

High Grade Basic Materials Weekly

Week ended February 2, 2024

Industry Overview

HG Basic Materials spreads finished 6 bps wider w-o-w

HG Basic Materials spreads finished 6 bps wider w-o-w, performing in-line with the Corp Index (-6 bps, OAS basis). All subsectors performed relatively in-line.

HG Basic Materials underperformed the market

HG Basic Materials (-49 bps of excess returns) underperformed the Corp Index (-46 bps) w-o-w. Paper & Pack (-39 bps) and Construction Materials / Homebuilders (-43 bps) outperformed while Chemicals (-50 bps) and Metals (-52 bps) underperformed.

BofA lowers lithium price deck; LYB, NUE, EMN earnings

On Tuesday, BofA's Commodity Research team reduced its price forecasts for lithium in 2024 and 2025 due to a lack of supply discipline which has pushed the market into a surplus. Despite a price downturn, operators have been reluctant to curtail production and the project pipeline is well filled which should keep pressure on prices moving forward. To rebalance lithium markets and stabilize prices, we will need to see production cuts, though timing remains uncertain. Away from supply, our commodity team also reduced its electric vehicle penetration assumptions due to slower production growth. We share an excerpt from the report below. Separately, we discuss earnings from LyondellBasell Industries (LYB, MW), Nucor (NUE, MW), and Eastman (EMN, NR). LYB posted EBITDA below consensus due to weakness in its Intermediates & Derivatives segment. The company provided a cautious outlook for 2024 and guided full-year capex modestly above consensus estimates. We continue to like the company's industry bellwether status and significant free cash flow generation but also cannot ignore the current weakness in petrochemical markets. We do not see much downside to LYB's fundamentals going forward (given EBITDA at or near trough levels) and remain MW given fair trading levels vs peers and the BofA Corp Index. Away from LYB, NUE printed EBITDA above consensus and guided 1024 earnings higher q-o-q. We, and the company, remain constructive on steel demand in 2024 which should support its credit story nearterm. We struggle to see value in the company notes, however, given trading levels which are tight to peers and inside the Single-A Corp Index. As a result, we think current spreads fully reflect our positive view on NUE and maintain our MW recommendation on the name. Lastly, we highlight EMN's in-line earnings print and FY24 earnings guidance which was a touch soft vs consensus estimates.

Metals prices weaker w/w; hawkish US Fed commentary

Metals prices were largely weaker w-o-w, excluding precious metals which gained on hawkish commentary from the US Fed. At the January Fed press conference, Chairman Jerome Powell "significantly raised the bar for a March cut" according to Michael Gapen and our US econ team. This led Michael Gapen's team to push back its outlook for the first 25 bps rate cut to come in June (from March) with additional cuts (25 bps) coming in September and December (75 bps total in 2024). In 2025, Michael Gapen expects 100 bps of total rate cuts.

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Refer to important disclosures on page 24 to 28. Analyst Certification on page 23.

Valuation & Risk on page 22.

02 February 2024

High Grade Credit North America Basic Materials

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Exhibit 1:WTD Excess Returns (bps)

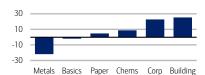
Basic materials underperformed this week



Source: BofA Global Research, ICE Data Indices, LLC BofA GLOBAL RESEARCH

Exhibit 2: YTD Excess Return (bps)

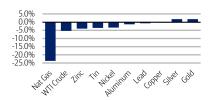
Basic materials underperformed YTD



Source: BofA Global Research, ICE Data Indices, LLC
BofA GLOBAL RESEARCH

Exhibit 3: W-o-w Commodity Performance

Gold gained the most w-o-w at 1.8%; while Nat Gas gained the least at -23.7%



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

News & Views

Geopolitics blows up lithium

No lithium cost support

Lithium prices have been under pressure, as the market has flipped from deficit into surplus. Operators have been reluctant to curtail production, the project pipeline is well filled and we continue to expect very high surpluses – this should keep the pressure on prices for now. With operators focused on preserving margins through cost management, we are concerned that lithium has not yet found a bottom. Ultimately, the supply overhang is driven by upstream production – one reason why mined spodumene has underperformed the downstream chemicals. Factoring in the lack of production discipline, we reduce our price forecasts and see lithium cutting deeper into cost curves, up to the point when miners start exiting the market; timing somewhat uncertain.

Geopolitics overrides margin pressure

Incentive prices, used to value projects, suggest that most mines in the pipeline are not profitable at current quotations. Yet, lithium is a strategic industry in China, limiting the appetite to reduce output there. Meanwhile, Western producers keep pushing ahead on expectations that lithium demand will expand thanks to policies including the Inflation Reduction Act. Furthermore, Australia's government is now thinking about extending tax incentives to producers. The threat of further trade restrictions, this time non-tariff, is also rearing its head again; this ultimately means just one thing: it protects the industry for now, but in the longer-term, consumers will have to pay more. Changing tack slightly, industry consolidation is also declining, a usual feature after bull markets, limiting the incentive to reduce output, especially for lower-cost incumbents.

Slower EV penetration= lower lithium demand growth

Meanwhile, on the demand side, we are reducing electric vehicle (EV) penetration assumptions for the first time since we started covering lithium a few years back. Indeed, several governments have revisited their financial support to the industry. Our US auto team notes that sentiment on EVs soured in late 2023. Commentary from dealers and original equipment manufacturers (OEMs) coincided with a stalling velocity of EV sales. On further investigation, it seems there is a dichotomy in the EV market: the premium market has moved towards electrification while mass-market adoption lags. Don't get us wrong: EV production keeps expanding, albeit at a slower pace, and in the end, it will not make a difference to lithium until markets rebalance. Eventual announcements of lithium production cuts will be key to a price rebound. Stay tuned!

This above is an excerpt from our Commodity Research Team's report Geopolitics blows up lithium published on January 30, 2024.



LYB 4Q23 EBITDA miss; company sees seasonally slow demand in 1Q24

On Friday morning, LyondellBasell Industries (LYB, MW) reported 4Q23 adj earnings of \$1.26/share below Bloomberg consensus estimates of \$1.31/share. Adj EBITDA of \$910mm (-49% q-o-q; -2% y-o-y) was also below consensus estimates of \$1,004mm. The below consensus results were driven by softness in Intermediates & Derivatives which offset strength in Olefine & Polyolefins – Americas.

Cash flow and credit metrics

Cash from operations of \$1,504mm covered capex of \$484mm and dividends of \$406mm. There were no share repurchases during the quarter. Credit stats were largely unch'd q-o-q: adj. total debt/LTM adj. EBITDA = 2.5x (2.5x as of 3Q23), adj. net debt/LTM adj. EBITDA = 2.0x (1.9x) and LTM adj. EBITDA/LTM interest expense = 15.0x (15.4x).

1Q24 guidance

In 1Q24, LYB expects headwinds across most of its business from seasonally slow demand and economic uncertainty. In China, LYB noted subdued activity in January with an unclear growth outlook. Away from the macro, management expects support from relatively low ethane / raw material costs and modest improvements in regional petrochemical demand (in North America) while Oxyfuel and Refining margins likely remain within typical winter ranges. In terms of operating rates, LYB plans to run its Olefin & Polyolefin assets in North America and Europe, Asia, & International at ~80% and ~75%, respectively. Separately, the business plans to run its Intermediate & Derivative assets at ~75%.

2024 guidance

LYB guided FY24 capex to ~\$2.1b (consensus of \$2b) which includes sustaining capital of ~\$1.3b and growth capital of ~\$0.8b. Separately, management plans for modest improvements across most businesses in 2H24 though expects bottoming market conditions near-term.

Capital allocation

LYB sees itself at 1.5x net leverage at YE23 (1.6x as of 3Q23), within its long-term target range (<2.5x net). The company plans to return ~70% of free cash flow to shareholders (dividends and share repurchases).

Growth projects

Management reached final investment decision (FID) to build its first commercial-scale catalytic advanced recycling plant using its MoReTec technology.

Value enhancement program

LYB achieved \$400mm of recurring annual EBITDA through self-help measures in 2023. By YE24, the company plans to realize \$600mm of recurring annual EBITDA with a target of (up to) \$1b achieved by YE25.

Producing free cash flow in a tough market, remain MW on fair trading levels

LYB's credit story is unchanged following its 4Q23 update. We continue to like the company's large size and scale, strong balance sheet and industry bellwether status but also cannot ignore the current weakness in petrochemical markets. Despite the current downturn, however, LYB still managed to produce significant free cash flow (post dividends) and lower net debt levels in 2023. We view this favorably and think that credit metrics have likely peaked in the current cycle (absent a large debt funded corporate action which we do not expect) given that EBITDA is at or near trough levels. As a result, we do not see much downside to LYB's fundamentals going forward and think that any positive developments in global demand / macro could improve investor sentiment on the name. Compared to peers, we view LYB's ~15-20 bps discount to DOW in the belly



(price adj) as fair value given LYB's stronger leverage metrics offset by DOW's larger size and scale and diversification. In previous downturns, we saw LYB trade considerably wider than DOW but feel this relationship makes sense given LYB's much stronger balance sheet this time around. We also note that LYB's ~15 bps discount to the BofA Corporate Index feels fair given the cautious outlook for petrochemical producers. This leads us to maintain our MW issuer-level recommendation on LYB.

Operating Results

- O&P Americas: 4Q23 adj EBITDA was \$604mm, up 20% q-o-q, due to inventory valuation changes and higher volumes following the completion of planned maintenance in 3Q23.
- **O&P EAI:** 4Q23 adj EBITDA was -\$87mm, down from -\$45mm in 3Q23, due to lower ethylene volumes (weak demand) and lower join-venture equity income.
- **I&D:** 4Q23 EBITDA was \$265mm, down 63% q-o-q, due to inventory valuation changes and lower volumes / margins for Propylene Oxide & Derivatives.
- **Refining:** 4Q23 adj. EBITDA was \$51mm, down 51% q-o-q, due to inventory valuation changes and lower margins.
- Technology: 4Q23 EBITDA was \$77mm, down 47% q-o-q, due to lower licensing revenue and catalyst margins.
- APS: 4Q23 EBITDA was \$12mm, down 33% q-o-q, due to lower volumes (reduced demand) and margins.

