

Paper/Forest Products

Pulp & Paper: Downstream weak but pulp hanging tough while Red Sea has impact

Price Objective Change

Intro: Pulp & Paper data supports sector view

Overall, we continue to maintain a neutral-to-positive view of the pulp & paper markets. While we see prices heading lower, prices have held up better than prior forecasts and Red Sea supply chain constraints could put upward pressure here as well, particularly in European paper and North American fluff. We reiterate our Buy-rating on Sylvamo (SLVM), on valuation, while other companies with exposure to pulp and uncoated free sheet (UCFS) include International Paper (IP; U/P) and Packaging Corp. (PKG; Neutral). We recently updated our pulp supply/demand forecast in the Global Pulp Year-Ahead report ([see Pulp YA here](#)) and pulp prices should peak in 1H ([see here](#)). Positive recent price trends, higher recovered paper (RCP) pricing, shipping disruptions and seasonality drive the 1H and 2024 forecast. For paper, we expect UCFS shipments to be down -20% in 2023 and rebound +6% off easy comparisons in 2024. Our industry models are shown in Exhibit 1 through Exhibit 7. For UCFS, we continue to forecast operating rates stagnating in the 80s and a gradual pricing decline for 2024.

Pulp +11% y/y in Nov. on (now slowing) China restock

The November Pulp and Paper Products Council (PPPC) industry data released on January 4th for Global 100 Chemical Pulp markets showed global pulp shipments were up +3.5% year-to-date, with a +11% increase in November 2023 vs. a year ago to 5,835k MT. Pulp shipments in softwood (SW) and hardwood (HW) were up +4% y/y to 2,164k MT and +17% y/y to 3,465k MT, respectively. Growth was concentrated in Asia, mostly China where demand rose +35.5% y/y. That said, as China slows in 2024 the rest of the world will have to compensate. Total producer (standard) inventories were down one day m/m to 40 days of supply, due to SW inventories dropping one day m/m to 37 days. Red Sea disruptions were having some impact, particularly in fluff according to our contacts.

Paper data less negative; Red Sea to benefit Europe?

The PPPC reported December data (1/18) for North America Printing & Writing (P&W). UCFS shipments were down -17% year-to-date, with a -13% decrease in December 2023 vs. a year ago. The avg. op. rate for UCFS in December also declined to 75% vs. 84% y/y. According to the PPPC, the soft data is mainly a result of continued destocking, though cut-size shipments benefited on a relative basis given increased "work from office." Red Sea constraints are apparently beginning to tension European markets as Asian-produced paper & converted products (i.e., calendars) are having difficulty reaching Europe. This could mean higher price realizations for our cos., though time will tell.

Raise fluff, lower UCFS – adjust SLVM, IP, PKG ests.

We update our benchmark forecasts in consideration of these points. In fluff, we increase our forecasts by +\$31/ton for 2024, and by +\$63/ton in 2025. Meantime, in UCFS, we decrease our forecasts by -\$26/ton in 2024 and by -\$30/ton in 2025. Relating this to our earnings models, our estimates increase for IP from \$2.05 to \$2.10 in 2024 and from \$2.60 to \$2.70 in 2025. Meantime, our estimates decrease slightly for PKG from \$8.50 to \$8.45 in 2024 and from \$9.75 to \$9.70 in 2025 and for SLVM from \$4.75 to \$4.40 in 2024 and from \$5.85 to \$5.40 in 2025. See inside for additional comments.

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Refer to important disclosures on page 9 to 13. Analyst Certification on page 8. Price Objective Basis/Risk on page 7.

