Global Metals Weekly

Steel tariffs are bullish regional premia

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Commodities
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US steel prices have outperformed again. Why?

Steel prices increased globally in 4Q23. The rally was remarkable in the US, where hot-rolled coil (HRC) prices rose by nearly 60% between September and December, topping US$1,200/t. Indeed, while US HRC prices have often outperformed those in Europe and China, that divergence has become increasingly visible in the past three years. Why? We believe protectionist measures (i.e. trade restrictions) and public infrastructure spending have played a pivotal role. With governments looking to rebuild and fortify domestic supply chains, there is a key message in this: siloing markets gives producers pricing power, and consumers have to pay more. Of course, this is what trade protectionism is designed to do. Consumers should be diligent in protecting against upside risk every time prices pull back.

Trade policies do matter. What if Trump wins?

Back in March 2018, the Trump administration imposed a 25% tariff on steel imports under Section 232, citing national security concerns (steel is used in critical infrastructure such as power plants and bridges). This boosted US producers' pricing power, and HRC has since been trading at a premium of up to 80% to quotations in Europe. Domestically, US steel prices averaged just under US$600/t before Trump fired the first restriction salvo; since then, they have averaged US$930/t, a 55% premium. While trade barriers have been relaxed somewhat since Biden took office, a second Trump administration could reverse some of those measures. There have been discussions around a potential minimum tariff on steel imports should Trump be re-elected.

Spending from the infrastructure bill saved the day

Even then, US steel prices have not just been supported by trade restrictions, but also by Biden's infrastructure bill (the Bipartisan Infrastructure Law), enacted in 2021. Indeed, while tighter monetary policy hit rates-sensitive residential construction, non-residential building activity has held up, growing uninterrupted for three years now. Steel demand in the US should also remain robust on growing renewables and EVs.

Rising protectionism will be an issue for China

Beyond the US, protectionist measures have also become more of a focus in other countries, with Chinese steel pushing into domestic markets. For instance, several producers in Brazil were forced to cut production or temporarily idle plants last year. The Brazilian steel industry has been urging the government to raise import tariffs to 25%, from 9.6-12.8%, a request that was partially accommodated earlier this month. Rising protectionism is an issue for Chinese steelmakers, and could force them to slow activity, unless domestic demand picks up.

EV – electric vehicle

GW – Gigawatt

HRC – Hot-rolled coil

mt – metric ton

st – short ton

Steel tariffs are bullish regional premia

Global steel prices have risen on production cuts

Steel demand is driven by cyclical sectors, including construction and car production. Hence, prices usually struggle when the economy slows. Notwithstanding, steel rallied in 4Q23 in China, the EU and, most notably, in the US:

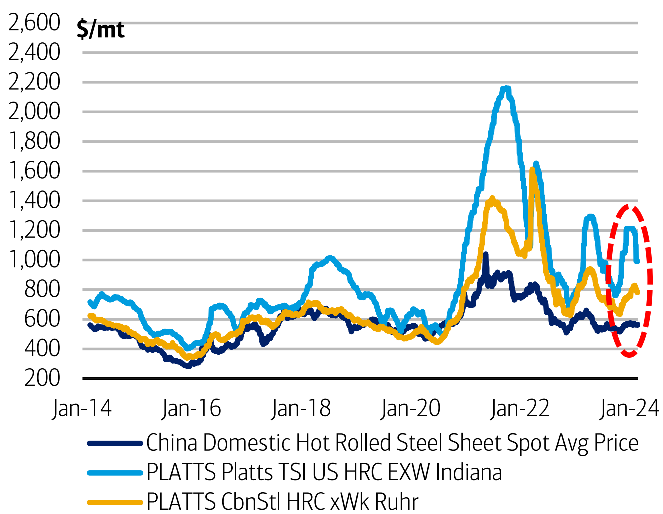
- In **China,** HRC prices rose by 9% to CNY4,093/t (US$571/t) during the last quarter, before consolidating those gains in the new year. The rally faded in the absence of clear signs that demand is recovering. At the same time, elevated raw material prices (e.g. iron ore and coking coal) have dented industry profitability. This, in turn, prompted an unseasonal production cut in December, pushing 2023 output growth down to 0.6% from 1.8% in Jan-Nov (Exhibit 2).

- In the **EU,** HRC prices have rallied by 28% to EUR765/t (US$830/t) since October, supported by production curtailments, which have contributed to another year-on-year decline in crude steel output. Also, lead times to ship raw materials have risen due to logistical issues in the Suez Canal. Notwithstanding, several blast furnaces are now coming back online, so a demand recovery is essential to keep prices supported.

- In the **US,** HRC prices have risen by nearly 60% since September, topping US$1,200/t by December. This has been driven by a confluence of factors. Most notably, steel demand in the US held up last year, on purchases from the automotive industry and a strong non-residential construction sector, accompanied by production discipline from the mills. This has pushed up lead times, but import restrictions have sheltered the domestic market from foreign competitors.

Exhibit 1: Global steel prices

Steel prices rallied late last year on production cuts



Source: Bloomberg

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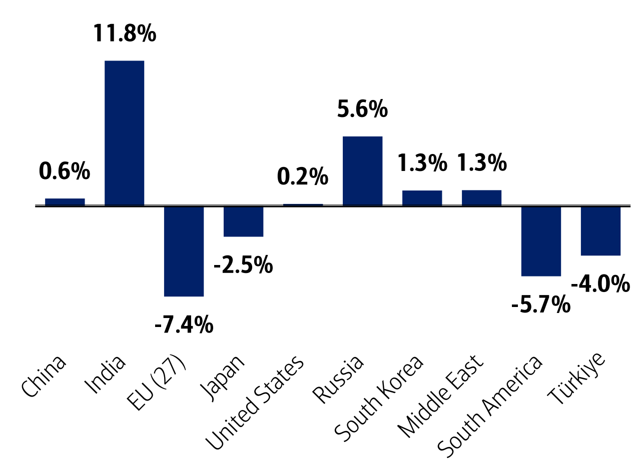
Exhibit 2: Crude steel production, by top producers (2023 vs 2022)

Steel production growth has been subdued in most regions



Source: Bloomberg, worldsteel

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The rally in US steel prices has been the most remarkable. Indeed, while US HRC prices have often outperformed those in Europe and China, that divergence has become increasingly visible in the past three years. Why? We believe protectionist measures (i.e. trade restrictions) and public infrastructure spending have played a pivotal role. With governments looking to rebuild and fortify domestic supply chains, there is a key message in this: siloing markets gives producers pricing power, and consumers have to pay more. Of course, this is what trade protectionism is designed to do.

