Metals & Mining: GS China Property View and 3Q Earnings Season Warm Up

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Major iron ore producers Vale, BHP and Rio Tinto have reported in-line to stronger than expected production numbers this week. Majors seem on track to deliver annual production guidance with Vale potentially adding >10mt shipments above production due to an inventory build up in 3Q22. This comes despite ongoing China demand weakness and limited room for significant demand recover going into the winter.

On the demand side, the GS China property team (property directly consumes 20% of steel in the country and 60% indirectly) downgraded housing starts expectations for 2023 to -20%. And this would follow a sharp 35% decline in 2022. Investors we spoke with this week were largely surprised by the ongoing China housing market weakness going into 2023. GS China property numbers are supported by elevated liquidity pressure and focus on project completion (especially for private players), weak land bank, rising secondary market supply, still elevated vacancy and others. Interestingly, the team expects house completions outperform and to be up 5% in 2023, which we believe would benefit demand for late-cycle commodities (e.g., copper).

In Brazil, monthly steel consumption data continues to suggest a 10-15% y/y decline for both flat and long steel, but we note this is largely expected by investors at this point and that consumption is still 10-15% above pre-pandemic levels in 2019. More importantly, our channel checks suggest domestic prices have stopped falling on the back of international price stability and a more sustainable import price parity (at a 16% premium for flats and 8% discount for longs).

On a stock specific levels, investors are warming up for 3Q earnings season with low expectations for LatAm metals and mining due to expectations of sequentially weaker set of results due to declining commodities prices and still rising cost. More specifically, steel producers are likely to face stronger headwinds with Usiminas expected to be lagging peers in the quarter (driven by weaker prices and higher costs in an elevated operating leverage business). Overall investors' sentiment continues to be cautious on metals/mining due to ongoing China property weakness and global slowdown risk, but positioning is already very light and any change in the current bearish outlook could trigger a return to buying.

Exhibit 1: Summary of GS 2023E forecasts for China national primary housing market (base and bear cases)

		2023E (bear)	2023E (base)	2022E	2021
GFA sold	(mn sqm)	1,227	1,292	1,435	1,794
	YoY	-15%	-10%	-20%	2%
Property sales	(Rmb tn)	11.0	12.4	13.8	18.2
	YoY	-20%	-10%	-24%	5%
ASP	(Rmb/sqm)	8,958	9,429	9,429	10,139
	YoY	-5%	0%	-7%	3%
GFA new starts	(mn sqm)	970	1,034	1,293	1,989
	YoY	-25%	-20%	-35%	-11%
GFA completions	(mn sqm)	867	958	913	1,014
	YoY	-5%	5%	-10%	11%
Property FAI	(Rmb tn)	10.1	10.9	13.0	14.8
	YoY	-22%	-16%	-12%	4%

Source: NBS, Gao Hua Securities Research

China flat steel export price, FOB decreased $17/t w/w to $545/t, driving Brazil flat steel domestic price to the equivalent of BRL 4,850/t, reaching a parity premium of 16%. On the long steel side, Turkey export price FOB decreased by $11/t to $678/t, leading Brazil long steel domestic price to the equivalent of BRL 4,334/t, reaching a parity discount of 8%.