Nucor Corporation (NUE) 4Q23 adj. EBITDA beat; remain MW on fair trading levels

On Monday after market close, Nucor Corporation (NUE, MW) reported 4Q23 adj. earnings of \$3.16/share, above the Bloomberg consensus estimate of \$2.88/share. Adj EBITDA of \$1,359mm was also above consensus estimates of \$1,288mm. On 12/14, NUE pre-released 4Q23 earnings guidance of \$2.75-2.85/share which was below consensus estimates of \$3.11/share (at the time).

Cash flow and credit metrics

Cash from operations of \$1,520mm (including a \$254mm working capital inflow) covered capex of \$718mm, dividends of \$127mm and share repurchases of \$177mm. Note, share repurchased were down dramatically from \$500mm of share repo in 3Q23, \$451mm in 2Q23, and \$426mm in 1Q23. Credit stats were mostly unch'd: adj. total debt/LTM adj. EBITDA = 1.0x (0.9x at 3Q23) and adj. net debt/LTM adj. EBITDA = 0.0x (0.0x). Interest income was ~\$30mm in 4Q23. The company was in a net cash position at YE23.

1Q24 guidance

NUE expects 1Q24 earnings to increase q-o-q (consensus of 18% earnings growth q-o-q) driven by:

- **Steel Mills:** Stronger earnings q-o-q due to higher avg. selling prices and volumes, particularly at its sheet mills.
- **Steel Products:** Softer earnings q-o-q due to lower selling prices. Current backlogs are consistent with historical norms.
- **Raw Materials:** Stronger earnings q-o-q due to increased profitability at its direct reduced iron (DRI) facilities and scrap processing / brokerage operations.



2024 guidance / market commentary

In FY24, NUE expects capex of \$3.5b (consensus of \$3.3b) with ~67% of this capital spending planned for NUE's growth projects. Over the medium-term, NUE sees steel demand supported by spending from the (i) Inflation Reduction Act; (ii) Infrastructure Investment and Jobs Act; and (iii) CHIPS and Science Act. Separately, NUE provided the following end-market commentary for 2024:

- **Non-residential construction:** Constructive outlook supported by easing inflation and the likelihood for lower interest rates in 2H24. NUE expects continued strength in manufacturing, retail, healthcare, data centers, and education. Management also sees support from spending for bridge, highway, water and other infrastructure as these projects move from planning to construction.
- Auto: Expect modest growth for light vehicles in 2024 though demand for onhighway trucks & trailers could moderate.
- Electricity / renewable energy: Expect strong power transmission growth supported primarily by solar projects.
- Heavy equipment: Higher interest rates and declining profits could hurt demand for tractors, combines, earth moving machinery and rail cars.

M&A

NUE maintained its disciplined approach to M&A and noted its focus on downstream product offerings and energy transition related projects (i.e., battery plants, electric vehicles, data centers, towers & structures). On its earnings call, management stated that it evaluated select assets within the US Steel (X, covered by Abraham Landa) portfolio in 2023 but ultimately decided they would not overpay for a purchase.

Capital allocation

NUE maintained its existing capital allocation priorities: (i) return at least 40% of net earnings to shareholders via cash dividends and share repurchases; (ii) disciplined growth; and (iii) maintain a strong balance sheet and strong IG ratings. The company expects to end 2024 with a lower cash balance vs YE23. During the quarter, NUE returned ~39% of net earnings to shareholders via dividend and share repurchases (inline with its capital allocation framework) and has ~\$3.3b outstanding under its current share buyback authorization (no expiration date). The company plans to repurchase more share in 2024 vs 2023 (FY23 share repurchases of ~\$1.55b).

Workplace fatality

NUE reported a workplace fatality on November 3.

Growth projects

NUE confirmed guidance for its Brandenburg plate mill to produce ~500k tons of plate steel in FY24. The company expects the facility to reach break-even run rates by mid-2024. Away from Brandenburg, management noted that its Gallatin sheet mill is producing at run rate capacity which should continue in 2024.

Solid fundamentals but fair value trading levels leaves us MW

NUE's credit story is unchanged following its strong 4Q23 update. We maintain our favorable view of the business supported by its robust size and scale, net cash position, and industry-wide tailwinds. We expect continued strong fundamentals in 2024 and believe NUE's credit story should remain well supported. We struggle to see value in the company's notes, however, given current trading levels ~25 bps inside Steel Dynamics (STLD, MW) in the belly and inside the BofA Single-A Corporate Index. As a result, we think current spreads fully reflect our positive view on NUE and maintain our MW recommendation on the name. Separately, we acknowledge that NUE's ~50 bps premium to STLD at the long-end screens tight but note this is likely due to STLD



trading too wide (hence our OW rec on STLD's notes due 2050) rather than NUE trading tight.

Segment results

- **Steel Mills:** 4Q23 operating income was \$588mm, down 33% q-o-q, due to a modest decrease in shipments and lower realized pricing.
- **Steel Products:** 4Q23 operating income was \$656mm, down 19% q-o-q, due to a modest decrease in shipments, lower realized pricing in joist and deck, and a modest mix shift to lower priced products.
- **Raw Materials:** 4Q23 operating income was -\$12mm, down from \$71mm in 3Q23, due to lower shipments, partly offset by stable prices.

EMN earnings in-line; company guides FY23 earnings below consensus at the midpoint

On Thursday evening, Eastman Chemical Company (EMN, NR) reported 4Q23 adj. earnings of \$1.31/share, in-line with Bloomberg consensus estimates of \$1.30/share. The in-line results reflected softness in Advanced Materials that was offset by strength across the rest of the business.

Cash flow and credit metrics

Cash from operations of \$452mm (including a \$254mm working capital inflow) covered capex of \$179mm, dividends of \$94mm, and share repurchases of \$100mm. Credit stats largely improved q-o-q as net debt fell by \sim \$375mm: adj. total debt/LTM adj. EBITDA = 3.6x (3.8x at 3Q23), adj. net debt/LTM adj. EBITDA = 3.2x (3.5x), and LTM adj. EBITDA/LTM interest expense = 7.2x (7.4x).

2024 guidance

In 2024, EMN expects adj earnings of \$7.25-8.00/share (consensus of \$7.83/share) and cash from operations of ~\$1,400mm (consensus of \$1,336mm). The company sees earnings supported by improved volume/mix for its specialty products, better asset utilization, ~\$75mm of incremental EBITDA from its Kingsport facility, and continued cost management to offset inflation. Conversely, EMN expects headwinds from lower price/cost primarily in Chemical Intermediates, higher costs related to growth investments, and higher depreciation expense. The company also provided the following FY24 outlooks for its business segments:

- Advanced Materials (AM): Adj EBIT >\$450mm (consensus of \$474mm)
- Additives & Functional Products (A&FP): Adj EBIT similar to FY23 (FY23 of \$436mm, consensus of \$447mm)
- **Fiber:** Adj EBIT slightly above FY23 (FY23 of \$422mm, consensus of \$422mm)
- Chemical Intermediates (CI): Adj EBIT higher than FY23 (FY23 of \$111mm, consensus of \$126mm)

Capital allocation

EMN guided FY24 capex to "less than" \$800mm (consensus of \$757mm). Separately, management plans to deliver a higher level of share repurchases in 2024 vs 2023 (\$150mm in FY23). Regarding M&A, the company will continue to look at bolt-on acquisitions but is more focus on its internal initiatives.



Kingsport facility

EMN completed commissioning of its Kingsport methanolysis facility during 4Q23. The facility is expected to contribute ~\$75mm of incremental EBITDA in 2024 (unch'd) with most of the benefit occurring in the back half of the year.

Segment results

- AM: 4Q23 adj. EBIT was \$65mm, up 51% y-o-y, driven by pricing gains and lower variable costs.
- A&FP: 4Q23 adj. EBIT was \$67mm, down 12% y-o-y, due to weak end-market demand in building and construction, timing of heat transfer fluid fills, and aggressive destocking in agriculture.
- **Fiber:** 4Q23 adj. EBIT was \$113mm, up 95% y-o-y, driven by higher selling prices for acetate tow and high single digit % volume/mix growth in textiles.
- **CI:** 4Q23 adj. EBIT was \$24mm, unch'd y-o-y, as lower selling prices and weak end market demand was offset by increased spreads.

BofA Recommendations

Exhibit 4: BofA Global Research Recommendations

HG Basic Materials recommendations include 1 Overweights and 2 Underweights

Chemicals	Rating	Metals, Mining, & Steel	Rating
Celanese Corporation	OW	Freeport-McMoRan Inc.	MW
Dow Inc	UW	Nucor Corporation	MW
Int'l Flavors & Fragrances	MW, OW 2030s	Steel Dynamics, Inc.	MW, OW 2050s
LyondellBasell Industries	MW	Teck Resources Ltd	MW
Nutrien Ltd	MW		
Sherwin-Williams	UW		

Source: BofA Global Research

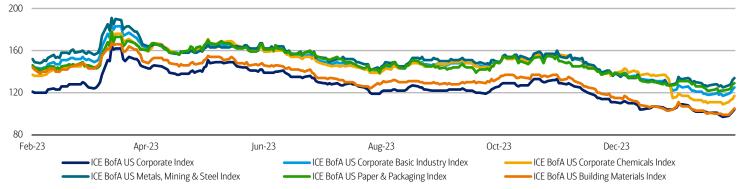
Note: UW = Underweight, MW = Marketweight, OW = Overweight, RSTR = Restricted. Please see credit opinion key at the end of this report



HG Basic Materials Spreads

Exhibit 5: Option Adjusted Spread: HG Corporate Index and HG Basic Materials (& subsectors) Indices (LTM)

The Option Adjusted Spread for the HG Basic Materials Index has traded wide of the HG Corporate Index for the LTM



Source: BofA Global Research, ICE Data Indices, LLC

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Exhibit 6: HG Chemicals Cash Spreads (Bid)

In the HG Chemicals subsector, spreads were mixed but mostly 5 to 10 bps wider w-o-w.

