

Patrick Industries, Inc.

Lowering estimates ahead of 1Q to reflect RV dealer destocking

Reiterate Rating: UNDERPERFORM | PO: 63.00 USD | Price: 67.79 USD

Lowering estimates to reflect RV destocking

PATK is scheduled to report 1Q23 earnings on Thursday, April 27th. Ahead of 1Q earnings, we lower our 1Q23 and 2023 estimates by 35% and 9%, respectively, to reflect headwinds from recreational vehicle (RV) (53% of 2022 sales) dealer destocking in 1H23. RV dealers entered 2023 carrying a significant amount of model year 2022 RVs following record levels of production and shipments over the last two years. We expect dealers to continue to work down the high-cost model year 2022 inventory through 1H23, which will significantly pressure demand for model year 2023. RV manufacturers reduced production days in 4Q22, and we expect additional curtailments in 1H23. Through February, RV wholesale shipments are down (56%) against a difficult comparison 2022. Retail sales have been more resilient than wholesale shipments year-to-date, but the macro environment and credit availability has worsened heading into the key selling season. We expect shipments to begin recover in late-2023 and leave our 2024 estimates largely unchanged.

Maintain our \$63 PO and Underperform rating

We maintain our \$63 PO, still based on 5.5x EV/2024E EBITDA. We also reiterate our Underperform rating, despite recent solid execution, given a worsening outlook for its key end markets (RV, marine and housing). We expect RV retail softness to continue in 2023 given: 1) higher carrying costs and tighter credit will cause dealers to destock inventory below historical levels (see report: Patrick Industries, Inc.: Worsening end market outlook to offset solid execution; Reiterate Underperform 27 March 2023), 2) higher rates and tighter credit will also pressure consumer demand for RVs, and 3) we believe some RV demand was pulled forward into 2020/2021 during the pandemic. In marine (21% of 2022 revenue), sales should be relatively resilient given lean channel inventory, but end market demand will likely soften in a more challenging macro environment. We expect the industrial segment (10%+ of sales) to decline in 2023 on slowing housing starts. While PATK's valuation already reflects a bearish scenario, we do not see a near-term catalyst for re-rating and we are modeling 2023/2024E EPS 13%/14% below consensus.

Estimates (Dec) (US\$)	2021A	2022A	2023E	2024E	2025E
EPS	9.63	13.48	6.45	7.48	9.03
GAAPEPS	9.63	13.41	6.45	7.48	9.03
EPS Change (YoY)	129.3%	40.0%	-52.2%	16.0%	20.7%
Consensus EPS (Bloomberg)			7.46	8.83	NA
DPS	1.17	1.32	1.34	1.36	1.38
Valuation (Dec)					
P/E	7.0x	5.0x	10.5x	9.1x	7.5x
GAAP P/E	7.0x	5.1x	10.5x	9.1x	7.5x
Dividend Yield	1.7%	1.9%	0%	0%	2.0%
EV / EBITDA*	5.8x	4.2x	7.1x	6.6x	5.9x
Free Cash Flow Yield*	12.6%	22.3%	24.3%	11.6%	12.8%
* For full definitions of <i>IQ</i> method SM measures, see page 5.					

26 April 2023

Equity

Key Changes		
(US\$)	Previous	Current
2023E EPS	7.06	6.45
2024E EPS	7.45	7.48
2025E EPS	8.53	9.03

Rafe Jadrosich Research Analyst BofAS +1 646 855 5815 rafe.jadrosich@bofa.com

Shaun Calnan, CFA Research Analyst BofAS shaun.calnan@bofa.com

Stock Data

ESGMeter™	Low
Net Dbt to Eqty (Dec-2022A)	132.0%
ROE (2023E)	14.2%
Bloomberg / Reuters	PATK US / PATK.OQ
BofA Ticker / Exchange	PATK / NAS
Average Daily Value (mn)	10.56 USD
(mn)	
Mrkt Val (mn) / Shares Out	1,491 USD / 22.0
52-Week Range	41.75 USD - 77.96 USD
Investment Opinion	C-3-7
Date Established	27-Mar-2023
Price Objective	63.00 USD
Price	67.79 USD

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

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 6 to 8. Analyst Certification on page 4. Price
Objective Basis/Risk on page 4.

