Big Global Miners

3 Big Issues: Portfolios. Optionality. Points of differentiation.

Industry Overview

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Equity
Europe
Non-Ferrous-Aluminum & Light Metals

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3 Big Issues: Portfolio, optionality, differentiation

As markets digest US policy volatility, a nascent China recovery(?), sector M&A & metals demand from the energy transition (and now AI?), which is surprising up, Big Miners have "appropriate" leverage and are striking a balance between shareholder returns and investing for growth. Some commodities are rallying (copper, gold), some not so much (iron ore, coal). We consider 3 "Big Issues": (1) Portfolios; (2) Optionality; and (3) Differentiation.

Our equity views in brief

BHP (Buy): Spending to stand still in copper. Copper growth: Chile, Argentina, Australia.
Rio Tinto (Buy): Copper growth in Mongolia. Lithium = “New” business of scale.
Vale (Buy): Value over volume in Iron Ore. Past max cash-out?
Glencore (Buy): Coal prices close to trough. Solid copper optionality.
Anglo American (Buy): Shrink to grow = Portfolio transformation. World class copper.
Fortescue (Underperform): Iron ore and decarb in focus. Eyes on Capital allocation.
South32 (Buy): Increasing focus on base metals, executing on growth strategy.
Teck (Buy): Transformational copper growth "in hand". Execution a key focus.
Freeport (Buy): Blue-chip copper. Optionality in leaching. Eyes on Indonesia.

Big Issue #1: Portfolios. Evolving in real time…

By their nature, Big Miner portfolios don't change quickly. We note key developments: RIO (Rio Tinto) out of all coal, into lithium. BHP out of oil, into fertilizer. More copper. GLEN (Glencore): More coking coal. VALE: Out of coal, base metal sell down. FMG (Fortescue): Green industries. South32: Out of coal, into copper. Anglo American: Out coal, diamonds, nickel, PGMs (platinum group metals). TECK: Out of coal, oil.

Big Issue #2: Optionality = Beyond committed growth.

Most Big Miners have 1-3 projects in execution, a greenfield plus 1-2 brownfield. Fertilizer features big for greenfield (BHP, Anglo). RIO now growing in Lithium. Copper: Many brownfield and greenfield growth options. Iron ore: brownfield & greenfield, too.

Big Issue #3: Points of differentiation

Iron ore & copper feature large in Big Miner portfolios = Convergence. That said, most companies have something that differentiates them from peers. RIO: Lithium, aluminium. GLEN: Trading, coal. BHP: Potash. AAL: Restructuring. FCX (Freeport-McMoRan): US footprint.

Existentialism. Why own a Big Miner?

We reflect on the "myth" of the Big Miner that: (1) Owns Tier 1 assets; (2) Invests contra-cyclically; (3) Generates returns > WACC; (4) Pays a progressive dividend. We think the myth has been "exploded" and that China and other developments "competed away" some historical Big Miner advantages (funding, cost of capital, institutional knowledge). Top down, we consider (1) China Macro; (2) India growth; and (3) Energy transition. What drives mining equity? We think: (1) Price; (2) Volume; (3) Self-help.

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Refer to important disclosures on page 120 to 123. Analyst Certification on page 117. Price Objective Basis/Risk on page 114.

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Comparable company valuations

Exhibit 1: Comparable company valuations
Comparable valuations based on our house "base case" commodity price forecasts

					EPS			PER-Calendar			NPV	P/NPV	ND/Eq	FCF Yield			EV/EBITDA			DY	MV	ND
Big Miners	**Symbol**	**BofA QRQ**	**Shr Price**	**Ccy**	**2025E**	**2026E**	**2027E**	**2025E**	**2026E**	**2027E**	**2025E**	**2025E**	**2025E**	**2025A**	**2026E**	**2027E**	**2025A**	**2026E**	**2027E**	**2025A**	**$bn**	**$bn**
BHP Group Limited	BHPLF	BUY (B-1-7)	AUD 37.72	USD	1.95	1.81	1.83	12.8x	13.2x	12.3x	46	0.82x	26.5%	4.8%	2.3%	3.3%	6.1x	6.2x	6.2x	3.7%	122.2	13.6
Rio Tinto Plc	RTPPF	BUY (B-1-8)	GBP 4585.5	USD	5.31	5.67	6.78	11.6x	10.8x	9.1x	6951	0.66x	26.7%	0.6%	1.8%	4.2%	6.0x	5.3x	4.6x	4.8%	99.6	0.8
Anglo American	AAUKF	BUY (B-1-8)	GBP 2099	USD	0.92	1.16	1.56	30.6x	24.2x	18.0x	2110	0.99x	39.3%	-2.0%	-2.3%	0.3%	8.7x	7.4x	6.5x	1.3%	34.0	6.2
Glencore Plc	GLCNF	BUY (B-1-8)	GBP 266.45	USD	0.10	0.25	0.31	34.3x	14.2x	11.6x	414	0.64x	100.7%	2.3%	7.0%	7.9%	5.8x	4.6x	4.5x	2.8%	43.5	36.0
Vale SA	VALE	BUY (B-1-8)	USD 9.44	USD	1.37	1.43	1.13	6.9x	6.6x	8.4x	14.2	0.66x	31.5%	8.3%	9.9%	6.5%	5.3x	5.2x	5.8x	6.8%	42.8	1.5
South32 Ltd	SHTLF	BUY (B-1-8)	AUD 2.65	USD	0.14	0.12	0.24	13.0x	10.4x	6.2x	3.33	0.80x	1.6%	0.2%	-10.3%	-5.6%	4.2x	4.2x	2.9x	3.4%	7.5	-0.3
Fortescue Ltd.	FSUMF	UNDE (B-3-8)	AUD 15.36	USD	1.07	0.85	0.44	10.4x	17.0x	23.4x	19.0	0.8x	6.0%	6.9%	4.5%	-2.2%	4.3x	4.8x	6.6x	7.1%	30.2	0.3
Teck Resources Ltd	TECK	BUY (C-1-7)	USD 33.84	CAD	1.75	3.66	4.23	26.8x	12.8x	11.1x	32	1.1x	-6.2%	5.6%	8.7%	9.8%	5.8x	3.9x	3.5x	1.1%	16.8	5.0
Freeport-McMoRan	FCX	BUY (C-1-7)	USD 34.06	USD	1.31	1.84	2.33	26.0x	18.5x	14.6x	38	0.9x	17.1%	2.9%	8.4%	16.3%	6.8x	5.2x	4.4x	1.8%	48.9	6.1
Median									**13.2x**	**11.6x**		**0.8x**	**26.5%**		**4.5%**	**4.2%**	**5.8x**	**5.2x**	**4.6x**	**3.4%**		

Source: BofA Global Research estimates

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Exhibit 2: Comparable company valuations
Comparable valuations based on our house "base case" commodity price forecasts

							ROE			ROCE			EV/Sales			EV/IC			NPV	P/NPV
Company	**Symbol**	**ML QRQ**	**Shr Price**	**Target**	**Upside**	**Ccy**	**2025**	**2026**	**2027**	**2025**	**2026**	**2027**	**2025**	**2026**	**2027**	**2025**	**2026**	**2027**	**2026**	**2026**
BHP Group Limited	BHPLF	BUY (B-1-7)	AUD 37.72	47	24.6%	USD	21.4%	18.3%	16.9%	13.0%	12.6%	12.1%	3.0x	3.1x	3.1x	1.6x	1.6x	1.5x	47	0.8x
Rio Tinto Plc	RTPPF	BUY (B-1-8)	GBP 4585.5	7300	59.2%	USD	15.2%	15.3%	16.9%	11.2%	11.5%	13.0%	2.5x	2.3x	2.2x	1.3x	1.2x	1.1x	7308	0.6x
Anglo American	AAUKF	BUY (B-1-8)	GBP 2099	2500	19.1%	USD	5.3%	6.6%	8.5%	4.0%	4.9%	5.7%	2.5x	2.3x	2.1x	1.0x	1.0x	0.9x	2211	0.9x
Glencore Plc	GLCNF	BUY (B-1-8)	GBP 266.45	410	53.9%	USD	3.1%	7.3%	8.6%	3.3%	5.7%	6.3%	0.3x	0.3x	0.3x	0.8x	0.8x	0.8x	414	0.6x
Vale SA	VALE	BUY (B-1-8)	USD 9.44	12	27.1%	USD	16.9%	16.2%	11.8%	12.1%	11.8%	9.3%	2.1x	2.0x	2.0x	1.1x	0.9x	0.9x	14	0.7x
South32 Ltd	SHTLF	BUY (B-1-8)	AUD 2.65	3.9	47.2%	USD	6.8%	5.9%	11.0%	7.6%	9.3%	13.7%	1.2x	1.3x	1.1x	0.6x	0.6x	0.5x	4	0.7x
Fortescue Ltd.	FSUMF	UNDE (B-3-8)	AUD 15.36	15	-2.3%	USD	16.7%	13.0%	6.5%	12.5%	10.1%	5.4%	2.1x	2.2x	2.5x	1.2x	1.1x	1.1x	19	0.8x
Teck Resources Ltd	TECK	BUY (C-1-7)	USD 33.84	53	56.6%	CAD	3.4%	6.8%	7.4%	3.6%	6.0%	6.6%	2.3x	1.9x	1.8x	0.5x	0.5x	0.5x	35	1.0x
Freeport-McMoRan	FCX	BUY (C-1-7)	USD 34.06	46	35.1%	USD	10.4%	13.6%	15.5%	8.2%	12.0%	13.6%	2.6x	2.2x	2.0x	1.3x	1.2x	1.1x	39	0.9x
Median							**10.4%**	**13.0%**	**11.0%**	**8.2%**	**10.1%**	**9.3%**	**2.3x**	**2.2x**	**2.0x**	**1.1x**	**1.0x**	**0.9x**		**0.8x**

Source: BofA Global Research estimates

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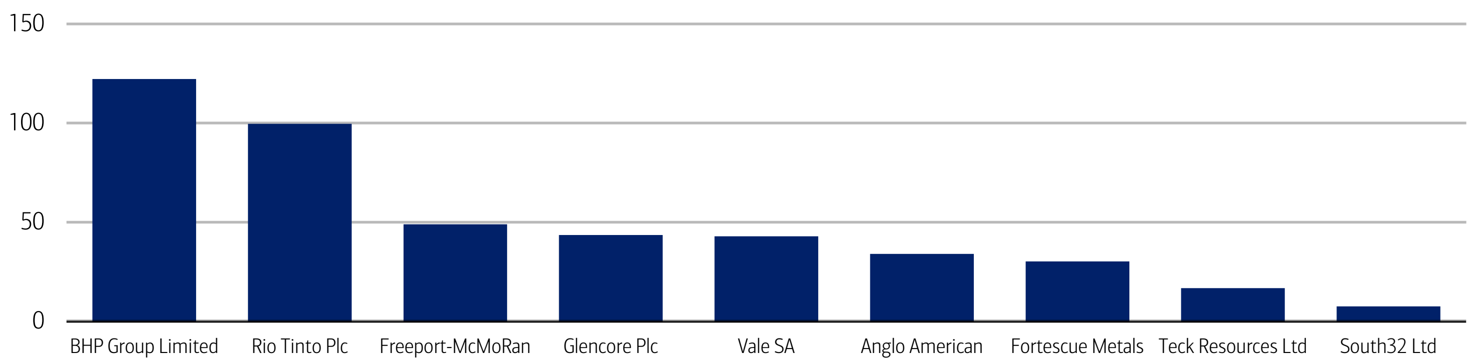
Exhibit 3: Market capitalization (US$bn) for Big Miners
BHP and RIO are the two largest Big Miners, both with market cap of c. US$100bn



Source: BofA Global Research

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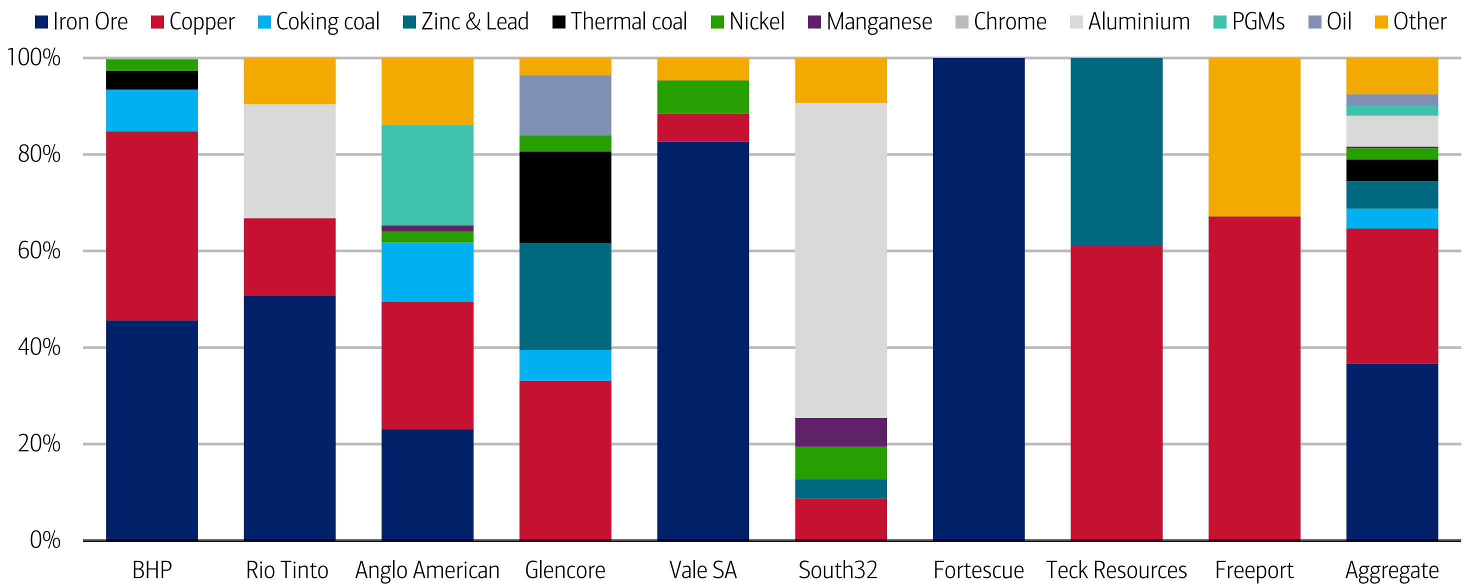
Revenue breakdown by commodity

Exhibit 4: Revenue breakdown by commodity, 2024A

Revenue breakdown by commodity, industrial assets only



Source: Company reports. Note: GLEN revenue breakdown for "industrial" activities only, ex-marketing.

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Big Issue #1: Portfolios

Portfolios. Evolving. Albeit slowly.

By their nature, Big Miner portfolios don't change quickly. We note key developments: RIO out of all coal, into lithium. BHP out of oil, into fertilizer. More copper. GLEN: More coking coal. VALE: Out of coal, base metal sell down. FMG: Green industries. South32: Out of coal, into copper. Anglo: Out coal, diamonds, nickel, PGMs. TECK: Out of coal, oil.

Everybody wants more copper

Our tagline is: **"Decarbonization = Increased Metal Intensity".** There is a pretty bullish inference here for electrification metals, think copper, nickel, cobalt maybe lithium, silver, rare earth. Today: Some have more, some less. But everybody seems to want more of these "future facing commodities" - copper in particular.

Key charts: Portfolio evolution over time.

BHP

2021 – Agreed to divest South Walker Creek and Poitrel met coal mines to Stanmore and demerge Petroleum into Woodside

2022 – scrapped previous plans for exit from thermal coal assets

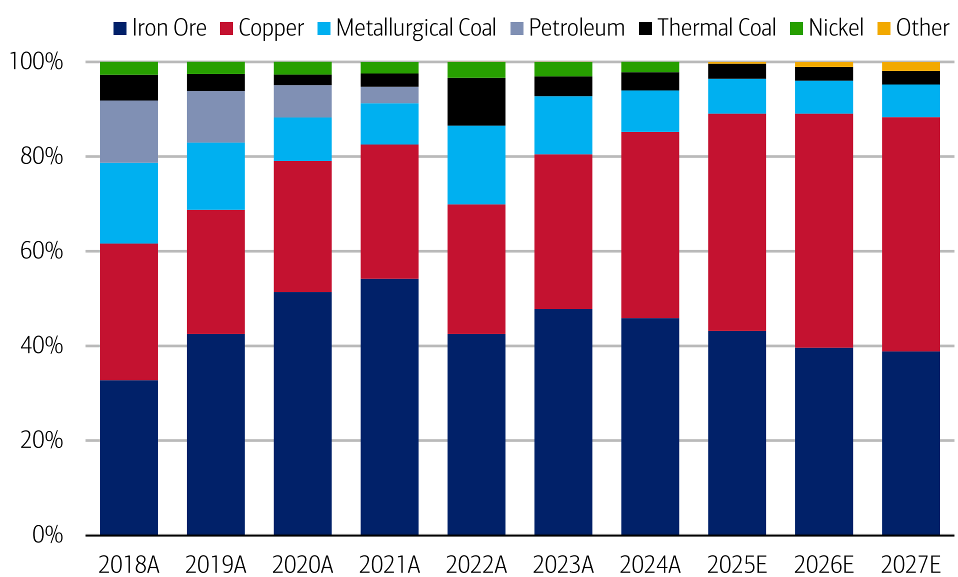
2023 – bought Australian copper producer Oz Minerals

2023 – sold two metallurgical coal assets in Australia (Daunia and Blackwater) to Whitehaven

2024 – suspended Australian Nickel operations until at least 2027 (to be reviewed in February 2027).

2024 – added more long-term copper optionality by investing with Lundin into Argentine copper district (Vicuña).

Exhibit 5: BHP – revenue breakdown by commodity (2018-2027E)
Out of Petroleum. Iron ore and copper dominate. Copper becoming more important.



Source: BofA Global Research estimates, company report

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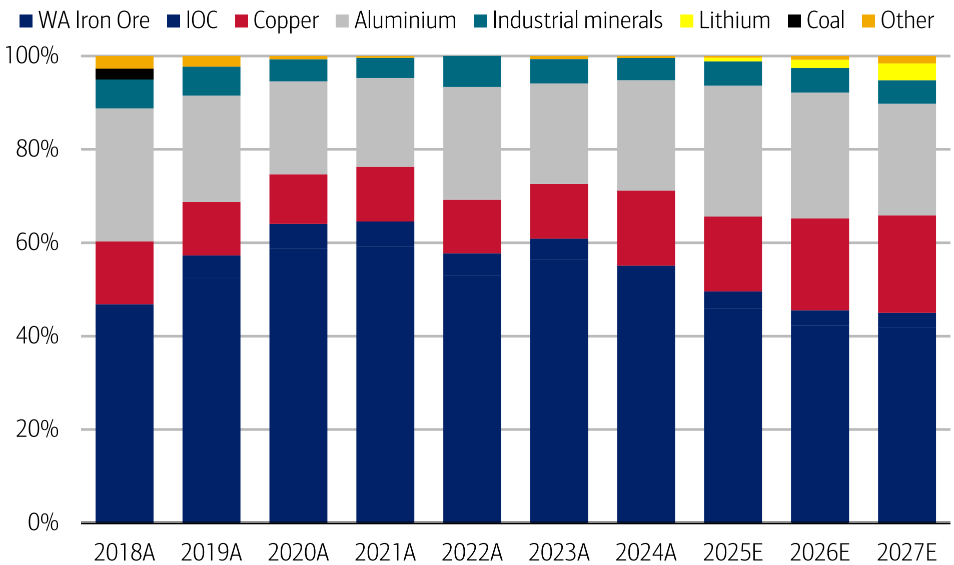
Rio Tinto

2018 – completed exit from coal by selling last assets in Australia

2024 – bought Arcadium Lithium and committed to $2.5bn expansion of its Rincon project in Argentina

Exhibit 6: Rio Tinto – revenue breakdown by commodity (2018-2027E)

Iron ore dominates, copper contribution increases as Oyu Tolgoi ramps up production from underground, lithium starting to contribute from 2025E



Source: BofA Global Research estimates, company report

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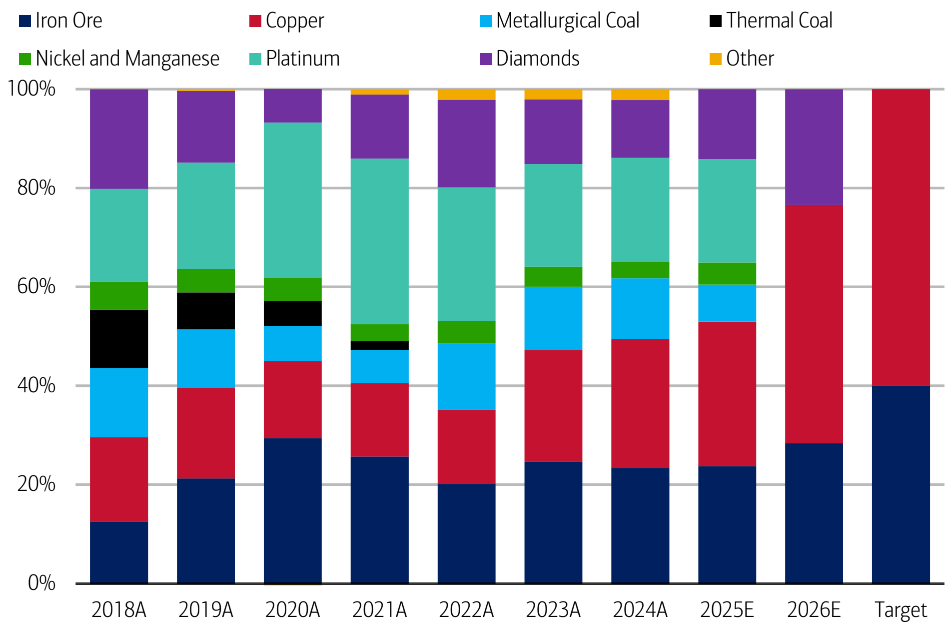
Anglo American

2021 – demerged South African thermal coal assets (Thungela)

2024 – following an approach from BHP, Anglo announced its own restructuring. Broadly: Platinum, DeBeers, Coking Coal out. Fertilizer investments slowed down. Nickel exit or care & maintenance. Restructuring is now progressing at pace, with Platinum timeline laid out (separation in June 2025). Coal sale completion in 2025, Nickel sale in Q3'25.

Exhibit 7: Anglo American – revenue breakdown by commodity (2018-2027E)

Restructuring is now progressing at pace, with Platinum timeline laid out (separation in June 2025). Coal sale completion in 2025, Nickel sale in Q3'25. Note: We don't include fertilizer (yet) as it is not board approved.



Source: BofA Global Research estimates, company report. Note: 2025 shown on a full-year basis pre-exit of remaining coal, nickel & PGMs.

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Glencore

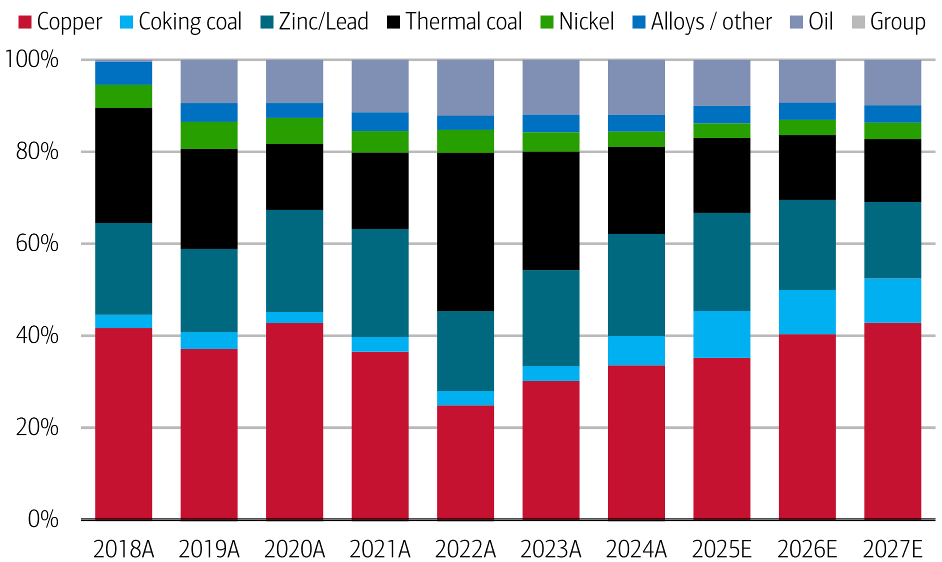
2023 – Purchased stake in Alunorte and Mineracão Rio do Norte

2023 – Viterra and Bunge merger, expected completion now 1H 2025.

2023 – acquired steel-making coal assets from Teck, completed H2 2024.

Coal demerger? Glencore has previously discussed demerging its combined coal and carbon steel materials business. This was put up for shareholder consultation in 2024. Shareholders endorsed keeping rather than demerging the business. Some investors think that coal provides an interesting, dependable source of cash flow that can be deployed either for share buybacks or M&A.

Exhibit 8: Glencore – revenue breakdown by commodity (2018-2027E)
Growing exposure to Met coal after acquiring TECK's coking coal assets



Source: BofA Global Research estimates, company report. Note: Industrial revenue only.

