

Paper/Forest Products

Post C4Q: BALL, IP, WRK: Momentum should improve as year progresses

Price Objective Change

Momentum to build throughout C'24 after tougher C1Q

We update our models and investment points for Underperform-rated Ball Corp (Ball) and International Paper (IP) and Buy-rated WestRock (WRK). While “cans ‘ain’t’ boxes”, there are some similarities across the companies as we look to calendar 2024. While with different drivers for each, C1Q will likely be the weakest quarter for all three companies in calendar 2024, before volume improvements increasingly leverage improved operations and cost structures over C2Q-C4Q (another similarity for all three). Valuation is largely why we rate BALL at Underperform but we raised our forecasts and has the least “price”-driven earnings catalyst. IP and WRK have lots of earnings leverage and trade at lower multiples but will need pricing to come through to support estimates. BALL and IP are scheduled to attend our Annual Global Ag & Materials Conference on 2/28-29 in Ft. Lauderdale - please contact your BofA rep. for details.

BALL: Tough 1Q but lots of future leverage

Our BALL flash report ([see note here](#)) has details from 4Q. Our estimates increase from \$3.15 in 2024E and \$3.65 in 2025E to \$3.25 and \$3.75, respectively, and our PO moves to \$61 from \$59. Keys? (a) Underlying earnings trends do seem to be improving across Ball's portfolio. Commentary on volumes, price/cost carryovers and other factors lead us to raise estimates...; (b) ...even though 1Q looks weaker than our prior model, though for generally well-understood reasons. There's about \$30mn impact from last year's volume fall-off for Anheuser-Busch Inbev (ABI; rated Buy by our colleague Andrea Pistacchi) and \$30mn from 2023's virtual purchase power agreement gain. BALL continues to be confident on the operating leverage in its business as volumes return to normal; (c) Ball's free cash flow guidance is complicated by the likely divestiture of aerospace. Bottom-line, the ~\$500mn BALL guided to would be comparable/ahead of our prior \$920mn when adjusting for \$500mn of factoring; (d) One thing to watch – while we have no way of modeling for this at present and Ball stated that it had the operational flexibility to manage, headlines this afternoon pointed to a likely Teamsters' strike at ABI.

We include more details on IP & WRK, including our PO change from \$48 to \$47

01 February 2024

Equity
United States
Paper/Forest Products

George L. Staphos
Research Analyst
BofAS
+1 646 855 4495
george.l.staphos@bofa.com

Cashen Keeler
Research Analyst
BofAS
+1 646 855 4256
cashen.keeler@bofa.com

Lucas Hudson
Research Analyst
BofAS
+1 917 861 6981
lucas.hudson@bofa.com

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

Refer to important disclosures on page 8 to 12. Analyst Certification on page 7. Price Objective Basis/Risk on page 6.

12654450

Timestamp: 01 February 2024 11:24PM EST

IP: Weak 1QE; Cost-outs + “Value over Volume”

Our IP flash report ([see flash note here](#)) has details from 4Q. Our estimates decrease from \$2.25 in 2024E and \$2.80 in 2025E to \$2.05 and \$2.60, respectively, and our PO is unchanged at \$37. Keys? (a) When considering IP’s commentary on its 1Q fundamentals (slide 13 in its deck), a chunk of which is driven by \$40mn of January free impacts, 1Q looks quite a bit lower than the Street (consensus is currently ~\$0.40 in EPS); (b) Like BALL and WRK, IP sees an improving backdrop, an end to destocking and leverage from company-specific factors. IP sees ~\$400mn-plus from combined go-to-market (commercial) and capacity-cost-out improvements; (c) IP sees industry box volume growth at 2% for 1Q and 3% for the year, though its volumes will trail the industry (as was the case in 4Q, where its gap was ~4%pts) given its “Value over Volume” strategies; (d) Peer companies in containerboard are following similar strategies, partly aimed at redoing contract structure, while also emphasizing local-account customers. IP acknowledges that it needs to add sales talent; (e) While IP is still optimistic on Global Cellulose Fibers (GCF), performance in 4QA and 1QE look below our prior estimates; (f) Separately, and while the question keeps coming up, we don’t believe IP has any interest in breaking up the WestRock/Smurfit (SKG; rated Buy by our colleague Patrick Mann) given its past comments on strategy, and given history.