Timestamp: 26 April 2023 02:28AM EDT

iQprofile[™] Patrick Industries, Inc.

iQmethod [™] – Bus Performance*					
(US\$ Millions)	2021A	2022A	2023E	2024E	20251
Return on Capital Employed	16.3%	18.0%	8.8%	9.2%	9.9%
Return on Equity	33.9%	38.3%	14.2%	14.4%	15.2%
Operating Margin	8.6%	10.2%	7.5%	7.7%	8.5%
Free Cash Flow	187	332	363	173	192
<i>i</i> Q method [™] – Quality of Earnings*					
(US\$ Millions)	2021A	2022A	2023E	2024E	2025
Cash Realization Ratio	1.1x	1.2x	3.2x	1.7x	1.5
Asset Replacement Ratio	1.2x	1.1x	1.3x	1.4x	1.3>
Tax Rate	23.5%	24.6%	25.5%	25.5%	25.5%
Net Debt-to-Equity Ratio	151.6%	132.0%	97.5%	74.8%	54.0%
Interest Cover	6.9x	9.1x	4.2x	4.6x	5.2
Income Statement Data (Dec)					
(US\$ Millions)	2021A	2022A	2023E	2024E	2025
Sales	4,078	4,882	3,518	3,788	3,956
% Change	64.0%	19.7%	-27.9%	7.7%	4.4%
Gross Profit	801	1,060	807	855	910
% Change	NA	NA	NA	NA	N/
EBITDA	457	627	372	403	452
% Change	85.1%	37.3%	-40.6%	8.3%	12.1%
Net Interest & Other Income	(58)	(61)	(70)	(70)	(70
Net Income (Adjusted)	225	330	144	165	199
% Change	131.7%	45.9%	-56.1%	14.4%	20.6%
Free Cash Flow Data (Dec)					
(US\$ Millions)	2021A	2022A	2023E	2024E	2025
Net Income from Cont Operations (GAAP)	225	328	144	165	199
Depreciation & Amortization	56	73	78	81	85
Change in Working Capital	(110)	(61)	202	(2)	(20)
Deferred Taxation Charge	NA	NA	NA	NA	N/
Other Adjustments, Net	81	71	39	39	39
Capital Expenditure	(65)	(80)	(100)	(110)	(110)
Free Cash Flow	187	332	363	173	192
% Change	NA	NA	NA	NA	N.A
Balance Sheet Data (Dec)					
(US\$ Millions)	2021A	2022A	2023E	2024E	2025
Cash & Equivalents	123	23	234	375	534
Trade Receivables	172	173	193	208	217
Other Current Assets	679	714	498	498	515
Property, Plant & Equipment	319	351	342	339	334
Other Non-Current Assets	1,357	1,522	1,642	1,642	1,642
Total Assets	2,651	2,782	2,909	3,061	3,241
Short-Term Debt	8	8	8	8	3
Other Current Liabilities	425	360	365	378	384
Long-Term Debt	1,279	1,276	1,276	1,276	1,276
Other Non-Current Liabilities	171	184	184	184	184
Total Liabilities	1,883	1,827	1,833	1,845	1,851
Lotal Equity	768	955	1,076	1,216	1,390
Total Equity Total Equity & Liabilities	2,651	2,782	2,909	3,061	3,241

Company Sector

Building Products

Company Description

PATK is a leading component and building products supplier to the RV (59% of sales), marine (16% of sales), manufactured housing (14%) and industrial (11%) end markets. PATK successfully diversified its business away from RVs and expanded its geographic presence through M&A. These acquisitions, along with solid pricing power and market share gains, have led to increased content per unit across segments. Patrick Industries was founded in 1959 and is headquartered in Elkhart, Indiana.