Exhibit 2: Summary table with all key metals & mining data

Oct-22						
Steel	**Last**	**5yr avg.**	**1 month**	**6 months**	**12 months**	**YTD %**
China HRC Inventory (Mt)	2.1	1.9	10%	6%	-1%	19%
China Rebar Inventory (Mt)	4.4	6.4	-8%	-51%	-26%	35%
Shanghai Steel Inventory (Mt)	1.2	1.1	-6%	-27%	0%	32%
China HRC Steel Margin ($/t)	-25.8	63.3	-82%	-138%	-120%	-122%
China Rebar Steel Margin ($/t)	10.8	73.4	-69%	-83%	-93%	-89%
China BOF Op. Rate (%)	74.8	74.4	-0.3pp	0.4pp	-1.6pp	-0.3pp
Brazil Flat Steel Import Parity	16%	n.a.	3.6pp	-1.0pp	16.8pp	12.4pp
Brazil Long Steel Import Parity	-8%	n.a.	-0.2pp	2.4pp	-5.1pp	4.1pp
Iron Ore	**Last**	**5yr avg.**	**1 month**	**6 months**	**12 months**	**YTD %**
China Iron Ore Port Inventories (Mt)	130.2	136.1	-7%	-15%	-7%	-17%
China Iron Ore Imports (Mt)	13.4	14.7	27%	-6%	-17%	-4%
AUS Iron Ore Exports (Mt)	13.7	14.4	22%	-11%	-10%	-9%
Price Indices	**Last**	**5yr avg.**	**1 month**	**6 months**	**12 months**	**YTD %**
Brazil HRC (R$/t)	4,850	3,905	-3%	-23%	-27%	-18%
Brazil Rebar (R$/t)	4,334	3,397	2%	-12%	-13%	-4%
China HRC ($/t)	545	610	-5%	-36%	-40%	-28%
China Rebar ($/t)	558	568	-4%	-33%	-25%	-23%
US HRC ($/t)	838	1,014	-4%	-48%	-60%	-46%
US Rebar ($/t)	1,091	843	0%	-15%	2%	-4%
Southern Europe HRC ($/t)	667	737	-11%	-52%	-39%	-30%
Turkey Rebar ($/t)	678	563	1%	-28%	-4%	-3%
Pig Iron Brazil ($/t)	500	431	11%	-47%	2%	1%
Iron Ore CFR China 62% ($/t)	94.8	109	-4%	-37%	-24%	-28%
Hard Coking Coal ($/t)	294	216	17%	-43%	-26%	-28%
US Platts HMS Scrap ($/t)	328	338	2%	-44%	-26%	-25%

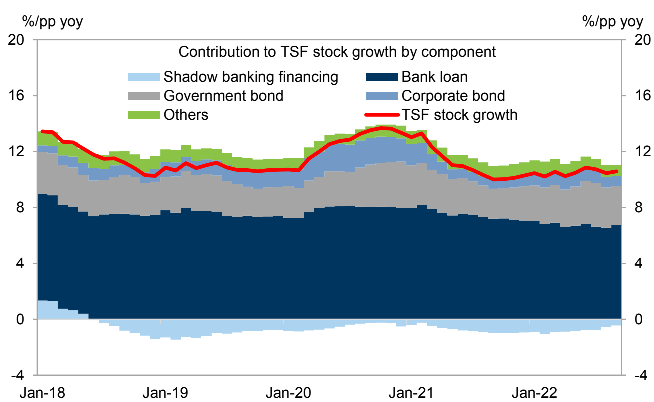
Source: Bloomberg, Platts

China

- **China Real Estate Developers 2023 outlook: Deleveraging set to continue (from GS China property team).** With the liquidity situation still deteriorating, our GS China Real Estate team expects China housing activities to contract further in 2023. They estimate c.25% of industry project construction, mostly from Private Owned Enterprises ("POE") developers facing high liquidity pressure ("FHLP"), could be halted, which could lead to calls for a resolution from government to avoid a deep negative feedback loop for the economy. Especially for New Starts (important driver for steel demand), the team expects 20%/25% yoy decline in 2023E in their base/bear-case. Given unprecedented liquidity stress in the current property downturn, they apply 10% discount to derive their regression based 2023E new starts estimate (down c.10%/20% yoy before/post discount) in order to reflect estimated 25% new starts cut from POE developers facing high liquidity pressure, which account for c.40% market share. Their 2022E new starts estimate (1,293mn sqm) is also at 10% below regression implied 2022E level (1,420mn sqm). For more details, please click here.

