

Paper/Forest Products

BofA Box Survey Feb '24: Improved overall, we expect up prices. BofA Conf 2/28-29

Industry Overview

Box Survey: Outlook better, we expect prices to increase

We conducted our independent Corrugated Converter survey (this version is the 38th edition of our "Flash" format) which dates back to 2003. Conducted January 9th to February 14th, this survey had 20-25 respondents. Overall, expected shipment growth rebounded from our September '23 survey to +1.1% (was -4.6%). That said, earlier responses were more positive as compared to trends from February respondents, with shipment growth expectations tracking close to +3.0% before later responses showed decelerating expectations. This trend may reflect the lack of movement in January prices by Fastmarkets RISI. **RISI will provide paperboard pricing and market commentary this Friday evening, 2/16 after market close – based on our survey, we expect prices to begin moving up in February, even with some variation across our survey responses.** We rate WestRock (WRK) at Buy, Packaging Corp (PKG) at Neutral and International Paper (IP) at U/P, which are our purest-play containerboard companies.

C'board BofA Global Agriculture/Materials Conf. 2/28-29

Our Annual Global Agriculture & Materials Conference (Ft. Lauderdale, 2/28-29) will feature firesides with IP and PKG. We'll also host expert panels on containerboard, recycled fiber, GLP-1, boxboard, and sustainable plastics, along with company dinners (including IP). Please call your BofA representative for information.

Growth outlook positive, some moderate improvement

As mentioned, growth expectations for the next two qtrs. came in at +1.1% vs. -4.6% in our September '23 survey, below the avg. expected growth rate since the Financial Crisis of +1.6%, but nonetheless an improvement. Expectations widened from our last survey and ranged from -15% to +10%, with a slight improvement in underlying sentiment (Exhibit 3 and Exhibit 4). Among other points, 53% of respondents expect "Better" conditions over the next 6-12 months versus 30% in September. Expectations of "Worse" future conditions have dropped since our June survey.

Pricing: outlook generally positive

As for pricing, we asked "What's more likely to happen first to containerboard?" and 76% of our respondents indicated pricing was more likely to increase than decrease. Similarly, 71% respondents said box pricing was more likely to increase than decrease. As for the next 12 months, 85% of respondents expect higher containerboard pricing vs. 15% in our September '23 survey, while in boxes, 79% expect higher pricing vs. 11% in September. When asked, most respondents expect the next price increase to occur in 1Q24 in containerboard (62%) and for boxes (55%).

We review backlogs and other points below.

15 February 2024

Equity
United States
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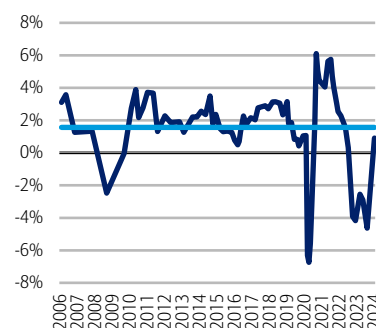
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Exhibit 1: Expectations for shipment growth in the next two quarters

Growth outlook increased to +1.1% in our Feb. '24 survey



Source: BofA Global Research

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12660313

Timestamp: 15 February 2024 05:44PM EST

Reported lead-times: Normal

Responses showed backlogs (defined in our survey as weeks to receive containerboard from paper suppliers or weeks to deliver boxes to customers) remain at relatively stable levels for both containerboard and boxes. For containerboard, average backlogs decreased to 1.6 weeks from our September '23 survey at 2.3 weeks. This is within the average range of 1-2 weeks. Meanwhile, average backlogs for boxes were relatively flat at 1.5 weeks from our September '23 survey at 1.6 weeks. This is versus the normal level of 3-7 days. Reported backlogs for containerboard were reported to range from as little as immediate delivery to as long as 4 weeks. For boxes, backlogs were reported to range from as little as immediate delivery to as long as 3 weeks.

Labor still an issue; Transportation is better

In this survey, we again posed questions asking respondents how they would describe the impact of labor and transportation on their boxmaking business. Overall, respondents noted transportation had a more "Positive" (29%) or "Neutral" (47%) impact. Meanwhile, few respondents noted labor had a more "Positive" (18%) or "Neutral" (12%) impact. Our review of the responses therefore suggests labor is still creating production bottlenecks, while transportation challenges have eased.