Investment Rationale

We rate PATK shares at Underperform. Patrick is well positioned within the RV and marine markets, however, we see a challenging outlook for PATK shares and end markets in a rising rate environment.

Stock Data

Average Daily Volume 155,758

Quarterly Earnings Estimates

	2022	2023
Q1	4.54A	1.07E
Q2	4.79A	2.03E
Q3	2.43A	1.80E
Q4	1.68A	1.57E

Exhibit 1: Patrick Industries income statement
We expect revenue to decline ~37% in 1H23 due to RV dealer destocking

(\$ mm) YE 12/31		2023	RF		2022	2023E	2024E
	3/31/2023	6/30/2023	9/30/2023	12/31/2023	12/31/2022	12/31/2023	12/31/2024
	1QE	2QE	3QE	4QE			
Net Sales	\$830.8	\$933.9	\$887.4	\$866.2	\$4,881.9	\$3,518.3	\$3,788.0
Cost of goods sold	643.9	719.1	681.5	667.0	3,821.9	2,711.4	2,933.4
Gross Profit	\$186.9	\$214.8	\$205.9	\$199.2	\$1,059.9	\$806.8	\$854.6
Warehouse & delivery	37.4	37.4	35.5	34.6	163.0	144.9	151.5
Selling, general & administrative	79.8	80.3	79.9	80.6	327.5	320.5	330.6
Amortization of intangible assets	19.3	19.5	19.7	19.9	73.2	78.2	81.4
Operating income	\$50.5	\$77.7	\$70.9	\$64.2	\$496.2	\$263.2	\$291.0
Interest expense	17.5	17.5	17.5	17.5	60.8	70.0	70.0
Earnings before income taxes	\$33.0	\$60.2	\$53.4	\$46.7	\$435.4	\$193.2	\$221.0
Income tax expense	8.4	15.3	13.6	11.9	107.2	49.3	56.4
Earnings from continuing operations	\$24.6	\$44.8	\$39.7	\$34.8	\$328.2	\$144.0	\$164.7
Net income attributable to PATK	\$24.6	\$44.8	\$39.7	\$34.8	\$328.2	\$144.0	\$164.7
Non-recurring items						<u> </u>	
GAAP Net Income	\$24.6	\$44.8	\$39.7	\$34.8	\$330.0	\$144.0	\$164.7
Diluted EPS (GAAP, less discontinued ops.)	\$1.07	\$2.03	\$1.80	\$1.57	\$13.48	\$6.45	\$7.48
Diluted EPS (Cont. Ops.)	\$1.07	\$2.03	\$1.80	\$1.57	\$13.48	\$6.45	\$7.48
Common Shares Outstanding:							
Diluted	22.9	22.1	22.1	22.1	24.5	22.3	22.0
EBITDA Calculation							
Adjusted Operating Profit	\$50.5	\$77.7	\$70.9	\$64.2	\$496.2	\$263.2	\$291.0
(+) other expense (income), net		<u> </u>	<u>-</u>	<u> </u>		<u> </u>	
(=) Adjusted EBIT	\$50.5	\$77.7	\$70.9	\$64.2	\$496.2	\$263.2	\$291.0
(+) Depreciation & Amortization	27.0	27.2	27.4	27.6	130.8	109.0	112.2
(=) Adjusted EBITDA	\$77.5	\$104.8	\$98.2	\$91.7	\$626.9	\$372.2	\$403.2
<u>Margins</u>							
Gross Margin	22.5%	23.0%	23.2%	23.0%	21.7%	22.9%	22.6%
Warehouse & Delivery % of Sales	4.5%	4.0%	4.0%	4.0%	3.3%	4.1%	4.0%
SG&A % Sales	9.6%	8.6%	9.0%	9.3%	6.7%	9.1%	8.7%
Operating Margin	6.1%	8.3%	8.0%	7.4%	10.2%	7.5%	7.7%
Adjusted EBIT Margin	6.1%	8.3%	8.0%	7.4%	10.2%	7.5%	7.7%
Adjusted EBITDA Margin	9.3%	11.2%	11.1%	10.6%	12.8%	10.6%	10.6%
Incremental EBITDA margin	22.4%	18.8%	12.4%	12.1%	21.2%	18.7%	11.5%
Pre-tax Margin	4.0%	6.4%	6.0%	5.4%	8.9%	5.5%	5.8%
Net Income (continuing ops)	3.0%	4.8%	4.5%	4.0%	6.7%	4.1%	4.3%
Гах rate	25.5%	25.5%	25.5%	25.5%	24.6%	25.5%	25.5%
YoY % Change							
Sales	(38.1%)	(36.7%)	(20.2%)	(9.0%)	19.7%	(27.9%)	7.7%
Gross Profit	(36.7%)	(34.3%)	(12.9%)	(0.9%)	32.3%	(23.9%)	5.9%
Operating Profit	(68.8%)	(55.4%)	(23.6%)	(5.1%)	41.1%	(46.9%)	10.6%
EBIT	(68.8%)	(55.4%)	(23.6%)	(5.1%)	41.1%	(46.9%)	10.6%
EBITDA	(59.6%)	(49.3%)	(22.1%)	(10.2%)	37.3%	(40.6%)	8.3%
Pre-tax Profit	(77.5%)	(62.2%)	(31.1%)	(10.0%)	48.2%	(55.6%)	14.4%
Net Income (continuing ops)	(78.2%)	(61.5%)	(32.4%)	(13.5%)	45.9%	(56.1%)	14.4%
EPS .	(76.3%)	(57.6%)	(25.9%)	(6.5%)	40.0%	(52.1%)	16.0%