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Vale

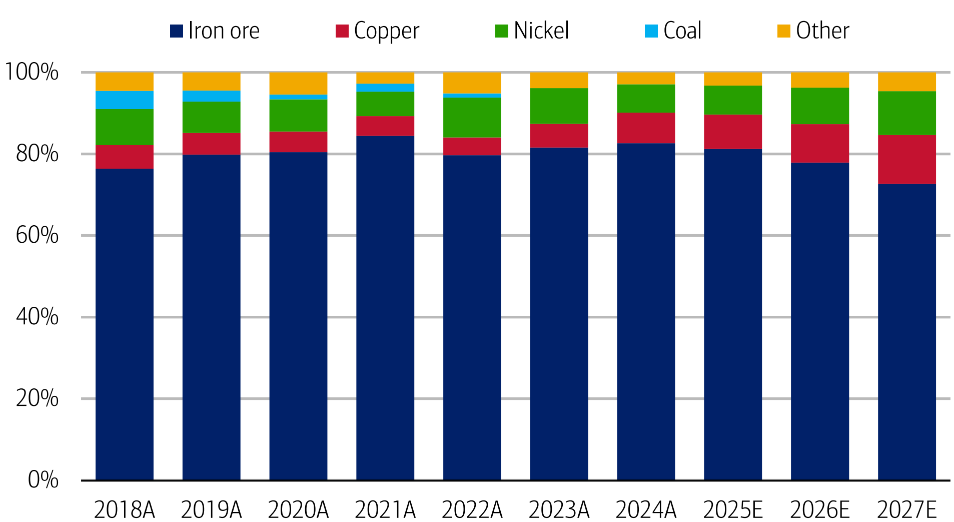
2016 – sold fertilizer assets to Mosaic

2021 – sold coal assets to Vulcan Resources

2023 – sold stake in base metals unit to Saudi Arabia's Maaden

2024 – acquired 15% in Anglo America's Minas-Rio mine, in exchange for Serra Serpentina and $157.5m

Exhibit 9: Vale – revenue breakdown by commodity (2018-2027E)
Iron still very much the key commodity for VALE



Source: BofA Global Research estimates, company report

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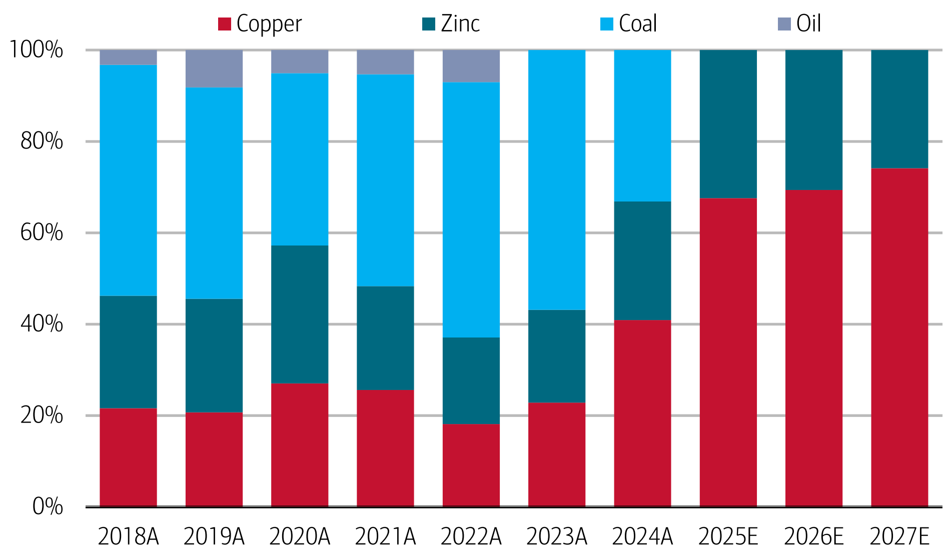
Teck Resources

2023 – completed exit of Fort Hills oil sands assets

2023 – sold steelmaking coal assets to Glencore

2023, 2024 – ramp-up of Quebrada Blanca II (QB2) mega-project in Chile, increasing copper importance.

Exhibit 10: Teck – revenue breakdown by commodity (2018-2027E)
Exited oil and met coal. Copper now the dominant product as QB2 ramps up.



Source: BofA Global Research estimates, company report

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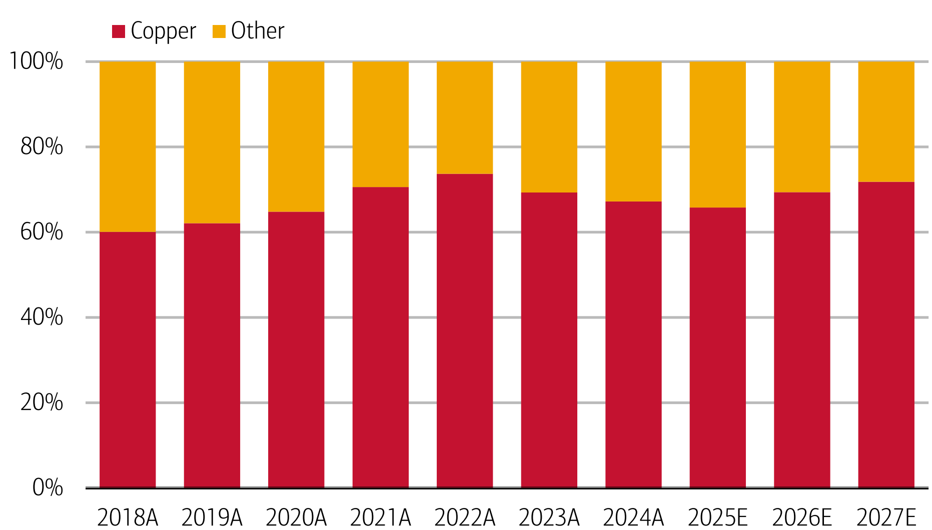
Freeport-McMoRan

2019 – sold Finland cobalt refinery to Umicore

2020 – sold 95% stake in undeveloped copper-cobalt project in DRC (Kisanfu) to China Molybdenum (CMOC)

Exhibit 11: Freeport – revenue breakdown by commodity (2018-2027E)
Effectively trades as a copper "pure play". Gold, molybdenum other key products. Aside: Freeport used to trade on a premium multiple to other industrial mining peers due to its gold exposure.



Source: BofA Global Research estimates, company report

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South32

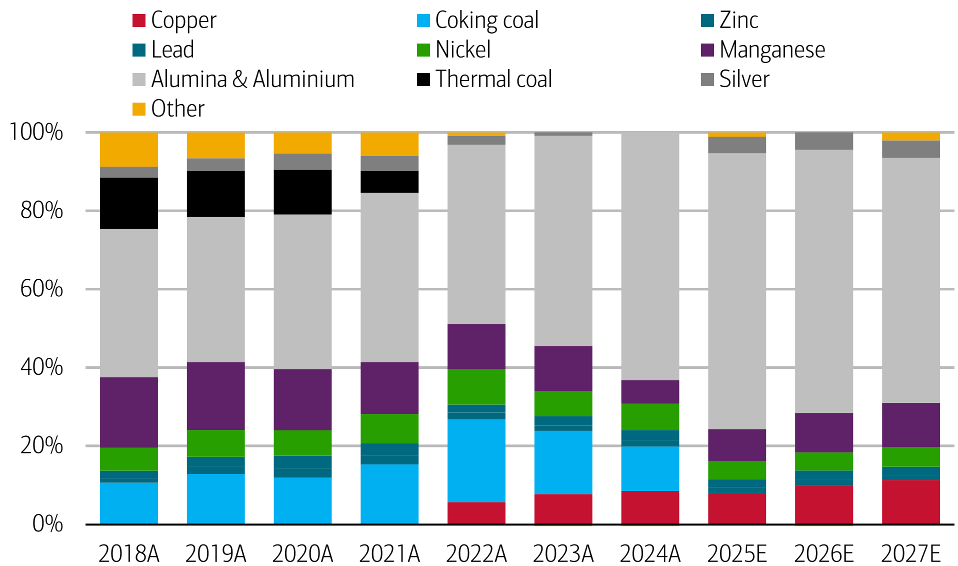
2019 – sold South Africa thermal coal assets to Seriti

2022 – completed acquisition of 45% interest in Sierra Gorda copper mine, Chile.

2024 – agreed to sell met coal assets (Illawarra) to an entity owned by Golden Energy and Resources Pte Ltd (GEAR) and M Resources

2027 – expected first production from Hermosa project in Arizona.

Exhibit 12: South32 – revenue breakdown by commodity (2018-2027E)
Exiting coal. Entering copper via Sierra Gorda stake.



Source: BofA Global Research estimates, company report. *Future revenue adjusted for sale of coking coal from F1H25
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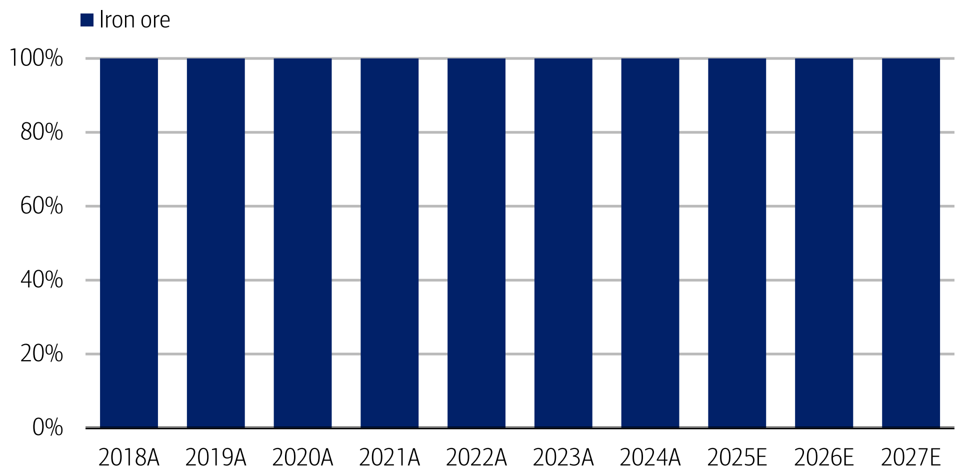
Fortescue

2022 – acquisition of Williams Advanced Engineering

2025 – controlling stake in Red Hawk

Aside: At the moment Fortescue is effectively an iron ore pure-play. As part of its Fortescue Future Industries (FFI) initiative some years ago, the group would have branched out into production of Green energy-related products (e.g., renewable power, hydrogen). That said, FFI has effectively been rebranded as Fortescue Energy with more of a focus on delivering decarbonization in the group's own operations than developing stand-alone "green" projects.

Exhibit 13: Fortescue – revenue breakdown by commodity (2018-2027E)
Iron ore pure play. FMG Future facing industries (FFI) when?



Source: BofA Global Research estimates, company report

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Big Issue #2: Optionality

Optionality = Beyond committed growth.

Most Big Miners have 1-3 projects in execution, a greenfield plus 1-2 brownfield. Copper: Many brownfield and Greenfield growth options. Iron ore: Brownfield & Greenfield, too.

BHP

Pilbara expansion = Iron ore is THE tier 1 asset for BHP

BHP is the world's third-largest iron ore producer with production of 260 Mt (100% basis) in FY24A and one of the lowest cost major producers with C1 costs of $18.7/t in FY24a. WAIO accounts for 58% of BHP's group EBITDA est (BofAe) in FY25e while 56% of our BHP group NPV. WAIO (Western Australian Iron Ore) has an interconnected system with four processing hubs (Newman, Jimblebar, Yandi and Mining Area C) supported by 5 mines.

BHP is growing its iron ore production, though notably at no rush. To achieve 300Mtpa by FY25 requires debottlenecking the current rail and port. BHP sees an extra 10Mtpa of iron ore shipments in three years amid South Flank's fully ramp up by FY25 and Yandi's available infra maybe conservative, in our view. Capital intensity: US$45-US$60/t guide by BHP (compare to $200/t for "greenfield"). Phase II to produce 330Mtpa is fairly long dated (end of decade) requiring another car dumper, routes and yard expansion. Studies on capital intensity for Phase II are ongoing.

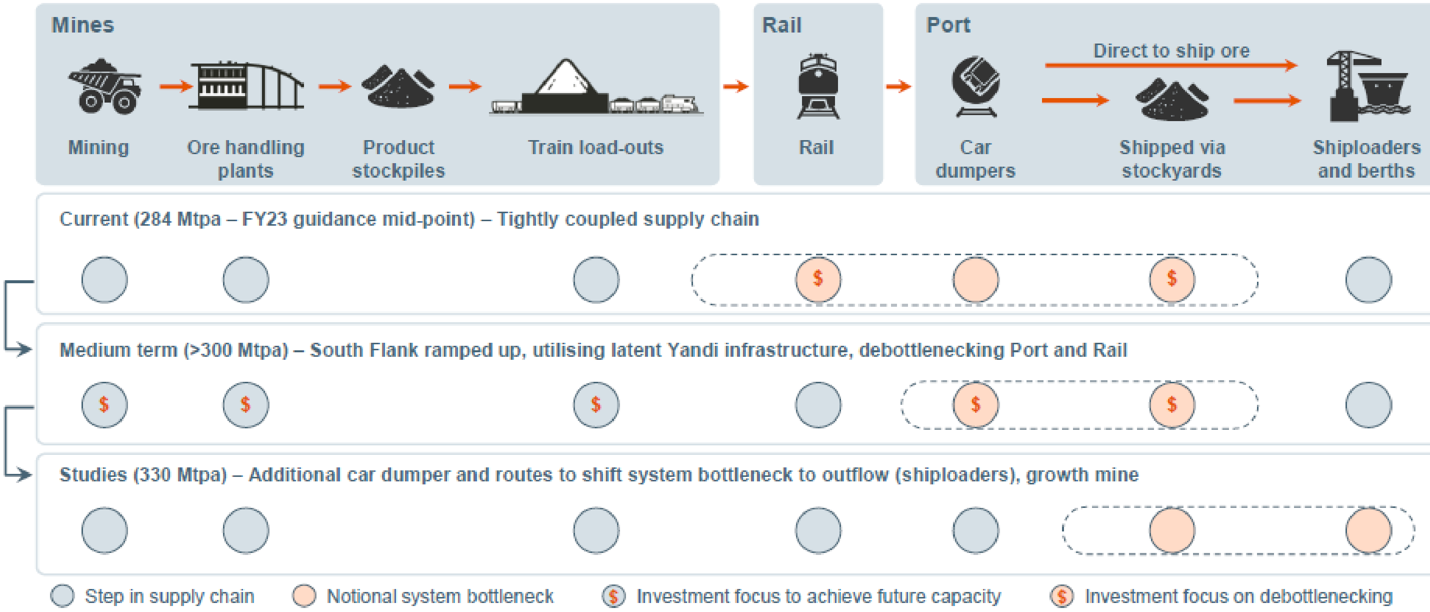
In our discussions with the company, management has indicated that even if studies are "positive" there is no guarantee that further expansion of Pilbara will move ahead; the project would still need to compete for capital with other projects and the group's long-term views on commodities will feed into these capital allocation decisions.

Original note: WAIO site visit. Restarting the iron ore growth machine.
Published 3 October 2022

Unlocking capacity to grow

BHP is studying the 300Mtpa as well as the options to produce 330Mtpa. Bottleneck to move to 300 Mtpa in the medium term is Port and Rail. Additional car dumper and routes to shift system will enable BHP to study the options to produce 330 Mtpa.

Exhibit 14: Unlocking capacity across the value chain
BHP is shifting the bottleneck to the port over the medium term



Source: Company presentation

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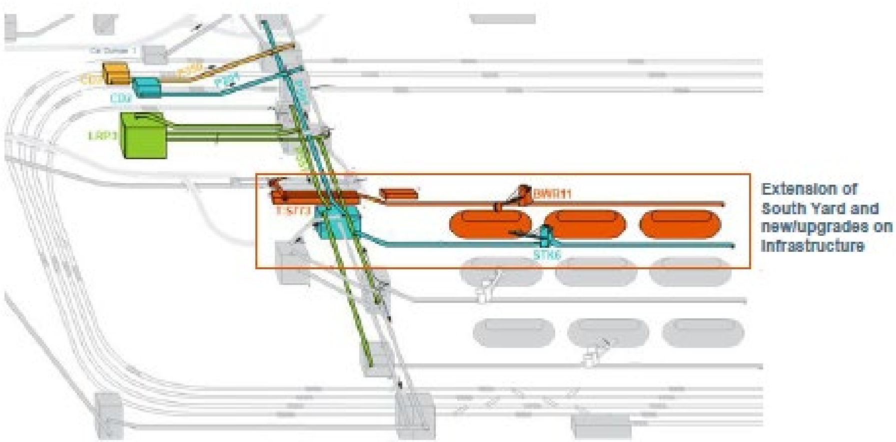
Targeted expansion to >300Mtpa and potentially 330Mtpa

Phase I - growth to 300Mtpa: From current 284Mtpa (FY23 guidance mid-point) to 300Mtpa as the medium-term target by 2025, BHP will be focusing on debottlenecking the inflow system in port and rail. Capital intensity of between US$45-US$60/t has been provided by BHP today. Port debottlenecking project (PDP1) is expected to complete in FY24 includes a yard extension and rate increases on BHP's ship-loader routes. South Flank is expected to ramp up to full capacity by FY25. Mine replacement and expansion primarily through crusher and conveyor infrastructure including wet processing infrastructure at Newman to manage increasing below water table ore. With Yandi depleting in a few years, there's potential to utilize Yandi infrastructure through developing nearby orebodies.

Exhibit 15: Phase I to grow to 300 Mtpa – Maximizing capacity through port five car dumpers system
From current 284Mtpa (FY23 guidance mid-point) to 300Mtpa as the medium term target by 2025, BHP will be focusing on debottlenecking the inflow system in port and rail



Source: Company presentation

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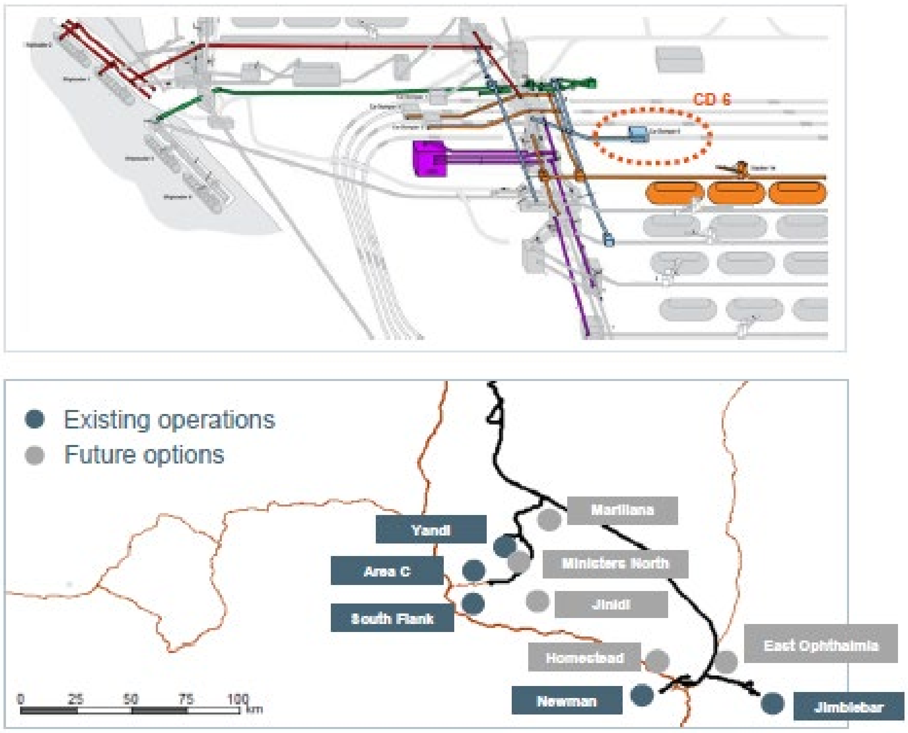
Phase II - growth to 330Mtpa

The phase II growth to 330Mtpa studies are expected to complete in FY25 with production expected at the end of this decade. Further debottlenecking the port required, likely through an additional car-dumper, routes and yard expansion. Mine options include Ministers North, Jinidi, Homstead, East Opthalmia and Marillana.

Exhibit 16: Phase II – studying options for growth to 330 Mtpa
Enable a stable future proof supply chain, studies expected to be completed in FY25



Source: Company presentation

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Vicuña copper district

In July 2024, BHP and Lundin agreed to acquire Filo Corp – owner of Filo del Sol (FDS) copper project in Argentina and in addition to jointly (50/50) develop Lundin's own Josemaria copper-gold project, also located in Argentina, contiguous to the FDS property. According to BHP, the combined projects could be a top 10 global copper operation (>300 ktpa). The transaction closed in January 2025 with timing and scope of technical studies expect in H1'25.

Original note: BHP and LUN to acquire Filo, and partner to develop the Vicuña copper district Published 30 July 2024

Josemaria Project overview

(Source: Lundin Mining)

Josemaria is a large-scale copper-gold-silver project. The project is wholly owned and operated by Lundin Mining's Argentinian subsidiary Desarrollo de Prospectos Mineros S.A. Lundin Mining acquired the project with the April 2022 acquisition of Josemaria Resources Inc.

Location Overview

Josemaria is located in the San Juan Province of Argentina, approximately 9 km east of the Chile-Argentina border. The project topography is mountainous with broad, flatbottomed valleys and moderately steep slopes ranging in elevation from approximately 4,000 to 4,900 m above sea level. Access to site is to be from the city of San Juan, a major mining centre, along public two-lane paved roads and a project-developed and maintained gravel road. The project has ready access to water, grid power, as well as transportation and logistics infrastructure wholly within San Juan province.

Project Overview

The Josemaria project is to be developed as a large-scale open pit mining operation. As currently envisaged, over 1 billion tonnes of ore will be mined at average diluted head grades of approximately 0.30% copper, 0.22 g/t gold and a strip ratio of 0.98 over a 19-year mine life.

The project is to employ conventional truck and shovel open-pit mining with conventional primary crushing, grinding and flotation at an estimated average processing rate of 152,000 t/d. Facilities on site include crushing, grinding, flotation, concentrate and tailings thickening, concentrate filtration, storage and loadout. To maximize productivity, efficiency and safety in a high-altitude environment, functions will be autonomously operated as much as possible.

Run-of-mine material will be delivered from the open pit to two gyratory crushers with crushed ore transported via an overland conveyor to a coarse ore stockpile. Material will be reclaimed from the coarse ore stockpile and conveyed to three SAG mill/ball mill circuits. Conventional copper rougher flotation, followed by concentrate re-grinding and copper cleaner flotation, will result in the production of a copper concentrate with a copper grade of 26% to 32% copper and payable precious metals. The gold-rich copper concentrate is to be transported by truck to San Juan, where it will be loaded onto rail and taken to the port at Rosario for export to international customers.

Geologic and Exploration Overview

Josemaria is classified as a porphyry copper-gold system. The deposit area presently measures approximately 1,500 m north-south by 1,000 m east-west and 600 to 700 m vertically from surface, within a larger alteration footprint of up to 4 km north-south by 2 km east-west. The deposit remains open to the south, beneath a thickening cover of post mineral volcanic rocks and also at depth.

Filo del Sol Project overview

(Source: Filo Corp)

The Filo del Sol Project is located in the San Juan Province of Argentina and the adjacent Atacama Region of Northern Chile, 140 kilometres southeast of the city of Copiapó, Chile and straddles the border between Argentina and Chile.

FDS contains an indicated resource of 3.2 B lb Cu; 4.6 M oz. Au; 160.4 M oz. Ag and inferred resource of 1.3 B lb Cu; 2.1 M oz. Au; 50.3 M oz. Ag.

Filo del Sol PFS Highlights

- A $1.31 billion after-tax NPV using an 8% discount rate and an IRR of 20% at $3.65/lb copper, $1700/oz gold and $21/oz silver

- Average annual production of approximately 66,000 tonnes of copper (including copper as copper precipitate), 168,000 ounces of gold, and 9,256,000 ounces of silver at a C1 cost of $1.54/lb CuEq

- An Initial Probable Mineral Reserve of 260 Mt of 0.39% copper, 0.34 g/t gold, and 16 g/t silver
- Pre-production capital cost of $1.81 billion (excluding costs prior to a construction decision)
- 13 year mine life (including pre-stripping)
- Low strip ratio of 1.57:1 (waste:ore)
- Excellent metallurgy producing LME grade copper cathodes and gold and silver doré
- Incorporates planning for a fully autonomous haul truck fleet and recovery of additional copper as sulphide precipitate with coincident regeneration of a portion of the cyanide, which drives the low estimated operating costs
- Potential opportunities to further improve the project include:
    - Increasing metallurgical recoveries with additional test work and optimization of process parameters;
    - Delineating more or higher-grade material through continued exploration on the Company's extensive land package; and
    - Future exploitation of copper-gold sulphide material underlying the identified oxide deposit.

Oak Dam

Oak Dam is a potential new iron oxide, copper, gold (IOCG) mineralised system 65km to the south east of BHP's Olympic Dam operation in South Australia, first announced in 2019. BHP assays identified multiple intervals ranging between 0.25 and 5.77 per cent copper from 10 diamond drill holes in 2019.

Oak Dam is planned to be one part of supply (the other coming from Prominent Hill) for the potential (FID in FY26) two-stage smelter at Olympic Dam which will increase BHP's copper capacity in South Australia to >500 ktpa.

In August 2024, BHP has provided an initial inferred resource of 8.84 Mt of contained copper for Oak Dam, ~75% larger than Carrapateena.