WRK: C2QE... umm, ditto

Our WRK flash report ([see note here](#)) has details from C1Q. Our estimates decrease from \$2.30 in F24E and \$3.15 in F25E to \$2.00 and \$3.25, respectively, and our PO moves to \$47 from \$48. Keys? (a) WRK is guiding well-below our prior estimate for C2Q, at \$550-600mn of EBITDA, following C1Q’s \$571mn. By our math, ~\$15-20mn of sequential negative comes from higher old corrugated carton (OCC) and other inputs and \$50mn negative comes from prior index pricing, with \$60mn coming back as volume; (b) NA box vols declined 3-4%, weaker than the market’s 0.4% growth, and pricing was challenged in a number of markets including Paper (third-party sales) where the yy decrease was \$91mn; (c) That said, WRK is running well ahead of its \$300-400mn cost-out target for 2024. Should volume and pricing increases resume, there is lots of earnings leverage.

Review of Relevant Operating Statistics

Ball Corp (BALL)

Exhibit 1: BALL Model Changes

Review of latest estimates and forecast changes

	Actual	BofA	Consensus
Quarterly Result	\$0.78	\$0.81	\$0.75
Model Changes	New	Old	Consensus
2023A	\$2.90	\$2.94	\$2.87
2024E	\$3.25	\$3.15	\$3.13
2025E	\$3.75	\$3.65	\$3.47
2026E	\$4.10		\$3.76
Price Objective	\$61	\$59	

Source: Company reports, BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 2: BALL Relevant Operating Statistics

Review of results vs. BofA estimates

	4Q22	4Q23	BofA	Key Highlights
Beverage Packaging, North and Central America				
Revenue (\$mn)	\$1,512.0	\$1,381.0	\$1,338.1	Operating earnings were \$156mn which was \$1.9mn below our \$157.9mn forecast. Volumes for the segment were down -6.9% which was better than our estimate of -8.5%
Operating Profit (\$mn)	\$99.0	\$156.0	\$157.9	
Operating Margin	6.5%	11.3%	11.8%	
Beverage Packaging, EMEA *				
Revenue (\$mn)	\$748.0	\$739.0	\$710.6	Operating earnings were \$5.3mn below of our model and volumes down -7% in 4Q (excluding Russia) which compares to our -4% estimate
Operating Profit (\$mn)	\$47.0	\$80.0	\$85.3	
Operating Margin	6.3%	10.8%	12.0%	
Beverage Packaging, South America				
Revenue (\$mn)	\$614.0	\$616.0	\$706.1	Operating earnings were \$15.6mn below our estimate at \$125mn (vs. our \$109.4mn estimate), and volumes were up 2.2% (compared to our 15% estimate)
Operating Profit (\$mn)	\$78.0	\$125.0	\$109.4	
Operating Margin	12.7%	20.3%	15.5%	
Other (Aerosol Packaging, Aluminum Cups)				
Revenue (\$mn)	\$168.0	\$167.0	\$173.0	Volumes in global extruded aluminum bottles and aerosol increased in Q4 by 6.6% and 8.2%, respectfully.
Operating Profit (\$mn)	\$10.0	\$19.0	\$26.0	
Operating Margin	6.0%	11.4%	15.0%	
Aerospace				
Revenue (\$mn)	\$506.0	\$500.0	\$556.6	Aerospace was slightly below our \$61.2mn forecast at \$59mn and backlog stood at \$2.98bn while won not booked was \$5.9bn.
Operating Profit (\$mn)	\$44.0	\$59.0	\$61.2	
Operating Margin	8.7%	11.8%	11.0%	

Source: Company reports, BofA Global Research.

BofA GLOBAL RESEARCH

International Paper Co (IP)

Exhibit 3: IP Model Changes

Review of results vs. BofA estimates

Quarterly result: **\$0.41 vs. BofA at \$0.35 and Consensus at \$0.35**

Model changes:

1Q24E	\$0.22 vs. \$0.25 (old)
2023A	\$2.16 vs. \$2.10 (old)
2024E	\$2.05 vs. \$2.25 (old)
2025E	\$2.60 vs. \$2.80 (old)
2026E	\$2.80 (new)
Price Objective	\$37 (unchanged)

Source: Company reports, BofA Global Research.