Efforts to reduce corrugated content

On a more general level, we asked respondents whether their customers are talking about reducing corrugated content in their boxes and 65% indicated that their customers are considering it to some degree (Exhibit 15) vs. 62% in our June '23 survey. Roughly 20% of respondents cited a 0-5% target reduction by customers considering this strategy, 40% of respondents indicated customers are talking about corrugated conservation but without any specific ranges. Doing a weighted average of these figures (for the responses that quantified an outlook) suggests that conservation efforts could amount to ~90 bps over time versus ~100 bps in our June '23 survey. We also asked, "what percentage of your customers are looking to reduce corrugated content?" and the responses ranged from 0% to 75%, with an average of 19%. In comparison, our June survey had a wider response range from 0% to 90%, with an average of 20%.

Survey details

Demand

Exhibit 2: Expectations for shipment growth in the next two quarters below normal

Growth expectations increased to +1.1% in our latest survey, but are still slightly below the historical average

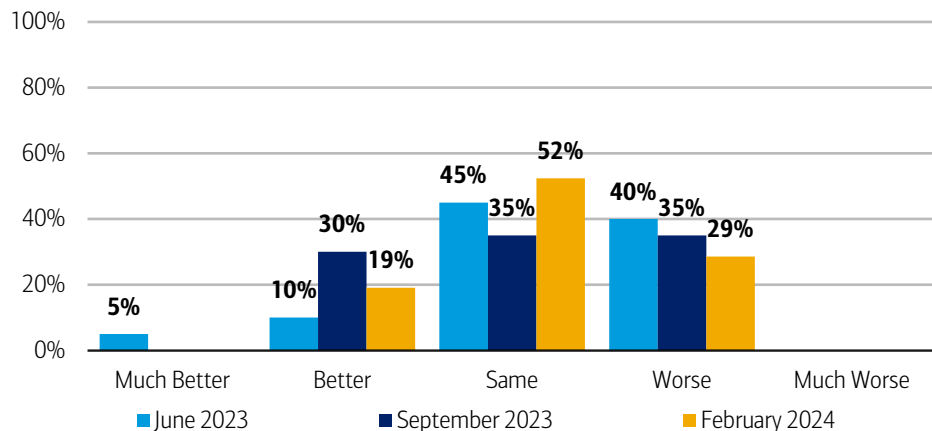


Source: BofA Global Research

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Exhibit 3: Current demand (relative to 3 months ago):

Current demand sentiment appears to be relatively flat versus 3 months ago, while negative observations seem to be declining

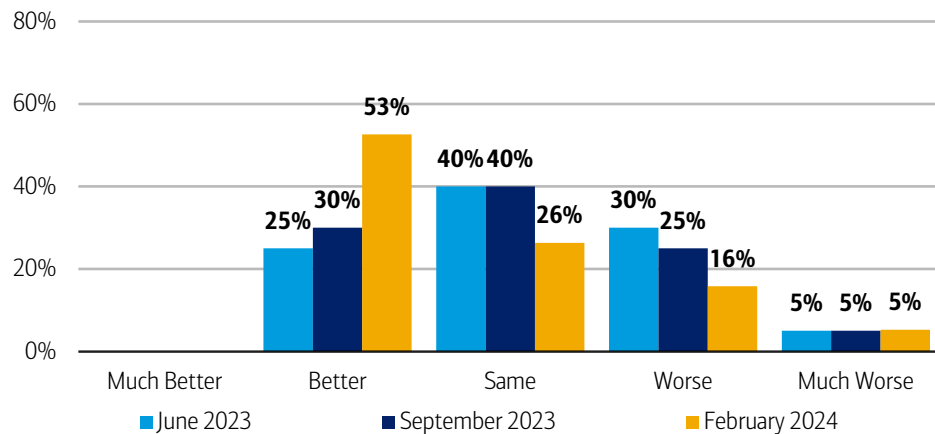


Source: BofA Global Research

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Exhibit 4: Future Demand (over next 6-12 months):