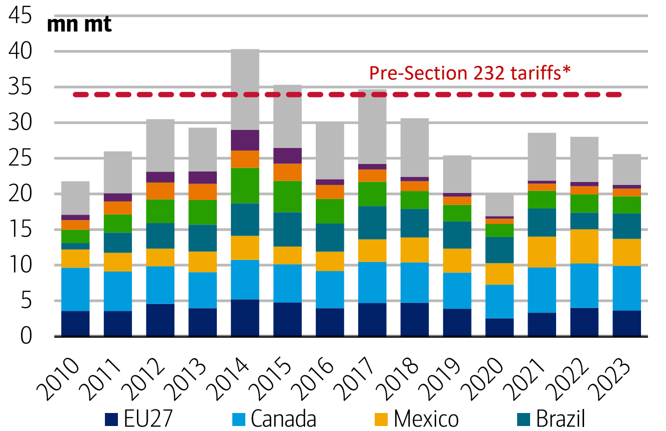
Trade restrictions have helped US steel producers

US steel has traded at a 80% premium to Europe

Taking a step back, the Trump administration introduced a 25% tariff on steel imports in March 2018, under **Section 232**, citing national security concerns (steel is used in critical infrastructure such as power plants and bridges). The decision prompted retaliatory action from the most affected trade partners (e.g. Europe, Canada, Mexico). While the US lifted the import restrictions on Canada and Mexico in 2019, the policy was effective in curbing inflows of foreign material, with European imports falling by 18% YoY five years ago (Exhibit 3). Of course, the policy also benefited US producers, with domestic steel prices trading at a premium of up to 80% to European steel prices since (Exhibit 4).

Exhibit 3: US imports of steel mill products

Steel tariffs in the US have curbed inflows of foreign material



Source: US Department of Commerce

Notes: Figures includes flat, semi-finished, pipe and tubes, long, stainless steel products. (*) Average imports between 2013-2017

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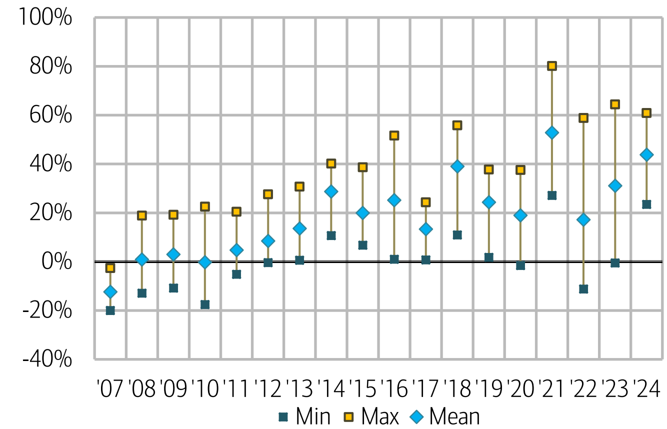
Exhibit 4: US HRC price premium to EU HRC

Trade barriers have benefitted US steel producers, with domestic HRC prices trading at elevated premia to the EU



Source: Bloomberg, BofA Global Research

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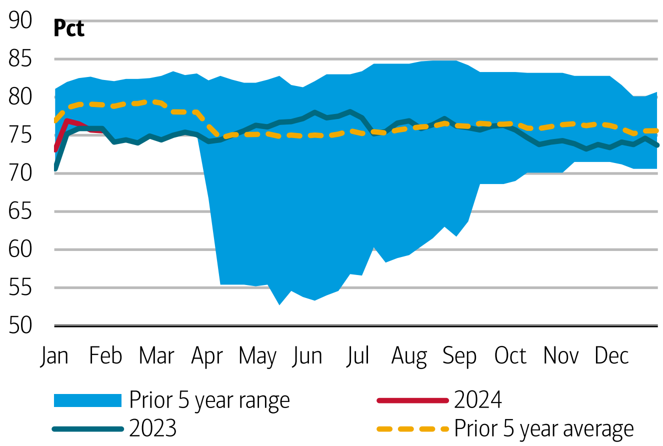
Taking heart to criticism, the Biden Administration updated the Section 232 trade restrictions in 2022, replacing tariffs on the EU, UK and Japan with a **tariff rate quota** (TRQ) system, which set shipment caps based on historical trade volumes. The framework currently allows up to 3.3Mt of EU steel to flow into the US duty-free. At the same time, the EU suspended retaliatory tariffs on US products, which has now been extended until March 2025. As a result, steel imports from the EU have rebounded from the 2020 lows, although they are still below the levels before the Trump tariffs. At present, the EU is working with the US on a longer-term solution, with the aim of potentially removing the Section 232 tariffs entirely. Importantly, the two regions will also continue to collaborate on addressing global overcapacity and reducing the carbon footprint of the steel industry, both still an issue in China, as part of the Global Arrangement on Sustainable Steel and Aluminium (GSA).

Trade restrictions hand pricing power to producers

That said, what might a Trump re-election mean for trade policies? We see the risk of tighter import barriers. Indeed, Trump's advisers/campaign officials have mentioned the possibility of introducing a broad minimum 10% tariff on steel imports, which would then also apply to units from the EU and China. Confirming the rationale behind these proposals, Trump's team outlined that the baseline tariff would boost US manufacturing, as well as provide room for future tax cuts for domestic producers. Under this scenario, US steel prices would likely remain at historical highs, while trading at a premium to other regions.