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Pricing Forecast

Exhibit 1: BofA Pulp & Paper Price Forecasts, 2022 – 2026E

Review of pricing forecast for 2022-2026

	2022	1Q23	2Q23	3Q23	4Q23	2023	1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E	2026E
NBSK Market Pulp (1)	\$1,704	\$1,675	\$1,510	\$1,293	\$1,312	\$1,448	\$1,370	\$1,390	\$1,390	\$1,340	\$1,373	\$1,296	\$1,290
NBSK Market Pulp (old) (1)	1,704	1,675	1,510	1,293	1,312	1,448	1,370	1,390	1,390	1,340	1,373	1,296	1,290
NBHK Market Pulp (1)	1,514	1,523	1,277	1,023	1,083	1,227	1,140	1,160	1,150	1,100	1,138	1,090	1,060
NBHK Market Pulp (old) (1)	1,514	1,523	1,277	1,023	1,083	1,227	1,140	1,160	1,150	1,100	1,138	1,090	1,060
SBSK Market Pulp (1)	1,678	1,643	1,460	1,217	1,225	1,386	1,283	1,303	1,303	1,253	1,286	1,210	1,203
SBSK Market Pulp (old) (1)	1,678	1,643	1,460	1,217	1,225	1,386	1,283	1,303	1,303	1,253	1,286	1,210	1,203
SBHK Market Pulp (1)	1,514	1,523	1,277	1,023	1,083	1,227	1,140	1,160	1,150	1,100	1,138	1,090	1,060
SBHK Market Pulp (old) (1)	1,514	1,523	1,277	1,023	1,083	1,227	1,140	1,160	1,150	1,100	1,138	1,090	1,060
Fluff Pulp (1)	2,070	2,138	1,977	1,747	1,755	1,904	1,805	1,810	1,800	1,780	1,799	1,663	1,550
Fluff Pulp (old) (1)	2,070	2,138	1,977	1,747	1,755	1,904	1,770	1,780	1,770	1,750	1,768	1,600	1,550
China HW, net (1)	792	756	518	532	620	607	648	600	592	669	627	600	-
China HW, net (old) (1)	792	756	518	532	620	607	648	600	592	669	627	600	-
Uncoated Freesheet - 20-lb repro	1,412	1,495	1,472	1,465	1,445	1,469	1,405	1,400	1,400	1,400	1,401	1,385	1,390
Uncoated Freesheet - 20-lb repro (old)	1,412	1,495	1,472	1,465	1,445	1,469	1,435	1,425	1,425	1,425	1,428	1,415	1,385

Source: Fastmarkets RISI / PPW, Random Lengths, BofA Merrill Lynch Global Research estimates.

All prices per short ton, except as noted; (1) \$/metric tonne; (2) Lumber price per MBF, Panel price per MSF.

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Company comments

Nearly done with 4Q reporting, Sylvamo remains

Summary: IP and PKG beat but IP's guide missed

Packaging Corp's 4Q showed steady paper margin

Packaging Corp.'s results were higher than our forecast with the company reporting 4Q23 EPS of \$2.13, above BofA at \$1.83 with a +7% higher EBITDA (adj. EBITDA at \$393.5mn vs. our \$367.7mn est.). At the segment level, EBITDA was lower for Packaging by -1.9% (at \$384.7mn) and for Paper by -10.7% (at \$35.2mn) on a year-over-year basis, but results were above our forecast, with Packaging EBITDA above our forecast by +5.6% (BofA est. at \$364.3mn) and Paper EBITDA above our forecast by +19.7% (BofA est. at 29.4%). In Packaging, the company saw box volume growth at +5.1% on a per-workday basis. In Paper, the company retained an impressive margin profile (24.5%) despite lower price mix (-3% y/y) and volumes (-3% y/y) versus 4Q22. As for guidance, PKG's packaging segment will benefit from two additional shipping days and the expected implementation of its \$70/ton increase in linerboard and \$100/ton increase in medium. In paper, the company expects improved mix to be offset by flat sales volumes. In addition, PKG cited Jackson mill's final conversion phase will be a y/y negative (16c in 1Q and 8c in 2Q). Recall, PKG is more exposed to cut-size office papers ~75%. We update our paper and pulp pricing forecasts for PKG, which impacts our financial forecasts for the company. Given these changes, our estimates move to \$8.45 in 2024 (from \$8.50), \$9.70 in 2025 (from \$9.75), and \$10.25 for 2026 (unchanged) while our PO moves to \$178 from \$179. We reiterate our Neutral.