													8-wk avg.	l
_				Outstanding		Bid	Z-	G-		1 wk.	6-mo	6-mo	spread	
	Entity	Coupon	Maturity	(\$mm)	MDY/S&P	(bps)	Spread	Spread	Price	change	tights	wides	(bps)	
ALB	Albemarle Corp	5.050	6/1/2032	600	Baa3 / BBB	162	194	163	96.17	(5)	153	215	172	
ALB	Albemarle Corp	5.650	6/1/2052	450	Baa3 / BBB	201	265	201	92.16	(11)	201	258	221	
APD	Air Products and Chemicals	4.800	3/3/2033	600	A2 / A	62	95	62	101.21	9	48	88	52	
APD	Air Products and Chemicals	2.800	5/15/2050	950	A2 / A	74	138	72	68.32	4	62	88	69	
CE	Celanese US Holdings LLC	6.700	11/15/2033	1,000	Baa3 / BBB-	181	213	181	106.35	7	163	259	176	
CF	CF Industries Inc	5.375	3/15/2044	750	Baa3 / BBB	141	204	141	95.75	3	138	206	154	
CTVA	Corteva, Inc	4.800	5/15/2033	600	A3 / A-	83	116	83	99.69	7	75	126	79	
DD	DuPont de Nemours Inc	5.419	11/15/2048	2,150	Baa1 / BBB+	124	184	120	99.27	28	96	160	109	
DOW	Dow Chemical Co/The	6.300	3/15/2033	600	Baa1 / BBB	105	137	105	108.75	10	94	148	104	
DOW	Dow Chemical Co/The	6.900	5/15/2053	900	Baa1 / BBB	145	209	146	117.14	9	136	201	144	
ECL	Ecolab Inc	2.125	2/1/2032	650	A3 / A-	65	99	66	83.25	6	53	92	60	
ECL	Ecolab Inc	2.700	12/15/2051	850	A3 / A-	76	143	76	65.70	4	69	107	74	
EMN	Eastman Chemical Co	5.750	3/8/2033	500	Baa2 / BBB	142	174	142	102.21	7	135	197	140	
EMN	Eastman Chemical Co	4.650	10/15/2044	900	Baa2 / BBB	144	208	145	86.63	5	138	192	149	
FMC	FMC Corp	5.650	5/18/2033	500	Baa2 / BBB-	182	214	182	98.70	(2)	182	257	195	
FMC	FMC Corp	6.375	5/18/2053	500	Baa2 / BBB-	208	271	209	100.81	(2)	208	271	218	
HUN	Huntsman International LLC	2.950	6/15/2031	400	Baa3 / BBB-	175	208	176	83.33	5	165	230	171	
IFF	International Flavors and Fragrances Inc	3.468	12/1/2050	1,500	Baa3 / BBB-	168	232	167	67.31	4	164	234	175	
LIN	Linde Inc/CT	2.000	8/10/2050	300	A2 / A	65	131	63	57.40	3	62	100	67	
LYB	LYB International Finance III LLC	5.625	5/15/2033	500	Baa2 / BBB	121	153	121	102.87	11	110	175	117	
LYB	LYB International Finance III LLC	3.625	4/1/2051	1,000	Baa2 / BBB	149	213	148	71.26	13	136	197	152	
MOS	Mosaic Co	5.625	11/15/2043	600	Baa2 / BBB	154	217	154	97.22	0	154	200	161	
NTRCN	Nutrien Ltd	5.800	3/27/2053	750	Baa2 / BBB	131	196	132	103.67	7	123	190	133	
RPM	RPM International Inc	2.950	1/15/2032	300	Baa3 / BBB	125	158	126	85.15	(4)	125	212	145	
RPM	RPM International Inc	4.250	1/15/2048	300	Baa3 / BBB	143	202	138	81.60	(4)	143	207	156	
SHW	Sherwin-Williams Co/The	2.200	3/15/2032	500	Baa2 / BBB	88	122	89	82.16	7	81	131	87	
SHW	Sherwin-Williams Co/The	2.900	3/15/2052	500	Baa2 / BBB	93	160	93	66.63	6	87	143	93	
WLK	Westlake Chemical Corp	3.125	8/15/2051	600	Baa2 / BBB	145	211	144	64.62	10	135	188	144	

Source: BofA Global Research, BofA Securities, Bloomberg



Exhibit 7: HG Metals, Mining and Steel Cash Spreads (Bid)In the HG Metals, Mining, & Steel subsector, spreads were mixed but mostly flat to 10 bps wider w-o-w.

				Outstanding		Bid	Z-	G-		1 wk.	6-mo	6-mo	8-wk avg.
Issuer	Entity	Coupon	Maturity	(\$mm)	MDY/S&P	(bps)	Spread	Spread	Price	change	tights	wides	spread (bps)
AALLN	Anglo American Capital PLC	5.500	5/2/2033	900	Baa2 / BBB	158	191	158	99.34	6	152	195	157
AALLN	Anglo American Capital PLC	4.750	3/16/2052	750	Baa2 / BBB	157	222	157	85.49	1	156	210	168
ABXCN	Barrick Gold Corp	5.750	5/1/2043	849	Baa1 / BBB	106	169	108	104.35	4	94	144	102
BHP	BHP Billiton Finance USA Ltd	5.250	9/8/2033	1,500	A2 / A-	97	130	97	101.99	14	83	120	90
BHP	BHP Billiton Finance USA Ltd	5.500	9/8/2053	800	A2 / A-	94	160	95	104.89	9	84	113	89
FCX	Freeport-McMoRan Inc	5.400	11/14/2034	730	Baa2 / BB+	154	186	151	98.78	23	131	206	149
FCX	Freeport-McMoRan Inc	5.450	3/15/2043	1,706	Baa2 / BB+	156	218	158	95.06	17	139	204	156
GLENLN	Glencore Funding LLC	6.500	10/6/2033	1,000	Baa1 / BBB+	141	173	141	107.87	10	131	197	141
GLENLN	Glencore Funding LLC	3.375	9/23/2051	500	Baa1 / BBB+	128	194	127	69.85	0	128	189	138
KCN	Kinross Gold Corp	6.250	7/15/2033	500	Baa3 / BBB-	157	189	157	104.76	(11)	157	244	172
NEM	Newmont Corp	2.600	7/15/2032	1,000	Baa1 / BBB+	100	134	101	83.57	13	80	144	90
NEM	Newmont Corp	4.875	3/15/2042	1,000	Baa1 / BBB+	92	154	97	95.72	0	92	148	94
NUE	Nucor Corp	3.125	4/1/2032	550	Baa1 / A-	78	111	79	88.86	0	78	127	82
NUE	Nucor Corp	3.850	4/1/2052	550	Baa1 / A-	91	157	91	80.88	4	87	143	92
RIOLN	Rio Tinto Finance USA Ltd	5.000	3/9/2033	650	A2 / A-	74	107	74	101.78	12	59	108	65
RIOLN	Rio Tinto Finance USA Ltd	5.125	3/9/2053	1,100	A2 / A-	90	156	91	99.88	7	83	120	87
SOUTAU	South32 Treasury Ltd	4.350	4/14/2032	700	Baa1 / BBB+	188	221	189	90.09	0	188	244	199
STLD	Steel Dynamics	3.250	1/15/2031	500	Baa2 / BBB	100	132	101	89.78	0	97	145	106
STLD	Steel Dynamics	3.250	10/15/2050	400	Baa2 / BBB	139	203	137	67.40	(2)	130	170	141
TCKBCN	Teck Resources Ltd	5.400	2/1/2043	367	Baa3 / BBB-	158	220	160	94.30	(2)	158	222	165

Source: BofA Global Research, BofA Securities, Bloomberg

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Exhibit 8: HG Paper, Packaging, and Wood Cash Spreads (Bid)In the HG Paper, Packaging, & Wood subsector, spreads were mixed w-o-w.

Issu				Outstanding		Bid	Z-	G-		1 wk.	6-mo	6-mo	8-wk avg.
er	Entity	Coupon	Maturity	(\$mm)	MDY/S&P	(bps)	Spread	Spread	Price	change	tights	wides	spread (bps)
ATR	AptarGroup Inc	3.600	3/15/2032	400	Baa3 / BBB-	119	152	120	89.51	1	118	190	126
AVY	Avery Dennison Corp	5.750	3/15/2033	400	Baa2 / BBB	100	132	100	105.23	2	98	160	110
IΡ	International Paper Co	4.350	8/15/2048	740	Baa2 / BBB	108	168	104	86.89	5	103	159	112
PKG	Packaging Corp of America	3.050	10/1/2051	700	Baa2 / BBB	96	162	95	68.73	(3)	96	147	108
SON	Sonoco Products Co	2.850	2/1/2032	500	Baa2 / BBB	110	143	111	85.32	5	105	165	124
SON	Sonoco Products Co	5.750	11/1/2040	537	Baa2 / BBB	127	189	138	101.65	(9)	127	180	140
WRK	WRKCO Inc	3.000	6/15/2033	600	Baa2 / BBB	100	134	100	85.12	1	99	160	104
WY	Weyerhaeuser	3.375	3/9/2033	450	Baa2 / BBB	109	143	109	87.56	4	105	145	110
WY	Weverhaeuser	4.000	3/9/2052	450	Baa2 / BBB	107	173	107	81.08	(1)	107	148	117

Source: BofA Global Research, BofA Securities, Bloomberg



Exhibit 9: HG Construction Materials/Homebuilders Cash Spreads (Bid)In the HG Construction Materials/Homebuilders subsector, spreads were mixed w-o-w.

