

Chord Energy Corporation

Downgrade to U/P as we have taken a defensive stance towards oil in 2024

Rating Change: UNDERPERFORM | PO: 165.00 USD | Price: 165.44 USD

Steeply backwardated curve limits upside

We downgrade Chord Energy (CHRD) from Buy to Underperform with our PO lowered to \$165 from \$177 as we have taken a defensive posture towards oil in 2024 (see Year Ahead) given a highly backwardated futures curve that reflects record OPEC spare capacity in an environment where we perceive some risk that it may be more challenging for Saudi to stabilize the commodity price due to a combination of demand uncertainty and non-OPEC growth. Given these concerns, we have lowered our long-term oil assumption for our coverage universe to \$70 WTI from \$75 while adjusting long-term gas to \$4 HH from \$4.25 HH based upon 2026 strip and beyond.

Shares reflect benefits of wider spacing & longer laterals

While our prior Buy rating on CHRD was predicated on a rate of change in its outlook from wider spacing and longer laterals that would provide greater confidence its depth of inventory and its ability to generate sustainable free cash flow, in our view, the company has largely demonstrated these benefits to the market as shares outperformed the Russell 3000 Energy Index by ~27% in 2023. In our valuation, we now allocate credit to ~10 years of inventory from 2023 through 2032 (versus 8 prior) and have lowered our WACC assumption from ~11% to 10%. Despite these positive revisions, these are more than offset by our lower long-term price deck.

One risk to our rating is potential M&A

Part of the difference between our price target and where shares are currently trading is likely 2024 oil volumes. While the Street is at ~100 Mbbl / d, CHRD has been quite insistent that this is too high and that its guide of 99 Mbbl / d is more appropriate. While the delta may seem small, it does make a difference when looking at the DCF of free cash flow over a multiyear horizon. Aside from commodity prices, one of the main risks to our rating is really potential M&A as this management team has been quite vocal that it believes that both size & scale are important. With that said, it is almost next to impossible to predict future deal activity, and on a standalone basis, we see potential upside from here as limited if the oil curve plays out. Our \$165 PO is based upon a DCF assuming a 10% WACC and a long-term price deck of \$70 WTI / \$4 HH.

Estimates (Dec) (US\$)	2021A	2022A	2023E	2024E	2025E
EPS	(4.42)	27.46	18.64	20.50	21.19
GAAPEPS	15.40	44.89	16.49	20.20	20.89
EPS Change (YoY)	NM	NM	-32.1%	10.0%	3.4%
Consensus EPS (Bloomberg)			19.59	24.83	25.26
DPS	5.43	20.55	5.00	5.00	5.00
Valuation (Dec)					
P/E	NM	6.0x	8.9x	8.1x	7.8x
GAAP P/E	10.7x	3.7x	10.0x	8.2x	7.9x
Dividend Yield	3.3%	12.4%	3.0%	3.0%	3.0%
EV / EBITDA*	12.1x	4.2x	3.8x	3.6x	3.5x
Free Cash Flow Yield*	5.6%	20.4%	13.8%	11.8%	12.2%
* For full definitions of <i>iQ</i> method SM measures, see page 5					

Bof A 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 6 to 8. Analyst Certification on page 4. Price Objective Basis/Risk on page 3. 12641542

05 January 2024

Equity

Key Changes		
(US\$)	Previous	Current
Inv. Opinion	C-1-7	C-3-7
Inv. Rating	BUY	UNDERPERFORM
Price Obj.	177.00	165.00
	(US\$) Inv. Opinion Inv. Rating	(US\$) Previous Inv. Opinion C-1-7 Inv. Rating BUY

John H. Abbott Research Analyst +1 713 247 7144 john.h.abbott@bofa.com

Doug Leggate Research Analyst BofAS doug.leggate@bofa.com Kalei Akamine

Research Analyst **BofAS** kale i.akamine@bofa.com

Noah Hungness Research Analyst **BofAS** noah.hungness@bofa.com

Carlos Escalante Research Analyst **BofAS** carlos.escalante@bofa.com

Stock Data

Price		165.44 USD
Price Objective	2	165.00 USD
Date Establishe	ed	5-Jan-2024
Investment Op	oinion	C-3-7
52-Week Rang	e	117.05 USD - 175.20 USD
Mrkt Val (mn)	/ Shares Out	6,829 USD / 41.3
(mn)		
Free Float		96.7%
Average Daily	Value (mn)	65.56 USD
BofA Ticker / E	exchange	CHRD / NYS
Bloomberg / R	euters	CHRD US / CHRD.OQ
ROE (2023E)		16.7%
Net Dbt to Eqt	y (Dec-2022A)	-4.3%
ESGMeter™		Medium