Oak Dam copper exploration target appears promising

In May 2023, BHP completed the $7bn acquisition of OZ Minerals which now forms part of the newly formed Copper South Australia business which comprises Olympic Dam, Prominent Hill and Carrapateena. For FY24, BHP has guided for production of 310-340kt for Copper South Australia and has an aspirational target to produce >500ktpa of copper from Copper South Australia mainly driven by the ramp up of the Carrapateena block cave. However, achieving this aspirational target may also be dependent on the potential development of the Oak Dam prospect located 35km from Carrapateena.

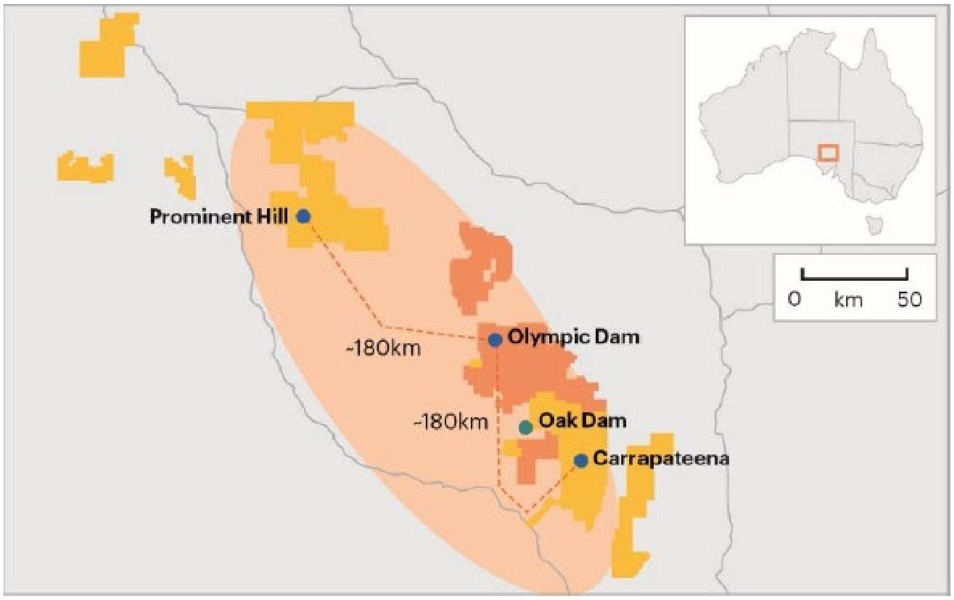
BHP has now defined an exploration target at Oak Dam of 500 to 1,700 Mt of copper with a grade of 0.8-1.1%. For context, Carrapateena contains a resource of 900 Mt at 0.56% copper and 0.24g/t gold and is expected to produce c.110-120ktpa of copper during 2027-38 from Block Cave 1. BHP has commenced the next phase of drilling as the company seeks to define a Mineral Resource possibly in CY24. BHP plans to increase from nine drill rigs to 11 rigs by the end of CY23.

One source of potential synergies from the recent OZL acquisition is the potential to process copper ore from the underground Oak Dam mine through the Carrapateena concentrator (located 35km away), then transport the copper concentrate to Olympic

Dam to produce copper cathode. This is one of the potential synergies that could be extracted from the recent OZ Minerals acquisition as BHP could achieve lower capex, transportation and TC/RC costs for a potential Oak Dam project.

Exhibit 17: Copper South Australia location map

Oak Dam is located ~35km from Carrapateena which could potentially process copper ore from Oak Dam



Source: Company presentation

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Rio Tinto

Resolution copper

Resolution is one of the largest undeveloped copper deposits in the world and will be mined by underground block caving methods. Estimated copper ore resource is 728Mt (measured and indicated) at an average grade of 1.9% copper. The project is a joint venture owned by Rio Tinto (55%) and BHP (45%). Permitting is well-underway, planning ongoing. At our Global Metals, Mining & Steel conference last May, Rio Tinto CEO, Jakob Stausholm noted that the project is 'closer than people think' (see our Day 1 Conference Feedback). In 2013 Rio estimated Capex of $10bn to bring project to full production (if we 'gross' up this figure by assumed rate of inflation and time period since last announced capex – we get to c. $17bn).

We note that Resolution copper was recently granted fast track status in the US and the new US administration has said that it will approve a land swap needed for the project to proceed.

Project Overview

The Resolution Copper project is a proposed underground mine 60 miles east of Phoenix, Arizona, near the town of Superior. It is a JV owned by Rio Tinto (55% ownership) and BHP (45% ownership).

The ore deposit lies more than 2,000m below surface. It is one of the most significant untapped copper deposits, with an estimated copper resource of 1.787bn metric tonnes at an average copper grade of 1.5%. The proposed mine is therefore one of the largest copper resources in North America.

Some Native American and conservation groups oppose the copper mine because it will potentially impact an area above the mine including Oak Flat and surrounding areas.

Current status of project

Resolution Copper filed a Mine Plan of Operations in 2013 with the U.S. Forest Service, with plans to design, construct and operate a mine while creating sustainable benefits for the community. The project is currently subject to regulatory approvals, further studies, a detailed feasibility study, consultation, and investment decisions.

The deposit's average grade is c. 1.5% copper. According to the company, it is expected to become the largest copper mine in North America. Aim of the mine is to produce as much as 60bn pounds of copper over 40 years. Construction is estimated to take roughly 10 years.

The project is expected to create 3,700 direct and indirect jobs.

The mine is expected to take 10 years to construct, have a 40-year operational life, followed by 5-10 years of reclamation.

Asset history

Resolution Copper assumed control of the Magma Mine site, located in the town of Superior, Arizona in 2004. Copper mining has been a major industry in Arizona since the 19th century. The Magma Mine started production in 1910 and operated until 1996.

Rio Tinto has been involved in the project since 2001, and in 2004 formed Resolution Copper together with BHP.

Lengthy permitting process still underway

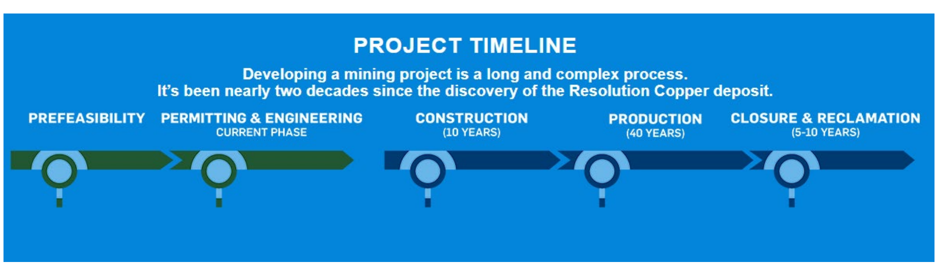
Permitting is currently underway. Resolution Copper started the US permitting process in 2013, and since the US Forest Service (USFS) has conducted a comprehensive independent review under the National Environmental Policy Act (NEPA).

To date, Rio Tinto and BHP have spent over $2bn to develop and permit the project, including reclamation of the Magma Copper Mine site, sinking a second shaft to mining depth, rehabilitating an existing shaft, extensive drilling and ore body testing and the permitting process.

Various land management and restoration programs have been initiated. Before the mine can be constructed and operated, approval from federal, state, and local agencies is needed, which includes approval by the federal government in accordance with the NEPA (National Environmental Policy Act) requirements.

Currently in the process of getting the Environmental Impact Statement (EIS) republished. The publication of the Final EIS triggers a land exchange that will see Resolution transfer 5,459 acres of high value conservation lands around Arizona to the Federal Government, in return taking ownership of 2,422 acres. The National Forest lands near Superior are underlain and surrounded by current and historic mining operations and mining claims, while those lands offered for exchange would become part of National Conservation Areas.

Exhibit 18: Resolution Copper proposed project timeline
Project currently in the permitting & engineering phase



Source: Company website

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Decision on whether to fully invest in developing the project, remains subject to further permitting processes and a feasibility study.

The USFS (US Department of Agriculture Forest Service) completed the Final EIS in January 2021. In March 2021 however, the USDA (US Department of Agriculture) delayed the Final EIS, requiring USFS to conduct further consultation.

Lithium projects = Potential to scale lithium business

Link to note: Rincon = Expanding the 'lithium triangle'. Originally published 19 December 2024

Rincon ramping up, Arcadium growth next

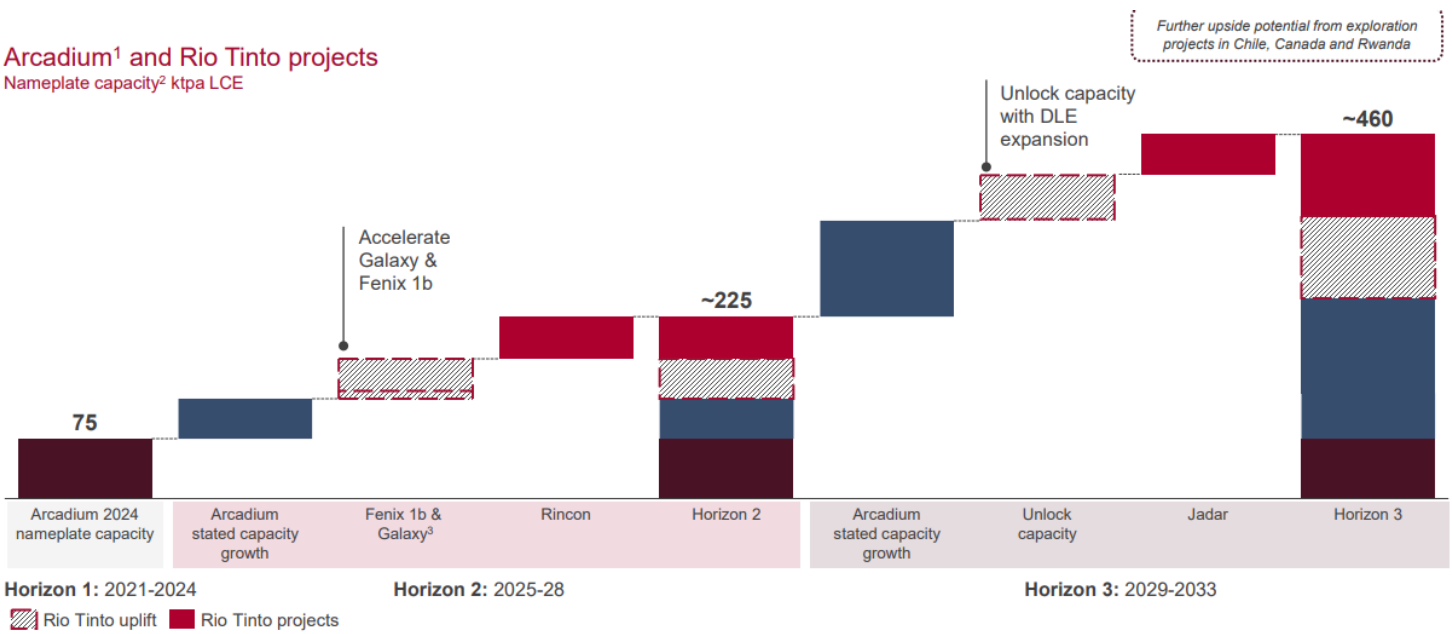
First lithium has been achieved at Rincon, which was acquired in March 2022. First lithium was delivered from the 3ktpa pilot plant just 32 months after acquisition. Expansion will take total production to 60ktpa. Rincon uses Direct Lithium Extraction (DLE) which conserves water and reduces waste, allowing for faster production and better consistency. Learnings from the project should be applied to Arcadium's large-scale, high-grade assets with expansion potential. These assets are well positioned on the cost curve and should allow the company to have a leading resource development position.

Pathway to c.460ktpa by 2029-2033

We see the strategic rationale given acquiring Arcadium gives instant scale, expertise and growth optionality. The acquisition is expected to close in mid-2025. At its recent CMD (see our feedback note), the company has outlined its growth ambitions in lithium over three horizons, reaching c.460ktpa over 2029-2033. Key focus are Rincon's super sites and Arcadium. Jadar remains a potential transformational project, with progress being made on the next stage of permitting. Exploration work is focusing on the Galinee pegmatite project in Quebec, located in close proximity to Arcadium's assets, as well as brine opportunities in Chile.

Exhibit 19: Growth path post Arcadium acquisition

Rincon and Arcadium assets to be primary growth drivers for lithium



Source: Company presentation

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Anglo American

Woodsmith (Fertilizer, UK)

Anglo American, as part of its own restructuring efforts, announced in May 2024 that the Woodsmith project would be slowed to support deleveraging = effectively putting the project on hold. Anglo plans to continue with the sinking of the service shaft through the key sandstone area. Information collected will support further project studies and potential approval decisions, as well as support the work to identify and secure a strategic syndication partner.

Since then, in August 2024, Anglo American announced it had signed a Memorandum of Understanding (MOU) with two Chinese fertilizer companies with a view to developing the market for Polyhalite fertilizer from its Woodsmith project. In addition, in October 2024 Anglo signed a new polyhalite fertiliser agreement with Cefetra Group.

Investors in our view have been negative on Woodsmith since AAL acquired the project in 2020. Why? 1) The product, Polyhalite, is not a "standard" fertilizer (N, P, K). It contains Potash (K) but other nutrients as well (hence "Poly"). There isn't an established market (in size. Israel Chemicals sells c. 1 Mtpa). AAL plans to produce 13 Mtpa. 2) The project is long-dated with first production originally predicted at the end of the decade but then with a slow ramp-up. So investors disliked 1) Market uncertainty and 2) Years of negative FCF. At the margin, we were probably a little less negative than some in the market. Once ramped up, we think this asset could be very valuable. Consider potential for c$2 bn of FCF annually, long term, in a developed market. Worth $20-25 bn?

> Link to original note: Fertilizer: Forgotten but not gone Originally published 14 October 2024.

Woodsmith project “paused”. Progressing business plan

Anglo American (AAL) signed a new polyhalite fertiliser agreement with Cefetra Group. Cefetra (Private) is a distributor of raw materials for the feed, food and fuel industries. We understand that the agreement replaces a previous supply & distribution for Europe signed in the days of Sirius Minerals (acquired by Anglo in 2020). Anglo also believes that new information gleaned from 1900+ crop trials will (eventually) allow for better value realization from its Polyhalite product. While following this development with interest, we do have an eye on near-term levers for value release: 1) Coking coal asset sales & 2) Platinum Group Metals (PGM) sell-down/spin. Maintain Buy PO GBp2900.

Fertilizer: A long, bumpy road to (potential) value creation

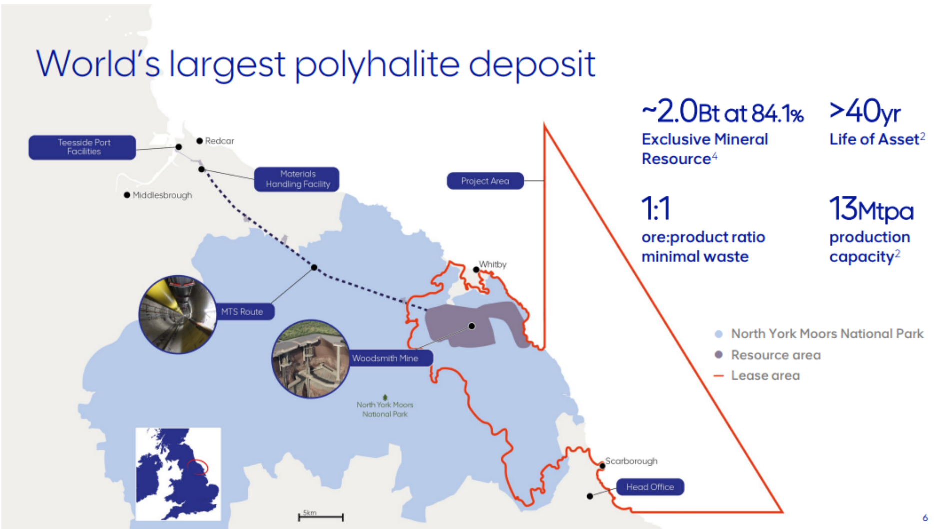
As a reminder, Anglo American’s involvement in Fertilizer dates back to the acquisition of Sirius Minerals in 2020. See our previous research on Woodsmith: Cornerstone asset or “white elephant” in the making? Site visit feedback. **Bottom line:** The market didn’t like this project: FCF too negative for too long and questions about market demand for the non-standard product, Polyhalite. As part of Anglo’s response to BHP’s M&A approach early this year, Anglo effectively put the project on hold. This a tricky thing to do – demobilizing (and perhaps eventually remobilizing) a mega-project can add materially to capex, making it even harder to generate value. Capex to date $2.4 bn. Plus acquisition cost. $3.3 bn of impairments to June 2024. Carrying value $0.9 bn. How much to complete, “from here”? Probably several billions more ($5-8 bn?).

> Link to original note: Postcard from Yorkshire: Fish & Chips & Fertilizer. Originally published 4 October 2023.

In October 2023, we attended a site visit to Anglo American's fertilizer project Woodsmith, based in Yorkshire, UK. Anglo is spending c. US$1bn per year through 2027 (c. $4.7 bn from 2023) to develop Woodsmith; management clearly view the project as a key value driver, longer-term, for Anglo. Top management hosting us for the trip included CEO Duncan Wanblad, Tom McCulley CEO Crop Nutrients and Alexander Schmitt, Chief Marketing Officer, Crop Nutrients. Per our recent note (link: [Woodsmith project]) we think the market could be too negative on Woodsmith. We estimate an NPV of US$4 bn.

Exhibit 20: Large deposit

Woodsmith is the world's largest polyhalite deposit. Expected life of asset >40 years.



Source: Company presentation

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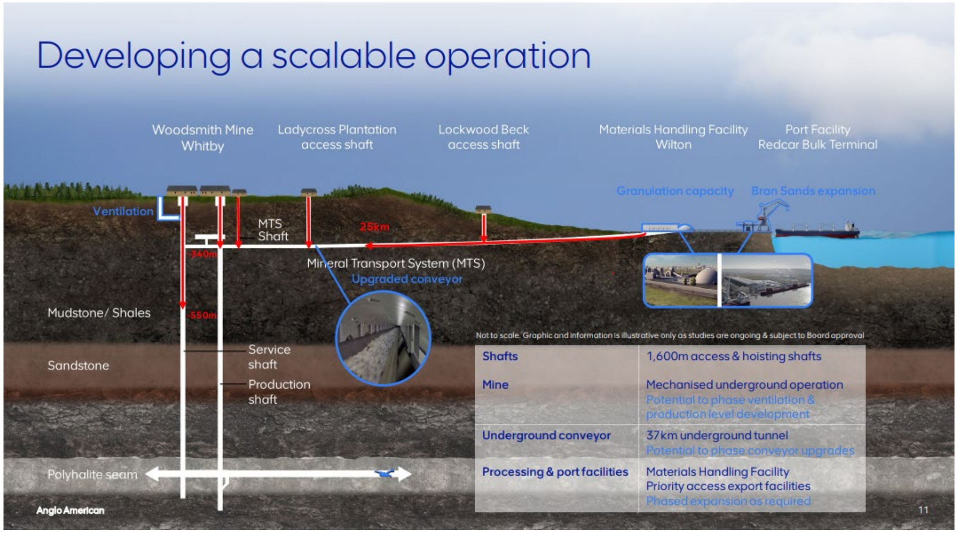
Anglo American management likes Woodsmith

Although Anglo purchased the Woodsmith project during ex-CEO Mark Cutifani's tenure, we think the project has come front and centre during Duncan Wanblad's tenure as CEO. Wanblad is the former Head of Copper at Anglo American, and played a key role in delivering Anglo's flagship copper project, Quellaveco. The Woodsmith project is also being "driven", in part, by Tom McCulley, Anglo's CEO of Crop Nutrients. McCulley also played a key role as project manager for Quellaveco. Both the project and company management love Woodsmith, execution & product marketing risks notwithstanding.

Exhibit 21: Scalability
Anglo see Woodsmith as a scalable operation – the company sees this as one of many appealing features of the project



Source: Company presentation

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Woodsmith *could* deliver transformational growth

We return from our site visit with 4 key takeaways: (1) **Shaft sinking:** In progress, 550m done. Shaft sinking 1m per day including maintenance and downtime. Slower in sandstone. Key watch points: Shaft sinking rates as shaft enters the water-bearing sandstone strata in 2024. (2) **Price x Volume:** Anglo management are optimistic on both pricing product and reaching 13Mtpa design capacity. Anglo anticipates hitting the orebody in 2027. (3) Anglo would syndicate for value but company says "now is not the time to do so" (4) **What is it worth?** Bottom line, once built, we think that Woodsmith could generate FCF of c. $2 billion per year. What cap rate to use? 10% FCF yield? 8% FCF Yield? So value once producing could be $20-25 bn, c. 60-75% of AAL's market cap.

Asset history

The Woodsmith project began in 2010 with Sirius Minerals – a fertilizer development company. Sirius had already incurred US$1.1bn to develop Woodsmith, but various media outlets at the time reported that an additional US$3.8bn would be needed to complete the project. Construction did not begin until 2017, after some challenges with planning permission and permitting. At the time, given uncertainty around the project's financing needs, Sirius chairman, Russell Scrimshaw, stated that recommending Anglo American's offer of a c. GBP400mn takeover was the only viable option to save the project. As such, in acquiring Sirius, Anglo American bought the project in March 2020. Since then, we think the market has become increasingly sceptical of the value to be unlocked from the project; Anglo impaired the project by US$1.7bn at FY22 results on use of a higher discount rate. The company discounted future cashflows at 9.58% which includes a development stage premium. For context, we use a discount rate of 9% in our asset NPV.

Anglo management favors Woodsmith. Cornerstone asset.

When discussing the project, Management, specifically CEO Duncan Wanblad, use terms like "Tier 1 asset", "multi-generational asset". At the FY2022 results, Wanblad stated: This will be a cornerstone of the Anglo American portfolio for decades to come. What attracts management to the asset? 1) Huge resource = very scalable, very long life. 2) Food = structural growth in demand driven by global trends. 3) Product potential to use as an organic fertilizer. 4) Once built, asset should generate EBITDA of c. $2 bn / year with very low sustaining capital.

Investors dislike Woodsmith. A lot. White elephant?

From our meetings with investors, we believe that most do NOT like the project and see it as an ongoing negative driver for Anglo's share price. Key issues mentioned: 1) Material FCF drag for several years i.e. US$1 bn /year cash outflow "forever". 2) Long lead on initial production, even longer lead on full production. 3) Question marks on whether there is a "deep" market for Polyhalite and what price should be assumed in the model. 4) Execution risk on the project given write-downs and now much longer schedule than that original proposed by Sirius, the former owner of the project.

Brief comparison versus Jansen

Taking a look at peer BHP's Jansen project, we do see some similarities to Woodsmith. Both are in tier one jurisdictions. Both projects are in somewhat "different" commodities versus big miners' historic portfolios. Both have taken some big write-downs. Having initially had some mixed views towards Jansen, we think the market (now) likes the project – execution has remained on time and on budget so far, and project NPV is positive "from here". We do think that the market is overly bearish Woodsmith – whilst we do acknowledge increased execution risk versus BHP's Jansen project, we (also) see the project being NPV positive (US$5.5bn 2024E) from here.

Exhibit 24: Jansen and Woodsmith comparison

Jansen has (historically) had material write-downs. That said, we think the market (now) likes Jansen

	Jansen	Woodsmith
Commodity	Potash	Polyhalite
Capacity (Mtpa)	4.35	5Mtpa, with 13Mtpa design capacity
Capex (US$bn) – pre-production, ex acquisition..	5.7	6.1
First production expected (year)	2026	2027
Write-down - FY21A (BHP) / FY22A (AAL) (US$bn)	1.3, pre-tax	1.7
NPV from here (US$bn) - 2024E	4.26	5.48
NPV/t of capacity (US$/t - AAL based on 13Mtpa, BHP stage 1)	979.2	421.5

Source: BofA Global Research estimates, company report

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Collahuasi projects

The Collahuasi mine is a joint venture (JV) with Glencore & Japan Inc (44%/44%/12%). The mine should produce c. 520 kt of copper in 2025E (100% basis) making it the third largest copper mine globally after Escondida (BHP, RIO) and Grasberg (FCX). We see Collahuasi as the "classic" tier 1 asset i.e. large scale, long-life, low-cost, expandable.

Water supply is a key challenge for the asset into the medium term (as with many mining assets in Chile). That said, the partners are taking steps to address this issue; a desalination plant is under construction and should start operation in 2026. We see potential for synergies by combining Collahuasi with TECK's QB2 mine, located right next door, effectively located on the same orebody.

Debottlenecking Projects

With the mine, Collahuasi's orebody provides significant opportunity and optionality for expansion. Collahuasi has a number of current brownfield projects:

- **Collahuasi (5th ball mill)**. An additional ball mill was completed in 2023, increasing copper production at the mine by c. 40kt per year. Anglo disclosed Capex for expansion in 2023 at $0.3bn.

- **Collahuasi (debottlenecking).** Shareholders are evaluating various debottlenecking initiatives available to them under current permits. The initiatives under study include 6 new floatation cells, 3rd primary crusher, coarse particle recovery unit and expanding the existing plant capacity from c. 170ktpd to c.210ktpd. Some of the initiatives have already been approved, while others expect to receive approval in near term. Debottlenecking could increase copper production at the mine by c. 57kt per year.

- **Collahuasi (4th processing line).** An addition of fourth processing line would look to add c. 340 kt of copper production per year. The expansion would require additional permits, which the owners expect to receive around 2027, with execution between 2028-2030, leading to production in early 2030s.

Separate to the projects listed below, the mine is also building a large-scale seawater desalination and water pumping system to stop using terrestrial water by 2040.