BofA GLOBAL RESEARCH

Exhibit 4: IP Relevant Operating Statistics

Review of results vs. BofA estimates

	4Q22	4Q23A	BofA	
Revenues (\$mn)				
Industrial Packaging	4,169	3,842	3,799	
Global Cellulose Fibers	842	656	764	
(less) Intersegment Sales	122	103	100	
Total	\$5,133	\$4,601	\$4,663	
	4Q22	4Q23A	BofA	Key highlights
Operating Profits (\$mn)				
Industrial Packaging*	416	315	288	In 4Q, box shipments were up +2.9% sequentially, though down -5.8% y/y. Performance was impressive, considering 243k tons of economic downtime vs. 458k k tons in 3Q23.
Global Cellulose Fibers	35	(58)	(42)	GFC experienced lower profits from unfavorable product mix, heavy maintenance outage schedules, and higher operating costs.
Total	\$451	\$257	\$245	
Sales Volumes				
Global Cellulose Fibers	711	676	725	
Corrugated Packaging	2,443	2,325	2,443	
External Containerboard	546	783	546	
Price Realizations				
Containerboard	\$924	\$826	\$818	
Bleached Board	\$1,530	\$1,450	\$1,450	

Source: Company filings, BofA Global Research estimates; (*) Excludes unusual charges

BofA GLOBAL RESEARCH

WestRock (WRK)

Exhibit 5: WRK Model Changes

Review of results vs. BofA estimates

Quarterly result: **\$0.20 vs. BofA at \$0.30 and Consensus at \$0.34**

Model changes:

F2Q24E	\$0.33 vs. \$0.55 (old)
2024E	\$2.00 vs. \$2.30 (old)
2025E	\$3.25 vs. \$3.15 (old)
2026E	\$3.70 vs. \$3.65 old
Price Objective	\$47 (was \$48)

Source: Company filings, BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 6: WRK Relevant Operating Statistics

Review of results vs. BofA estimates

	F1Q23	F1Q24	BofA	Key Highlights
Adj. Segment EBITDA (\$mn)				
Corrugated Packaging	\$329.4	\$327.8	\$302.0	Corrugated adj. EBITDA was above our forecast by \$25.8mn. Results benefited from \$65mn of cost savings and moderating input costs. Meantime, total shipments increased 10% y/y (includes Grupo Gondi acquisition).
Consumer Packaging*	\$183.3	\$166.2	\$170.8	Consumer Packaging was below our estimate by -\$4.6mn. Results were partially impacted by the RTS divestiture and the realignment of Latin America operations. Meantime, net organic sales volume declined 10% y/y.
Paper	\$157.3	\$118.4	\$117.5	Global Paper was above our forecast by +\$0.9mn. Segment results included \$10mn of adjustments related to divested mills. WRK expects continued softness in paperboard.
Distribution Corporate	\$10.8	\$9.0	\$9.9	
Total	\$680.8	\$621.4	\$600.3	
Adj. EBITDA Margin (%)				
Corrugated Packaging	13.8%	12.8%	14.0%	
Consumer Packaging*	14.4%	13.3%	13.7%	
Paper	9.8%	11.1%	9.8%	
Distribution	3.0%	2.8%	2.6%	
Total	12.3%	12.1%	12.3%	
Shipments (000 tons)				
NA Corrugated Packaging	-9.1%	-2.6%	-7.0%	
Brazil Corrugated Packaging	70.7%	93.8%	125.0%	
Consumer Packaging	-3.7%	-17.2%	-10.0%	

Source: Company filings, BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 7: Stocks mentioned

Prices and ratings for stocks mentioned in this report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
BALL	BALL US	Ball Corp	US\$ 59.41	B-3-7
IP	IP US	Intl Paper Co	US\$ 34.36	B-3-7
WRK	WRK US	WestRock	US\$ 39.23	B-1-7
BUDFF	ABI BB	AB InBev	EUR 57.43	B-1-7
SMFTF	SKG ID	Smurfit Kappa	EUR 33.78	B-1-7

Source: BofA Global Research

BofA GLOBAL RESEARCH

Price objective basis & risk**Ball Corp. (BALL)**

Our \$61 price objective is based on a three-part valuation approach, which takes: (1) a 18-19x 2024E P/E multiple, (2) a 14x 2024E EV/EBITDA multiple and (3) our intrinsic free cash flow (FCF) valuation, which assumes \$1.2bn of normalized FCF, 11% cost of equity and a 3% growth rate. Multiple ranges are higher vs. past valuation levels given packaging group valuations and the growth trajectory offered by the beverage can market.