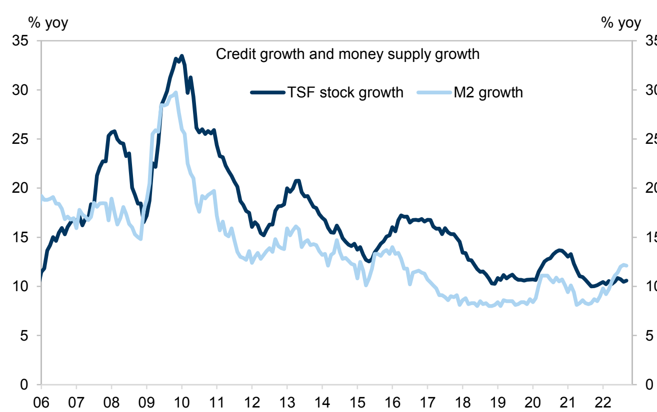
- **China: Why has the ongoing policy easing not driven a significant credit upcycle? (From GS Asia Macro team).** The ongoing Chinese credit cycle has featured much less acceleration in credit growth than previous easing cycles, and in recent months Total Social Finance (TSF) stock growth and M2 growth have diverged (while TSF has become a more crucial quantitative credit measure than M2 in recent years). Besides the prolonged drag from Covid restrictions and policymakers' reluctance to launch a massive stimulus package, two factors — the sharp property downturn and the large-scale tax rebates/deferrals — have weighed on headline TSF stock growth by a combined 2pp yoy this year, based on our GS China Macro team's estimates. In other words, policy easing may not have resulted in a sharp acceleration in credit growth, but it has likely prevented a meaningful slowdown in a time of various headwinds. The team expects TSF stock growth to rise slightly to 10.5% yoy at end-2022 from 10.3% at end-2021, before declining to around 10% at end-2023. Their forecast suggests macro leverage should rebound this year and rise further in 2023, leaving the task of deleveraging for the future. Click here for the full report.

Exhibit 3: Rising growth in government bonds and shadow banking financing contributed to the latest credit upcycle



Source: Wind, Goldman Sachs Global Investment Research

Exhibit 4: The ongoing credit upcycle has been much smaller and more gradual than previous easing cycles, and diverged from M2 growth recently



Source: Wind, Goldman Sachs Global Investment Research

- **Takeaways from President Xi's opening remarks at the 20th Party congress (From GS China Macro team).** The 20th National Congress of the Communist Party of China (NCCPC) began on 16 October in Beijing and will conclude on 22 October. In President Xi's opening remarks, our GS China Team highlights: 1) President Xi's "Thoughts on Socialism with Chinese Characteristics for a New Era" have been further highlighted; 2) national security and social stability appear to have become more important, especially for the security of key supply chains; 3) President Xi reiterated the "One Country, Two Systems" principle, and strengthened the stance to secure national sovereignty; and 4) economic development remains important, with continued focus on high-quality growth. The team believes the ongoing Party congress may not be an inflection point for major policy changes. They maintain their view that a reopening will probably be delayed until at least Q2 2023, and implemented gradually to the extent possible. Policymakers' reaction function such as "no flooding of easing measures" and the top leadership's long-term goals are unlikely to change after the Party Congress. Click here for the full report.

Exhibit 5: A series of high-level policymaker meetings will occur over the next year

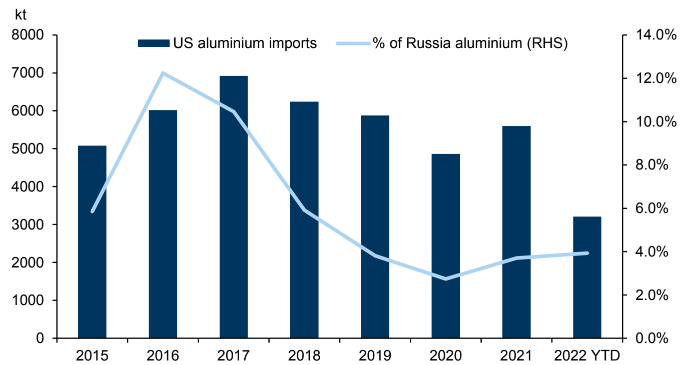
Dates (possible)	Key political and policy events
Oct 16-22 2022	The 20th Party Congress
Oct 23 2022	First Plenum of the 20th CPC Central Committee
Early Dec 2022	Politburo meeting on 2023 economic policy outlook, preparation for CEWC
Mid Dec 2022	Central Economic Work Conference (CEWC)
Jan/Feb 2023	Second Plenum of the 20th Party Congress
Mar 2023	Two Sessions - NPC and CPPCC
Oct/Nov 2023	Third Plenum of the 20th Party Congress