- **Collahuasi desalinated water plant project.** The 2200l/s desalinated water plant in construction (50% to April 2024) is expected to be fully operational ready in 2026. This water plant is expected to cover the treatment of 210kt/d (77Mtpa) ore in the mill. initial capex for the water plant is US$2,8 bn, largely spent, perhaps slightly higher here at c. $3 bn, TBC.

Beyond brownfield: QBII Synergy from contiguous assets

Beyond brownfield expansion potential, we consider the synergy potential from the mines location next to TECK's mine QBII (TECK). Simple synergy story? Turn down (off?) QBII mine (c. 0.5-0.6% copper). Move mining fleet to Collahuasi. Mine higher-grade ore body, faster. Transport high grade ore from Collahuasi to process at QBII plant.

How to think about the potential value uplift? We think that a project like this could see c. 200 ktpa of copper production for very limited incremental capital. How much is an annual tonne of copper production "worth"? We think that copper "pure plays" can be valued at $50-90,000/t of annual production capacity. Take $50,000 as a starting point. 200 ktpa could be valued at c. $10 bn. Capex? Fairly limited in our view, perhaps a conveyor belt from Collahuasi to QBII plus upgrades to flotation & concentrate handling.

Where to from here? We believe that all participants in both mines are aware of the potential for synergies. That said, we believe that recent M&A approaches for both TECK and Anglo American may mean that management's focus is elsewhere, at least for the moment.

Link to original note: Mini-Primer on Collahuasi. Originally published 20 January 2025.

A world class copper mine

Located in Northern Chile, Collahuasi produces c. 575 ktpa of copper per year and has a mine life of > 50 years on reserves with further upside from resources. Mining in Collahuasi first took place in the 1500s and then resumed in the 1990s. Historically, mine production has been limited by water supply and processing capacity, and disrupted occasionally by power shortages, plant maintenance, and labour strikes. A number of debottlenecking options are being considered / implemented near term, while studies and permitting for a fourth processing line in the plants as well as mine expansion are being discussed. A new desalination system is being built at a total cost of c. $3 bn which underwrites expanded ore processing at c. 210 ktpd / 77 Mtpa.

Exhibit 25: Collahuasi view
Mineral extraction at Collahuasi is carried out through open-pit mining

Source: Company website

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Collahuasi mine is a joint venture among Glencore (44%), Anglo American (44%) and a Japanese consortium led by Mitsui & Co. (12%).

Exhibit 26: Overview of Collahuasi
Collahuasi is an open pit mine asset in Chile with a long reserve life

Highlights	Collahuasi is an independently managed mine, a joint venture among Anglo, Glencore, and a Japanese consortium led by Mitsui. Mining in Collahuasi first took place in the 1500s and then resumed in the early 1990s.
Annual Production (FY24E)	578kt of Cu at c. 1.1% ore grade
Life-of-mine (LOM)	>50 years based on reserves with further upside from resources
Location	Chile
Recent developments	A number of debottlenecking options are being considered / implemented near term. In addition, studies and permitting for the fourth procession line in the plants as well as mine expansion options are being evaluated. A desalination plant is currently under construction (target 2026) plus exploration of further mineralisation nearby & underground.

Source: BofA Global Research and company report

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Chile: A well-established copper hub

Chile is host to many of the world's largest copper mines, with total Chilean production of 5.3Mt in 2023, representing c. 24% of global mined copper production. Collahuasi is an open pit copper mine located in the Tarapacá region in the north of Chile, c.200km away from the coast and 4.4km above sea level, meaning somewhat challenging access to both sea transport and water for processing.

Exhibit 27: Collahuasi copper mine is located in Chile
Collahuasi is an open pit mine in Northen Chile

Source: Company report

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Exhibit 28: Collahuasi mine
View from a previous site visit to Collahuasi mine in Chile

Source: BofA Global Research site visit

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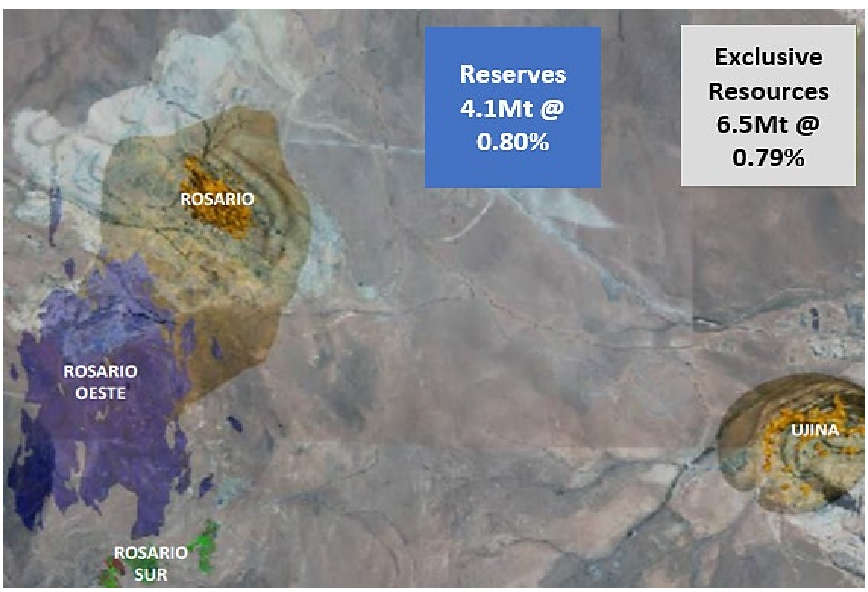
There are three deposits at Collahuasi: **Ujina**, **Rosario** and **Huinquintipa**. The deposits are spread over 520sqkm. The Ujina and Huinquintipa zones were mined first, with a transition to the Rosario orebody in 2004. The Ujina and Rosario deposits are large porphyry deposits exhibiting a leached cap, a copper oxide horizon, a secondary enrichment blanket and a primary sulphide protore.

Exhibit 29: Collahuasi's mineral reserves and resources map
Collahuasi has one of the largest copper deposits in the world



Source: BofA Global Research, Company presentations

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The copper concentrate product is shipped out from the Collahuasi-owned Punta Patache port, which is located 203km from the mill and 65km south of Iquique. The concentrate is transported through a pipeline to the filter plant in Punta Patache. Water is supplied from Michincha and Caposa, moreover desalinated seawater is being introduced as a source of additional water. Since 2015, Collahuasi sells 100% of its copper and moly products to its shareholders under indefinite long-term off-take contracts. Production is sold based on the percentage of ownership of each shareholder (44% to Anglo American, 44% to Glencore and the balance to the consortium group led by Mitsui).

Exhibit 30: Collahuasi needs a port and lots of water to operate
Collahuasi is located c.200km from the coast and 4.4km above sea level. It is also right next to TECK's Quebrada Blanca II (QBII) mine – only about 5-6 km away.

Source: Company presentation

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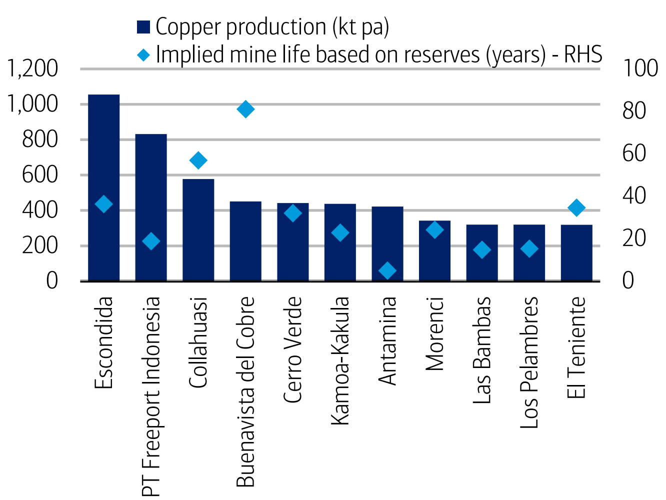
Exhibit 29: Global copper mine production and life of mine
Global copper mine production and implied mine life of top producers



Source: BofA Global Research estimates, Wood Mackenzie, company report

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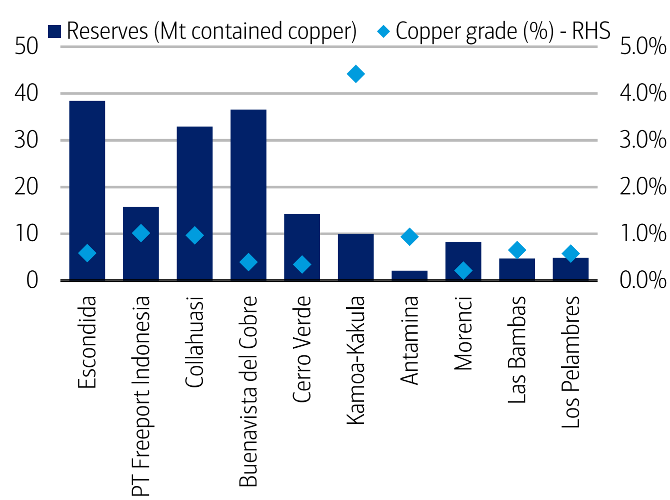
Exhibit 30: Global copper mine reserve and copper grade
Global copper mine reserves and copper grade of top producers



Source: BofA Global Research estimates, Wood Mackenzie, company report

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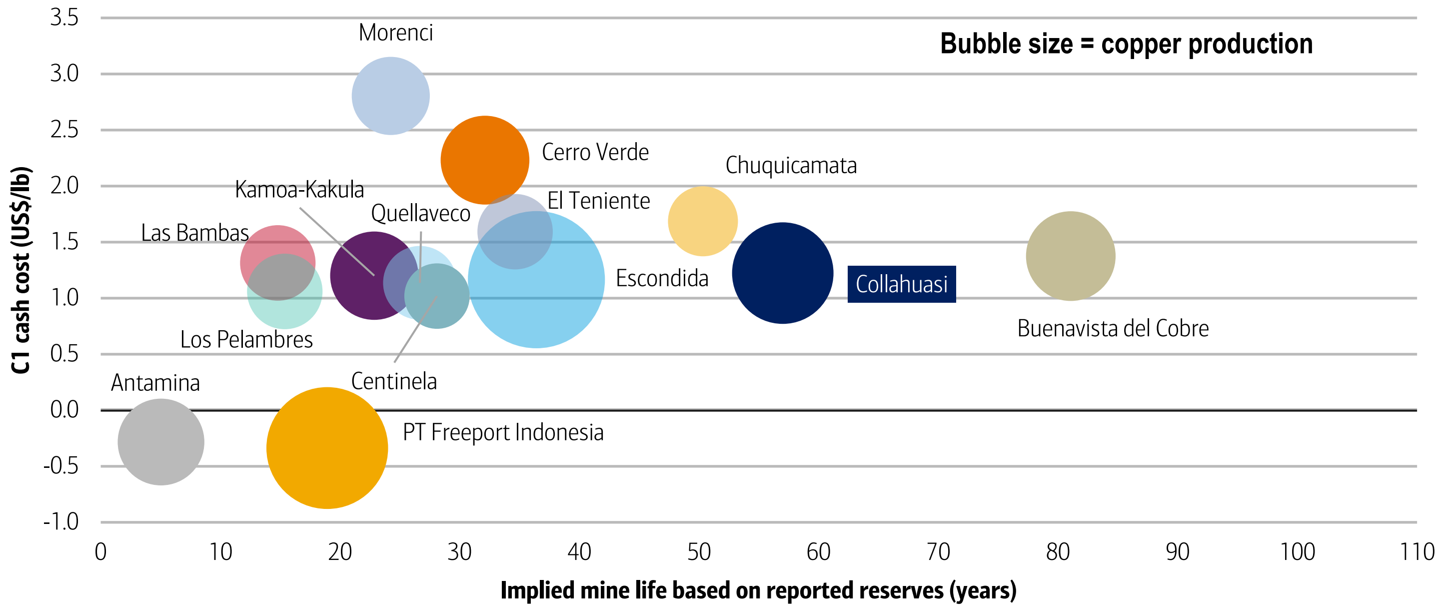
Exhibit 31: Global copper mine production (x axis) vs mine life (y axis) vs production (bubble size)
Selected global copper mines by production, C1 cash cost and implied mine life (copper reserves divided by annual production)



Source: BofA Global Research estimates, Wood Mackenzie, company report

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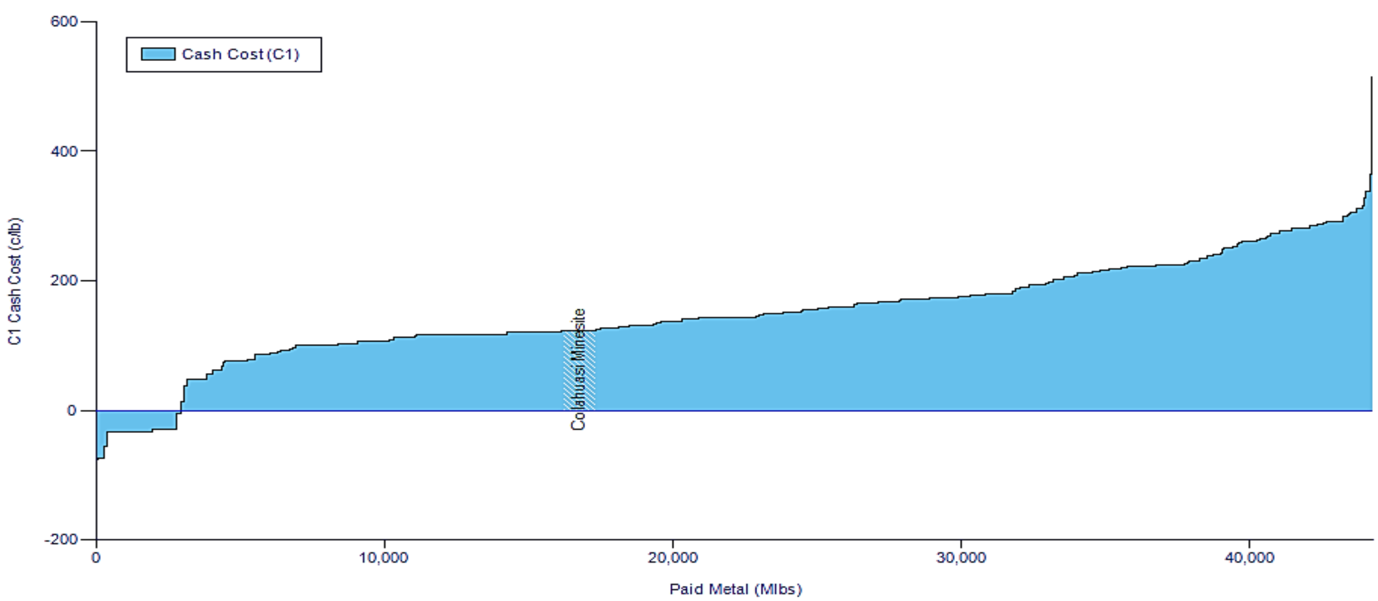
Second quartile cost positioning

Collahuasi is positioned in the second quartile of the global copper supply cost curve (Wood Mackenzie). C1 cost is at US$1.22/lb in FY25 vs US$1.19/lb and US$1.14/lb in FY23 and FY24 respectively. We think the increase in cost could be partially attributed to the declining ore grades notwithstanding efforts to achieve higher ore processed as well as a function of broader trends of cost increases in the industry. Grade decline is a major issue across the industry with miners persistently seeking to offset the fact that each tonne of ore treated contains less copper.

Exhibit 34: C1 cash costs for global copper mines (2025E)
Collahuasi in the second quartile of cost curve. That said, as grades decline at other mines globally, we think that Collahuasi's cost position could improve relative.



Source: BofA Global Research estimates, Wood Mackenzie

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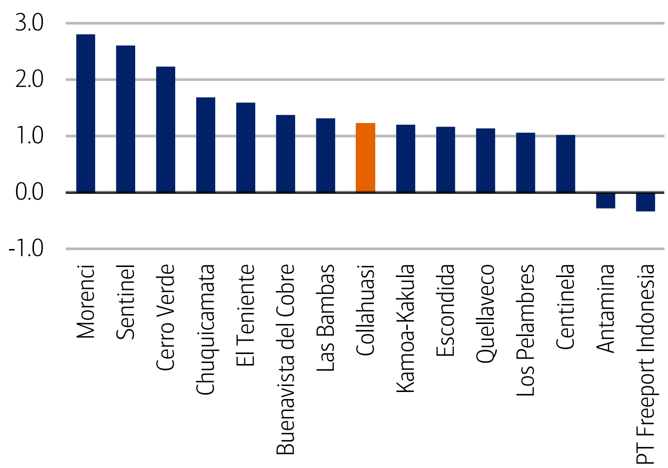
For reference, C1 mining cost here includes all direct production costs, plus TCRCs & realizations, net of by-product credits. It excludes royalties, exploration and sustaining costs. Collahuasi's cash cost of production is fairly typical for a big Chilean copper porphyry mine.

Exhibit 33: C1 cash costs of selected top copper producers (FY25)
C1 cash cost ($/lb) of US$1.22/lb in FY25



Source: BofA Global Research, Wood Mackenzie. Aside: "Negative" C1 costs typically result from high levels of by-product credits e.g. for PT Freeport, gold. For Antamina zinc.
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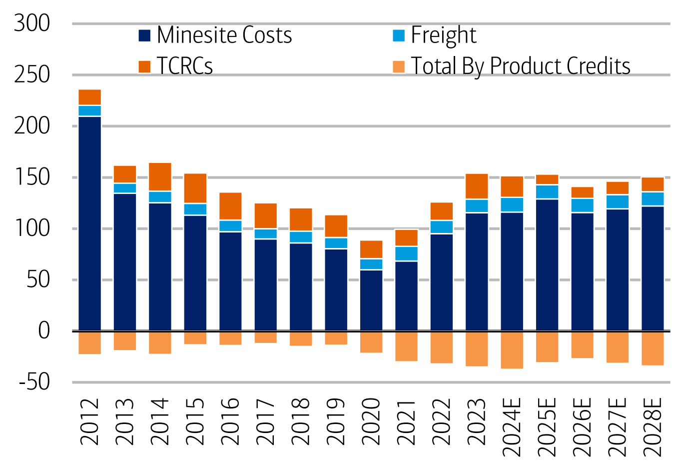
Exhibit 34: Collahuasi copper mine costs (C1)
Collahuasi C1 cash cost breakdown



Source: BofA Global Research, Wood Mackenzie. TCRC = Treatment and refining charge
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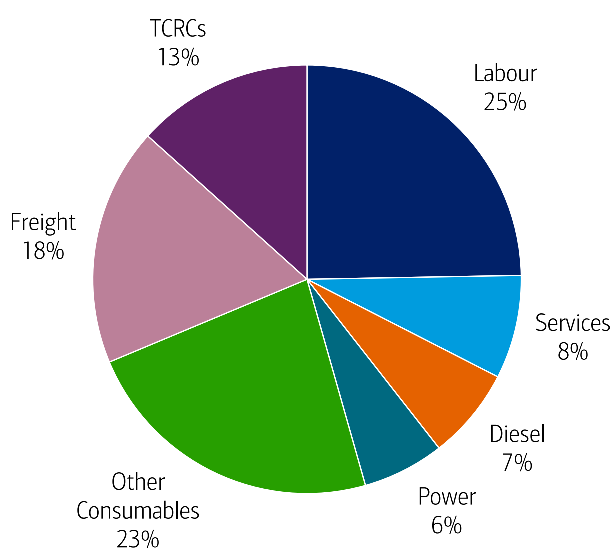
Exhibit 35: Collahuasi cost breakdown
Approximate cost breakdown by category (FY25). Labour, freight, other consumables are key cost drivers.



Source: BofA Global Research, Wood Mackenzie
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Workforce: c50% local, families 200km away on the coast

Collahuasi has a total workforce averaging c. 5000 workers, including its own workers and contractors. In addition, c. 50% of the workers come from the Tarapacá Region, while c. 64% of the total come from the north of the country (Antofagasta, Arica and Tarapacá). In April 2023, the Chile Congress approved the labour law of 40hrs/week. The law has to be implemented gradually in 5 years, reducing 45hrs to 40hrs and could have some impact on labour cost in the mining sector. The new rule is now being regulated.

Quelleveco debottlenecking. Brownfield. Low risk. High return.

Located in Peru, Quellaveco is a brand-new copper mine, which after a ramp up in 2023 reached its design capacity of c. 300 kt of copper equivalent per year and has a 35-year open pit life. The asset is majority owned and operated by Anglo American (60%) in a joint venture with Mitsubishi (40%). Anglo American sees further brownfield optionality from the asset in the medium term and is evaluating further expansion potential.

Studies ongoing to progress throughput to ~140ktpd (Stage 1), involving the addition of a pebble crusher and flotation cells, subject to approval in 2025. Production expected to come online from late 2026. Pre-feasibility studies ongoing for Stage 2 expansion to ~150ktpd. This is subject to approval with expected production from late 2027.

What do we think? As a project, Quellaveco has been around for a long time. [Aside: In the late 90s, working as a project engineer in Southern Peru, your author thought they might end up working on the project. The project finally started production in 2023!] Why wasn't it built sooner? Grade. Bottom line, once upon a time, despite a large resource size, the grade of this project (c. 0.6% copper) wasn't high enough to make it a compelling investment. Fast forward 25 years and 0.6% copper, in size, is now "fine".

In the early days of the project, we think the market had doubts about Quellaveco but when Anglo syndicated its ownership down to 60% by selling a further stake to Mitsubishi, we think this forced the market to take the project more seriously. Anglo chose an unusual approach to project development, completing much more of the detailed engineering and indeed no small part of the advance works before formally approving and syndicating the project. The project was brought in broadly on schedule and at budget despite COVID-19 – impressive execution in our view.

Glencore

El Pachon

A greenfield copper and molybdenum project located in the southwest of San Juan Province of Argentina. The project is fully owned by Glencore. The El Pachon orebody is a copper-molybdenum porphyry deposit in which two major stages of sulphide mineralisation contributed to the formation of the orebody. The project will require building a mine, ore handling systems, concentrator, water systems, concentrate handling systems and other associated infrastructure. Life of Mine is estimated at >20 years, with a headline annual production of 340kt of copper at c.0.5% head grade. Glencore's last public estimate for capex for the project is $5.6bn. We think this is VERY out of date – it dates back to Xstrata days (Xstrata & Glencore merged in 2013). As such, if we 'gross' up the figure by assumed rate of inflation and time period since last announced capex we get to c. $10.6bn

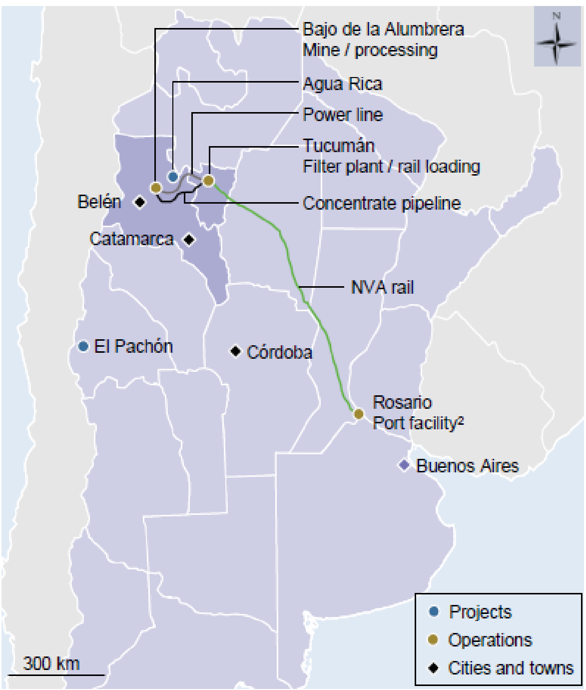
MARA

MARA is a brownfield copper project in the Catamarca state of Argentina. In 2023 Glencore paid US$475 mn to acquire Pan American Silver's (PAAS) 56.25% stake in the MARA project, implying a valuation for 100% of the project is $844 mn. MARA includes GLEN's (mothballed) Alumbrera mine (which is depleted but has a fully functioning large concentrator) and the nearby Agua Rica copper/gold deposit. The vision is to transport ore from a new mine at Agua Rica some 30 km by conveyor/tunnel to be processed at Alumbrera. MARA is fairly large, fairly high grade (on a copper equivalent basis) and is fairly low-risk inasmuch as it is a brownfield project. c.210 ktpa of copper equivalent production would put in (roughly) in the top 20 operating copper mines in the world – material for any mining company. Capex for the project was estimated at $2.7bn in 2020.

Link to original note: [MARA consolidation = Brownfield copper optionality](), originally published 1 August 2023.

In July 2023, GLEN announced that it would pay a headline price of US$475 mn for to acquire Pan American Silver's (PAAS) 56.25% in the MARA project, a brownfield copper project in the Catamarca state of Argentina. The implied valuation for 100% of the project is $844 mn. The price is comparable to the implied valuation paid by GLEN to acquire Newmont's 18.75% stake in the project in 2022. GLEN now controls 100% of MARA. We view the acquisition positively, GLEN is creating a high quality, low capital intensity, low(er) risk growth option in copper, the commodity where all Big Miners want more exposure. The capital intensity of c. $11-14k/t of annual capacity compares favourably with Greenfield projects which today cost c. US$25-35k/t of capacity.

