Medical Technology

Scrubbing interest expense in 2024

Industry Overview

04 December 2023

Equity
United States
Medical Technology

Travis Steed
Research Analyst
BofAS
+1 404 607 3251
travis.steed@bofa.com

Craig Bijou
Research Analyst
BofAS
+1 646 855 2590
craig.bijou@bofa.com

Carolyn Huszagh
Research Analyst
BofAS
+1 312 259 7414
carolyn.huszagh@bofa.com

Stephanie Piazzola
Research Analyst
BofAS
+1 646 855 4568
stephanie.piazzola@bofa.com

A look at who has debt coming due

We looked through our coverage to see who has debt coming due in 2024 and 2025 as we think about potential below the line items for 2024 (we addressed Tax last week with Pillar Two and medtech tax). Interest expense could potentially go higher when low-rate fixed debt is refinanced at higher rates. Floating debt may also see a modest headwind depending on where rates go. Inside we include a rough analysis estimating what EPS headwind might need offsetting, assuming fixed debt coming due gets refinanced at 300bps higher rates and floating debt goes 100bps higher. Reducing overall leverage is a potential offset to higher rates and this was a well-known variable as companies gave some early 2024 commentary (see 2024 medtech - what we know so far).

A few things to note that are company specific

ZimmerBiomet (ZBH) has $850m of 1.45% fixed debt maturing in 2024. Last week ZBH issued $500m of 5.35% fixed debt (2028 maturity). All else equal, this $500m at a 390bps higher rate is a $0.08 (or 1%) headwind on 2024 EPS that needs offsetting. However, If ZBH just pays down the $250m remaining, it could offset half of this $0.08. ZBH also has another $863m coming due in 2025.

Stryker (SYK) has $2bn of debt due in 2024 ($1.5bn fixed at 1.5%). We assume SYK will be refinancing some of this debt soon (filed a shelf last week). But this could be about a 1% EPS headwind that SYK needs to offset elsewhere (likely revenue & margins) to get to its double-digit EPS growth goal.

Baxter (BAX) had $1.1bn of debt due on Dec 1, 2023. It has $4bn coming due in 2024 but BAX said it already paid off $950m of this $4bn in Oct 2023 suggesting BAX has roughly $3bn left to pay in 2024. BAX is paying off debt as it comes due with cash from the Biopharma sale. BAX interest expense could go down $80m y/y in 2024 given the debt paydown. BAX has $642m coming due in 2025 but at that point may have access to proceeds from a retained stake in the Renal Spin.

GE Healthcare (GEHC) has $1bn in debt coming due in Nov 2024 but we'd note this debt is already at a 5.5% interest rate and GEHC's top capital allocation strategy over the next 18 months is to pay down debt.

2025 debt refi's that could come sometime in 2024

In 2025 ABT has $1.5bn of fixed debt due, BDX has $1.7bn of fixed debt due, BSX has $1.6bn of fixed debt due, DXCM has $1.2bn due, GEHC has $3.5bn due (almost half fixed), COO has $1bn due, ZBH has $863m due, and SYK has $1.4bn due. In smids, IART has $600m due, GMED has $450m convert due, and TNDM has its $288m convert due. NVRO just addressed the $190m it had due in 2025 with last week's financing.

See inside for the tables that lay this out more clearly. We also update our EMBC model for FQ4 EPS a few weeks ago. Our EMBC FY24/FY25 EPS goes to $2.00/$2.13.

Tickers mentioned

ZBH = ZimmerBiomet
SYK = Stryker
BAX = Baxter
GEHC = GE Healthcare
ABT = Abbott
EMBC = Embecta

Acronym glossary

SMID = small and mid
BDX = Becton Dickinson
BSX = Boston Scientific
DXCM = Dexcom
COO = Cooper Companies
IART = Integra
GMED = Globus Medical
TNDM = Tandem
NVRO = Nevro
EMBC = Embecta

Many companies have debt due in ‘24/‘25

Exhibit 1: Debt outstanding ($m) as of fiscal quarter-end, and debt coming due ($m) in FY24 or FY25

BAX, SYK, and ZBH have the most debt due in ‘24 as a % of debt outstanding. TNDM, GMED, and NVRO have the most debt due in ’25 as a % of debt outstanding.