lssuer	Entity	Coupon	Maturity	Outstanding (\$mm)	MDY/S&P	Bid (bps)	Z- Spread	G- Spread	Price	1 wk. change	6-mo tights	6-mo wides	8-wk avg. spread (bps)
EXP	Eagle Materials	2.500	7/1/2031	750	Baa2 / BBB	110	143	111	84.07	4	105	163	114
FBINUS	Fortune Brands Home & Security Inc	5.875	6/1/2033	600	Baa2 / BBB	138	170	138	103.43	1	137	200	145
FBINUS	Fortune Brands Home & Security Inc	4.500	3/25/2052	450	Baa2 / BBB	146	211	146	83.36	2	144	210	158
MAS	Masco Corp	2.000	2/15/2031	600	Baa2 / BBB	108	141	109	81.93	2	106	150	118
MAS	Masco Corp	3.125	2/15/2051	300	Baa2 / BBB	112	177	111	68.37	(2)	109	190	118
MDC	MDC Holdings Inc	2.500	1/15/2031	350	Ba1 / BBB- *+	148	181	149	82.92	4	144	259	181
MDC	MDC Holdings Inc	6.000	1/15/2043	500	Ba1 / BBB- *+	171	233	174	99.62	(18)	171	298	233
MLM	Martin Marietta Materials Inc	2.400	7/15/2031	900	Baa2 / BBB+	100	134	101	83.94	8	92	144	98
MLM	Martin Marietta Materials Inc	3.200	7/15/2051	900	Baa2 / BBB+	95	161	94	71.14	14	80	141	90
OC	Owens Corning	4.300	7/15/2047	600	Baa1 / BBB	109	177	113	85.31	8	101	175	116
PHM	PulteGroup Inc	7.875	6/15/2032	300	Baa2 / BBB	133	164	134	116.89	(9)	133	192	145
VMC	Vulcan Materials Co	4.700	3/1/2048	461	Baa2 / BBB+	108	167	104	91.73	3	105	154	118

Source: BofA Global Research, BofA Securities, Bloomberg



HG Basic Materials Financial Data

Exhibit 10: HG Chemicals Financial Data (LTM as of 3Q23) LTM financial data for HG Chemical Companies as of 3Q23

Company Name	Air Products	Albemarle	Celanese	CF Industries	Dow Chemical	DuPont	Eastman Chemical	Ecolab Inc.	FMC Corp.
Debt Ticker:	APD	ALB	CE	CF	DOW	DD	EMN	ECL	FMC
Sector/Subsector:	Industrial Gases	Spec. Chemicals	Spec. Chemicals	Agri. Chemicals	Petro. Chemicals	Spec. Chemicals	Spec. Chemicals	Spec. Chemicals	Agri. Chemicals
Moody's	A2/S	Baa3 / S	Baa3 / N	Baa3/S	Baa1/S	Baa1/S	Baa2 / S	A3 / N	Baa2/S
S&P	A/S	BBB/S	BBB-/S	BBB/S	BBB / P	BBB+/S	BBB/S	A- / N	BBB-/S
Financials (LTM, US\$ mm)									
Total Revenue	\$12,600	\$7,571	\$10,719	\$7,668	\$45,860	\$12,274	\$9,376	\$15,053	\$4,963
EBITDA	\$4,702	\$3,899	\$2,322	\$3,464	\$5,427	\$2,965	\$1,558	\$2,934	\$1,155
EBITDA Margin	37.3%	51.5%	21.7%	45.2%	11.8%	24.2%	16.6%	19.5%	23.3%
Capital Expenditures	\$4,626	\$1,365	\$583	\$445	\$2,197	\$659	\$852	\$714	\$143
Dividends	\$1,497	\$140	\$305	\$314	\$1,976	\$647	\$373	\$608	\$486
Free Cash Flow	(\$2,917)	\$242	\$722	\$2,103	\$1,445	\$113	\$154	\$1,096	(\$629)
Cash & Cash Equivalents	\$1,949	\$1,587	\$1,357	\$3,254	\$3,080	\$1,338	\$439	\$1,001	\$324
Total Debt	\$10,306	\$3,236	\$14,334	\$2,967	\$20,029	\$9,314	\$5,924	\$8,616	\$4,116
Total Debt/EBITDA	2.2x	0.8x	6.2x	0.9x	3.7x	3.1x	3.8x	2.9x	3.6x
Net Debt	\$8,357	\$1,649	\$12,977	(\$287)	\$16,949	\$7,976	\$5,485	\$7,615	\$3,792
Net Debt/EBITDA	1.8x	0.4x	5.6x	-0.1x	3.1x	2.7x	3.5x	2.6x	3.3x
Interest	\$178	\$76	\$710	\$90	\$724	\$417	\$211	\$296	\$225
EBITDA/Interest	26.5x	51.0x	3.3x	38.5x	7.5x	7.1x	7.4x	9.9x	5.1x
Market Capitalization	\$59,627	\$13,438	\$12,844	\$15,283	\$34,064	\$29,961	\$8,717	\$49,834	\$6,337
Enterprise Value	\$67,984	\$15,087	\$25,821	\$15,373	\$51,013	\$37,937	\$14,202	\$57,449	\$10,129
EV/EBITDA	14.5x	3.9x	11.1x	4.4x	9.4x	12.8x	9.1x	19.6x	8.8x
Total Debt/EV	15%	21%	56%	19%	39%	25%	42%	15%	41%

Source: BofA Global Research, Company Reports, Bloomberg

Exhibit 11: HG Chemicals Financial Data (LTM as of 3Q23) LTM financial data for HG Chemical Companies as of 3Q23

Company Name	Huntsman Corp.	Int'l Flavors & Fragrances	LyondellBasell	Mosaic	Nutrien	PPG Industries	RPM International	Sherwin-Williams	Westlake
Debt Ticker:	HUN	IFF	LYB	MOS	NTRCN	PPG	RPM	SHW	WLK
Sector/Subsector:	Commod. Chemicals	Spec. Chemicals	Petro. Chemicals	Agri. Chemicals	Agri. Chemicals	Coatings	Coatings	Coatings	Petro. Chemicals
Moody's	Baa3 / S	Baa3 / N	Baa2/S	Baa2 / S	Baa2/S	A3/S	Baa3/S	Baa2 / S	Baa2 / S
S&P	BBB-/S	BBB-/N	BBB/S	BBB/S	BBB/S	BBB+/N	BBB/S	BBB/S	BBB / P
Financials (LTM, US\$ mm))								
Total Revenue	\$5,969	\$11,620	\$41,384	\$15,028	\$30,925	\$18,081	\$7,336	\$23,030	\$13,021
EBITDA	\$515	\$1,959	\$5,177	\$2,807	\$7,078	\$2,817	\$985	\$4,183	\$2,816
EBITDA Margin	8.6%	16.9%	12.5%	18.7%	22.9%	15.6%	13.4%	18.2%	21.6%
Capital Expenditures	\$233	\$550	\$1,520	\$1,384	\$2,814	\$531	\$249	\$803	\$1,049
Dividends	\$168	\$825	\$1,591	\$339	\$1,021	\$591	\$217	\$624	\$202
Free Cash Flow	(\$46)	(\$424)	\$1,931	\$1,102	\$1,817	\$978	\$447	\$1,818	\$1,347
Cash & Cash Equivalents	\$496	\$639	\$2,833	\$591	\$554	\$1,218	\$241	\$503	\$3,057
Total Debt	\$2,118	\$10,301	\$13,165	\$3,657	\$14,987	\$6,202	\$2,505	\$9,936	\$5,379
Total Debt/EBITDA	4.1x	5.3x	2.5x	1.3x	2.1x	2.2x	2.5x	2.4x	1.9x
Net Debt	\$1,622	\$9,662	\$10,332	\$3,066	\$14,433	\$4,984	\$2,264	\$9,433	\$2,322
Net Debt/EBITDA	3.1x	4.9x	2.0x	1.1x	2.0x	1.8x	2.3x	2.3x	0.8x
Interest	\$64	\$441	\$337	\$128	\$768	\$243	\$124	\$431	\$167
EBITDA/Interest	8.0x	4.4x	15.4x	21.9x	9.2x	11.6x	7.9x	9.7x	16.9x
Market Capitalization	\$4,294	\$18,130	\$29,971	\$11,266	\$27,952	\$29,508	\$12,606	\$65,463	\$15,845
Enterprise Value	\$5,916	\$27,792	\$40,303	\$14,332	\$42,385	\$34,492	\$15,112	\$74,896	\$18,167
EV/EBITDA	11.5x	14.2x	7.8x	5.1x	6.0x	12.2x	15.3x	17.9x	6.5x
Total Debt/EV	36%	37%	33%	26%	35%	18%	17%	13%	30%

Source: BofA Global Research, Company Reports, Bloomberg



Exhibit 12: HG Metals, Mining, & Steel Financial Data (LTM as of 3Q23) LTM financial data for HG Metals, Mining, & Steel Companies as of 3Q23