Demand is expected to be better or the same over the next 6-12 months

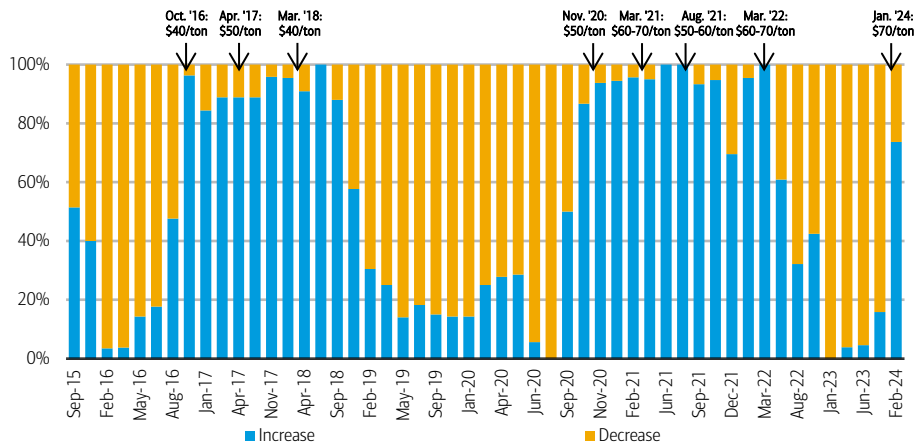


Source: BofA Global Research

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Pricing**Exhibit 5: What's more likely to happen first to containerboard prices?**

76% of respondents expect containerboard prices to decrease first vs. 16% in our Sep. '23 survey



Source: BofA Global Research

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Table 1: What's more likely to happen first to containerboard & box prices?

Some respondents noted the imbalance of supply/demand as the main cause of concern to drive a decrease in price.

Containerboard prices more likely to remain flat or increase first

- Increasing input costs and increasing demand.
- Mills trying to shore up their investments.
- (Market observers) will raise the ton price soon.
- Integrated company's agenda.
- The integrated companies have already pushed it, without any regard for current market conditions.
- Manufacturers are continuing to push.
- Too much talk of going up. Not going backwards.
- Eventually RISI will give into the announcements.

Box prices more likely to remain flat or increase first

- To cover increase in material and other input charges.
- If linerboard increases, then finished boxes will follow.
- If it sticks, we will be happy to try and go get it.
- Due to containerboard.

Containerboard prices more likely to decrease first

- Even though a \$70/ton increase has been announced and is trying to be implemented, the market is still soft and resisting this attempt.
- Demand is off and there is an oversupply in the market.
- Oligopoly effect.

Box prices more likely to decrease first

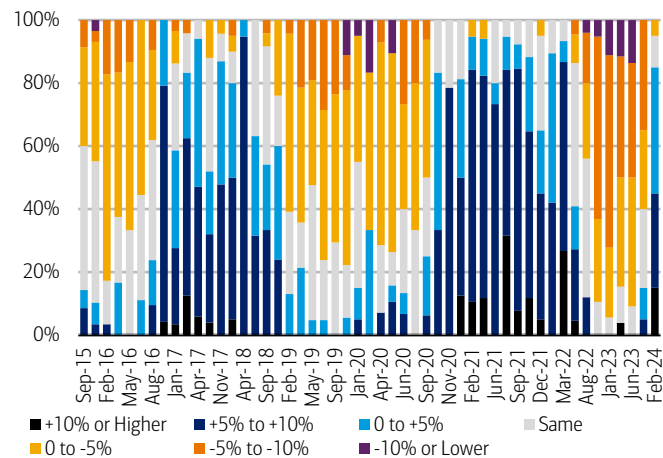
- Pricing pressure on boxes is still strong due to soft conditions and excess capacity.
- Demand is down and industry is slower.
- Demand is low, Supply is readily available.

Note: Opinions are not endorsed by and do not necessarily reflect BofA views and are presented with (minimal editing).