	Total debt ($m)			Due in FY24 ($m)				Due in FY25 ($m)			
Ticker	Principal	% Fixed	% Floating	Principal	% of Total	% Fixed	% Floating	Principal	% of Total	% Fixed	% Floating
ABT	**15,785**	97%	3%	1,027	**7%**	61%	39%	1,500	**10%**	100%	0%
BAX*	**16,595**	75%	25%	3,990**	**25%**	56%	44%	642	**4%**	100%	0%
BDX	**16,096**	100%	0%	1,141	**7%**	100%	0%	1,717	**11%**	100%	0%
BLCO	**4,363**	0%	100%	41	**1%**	0%	100%	41	**1%**	0%	100%
BSX	**9,000**	100%	0%	504	**6%**	100%	0%	1,571	**17%**	100%	0%
CNMD	**1,005**	87%	13%	91	**9%**	77%	23%	24	**2%**	0%	100%
COO	**2,676**	0%	100%	0	**-**	-	-	1,014	**38%**	0%	100%
DXCM*	**2,572**	100%	0%	0	**-**	-	-	1,208	**47%**	100%	0%
EMBC	**1,636**	43%	57%	10	**1%**	0%	100%	10	**1%**	0%	100%
GEHC	**10,250**	80%	20%	1,000	**10%**	100%	0%	3,500	**34%**	43%	57%
GMED*	**450**	100%	0%	0	**-**	-	-	450	**100%**	100%	0%
IART	**1,440**	40%	60%	15	**1%**	0%	100%	609	**42%**	94%	6%
ITGR	**956**	52%	48%	12	**1%**	0%	100%	22	**2%**	0%	100%
MDT	**25,024**	100%	0%	0	**-**	-	-	1,339	**5%**	100%	0%
NVRO*	**190**	100%	0%	0	**-**	-	-	190	**100%**	100%	0%
PODD	**1,289**	62%	38%	5	**0%**	0%	100%	5	**0%**	0%	100%
SILK	**75**	0%	100%	6	**8%**	0%	100%	6	**8%**	0%	100%
SYK*	**12,833**	96%	4%	2,045	**16%**	74%	26%	1,400	**11%**	100%	0%
TNDM	**288**	100%	0%	0	**-**	-	-	288	**100%**	100%	0%
ZBH*	**5,358**	100%	0%	850	**16%**	100%	0%	863	**16%**	100%	0%

Source: Bloomberg, Company filings, BofA Global Research. *Note: Total debt is as of fiscal quarter-end and ’24 and ’25 debt due is on fiscal year (FY) basis for companies that don’t report on calendar basis.

*BAX had $800m in fixed debt due 12/1/23 and $300m in floating debt due 12/1/23. BAX paid down $514m of commercial paper in Oct ’23.

**BAX paid down $950m in floating debt due in 2024 in Oct ’23. Also, BAX has said that it will use BPS divestiture proceeds to pay down another ~$500m in floating debt due in 2024 and ~$800m in fixed debt due in 2024.

*DXCM had a $114m fixed convert expire 12/1/23.

*NVRO issued $200m in floating debt 11/30/23 that addresses the debt it has coming due in FY25

*SYK had $580m in fixed debt due 11/30/23 and $600m in fixed debt due 12/1/23.

*GMED includes $450m fixed convert issued to NUVA that expires 3/15/25.

*ZBH issued $500m in fixed debt on 12/1/23.

BofA GLOBAL RESEARCH

A look at potential interest h/w to ’24 EPS

Below we illustrate at a high-level the potential impact of rising rates on companies that have 1) floating debt due in FY24 which we assume takes on a 100bps higher rate at the start of FY24 and 2) fixed debt due in FY24 which we assume is refinanced at the start of FY24 at a 300bps higher rate.