Source: Xinhua, www.gov.cn

Europe

- **Aluminium: Russia supply uncertainty escalates (From GS commodities team).** A recent Bloomberg story reported that the White House is weighing a retaliatory move on Russian aluminum following recent military escalation in Ukraine. Per the article, the policy options being considered are threefold: (1) ban on Russian aluminum imports into the US, (2) higher tariff on Russian aluminum imports into the US and (3) sanctioning Russian aluminum producers. If policy options (1) and (2) were followed by either/both the EU following suit as well as an LME ban, then that would still generate a significant tightening to the Western aluminum market. If option (3) was followed the team believes this would generate an outsized supply shock to the Western market that could be solvable in the short run by higher prices and using the 2018 LME price path as a guide, a rally to within touching distance of $3,000/t would be possible. For more details, please click here.

Exhibit 6: A ban on US imports of Russian aluminium would have a limited market impact



Source: USGS, Goldman Sachs Global Investment Research

- **Antofagasta: 3Q22 Production Review: Q3 beat but 2023 production guidance below expectations (From GS EU mining team).** Overall, we view the results as slightly below expectations. While 3Q22 copper and gold production came in c.3/5% above our/Visible Alpha Consensus Data expectations, reflecting a higher-than-expected production recovery at Los Pelambres, production guidance for 2023 surprised to the downside at 670-710kt (cons at 723kt), negatively impacted by a delay in the Los Pelambres desalination plant completion (by c.30kt) and lower production at Centinela Cathodes. The company revised the Los Pelambres desalination plant completion schedule, due to the suspension of marine construction works after continued sea swells. The company now projects the desalination plant to be completed in 1H23 (4Q22 before) and the concentrator plant expansion has an expected completion time in 1Q23 (unchanged). Project capex remains unchanged at US$2.2bn. For more details, please click here.

Australia

- **Fortescue Metals Group (FMG.AX): Pilbara visit; mine replacement spend to remain elevated (From GS Paul Young).** Paul Young attended FMG's recent investor tour of the company's Eliwana mine and Port Hedland port facilities, and run through of the Pilbara decarbonisation investment and strategy. Key takeaways were; 1. Eliwana mine de-bottlenecking will support hematite group shipments at ~190Mtpa; 2. mine replacement & sustaining capex to remain elevated at ~US$2-2.5bn (GSe) with the Flying Fish mine (GSe US$200-300mn) next to Eliwana brought forward and an investment decision on the Nyidinghu replacement mine expected around FY25 and possibly costing >US$2bn (GSe), (3) Run through of recently announced US$6.2bn Pilbara decarbonisation program (>US$7bn all-in). Overall, we forecast FMG's capex to increase from ~US$3.2bn in FY23 to ~US$4bn by FY26 on mine and haul truck replacement and decarbonisation spend, but see upside risk to our estimate. For more details, please click here.
- **Rio Tinto 3Q22 result: Pilbara shipments at low end in 2022, Rhodes Ridge resurfaces, trims capex guidance (From GS Paul Young).** RIO reported an improved 3Q with Pilbara iron ore production & shipments increasing 7%/4% QoQ