Company Name	Barrick Gold	Freeport McMoRan	Kinross Gold	Newmont Mining	Nucor	Reliance Steel	Steel Dynamics	Teck Resources
Debt Ticker:	ABXCN	FCX	KCN	NEM	NUE	RS	STLD	TCKBCN
Sector/Subsector:	Metals & Mining	Metals & Mining	Metals & Mining	Metals & Mining	Steel	Steel	Steel	Metals & Mining
Moody's	A3/S	Baa3 / S	Baa3/S	Baa1 / P	Baa1/S	Baa2 / S	Baa2 / S	Baa3 / S
S&P	BBB+/S	BB+ / P	BBB-/N	BBB+/S	A-/S	BBB / P	BBB/S	BBB-/S
Financials (LTM, US\$ mm)								
Total Revenue	\$11,112	\$22,708	\$4,133	\$11,055	\$35,733	\$15,079	\$19,388	\$12,731
EBITDA	\$5,301	\$8,754	\$1,751	\$3,990	\$7,630	\$2,144	\$3,904	\$5,997
EBITDA Margin	47.7%	38.6%	42.4%	36.1%	21.4%	14.2%	20.1%	47.1%
Capital Expenditures	\$3,116	\$4,509	\$1,098	\$2,392	\$2,014	\$451	\$1,487	\$4,917
Dividends	\$785	\$861	\$148	\$1,390	\$517	\$233	\$262	\$515
Free Cash Flow	(\$354)	(\$964)	\$452	(\$625)	\$5,594	\$1,271	\$2,050	(\$1,544)
Cash & Cash Equivalents	\$4,261	\$6,442	\$465	\$3,190	\$6,719	\$977	\$2,266	\$1,343
Total Debt	\$4,775	\$9,405	\$2,415	\$6,087	\$6,681	\$1,142	\$3,095	\$6,745
Total Debt/EBITDA	0.9x	1.1x	1.4x	1.5x	0.9x	0.5x	0.8x	1.1x
Net Debt	\$514	\$2,963	\$1,950	\$2,897	(\$38)	\$165	\$829	\$5,402
Net Debt/EBITDA	0.1x	0.3x	1.1x	0.7x	0.0x	0.1x	0.2x	0.9x
Interest	\$205	\$555	\$104	\$215	\$28	\$46	\$86	\$112
EBITDA/Interest	25.9x	15.8x	16.8x	18.6x	276.3x	46.8x	45.6x	53.5x
Market Capitalization	\$26,491	\$50,913	\$6,421	\$39,415	\$37,385	\$15,291	\$17,528	\$24,883
Enterprise Value	\$27,005	\$53,876	\$8,371	\$42,312	\$37,347	\$15,456	\$18,357	\$30,285
EV/EBITDA	5.1x	6.2x	4.8x	10.6x	4.9x	7.2x	4.7x	5.0x
Total Debt/EV	18%	17%	29%	14%	18%	7%	17%	22%

Source: BofA Global Research, Company Reports, Bloomberg

Exhibit 13: HG Paper, Packaging, & Wood Financial Data (LTM as of 3Q23) LTM financial data for HG Paper, Packaging, & Wood Companies as of 3Q23

Company Name	Avery Dennison	CCL Industries	International Paper	Packaging Corp	Sonoco Products	WestRock	Weyerhaeuser
Debt Ticker:	AVY	CCLBCN	IP	PKG	SON	WRK	WY
Sector/Subsector:	Labeling	Labeling	Paper / Packaging	Paper / Packaging	Packaging	Packaging	Forestry
Moody's	Baa2 / S	Baa2/S	Baa2 / S	Baa2/S	Baa2 / S	Baa2 / S	Baa2/S
S&P	BBB/S	BBB/S	BBB/S	BBB/S	BBB / N	BBB / S	BBB/S
Financials (LTM, US\$ mm)							
Total Revenue	\$8,280	\$4,896	\$19,448	\$7,843	\$6,822	\$20,310	\$7,723
EBITDA	\$1,178	\$957	\$2,535	\$1,622	\$1,022	\$2,872	\$1,742
EBITDA Margin	14.2%	19.5%	13.0%	20.7%	15.0%	14.1%	22.6%
Capital Expenditures	\$288	\$377	\$1,158	\$576	\$337	\$1,142	\$512
Dividends	\$252	\$137	\$646	\$453	\$195	\$281	\$1,208
Free Cash Flow	\$320	\$266	\$298	\$371	\$271	\$405	(\$408)
Cash & Cash Equivalents	\$210	\$577	\$1,149	\$727	\$258	\$393	\$1,173
Total Debt	\$3,314	\$1,889	\$5,669	\$2,087	\$3,255	\$8,584	\$5,679
Total Debt/EBITDA	2.8x	2.0x	2.2x	1.3x	3.2x	3.0x	3.3x
Net Debt	\$3,104	\$1,312	\$4,520	\$1,361	\$2,997	\$8,191	\$4,506
Net Debt/EBITDA	2.6x	1.4x	1.8x	0.8x	2.9x	2.9x	2.6x
Interest	\$112	\$67	\$238	\$57	\$128	\$418	\$274
EBITDA/Interest	10.5x	14.4x	10.7x	28.3x	8.0x	6.9x	6.4x
Market Capitalization	\$14,018	\$6,343	\$11,450	\$14,123	\$5,398	\$9,864	\$20,739
Enterprise Value	\$17,122	\$7,656	\$15,970	\$15,483	\$8,395	\$18,054	\$25,245
EV/EBITDA	14.5x	8.0x	6.3x	9.5x	8.2x	6.3x	14.5x
Total Debt/EV	19%	25%	35%	13%	39%	48%	22%

Source: BofA Global Research, Company Reports, Bloomberg





Company Name	D.R. Horton	Eagle Materials	Fortune Brands	Martin Marrietta	Masco	Mohawk	Owens Corning	Vulcan
Debt Ticker:	DHI	EXP	FBINUS	MLM	MAS	MHK	OC	VMC
Sector/Subsector:	Homebuilding	Construction Products	Building Products	Construction Products	Building Products	Building Products	Building Products	Construction Products
Moody's	Baa1/S	Baa2 / S	Baa2 / S	Baa2 / S	Baa2 / S	Baa1/S	Baa2 / P	Baa2 / S
S&P	BBB+/S	BBB/S	BBB / S	BBB+/S	BBB/S	BBB+/S	BBB/S	BBB+/S
Financials (LTM, US\$ mm)								
Total Revenue	\$35,460	\$2,205	\$966	\$6,646	\$8,008	\$11,174	\$9,658	\$7,680
EBITDA	\$6,364	\$772	\$861	\$2,052	\$1,235	\$1,348	\$2,264	\$1,824
EBITDA Margin	17.9%	35.0%	89.2%	30.9%	15.4%	12.1%	23.4%	23.8%
Capital Expenditures	\$149	\$132	\$247	\$637	\$268	\$523	\$530	\$829
Dividends	\$341	\$36	\$124	\$169	\$256	\$0	\$175	\$225
Free Cash Flow	\$3,814	\$386	\$743	\$597	\$369	\$751	\$991	\$402
Cash & Cash Equivalents	\$3,874	\$47	\$453	\$648	\$560	\$518	\$1,323	\$340
Total Debt	\$5,095	\$1,090	\$2,829	\$4,344	\$3,012	\$2,598	\$3,022	\$3,875
Total Debt/EBITDA	0.8x	1.4x	3.3x	2.1x	2.4x	1.9x	1.3x	2.1x
Net Debt	\$1,221	\$1,042	\$2,376	\$3,697	\$2,452	\$2,080	\$1,699	\$3,535
Net Debt/EBITDA	0.2x	1.4x	2.8x	1.8x	2.0x	1.5x	0.8x	1.9x
Interest	\$204	\$42	\$122	\$168	\$108	\$75	\$89	\$190
EBITDA/Interest	31.3x	18.5x	7.1x	12.2x	11.4x	18.0x	25.4x	9.6x
Market Capitalization	\$43,162	\$5,165	\$6,959	\$28,052	\$12,610	\$5,137	\$11,047	\$25,661
Enterprise Value	\$44,383	\$6,207	\$9,335	\$31,749	\$15,062	\$7,216	\$12,746	\$29,196
EV/EBITDA	7.0x	8.0x	10.8x	15.5x	12.2x	5.4x	5.6x	16.0x

14%

20%

Source: BofA Global Research, Company Reports, Bloomberg

11%

18%

30%

Total Debt/EV

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13%

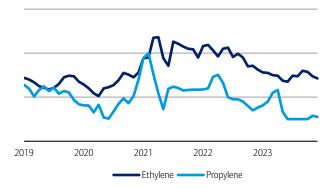
36%

24%

Chemical Markets Data

Exhibit 15: Olefin Pricing (\$/lb)

Olefin prices have declined from their highs

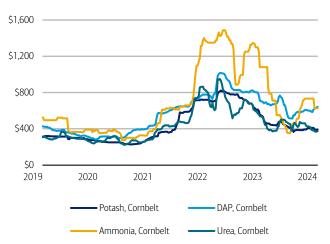


Source: Chemical Data Inc., a part of ICIS

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Exhibit 17: Fertilizer Pricing (\$/st) Exhibit 18: Iso

Fertilizer prices declined from their high but have started to stabilize

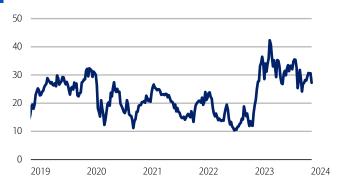


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 19: Brent (\$/bbl) to Natural Gas (\$/mmbtu)

The ratio of Brent to Natural Gas is at elevated levels

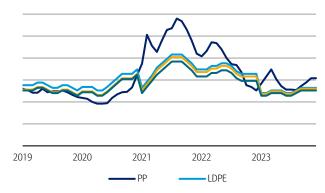


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 16: Polyolefin Pricing (\$/lb)

Polyolefin prices declined from their highs but have started to stabilize

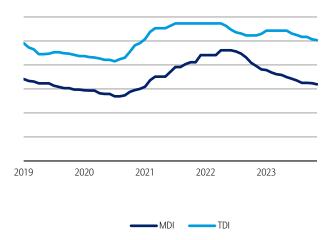


Source: Chemical Data Inc., a part of ICIS

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Exhibit 18: Isocyanates Pricing (\$/lb)

MDI and TDI have rebounded from their COVID lows

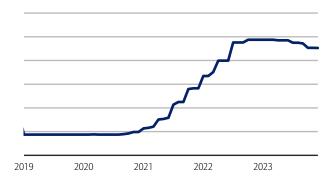


Source: Chemical Data Inc., a part of ICIS

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Exhibit 20: Chlorine Price (US Gulf Coast FOB \$/st)