Exhibit 2: Potential interest headwind (h/w) ($m) to FY24E EPS

BAX, SYK, BDX and ZBH FY24E EPS could be at greatest risk from rising rates

	Due in FY24 ($m)				’24E Interest h/w – if 300bps higher fixed rate and 100bps higher floating rate				
Ticker	Principal	% of Total	% Fixed	% Floating	Refi h/w ($m)	Floating h/w ($m)	Total h/w ($m)	’24E EPS impact $	’24E EPS impact %
ABT	1,027	**7%**	61%	39%	(19)	(4)	(23)	**-0.01**	0%
BDX	1,141	**7%**	100%	0%	(34)	0	(34)	**-0.10**	-1%
BSX	504	**6%**	100%	0%	(15)	0	(15)	**-0.01**	0%
CNMD	91	**9%**	77%	23%	(2)	(0)	(2)	**-0.06**	-2%
EMBC	10	**1%**	0%	100%	0	(0)	(0)	**0.00**	0%
GEHC	1,000	**10%**	100%	0%	(30)	0	(30)	**-0.05**	-1%
IART	15	**1%**	0%	100%	0	(0)	(0)	**0.00**	0%
ITGR	12	**1%**	0%	100%	0	(0)	(0)	**0.00**	0%
PODD	5	**0%**	0%	100%	0	(0)	(0)	**0.00**	0%
SYK	2,045	**16%**	74%	26%	(45)	(5)	(51)	**-0.11**	-1%
ZBH	850	**16%**	100%	0%	(26)	0	(26)	**-0.10**	-1%

Source: Bloomberg, Company filings, BofA Global Research. *Note: h/w = headwind. BAX paid down $950m in floating debt due in 2024 in Oct ‘23. Also, BAX has said that it will use BPS divestiture proceeds to pay down another ~$500m in floating debt due in 2024 and ~$800m in fixed debt due in 2024.

BofA GLOBAL RESEARCH

Low/no-profit SMIDs' cash Vs cash burn

Exhibit 3: Low-to-no profit SMIDs' cash on the balance sheet ($m), Vs TTM FCF and Consensus '24E FCF ($m)
Low-to-no profit SMIDs' trailing-twelve-month (TTM) free cash flow (FCF) and what Street is modeling for '24E FCF, vs cash and debt on the balance sheet.

Ticker	Trailing Twelve Month FCF	Consensus '24 FCF	Cash on Balance Sheet	Cash + Consensus '24 FCF	Cash runway in years, given '24E cash burn	Debt on Balance Sheet
FNA*	(90)	(23)	97	74	**4.2***	115
PRCT	(126)	(90)	291	201	**3.2**	51
RXST	(51)	(37)	132	95	**3.5**	0
SIBN	(32)	(23)	167	144	**7.3**	36
OM*	(116)	(82)	194	112	**2.4***	97
SILK	(29)	(33)	193	160	**5.9**	75
NVRO	(72)	(26)	320	294	**12.1**	188
TNDM	(46)	2	498	500	**-**	285

Source: *Note: Cash and debt balances are on-balance-sheet balances and therefore do not reflect untapped debt capacity.
*OM has access to a $100m debt facility which could increase its cash runway to over 3 years. Also, NVRO excludes $200m term loan priced 11/30/23. FNA cash and debt balances are pro forma given credit facility announced in 4Q'23.

BofA GLOBAL RESEARCH

ZBH: We maintain our Neutral rating on ZBH as it will take time for ZBH to prove out a higher WAMGR.

SYK: We maintain our Buy rating on SYK as we see both revenue and margin upside as new products come to the market and SYK sprints back to 2019 margins.

BAX: We maintain our Neutral rating on BAX given we see multiple expansion being difficult pre-renal spin.

GEHC: We maintain our Neutral rating as we wait for more progress toward margin goals before ascribing GEHC a higher multiple.