Source: BofA Global Research

Exhibit 6: Containerboard prices (over next 12 months)

85% expect higher c'board pricing in next 12 months vs. 15% in Sep. '23

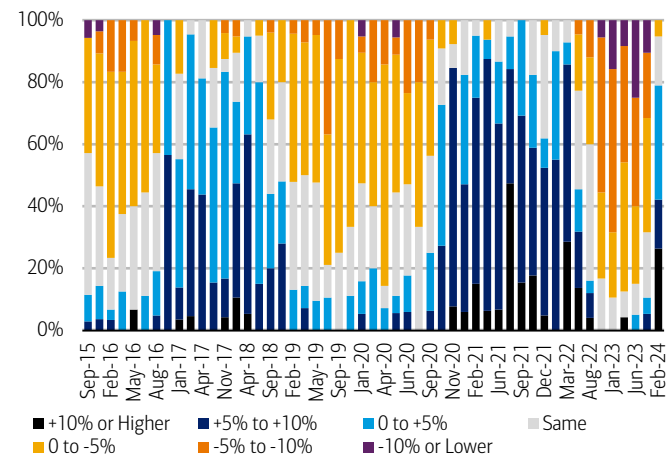


Source: BofA Global Research

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Exhibit 7: Box prices (over next 12 months)

79% expect higher box pricing in next 12 months vs. 11% in Sep. '23

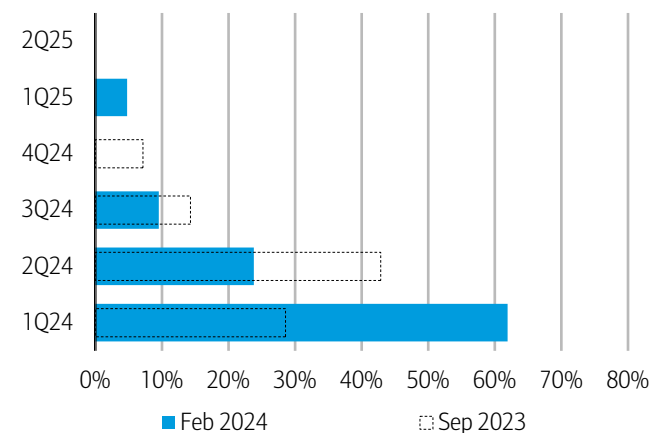


Source: BofA Global Research

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Exhibit 8: When do you think integrated producers might attempt a board increase?

62% of box makers expect the next containerboard price hike in 1Q24 and 24% in 2Q24.



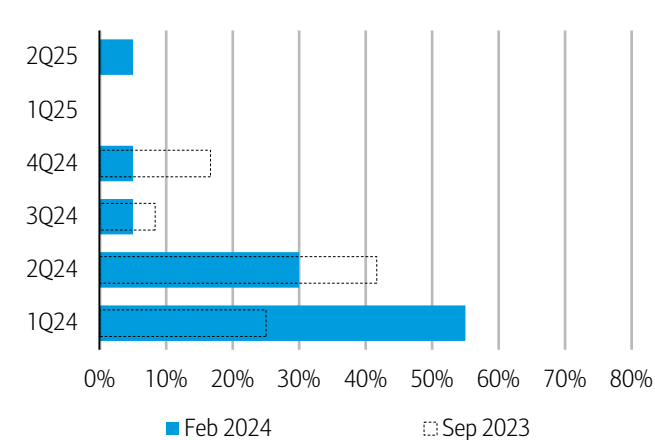
Source: BofA Global Research

Note: Approximately 7% of respondents answered 2023 for Sep. 2023 survey

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Exhibit 9: When do you think integrated producers might attempt a box increase?

On box pricing, 55% expect the next box price hike in 1Q24 and 30% in 2Q24.