Risks to our PO are (1) operational challenges from new capacity onboarding, (2) potentially increased competition arising from new entrants, (3) BALL's ability to realize benefits from prior capital spending (e.g., new capacity, custom cans, productivity, etc.), (4) input cost volatility including energy cost volatility in Europe, (5) overseas/emerging market risks (for example, currency), (6) demand trends in beverages, including the risks to overall valuation, demand and pricing should growth slow, (7) seasonal-weighting of full-year earnings to the key 2Q/3Q period, (8) potential governmental policy and regulatory changes in the US and elsewhere, (9) increasing risk from Russia and South America.

And, as with most packaging companies, there are numerous macro risks and other risks around volumes, pricing, input costs and other factors that could negatively affect fundamental and stock price performance. Similarly should these factors prove more constructive than expected, BALL's performance/PO could exceed our forecasts.

International Paper Co. (IP)

Our \$37 price objective is based on an average of (a) an EPS forecast of \$2.25 in 2024E and a P/E of 14x, which is consistent with historical ranges, (b) a normalized free cash flow (FCF) estimate of \$1bn, a calculated cost of equity of 10% and forecast rate of growth of 2%, (c) our IP sum-of-the-parts (SOTP) value, based on normal EBITDA, which is an average of historical periods 2016-22 and our forecasts through '25E.

Risks to our price objective are (1) the broader employment & macro picture, (2) paper/board sector volatility & demand trends, (3) wastepaper/input cost volatility, (4) trends in the US\$ and its effect on trade flows, (5) emerging market risk, (6) operational risks related to investment projects, (7) IP's pension, (8) the potential for new capacity to come into the market, (9) potential volatility coming from any future Administration policy changes. Fundamental trends could wind up worse than expected, causing further downside to the shares relative to our PO. Better performance or macro news could cause the shares to perform better than our price objective.

WestRock (WRK)

Our \$47 PO is based on an average of (a) a calendarized EPS forecast of \$2.38 in C24 and a P/E of 16x, given optionality with the potential Smurfit Kappa deal, (b) a

normalized free cash flow (FCF) of \$1.1bn, a cost of equity of 11% and forecast growth rate of 3%, (c) our WRK sum-of-the-parts (SOTP) value, based on our evaluation of normal EBITDA, which is an average of historical periods 2020-22 and our forecasts through '25E. Based on current market and sector valuations, we estimate 9x to 10x EV/EBITDA multiple for Corrugated Packaging and an 8x to 9x multiple for Consumer Packaging. Separately, we apply 6x EV/EBITDA multiple for WRK's Global Paper business and a 5x EV/EBITDA multiple for WRK's Distribution businesses.

Risks to our PO are (1) the broader employment, macro and consumer spending outlook, (2) potential volatility in OCC prices, (3) paper/board sector volatility and demand trends across end markets, (4) supply-chains, (5) potential governmental policy and regulatory changes, (6) risks related to the closing of the Smurfit Kappa transaction. As with all our packaging and paper/forest product companies, WRK must contend with a variety of macro, FX, commodity inflation and other considerations. Should the factors above impact WRK more negatively than expected, its results and stock price will have difficulty achieving our forecasts. Similarly, should these factors combine more positively than expected, WRK's results and stock price could exceed our forecasts.

Analyst Certification

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

Special Disclosures

BofA Securities is currently acting as financial advisor to BAE Systems PLC in connection with its proposed acquisition of Ball Aerospace from Ball Corp, which was announced on 17th August 2023