Looking beyond prices, the impact of trade restrictions on the pricing power of domestic US steelmakers has also been visible in other metrics. Cleveland Cliffs, the second largest US producer, hiked steel prices more than 10 times in 2023, often pointing towards tight spot availability. Again, reduced competition from abroad has given US mills better control over domestic market dynamics, i.e. they can sacrifice production volumes to stop price declines. The greater operational flexibility of electric arc furnaces (EAF – accounting for about 70% of US crude steel production) and mini mills in the US, compared with blast furnaces also helps. Exhibit 5 picks up on this, showing that US capacity utilisation rates are hovering around multi-year lows. At the same time, lead times have risen, and prices have followed (Exhibit 6). Indeed, the two sharp rallies in domestic US steel prices last year coincided with production cuts at the mills. So all in, US steel prices averaged just under US$600/t before Trump fired the first restriction salvo; since then, they have averaged US$930/t, a 55% premium.

Exhibit 5: Steel capacity utilization rates (United States)
US steelmakers proactively adjust output when market conditions change, cutting production as prices fall



Source: Bloomberg

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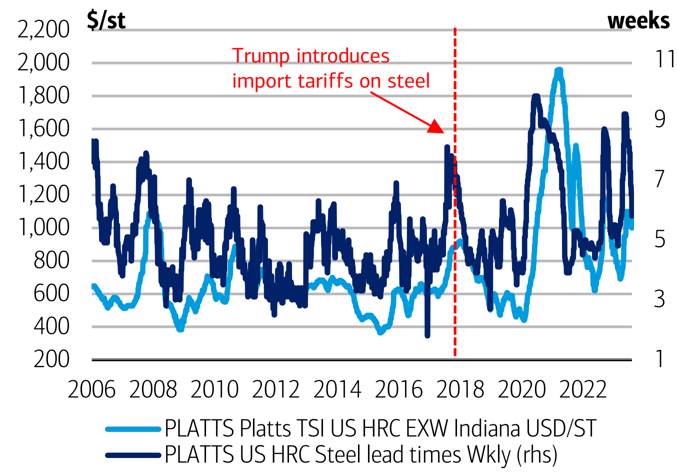
Exhibit 6: US HRC prices and lead times
Lead times and US steel prices have been trending higher since the introduction of trade restrictions on steel



Source: Bloomberg

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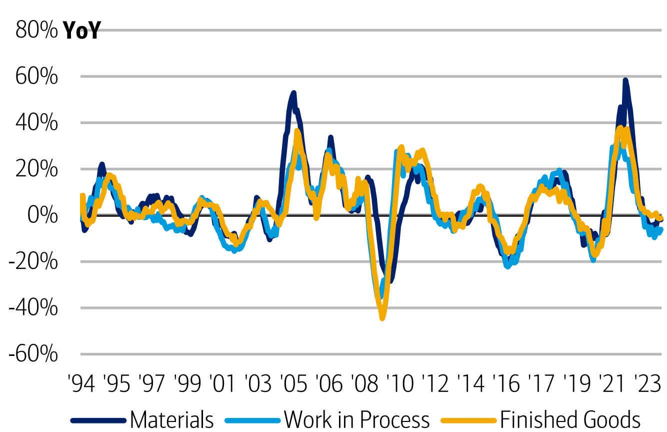
Economic slowdown accompanied by rising steel prices

Steel prices have become more resilient to inventory destocking

The resilience in US steel prices has been remarkable particularly given tight monetary conditions and destocking through the manufacturing supply chain, reflected in a reduction of primary metals inventories (Exhibit 7).

Exhibit 7: US primary metals inventories
Metals inventories in the US started to decline in 2Q23, after the exceptional restocking cycle post-pandemic



Source: Bloomberg

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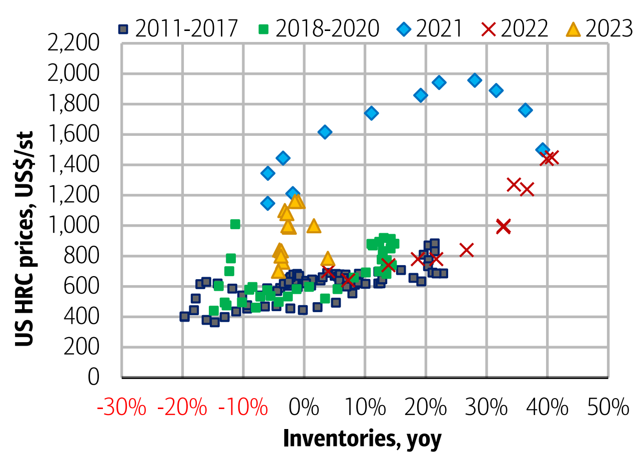
Exhibit 8: US primary metals inventories and steel prices
The relationship between inventories and prices has been impacted by trade policies, making prices resilient to destocking cycles



Source: Bloomberg

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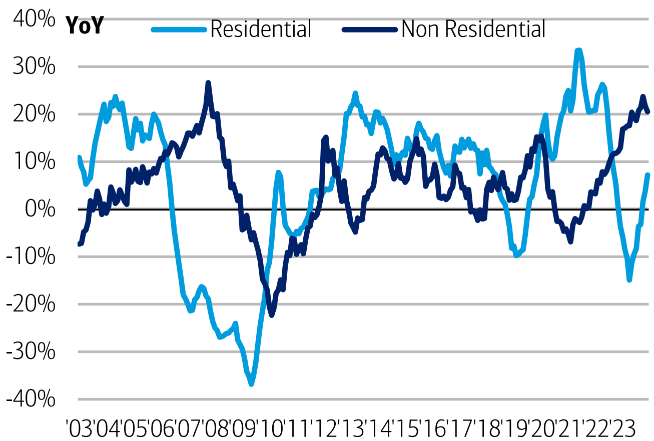
Indeed, after the exceptional restocking cycle post-pandemic, primary metals inventories in the US started to decline in 2Q23, putting pressure on steel prices. Exhibit 8 picks up on this, showing a positive historical relationship between changes in inventories and prices. Yet, that relationship has become much weaker since 2018, testament to the changing dynamics in the domestic US steel market.