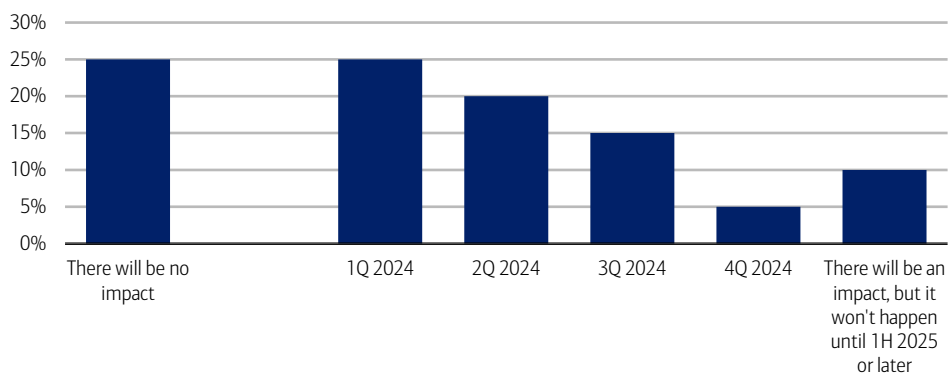
Source: BofA Global Research

Note: Approximately 8% of respondents answered 2023 for Sep. 2023 survey

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Exhibit 10: When do you expect new capacity to have an impact on the market's supply/demand?

65% of respondents expect an impact from new capacity in 2024. Approximately 25% of our respondents expect that 1Q24 will have the most visible effect.



Source: BofA Global Research

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Exhibit 11: Comments regarding market trends / developments that might be overlooked by the trade press or analyst community

Respondents cited industry trends, the competitive landscape, and high interest rates as notable developments.

- Is NA containerboard becoming too recycled? What will future be on quality of recycled liner in USA as KL mills are closed?
- High bank interest rates.

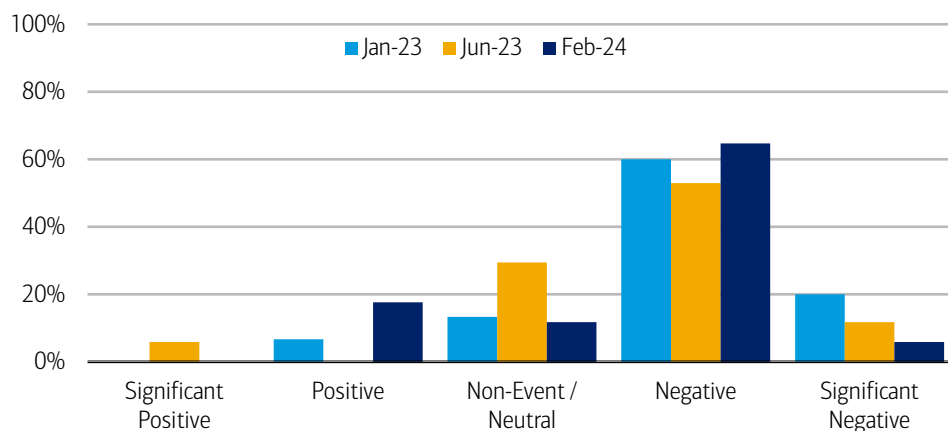
Note: Opinions are not endorsed by and do not necessarily reflect BofA views and are presented with (minimal editing).

Source: BofA Global Research

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Exhibit 12: How would you describe impact of labor on box business vs. prior periods?

Respondents generally view labor as having an adverse impact on box business. In our survey, 71% of respondents describe a "negative", or "significant negative" sentiment vs. 65% in Jun. '23.

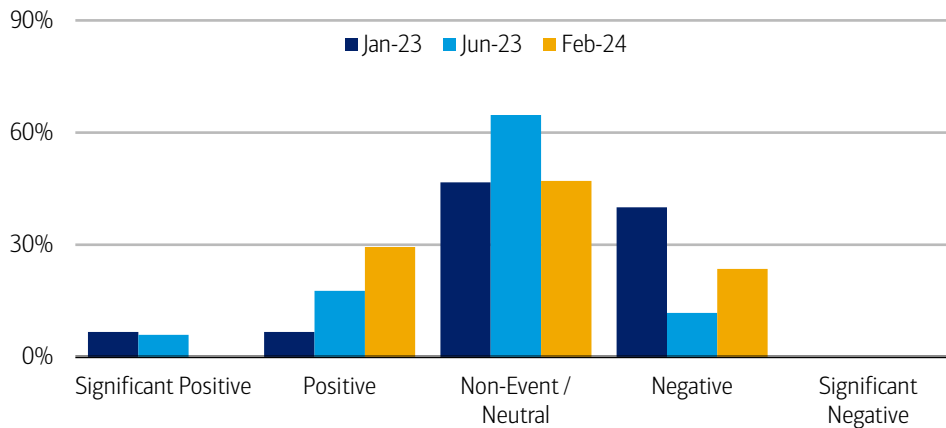


Source: BofA Global Research

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Exhibit 13: How would you describe impact of transportation on box business vs. prior periods?