Exhibit 38: The MARA project is located in Catamarca, Argentina
The project includes the concentrator and other facilities of the now depleted Alumbrera mine



Source: Company data

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GLEN knows this project well. Brownfield = lower risk

MARA includes GLEN's (mothballed) Alumbrera mine (which is depleted but has a fully functioning large concentrator) and the nearby Agua Rica copper/gold deposit. The vision is to transport ore from a new mine at Agua Rica some 30 km by conveyor/tunnel to be processed at Alumbrera. PAAS acquired the project stake as part of its acquisition of some of the assets of Yamana gold in late 2022/early2023. In our view, Argentina, still has some questions as a mining jurisdiction [although this is evolving]. That said, GLEN knows the region and the asset well having previously operated the Alumbrera mine as a standalone asset.

Reserves & resources

Exhibit 39: Reserves and resources

Shown on 100% basis for the entire Mara Project basis the 2019 PFS

Mineral reserves - Total proven & probable					
Metal	**Tonnes (Mt)**	**Grade**	**Grade - unit**	**Contained metal**	**Unit**
Copper	1105	0.49	%	5.4	Mt
Gold	1105	0.21	g/t	7.5	Moz
Silver (Moz)	1105	2.8	g/t	99.5	Moz
Molybdenum	1105	0.03	%	0.3	Mt
Mineral resources - measured and indicated					
Metal	**Tonnes (Mt)**	**Grade**	**Grade - unit**	**Contained metal**	**Unit**
Copper	260	0.29	%	0.8	Mt
Gold	260	0.18	g/t	1.5	Moz
Silver	260	1.8	g/t	15.0	Moz
Molybdenum	260	0.022	%	0.1	Mt

Source: Company disclosure

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How did Yamana talk about MARA?

Before Yamana was jointly acquired by Agnico Eagle and Pan American silver, management presented the Mara project to the market. Some key parameters as follows were presented in January 2021:

Exhibit 40: MARA project key financial statistics

These figures were presented by Yamana management in January 2021 when Yamana controlled the project.

Studies	**PFS(A) - July 19, 2012**	**PFS (B) - Update 2020**
Nameplate ore throughput	40 Mtpa	42 Mtpa
Average annual CuEq production	533 Mlbs (First 10Y)	556 Mlbs (First 10Y)
	452 Mlbs (LOM)	469 Mlbs (LOM)
AISC/lb (Life of Mine / LOM)	$1.54/lb	$1.49/lb
Estimated mine life	28 years	27 years
Initial capital costs	$2.4 bn	$2.8 bn
Sustaining capital costs	$1.5 bn	$1.1 bn
Life of mine strip ration	1.66x	1.66x
NPV 8%: $3 Cu, $1300 Gold	$1.935 bn	$2.101 bn
NPV 8%: $3 cu, $1300 Gold, progressive export tax	N/A	$1.906 bn
IRR	19.3%	21.2%

Source: Company disclosure

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What has changed?

Of course, since these figures were presented much has changed. The industry has seen a period of strong capital cost and operating cost inflation. As such, these capex figures as presented are likely too low. How much too low? On the same basis we would expect at least c. 20-40% inflation. Similarly operating costs are probably higher.

All of that said, we think that market expectations for metal prices are now probably much higher too. These pre-feasibility studies were done basis US$3/lb copper and US$1300/oz gold. Our long-term (LT) copper price (money of today) is now $3.85/lb and is probably low vs. broader street expectations. Our LT gold price assumption is $1850/oz (real). So, bottom line, yes capital costs and cash costs higher, but metal prices probably higher too.

Capital intensity: Brownfield = Low

Inasmuch as MARA is a brownfield project, capital intensity will be low vs. comparable greenfield project as the project will use existing infrastructure including a concentrator, logistics infrastructure and tailings storage facilities.

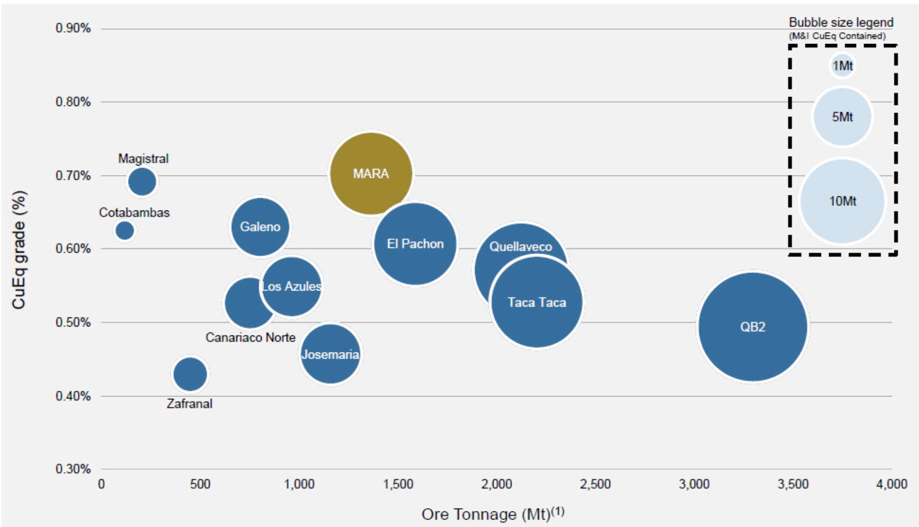
The last pre-operational capex estimate made public was US$2.8 bn for about 250 ktpa of annual copper equivalent production. This implies just $11k/t of annual capacity, low vs. typical greenfield projects which today cost c. $25-30k/t of annual capacity (e.g. Quelllaveco, QB2).

Even if we assume that this figure is too low and inflate it by an "appropriate" figure capital intensity could still be very favourable vs. comparable greenfield projects.

Mara = decent size potential

MARA is fairly large, fairly high grade (on a copper equivalent basis) and is fairly low-risk inasmuch as it is a brownfield project. 250 ktpa of copper equivalent production would put in (roughly) in the top 20 operating copper mines in the world – material for any mining company.

Exhibit 41: Mara vs. comparable Green and brownfield development project.
MARA is fairly large, fairly high grade (on a copper equivalent basis) and is fairly low-risk inasmuch as it is a brownfield project.



Source: Company data

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Where to from here?

Realistically, we expect up to 2 years of full feasibility study which would mean taking the project to the board of directors for approval in late 2025 / early 2026, construction (say 2 years?) starting in 2026 = earliest production likely in 2028, more likely 2029 or 2030. Of course, Glencore now has full control of MARA, so we'd expect it to revisit some of the key assumptions and consider other approaches to the project which might create more value or minimize the risk for GLEN shareholders (for example, bringing in a partner). We don't include the project in our model for now.

Vale

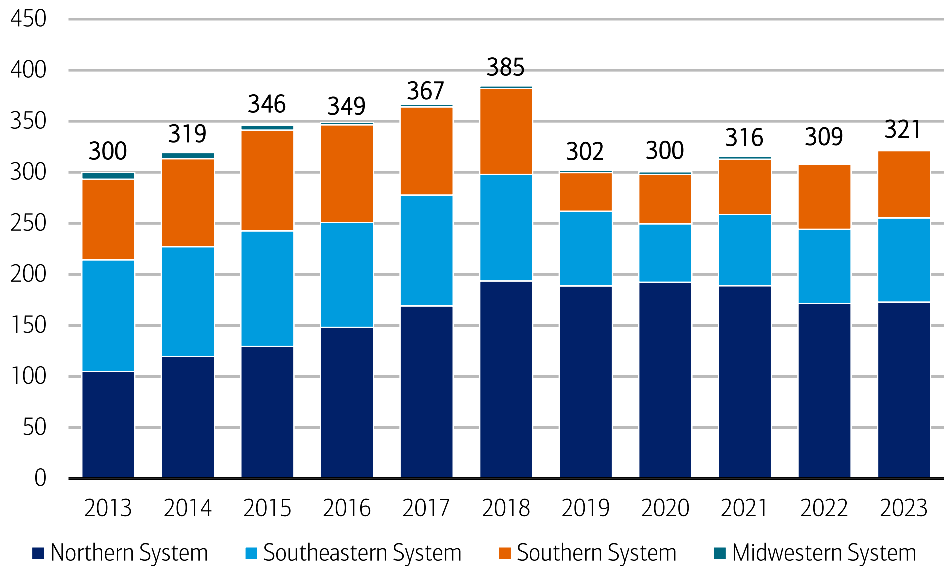
Capanema and Vargem Grande (Iron ore, Brazil)

Projects aim to partially recover production capacity lost after Brumadinho

Before the Brumadinho dam burst in January 2019, Vale was on track to reach their 400Mt/year iron ore capacity target. However, the aftermath of the accident at the 8Mt/year mine led to operations being suspended, licensing delays, dam restrictions and heightened safety standards. This led Vale to lose over 80Mt/yr of capacity. Since then, Vale has been gradually working to recover production, initially targeted to reach 400-450Mt/year in the long term – running at 400Mt/yr but with a 50Mt/yr buffer to attend market demand, ultimately relying on their value over volume mantra.

Exhibit 40: Vale – total iron ore production by system (Mt/year)

Vale's iron ore output dropped 83Mt y/y in 2019 hurt by the Brumadinho dam burst. While production has recovered somewhat it is still not at previous levels.



Source: BofA Global Research, company report

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Continuous licensing and operational issues trimmed their estimates, and the latest guidance now targets output at 340-360Mt by 2026, vs 321Mt in 2023. The key pillars of this expansion are the growth projects Capanema and Serra Sul 120Mtpy and the sustaining projects Vargem Grande plant revamp and the compact crushing of S11D, as listed below. Capanema and Vargem Grande together can unlock ~30Mt/year of iron ore output by 2H25. Meantime, the Serra Sul expansion should add 20Mt/yr of extra capacity to the Northern System, while the implementation of S11D's compact crushers is also crucial to debottleneck 50Mt/yr of production going forward. Both projects are expected to be concluded by 2H26.

Growth projects

Capanema – 15Mt/yr additional output by 2H25

The Capanema Maximization project is a US$913mn brownfield expansion project of the Timbopeba plant, in Minas Gerais. The project should add 18Mt/yr of natural moist sinter feed capacity through new mine equipment, primary crushing, secondary and tertiary crushing and screening and a new long-distance conveyor with 8.2km connecting the Capanema mine to the Timbopeba plant. The project was delivered ahead of schedule and begun commissioning on November 2024 and startup in 1H25, adding 15Mt to Vale's output – which translates into an extra annual revenue of US$1.6bn based on our US$90/t long-term iron ore price forecast.

Project status: As of 4Q24, the project was on time with a physical progress of the project of 96%. Hot commissioning started in November 2024. and the site is expected to reach its full capacity in 2026.

Serra Sul – 20Mt/yr of high-grade ore expected by 2H26

The Serra Sul 120Mtpy expansion project is a US$2,844mn brownfield project at Vale's Northeast system. It should add 20Mt/yr of capacity to the complex, bringing it up to 120Mt/yr by 2H26. It will create an important productive capacity buffer, guaranteeing greater operating flexibility for facing eventual production or licensing restrictions in the North System. The project includes, among other initiatives: (i) the opening of new mining areas; (ii) the duplication of the existing long distance belt conveyor; (iii) the implementation of new processing lines in the plant; and (iv) expansion of the storage areas.

Project status: As of 4Q24, the project was on time with a physical progress of the project of 69%. Construction of the reinforced earth wall at the mine was completed. The semi-mobile crushers at the mine have started isolated load tests. Assembly of the new long distance conveyor belt is ongoing and should be completed in 1H25. Key civil works at the plant are complete and assembly packages are being mobilized.

Teck Resources

Zafranal

Zafranal is a copper and gold project is located in the Arequipa region of Southern Peru. If developed, the project would consist of an open pit mine and a concentrator plant producing copper concentrate, in addition to other facilities for tailings and waste rock management, concentrate transport and water management. Following a sanction decision, construction is expected to take three years. Life of Mine is estimated at c.19 years, with mid-range C1 cash costs. The project is owned 80% by Teck and 20% by Mitsubishi Materials Corporation (MMC). Capex for project was estimated at $1.3bn in 2021. (if we 'gross' up this figure by assumed rate of inflation and time period since last announced capex – we get to c. $1.4bn). TECK has received its SEIA permit, operating costs are being updated, early works are underway with sanctioning decision planned for late 2025.

San Nicolas

A large copper-zinc sulphide deposit located in Mexico. San Nicolas is one of the world's most significant undeveloped Volcanogenic massive sulphide (VMS) ore deposits. The project is a 50/50 JV between Teck and Agnico Eagle. Copper reserves are estimated at 105Mt ore reserves (100% basis) with 1.12% copper grade. In 2023 Teck provided Capex estimate for the project of $1.0bn-1.1bn. Feasibility and permits are expected in H2'25.

Freeport-McMoRan

Bagdad 2X Expansion (Copper, USA)

Construction of new concentrating facilities at the open-pit copper and molybdenum mining complex in Arizona, USA. This would expand capacity from 77,000 metric tons per of ore per day to between 165,000-185,000 metric tons per of ore per day, effectively double capacity, and is expected to increase production by c.100kt per year. Bagdad is wholly owned by Freeport. Capex for building new facilities has been disclosed at $3.5bn in 2024. There are significant tax loss carry-forwards available to Freeport which can potentially (materially) increase the returns on this project. Management is targeting investment decision by YE 2025 and start-up in 2029.

Kucing Liar (Copper, Indonesia)

FCX is developing the Kucing Liar (KL) deposit at Grasberg. KL is an underground copper-gold deposit located at FCX's 48.76% owned Grasberg mine in Indonesia. On a 100% basis, proven and probable (2P) reserves include 5Bn lbs of copper, 6Moz of gold and 18Moz of silver, after estimated process recoveries. FCX has suggested an underground mining rate for KL of up to 90,000 tonnes per day (tpd) once fully ramped. FCX sees $4bn of capex over the next 10 years to full ramp-up.

Kucing Liar is expected to produce ~ 560Mlbs (254kt) Cu & 520koz Au per annum on average. This project will allow Freeport to sustain mill rates through 2041 offsetting declines at Grasberg Block Cave and DMLZ.

South32

Taylor-Hermosa (Zinc/Polymetallic, United States)

Hermosa project is a polymetallic mine with high grade zinc-lead-silver resource. The Hermosa project will involve the development of the Taylor zinc-lead-silver sulphide deposit and the Clark zinc-manganese-silver oxide deposit. It also includes a highly prospective land package hosting multiple exploration targets with further polymetallic and copper mineralisation potential. Clark asset is a 55Mt zinc-manganese-silver oxide Mineral Resource. Scoping study has confirmed the potential to produce battery-grade manganese.

S32 acquired the Hermosa project through the acquisition of the remaining 83% of Arizona Mining it did not already own for US$1.3bn in June 2018.

In February 2024, South32 approved a US$2.16bn spend for the development of the Taylor deposit, the first development at its Hermosa project in Arizona, United States.

Taylor is expected to reach first production in 2H FY27 and deliver nameplate production in FY30. Once in production, Taylor is expected to provide an additional 8% to S32's group volumes relative to FY24 levels.

We also note further upside at Hermosa with the potential development of the Clark, battery-grade manganese deposit which should generate higher returns given the existing Taylor infrastructure including dewatering, power, roads and site facilities.

Development costs for Taylor-Hermosa increased from an initial expectation of c. $1.5bn in the pre-feasibility study to $2.16bn in the feasibility study due to significant industry cost inflation which has impacted returns.

However, we believe the Taylor project is consistent with S32's strategy to focus on base metals and note the ramp up of Taylor will help offset Cannington which is expected to cease production later this decade.

Exhibit 43: Taylor feasibility study highlights
Taylor's feasibility study has confirmed the potential for a large scale, long-life, low-cost operation

Annual average production	~290kt ZnEq in the steady state years
Initial operating life[a]	Increased to ~28 years in the feasibility study
Operating unit costs	~US$86/t ore processed (AISC of ~US$0.16/lb Zn)
Pre-production capital[b]	~US$2,160M
Sustaining capital (average)	~US$36M per annum
EBITDA (average)[c]	~US$400M per annum
EBITDA margin (average)[c]	~50%
Free cash flow (average)[c]	~US$320M per annum (post tax)
Net present value	~US$686M (post tax)
Internal rate of return	~12% (post tax)

Source: Company presentation

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Fortescue

Iron Bridge (Iron ore, Australia)

The 22 Mtpa capacity Iron Bridge magnetite concentrate project is Fortescue's largest growth project which completed its first shipment of high grade (67% Fe) magnetite product in July 2023.

However, the ramp up of Iron Bridge has proved challenging with FY24 production guidance reduced from 7Mt to 5Mt in October 2023 due to performance of the raw water pipeline and plant rectification works. Then in January 2024, FY24 guidance for Iron Bridge was reduced again from 5 Mt to 2-4 Mt due to leak damage along a 65km section of the raw water pipeline. FMG expects Iron Bridge to ramp up to 22 Mtpa over the next 24 months.

FMG is a typically viewed as a low grade (58% Fe) iron ore producer which relates to its c.190 Mtpa of haematite iron ore operations in the Pilbara region of Western Australia. The motivation for developing Iron Bridge was to further diversify FMG's product suite to include a high-grade concentrate product which would also increase FMG's average iron ore grade by approx. 1% from 58% Fe to 59%.

Price realisations are also higher for FMG's Iron Bridge Concentrate achieving >100% of the average Platts 65% CFR Index for November 2023. This compares to FMG's Pilbara hematite realising 91% of the average Platts 62% CFR Index in the Dec-23 quarter.

Iron Bridge is located 145km south of Port Hedland and incorporates the North Star and Glacier Valley magnetite ore bodies. Unlike Fortescue's hematite operations, Iron Bridge produces a wet concentrate product which is transported to Port Hedland through a 135km specialist slurry pipeline where dewatering and materials handling occurs.

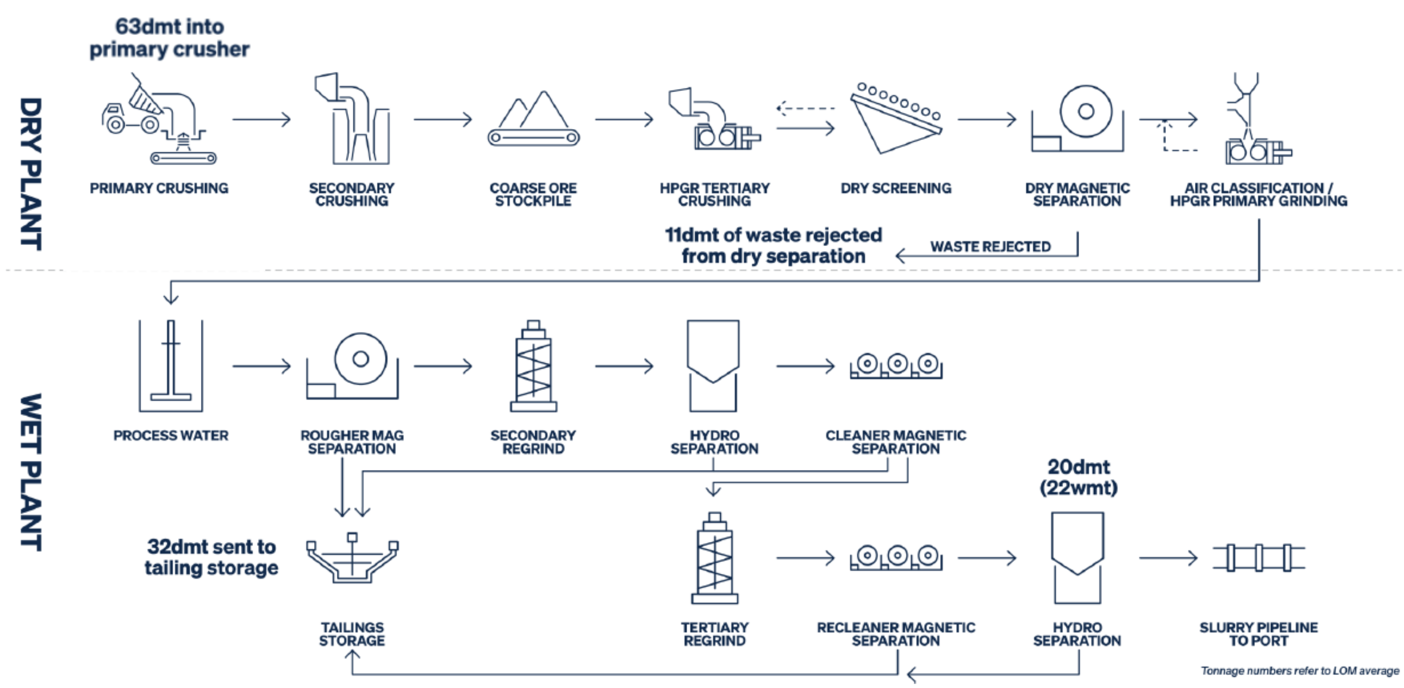
Iron Bridge is 69% owned by FMG and 31% by Formosa Steel IB Pty Ltd.

The Final Investment Decision for Iron Bridge was reached in April 2019 with estimated capex of US$2.6bn (100% basis) although this increased by 54% to US$4bn (100% basis) due to changes in FX rates, Covid impacts, supply chain issues and labour availability.

Delivery of first ore was originally expected in 1H CY22 with ramp up to full production in 12 months although this was delayed to mid-2023 mainly due to Covid impacts, supply chain issues and labour availability.

In 1H FY24, 6 Mt of ore was mined at Iron Bridge with total ore shipped of 84kt for H1 FY24 (100% basis).

Exhibit 44: Iron Bridge OPF process flow
Iron Bridge utilizes a unique process flow with four international and national patents



Source: Fortescue

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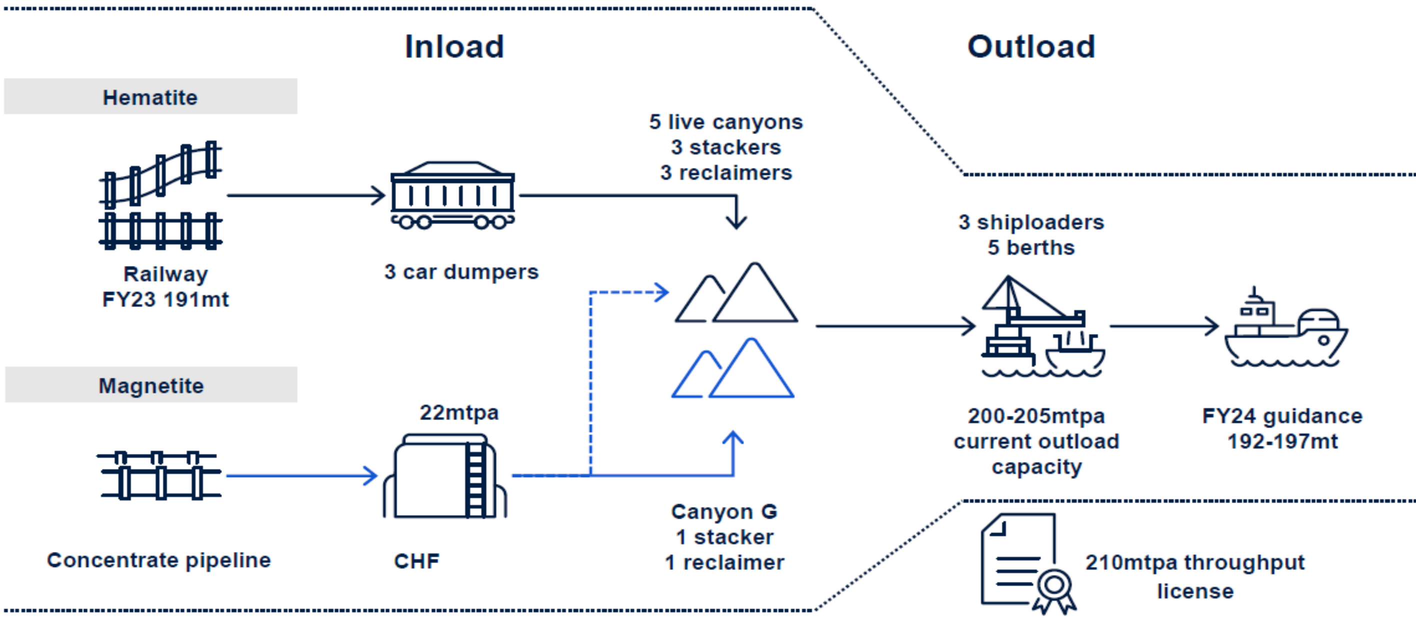
Exhibit 45: FMG's Port Hedland operations

FY24 production guidance includes 2-4 Mt of Iron Bridge magnetite concentrate



Source: Fortescue

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Big Issue #3: Points of differentiation

Big Issue #3: Points of differentiation

Iron ore & copper feature large in Big Miner portfolios = Convergence. That said, many companies have something that differentiates them from peers. RIO: Lithium, aluminium. GLEN: Trading, coal. BHP: Potash. AAL: Restructuring. FCX: US footprint.

BHP

Jansen project(s!): Entry into a new commodity (Potash, Canada)

BHP's Jansen project is actually a series of projects. In our view, Stage 1, including the production shafts, is/was NPV negative due to project delays and (possible) overcapitalization. As part of its 2021 results, BHP took a pre-tax $1.3 bn impairment charge on Jansen. At the time, BHP said, "The impairment charge against our Potash assets reflects an analysis of recent market perspectives and the value that we would now expect a market participant to attribute to our investments to date." As such, "from here" Stage 2, 3 and 4 need to deliver value for the group. BHP originally presented the project to the market in late 2021. We think that having a multi-stage approach to very large projects creates potential for large value-creation longer term but complicates NPV and IRR analysis in the short to medium term.