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

BBL-barrel HH-Henry Hub WTI-West Texas Intermediate

iQprofile[™] Chord Energy Corporation

(US\$ Millions)	2021A	2022A	2023E	2024E	2025
Return on Capital Employed	47.9%	40.3%	16.5%	15.5%	15.19
Return on Equity	-9.4%	30.6%	16.7%	17.5%	17.49
Operating Margin	-9.4% 57.7%	43.4%	34.1%	39.7%	40.29
Free Cash Flow	37.770	1,393	940	804	83
Tree casti low	302	1,555	540	004	05
Qmethod [™] – Quality of Earnings*					
US\$ Millions)	2021A	2022A	2023E	2024E	2025
Cash Realization Ratio	NM	2.2x	2.2x	1.9x	1.9
Asset Replacement Ratio	1.4x	1.4x	1.4x	1.4x	1.4
Tax Rate	NM	NM	29.6%	24.0%	24.09
Net Debt-to-Equity Ratio	21.3%	-4.3%	-0.7%	-2.9%	-5.69
Interest Cover	17.0x	NM	42.5x	37.8x	39.1
ncome Statement Data (Dec)					
US\$ Millions)	2021A	2022A	2023E	2024E	2025
Sales	1,672	3,647	3.755	3,003	3,06
% Change	54.4%	118.1%	3.0%	-20.0%	1.9
Gross Profit	1,672	3,647	3,755	3,003	3,06
% Change	54.4%	118.1%	3.0%	-20.0%	1.9
EBITDA	550	1,584	1,727	1,840	1,88
% Change	NA	187.9%	9.1%	6.5%	2.6
Net Interest & Other Income	(647)	(200)	(264)	(32)	(3
Net Income (Adjusted)	(91)	875	810	895	92
% Change	NM	NM	-7.4%	10.5%	3.4
US\$ Millions) Net Income from Cont. Operations (GΔΔΡ)	2021A 318	2022A	2023E	2024E 882	202 !
Net Income from Cont Operations (GAAP)		1,430	717		
Depreciation & Amortization	158 6	370	593	635 0	64
Change in Working Capital	NA	(47) NA	(84)	NA	N
Deferred Taxation Charge Other Adjustments, Net	113	170	NA 518	186	N 17
Capital Expenditure	(213)	(531)	(803)	(899)	
Free Cash Flow	382	1,393	940	(899) 804	(89) 83
% Change	-38.2%	264.8%	-32.5%	-14.5%	4.0
Share / Issue Repurchase	- 30.2 %	204.070	- 32.3 %	14.5%	4.0
Cost of Dividends Paid	(112)	(655)	(217)	(218)	(21
Change in Debt	343	(033)	(217)	(210)	(21
	5-5	15	O	U	
Balance Sheet Data (Dec)	20214	20224	20225	20245	202
US\$ Millions)	2021A	2022A	2023E	2024E	202
Cash & Equivalents	172	593	429	544	1.03
Trade Receivables	377	782	1,032	1,032	1,03
Other Current Assets	1,066	108	123	123	12
Property, Plant & Equipment	1,320	4,711	5,254	5,495	5,72
Other Non-Current Assets	91	437	233	220	20
T-4-I A4-	3,027	6,631	7,071	7,414	7,78
Total Assets	^	0	0	0	1,39
Short-Term Debt	1 225				1 3
Short-Term Debt Other Current Liabilities	1,225	1,361	1,396	1,396	
Short-Term Debt Other Current Liabilities Long-Term Debt	1,225 393	1,361 394	395	395	39
Short-Term Debt Other Current Liabilities Long-Term Debt Other Non-Current Liabilities	1,225 393 376	1,361 394 196	395 230	395 416	39 59
Short-Term Debt Other Current Liabilities Long-Term Debt Other Non-Current Liabilities Total Liabilities	1,225 393 376 1,994	1,361 394 196 1,951	395 230 2,021	395 416 2,207	39 59 2,38
Short-Term Debt Other Current Liabilities Long-Term Debt Other Non-Current Liabilities	1,225 393 376	1,361 394 196	395 230	395 416	39 59

Company Sector

Oil & Gas Producers

Company Description

CHRD the second largest oil and natural gas producer in the Williston, formed from the merger Oasis and Whiting and Petroleum in 2022. Management estimates that it has approximately 1,000 to 1,100 'core' locations assuming an average two mile lateral length. Pro forma, it has estimated 2021 proved reserves of 577 MMboe, (approximately 56% oil and 76% PDP)

Investment Rationale

Our rating reflects that we perceive potentially limited upside given a steeply backwardated oil curve

Stock Data

Average Daily Volume

396,253

Quarterly Earnings Estimates

	2022	2023
Q1	9.36A	4.51A
Q2	7.31A	3.65A
Q3	7.20A	5.06E
Q4	5.28A	5.42E



\$165 Price Objective

Below is a summary of our \$165 DCF valuation for CHRD assuming a long-term price deck of \$4 HH / \$70 WTI. Please note we are now assuming a 10% WACC and 10 years of inventory from 2023 through 2032 versus 11% and eight years previously due to the derisking of the company's inventory through wider spacing and longer laterals.