Respondents generally view transportation as having a “positive” or “neutral” impact on box business. In our survey, 29% of respondents describe a “positive”, or “significant positive” sentiment vs. 24% in Jun. '23.

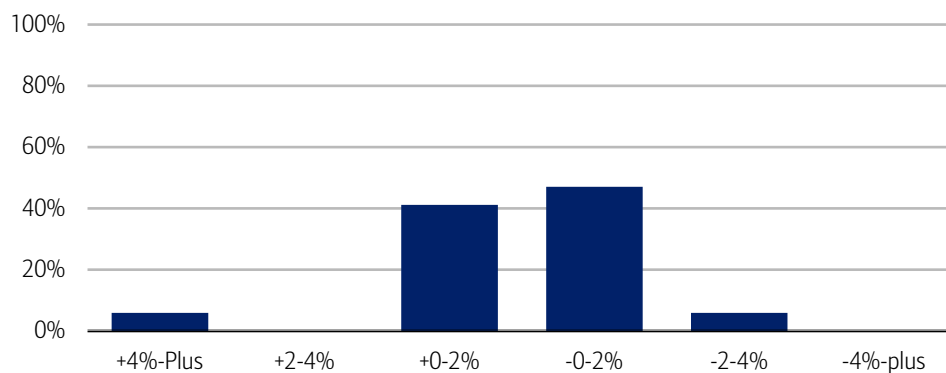


Source: BofA Global Research

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Exhibit 14: How would you describe the benefit or headwind to growth being created by labor and transportation trends on a combined basis?

Considering our prior exhibits' commentary, the estimated headwind equates to roughly 0 to -2%. This represents 47% versus 65% in our Jun. '23 survey.



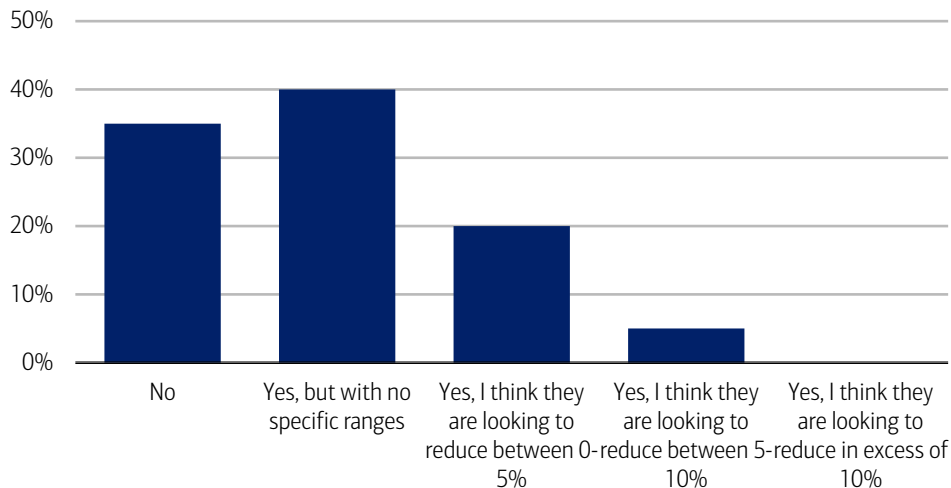
Source: BofA Global Research

*Note: we utilize the mode to measure respondent data

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Exhibit 15: Are customers talking about reducing corrugated content, downgauging, etc. in boxes?

Approximately 65% of respondents indicated that their customers are considering reducing corrugated content to some degree.