We note that the group has announced that it will bring forward Phase II of Jansen vs. its original plans. In October 2023, BHP announced that it had approved an investment of US$4.9 bn for Jansen stage 2. This follows the approval of US$5.7 bn for Jansen stage 1 and pre-investment of US$4.5 bn in the shafts and other infrastructure. Total investment then for the first two stages c. US$15.1 bn. For the subsequent stages (Jansen 3 & 4) we would expect similar capital intensity to phase 2, i.e.. around US$5 bn in money of today for c. 4 Mtpa of incremental production.

Link to note: Salt of the earth, Part VII:. Jansen "works" standalone. But a JV would be better... Originally published 15 September 2021

BHP Jansen "teach in": Stage I "fine" from here...

BHP presented its Jansen Potash project to the market in September 2021. Jansen = world-class asset in a stable jurisdiction. High quality resource, potential for low-cost high margin, long life, capital efficient expansion options. Jansen gives diversification of commodities, customer base & operating footprint. Capex US$5.7 bn "from here". We incorporated Jansen into our model some time ago. We model an IRR of c. 13% and NPV "from here" of c. US$2.4 bn (taking spend on shaft & acreage as sunk). Subsequent stages (2-4) = 18-20% IRR. Materiality: At full production, we estimated stage 1 EBITDA at c. $1 bn, c. 4% of group. Links to previous notes on Jansen/Potash: Jansen JV, BHP/NTR, Potash outlook call.

... but a JV with Nutrien on Potash would be better.

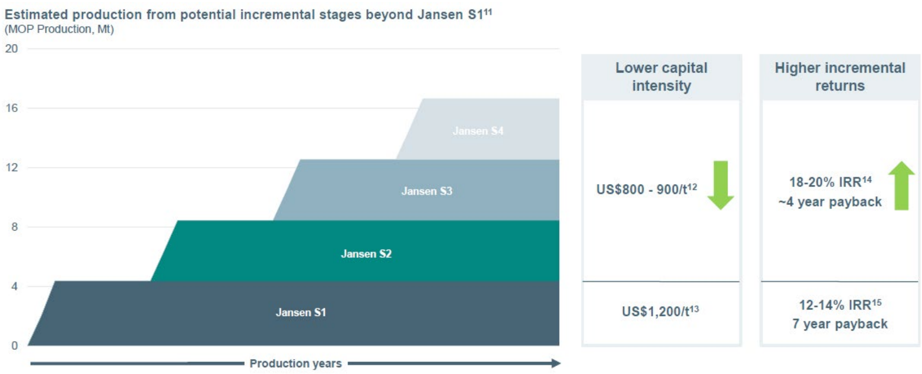
While Jansen "works" standalone, we do think that its location, close to Nutrien's Lanigan mine, suggests potential for real operating synergies. BHP likes investing in mineral "basins". Interestingly, it controls c. 37% of the Potash tenure in Saskatchewan. We've previously written that a full Potash JV between BHP & NTR could be way to unlock synergies, both operational and market impact related (see report: BHP NTR JV). So far, Nutrien's CEO has indicated that a JV is "not our focus". BHP says it would consider a JV "for value". Jansen's shaft is sized for 16 Mtpa (c. 25% of current market) = underwrites 3 more "stages" of expansion. BHP is committing to this commodity for the long term.

Future optionality

Jansen's huge resource base and well (over?)-capitalized hoisting shaft sets up future optionality in the asset. Stage 1 = 4.4 Mtpa but potential increases to 16 Mtpa. Future stages = lower capex, higher return.

Exhibit 46: Jansen has resource for multiple stages of expansion

Brownfield stages 2-4 = lower capital higher return. BHP is playing the long game.



Source: Company data

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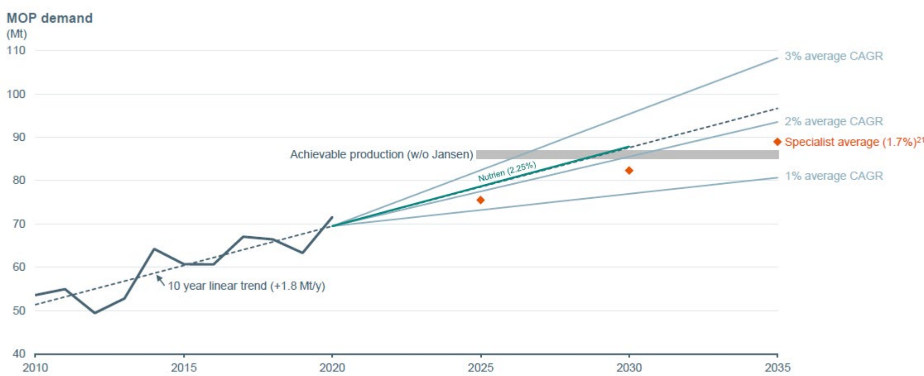
Potash outlook: Strong, growing demand

BHP sees Potash as an "FFC" (future facing commodity). Bottom line, population growth = need to produce more food from the same arable land.

Exhibit 47: Potash demand is growing

New mines will be required. BHP is signalling that Jansen will supply the next 16 Mt of new mined supply to the market.



Source: Company data

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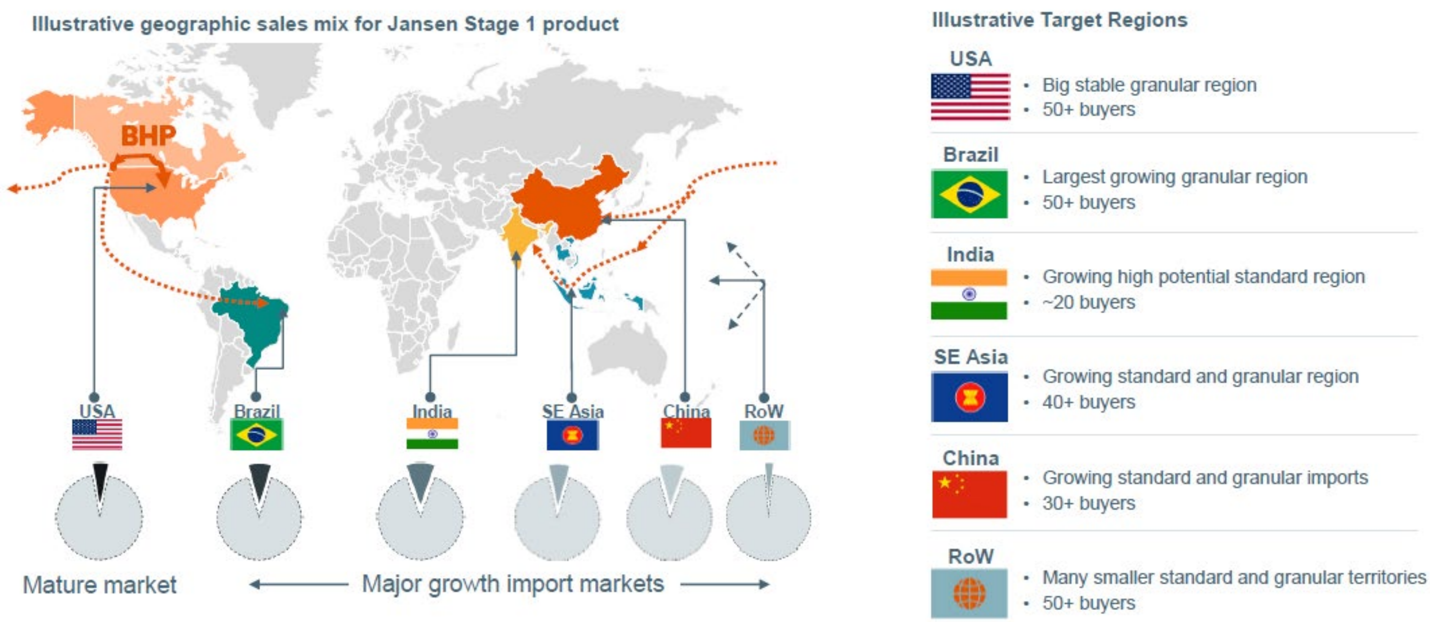
Canada = Premier mining jurisdiction

Canada is a key potash supplier, globally. BHP is on a path from zero to being a major and eventually, possibly, leading Potash producer.

Exhibit 48: Potash is a global market

Canada is a major supplier to ALL global markets. BHP will be a key global supplier.



Source: Company data

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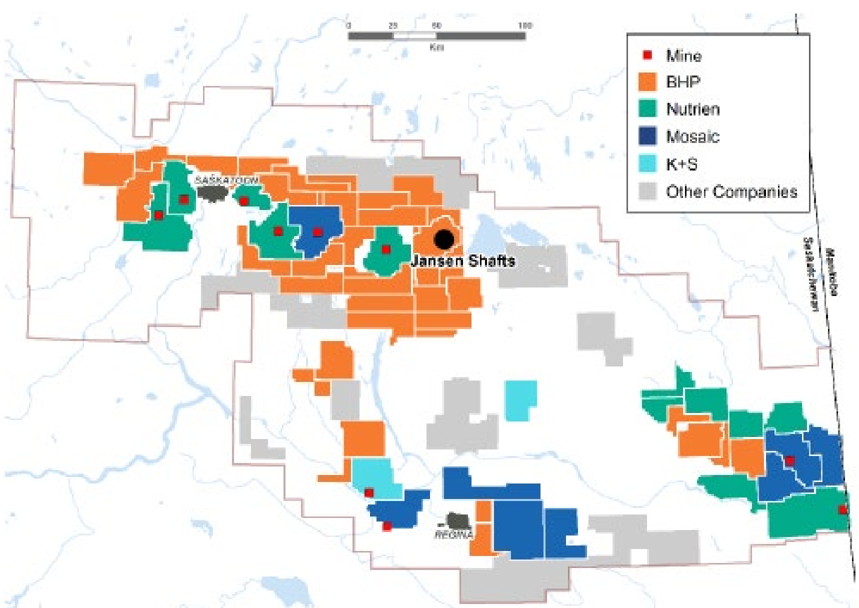
BHP likes mineral "basins"

The land-area the BHP controls in Saskatchewan effectively surrounds the Canadian incumbents. BHP likes owning material land positions in world-scale mineral basins. Saskatchewan is a world-scale potash basin. BHP controls c. 37% of the acreage.

Exhibit 49: BHP land position (orange) in Saskatchewan potash basin

BHP controls c. 37% of the world's premier Potash basin (by acreage) = 6.5 Bt of resource



Source: Company data

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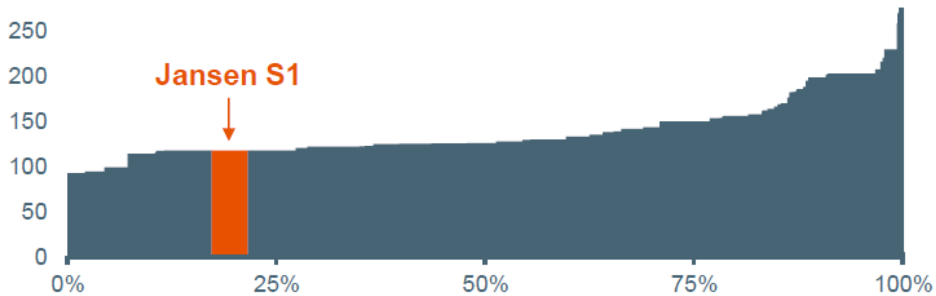
Jansen will be a low cost asset

Jansen's low cost position will be driven by economies of scale and high automation across all aspects of the project. Mining will be done using "size to fit" borers = more productivity in 1 pass.

Exhibit 50: Potash cost curve 2030 real costs
Jansen will be a low cost producer at c US$100/t FOB cost



Source: Company data

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Key advantages of Jansen

BHP outlined its view of the key advantages of Jansen vs. other Potash peers.

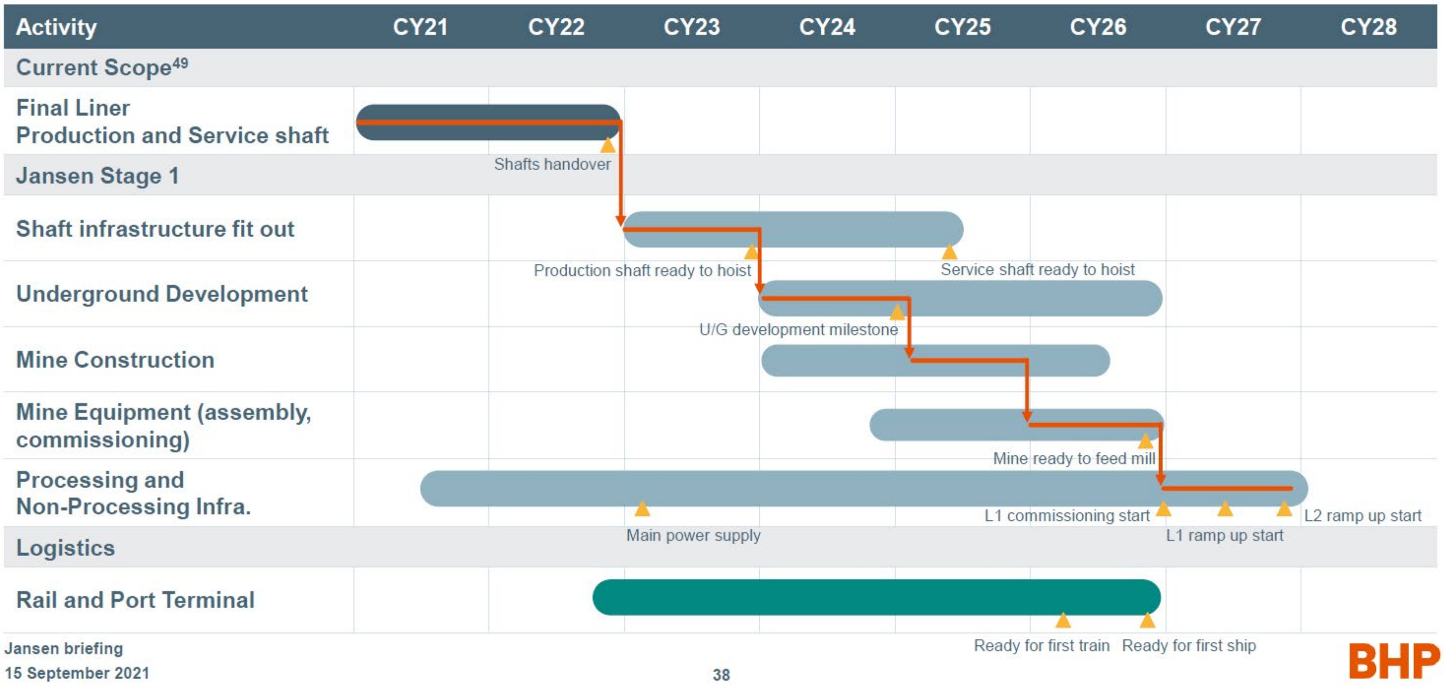
1. Location. 1 site, big production = economies of scale.
2. Shafts. 1. Again simple, economies of scale. Future expansions = lower capital intensity.
3. Mining technology: New style borer machines = larger, much more efficient.
4. Plant design. 1 plant, plan for 4 identical plants. Simplicity, economies of scale.
5. Rail car loading. Continuous, automated. Peers = batch, manual.
6. Port: 1 port, 1 site = simplicity, economies of scale.

Execution risk: Schedule in focus

Critical path has been shaft sinking and lining. From here, there are multiple key, critical activities, taking place in parallel. "From here", BHP believes that it has the project execution experience to bring the project in on time and on budget. To be frank, the project execution to date has been poor leading to a US$2.1 bn net impairment of works to date.

Exhibit 51: Project schedule

6 years to construct, 2 years to ramp up. Orange line = critical path



Source: Company data

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Rio Tinto

Lithium: Becoming a differentiator

Lithium is increasingly becoming an important part of Rio's portfolio mix. Rincon (Argentina) test plant has produced 1st product, ramping up, $2.5bn expansion approved to take production to 60ktpa, comprised of 3ktpa starter plant and 57ktpa expansion.. Recently acquired Arcadium (Link: Arcadium Acquisition) is rich in growth options and should underwrite a multi-fold increase in lithium production over the next decade. At its recent CMD (see our note), when pushed on short term market outlook, RIO management made point that market is expected to grow exponentially and should be able to "take" RIO's expected eventual production ramp.

Link to note: Arcadium deal confirmed. Sizeable premium, but allows scale.
Originally published 11 October 2024

Rio acquires Arcadium Lithium, EV $7.0bn, 6x EBITDA

Rio Tinto and Arcadium Lithium (ALTM, not covered) announced an agreement under which Rio will acquire ALTM in all-cash transaction. RIO will pay $5.85/share, a +90% premium to undisturbed share price and values ALTM at $7.0bn (incl Net Debt). Based on ALTM's own indicative EBITDA (Capital Markets Day - CMD) of $1.3bn in 2028E and including near term growth capex, this implies 6x 2028E EBITDA, broadly in line with Rio's own multiple.

From here? Complete deal. Execute projects. Then price...

To us, the next steps are 1) Complete the deal. Expected mid-2025. 2) Execute on Arcadium's growth project (near doubling of production by 2028). 3) See what happens with prices. We can see the strategic rationale and potential positives of this deal for

Rio; it has growth aspirations in lithium and acquiring ALTM gives instant scale, expertise and more growth optionality. In our view, the timing for a lithium acquisition looks positive, given at current price, we think we are well into the cost curve. After a peak at c. $80,000/t in late 2022, price has corrected, materially, -87% to c. $10,000/t. Key question: When do prices for Lithium start to recover? Higher cost producers in China have recently started to cut production. In our view, this marks the beginning of a bottoming process although the time to price recovery remains uncertain.

Link to note: Rincon = Expanding the 'lithium triangle' Originally published 19 December 2024

Rincon expansion confirmed, first production in 2028

Rio Tinto (RIO) approved a $2.5bn expansion of its Rincon lithium project in Argentina. This should take production to 60ktpa, comprised of 3ktpa starter plant and 57ktpa expansion. Construction to begin in mid-2025, with first production in 2028, ramping up to full capacity by 2031. Rincon uses Direct Lithium Extraction (DLE) technology to recover lithium from brine. DLE conserves water and reduces waste, allowing for faster production and better consistency. Learnings from the project should be applied Arcadium's large-scale, high-grade assets with expansion potential. Assuming the project achieves a first quartile cost position, we model an NPV for the project of $2,791mn based on a LT lithium price (2025$) of US$18,119/t.

Lithium growth: Rio has attractive options

In **Argentina**, apart from Rincon test plant which has produced 1st product and is ramping up, recently acquired Arcadium (Link: Arcadium Acquisition) is rich in growth options and should underwrite a multi-fold increase in lithium production over the next decade. Exploration work is focusing on the Galinée pegmatite project in Quebec, **Canada** located close to Arcadium's assets, as well as on brine opportunities in **Chile**. In **Serbia**, RIO's Jadar project is effectively "on hold" pending further negotiations with stakeholders in Serbia. Planned production is c. 58 ktpa of battery grade lithium.

Building scale: Lithium market is small today but growing

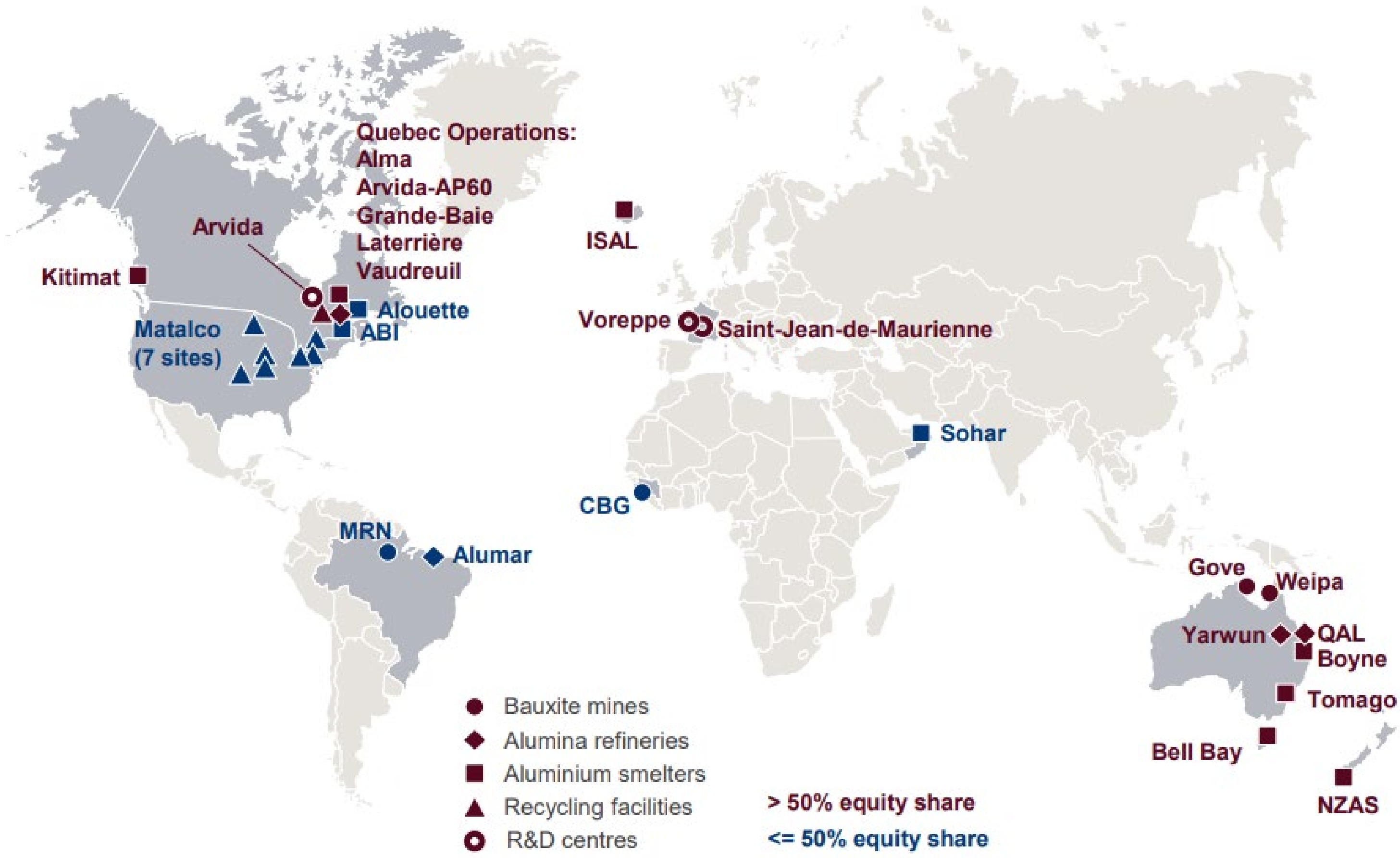
Lithium is a relatively small but fast-growing market. Consider: Copper is a c. $250 bn market, contested iron ore a c. $200 bn market. In 2025, lithium demand (Lithium Carbonate Equivalent) is estimated to be c. 1.4-1.5 Mt. At current spot prices, this makes it a c. US$15 bn market but demand expected to grow at +20-30% per year. At its recent CMD (see our note), when pushed on short term market outlook, RIO management made point that market is expected to grow exponentially and should be able to "take" RIO's expected eventual production ramp.

Aluminium

Aluminium is an important differentiator for RIO. The company operates 4 bauxite mines, 4 alumina refineries and 14 aluminium smelters.

Exhibit 52: Rio Tinto – Aluminium overview

Rio operates 4 bauxite mines, 4 alumina refineries and 14 aluminium smelters



Source: Company presentation

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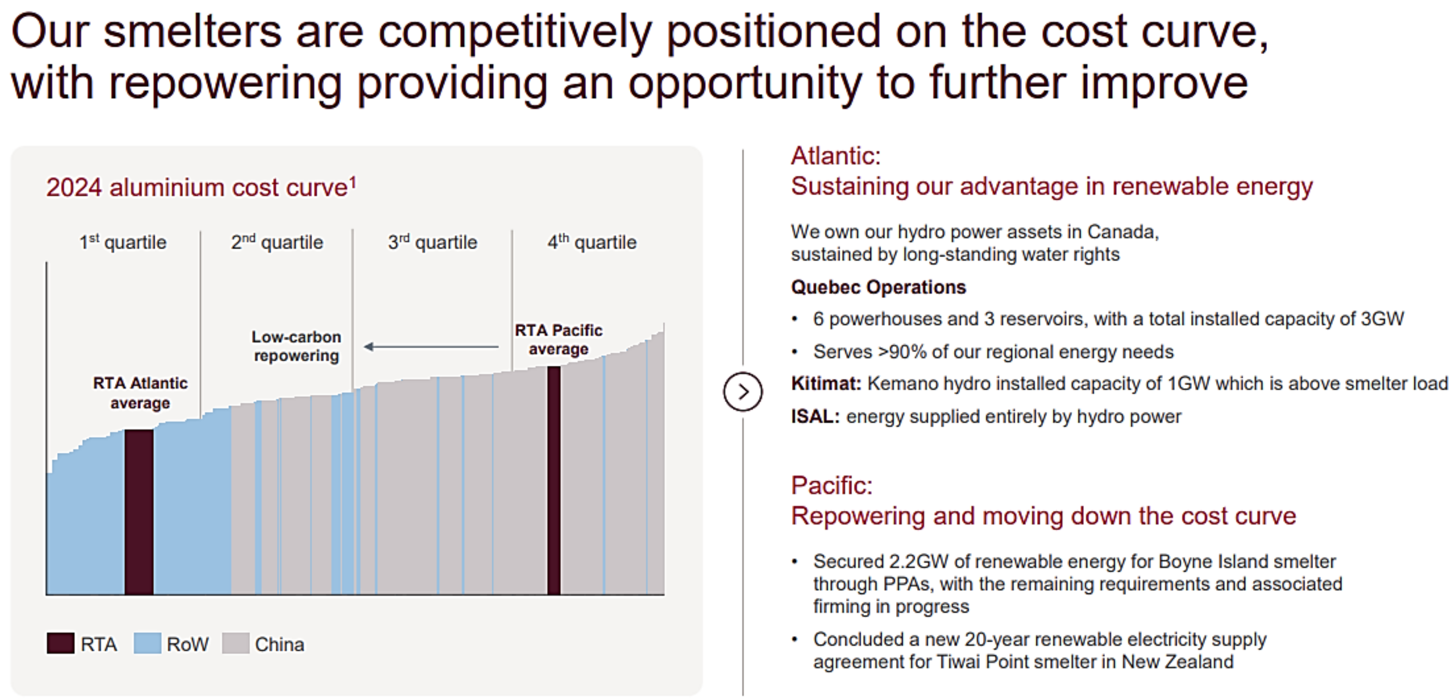
At its recent CMD (see our feedback note from CMD (Capital Markets Day)), management stated the aims to increase Aluminium ROCE by 5% by the end of this decade.