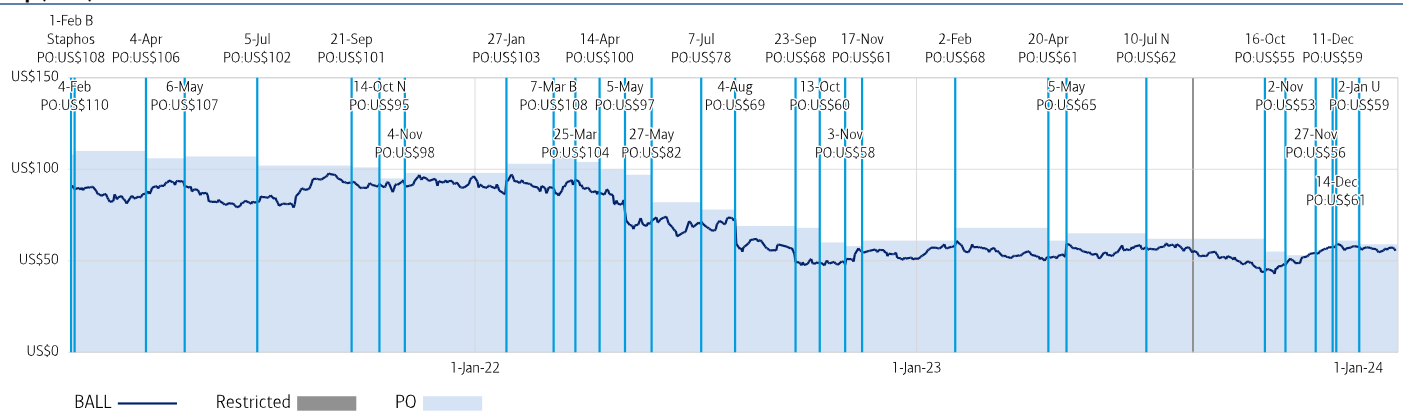
US - Paper and Packaging Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	AptarGroup Inc.	ATR	ATR US	George L. Staphos
	Berry Global	BERY	BERY US	George L. Staphos
	Brady Corp. - CI A	BRC	BRC US	Cashen Keeler
	Crown Holdings Inc.	CCK	CCK US	George L. Staphos
	Graphic Packaging	GPK	GPK US	George L. Staphos
	O-I Glass Inc	OI	OI US	George L. Staphos
	Pactiv Evergreen	PTVE	PTVE US	George L. Staphos
	Sealed Air Corp.	SEE	SEE US	George L. Staphos
	Silgan Holdings Inc.	SLGN	SLGN US	George L. Staphos
	Sonoco Products Co.	SON	SON US	George L. Staphos
	Sylvamo Corp.	SLVM	SLVM US	George L. Staphos
	WestRock	WRK	WRK US	George L. Staphos
	Weyerhaeuser Co.	WY	WY US	George L. Staphos
NEUTRAL				
	Ardagh Metal Packaging S.A.	AMBP	AMBP US	George L. Staphos
	Greif Inc.	GEF	GEF US	George L. Staphos
	Packaging Corp. of America	PKG	PKG US	George L. Staphos
	PotlatchDeltic Corp.	PCH	PCH US	George L. Staphos
UNDERPERFORM				
	Amcor Plc	AMCCF	AMC AU	George L. Staphos
	Amcor PLC	AMCR	AMCR US	George L. Staphos
	Avery Dennison Corp.	AVY	AVY US	George L. Staphos
	Ball Corp.	BALL	BALL US	George L. Staphos
	Boise Cascade Company	BCC	BCC US	George L. Staphos
	International Paper Co.	IP	IP US	George L. Staphos
	Louisiana-Pacific Corp.	LPX	LPX US	George L. Staphos