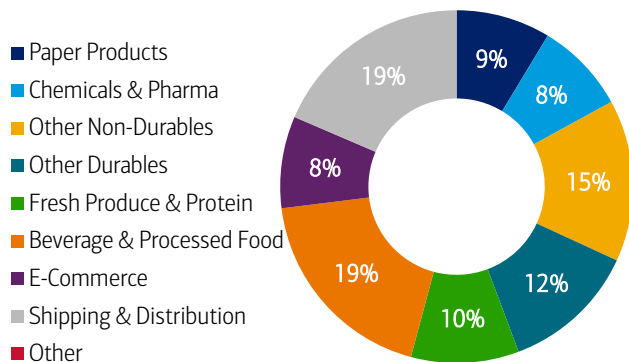


Source: BofA Global Research

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End markets**Exhibit 16: What percentage of your boxes do you believe is sold into the following categories?**

E-commerce only accounted for 8% of boxes in our latest survey, however, shipping & distribution accounted for 19% and tends to represent an extension of the e-commerce channel.



Source: BofA Global Research

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Exhibit 17: Companies Mentioned

List of companies mentioned in the report

Company	Ticker	Q-R-Q	PO	Recent Price
Paper/Forest				
International Paper	IP	B-3-7	\$37	\$35.07
Packaging Corp.	PKG	B-2-7	\$178	\$166.9
WestRock	WRK	B-1-7	\$47	\$43.31

Source: BofA Global Research, Bloomberg. Priced on 2/14/24.

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Price objective basis & risk**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.

Packaging Corp. of America (PKG)

Our \$178 price objective is based on an average of (a) an EPS forecast of \$8.50 in 2024E and a P/E of 20x, in line with peer multiples, (b) a normalized free cash flow (FCF) estimate of \$750mn, a calculated cost of equity of 9% and forecast rate of growth of 4%, (c) a sum-of-the-parts (SOTP) value, based on forecast midcycle EBITDA or per ton(ne) replacement values.

Risks to our price objective being achieved are (1) PKG's leverage to economic cycles, (2) containerboard market volatility and demand trends, (3) input cost volatility, (4) demand, supply-chain and other risks created by the Covid-19 pandemic, (5) potential structural changes in the economy, (6) the potential for mill or converting operations to perform less well than anticipated, (7) the potential for new capacity to come into the market, (8) volatility coming from changes by the Administration. While we've tried to be conservative in our modeling, fundamental trends could wind up worse than expected, causing downside risk to the shares relative to our price objective. Similarly, PKG results could wind up stronger than our forecasts, causing the shares to move beyond our PO.

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.

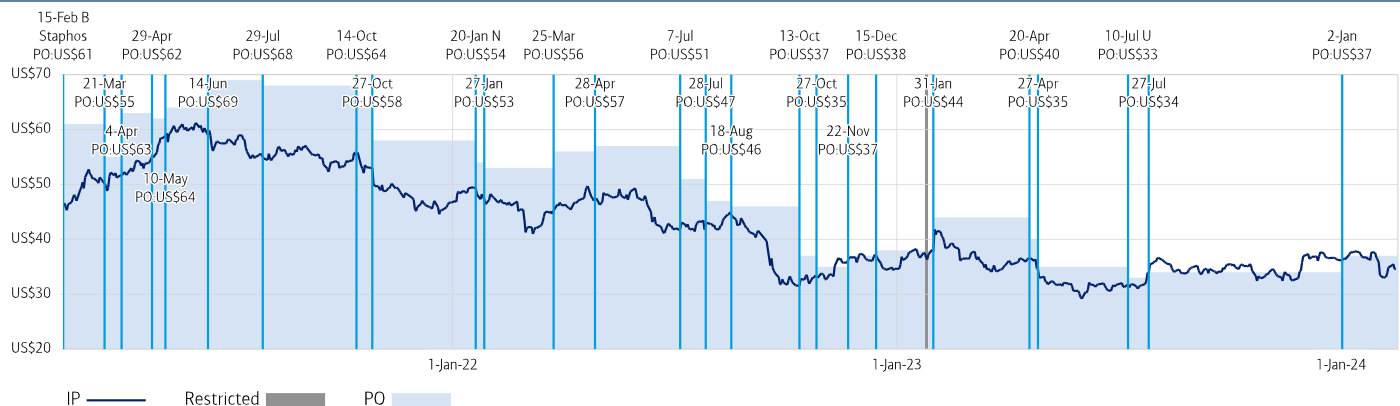
US - Paper and Packaging Coverage Cluster