Chlorine price were largely flat in 2023



Source: Chemical Market Analytics by OPIS, a Dow Jones Company



Commodity Forecasts

Exhibit 21: Commodity Team Base Metals Forecasts

BofA's quarterly and annual forecasts for base metals

		1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E	2026E	2027E	2028E	LT price
Aluminum	US\$/t	2,250	2,500	2,750	2,750	2,563	3,000	3,250	3,015	2,781	2,546
	USc/lb	102	113	125	125	116	136	147	137	126	115
Strip Aluminum	US\$/t	2,279	2,279	2,279	2,279	2,279	2,425	2,546	2,637		
Copper	US\$/t	8,000	8,500	8,750	9,250	8,625	10,500	9,500	9,539	9,578	9,617
	USc/lb	363	386	397	420	391	476	431	433	434	436
Strip Copper	US\$/t	8,593	8,593	8,593	8,593	8,593	8,686	8,712	8,725		
Lead	US\$/t	2,000	2,000	2,000	2,000	2,000	1,750	2,024	2,217	2,409	2,602
	USc/lb	91	91	91	91	91	79	92	101	109	118
Strip Lead	US\$/t	2,167	2,167	2,167	2,167	2,167	2,189	2,219	2,251		
Nickel	US\$/t	18,500	18,500	19,000	19,000	18,750	20,000	20,000	19,141	18,283	17,424
	USc/lb	839	839	862	862	850	907	907	868	829	790
Strip Nickel	US\$/t	16,925	16,925	16,925	16,925	16,925	17,858	18,628	19,421		
Zinc	US\$/t	2,500	2,500	2,250	2,250	2,375	2,250	2,424	2,596	2,769	2,942
	USc/lb	113	113	102	102	108	102	110	118	126	133
Strip Zinc	US\$/t	2,592	2,592	2,592	2,592	2,592	2,621	2,627	2,630		

Source: BofA Global Research, BofA Global Commodity Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 22: Commodity Team Precious Metals Forecasts

BofA's quarterly and annual forecasts for precious metals

		1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E	2026E	2027E	2028E	LT price
Gold, nominal	US\$/oz	1,950	1,950	2,000	2,000	1,975	2,150	2,096	2,095	2,094	2,093
Gold, real	US\$/oz	1,950	1,950	2,000	2,000	1,975	2,098	1,995	1,946	1,898	1,850
Strip Gold	US\$/oz	2,064	2,064	2,064	2,064	2,064	2,155	2,259	2,314		
Silver, nominal	US\$/oz	22.50	23.00	23.53	24.00	23.26	24.75	26.07	27.18	28.39	29.42
Silver, real	US\$/oz	22.50	23.00	23.53	24.00	23.26	24.15	24.81	25.21	25.60	26.00
Strip Silver	US\$/oz	22.92	22.92	22.92	22.92	22.92	24.26	25.19	25.40		
Platinum	US\$/oz	1,000	1,000	1,100	1,250	1,050	1,250	1,322	1,372	1,421	1,471
Strip Platinum	US\$/oz	907	907	907	907	907	936	969			
Palladium	US\$/oz	900	800	700	600	750	500	500	824	1,147	1,471
Strip Palladium	US\$/oz	958	958	958	958	958	1.000	1.049			

Source: BofA Global Research, BofA Global Commodity Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 23: Commodity Team Bulk Commodities Forecasts

BofA's quarterly and annual forecasts for bulk commodities

		1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E	2026E	2027E	2028E	LT price
Hard coking coal	US\$/t fob	360	280	210	230	270	215	205	212	219	226
Strip Hard coking coal	US\$/t fob	295	295	295	295	295	273	220	215		
Semi-soft	US\$/t fob	238	185	139	152	178	142	135	134	133	132
Thermal Coal	US\$/t fob	148	148	151	153	150	125	112	112	113	113
Iron ore fines, spot	US\$/t CIF	150	130	120	100	125	90	90	94	98	102
Strip Iron ore fines, spot	US\$/t CIF	128	128	128	128	128	112	102			

 $\textbf{Source:} \ \mathsf{BofA} \ \mathsf{Global} \ \mathsf{Research}, \mathsf{BofA} \ \mathsf{Global} \ \mathsf{Commodity} \ \mathsf{Research}, \mathsf{Bloomberg}$

Exhibit 24: Commodity Team Other Materials Forecasts

BofA's quarterly and annual forecasts for other materials

		1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E	2026E	2027E	2028E	LT price
Lithium spodumene	\$/t	1,950	1,850	1,750	1,500	1,763	2,188	1,858	1,722	1,586	1,450
Lithium carbonate	\$/t	18,000	17,000	16,000	15,000	16,500	21,875	21,250	20,833	20,417	20,000
Lithium hydroxide	\$/t	19,500	18,500	17,500	16,500	18,000	23,375	22,750	22,333	21,917	21,500
Alumina	\$/t	340	340	340	340	340	348	357	375	394	412
Uranium	\$/lb	75.00	7,750.00	80.00	80.00	78.13	75.00	70.00	65.00	60.00	55.00
Molybdenum	\$/lb	18.10	18.10	18.10	18.10	18.10	18.10	18.10	16.32	14.54	12.76
Cobalt	\$/lb	18.00	18.00	18.00	18.00	18.00	18.00	18.44	19.84	21.23	22.63
Manganese ore	\$/dmtu	4.35	4.35	4.35	4.35	4.35	4.35	4.93	5.52	6.11	6.70

Source: BofA Global Research, BofA Global Commodity Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 25: Commodity Team Steel HRC Forecasts

BofA's quarterly and annual forecasts for steel

		1Q24E	2Q24E	3Q24E	4Q24E	2024E	2025E
HRC, Europe	US\$/t	719	701	639	674	683	714
HRC, US	US\$/t	1,130	1,020	882	805	959	799
HRC, China	US\$/t	568	602	623	592	595	602

Source: BofA Global Research, BofA Global Commodity Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 26: Commodity Team Energy Forecasts

BofA's quarterly and annual forecasts for steel

		1Q24E	2Q24E	3Q24E	4Q24E	2024E
Brent	US\$/bbl	78.00	80.00	82.00	80.00	80.00
Strip Brent	US\$/bbl	80.16	80.16	80.16	80.16	80.16
WTI	US\$/bbl	73.00	75.00	77.00	75.00	75.00
Strip WTI	US\$/bbl	75.46	75.46	75.46	75.46	75.46
Henry Hub	US\$/MMBtu	2.90	2.50	3.00	3.60	3.00
Strip Henry Hub	US\$/MMBtu	2.76	2.76	2.76	2.76	2.76

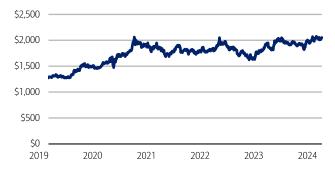
Source: BofA Global Research, BofA Global Commodity Research, Bloomberg



Precious and Base Metals Market Data

Exhibit 27: Gold Spot Price (\$/oz)

Gold prices ended up +1.7% w/w at \$2,055

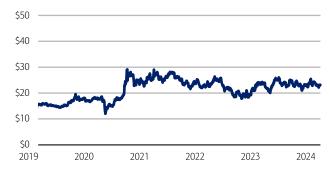


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 28: Gold Spot Price (\$/oz)

Silver prices ended up +1.6% w/w at \$23.17

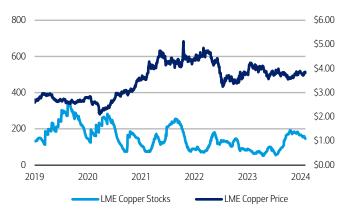


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 29: LME Copper Warehouse Stocks (000s mt) & Price (\$/lb)

Copper prices ended down -0.6% w/w at \$3.82



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 30: LME Aluminum Warehouse Stocks (mm mt) & Price

Aluminum prices ended up +0.2% w/w at \$1.00



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 31: LME Nickel Warehouse Stocks (000s mt) & Price (\$/mt)

Nickel prices ended down -2.9% w/w at \$15,984



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 32: LME Zinc Warehouse Stocks (000s mt) & Price (\$/mt)

Zinc prices ended down -4.2% w/w at \$2,468

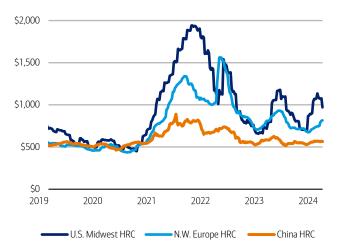


Source: BofA Global Research, Bloomberg



Exhibit 33: U.S. Midwest HRC (\$/t), NW. Europe HRC (\$/mt) and China HRC (\$/mt)

U.S. Midwest HRC prices ended down -9.9% w/w at \$970; NW. Europe HRC prices ended up +0.7% w/w at \$816; China HRC prices ended down -0.7% w/w at \$565



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 35: LME Lead Warehouse Stocks (000s mt) & Price (\$/lb)

Lead prices ended down -0.1% w/w at \$133 $\,$



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 34: China Spot Iron Ore 62% (\$/mt)

China spot iron ore prices ended down -4.5% w/w at \$129



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 36: Hard Coking Coal (\$/mt) and Thermal Coal (\$/mt)

Thermal Coal prices ended down -8.7% w/w at \$116 Hard Coking Coal prices ended Unch. at \$329 $\,$

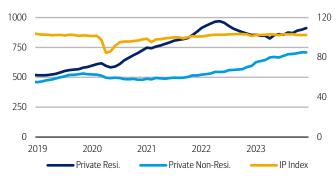


Source: BofA Global Research, Bloomberg

Construction Products Market Data

Exhibit 37: US Construction Spending (\$bn) & Industrial Production

U.S. private residential new construction spending peaked in May 2022

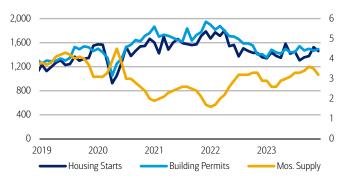


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 38: US Housing Statistics (000s, SAAR) & Months' Supply of Existing Homes

U.S. housing starts & building permits have fallen from Spring 2022 highs



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 39: Existing Home Sales (mm) & Months' Supply of Existing Homes