ABT: We maintain our Buy rating on ABT as estimates for 2024 seem de-risked and ABT's gross margin expansion gives room for upside along with its balance sheet.

EMBC: We maintain our Underperform rating as EMBC's cash flow value looks reflected in valuation when considering the structural growth rates for this business longer term.

Stocks mentioned

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
ABT	ABT US	Abbott Labs	US$ 104.88	B-1-7
BAX	BAX US	Baxter	US$ 36.55	B-2-7
EMBC	EMBC US	Embecta	US$ 18.42	C-3-7
GEHC	GEHC US	GE Healthcare	US$ 69.41	C-2-7
SYK	SYK US	Stryker	US$ 297.79	B-1-7
ZBH	ZBH US	Zimmer Biomet	US$ 117.97	B-2-7

Source: BofA Global Research

Price objective basis & risk

Abbott Laboratories (ABT)

Our $115 PO is based on 25x our 2024E EPS. This multiple is a premium for a high single digit organic grower but ABT's forward multiple has averaged 27x over the last three years. ABT likely deserves a premium for its balance sheet, above average durability in recession, and upside optionality with COVID testing.

Downside risks to our PO are 1) durability of COVID testing revenue, 2) product or pipeline setbacks, 3) lower-than-expected growth in emerging markets, 4) unfavorable FX moves.

Baxter International Inc (BAX)

Our price objective of $48 is based on an earnings multiple of approximately 14x our 2024E EPS estimate. This multiple represents a several turn discount to the large cap medtech comp group as we see BAX revenues growing below the medtech average particularly with hospitals likely to pull back on replacement capital spending. We do not see any major upside revenue growth catalysts for BAX. Upside/Downside risks to our PO are whether BAX can create value with its portfolio repositioning (business exits/spins) and deflation/inflation given BAX has outsized exposure to inflationary pressures.

Embecta (EMBC)
Our price objective of $17 is based on 8x CY2025 EPS a discount to large cap value medtech that trades at 10-13x EPS given EMBC's structural declining market.

Upside risks to our PO are: 1) Multiple Daily Injection (MDI) patients decline slower than expected, 2) faster growth in emerging markets, 3) pipeline comes to market quicker than expected, and 4) larger opportunity in Type 2 patient population. Downside risks are: a negative material change in EMBC's cash flow driven by a need to invest more or a slowdown in its markets or further pricing pressure

GE HealthCare (GEHC)
Our price objective of $72 is based on 15x our 2025 EPS estimate, a half-turn discount to large cap medtech peers. We believe a slight discount is warranted given GEHC's lower margin profile and higher exposure to hospital capital equipment spending than peers.

Upside risks to our PO are 1) faster than expected topline growth, 2) accelerated margin expansion and 3) growth and margin accretive M&A.

Downside risks to our PO are 1) increased competitive pressure, 2) slower than expected margin expansion, 3) incremental inflation and supply chain challenges and 4) disruptive or dilutive M&A.

Stryker (SYK)
Our $315 PO is based on 27x our 2024 EPS which is a premium to medtech but in line with where higher-quality, higher-growth names trade today on 2024 EPS.

Downside risks to our PO are a slowdown in hospital capital spending, supply chain disruption, or more inflation pressure on costs and materials. Upside risks to our PO are new product launches and continued share gains driving upside to revenue growth. Moderating inflation/improving supply chains could also drive upside.

Zimmer Biomet (ZBH)
Our $130 PO is based on 16x our 2024E EPS. This multiple is in line with large cap medtech peers. We think in line is appropriate given ZBH is growing revenue and eps in line with average large cap medtech peers.

Upside risks to our PO are 1) orthopedic backlog caused by covid comes through faster than expected, 2) pipeline product adoptions happens quicker than we had modeled and 3) an acquisition that accelerates top-line growth.

Downside risks are 1) a slowdown in the hip/knee market, 2) pressure on margins from supply chain/inflation/ increased pricing pressure in hips/knees and 3) slower than expected benefit from robotic utilization and new product mix and 4) strategic activity that is not well received.