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	GPX	GPX 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

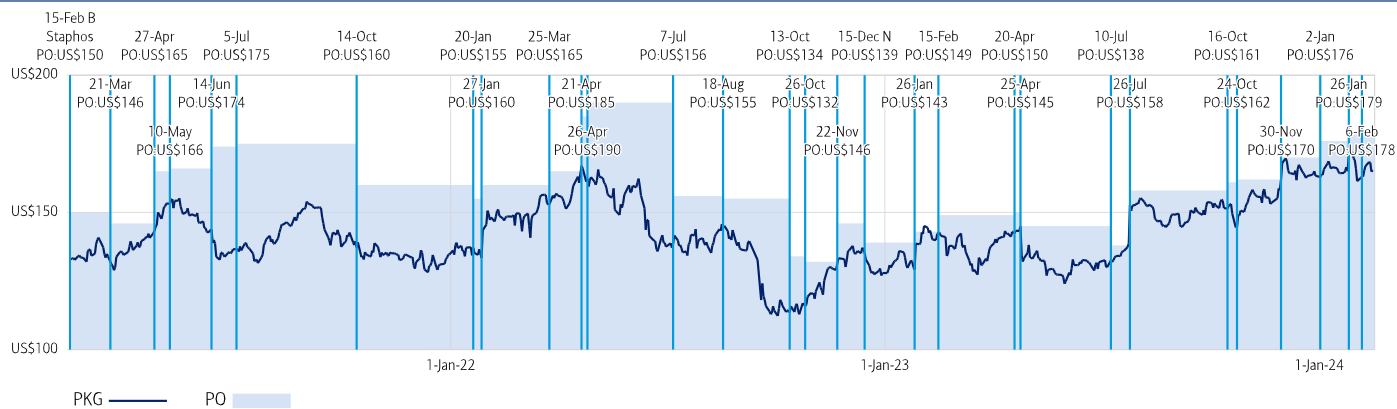
Intl Paper Co (IP) Price Chart



IP ——— Restricted ■ PO ■

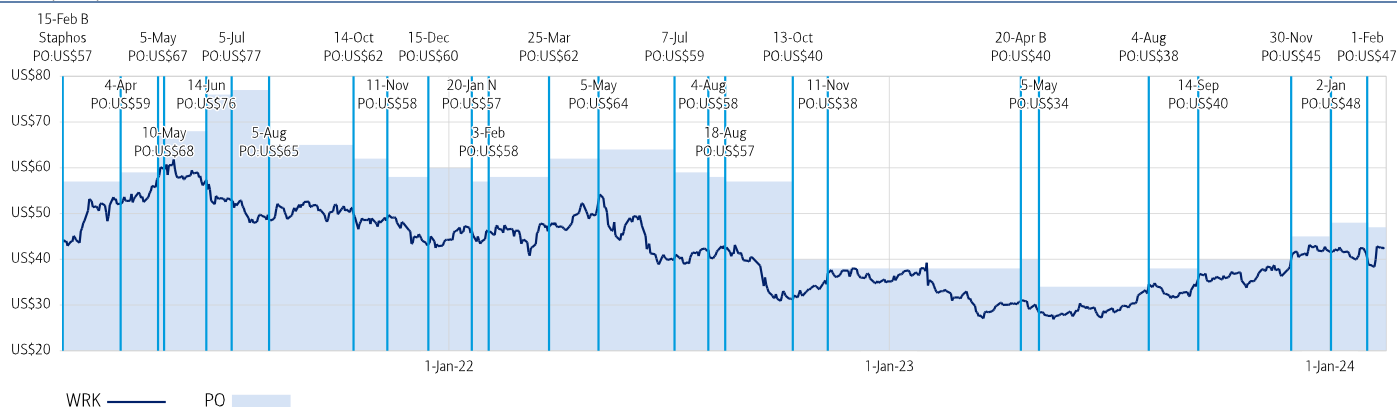
B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

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.

Packaging Corp (PKG) Price Chart

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

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WestRock (WRK) Price Chart

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

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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.

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

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