International Paper's 4Q showed lower GCF results on price/mix, special items

International Paper's results were higher than our forecast with the company reporting 4Q23 EPS of \$0.59, above BofA at \$0.38. At the segment level, EBIT was lower for Industrial Packaging (containerboard) by -24.3% (at \$315mn) on a year-over-year basis. IP cited U.S. box shipments were up +2.9% sequentially, though down -5.8% y/y. Meantime, IP's Global cellulose Fibers (GCF) business had weaker results with an EBIT of -\$58mn compared to +\$35mn in 4Q22. Results were negatively impacted by price/mix (-\$136mn y/y) and special items (e.g., \$18mn planned turbine maintenance expense in 4Q23). While we lowered our forecasts post 4Q, IP's guidance bridge does imply an increase in the Paper segment by ~\$10mn sequentially. Given our new pricing forecasts, our earnings estimates for IP move to \$2.10 in 2024 (from \$2.05), \$2.70 in 2025 (from \$2.60), and \$2.75 for 2026 (from \$2.80) while our PO is unchanged at \$37. We reiterate our Underperform.

Sylvamo is next – we are expecting weaker results on tough y/y comps

Sylvamo is expected to report earnings on February 15th and SLVM has been rated a Buy based on its valuation, cashflow and BofA's expectation that smaller-cap, cyclical and cheaper stocks can outperform. We are currently projecting an operating EPS of \$0.82 in 4Q23 with an adj. EBITDA at \$105mn. At the segment level, we are expecting adj. EBITDA to be lower by -\$31.6mn for North America (at \$50.4mn), by -\$17.9 for Europe (at -\$1.9mn), and by -\$21.1mn for Latin America (at \$50.9mn) on a year-over-year basis. We update our paper and pulp pricing forecasts for SLVM given our benchmark adjustments, and our earnings estimates consequently we move to \$4.40 in 2024 (from \$4.75), \$5.40 in 2025 (from \$5.85), and \$5.55 for 2026 (new) while our PO moves to \$57 (from \$59). We reiterate our Buy.



Pulp Review

Supply/Demand for Market Pulp

Exhibit 2: BofA – Global market pulp supply/demand model (kMT)

Summary of supply/demand for market pulp

BofA Market Pulp Supply Demand Model	2017	2018	2019	2020	2021	2022E	2023E	2024E	2025E	2026E
Total Demand (kMT)	59,212	60,801	62,206	62,604	60,947	61,838	62,717	63,608	64,861	66,162
% change y/y	4.3%	2.7%	2.3%	0.6%	-2.6%	1.5%	1.4%	1.4%	2.0%	2.0%
USA	6,832	6,818	6,964	7,222	6,768	6,903	6,282	6,471	6,438	6,406
Canada	600	636	727	915	1,048	1,069	973	1,002	997	992
West Europe	12,921	13,106	12,634	11,378	11,868	12,105	10,290	10,650	10,596	10,543
East Europe and CIS	3,564	3,744	3,801	3,678	3,942	3,883	3,417	3,519	3,555	3,590
Latin America	3,701	3,631	3,324	3,547	3,553	3,695	3,769	3,882	4,037	4,199
China	20,568	21,414	22,959	24,850	23,232	23,000	27,255	26,982	27,926	28,904
Japan	1,901	1,930	2,002	1,834	1,772	1,949	1,715	1,801	1,783	1,765
Asia/Africa	6,814	7,061	7,580	7,243	6,754	7,125	7,268	7,486	7,711	7,942
Nordic Countries	1,925	2,070	1,856	1,558	1,652	1,685	1,432	1,482	1,475	1,468
Oceania	386	391	359	379	358	422	317	333	343	353
Total Capacity (kMT)	65,035	68,070	68,404	68,554	68,069	67,878	70,014	74,618	76,520	76,815
Net Additional Capacity	2,140	3,035	334	150	(485)	998	2,298	3,037	1,903	295
Net Hardwood additional capacity						1,150	2,327	2,338	1,903	295
Net Softwood additional capacity						(153)	(30)	699	0	0
Delta of unplanned downtime			(564)	582	716	(1,189)	(162)	1,567	0	0
Unplanned Closures/downtime		(1,450)	(2,014)	(1,432)	(716)	(1,905)	(2,067)	(500)	(500)	(500)
Producer Inventories (kMT)	4,751	6,484	6,362	5,244	6,060	6,485	7,186	6,986	6,986	6,986
Producer Inventories (days of supply)	29	39	37	31	36	38	42	40	39	39
Inventory consumption		1,733	(122)	(1,118)	816	425	701	(200)	0	0
Operating rates (%)	91.0%	91.9%	90.8%	89.7%	90.7%	91.7%	90.6%	85.0%	84.8%	86.1%