and an increase in aluminium, mined copper and TiO2 feedstock production (all in-line with GSe), although the Kitimat aluminium & Kennecott copper smelters, the Queensland Alumina Refinery (QAL) were impacted by ongoing equipment reliability issues. RIO expects Pilbara shipments to be at the lower end of the 320-335Mt guidance range (GSe 322Mt) implying ~86Mt of shipments in 4Q, achievable in our view with the ongoing ramp-up of the ~45Mtpa Gudai-Darri mine. After a decade long wait, RIO have agreed to modernise the 50/50 JV with Wright Prospecting covering the 6.7Bt ~62% Fe Rhodes Ridge deposit (near the Hope Downs 4 mine), and are considering the development of a Stage 1 40Mtpa operation before the end of the decade. We think the development of Rhodes Ridge has the potential to be significant for RIO's Pilbara business as it could lift system capacity, product grades and FCF/t, but will lower RIO's equity tonnes. Separately, RIO now expect 2022 capex to be ~US$7.0bn (from US$7.5bn), due to the stronger US dollar and reassessment on timing of decarbonisation investment. For more details, please click here.

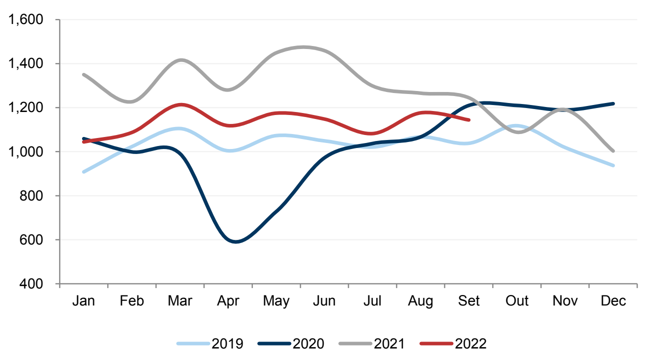
- **BHP Group Ltd. (BHP.AX): 1Q FY23 result: Chile Cu & met coal weak, FY23 guidance unch, but low end likely; Buy.** BHP reported a weaker than expected start to FY23 with an 11% QoQ decrease in copper production to 410kt on lower grades and throughput at both Escondida & Spence in Chile, and a 24% drop in met coal production from Qld due to wet weather and continued labour shortages. Pilbara shipments of 70.3Mt were in-line with GSe. FY23 production and cost guidance for all commodities remains unchanged, although we think copper & met coal will be right at the bottom end. The production challenges in northern Chile are not too dissimilar to copper peers Codelco and Antofagasta and are one of the reasons we are more constructive on copper (~25% of BHP FY23E EBITDA) vs. the other base metals. BHP's recent investor tour of the Pilbara highlighted that tie-in activities at Port Hedland to support the expansion to >300Mtpa will take place throughout the remainder of the year, although Fe guidance is also unchanged. For more details, please click here.

Latam

- **Vale: 3Q22 Production/Sales Report: Marginal Changes to 3Q Earnings Expectations.** Vale's reported iron ore production of 90mt in 3Q22 was 4% ahead of GSe and marginally ahead of investors' expectations, based on our conversations. We believe Vale is on track to reach the low end of the production guidance of 310-320mtpa for the year. However, total ferrous sales volume was 12mt below production at 78mt, which is explained by in transit inventories, according to the company. Vale said that the inventory build-up could be reverted in 4Q depending on market conditions (if fully reverted, we would expect Vale sales to be 19mt higher sequentially in 4Q). We mark to market our 3Q22 EBITDA to $4.5B (+5% from $4.3B), as weak iron ore sales and premiums are offset by better benchmark prices vs. GSe and lower freight rates. We maintain our Neutral rating on Vale as we see the stock pricing in $94/t iron ore price vs. GS forecast at $90-100/t for 2023-24. We continue to see limited room for extraordinary dividends and buybacks due to declining earnings, potential additional provisions from Samarco and net debt close to the top end of the guidance. For more details, please click here.