Cutting CO_2 emissions. This continue to be a priority for the business. For instance, the two smelters located in Australia account for c. 50% of Rio's CO_2 emissions and the focus is now on executing a repowering strategy (i.e., replacing expiring fossil fuel contracts with a combination of renewable agreements).

Target to remain competitive on cost curve and lower emissions

Exhibit 53: Aluminium is "stabilised, growing and decarbonizing"
Aluminium business focus continues to include cost optimization and CO_2 emission reduction



Source: Company presentation

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"Best Operator" objective and growth story

Deploying the SPS (Safe Production System) principle across the business monitoring the performance of the smelters based on key operational KPIs and progressing towards the adoption of best-in-class metrics.

Growth initiatives include:

- **Matalco**: Joint venture with Giampaolo Group established nearly a year ago, has promising synergy that can boost Rio's secondary aluminum position and the primary aluminum business.

- **AP60 investment in Quebec:** Adding 96 pots to the existing 38 pots of AP60 technology, which is the latest deployed aluminum smelting technology, allowing for better production and lower emissions. The project is on time and on budget, RIO confirmed. The 96 pots are progressively replacing potrooms at the Arvida smelter, which we are currently used. Rio plans to produce first metal for AP60 by 2026.

- Rio is also studying a potential new smelter project in Finland which would be a JV with Mitsubishi & Vargas with renewable power supplied by Fortum. Early days here, we don't see near term spend until extensive studies are complete.

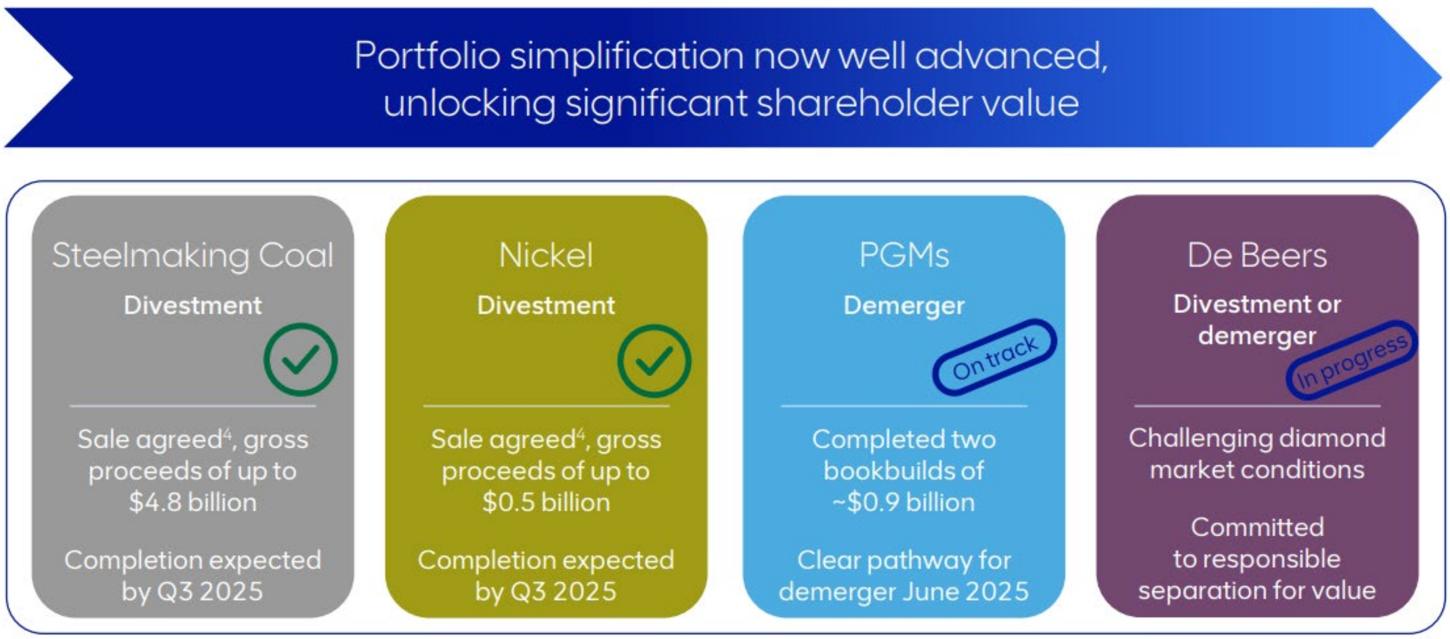
Anglo American

Restructuring

In May 2024. Anglo American was approached by BHP with a view to a merger – Anglo declined to engage and announced its own restructuring plan, instead. See report: [Anglo American May break-up plan](). We think Anglo's copper business is highly attractive and was a key driver for BHP's approach. Anglo's portfolio includes some world class copper assets including Quellaveco = new 300 ktpa copper mine and a 44% stake in Collahuasi, the world's 3rd largest copper mine with expansion potential. We think the copper business by itself could be worth $30 bn+, c. 55% of Anglo's EV, c. 80% of market cap.

Anglo's own major restructuring programme involved a portfolio simplification by selling or spin off non-core assets. For choice, happening faster than we thought with better outcomes. **Coal sales:** Headline US$4.9 bn total. First completed in January US$1 bn inflow. Rest later this year. **Nickel sale:** Headline. US$500 mn. Completion in Q3. **Platinum (PGM) spin:** Transaction costs US$400-500 mn. **Cost savings:** $1 bn achieved, $1.3 bn run-rate, $800 to go, $500 more from corporate costs by end-2025.

Exhibit 54: Anglo American shareholders to capture full value from portfolio changes
Anglo's portfolio transformation is progressing.



Source: Company presentation

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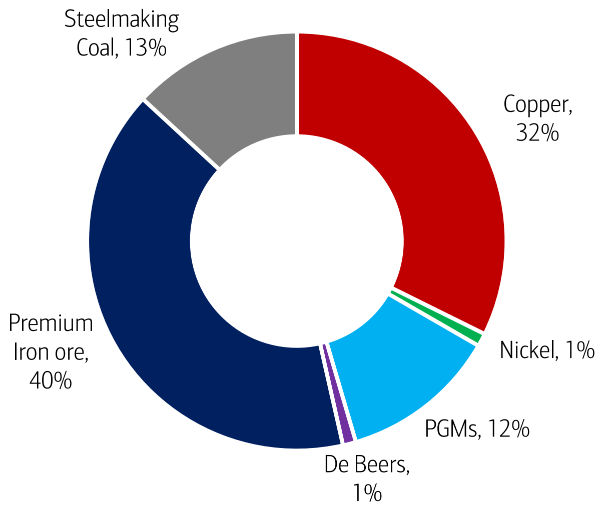
What's next? PGM spin approval is expected at AGM on April 30th, with Separation in June. As a reminder, in Q4 2024, Anglo American sold a second tranche of AMS shares (17.5mn shares, 6.6% of company) into the market for total proceeds of c. $520 mn. (Link to our note: Amplats placement) This follows a placement of 13.9 mn shares earlier in 2024 which raised $400 mn. Anglo (AAL) will keep a 19.9% stake in Amplats, (for now) = perhaps less flowback.

Post the restructuring, Iron ore and Copper are expected to be the core business, contributing to c.51% and c.49% respectively to the Group's EBITDA. Eventually. Anglo expects the new business to be more appealing to shareholders.

Exhibit 53: EBITDA breakdown pre divestment (FY2023A)
Anglo American FY2023A EBITDA breakdown by business ($10bn)



Source: BofA Global Research, company report
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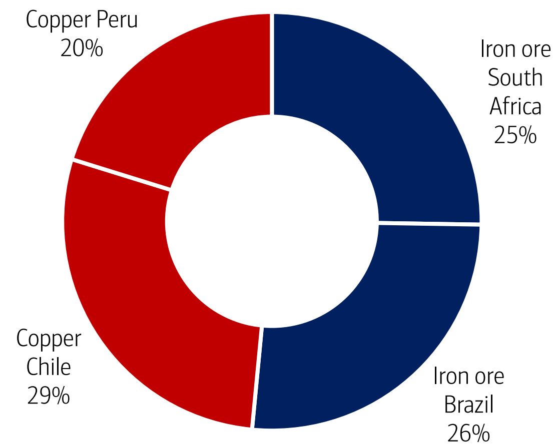
Exhibit 54: EBITDA breakdown post divestment (*)
Anglo expects Copper and Iron Ore to account for 49% and 51% respectively



Source: BofA Global Research, company report. * Based on 2023 pro-forma attributable EBITDA
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Glencore

Marketing

Glencore's marketing (trading) business facilitates the physical trade of commodities, both self-produced and third-party sourced, from producers to consumers. The business focuses mainly energy and on metals and minerals trading (Energy c. 55% of marketing EBITDA in 2023A, Metals c. 45%). Glencore previously also had an Agricultural trading business (Ag) called Viterra but has set up a path to an possible exit by merging its remaining stake in this business with Bunge (BG US), a US listed global Ag trader. Glencore traders optimize arbitrage opportunities through buying and selling commodities (metals and minerals and energy) to match supply and demand globally.

Commodity trading used to generate strong margins by taking advantage of asymmetrical information flows on prices and products. However, technological & communication progress, commodities are now traded on exchange markets and information on pricing has become much more transparent. We believe that this has led to diminishing margins for "traditional" commodity trading businesses and could prompt the industry to explore other money-making alternatives.

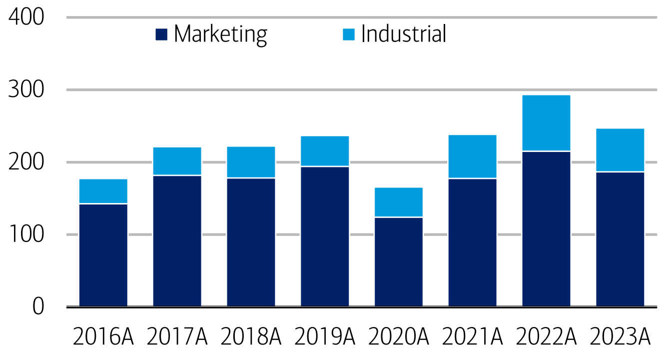
Glencore Xstrata merger

On the 2nd May 2013, Glencore merged with Xstrata. Prior to the merger, Glencore was more focused on marketing, whilst Xstrata was primarily focused on Industrial mining. Glencore was formed in 1994 by a management buyout of Marc Rich and co. AG. (itself founded in 1974). Unlike typical miners who sell at spot FOB (Free-On-Board, i.e. price of goods when delivered to port in the country where produced), Glencore believes it can extract value along the supply chain through its marketing activities. Glencore also served as the marketing partner to Xstrata before the merger. Xstrata was first listed on the London stock exchange in 2002 with a focus on Industrial mining. It was a major producer of coal, copper, nickel, primary vanadium and ferrochrome.

Marketing: A differentiating factor vs. competitors

Commodity trading is a common practice in the mining sector as the companies trade to manage commodity price and demand fluctuations. However, other major diversified miners such as Rio, BHP and Anglo have much more limited marketing operations and trade much less (if any) third party material. Put another way, the "marketing" groups of most large miners could be better described as “sales departments”. Glencore is differentiated by the volume of 3rd party product that it handles. Although marketing represents c.76% of Glencore’s revenue, it only represented c.23% of group EBITDA in 2023. In our sum-of-parts valuation, marketing accounts for c. 26% of group EV.

Exhibit 57: Marketing share of group revenue (US$bn)
Marketing was c. 76% of group revenue in 2023A



Source: Company report

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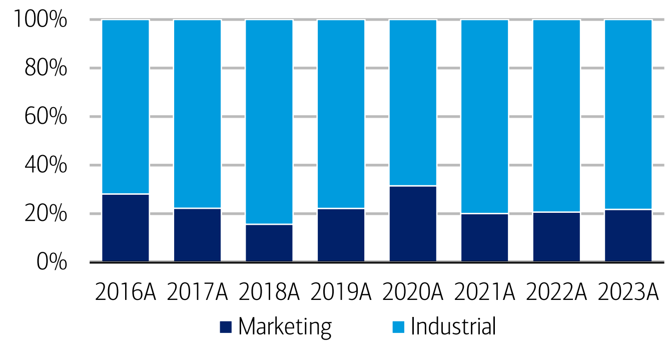
Exhibit 58: Marketing as share of group EBITDA
Marketing as a % of group EBITDA has remained relatively stable over the years



Source: Company report

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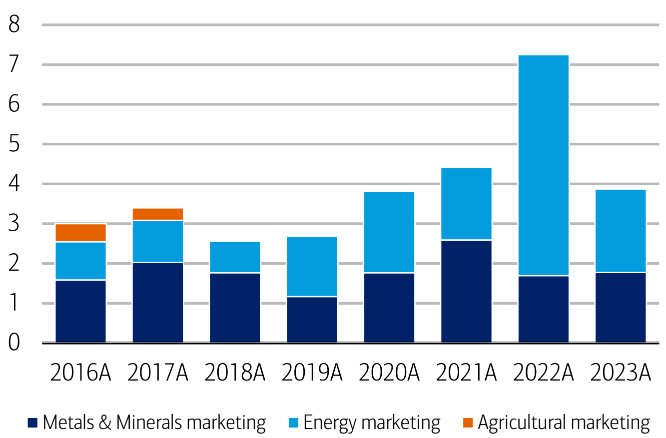
Exhibit 59: Marketing EBITDA split by business segment (US$bn)
Energy Marketing EBITDA decreased in absolute terms in 2023A vs. 2022A. 2022 was an unusual year due to the dislocations in energy markets caused by the war in the Ukraine.



Source: Company report. Note Agricultural no longer generates EBITDA as reported as an associate since sell-down.

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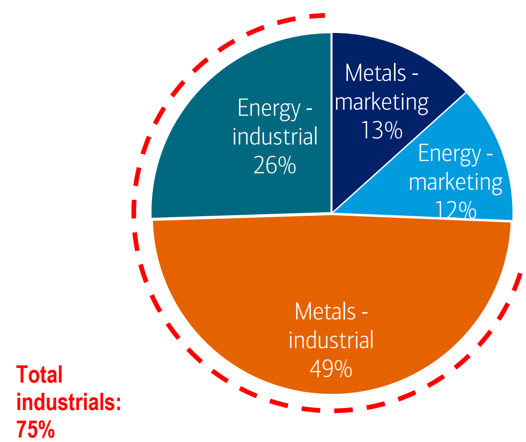
Exhibit 60: Valuation split by business segment
We estimate marketing is c. 25%, industrial 75% of our estimated group EV



Source: BofA Global Research estimates

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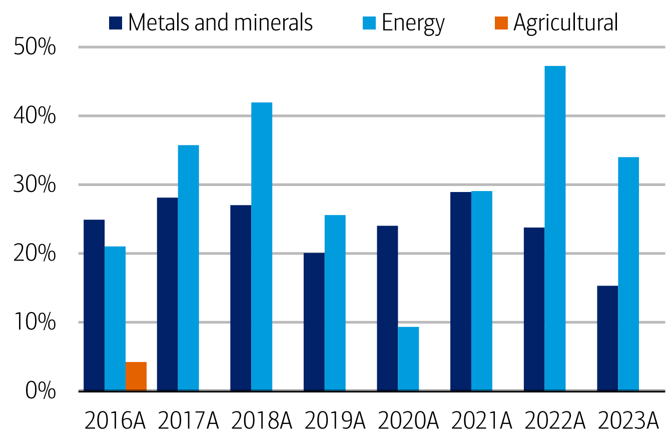
Why does Glencore market? History.

“Marketing” (or physical commodity trading) is seen by management as core to Glencore’s business with its previous CEO, Ivan Glasenberg, an ex-commodity (coal) trader. Current CEO Gary Nagle has also worked across the marketing division before ultimately running Glencore’s coal assets. The marketing division provides more stable, albeit lower margins to Glencore compared to the industrial assets (i.e. mines - see below). We also consider the history of the group. Glencore started as a trader and evolved into a diversified resource business over time, gradually building out its holdings of “upstream” (production) assets.

Management believes that the trading business’s contra-cyclical cash generation (working capital is released when commodity prices fall) serves as a natural hedge to the group’s industrial business.

Exhibit 61: Industrial EBITDA margin
EBITDA margin for Metals & Minerals has been on average > 20%.



Source: Company report.

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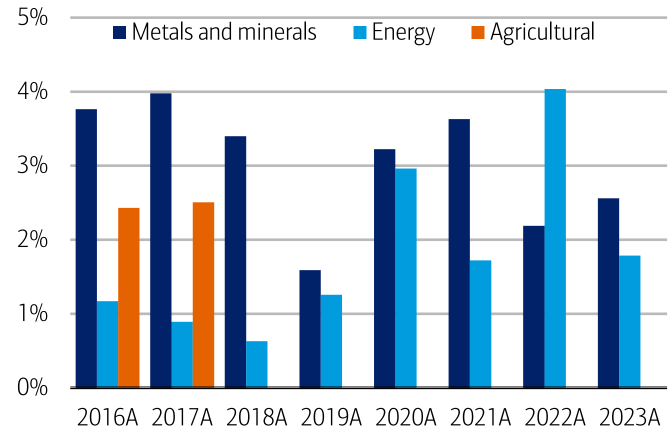
Exhibit 62: Marketing EBITDA margin
Post-2016, EBITDA margins across marketing have been <4%.



Source: Company report.

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For a 'teach-in' on Glencore's marketing (trading) business, see our Glencore: Marketing division primer Mk V. Originally published 18 June 2024

Thermal and (now) steelmaking coal

Glencore is the largest producer of seaborne thermal coal (c. 100 Mtpa = c. 10% of the seaborne market). Glencore is also the largest trader of seaborne thermal coals.

In steelmaking coal, Glencore is now the second largest producer after BHP.

- Nameplate capacity: c. 100 Mtpa of energy/thermal coal + c. 35 Mtpa of steelmaking/coking coal.
- 2025E production guidance: 92-100 Mt of energy coal, 30-35 Mt of steelmaking coal.

Elk Valley Resources (EVR) = Tier 1 seaborne coking coal asset

Having completed the acquisition of Teck's steelmaking coals assets (EVR = Elk Valley Resources), GLEN is now, along with BHP's BMA Australian met coal business, the other key Tier 1 supplier of high-quality seaborne coking coal. The group of 4 mines in eastern British Colombia (Canada) supply c. 24-26 Mtpa of mainly high-quality steel making (coking) coal.

Exhibit 63: Location of Elk Valley Resources (EVR) mine
The EVR coal mines are in south-east British Colombia near the Alberta border. Rocky Mountains!

Source: BofA Global Research

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Reserves are just over 800 Mt (100% basis) underwriting c. 30 years of production with further resources which might support further decades of production. EVR's coal travels c. 700 miles (1,100 km) by rail to the port of Vancouver, BC (Neptune Terminals) before being loaded onto ships for delivery to key global customers, mainly in Asia.

Not all coals are created equal

While much of Glencore's thermal coal product is "benchmark" Newcastle (High quality, Australian) thermal coal, we note that not all thermal coals are created equal. Variations in heat content, ash, sulphur, other impurities and deliver location can all lead to (material) differences in pricing. As such, Glencore provides guidance on "portfolio mix adjustment factors". For 2025, the company's indicative spot FCF analysis is based on a $34.1/t portfolio mix adjustment for thermal coal and a $12.9/t portfolio mix adjustment for coking coal.

Coal spin not happening

At the time of GLEN's approach to TECK in 2023, GLEN suggested potential to spin out the combined coal business. In our subsequent meetings with investors, some made the point that the coal assets are an important source of cash flow for Glencore and that a spin might not make sense. GLEN engaged with shareholders who apparently preferred to keep coal. We think investors appreciate the strong cash flow from coal, particularly if it is channelled to capital returns / buybacks. GLEN plans to "run down" its thermal coal assets over time and will keep and run EVR (steelmaking coal).

Freeport-McMoRan

FCX is a globally diversified copper producer, with optionality on leaching due to decades of historic low grades.

FCX's assets are predominantly located in the USA, Peru, Chile and Indonesia.

Exhibit 64: Map of key Freeport assets
By number of assets, FCX is concentrated in the United States

Source: Freeport-McMoRan Inc. 2020 Form 10-K

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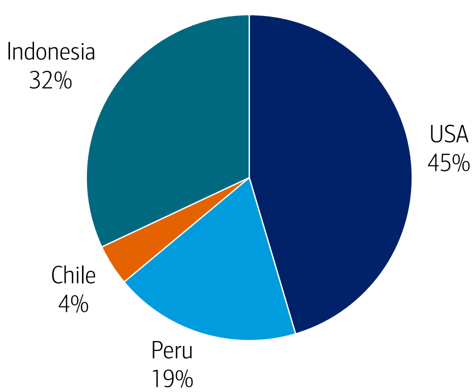
By location of assets, USA is the largest contributor to group's copper production (attributable) at c. 45%.

Exhibit 63: Teck – Copper production
USA contributes 45% to group's copper production (attributable)



Source: BofA Global Research estimates

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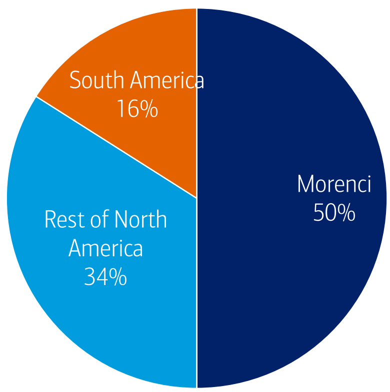
FCX has several options to boost consolidated production growth.

New Leach Technologies

FCX is also assessing several internal and external initiatives to advance sulphide leaching technologies. The assessments include in-field trials at existing FCX owned leach stockpiles with a focus on both traditional leach ores and ores that have historically been considered too difficult to leach, such as chalcopyrite. Management estimates it has 39Blbs of copper contained in leach stockpiles that are considered unrecoverable by traditional leach methods but that could be recovered by new leach technologies. Of the total 39Blbs, 50% is located at Morenci, 34% is located across the North American operations (other than Morenci) and 16% is located at the South American operations. In 2024, incremental production from these initiatives totalled 214Mlbs, with a target of 300-400Mlbs in 2026e and 800Mlbs by 2030e.

Exhibit 64: Location breakdown of the 39 Blbs of copper contained in leach stockpiles potentially recoverable by new leach technologies

In 2024, incremental production from new leach technologies totalled 214Mlbs



Source: Company presentation

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We note, in 2021 FCX's invested into Jetti resources (see report) which has developed a "novel leach" technology to unlock low-grade primary sulphide resources and is an example of one technology being assessed by FCX, having deployed at its El Abra mine in Chile in 2023.

Ambitious climate transition plan

Fortescue set a strategic ambition to decarbonise operations by 2030 and use its first mover advantage to accelerate commercial decarbonisation throughout the industry. Since 2023, the company no longer purchases voluntary carbon offsets for Scope 1 and 2 emissions, instead focusing efforts on the elimination of emissions. In September 2022 the company committed US$6.2bn of capex related to the decarbonisation of its Pilbara operations. Fortescue has laid out a detailed timeline showing how it will eliminate emissions without voluntary offsets and without carbon capture and storage, known as "Real Zero". This includes turning off diesel and gas and completely shifting to green energy. Fortescue Zero exists to build the tech needed to eliminate fossil fuels. This spans from intelligent batteries to vehicle management systems. It is estimated that around 2-2 gigawatts of solar, wind and battery storage are needed to decarbonise the iron ore operations.

Vale

Iron ore quality. Valuable in decarbonization. Primary listing in emerging market.