Non-residential construction has supported US steel demand

Trade restrictions don't tell the entire story though, as US steel prices have also been supported by pockets of strength in demand. While it is true that tighter monetary policy has hit rates-sensitive sectors (e.g. residential sector), non-residential construction has remained exceptionally strong, expanding by as much as 25% YoY in 2023, sustaining a three-year upward trend in growth rates. Most of that was driven by spending on roads and highways, which has been expanding for 31 consecutive months, supported by funding from Biden's infrastructure bill, although other sectors have been strong too (Exhibit 10). The recent mix of government policies has supported domestic steel mills on both the supply and demand side.

Exhibit 9: US construction spending

Residential construction has underperformed in the US, but non-residential construction spending grew by as much as 25% YoY in 2023



Source: Bloomberg

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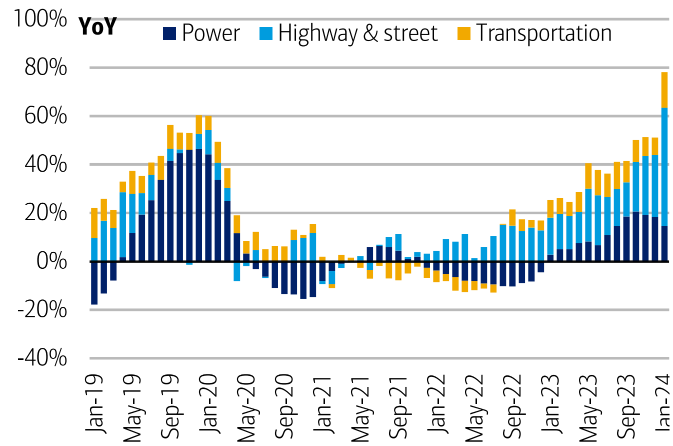
Exhibit 10: US non-residential construction spending

Non-residential construction growth was driven by spending in roads and highways, which has been expanding for 31 consecutive months



Source: Bloomberg

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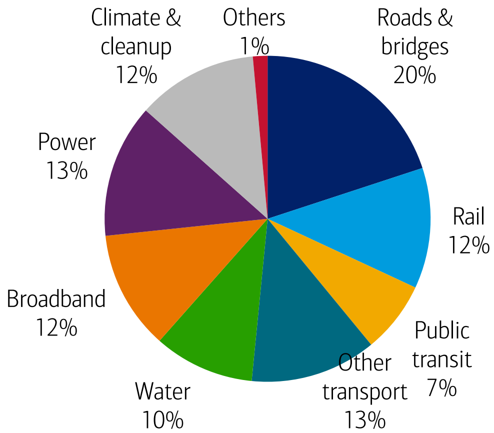
Biden's infrastructure bill has had a positive impact on steel demand

Digging deeper into fiscal spending, the Biden administration signed the Infrastructure Investment and Jobs Act (IIJA), also known as the Bipartisan Infrastructure Law (BIL) back in November 2021. The act provides US$1.2tn in funding, including US$550bn of new federal spending to be allocated over five years. The bill encompasses major critical infrastructure, such as roads and bridges, rail, power, broadband, etc (Exhibit 11). So far, the majority of the funding has been allocated to steel-consuming sectors (Exhibit 12) – one reason why demand for the key construction material should remain supported.

Exhibit 11: New spending under the infrastructure bill
Transportation (roads, rail, public, river, airport etc) = >50% of total



Source: BofA Global Research, company reports

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Exhibit 12: Announced Bipartisan Infrastructure Law (BIL) funding
So far the majority of funding has been allocated to steel-consuming sectors

Category	Funding (US$ BN)	% total
Transportation	**252**	**70%**
Airports and Federal Aviation Administration Facilities	8	2%
Electric Vehicles, Buses and Ferries	3	1%
Passenger and Freight Rail	14	4%
Ports and Waterways	6	2%
Public Transportation	34	9%
Roads, Bridges and Major Projects	175	48%
Safety	12	3%
Climate, Energy, and the Environment	**61**	**17%**
Clean Energy and Power	17	5%
Environmental Remediation	4	1%
Resilience	17	5%
Water	24	7%
Broadband	**47**	**13%**
Other	**1**	**0%**
Total	**361**	**100%**

Source: Invest.gov (2023)
Notes: Data as of November 22nd, 2023

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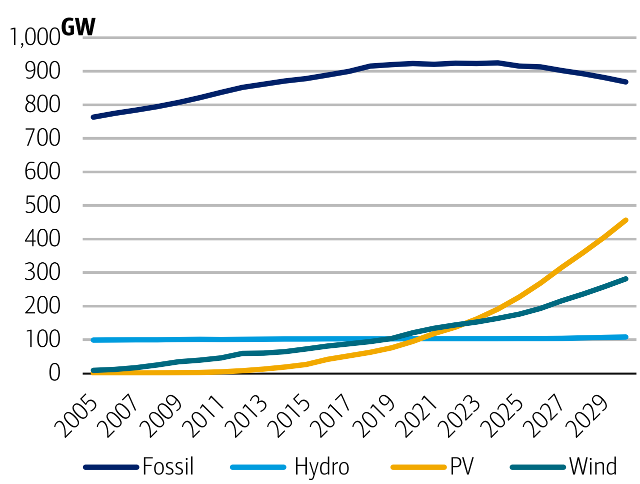
The buildout of renewable capacity also helps

Going forward, the US steel industry should also benefit from increased green ambitions and the IRA. Indeed, solar and wind are making inroads, while fossil fuels are losing out in the energy mix: renewables could have a combined capacity of more than 700GW in 2030 from around 280GW in 2022 (Exhibit 13). Translating that into steel demand suggests annual consumption of 4Mt out to 2030, or 5% of current usage. Adding the demand from EVs, that estimate would rise to 9Mt annually (Exhibit 14). The bottom line: as steel demand in the US looks robust in the coming years, trade policies could have a great impact on domestic prices, especially if import tariffs come back in earnest.