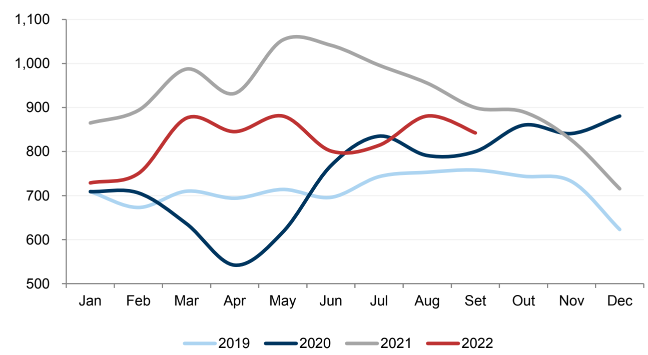
- **Apparent steel consumption down 8% and 6% y/y for flats and longs in Brazil in September (but still 10% above pre-pandemic levels).** Brazil steel consumption have been weakening alongside rising interest rates and weaker economic activity, but it also follows a strong comps in 2021. On a YTD base, flats and long steel consumption is down 14-15% but still 10-15% above pre-pandemic levels in 2019.

Exhibit 7: Brazil Flat Steel Apparent Consumption (kt)



Source: IABR

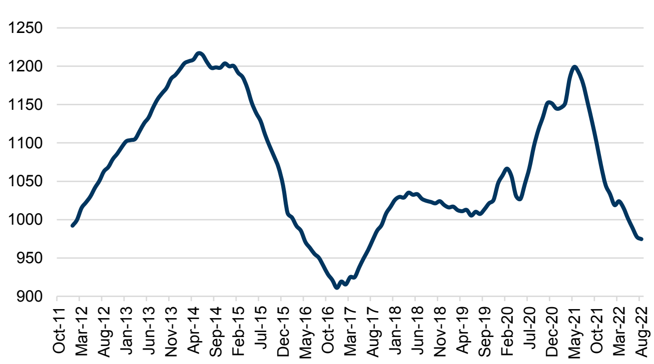
Exhibit 8: Brazil Long Steel apparent Consumption (kt)



Source: IABR

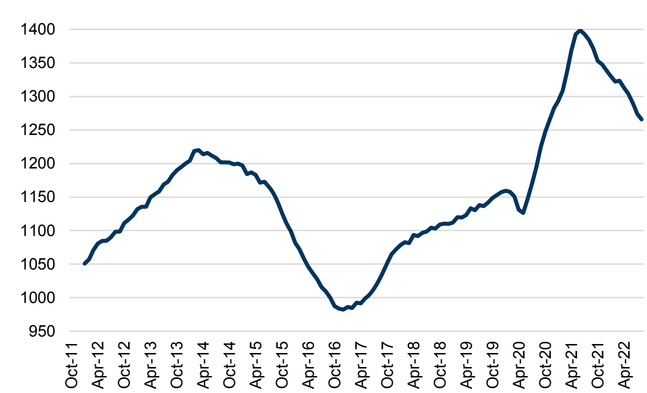
- **White goods and construction materials down 15% and 9% y/y in August.** IBGE reported its sales volume index for August, with both White Good and Construction Materials declining y/y, although the latter still 11% above pre-pandemic levels (White Goods marginally below with -3%). We advise investors to keep track of construction materials sales volume as a proxy for the real estate market, which represents 60% of Gerdau's sales volume in Brazil. White goods represent 10% of Brazil flat steel consumption (USIM and CSN's main exposure).