Analyst Certification

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

US - Medical Technology & Devices Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Abbott Laboratories	ABT	ABT US	Travis Steed
	Axonics	AXNX	AXNX US	Travis Steed
	Bausch & Lomb	BLCO	BLCO US	Craig Bijou
	Becton Dickinson	BDX	BDX US	Travis Steed
	Boston Scientific	BSX	BSX US	Travis Steed
	Dexcom	DXCM	DXCM US	Travis Steed
	Inari Medical	NARI	NARI US	Travis Steed
	Inspire Medical	INSP	INSP US	Travis Steed
	Insulet	PODD	PODD US	Travis Steed
	Intuitive Surgical	ISRG	ISRG US	Travis Steed
	Medtronic	MDT	MDT US	Travis Steed
	Paragon 28	FNA	FNA US	Craig Bijou
	Procept BioRobotics Corporation	PRCT	PRCT US	Craig Bijou
	RxSight	RXST	RXST US	Craig Bijou
	Shockwave Medical	SWAV	SWAV US	Travis Steed
	Si-Bone	SIBN	SIBN US	Craig Bijou
	Stryker	SYK	SYK US	Travis Steed
	The Cooper Companies	COO	COO US	Craig Bijou
NEUTRAL				
	Baxter International Inc	BAX	BAX US	Travis Steed
	Conmed	CNMD	CNMD US	Travis Steed
	Edwards Lifesciences	EW	EW US	Travis Steed
	GE HealthCare	GEHC	GEHC US	Craig Bijou
	Integer Holdings Corporation	ITGR	ITGR US	Craig Bijou
	Teleflex Incorporated	TFX	TFX US	Craig Bijou
	Zimmer Biomet	ZBH	ZBH US	Travis Steed
UNDERPERFORM				
	Embecta	EMBC	EMBC US	Travis Steed
	Globus Medical	GMED	GMED US	Craig Bijou
	Integra Lifesciences	IART	IART US	Craig Bijou
	Nevro	NVRO	NVRO US	Travis Steed
	Outset Medical	OM	OM US	Travis Steed
	Silk Road Medical	SILK	SILK US	Travis Steed
	Tandem Diabetes Care	TNDM	TNDM US	Travis Steed

Disclosures

Important Disclosures

Equity Investment Rating Distribution: Health Care Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships [R1]	Count	Percent
Buy	233	60.21%	Buy	113	48.50%
Hold	83	21.45%	Hold	33	39.76%
Sell	71	18.35%	Sell	25	35.21%

Equity Investment Rating Distribution: Global Group (as of 30 Sep 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships [R1]	Count	Percent
Buy	1869	53.48%	Buy	1046	55.97%
Hold	828	23.69%	Hold	461	55.68%
Sell	798	22.83%	Sell	370	46.37%

[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: Abbott Labs, Baxter, Embecta, GE Healthcare, Stryker, Zimmer Biomet.
BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: GE HealthCare, Zimmer.
The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: Abbott Labs, Baxter Intl, GE HealthCare, Stryker Corp, Zimmer.
BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Abbott Labs, Baxter Intl, GE HealthCare, Stryker Corp, Zimmer.
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: Abbott Labs, Baxter Intl, GE HealthCare, Stryker Corp, Zimmer.
BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Abbott Labs, Baxter Intl, GE HealthCare, Stryker Corp, Zimmer.
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: Abbott Labs, Baxter Intl, GE HealthCare, Stryker Corp, Zimmer.
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: Abbott Labs, Baxter Intl, Zimmer.
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: Abbott Labs, Baxter, Embecta, GE Healthcare, Stryker, Zimmer Biomet.
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: Abbott Labs, Baxter Intl, GE HealthCare, Stryker Corp, Zimmer.
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.bofaml.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 (HKSFC); 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; BofAS 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 HKSFC; 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:

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.