Exhibit 13: US, installed power capacity by source
Fossil fuels will remain critical for the US, but renewables are set to gain market share



Source: IEA, BNEF, BofA Global Research estimates

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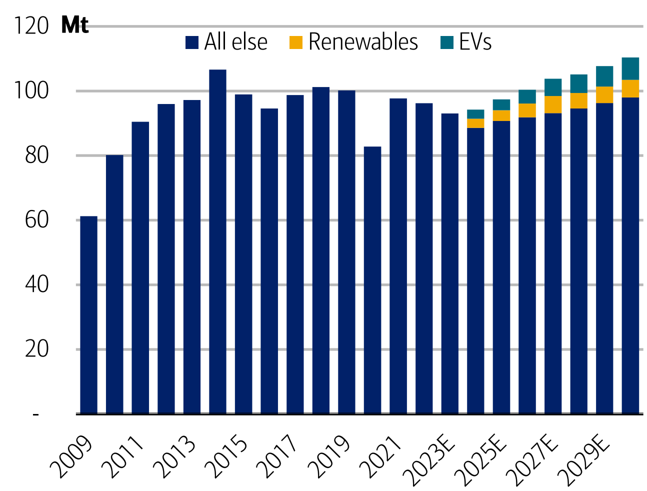
Exhibit 14: US steel demand
The green sector should also keep steel demand robust in the coming years



Source: BofA Global Research estimates

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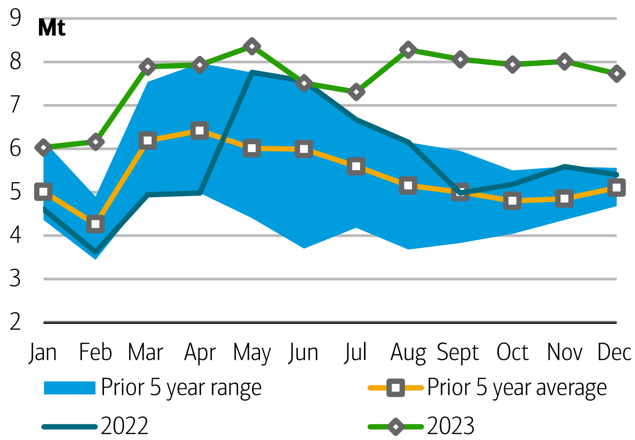
A surge in Chinese exports triggers more protectionism

Beyond the US, other countries have also started considering protectionist measures, particularly as Chinese steel exports rose to record highs last year (Exhibit 15). Several trading partners have seen significant increases in Chinese imports. Remarkably, those tonnages did not arrive in just neighbouring countries (e.g. India, Vietnam, Hong Kong), but also in South America. Influenced by that, producers in Brazil were forced to cut production or temporarily idle plants, because they were not competitive against cheaper Chinese products. Not surprisingly, last year the Brazilian steel industry lobbied the government to raise import tariffs to 25%, from 9.6-12.8% across different categories, following the example of other Latin American countries, such as Mexico. The government partially accommodated the request early this month, albeit still keeping flat steel products off the list.

Exhibit 15: China steel exports

Chinese steel exports rose by 35% YoY, topping 91Mt in 2023



Source: Bloomberg

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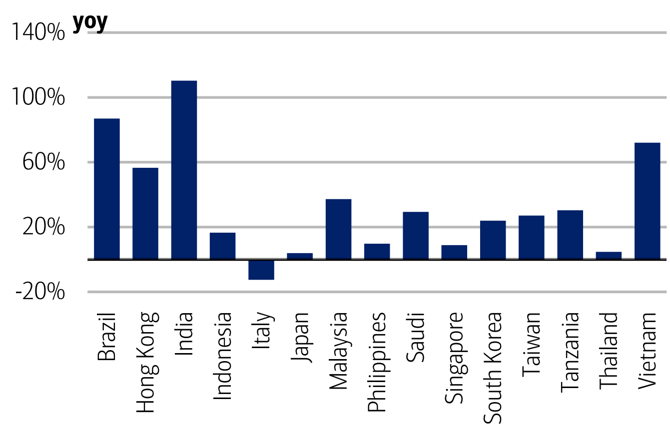
Exhibit 16: China iron & carbon steel products exports (2023)

Several markets have been flooded by cheap Chinese material



Source: Bloomberg

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While rising trade barriers are supportive for domestic steel prices ex-China, there is a wrinkle for the ferrous complex: with China exporting around 90Mt of steel last year, a reduction in shipments may well force production cuts, potentially with a negative impact on demand for steelmaking raw materials, such as iron ore and coking coal.

Appendix

Table 1: Commodity prices, exchange rates, equity indices, yields and inventories

Metal prices have stabilized

Base metals	Cash, $/t	3-month, $/t	Cash, WoW change	3-month, WoW change
Aluminium	2,176	2,197	-1.1%	-1.3%
Copper	8,354	8,435	2.8%	2.4%
Lead	2,044	2,043	0.8%	0.9%
Nickel	16,106	16,349	2.0%	1.9%
Tin	26,169	26,434	-3.4%	-3.2%
Zinc	2,363	2,402	2.6%	3.5%
LMEX	3,647		1.7%	
	Cash, c/lb	**3-month, c/lb**		
Aluminium	99	100		
Copper	379	383		
Lead	93	93		
Nickel	731	742		
Tin	1,187	1,199		
Zinc	107	109		
Other commodities, freight, exchange rates, equities and yields	**Spot**	**WoW change**		
Gold, $/oz	2,017	-0.1%		
Silver, $/oz	23	1.4%		
Platinum, $/oz	903	1.1%		
Palladium, $/oz	955	6.4%		
Iron ore, China fines cfr $/dmt	129	-0.2%		
Brent, $/bbl	84	1.9%		
Baltic Dry Index	1,629	3.6%		
EUR/USD	1.078	0.1%		
Dow Jones Industrial Average	38,628	-0.4%		
10-year US Treasury yield	4.281	2.4%		
ICE BofA Commodity index, ER	418	-0.4%		
ICE BofA Commodity index Industrial Metals, ER	173	1.8%		
ICE BofA Commodity index Precious Metals, ER	216	-0.1%		
ICE BofA Commodity index Energy, ER	509	0.0%		
Exchange stocks and cancelled warrants	**Stocks, tonnes**	**WoW change**	**Canc. warrants, tonnes**	**Canc. warr., of stocks**
Aluminium				
LME	525,225	-0.0%	199,825	38.0%
Shanghai	104,763	0.0%		
Total aluminium	629,988	-0.0%		
Copper				
LME	135,450	-0.6%	22,300	16.5%
Comex	20,617	0.0%		
Shanghai	86,520	0.0%		
Total copper	242,587	-0.3%		
Lead				
LME	162,475	4.2%	17,550	10.8%
Shanghai	37,723	0.0%		
Total lead	200,198	3.4%		
Nickel				
LME	71,946	0.0%	5,580	7.8%
Shanghai	15,965	0.0%		
Total nickel	87,911	0.0%		
Tin	6,280	0.0%	1,100	17.5%
Zinc				
LME	246,400	3.4%	31,650	12.8%
Shanghai	33,593	0.0%		
Total zinc	279,993	3.0%		