Source: BofA Global Research estimates, Fastmarkets RISI, Hawkins Wright, PPPC, Brian McClay & Associates

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World Chemical Market Pulp

Exhibit 3: Summary table for Global Pulp Statistics (G-100) – Shipments (kMT)

PPPC reported global pulp shipments were up 11% in November

	Nov-23	y/y %	2023 ytd	ytd (%)
Total shipments	5,835	10.7%	62,010	3.55%
Softwood pulp	2,164	3.9%	22,634	0.4%
Hardwood pulp	3,465	16.6%	36,993	7.4%
Others	206	-4.6%	2,383	-18.0%
By region				
North America	604	-8.5%	6,716	-7.3%
Europe - Western	971	-9.9%	10,881	-17.3%
Europe - Eastern	250	-1.6%	2,578	-9.6%
LatAm	326	2.8%	3,725	3.0%
Japan	150	-23.1%	1,764	-16.8%
China	2,612	35.5%	26,356	25.3%
Other Asia & Africa	894	12.5%	9,677	2.6%
Oceania	28	-34.9%	312	-27.4%

Source: Pulp & Paper Products Council

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Paper Review

Uncoated Free Sheet Supply/Demand

Exhibit 4: Uncoated Free Sheet North American Supply Demand

Summary of supply/demand for UCFS

Uncoated Free Sheet - NA	2017	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E
Apparent Consumption (Tons)	8,285	8,374	7,726	6,303	6,556	6,780	5,384	5,607	5,485	5,366
Shipments	8,376	8,279	7,402	6,116	6,157	6,111	5,037	5,287	5,133	5,007
Adjusted Capacity	9,429	9,011	8,390	7,727	6,772	6,824	6,768	6,648	6,648	6,624
Capacity Utilization	89%	92%	88%	79%	91%	90%	74%	80%	77%	76%
Net (Imports) Exports, est. (1)	(29)	(238)	(525)	(488)	(704)	(973)	(621)	(605)	(649)	(644)
-- as pct shipments	0%	-3%	-7%	-8%	-11%	-16%	-12%	-11%	-13%	-13%

Uncoated Free Sheet - US	2017	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E
Shipments	7,613	7,492	6,631	5,324	5,357	5,311	4,265	4,509	4,360	4,260
% Growth	-3.5%	-1.6%	-11.5%	-19.7%	0.6%	-0.9%	-19.7%	5.7%	-3.3%	-2.3%
Capacity	8,610	8,199	7,576	6,915	5,952	6,004	5,948	5,828	5,828	5,828
Exports	852	717	599	439	404	348	316	316	316	316
Imports	946	1,019	1,138	957	1,102	1,287	927	927	973	973
Apparent Consumption (Tons)	7,707	7,794	7,171	5,842	6,054	6,251	4,875	5,119	5,017	4,916
Growth %	-6.3%	1.1%	-8.0%	-18.5%	3.6%	3.2%	-22.0%	5.0%	-2.0%	-2.0%
Gross Imports % of Consumption	12%	13%	16%	16%	18%	21%	19%	18%	19%	20%