Exhibit 1: CHRD DCF Valuation: \$165 POCash flows extend beyond the period shown

Discount rate	10% 4Q23	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E
Production (Mboe / d)	178	175	178	180	184	187	188	188					
% oil	58%	56%	56%	56%	55%	55%	54%	54%					
Commodity Deck													
Henry Hub (\$/MMbtu0	2.88	2.75	3.56	4.00	4.00	4.00	4.00	4.00					
WTI (\$ / Bbl)	78.15	75.00	72.50	70.00	70.00	70.00	70.00	70.00					
Consolidated													
Debt adjusted cash flow	452	1,733	1,760	1,754	1,779	1,807	1,810	1,818	1,818	1,818	1,130	904	741
Capital expenditures	(160)	(899)	(895)	(914)	(932)	(962)	(990)	(1,016)	(1,026)	(1,037)			
Warrants	-	252	186										
Other	(10)	23	22	22									
Free cash flow	283	1,108	1,073	861	847	845	820	802	792	781	1,130	904	741
											200/-	200/-	100%

Present value (4Q22 -2030)	4,799
Terminal PDP value	2,742
Total Present value	7,542
Ownership in Energy Transfer	143
Estimated tax leakage 45%	(8)
	135
Net Debt	(131)
Equity value	7,546
Shares ex warrants	41
Equity value per share	182
Warrants exercisable at 75.57 through 11/19/24	
Number of warrants	0.6
Strike price	75.6
Number of shares	42.1
Equity value per share	179.2
Warrants exercisable at 116.37 through 01/09/24	
Number of warrants	2.2
Strike price	116.4
Number of shares	44.3
Equity value per share	170.5
Warrants exercisable at 133.70 through 01/09/25	
Number of warrants	1.4
Strike price	133.7
Number of shares	45.7
Equity value per share	165
Price objective	165
Shares Outstanding ((adj for warrants)	45.7

BofA GLOBAL RESEARCH

Price objective basis & risk

Chord Energy Corporation (CHRD)

Source: BofA Global Research estimates

Our price objective of 165 / sh is based on DCF methodology and assumes 4 HH / 70 WTI long-term. We apply a long-term (post-tax) weighted average cost of capital (WACC) of 10%.



Downside risks to our price objective: 1) oil differentials widen, 2) capital intensity increases, and 3) potential failure to execute on accretive transactions

Upside risks to our price objective: 1) greater market confidence on the extent of 'core' inventory, 2) Potentially lower spending from shift to more three-mile laterals, and 3) better oil differentials