Source: BofA Global Research

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Exhibit 26: Price forecasts, fundamental drivers and risks
We are bullish a range of cyclical commodities

Metal	2024E	2025E	Fundamental drivers	Risks (D = downside; U = upside)
Aluminium	$2,563/t 116c/lb	$3,000/t 136c/lb	• China is almost operating at its 45mt capacity cap and smelters ex-China have closed capacity • China's smelters remain under pressure on hydro power shortages. At the same time, demand has been strong, so exports will likely remain capped • We expect rising deficits going forward	• D: No production discipline in China/World ex-China • D: China exports more • U: Smelter restraint and/or production disruptions reduce output • U: Stronger-than-anticipated demand growth
Copper	$8,625/t 391c/lb	$10,500/t 476c/lb	• Demand in China has been patchy, but grid spending has completely offset weakness in housing. Demand may be more balanced in 2024, and should hold up. Copper to rally, if the government pushes leads to broader recovery • Inventories are low, which is supportive, but could also increase volatility • We expect a small surplus for 2024	• D: China re-exports metal • D: Global demand slows sharply into next year • U: Strong restocking through the supply chain on improved confidence • U: Continued production disruptions in coming quarters
Lead	$2,000/t 91c/lb	$1,750/t 79c/lb	• There are no immediate scrap or concentrates shortages, suggesting the market could flip back into surplus • China's demand has slowed structurally, as the ebike market has matured	• D: Destocking in China or higher lead exports from the country. • U: Strong seasonal demand for replacement batteries after cold/hot winter/summer months
Nickel	$18,750/t 851c/lb	$20,000/t 907c/lb	• Nickel demand from electric vehicle producers should rise in the coming years, yet more NPI is being converted to nickel sulphate • China has built conversion capacity, which should take about 100Kt of Indonesian units into the refined market • Indonesian supply may prevent shortages near-term, but further out, more material is required • We expect a surplus for 2024, with prices increasingly supported by costs	• D: NPI producers don't close shop; ore inventories last for longer and more ores are imported form the Philippines. • D: Faster ramp-up of Indonesian NPI production • D: Stainless steel demand remains subdued
Zinc	$2,375/t 108c/lb	$2,250/t 102c/lb	• The zinc market has been better supplied, as demand from galvanisers has subsided • Zinc may remain an underperformer, but immediate downside more limited, also because costs have shifted higher on inflation • The surpluses could disappear, if more mine close	• D: Unreported inventories exist on the zinc market. More metal could become available • D: The zinc market is fragmented. There is evidence that miners, especially in China, could consider further output increases
Gold	$1,975/oz	$2,150/oz	• Gold has been a trade on US rates. The rally past $2,000/oz subsided as the Fed signalled a resumption of rate hikes. Until the end of the hiking cycle is reached, gold prices will remain capped. • If rate cuts come before 2Q24, gold could end next year at $2,400/oz • Central bank buying has been strong, but not sufficient; a Fed pivot may bring more investors into the market • Gold to rally in 2H24	• D: Deterioration of investor sentiment • D: Real rates become more positive; sustained USD rally • D: High gold prices deter buyers of physical gold; increased scrap supply
Silver	$23.26/oz	$24.75/oz	• The silver market has rebalanced on production discipline and demand from new applications including solar panels • As more spending on solar panels come through, silver should rally • Bottoming out of the global economy in 2024 should also help industrial demand	• U: Investors returning to the market • U: China's imports to rise • D: ETF liquidation • D: More supply
Platinum Palladium	$1,050/oz $750/oz	$1,250/oz $500/oz	• Palladium is slowly moving into surplus, keeping pressure on prices. • More production discipline is necessary. • Any supply cuts may reduce the palladium surpluses, but will likely push platinum into a deficit, so prices might diverge. • PGMs are in a difficult spot.	• D: Jewellery demand suffers due to rising prices • D: In palladium, the risk of deliveries from Russian stockpiles has not gone away • D: Demand from key buyers like Europe not increasing • U: Production disruptions reduce availability of PT and PD
Iron Ore	$125/t CIF	$90/t CIF	• Iron ore inventories at China's mills are extremely low. • Production cuts at mills, along with higher steel demand should support steel prices, likely pulling iron ore higher as well near-term	• D: China's steel production slowing sharply • U: Mine closures/slowdown in production increases
HCC Thermal coal	$270/t $150t	$215/t $125/t	• Thermal coal prices to come under pressure as supply is increasing and the energy emergency normalises • Normalisation of supply should also contribute to lower met coal prices	• D: Lack of supply discipline • U: Chinese steel production stronger (HCC) U: mine closures

Colours indicate our stance on each commodity: Green = bullish, Yellow = neutral, Red = cautious. **Source:** BofA Global Research estimates

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Exhibit 27: Commodity price forecasts