Source: Company reports, BofA Global Research estimates

BofA GLOBAL RESEARCH



Price objective basis & risk

Patrick Industries, Inc. (PATK)

Our \$63 price objective is based on 5.5x 2024E adjusted EV/EBITDA, near the low-end Patrick's trading range over the last five years due to macro/demand concerns. Patrick is well positioned within the RV and marine markets, however, we see a challenging outlook for PATK shares and end markets in a rising rate environment...

Downside risks: 1) a weaker macroeconomic environment 2) deterioration in consumer confidence, 3) a rise in interest rates, 4) general weakness in RV and/or marine demand 5) a housing-related slowdown, 6) Customer concentration, 7) higher labor and raw material costs, and 8) acquisitions could fail to materialize or be dilutive.

Upside risks: 1) a stronger macroeconomic environment 2) lower interest rates, 3) strength in RV and/or marine demand 4) housing acceleration 5) lower labor and raw material costs.

Analyst Certification

I, Rafe Jadrosich, 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 - Homebuilders and Building Products Coverage Cluster

Investment rating	Company	Bof A Ticker	Bloomberg symbol	Analyst
BUY				
	Armstrong World Industries, Inc.	AWI	AWI US	Rafe Jadrosich
	D.R. Horton, Inc.	DHI	DHI US	Rafe Jadrosich
	Latham Group, Inc.	SWIM	SWIM US	Shaun Calnan, CFA
	NVR, Inc.	NVR	NVR US	Rafe Jadrosich
	Owens Corning	OC	OC US	Rafe Jadrosich
	PulteGroup Inc.	PHM	PHM US	Rafe Jadrosich
	The AZEK Company Inc.	AZEK	AZEK US	Rafe Jadrosich
	Toll Brothers, Inc.	TOL	TOL US	Rafe Jadrosich
NEUTRAL				
	Dream Finders Homes, Inc.	DFH	DFH US	Rafe Jadrosich
	KB Home	KBH	KBH US	Rafe Jadrosich
	Lennar Corporation	LEN	LEN US	Rafe Jadrosich
	Trex Company, Inc.	TREX	TREX US	Rafe Jadrosich
UNDERPERFORM				
	Fortune Brands Innovations Inc	FBIN	FBIN US	Rafe Jadrosich
	Hayward Holdings, Inc.	HAYW	HAYW US	Rafe Jadrosich
	Masco Corp	MAS	MAS US	Rafe Jadrosich
	Mohawk Industries	MHK	MHK US	Rafe Jadrosich
	Patrick Industries, Inc.	PATK	PATK US	Rafe Jadrosich
	Pool Corporation	POOL	POOL US	Shaun Calnan, CFA