Uncoated freesheet - Canada (2)	2017	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E
Shipments	763	787	771	792	800	800	773	779	773	747
% growth	0.9%	3.2%	-2.0%	2.7%	1.0%	0.0%	-3.4%	0.8%	-0.7%	-3.4%
Capacity	819	812	814	812	820	820	820	820	820	796
Utilization Rate %	93.1%	96.9%	94.8%	97.5%	97.6%	97.6%	94.2%	94.9%	94.3%	93.9%
Exports	463	478	468	519	506	531	496	508	518	502
Imports	278	271	252	188	208	260	231	218	213	205
Apparent consumption (tons)	578	580	555	461	502	530	508	488	469	450
% growth	0.6%	0.3%	-4.3%	-16.9%	8.8%	5.6%	-4.0%	-4.0%	-4.0%	-4.0%
Canadian exports ex-US	119	125	86	84	55	64	60	64	65	63
Canadian imports ex-US	54	61	72	54	62	98	71	59	57	50

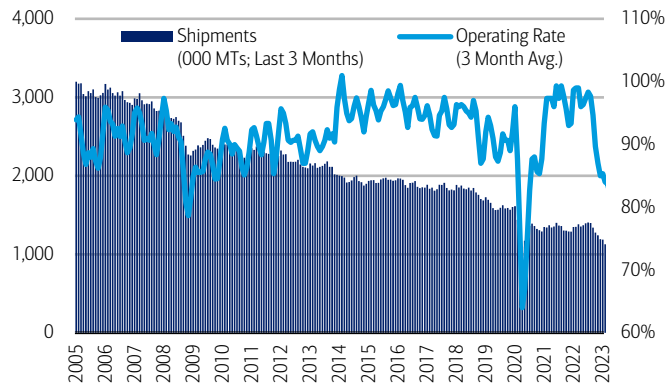
Source: RISI, AFPA, BofA Global Research

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North America Printing & Writing Statistics

Exhibit 5: Uncoated Freesheet vs. Operating Rates – 3 months

UCFS average operating rates in December

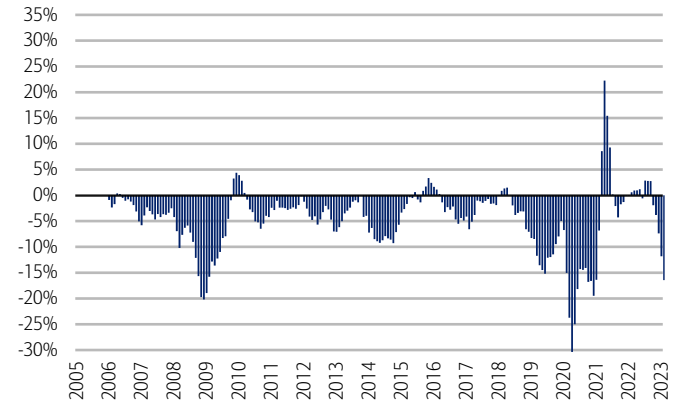


Source: Pulp & Paper Products Council

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Exhibit 6: Uncoated Freesheet Shipments (Y/Y Chg) – 3 months

UCFS shipments in December

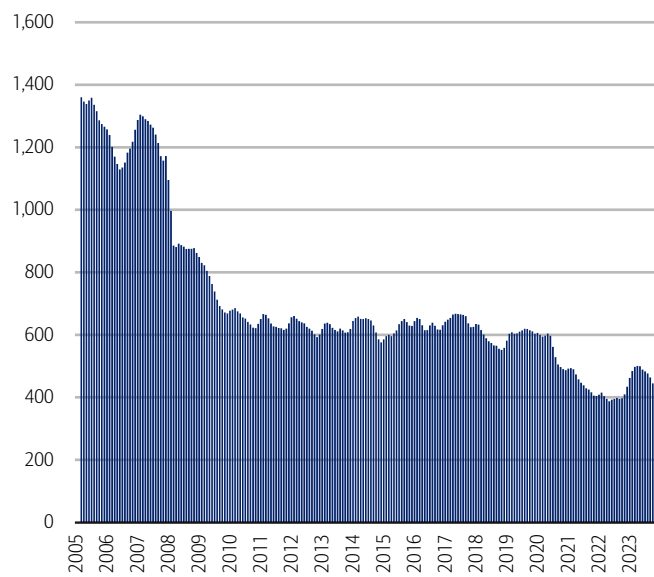


Source: Pulp & Paper Products Council

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Exhibit 7: Uncoated Freesheet Inventories - 3 Months