Disclosures

Important Disclosures

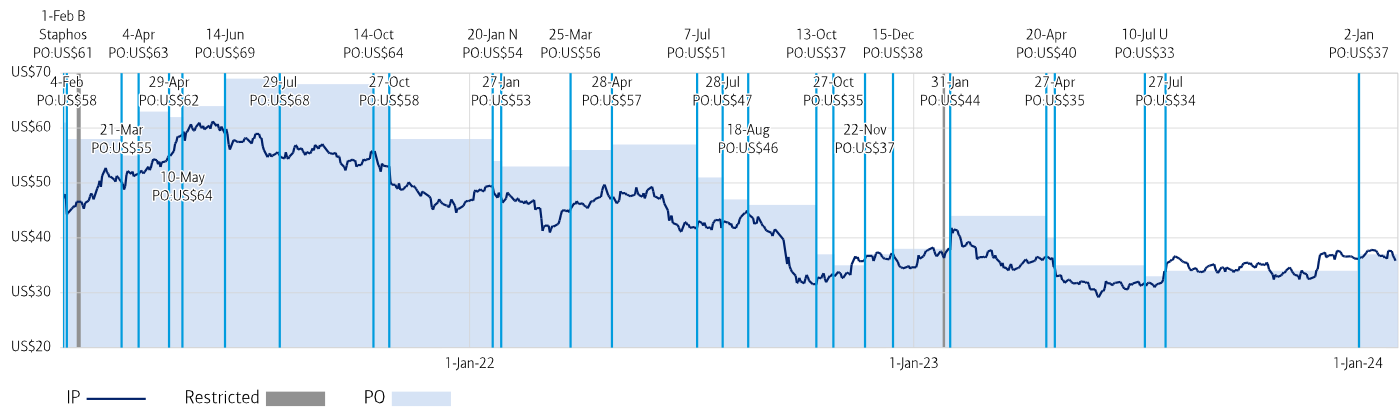
Ball Corp (BALL) Price Chart



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

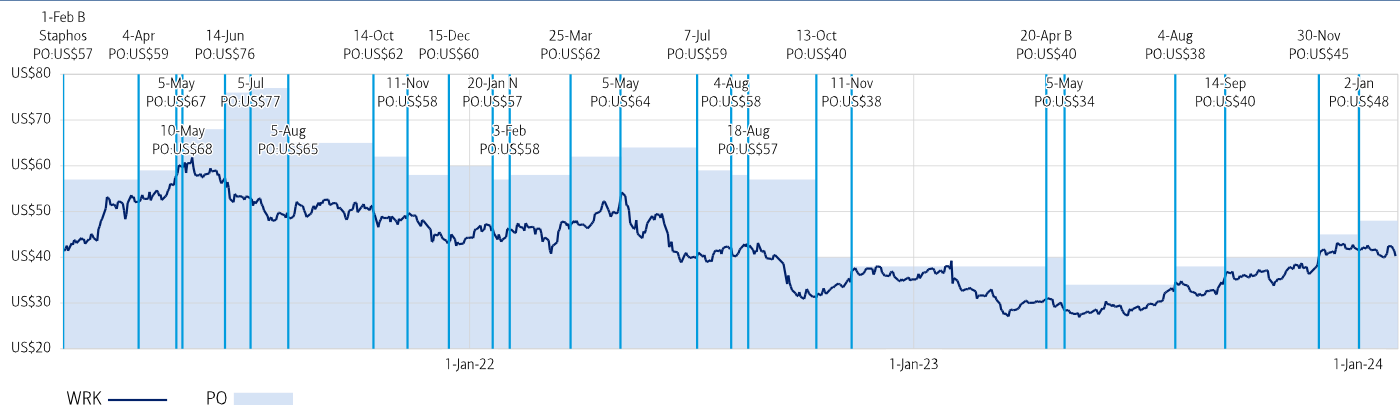
The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey 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.

Intl Paper Co (IP) Price Chart



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

WestRock (WRK) Price Chart



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

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

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	14	60.87%	Buy	10	71.43%
Hold	6	26.09%	Hold	5	83.33%
Sell	3	13.04%	Sell	2	66.67%

Equity Investment Rating Distribution: Paper/Forest Products Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	9	45.00%	Buy	8	88.89%
Hold	2	10.00%	Hold	1	50.00%
Sell	9	45.00%	Sell	5	55.56%

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

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

^{R1} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. **VOLATILITY RISK RATINGS**, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. **INVESTMENT RATINGS** reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R2}Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. *Coverage Cluster* is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

Price Charts for the securities referenced in this research report are available on the [Price Charts website](#), or call 1-800-MERRILL to have them mailed.

BofAS or one of its affiliates acts as a market maker for the equity securities recommended in the report: Ball Corp, Intl Paper Co, WestRock.

BofAS or an affiliate was a manager of a public offering of securities of this issuer within the last 12 months: Ball Corp.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: Ball Corp, Intl Paper, WestRock.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Ball Corp, Intl Paper, WestRock.

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: Ball Corp, Intl Paper, WestRock.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Ball Corp, Intl Paper.

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: Ball Corp, Intl Paper, WestRock.

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: Ball Corp, Intl Paper Co, WestRock.

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: Ball Corp, Intl Paper, WestRock.

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.bofamli.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; 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 HKSCF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

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

General Investment Related Disclosures:

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

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

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

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

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

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

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

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

BofA ESGMeter Methodology:

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

Copyright and General Information:

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

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

material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS or 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.