1%	12.9%
ON	-14.2%	-10.1%	-1.7%	14.9%	32.0%	33.9%	21.2%
LSCC	-9.4%	-19.7%	-10.6%	0.6%	47.2%	6.3%	23.9%
Average	-7.2%	6.5%	-9.5%	2.6%	28.8%	26.0%	4.9%
Semicap							
AMAT	3.0%	17.1%	-4.2%	17.7%	26.1%	66.4%	-21.9%
ASML	16.9%	21.9%	-15.7%	6.0%	24.1%	35.3%	-11.5%
LRCX	7.1%	25.0%	-2.5%	21.3%	26.1%	86.4%	-26.3%
KLAC	3.1%	26.7%	-5.4%	21.5%	5.9%	54.2%	-7.2%
TER	-2.8%	8.0%	-9.8%	3.6%	23.1%	24.2%	-34.3%
Average	5.5%	19.7%	-7.5%	14.0%	21.1%	53.3%	-20.2%
Memory/Storage							
MU	3.2%	25.4%	7.8%	4.6%	20.7%	70.7%	-35.2%
WDC	11.2%	14.8%	20.3%	0.7%	19.4%	66.0%	-42.2%
STX	5.9%	29.4%	6.6%	-6.4%	25.7%	62.3%	-41.5%
Average	6.8%	23.2%	11.6%	-0.4%	21.9%	66.3%	-39.6%
Foundry							
GFS	-6.8%	4.1%	-9.9%	-10.5%	33.9%	12.5%	11.1%
Smallcaps							
COHR	8.7%	33.4%	-36.0%	33.9%	8.5%	24.0%	-44.3%
MTSI	-6.0%	13.9%	24.5%	-7.5%	12.5%	47.6%	-9.5%
WOLF	-21.7%	14.2%	-31.5%	-14.4%	-5.9%	-37.0%	-41.9%
NVMI	6.1%	22.2%	-4.1%	12.3%	27.9%	68.2%	-28.7%
CAMT	14.0%	11.4%	74.7%	25.7%	29.1%	215.9%	-38.4%
LITE	5.4%	16.0%	-20.4%	5.0%	3.5%	0.5%	-48.9%
AMBA	-10.6%	15.6%	-36.6%	8.1%	-5.8%	-25.5%	-61.8%
AEIS	-3.6%	5.6%	-7.5%	13.7%	14.2%	27.0%	880.0%
ALGM	-11.6%	-5.2%	-29.2%	-5.9%	59.9%	0.8%	336.3%
CRDO	7.0%	27.7%	-12.1%	84.1%	-29.2%	46.3%	-21.5%
ACLS	1.2%	-20.5%	-11.1%	37.6%	67.9%	63.4%	925.0%
Average	-1.0%	12.2%	-8.1%	17.5%	16.6%	39.2%	167.8%

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 3: Stocks mentioned

Prices and ratings for stocks mentioned in the report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
AMD	AMD US	Advanced Micro	US\$ 177.25	C-1-9
AMAT	AMAT US	Applied Materials	US\$ 166.9	B-1-7
AVGO	AVGO US	Broadcom	US\$ 1204.88	B-1-7
CDNS	CDNS US	Cadence	US\$ 290.73	B-1-9
INTC	INTC US	Intel	US\$ 43.65	B-2-8
KLAC	KLAC US	KLA Corp	US\$ 599.37	B-1-7
LRCX	LRCX US	Lam Research	US\$ 839.04	C-1-7
MRVL	MRVL US	Marvell	US\$ 68.04	C-1-7
NVDA	NVDA US	NVIDIA	US\$ 610.31	C-1-7
SNPS	SNPS US	Synopsys	US\$ 528.13	B-1-9

Source: BofA Global Research

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.

Applied Materials, Inc. (AMAT)

Our PO of \$185 is based on 21x our CY25E P/E estimate, in line with mid-cycle average and at normal 1-2 turn discount to more profitable semicap peers.

Downside risks to our PO are: ongoing US government probe that we are unable to size the financial impact at this time, slower-than-expected capital spending cycle, delay in memory capacity adds, market share loss in deposition, implant, thermal, CMP, etch, or process control segments, merger & integrations risk, and macro headwinds.