U.S. existing home sales have declined since February 2022



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 40: New Home Sales (000s) & Months' Supply of New Homes U.S new home sales have fallen from 2020 highs

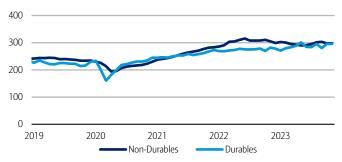


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 41: U.S. Durable/Non-Durable Goods (\$bn)

New orders for U.S. durable and non-durable goods have rebounded since their COVID lows

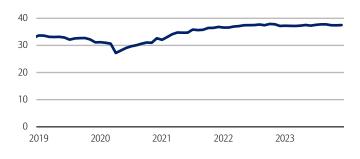


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 42: U.S. Durable Goods: Machinery (\$bn)

New orders for U.S. machinery have rebounded since their COVID lows



Source: BofA Global Research, Bloomberg



Earnings Calendar

Exhibit 43: HG Basic Materials Earnings Calendar

HG Basic Materials earnings over the next few weeks

Company	Sector	Ticker	EPS Date	Time	Status	Call Date	Call Time	Call Number	Call PIN
Air Products and Chemicals Inc	Chemicals	APD US	2/5/2024	Bef-mkt	Confirmed	2/5/2024	8:30:00 AM	#N/A N/A	#N/A N/A
Cabot Corp	Chemicals	CBT US	2/5/2024	Aft-mkt	Confirmed	2/6/2024	8:00:00 AM	#N/A N/A	#N/A N/A
FMC Corp	Chemicals	FMC US	2/5/2024	Aft-mkt	Confirmed	2/6/2024	9:00:00 AM	+1 833 470 1428	196953
DuPont de Nemours Inc	Chemicals	DD US	2/6/2024	06:00	Confirmed	2/6/2024	8:00:00 AM	888-440-4172	5994046.
Linde PLC	Chemicals	LIN	2/6/2024	06:00	Confirmed	2/6/2024	9:00:00 AM	1 888 770 7292	6877110
Masco Corp	Building Materials	MAS US	2/8/2024	07:00	Confirmed	2/8/2024	8:00:00 AM	888-259-6580	96682919
Mohawk Industries Inc	Building Materials	MHK US	2/8/2024	Aft-mkt	Confirmed	2/9/2024	11:00:00 AM	1-833-630-1962	#N/A N/A
AptarGroup Inc	Packaging&Containers	ATR US	2/8/2024	Aft-mkt	Confirmed	2/9/2024	9:00:00 AM	#N/A N/A	#N/A N/A
Ecolab Inc	Chemicals	ECL US	2/13/2024	Bef-mkt	Confirmed	2/13/2024	1:00:00 PM	#N/A N/A	#N/A N/A
Barrick Gold Corp	Mining	ABX CN	2/14/2024	06:00	Confirmed	2/14/2024	11:00:00 AM	1 800 319 4610	#N/A N/A
Owens Corning	Building Materials	OC US	2/14/2024	Bef-mkt	Confirmed	2/14/2024	9:00:00 AM	1 833 470 1428	498688
CF Industries Holdings Inc	Chemicals	CF US	2/14/2024	Aft-mkt	Confirmed	2/15/2024	10:00:00 AM	833-634-5017	#N/A N/A
Kinross Gold Corp	Mining	K CN	2/14/2024	Aft-mkt	Confirmed	2/15/2024	8:00:00 AM	+1 (888) 330-2446	4915537
Sonoco Products Co	Packaging&Containers	SON US	2/14/2024	Aft-mkt	Confirmed	2/15/2024	8:30:00 AM	+1 844-543-0451	916190
Albemarle Corp	Chemicals	ALB US	2/14/2024	Aft-mkt	Confirmed	2/15/2024	9:00:00 AM	+1 (888) 330-2007	5205664
Reliance Steel & Aluminum Co	Iron/Steel	RS US	2/15/2024	06:50	Confirmed	2/15/2024	11:00:00 AM	(877) 407-0792	13743428
Martin Marietta Materials Inc	Building Materials	MLM US	2/15/2024	NA	Estimated	NA	NA	#N/A N/A	#N/A N/A
Vulcan Materials Co	Building Materials	VMC US	2/16/2024	Bef-mkt	Confirmed	2/16/2024	10:00:00 AM	800-274-8461	4460325
Northern Star Resources Ltd	Mining	NST AU	2/20/2024	NA	Estimated	NA	NA	#N/A N/A	#N/A N/A
Celanese Corp	Chemicals	CE US	2/20/2024	Aft-mkt	Confirmed	2/21/2024	10:00:00 AM	1-877-407-0989	#N/A N/A
International Flavors & Fragra	Chemicals	IFF US	2/20/2024	Aft-mkt	Confirmed	2/21/2024	9:00:00 AM	#N/A N/A	#N/A N/A
CCL Industries Inc	Packaging&Containers	CCL/B CN	2/21/2024	17:30	Confirmed	2/22/2024	7:30:00 AM	1-877-545-0320	832360
Huntsman Corp	Chemicals	HUN US	2/21/2024	Aft-mkt	Confirmed	2/22/2024	10:00:00 AM	(877) 402-8037	#N/A N/A
Nutrien Ltd	Chemicals	NTR CN	2/21/2024	Aft-mkt	Confirmed	2/22/2024	10:00:00 AM	1-888-886-7786	#N/A N/A
Toll Brothers Inc	Home Builders	TOL US	2/21/2024	NA	Estimated	NA	NA	#N/A N/A	#N/A N/A
Westlake Corp	Chemicals	WLK US	2/21/2024	NA	Estimated	NA	NA	#N/A N/A	#N/A N/A
Mosaic Co/The	Chemicals	MOS US	2/22/2024	NA	Estimated	NA	NA	#N/A N/A	#N/A N/A
Newmont Corp	Mining	NEM US	2/22/2024	Bef-mkt	Confirmed	2/22/2024	10:00:00 AM	833 470 1428	960159
Teck Resources Ltd	Coal	TCK	2/22/2024	Bef-mkt	Confirmed	2/22/2024	11:00:00 AM	1 800 319 4610	Teck Resources
Lennar Corp	Home Builders	LEN US	3/14/2024	NA	Estimated	NA	NA	#N/A N/A	#N/A N/A

Source: BofA Global Research, Blomberg

BofA GLOBAL RESEARCH

Valuation & risk

LyondellBasell NV (LYB)

LyondellBasell Industries NV's (LYB) is a global, independent chemical company whose business consists primarily of processing plants that convert large volumes of liquid and gaseous hydrocarbon feedstocks into plastic resins and other chemicals.

LYB's credit story is supported by its large size and scale and industry bellwether status. Despite a current downcycle, LYB has been able to produce significant free cash flow (post dividends) and further improve its balance sheet. In previous downcycles, LYB tended to underperform peers given its weaker credit metrics and risk of credit downgrade. In the current cycle, however, we do not see risk of a credit downgrade and note that LYB's balance sheet is much stronger. We therefore think that LYB's modest discount to larger peers makes sense and provide a MW rec on the name.

Risks: faster/slower-than-anticipated de-leveraging, elevated input costs, prolonged tight



supply keeping prices elevated for longer, demand shocks, capacity additions loosening the market, industry cyclicality, and M&A.

Nucor Corporation (NUE)

Nucor Corporation (NUE) is a North American steel producer with annual production capacity of approx. 27mm tons. The company primarily operates electric arc furnace mills and manufactures steel (i) sheets, (ii) plates, (iii) bars, and (iv) structural products. NUE's integrated business model includes a recycling segment with approx. 2-3mm tons of annual scrap processing capacity.

We maintain that NUE is well positioned fundamentally and should benefit from supportive sector wide fundamentals. Overall, the company benefits from (i) significant size and scale, (ii) robust credit metrics, and (iii) conservative financial policies (explicit commitment to IG ratings). We also view its growth strategy into higher value-add products favorably. Compared to peers, we believe that NUE trades near fair value and highlight that material upside is likely limited given trading levels inside of the ICE BofA Single-A Index. As a result, we think NUE remains well positioned as a defensive, bellwether steel name and should trade in-line with the broad market. We therefore provide a MW recommendation on the name.

Risks: steel price volatility, lower/higher supply and/or demand, lower/higher production costs, a more/less shareholder-friendly capital allocation policy, large-scale M&A activity and changes to Section 232 steel tariffs.

Steel Dynamics (STLD)

Steel Dynamics Inc (STLD) is a North American steel producer with annual production capacity of approx. 14mm tons. The company primarily operates electric arc furnace mills and manufactures (i) flat-rolled products, (ii) special/merchant bars, and (iii) structural steel products. STLD's circular business model includes a recycling segment which processes ferrous and nonferrous scrap metals.

We believe that STLD is well positioned fundamentally and should benefit from supportive sector wide fundamentals. Overall, the company benefits from (i) strong credit metrics, (ii) growth plans into higher value add products and (iii) conservative financial policies with explicit commitments to IG ratings. Despite our positive view of the business, we struggle to see value in the company's notes given fair trading levels vs peers and the BofA Corp Index. We therefore provide a MW rec on STLD. However, we are OW the company's notes due 2050 given a steeper 10s30s curve and attractive discount to peers at the long end.

Risks: steel price volatility, lower/higher supply and/or demand, lower/higher production costs, a more/less shareholder-friendly capital allocation policy, large-scale M&A activity and changes to Section 232 steel tariffs.

Analyst Certification

I, Daniel Lungo, 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.



Security/Loan pricing

LyondellBasell Industries N.V. / LYB

	Amt		Ratings			Yield	Spread
Security		Maturity date	Moody's/S&P/Fitch	Price	Price date	(%)	(bps)
5.75, Senior, USD, 2024:B	1,000	15-APR-2024	Baa2/BBB/BBB	99.99	01-Feb-2024	5.72	31
4.625, Senior, USD, 2055:B	1,000	26-FEB-2055	Baa2/BBB/BBB	85.31	01-Feb-2024	5.63	157

For pricing information refer to "Other Important Disclosures" below.