Exhibit 9: Brazil's LTM White goods sales volume index



Source: IBGE

Exhibit 10: Brazil's LTM Construction materials sales volume index



Source: IBGE

Coverage comps table

Exhibit 11: Latam Metals & Mining coverage comps table

							EV/EBITDA			FCF Yield (%)			Dividend Yield (%)			Net Debt / EBITDA		
Steel Companies	Country	M. Cap (US$bn)	Rating	Target Price 12-m fwd.	Price (in LC)	Upside/ Downside	2022	2023	2024	2022	2023	2024	2022	2023	2024	2022	2023	2024
Usiminas	Brazil	1.8	Buy	13.0	7.5	73.3%	1.8x	2.1x	2.0x	17.8%	17.9%	25.3%	11.3%	8.8%	5.5%	-0.3x	-0.5x	-1.0x
Gerdau	Brazil	8.5	Buy	35.0	26.2	33.5%	1.9x	2.9x	2.7x	23.8%	15.2%	12.1%	5.0%	3.5%	3.1%	0.0x	-0.4x	-0.7x
CSN	Brazil	3.5	Neutral	15.0	13.2	14.0%	2.8x	4.2x	4.6x	-2.7%	-4.5%	3.8%	8.8%	3.6%	2.5%	1.2x	1.9x	2.1x
Ternium	Argentina	5.5	Buy	52.0	27.8	87.1%	1.3x	1.2x	0.9x	35.4%	46.7%	30.2%	6.5%	11.3%	6.8%	-0.6x	-1.6x	-2.2x
LatAm Average		4.8				52.0%	1.9x	2.6x	2.5x	18.6%	18.8%	17.9%	7.9%	6.8%	4.5%	0.1x	-0.2x	-0.5x
ArcelorMittal	Luxembourg	20.1	Neutral	25.0	22.1	13.0%	1.8x	3.5x	3.4x	31.1%	13.7%	4.9%	1.9%	1.8%	2.2%	0.2x	0.5x	0.6x
Voestalpine	Austria	3.5	Sell	21.0	20.2	3.9%	4.2x	2.9x	4.4x	3.1%	11.1%	-1.2%	3.6%	7.2%	5.1%	1.1x	0.7x	1.2x
SSAB	Sweden	5.0	Buy	71.0	55.7	27.5%	1.4x	3.3x	3.5x	22.8%	18.2%	10.2%	14.3%	5.0%	4.3%	-0.4x	-1.2x	-1.6x
Europe Average		3.9				14.8%	2.5x	3.2x	3.8x	19.0%	14.3%	4.6%	6.6%	4.7%	3.9%	0.3x	0.0x	0.1x
Nucor Corp.	United States	32.8	Neutral	114	124	(8.4%)	3.2x	5.3x	6.1x	24.1%	11.1%	9.0%	1.6%	1.6%	1.7%	0.3x	0.5x	0.4x
Steel Dynamics Inc.	United States	15.3	Buy	88.0	81.7	7.7%	2.7x	3.9x	4.8x	24.7%	15.6%	9.1%	1.7%	1.8%	1.9%	0.1x	0.0x	-0.1x
Reliance Steel and Aluminum Co.	United States	11.6	Neutral	201	185	8.9%	4.7x	6.2x	5.7x	19.3%	7.7%	10.9%	1.9%	2.1%	2.3%	0.0x	-0.3x	-0.7x
United States Steel Corp.	United States	5.8	Sell	18.0	20.1	(10.3%)	1.5x	5.0x	3.8x	24.8%	-22.0%	12.3%	1.0%	1.0%	1.0%	0.3x	1.8x	1.2x
Cleveland-Cliffs Inc.	United States	8.0	Buy	19.0	15.2	25.3%	3.0x	3.5x	2.5x	25.1%	23.0%	27.8%	0.0%	0.0%	0.0%	0.9x	0.7x	-0.1x
Commercial Metals Co.	United States	5.2	Neutral	40.0	43.2	(7.4%)	3.4x	4.1x	4.9x	5.7%	19.2%	8.8%	1.5%	1.5%	1.7%	0.5x	0.1x	-0.2x
Schnitzer Steel Industries	United States	0.9	Buy	39.0	29.4	32.7%	3.3x	2.7x	2.3x	13.9%	31.7%	21.1%	2.6%	2.6%	2.6%	0.7x	0.0x	-0.5x
North America Average		11.4				6.9%	3.1x	4.4x	4.3x	19.7%	12.3%	14.2%	1.5%	1.5%	1.6%	0.4x	0.4x	0.0x
Baoshan Iron & Steel	China	16.5	Neutral	6.4	5.3	20.3%	5.0x	4.2x	3.5x	2.5%	10.2%	15.4%	5.8%	7.5%	9.4%	1.1x	0.7x	0.4x
Angang Steel	China	2.5	Buy	4.3	2.1	108.7%	2.7x	1.5x	1.0x	13.4%	24.4%	29.0%	4.1%	8.6%	10.7%	0.1x	-0.3x	-0.6x
Maanshan Iron & Steel	China	1.6	Sell	1.9	1.7	13.8%	5.9x	4.5x	4.3x	-21.6%	-1.8%	-1.8%	5.4%	10.9%	12.2%	3.0x	2.3x	2.3x
Asian Average		7.0				47.6%	4.5x	3.4x	2.9x	-1.9%	10.9%	14.2%	5.1%	9.0%	10.8%	1.4x	0.9x	0.7x
Global Average		7.0				26.1%	3.0x	3.6x	3.6x	15.1%	13.7%	13.1%	5.5%	5.3%	4.9%	0.5x	0.3x	0.1x