Broadcom Inc (AVGO)

Our \$1250 price objective for Broadcom is based on 22x CY25E P/E, the upper end of its 8x-23x historical range, though justified given double-digit EPS growth and best-in-semis profitability, FCF generation, and returns.

Downside risks to our price objective are 1) semiconductor cycle risks, including sensitivity to US/China trade relations, 2) high exposure to Apple and Google with potential design out risks, 3) competitive risks in networking, smartphone, storage, enterprise software markets, 4) frequent acquirer of assets, which increases financial and integration risks, and 5) recent strategy towards moving into non-core software businesses creates execution risks.

Cadence (CDNS)

Our \$315 PO is based on 46x FY25E P/E, at upper end historical 22x-52x trading range and justified in our view given the strategic importance of EDA in an increasingly fragmented global electronics supply chain.

Downside risks are: (1) Share loss in existing markets to primary competitors, (2) a broader economic downturn dampens semis R&D spending and corresponding spend on



EDA tools and services, (3) escalation of US-China trade war limits CDNS' ability to sell to key customers, (4) semiconductor industry consolidation accelerates which could diminish customer spending power, (5) venture into adjacent system analysis market fails to meaningfully accelerate revenue growth and incremental investments suppress margin expansion.

Intel (INTC)

Our \$50 price objective is based on 26x our 2025E pf-EPS ex-stock comp expense, in the middle of compute peers (15x-40x), which we view as appropriate given manufacturing uncertainties and risks of new foundry strategy.

Upside risks to our price objective are 1) clarity or breakthrough on yields for 7nm process technology, 2) new products allowing Intel to limit share loss, 3) improving product mix which can drive upside to gross margins, 4) manufacturing slip up at key foundry competitors.

Downside risks to our price objective are 1) weaker-than-expected trends in a mature PC market, which is largest revenue generator for Intel, 2) further delays in 7nm process technology and roadmap, 3) accelerated share loss to AMD, 4) more competition in profitable data center market.

KLA Corporation (KLAC)

Our PO of \$740 is based on 26x CY25E P/E, at higher end KLAC's historical range of 10x-26x. KLAC's leading profit margin and less cyclical topline supports a slightly higher multiple vs. semicap peers, in our view.

Downside risks to our PO are the cyclical nature of the semiconductor capital spending and its impact on earnings, competitive price and market share issues, particularly against Applied Materials, ability to get new products and technologies into the market in a timely manner.

Lam Research Corp. (LRCX)

Our PO of \$970 is based on 25x cash adjusted CY25E PE, in line with its historical 1-2 turn discount to more profitable semicap peers.

Upside risks to our PO are: stronger-than-expected electronics demand that would tighten up semiconductor capacity, driving increased semiconductor equipment sales and/or increasing market share.

Downside risks are slower than expected capital spending cycle, delay in memory capacity adds, market share loss in etch or clean segments, merger & integrations risk, and macro headwinds.

Marvell Technology Group Ltd. (MRVL)

Our \$80 PO is based on a 32x FY26E/CY25E pf-EPS, which is well-supported by the 20%-30%+ longer-term compounded annual EPS growth potential, and within the normal 1x-2x range for high growth semi peers.

Downside risks: 1) Integration risks in recent deals, 2) Financial risks related to going to net debt from net cash position, and in achieving expected cost synergies in a timely manner, and 3) Cyclical industry risks including potential slowdown in legacy hard disk drive, infrastructure spending, and storage assets, 4) Competitive risks against larger well resourced rivals.

NVIDIA Corporation (NVDA)

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.

Synopsis (SNPS)

Our \$650 PO is based on 40x 2025E P/E, at upper end of company's historical trading range (19x-49x), justified in our view as EDA investment accelerates as chip complexity rises.

Downside risks are (1) variability in IP/hardware sales creates issues in timing of revenue recognition, (2) competitors develop unique software capabilities displacing SNPS at core customers, (3) heightened geopolitical tensions lead to further restrictions on supplying firms in China with EDA technology.

Upside risks are (1) share gains in existing markets versus primary competitors, (2) increased government investment in semiconductor R&D and development as nations develop internal ecosystems, (3) material M&A that enables consistent margin expansion or further accelerates sales CAGR, (4) faster-than-expected cost improvements driving higher operating margin.