B=Bond; L=Loan; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Nucor Corporation / NUE

	Amt		Ratings			Yield	Spread
Security		Maturity date	Moody's/S&P/Fitch	Price	Price date	(%)	(bps)
3.95, Senior, USD, 2028:B	500	01-MAY-2028	Baa1/A-/A-	98.21	01-Feb-2024	4.42	55
4.4, Senior, USD, 2048:B	329	01-MAY-2048	Baa1/A-/A-	90.75	01-Feb-2024	5.07	82
2, Senior, USD, 2025:B	500	01-JUN-2025	Baa1/A-/A-	96.26	01-Feb-2024	4.94	44
2.7, Senior, USD, 2030:B	500	01-JUN-2030	Baa1/A-/A-	90.60	01-Feb-2024	4.42	61
2.979, Senior, USD, 2055:B	439	15-DEC-2055	Baa1/A-/A-	67.85	01-Feb-2024	5.01	95
3.125, Senior, USD, 2032:B	550	01-APR-2032	Baa1/A-/A-	89.92	01-Feb-2024	4.62	80
3.85, Senior, USD, 2052:B	550	01-APR-2052	Baa1/A-/A-	82.51	01-Feb-2024	5.02	87
3.95, Senior, USD, 2025:B	500	23-MAY-2025	Baa1/A-/A-	98.70	01-Feb-2024	4.98	46
4.3, Senior, USD, 2027:B	500	23-MAY-2027	Baa1/A-/A-	99.16	01-Feb-2024	4.57	62

For pricing information refer to "Other Important Disclosures" below.

B=Bond; L=Loan; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Steel Dynamics, Inc. / STLD

	Amt		Ratings			Yield	Spread
Security		Maturity date	Moody's/S&P/Fitch	Price	Price date	(%)	(bps)
5, Senior, USD, 2026:B	400	15-DEC-2026	Baa2/BBB/NR	99.53	01-Feb-2024	5.18	115
3.45, Senior, USD, 2030:B	600	15-APR-2030	Baa2/BBB/BBB	92.69	01-Feb-2024	4.83	102
3.25, Senior, USD, 2031:B	500	15-JAN-2031	Baa2/BBB/BBB	90.80	01-Feb-2024	4.82	102
1.65, Senior, USD, 2027:B	350	15-OCT-2027	Baa2/BBB/BBB	89.74	01-Feb-2024	4.70	79
3.25, Senior, USD, 2050:B	400	15-OCT-2050	Baa2/BBB/BBB	69.16	01-Feb-2024	5.46	126

For pricing information refer to "Other Important Disclosures" below.

B=Bond; L=Loan; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Disclosures

Important Disclosures

Credit opinion history

LyondellBasell Industries N.V. / LYB

Company	Date ^{R1}	Action	Recommendation	
LyondellBasell Industries N.V. / LYB	31-Jan-2021		Marketweight	
	01-Feb-2021	Upgrade	Overweight	
	04-Mar-2021	Extended Review	NA	
	26-May-2021	Coverage Reinstatement	Marketweight	
	29-Oct-2021	Downgrade	Underweight	
	12-Aug-2022	Upgrade	Marketweight	
	10-Mar-2023	Upgrade	Overweight	
	28-Nov-2023	Downgrade	Marketweight	
Security	Date ^{R1}	Action	Recommendation	Price
5.75, Senior, USD, 2024:B	31-Jan-2023		Marketweight	
	10-Mar-2023	Upgrade	Overweight	99.83
	28-Nov-2023	Downgrade	Marketweight	99.87
4.625, Senior, USD, 2055:B	31-Jan-2023		Marketweight	
	03-Feb-2023	Upgrade	Overweight	88.33
	19-Jan-2024	Downgrade	Marketweight	82.98

Table reflects credit opinion history as of previous business day's close. First date of recommendation within the last 36 months, if for an issuer or within the last 12 months, if for a security or loan. The investment opinion system is contained at the end of the report under the heading "BofA Global Research Credit Opinion Key."

Pricing information in the table is provided for each action where available. In the case of bonds, loans, capital securities and equity preferreds, the price shown reflects the nominal cash price for the security; and in the case of CDS, the price shown reflects the spread, on the date of the relevant action.



LyondellBasell Industries N.V. / LYB

Company Date^{R1} Action Recommendation

B=Bond; L=Loan; CS=Capital Security (Not including Equity Preferred); EP=Equity Preferred; CDS=Credit Default Swap

Nucor Corporation / NUE

Company	Date ^{R2}	Action	Recommendation	
Nucor Corporation / NUE	28-Sep-2023	Initial	Marketweight	
Security	Date ^{R2}	Action	Recommendation	Price
3.95, Senior, USD, 2028:B	28-Sep-2023	Initial	Marketweight	93.79
4.4, Senior, USD, 2048:B	28-Sep-2023	Initial	Marketweight	78.49
2, Senior, USD, 2025:B	28-Sep-2023	Initial	Marketweight	93.86
2.7, Senior, USD, 2030:B	28-Sep-2023	Initial	Marketweight	83.75
2.979, Senior, USD, 2055:B	28-Sep-2023	Initial	Marketweight	57.19
3.125, Senior, USD, 2032:B	28-Sep-2023	Initial	Marketweight	82.95
3.85, Senior, USD, 2052:B	28-Sep-2023	Initial	Marketweight	70.97
3.95, Senior, USD, 2025:B	28-Sep-2023	Initial	Marketweight	96.84
4.3, Senior, USD, 2027:B	28-Sep-2023	Initial	Marketweight	96.06

Table reflects credit opinion history as of previous business day's close. First date of recommendation within the last 36 months, if for an issuer or within the last 12 months, if for a security or loan. The investment opinion system is contained at the end of the report under the heading "BofA Global Research Credit Opinion Key."

Pricing information in the table is provided for each action where available. In the case of bonds, loans, capital securities and equity preferreds, the price shown reflects the nominal cash price for the security; and in the case of CDS, the price shown reflects the spread, on the date of the relevant action.

B=Bond; L=Loan; CS=Capital Security (Not including Equity Preferred); EP=Equity Preferred; CDS=Credit Default Swap

Steel Dynamics, Inc. / STLD

Company	Date ^{R3}	Action	Recommendation	
Steel Dynamics, Inc. / STLD	31-Jan-2021		Marketweight	
•	22-Jun-2022	Extended Review	NA	
	28-Sep-2023	Coverage Reinstatement	Underweight	
	28-Nov-2023	Upgrade	Overweight	
	26-Jan-2024	Downgrade	Marketweight	
Security	Date ^{R3}	Action	Recommendation	Price
5, Senior, USD, 2026:B	31-Jan-2023		NA	
	28-Sep-2023	Coverage Reinstatement	Underweight	97.99
	28-Nov-2023	Upgrade	Overweight	98.17
	26-Jan-2024	Downgrade	Marketweight	99.72
3.45, Senior, USD, 2030:B	31-Jan-2023		NA	
	28-Sep-2023	Coverage Reinstatement	Underweight	86.80
	28-Nov-2023	Upgrade	Overweight	87.31
	26-Jan-2024	Downgrade	Marketweight	91.67
3.25, Senior, USD, 2031:B	31-Jan-2023		NA	
	28-Sep-2023	Coverage Reinstatement	Underweight	84.90
	28-Nov-2023	Upgrade	Overweight	85.59
	26-Jan-2024	Downgrade	Marketweight	89.45
1.65, Senior, USD, 2027:B	31-Jan-2023		NA	
	28-Sep-2023	Coverage Reinstatement	Underweight	85.23
	28-Nov-2023	Upgrade	Overweight	85.90
	26-Jan-2024	Downgrade	Marketweight	88.98
3.25, Senior, USD, 2050:B	31-Jan-2023		NA	
	28-Sep-2023	Coverage Reinstatement	Underweight	60.75
	28-Nov-2023	Upgrade	Overweight	62.29

Table reflects credit opinion history as of previous business day's close.83 First date of recommendation within the last 36 months, if for an issuer or within the last 12 months, if for a security or loan. The investment opinion system is contained at the end of the report under the heading "BofA Global Research Credit Opinion Key."

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 $B=B ond; L=Loan; CS=Capital\ Security\ (Not\ including\ Equity\ Preferred); EP=Equity\ Preferred; CDS=Credit\ Default\ Swap$

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Issuer Recommendations: If an issuer credit recommendation is provided, it is applicable to bonds and capital securities of the issuer except bonds and capital securities specifically referenced in the report with a different credit recommendation. Where there is no issuer credit recommendation, only individual bonds and capital securities with specific recommendations are covered. Loans, CDS and equity preferreds are rated separately and issuer recommendations do not apply to them.

BofA Global Research credit recommendations are assigned using a three-month time horizon:



Overweight: Spreads and /or excess returns are likely to outperform the relevant and comparable market over the next three months.

Marketweight: Spreads and/or excess returns are likely to perform in-line with the relevant and comparable market over the next three months.

Underweight: Spreads and/or excess returns are likely to underperform the relevant and comparable market over the next three months.

BofA Global Research uses the following rating system with respect to Credit Default Swaps (CDS):

Buy Protection: Buy CDS, therefore going short credit risk. **Neutral:** No purchase or sale of CDS is recommended. **Sell Protection:** Sell CDS, therefore going long credit risk.

Corporate Credit Issuer Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships R4	Count	Percent
Buy	144	37.21%	Buy	119	82.64%
Hold	193	49.87%	Hold	163	84.46%
Sell	50	12.92%	Sell	37	74.00%

R4 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 corporate credit issuer recommendations. A corporate credit issuer rated Overweight is included as a Buy, a corporate credit issuer rated Marketweight is included as a Hold, and a corporate credit issuer rated Underweight is included as a Sell.

Credit Opinion History Tables for the securities referenced in this research report are available on the <u>Price Charts and Credit Opinion History Tables website</u>, or call 1-800-MERRILL to have them mailed.

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