Qmethod [™] Measures Definitions

Business Performance Denominator

Return On Capital Employed NOPAT = (EBIT + Interest Income) × (1 - Tax Rate) + Goodwill Amortization Total Assets - Current Liabilities + ST Debt + Accumulated Goodwill

N/A

N/A

Net Income

Amortization Return On Equity Net Income Shareholders' Equity Operating Margin Operating Profit Sales

Earnings Growth Expected 5 Year CAGR From Latest Actual Free Cash Flow Cash Flow From Operations - Total Capex

Quality of Earnings Numerator Denominator

Cash Realization Ratio Cash Flow From Operations 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 Interest Expense

Valuation Toolkit Numerator Denominator Current Share Price

Diluted Earnings Per Share (Basis As Specified) Price / Earnings Ratio Current Share Price Price / Book Value Shareholders' Equity / Current Basic Shares

Annualised Declared Cash Dividend Dividend Yield 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 + Sales

Other LT Liabilities EV / EBITDA Basic EBIT + Depreciation + Amortization Enterprise Value

Remethod 34 is the set of BofA Global Research standard measures that serve to maintain global consistency under three broad headings. Business Performance, Quality of Earnings, and validations. The key features of iQmethod are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

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.

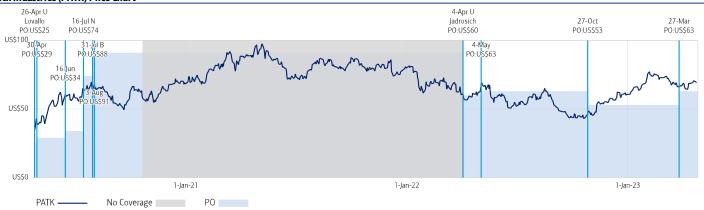
I/QprofileSM, I/Qmethod SM are service marks of Bank of America Corporation. I/Qdatabase ® is a registered service mark of Bank of America Corporation.



Disclosures

Important Disclosures

Patrick Industries (PATK) 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: Building Group (as of 31 Mar 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	34	44.74%	Buy	17	50.00%
Hold	14	18.42%	Hold	9	64.29%
Sell	28	36.84%	Sell	9	32.14%

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

Coverage Universe	Count	Percent	Inv. Banking Relationships R1	Count	Percent
Buy	1869	53.01%	Buy	1030	55.11%
Hold	827	23.45%	Hold	476	57.56%
Sell	830	23.54%	Sell	389	46.87%

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). There are three investment ratings: 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. 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: Patrick Industries.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Patrick Industries.

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: Patrick Industries.

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: Patrick Industries.

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: Patrick Industries.

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: Patrick Industries.

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); BofAŚE (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 (Forgalized (Australia): Merrill Lynch (Hong Kong): Merrill (H (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 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): Merrill Lynch (Israel): Merrill Lynch (DIFC): Merrill (DIFC): Merrill Lynch (DIFC): Merrill (D 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 S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários; Merrillos e Valores Mobiliários; Merrillos e Valores Mobil 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 prepared and issued by Merrill Lynch (DIFC) is done so in accordance

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 2023 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.