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.

Special Disclosures

BofA Securities is currently acting as financial advisor to Intel Corp in connection with its sale of a minority stake in IMS Nanofabrication GmbH to Taiwan Semiconductor Manufacturing Co Ltd, which was announced on September 12, 2023.

US - Semiconductors and Semiconductor Capital Equipment Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	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
NEUTRAL				
	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
	Intel	INTC	INTC US	Vivek Arya
	Lattice Semiconductor	LSCC	LSCC US	Blake Friedman
	Texas Instruments Inc.	TXN	TXN US	Vivek Arya
UNDERPERFORM				
	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

Disclosures

Important Disclosures

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

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	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 ^{R1}	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%

^{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.

BofAS or one of its affiliates acts as a market maker for the equity securities recommended in the report: Advanced Micro, Applied Materials, Broadcom, Cadence, Intel, KLA Corp, Lam Research, Marvell, NVIDIA, Synopsys.

BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: Intel, Marvell Tech.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: Advanced Micro, Applied Materials, Broadcom Inc, Intel, KLA Corp, Lam Research, Marvell Tech, NVIDIA, Synopsys.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Advanced Micro, Applied Materials, Broadcom Inc, Cadence, Intel, KLA Corp, Lam Research, Marvell Tech, NVIDIA, Synopsys.

The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: Advanced Micro, Applied Materials, Broadcom Inc, Cadence, Intel, KLA Corp, Lam Research, Marvell Tech, NVIDIA, Synopsys.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Advanced Micro, Applied Materials, Broadcom Inc, Intel, KLA Corp, Lam Research, Marvell Tech, NVIDIA, Synopsys.

BofAS or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer or an affiliate of the issuer within the next three months: Advanced Micro, Applied Materials, Broadcom Inc, Intel, KLA Corp, Lam Research, Marvell Tech, Synopsys.

BofAS together with its affiliates beneficially owns one percent or more of the common stock of this issuer. If this report was issued on or after the 9th day of the month, it reflects the ownership position on the last day of the previous month. Reports issued before the 9th day of a month reflect the ownership position at the end of the second month preceding the date of the report: Applied Materials, Broadcom Inc, KLA Corp, Marvell Tech.

BofAS or one of its affiliates is willing to sell to, or buy from, clients the common equity of the issuer on a principal basis: Advanced Micro, Applied Materials, Broadcom, Cadence, Intel, KLA Corp, Lam Research, Marvell, NVIDIA, Synopsys.

The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of BofAS and/or one or more of its affiliates: Advanced Micro, Applied Materials, Broadcom Inc, Cadence, Intel, KLA Corp, Lam Research, Marvell Tech, NVIDIA, Synopsys.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

From time to time research analysts conduct site visits of covered issuers. BofA Global Research policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

Refer to [BofA Global Research policies relating to conflicts of interest](#).

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofam.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the

ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofA Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

BofA ESGMeter Methodology:

ESGMeter is a proprietary metric based on quantitative analysis and fundamental analyst inputs that reflects our assessment of a company's Environmental, Social and Governance-related attributes. The ESGMeter is intended to indicate a company's likelihood of experiencing stronger financial stability (higher return on equity and lower earnings and price volatility) over the next three years relative to peer group. There are three ESGMeter levels - Low, Medium, and High - which indicate whether a company has attributes most likely to translate into superior financial stability (in the case of a High level) or weaker financial stability (in the case of a Low level) over the next three years relative to its peer group. A Medium level suggests that a company exhibits ESG characteristics that are likely associated with financial stability results in line with its peer group over the next three years. Full details of our methodology, financial stability definition and disclaimers are available at [BofA ESGMeter methodology](#). ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of the BofA Global Research fundamental equity analyst's investment rating, volatility risk rating, income rating or price objective for that company.

Copyright and General Information:

Copyright 2024 Bank of America Corporation. All rights reserved. IQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Subject to the quiet period applicable under laws of the various jurisdictions in which we distribute research reports and other legal and BofA Securities policy-related restrictions on the publication of research reports, fundamental equity reports are produced on a regular basis as necessary to keep the investment recommendation current.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.