Closing prices as of 18-Oct-2022.

							EV/EBITDA			FCF Yield (%)			Dividend Yield (%)			Net Debt / EBITDA		
Bulks Companies	Country	M. Cap (US$bn)	Rating	Target Price 12-m fwd.	Price (in LC)	Upside/ Downside	2022	2023	2024	2022	2023	2024	2022	2023	2024	2022	2023	2024
Vale	Brazil	62.6	Neutral	13.0	13.6	-4.7%	3.6x	3.6x	3.6x	9.8%	11.2%	7.5%	13.4%	15.2%	6.4%	0.9x	1.0x	1.0x
CSN - Mineração	Brazil	3.5	Sell	3.5	3.4	4.2%	3.7x	4.7x	7.2x	-14.4%	-6.0%	-3.5%	17.1%	2.9%	1.2%	0.0x	0.4x	0.9x
LatAm Average		33.1				-0.3%	3.6x	4.1x	5.4x	-2.3%	2.6%	2.0%	15.2%	9.1%	3.8%	0.5x	0.7x	0.9x
Rio Tinto Ltd.	Australia	96.2	Buy	112.9	94.0	20.1%	3.7x	3.8x	3.8x	10.4%	8.6%	7.8%	8.1%	7.2%	7.0%	0.0x	-0.1x	-0.1x
Rio Tinto Plc	United Kingdom	87.0	Buy	6,200	4,748	30.6%	3.3x	3.5x	3.5x	11.4%	9.5%	8.6%	8.9%	7.9%	7.8%	0.0x	-0.1x	-0.1x
Fortescue Metals Group	Australia	33.8	Sell	13.4	17.2	-22.1%	4.2x	4.4x	7.4x	8.9%	6.3%	1.5%	10.7%	8.9%	3.5%	0.1x	0.4x	0.9x
Coronado Global Resources Inc.	Australia	2.1	Buy	2.25	2.0	14.2%	0.8x	4.5x	4.1x	58.8%	18.0%	11.2%	46.1%	14.4%	9.0%	-0.4x	-0.8x	-0.8x
Whitehaven Coal Ltd.	Australia	6.0	Neutral	9.7	10.5	-7.8%	0.8x	1.4x	2.4x	68.2%	35.4%	12.2%	14.4%	8.0%	5.2%	-0.3x	-0.5x	-1.0x
New Hope Corp.	Australia	4.1	Sell	4.4	6.9	-36.5%	1.1x	2.0x	4.3x	45.7%	30.1%	6.6%	30.8%	18.7%	8.4%	-0.3x	-0.5x	-0.7x
BHP Group Ltd.	Australia	124.8	Buy	42.5	39.3	8.3%	3.5x	5.0x	5.1x	14.9%	4.5%	6.3%	11.1%	6.9%	5.5%	0.0x	0.3x	0.4x
Global Average		46.7				0.7%	2.7x	3.7x	4.6x	23.7%	13.1%	6.5%	17.8%	10.0%	6.0%	0.0x	0.0x	0.1x

Closing prices as of 18-Oct-2022.

Target Prices in R$ and in US$ for Vale and Ternium

Source: Bloomberg, Goldman Sachs Global Investment Research

Disclosure Appendix

Reg AC

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