Copper and aluminium are stabilizing, we are still bearish lithium

		Current	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	2023E	2024E	2025E	2026E	2027E	2028E	LT price
Base metals															
Aluminium	US$/t	2,176	2,250	2,500	2,750	2,750	3,000	3,000	2,268	2,563	3,000	3,250	3,015	2,781	2,546
	USc/lb	99	102	113	125	125	136	136	103	116	136	147	137	126	115
Copper	US$/t	8,354	8,000	8,500	8,750	9,250	10,000	10,000	8,442	8,625	10,500	9,500	9,539	9,578	9,617
	USc/lb	379	363	386	397	420	454	454	383	391	476	431	433	434	436
Lead	US$/t	2,044	2,000	2,000	2,000	2,000	1,750	1,750	2,156	2,000	1,750	2,024	2,217	2,409	2,602
	USc/lb	93	91	91	91	91	79	79	98	91	79	92	101	109	118
Nickel	US$/t	16,106	18,500	18,500	19,000	19,000	20,000	20,000	21,786	18,750	20,000	20,000	19,141	18,283	17,424
	USc/lb	731	839	839	862	862	907	907	988	851	907	907	868	829	790
NPI, 8-12%	CNY/t		1,032	1,032	1,032	1,032	1,062	1,062	1,129	1,032	1,062	1,102	1,138	1,174	1,210
Zinc	US$/t	2,363	2,500	2,500	2,250	2,250	2,250	2,250	2,648	2,375	2,250	2,424	2,596	2,769	2,942
	USc/lb	107	113	113	102	102	102	102	120	108	102	110	118	126	133
Precious metals															
Gold, nominal	US$/oz	2,025	1,950	1,950	2,000	2,000	2,100	2,100	1,924	1,975	2,150	2,096	2,095	2,094	2,093
Gold, real	US$/oz		1,950	1,950	2,000	2,000	2,049	2,049	1,924	1,975	2,098	1,995	1,946	1,898	1,850
Silver, nominal	US$/oz	23.04	22.50	23.00	23.53	24.00	24.50	24.50	23.20	23.26	24.75	26.07	27.18	28.30	29.42
Silver, real	US$/oz		22.50	23.00	23.53	24.00	23.90	23.90	23.20	23.26	24.15	24.81	25.21	25.60	26.00
Platinum	US$/oz	908	1,000	1,000	1,100	1,100	1,250	1,250	976	1,050	1,250	1,322	1,372	1,421	1,471
Palladium	US$/oz	962	900	800	700	600	500	500	1,379	750	500	500	824	1,147	1,471
		Current	**1Q24E**	**2Q24E**	**3Q24E**	**4Q24E**	**1Q25E**	**2Q25E**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**LT price**
Bulk Commodities															
Hard coking coal	US$/t fob	315	360	280	210	230	240	190	290	270	215	205	212	219	226
Semi-soft	US$/t fob	153	238	185	139	152	158	125	220	178	142	135	134	133	132
Thermal Coal	US$/t fob	120	148	148	151	153	125	125	176	150	125	112	112	113	113
Iron ore fines	US$/t CIF	129	150	130	120	100	90	90	115	125	90	90	94	98	102
		Current	**1Q24E**	**2Q24E**	**3Q24E**	**4Q24E**	**1Q25E**	**2Q25E**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**LT price**
Other materials															
Lithium spodumene	US$/t	850	850	500	500	750	1,000	1,500	3,821	650	1,438	1,750	1,650	1,550	1,450
Lithium carbonate	US$/t	13,500	13,500	10,000	8,250	10,250	12,000	16,000	40,469	10,500	15,500	18,000	18,667	19,333	20,000
Lithium hydroxide	US$/t	13,000	14,000	11,000	9,700	11,750	13,500	17,500	44,500	11,613	17,000	19,500	20,167	20,833	21,500
Alumina	$/t	367	340	340	340	340	348	348	343	340	348	357	375	394	412
Uranium	$/lb		75.00	77.50	80.00	80.00	75.00	75.00	58.91	78.13	75.00	70.00	65.00	60.00	55.00
Molybdenum	$/lb	20.3	18.10	18.10	18.10	18.10	18.10	18.10	23.99	18.10	18.10	18.10	16.32	14.54	12.76
Cobalt	$/lb	15.8	18.00	18.00	18.00	18.00	18.00	18.00	17.57	18.00	18.00	18.44	19.84	21.23	22.63
Manganese ore	$/dmtu	4.20	4.35	4.35	4.35	4.35	4.35	4.35	4.79	4.35	4.35	4.93	5.52	6.11	6.70
Steel, HRC															
HRC, Europe	US$/t	699	719	701	639	674	721	702	767	683	714				
HRC, US	US$/t	992	1,130	1,020	882	805	799	799	975	959	799				
HRC, China	US$/t	552	568	585	602	623	592	597	565	595	602				
		Current	**1Q24E**	**2Q24E**	**3Q24E**	**4Q24E**	**1Q25E**	**2Q25E**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**LT price**
WTI	US$/bbl	79	73	75	77	75	57	57	79	75	57	57	57	57	57
Brent	US$/bbl	83	78	80	82	80	60	60	83	80	60	60	60	60	60
Henry Hub	US$/MMBtu	1.6	2.9	2.5	3.0	3.6	2.6	2.6	.7	3.0	2.6	2.6	2.6	2.6	2.6

Note: quarterly energy forecasts are period-end, rest are period averages; **Source:** BofA Global Research

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Supply and demand balances

Table 2: Aluminium supply and demand balance
Deficits set to increase

'000 tonnes	2022	2023	2024	2025	2026
Global production	68,342	69,881	72,280	73,902	75,238
YoY change	1.4%	2.3%	3.4%	2.2%	1.8%
Global consumption	69,061	70,415	73,447	76,385	79,440
YoY change	0.7%	2.0%	4.3%	4.0%	4.0%
Balance	**-719**	**-534**	**-1,167**	**-2,483**	**-4,203**
Market inventories	8,576	9,120	0	0	
Weeks of world demand	6.5	6.7	0.0	0.0	
LME Cash ($/t)	**2,706**	**2,268**	**2,563**	**3,000**	**3,250**
LME Cash (c/lb)	**123**	**103**	**116**	**136**	**147**

Source: SNL, Woodmac, CRU, Bloomberg, company reports, IAI, BofA Global Research
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Table 3: Copper supply and demand balance
Balanced market in 2023E