Analyst Certification

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

US - Large Cap Oils Coverage Cluster

Investment rating	Company	Bof A Ticker	Bloomberg symbol	Analyst
BUY				
	APA Corporation	APA	APA US	Doug Leggate
	California Resources Corporation	CRC	CRC US	Kalei Akamine
	Canadian Natural Resources	YCNQ	CNQ CN	Doug Leggate
	Canadian Natural Resources	CNQ	CNQ US	Doug Leggate
	Chesapeake Energy	CHK	CHK US	Doug Leggate
	Chevron Corp.	CVX	CVX US	Doug Leggate
	ConocoPhillips	COP	COPUS	Doug Leggate
	EOG Resources	EOG	EOG US	Doug Leggate
	EQT Corporation	EOT	EQT US	John H. Abbott
	ExxonMobil Corp.	XOM	XOM US	Doug Leggate
	Granite Ridge Resources, Inc	GRNT	GRNT US	John H. Abbott
	Gulfport Energy Corporation	GPOR	GPOR US	Doug Leggate
	Imperial Oil	IMO	IMO US	Doug Leggate
	Imperial Oil	YIMO	IMO CN	Doug Leggate
	Kimbell Royalty Partners	KRP	KRP US	John H. Abbott
	Northern Oil and Gas	NOG	NOG US	John H. Abbott
	Occidental Petroleum Corp.	OXY	OXY US	Doug Leggate
	Ovintiv Inc	YOW	OW CN	Doug Leggate
	Ovintiv Inc	OW	OW US	Doug Leggate
	Range Resources Corp	RRC	RRC US	Doug Leggate
	Southwestern Energy Corp.	SWN	SWN US	Doug Leggate
	Suncor	YSU	SUCN	Doug Leggate
	Suncor	SU	SUUS	Doug Leggate
NEUTRAL				
112011012	Coterra Energy Inc	CTRA	CTRA US	Doug Leggate
	Delek US Holdings, Inc.	DK	DK US	Doug Leggate
	Devon Energy Corp.	DVN	DVN US	Doug Leggate
	HF Sinclair Corporation	DINO	DINO US	Doug Leggate
	Marathon Petroleum Company	MPC	MPC US	Doug Leggate
	PBF Energy	PBF	PBF US	Doug Leggate
	Phillips 66	PSX	PSX US	Doug Leggate
	Valero Energy Corp.	VLO	VLO US	Doug Leggate
UNDERPERFORM				***************************************
OILD ENI ONN	Chord Energy Corporation	CHRD	CHRD US	John H. Abbott
	CNX Resources	CNX	CNX US	John H. Abbott
	Crescent Energy Company	CRGY	CRGY US	John H. Abbott
	Diamondback Energy Inc.	FANG	FANG US	Doug Leggate
	Marathon Oil Corp.	MRO	MRO US	Doug Leggate
	National Fuel Gas Company	NFG	NFG US	John H. Abbott
	Vital Energy Inc	VTLE	VTLE US	John H. Abbott
DCTD	37			,
RSTR	Diagram National Danas was	DVD	DVD LIC	David 1
	Pioneer Natural Resources	PXD	PXD US	Doug Leggate

Qmethod ³⁴ Measures Definitions

Business Performance	Numerator	Denominator
Return On Capital Employed	NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization	Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill Amortization
Return On Equity	Net Income	Shareholders' Equity
Operating Margin	Operating Profit	Sales
Earnings Growth	Expected 5 Year CAGR From Latest Actual	N/A
Free Cash Flow	Cash Flow From Operations — Total Capex	N/A
Quality of Earnings	Numerator	Denominator
Cash Realization Ratio	Cash Flow From Operations	Net Income
Asset Replacement Ratio	Capex	Depreciation
Tax Rate	Tax Charge	Pre-Tax Income
Net Debt-To-Equity Ratio	Net Debt = Total Debt - Cash & Equivalents	Total Equity
Interest Cover	EBIT	Interest Expense
Valuation Toolkit	Numerator	Denominator
Price / Earnings Ratio	Current Share Price	Diluted Earnings Per Share (Basis As Specified)
Price / Book Value	Current Share Price	Shareholders' Equity / Current Basic Shares
Dividend Yield	Annualised Declared Cash Dividend	Current Share Price
Free Cash Flow Yield	Cash Flow From Operations – Total Capex	Market Cap = Current Share Price × Current Basic Shares
Enterprise Value / Sales	EV = Current Share Price × Current Shares + Minority Equity + Net Debt + Other LT Liabilities	Sales

EV/EBITDA Enterprise Value Basic EBIT + Depreciation + Amortization

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

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

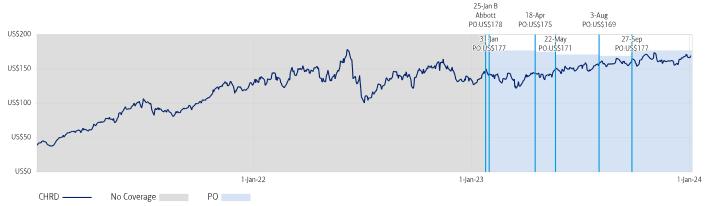
IQprofile M, IQmethod M are service marks of Bank of America Corporation. IQdatabase is a registered service mark of Bank of America Corporation.



Disclosures

Important Disclosures

Chord Energy (CHRD) Price Chart



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

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

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

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	83	61.48%	Buy	64	77.11%
Hold	28	20.74%	Hold	21	75.00%
Sell	24	17.78%	Sell	18	75.00%

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%

RI Issuers that were investment banking dients 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%

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: Chord Energy.

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: Chord Energy.

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: Chord Energy.

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 Prudential 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 (Fundamentalia): Merrill Lynch (Hong Kong): Merrill (Hong Kong): Merril (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): Merrill Lynch (Canada): Merrill Lynch (Mexico): Merrill Ly de Bolsa, regulated by the Comisión Nacional Bancaría 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) Merrill Merr 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 in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securi

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 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 inform

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.