UCFS inventories in December



Source: Pulp & Paper Products Council

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Stocks mentioned

Prices and ratings for stocks mentioned in this report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
IP	IP US	Intl Paper Co	US\$ 32.97	B-3-7
PKG	PKG US	Packaging Corp	US\$ 162.58	B-2-7
SLVM	SLVM US	Sylvamo	US\$ 46.34	C-1-7

Source: BofA Global Research

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.

Sylvamo Corp. (SLVM)

Our \$57 price objective is based on an average of: (a) an EPS forecast of \$4.75 in 2024E and a P/E of 12x, which is within the range in which paper companies have traded, (b) a normalized FCF estimate of around \$258mn, a calculated cost of equity of 8% and forecast rate of decline of 3%, (c) our SLVM sum-of-the-parts (SOTP) value, based on forecast midcycle EBITDA values and applying multiples of 4-7x across the regions.

Risks to our PO are: (1) Broader employment and macro picture, (2) Paper sector volatility and demand trends, (3) Changes in the cost or availability of key inputs, energy and transportation, (4) Demand, supply chain and other risks created by the pandemic, (5) Potential cash outflow related to the pending tax ruling on the deductibility of goodwill from IP's 2007 acquisition of the Luis Antonio mill, (6) Emerging market risk, including potential for volatility in Latin America, (7) Potential dis-synergies and



operational risks related to the spin-off from IP, (8) Operational risks associated with the Svetogorsk recovery boiler project, (9) Potential for supply/demand imbalances in UCFS, (10) Potential loss of a key customer, (11) Risks of fragmentation in Europe. Volatility in macro and micro factors and the earnings leverage that exists could mean fundamental trends wind up worse than expected, causing further downside to the shares relative to our PO. Alternatively, better performance could cause the shares to perform better than our PO.

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.

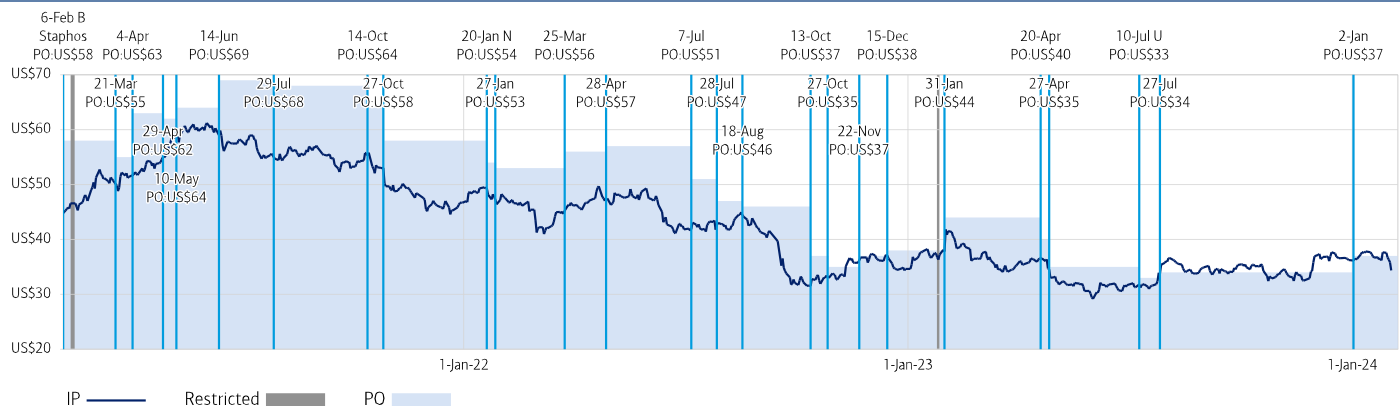
US - Paper and Packaging Coverage Cluster