'000 tonnes	2022	2023	2024	2025	2026
Global production	24,717	26,418	26,508	27,655	28,318
YoY change	1.5%	6.9%	0.3%	4.3%	2.4%
Global consumption	25,164	26,061	26,868	27,943	29,061
YoY change	0.9%	3.6%	3.1%	4.0%	4.0%
Balance	**-447**	**357**	**-360**	**-288**	**-743**
Market inventories	1,030	1,016	656	367	
Weeks of world demand	2.1	2.0	1.3	0.7	
LME Cash ($/t)	**8,822**	**8,442**	**8,625**	**10,500**	**9,500**
LME Cash (c/lb)	**400**	**383**	**391**	**476**	**431**

Source: SNL, Woodmac, CRU, Bloomberg, company reports, ICSG, BofA Global Research
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Table 4: Nickel supply and demand balance
Nickel to be well supplied

'000 tonnes	2022	2023	2024	2025	2026
Global production	3,170	3,488	3,949	4,302	4,617
YoY change	16.2%	10.0%	13.2%	10.6%	11.1%
Global consumption	3,087	3,287	3,468	3,833	4,127
YoY change	0.1%	6.5%	5.5%	8.9%	6.0%
Balance, incl. NPI oversupply	**84**	**200**	**481**	**469**	**490**
Market inventories	476	676	1,157	1,626	2,116
Weeks of world demand	8.0	10.7	17.3	22.1	0.0
LME price ($/t)	**25,707**	**21,786**	**18,750**	**20,000**	**20,000**
LME price (c/lb)	**1,166**	**988**	**851**	**907**	**907**

Source: SNL, Woodmac, CRU, Bloomberg, company reports, INSG, BofA Global Research
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Table 5: Zinc supply and demand balance
Project pipeline not a significant risk

	2022	2023	2024	2025	2026
Global production	13,919	14,000	15,150	15,900	16,150
YoY change	-2.8%	0.6%	8.2%	5.0%	1.6%
Global consumption	13,607	13,513	14,104	14,400	14,703
YoY change	-3.2%	-0.7%	4.4%	2.1%	2.1%
Balance	**312**	**487**	**1,046**	**1,500**	**1,447**
Market inventories	3,482	2,648	2,375	2,250	2,424
Weeks of world demand	13.3	10.2	8.8	8.1	8.6
LME Cash ($/t)	**3,482**	**2,648**	**2,375**	**2,250**	**2,424**
LME Cash (c/lb)	**158**	**120**	**108**	**102**	**110**

Source: SNL, Woodmac, CRU, Bloomberg, company reports, ILZSG, BofA Global Research
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Exhibit 28: Iron ore supply and demand balance
Flipping back into surplus

Wet Mt	2022	2023E	2024E	2025E	2026E
Global production	2,363	2,375	2,422	2,504	2,544
YoY change	2.2%	0.5%	2.0%	3.4%	1.6%
Global consumption	2,301	2,348	2,372	2,374	2,386
YoY change	-5.0%	2.1%	1.0%	0.1%	0.5%
Balance	**63**	**27**	**50**	**130**	**157**
Iron ore price (US$/t)	**120**	**115**	**125**	**90**	**90**

Source: Woodmac, CRU, Bloomberg, company reports, BofA Global Research estimates
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Exhibit 29: Metallurgical coal supply and demand balance
Deficit to persist

Mt	2022	2023E	2024E	2025E	2025E
Global production	904	950	977	1,001	1,010
YoY change	-0.6%	5.1%	3.3%	2.4%	0.9%
Global consumption	925	971	993	991	1,003
YoY change	-1.4%	4.9%	2.3%	-0.2%	1.2%
Balance	**-21**	**-21**	**-15**	**10**	**7**
Met coal price (US$/t)	365	290	270	215	205

Source: Woodmac, McCloskey, company reports, BofA Global Research estimates
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Exhibit 30: Platinum supply and demand balance
Supply cuts could flip the market into a deeper deficit

'000 ounces	2022	2023	2024	2025	2026
Global production	6,530	6,584	7,333	7,760	7,858
YoY change	-13.9%	0.8%	11.4%	5.8%	1.3%
Global consumption	6,057	7,231	7,411	7,516	7,662
YoY change	-22.8%	19.4%	2.5%	1.4%	1.9%
Balance	**473**	**-647**	**-78**	**244**	**196**
Spot ($/oz)	964	976	1,050	1,250	1,322

Source: Matthey, company reports, BofA Global Research estimates
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Exhibit 31: Palladium supply and demand balance
Rising surpluses ahead

'000 ounces	2022	2023	2024	2025	2026
Global production	9,377	9,400	9,956	10,568	10,807
YoY change	-4.5%	0.2%	5.9%	6.1%	2.3%
Global consumption	9,829	9,710	8,771	8,434	8,024
YoY change	-3.2%	-1.2%	-9.7%	-3.8%	-4.9%
Balance	**-452**	**-310**	**1,185**	**2,134**	**2,783**
Spot ($/oz)	2,110	1,379	750	500	500

Source: Matthey, company reports, BofA Global Research estimates
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Table 6: Lithium supply and demand balance
The lithium market is increasingly oversupplied

tonnes	2022	2023	2024E	2025E	2026E
Global production	657,337	897,532	1,245,682	1,704,066	1,986,158
YoY change	-2.5%	36.5%	38.8%	36.8%	16.6%
Global consumption	688,335	869,496	1,120,566	1,410,128	1,778,390
YoY change	48.5%	26.3%	28.9%	25.8%	26.1%
Balance	**-30,998**	**28,036**	**125,115**	**293,938**	**207,768**
Spot ($/t)	71,531	45,980	10,500	15,500	18,000

Source: Company reports, Woodmac, Bloomberg, BofA Global Research estimates

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Table 7: Cobalt supply and demand balance
The cobalt market needs some supply cuts

tonnes	2022	2023	2024	2025	2026
Global production	198,235	231,241	274,225	301,692	309,256
YoY change	25.4%	16.6%	18.6%	10.0%	2.5%
Global consumption	186,279	210,900	250,033	291,266	335,607
YoY change	17.0%	13.2%	18.6%	16.5%	15.2%
Balance	**11,956**	**20,341**	**24,192**	**10,425**	**-26,351**
Spot ($/t)	68,428	38,733	39,681	39,681	40,652

Source: Company reports, CRU, Bloomberg, BofA Global Research estimates

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