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

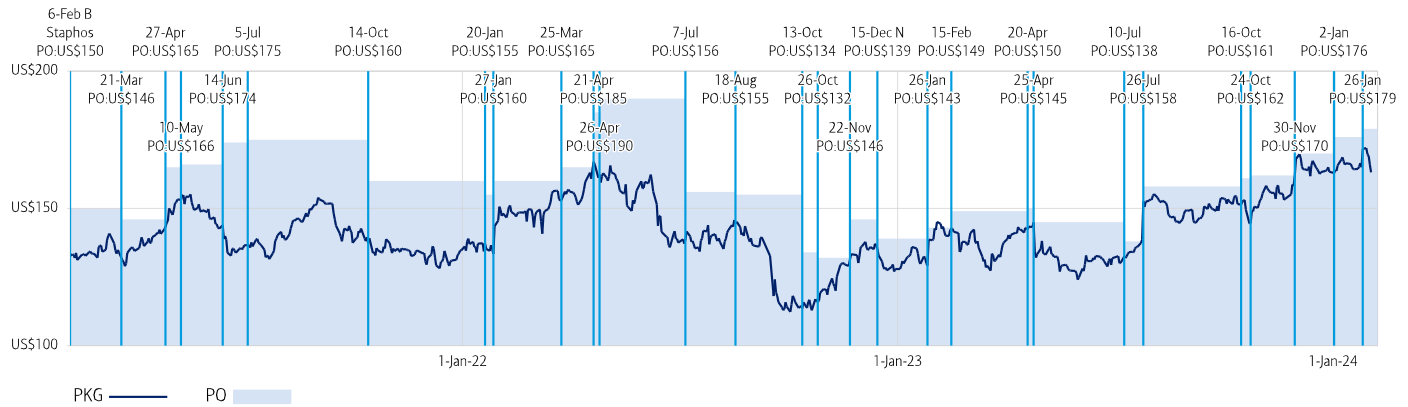
Important Disclosures

Intl Paper Co (IP) Price Chart

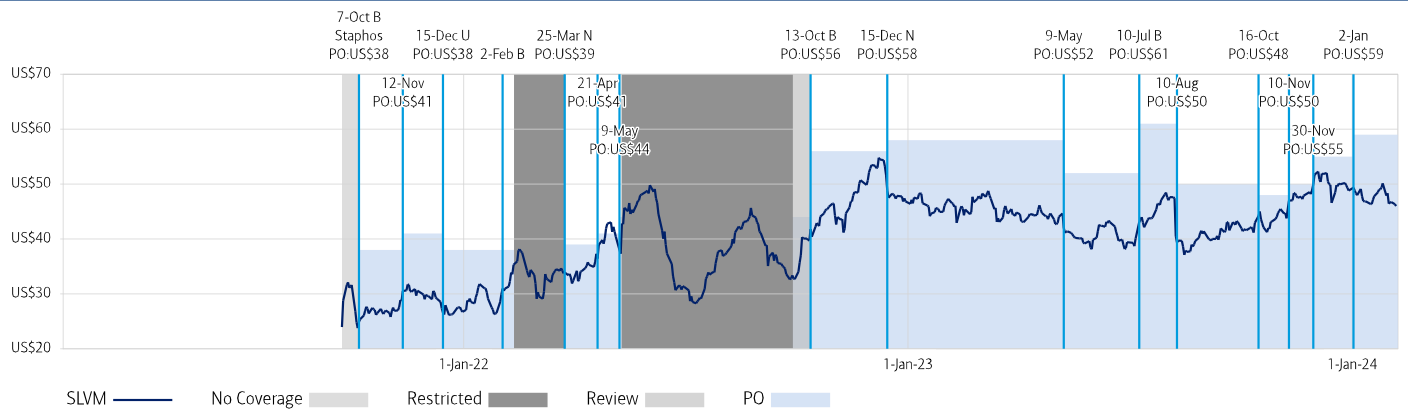


B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

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

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Sylvamo (SLVM) Price Chart

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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.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
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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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