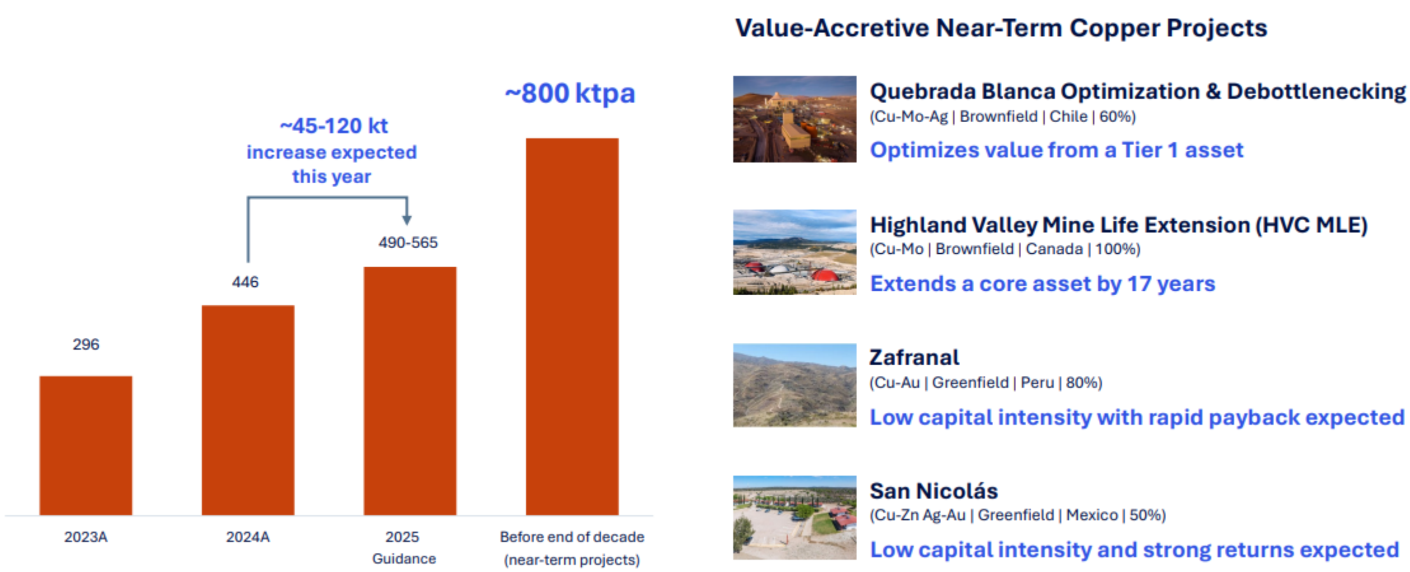
Vale is one of the largest producers of iron ore in the world, and is known for its high quality. The Carajas ore boasts 67% iron ore content. The company's strategy has been centred around supplying high quality iron ore to reduce emissions in the steel industry. Vale believes supply will stay tighter for longer while licensing becomes more complex due to more stringent environmental, social and governance standards. High-quality ores, such as iron as well as critical metals are essential for the energy transition and the low-carbon economy. In February 2025, Vale announced the New Carajas Project, in the state of Para, in Brazil, focused on resuming and maintaining iron ore volumes and expanding copper production. Iron ore production in Carajas is expected to reach a rate of 200 million tonnes a year by 2030.

Teck Resources

Abundant optionality in TECK's portfolio including QB expansion

Copper optionality within TECK's portfolio is abundant. There is a path to drive TECK's copper production to c.800ktpa in the near-to-medium term, through the Zafranal project in Peru (potential sanction decision in late 2025), the 50%-owned San Nicolas project in Mexico (feasibility study completion and receipt of permits expected in H2'25) and the Quebrada-Blanca Optimization and Debottlenecking (planned DIA permit application in H2'25). As such, the current QB2 configuration and mine plan covers just 18% of the total reserve and resource tonnage for the deposit, implying immense future growth potential. Brownfield life extensions (with elements of expansion) include the 100% owned Highland Valley Copper (potential sanction decision in H2'25).

Exhibit 67: Teck has abundant short-to-medium term growth optionality
Company sees path to c.800ktpa by end of decade



Source: Company presentation

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Unique shareholder structure

Unique, historical dual class share structure in which each class A share has 100 votes and each class B share has 1 vote. This structure will be eliminated in May 2029. The share structure had been seen by investors as an impediment to a potential acquisition of TECK by a larger peer.

South32

Unique portfolio relative to other diversified miners

Interestingly, like many miners, S32 is pivoting away from high CO2 footprint products towards commodities which enable the energy transition. Since its separation from BHP in 2015, S32's portfolio has continued to evolve with exits from thermal coal, coking coal and now potential sale of its Ferronickel business in Colombia. Conversely, S32 has added more polymetallic exposure (zinc, lead, silver) by executing the Hermosa project (USA) and added copper exposure by purchasing a 45% stake in the Sierra Gorda copper mine in Chile (Partner: KGHM, 55%). "From here", S32 sees more optionality at its Hermosa project beyond the Taylor deposit currently being developed. Other deposits at the mine (Clark, Peake) may enable low capital intensity growth, including in copper.

Growth relative to size

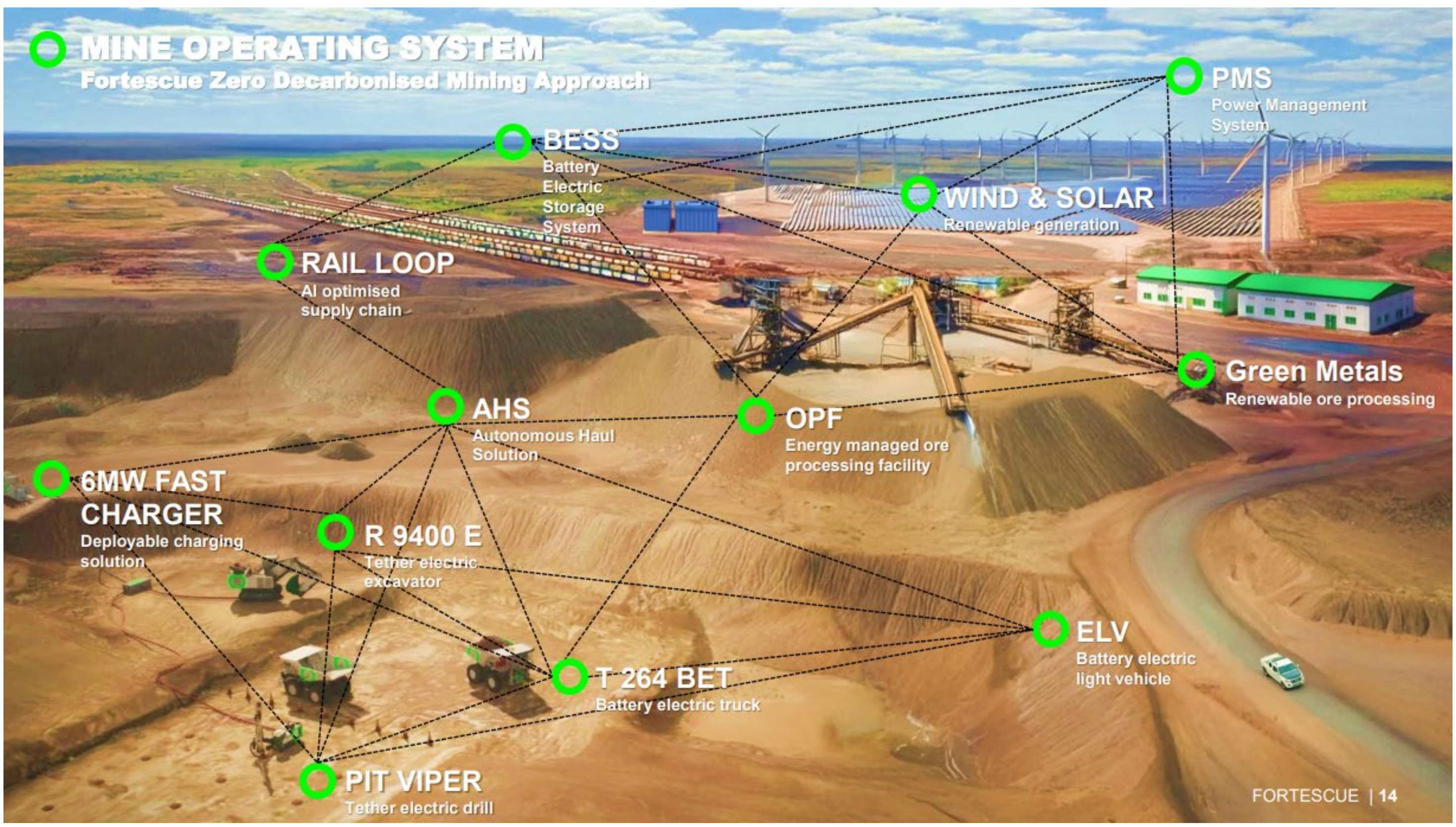
Some mining companies evolve through a combination of both organic & inorganic development over time. S32 started life instantly as a "less wanted" tail of smaller scale & shorter life assets spun out of BHP with a view to simplifying the Big Australian's business (c. 8% of BHP). That said, since 2015, the portfolio has evolved considerably. Big picture, we weigh the investibility of Big Miners such as BHP or Rio Tinto vs. a more company specific execution story such as South32. Bottom line, with relatively smaller enterprise value (EV) at c. $8 bn, individual portfolio and project decisions & execution can impact shareholder returns in a much more differentiated way than at a Big Miner. We also consider that, unlike Big Miners, S32 could (in theory) be an M&A target.

Fortescue

Green Metals Project

Located at Christmas Creek, the Green Metal Project is a cornerstone of Fortescue's decarbonisation strategy, positioning the company at the forefront of sustainable metal production.

Exhibit 68: Fortescue – Decarbonisation approach
Green Metals Project is a cornerstone of Fortescue's decarbonization strategy



Source: Company presentation

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The project employs renewable energy and green hydrogen reduction technology, combined with an electric smelting furnace to produce high-purity green metal with near-zero carbon emissions. This initiative is part of Fortescue's broader strategy to explore the commercialization of green metal production, in response to increasing industry focus on decarbonizing the steel supply chain.

Management at Big Miners

We recap key management at "Big Miners" noting backgrounds, time in the role and a view on the experience and track record of each of the CEOs.

Exhibit 69: Top Management at Big Miners

Overview of current Chairmans and CEOs across our Big Miners.

Company	Chairman	CEO
BHP	**Ross McEwan:** Mr McEwan has been Chairman since April 2025 and independent Non-executive Director since April 2024. He has over 30 years' global executive experience, including in the financial services industry, with deep expertise in capital allocation, risk management and value creation in complex regulatory environments. He was CEO of National Bank Australia (2019-2024) and Group CEO of the Royal Bank of Scotland (2013-2019). Prior to that, he held executive roles at Commonwealth Bank of Australia, First NZ Capital Securities and National Mutual Life Association of Australasia / AXA New Zealand. McEwen has a deep understanding of organisational transformation and brings a very strong focus on the customer and technology as a driver of change.	**Mike Henry:** Mr Henry was appointed Chief Executive Officer of BHP on 1 January 2020. He has over 30 years' experience in the resources industry, including in Australia, Asia, North America, and Europe. Prior to being appointed CEO, Henry led BHP's Minerals business in Australia. He has been with BHP since 2003 and has held leadership roles spanning operational, commercial, and technical. He was President Coal from 2015-2016 and President HSE, Marketing and Technology from 2013-2014. Henry has been a member of the Executive Leadership Team since 2011. Prior to joining BHP, Henry worked in the resources industry in Canada, Japan and Australia. **What we think:** We think Henry thinks about the business with a strong long-term focus. He focuses on the transition to future facing commodities, and what this may spell out for BHP's steelmaking business. He has also executed, decisively, on many material changes for the company including collapsing the DLC, exiting oil, adding copper optionality and approving the Jansen Potash project.
Rio Tinto	**Dominic Barton:** Mr Barton was appointed Chair from May 2022. Barton spent over 30 years at McKinsey & Company. including nine years as the Global Managing Partner, and has also held a broad range of public sector leadership positions. Previously he also has served as Canada's Ambassador to China. Barton brings a wealth of global business experience, including deep insight of geopolitics, corporate sustainability and governance. His business acumen and public sector experience position him to provide balanced guidance to Rio Tinto's leadership team.	**Jakob Stausholm:** Mr Stausholm joined Rio Tinto in September 2018 as Executive Director and Chief Financial Officer. He became Chief Executive in January 2021. Prior to joining Rio Tinto, Stausholm was the Chief Strategy, Finance and Transformation Officer for the Maersk Group, with oversight of the Group's strategy, digitisation, IT, legal as well as the transformation and shared services functions. He also served as Group CFO of the global facility service provider ISS. Prior to this, Stausholm worked for 19 years for Shell across Europe, Latin America and Asia-Pacific, including as Vice President, Finance for Asia-Pacific, and earlier, as chief internal auditor. From 2009-16, he served as a non-executive director of Statoil (now Equinor), including the last six years of his tenure as Chairman of the Audit Committee. Between 2006-08, Stausholm was also a non-executive director of Woodside Petroleum. **What we think:** We see Stausholm's appointment as a move to rebuilding relations outside Rio Tinto. We think he is committed to improving Rio Tinto's relationship with local communities, and is making a genuine attempt revamp company culture. We think that he believes in taking calculated risks to increase optionality at Rio Tinto but is wary of overpaying for this, hence a bias towards investing in earlier stage projects.
Anglo American	**Stuart Chambers:** Mr Chambers contributes to Anglo American significant global executive and boardroom experience across the industrial, logistics and consumer sectors. Until 31 March 2021, he served as chairman of Travis Perkins plc, having joined the board as a non-executive director in 2017. He previously served as chairman of ARM Holdings plc and Rexam plc until 2016; and as a non-executive director on the boards of Tesco PLC (2010-15), Manchester Airport Group plc (2010-13), Smiths Group plc (2006-2012) and Associated British Ports Holdings plc (2002-06). His executive career included 13 years at Pilkington plc and its subsequent parent company Nippon Sheet Glass until 2010, in a number of executive roles and ultimately as chief executive of both companies. Prior to that, he gained 10 years of sales and marketing experience at Mars Corporation, following 10 years at Shell as a chemical engineer.	
Glencore	**Kalidas Madhavpeddi**: Kalidas Madhavpeddi was appointed as Non-Executive Chairman on 30 July 2021. He was first appointed to the Board as an Independent Non-Executive Director in February 2020. He started his career at Phelps Dodge, where he worked from 1980 to 2006, ultimately becoming both President of Phelps Dodge Wire & Cable and Senior Vice President responsible for the parent company's global business development, acquisitions and divestments.	**Gary Nagle:** Mr Nagle was appointed as CEO on 1 July 2021. He joined Glencore in 2000 in Switzerland as part of the Coal business development team. He was heavily involved in seeding a portfolio of assets to Xstrata in 2002, in conjunction with its initial listing on the London Stock Exchange. Nagle then worked for five years (2008-2013) in Colombia as CEO of Prodeco, Glencore's Colombian coal operation. He then moved to South Africa to take on the role of Head of Glencore's Alloys Assets (2013-2018). Following that he was the Head of Glencore's Coal Assets based in Australia.

Exhibit 69: Top Management at Big Miners

Overview of current Chairmans and CEOs across our Big Miners.

	In 2008 he was appointed as CEO of CMOC International, the operating subsidiary of China Molybdenum Co Ltd (China Moly), a single asset company with a market value of $500 million. Madhavpeddi has degrees from the Indian Institute of Technology, Madras, India and the University of Iowa and has completed the Advanced Management Program at Harvard Business School.	Nagle has commerce and accounting degrees from the University of the Witwatersrand, and qualified as a Chartered Accountant in South Africa in 1999. He also served on the Board of Lonmin plc from 2013 - 2015 and has represented Glencore on the Minerals Councils of Australia and Colombia. **What we think:** Nagle supports the previous management team's approach to the coal assets, i.e. to continue to own and operate them, and allow the assets to deplete over natural lives. He is willing to engage with the market to understand opposing views, which we see as promising. We believe that, given the company's history with the DoJ / SFO, Nagle wants GLEN to have / build a reputation for doing the "right" thing. At an analyst dinner, Nagel discussed how management now asks itself, "Would Chevron do this deal, would BP does this deal?" i.e., the company is very concerned about market perception of its internal decision making and risk taking approach.
Vale SA	**Daniel André Stieler:** He assumed the position of Chairman of the Board of Directors of Vale in April 2023. He was previously CEO of Previ (pension fund for Banco do Brasil) since in June 2021. Stieler was an employee of Banco do Brasil since 1980s, where he started as a trainee. Before becoming CEO at Previ, he was superintendent director at Economus Instituto de Seguridade Social, the pension fund of Nossa Caixa, which was acquired by BB in 2009. Daniel holds a degree in Accounting from Universidade Federal de Santa Maria (RS), two post-graduate degrees in Business Finance and Auditing from Fundação Getúlio Vargas, and an MBA in Accounting from Universidade de São Paulo (USP).	**Gustavo Pimenta:** Mr Gustavo Pimenta has been Vale's CEO since October 2024. Pimenta's experience spans the financial, energy and mining sectors, with a career developed over 20 years in Brazil, the Unites States and Europe. In 2021 he assumed the position of executive Vice-president of Finance and Investor Relations. He was also responsible for the Procurement and Energy & Decarbonisation. Prior to joining Vale, he was an executive at AES for 12 years with experience as CFO. He also served as Vice President of Strategy and M&A at Citigroup in New York. **What we think:** Pimenta's candidacy generated consensus among the board of directors, which is important to boost confidence over execution. The resolution of the succession process ahead of schedule is a testament of the strength of Vale's corporate governance.
South32	**Ms Karen Wood:** She has held various senior global leadership roles with BHP, including Group Company Secretary, Chief People Officer and President Corporate Affairs. She was a member of BHP's leadership team and served as Chair of The Global Ethics Advisory Panel, the Disclosure Committee and as Chief Governance Officer. Following the merger between BHP Limited and Billiton Plc in 2001, she established the multi-jurisdictional governance framework for the merged entity. Wood joined BHP as Group Company Secretary in 2001 and retired in 2014. Before joining BHP, Wood held the role of General Counsel and Company Secretary with Bonlac Foods Limited. Wood is a member of the Takeovers Panel (Australia) from 2000 to 2012 and her roles with the Australian Securities and Investment Commission (Business Consultative Panel) and the Australian Federal Government's Business Regulatory Advisory Group.	**Mr Graham Kerr:** Mr Kerr has been Chief Executive Officer since October 2014 and is responsible for running all parts of our business. He led South32 through the Demerger from BHP in 2015 and its public listing in three countries and has overseen the development and implementation of our strategy. He joined BHP in 1994 and was appointed Chief Financial Officer in November 2011. Previously, Kerr was President of Diamonds and Specialty Products and worked in a wide range of operational and commercial roles across BHP. As President of Diamonds and Specialty Products, Kerr was accountable for the Ekati Diamond Mine in Canada, the Richards Bay Minerals Joint Venture in South Africa, diamonds exploration in Angola, the Corridor Sands Project in Mozambique and the development of BHP's potash portfolio in Canada. Kerr holds a Business degree from Edith Cowan University and studied at Deakin University to become a Certified Practicing Accountant. **What we think:** We think Kerr developed deep understanding of the business with his extensive experience with the company (since its inception). We think that Kerr understands that value creation in the mining sector takes time, especially when starting a company with fairly limited optionality. Kerr has been instrumental in the (ongoing) portfolio pivot at South32, in our view.
Fortescue Metals	**Dr Andrew Forrest**: As Fortescue's Founder and Chairman, Dr Forrest has led the Company from inception to its Top 10 status on the Australian Stock Exchange, during which time Fortescue invested more than US$27 billion in the resources sector. Dr Forrest completed a PhD in Marine Ecology. Prior to that he was awarded an honorary doctorate by the University of Western Australia, is an Adjunct Professor of the Central South University in China and a lifetime Fellow of the Australian Institute of Mining and Metallurgy. He is Co-Chairman of the Senior Business Leaders' Forum, the leading formal dialogue for China and Australia's most senior business leaders. In 2017, Dr Forrest was appointed an Officer of the Order of Australia (AO) for distinguished service to the mining sector. He was a Councillor of the Global Citizen Commission, charged by the UN to modernise the Universal Declaration of Human Rights presented to the UN Secretary General in April 2016.	**Dino Otranto:** Mr Otranto joined Fortescue in 2021 as Chief Operating Officer Iron Ore before becoming Fortescue Metal's CEO in August 2023. With a career in the resources industry spanning 20 years, he has held various positions across a range of commodities and operations around the world. Prior to joining Fortescue Metals, Otranto held the role of COO at Vale Base Metals, leading their North American, European and Asian nickel and copper businesses, which encompasses a global network of underground and open pit mines, smelters, refineries, power stations, port and rail infrastructure. Otranto holds a Bachelor of Engineering (Chemical) and a Bachelor of Science (Chemical) from Curtin University and a Graduate Diploma of Finance from the Financial Services Institute of Australasia. **What we think**: We think Otranto has a deep understanding of the industry and business given 20+ years in various positions across different commodities on an international scale. He is focused on advancing the company's green ambitions and delivering operationally.
Teck Resources	**Sheila Murray**: Sheila Murray has been a director of Teck since April 2018 and was appointed Chair of the Board in February 2020. She is a graduate of Queens University	**Jonathan Price:** Mr Price was appointed President & CEO of Teck in September 2022, and has been a member of Teck's Board of Director since July 2022. Previously, Price

Exhibit 69: Top Management at Big Miners

Overview of current Chairmans and CEOs across our Big Miners.

	(B.Comm and LLB). Murray served as President of CI Financial Corp. from 2016 to 2019 and was previously Executive Vice-President, General Counsel and Secretary of CI Financial Corp. Prior to that, Murray had a 25-year career at Blake, Cassels & Graydon LLP, where she practised securities law with an emphasis on mergers and acquisitions, corporate finance, and corporate reorganizations. Murray is the past Chair of the Dean's Council at Queen's University Law School and has also taught Securities Regulation at Queen's University and Corporate Finance at the University of Toronto's Global Professional LLM in Business Law Program.	was Executive Vice President and Chief Financial Officer having joined Teck in October 2020. He brings extensive experience in the resources sector through a variety of finance, commercial and business development roles spanning Europe, Asia and Australia, with a focus on strategy, transformational change and business improvement. Prior to joining Teck, Price was employed by BHP from 2006 to 2020 where he was Chief Transformation Officer, Vice President Finance and Vice President Investor Relations working in Asia, Australia and the UK. He has also worked in the Metals and Mining team at ABN AMRO Bank and held various production and technical roles with INCO. **What we think:** We think Price's experiences at BHP as well as across a few key mining jurisdictions could support the company's strategic direction and business development.
Freeport	**Richard C. Adkerson**: Mr.Adkerson served as CEO from 2003-2024, having served in various senior roles at Freeport since 1995. Total tenure at Freeport has spanned over 30 years, including time as CFO and COO plus Vice Chairman of the International Copper Association. Adkerson has served on the FCX Board since 2006 and as Chairman of the Board since February 2021. Adkerson stands out vs. his peers for his tenure (30+ years with the company, many of them in very senior roles). In our view, Adkerson historically took a very "hands on" approach to running Freeport, for example, having been intimately involved in the negotiations for the company's 2019 process to sell a stake in the company's Grasberg mine to a mining company owned by the Indonesian government. What we think: **Adkerson,** is one of the longest serving "Big Miner" leaders and has seen the company through some very difficult crises, including 1) The need to repair the balance sheet post an ill-timed petroleum acquisition and 2) The negotiation of Rio Tinto's exit from Grasberg and the accompanying increase in Government of Indonesia holding. It's positive that he will remain chairperson of the board.	**Kathleen L. Quirk:** President and CEO and a member of the Board of Directors of Freeport-McMoRan Inc (Freeport). Effective at the annual meeting of shareholders on June 11, 2024, Quirk became President and Chief Executive Officer and will assume full responsibility for executive management of the business reporting to the Freeport Board of Directors. She has over thirty years of experience in the Freeport-McMoRan organization and is a senior member of the company's executive team. She has been instrumental in Freeport-McMoRan's strategic planning and has responsibility for a broad range of corporate functions. She previously served as Chief Financial Officer of the company from December 2003 to March 2022. During that period she was named Best CFO in Metals and Mining by Institutional Investor magazine on numerous occasions. She currently serves on the Board of Directors of Vulcan Materials Company. Quirk holds a Bachelor of Science in Accounting from Louisiana State University. Quirk joined the FCX Board in February 2023. **What we think:** We think Quirk is the right successor to Richard Adkerson (former CEO, now Chairman), given her deep understanding of the company strategy and operations through her 30+ years with the company and 19 years serving as CFO. She gained trust from investors and demonstrated her execution ability.

Source: BofA Global Research, company website

BofA GLOBAL RESEARCH

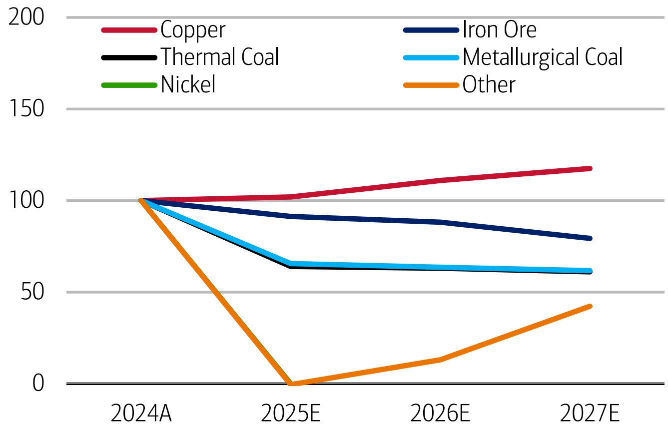
Why own a Big Miner?

As ever, we reflect on the "myth" of the Big Miner that: (1) Owns Tier 1 assets; (2) Invests contra-cyclically; (3) Generates returns > WACC; and (4) Pays a progressive dividend. We think the myth has been "exploded" and that China and other developments eroded historic Big Miner advantages (funding, cost of capital, institutional knowledge).

What drives mining equity today? We think: (1) Prices; (2) Growth; and (3) Self-help.

Revenue (Both price and volume)

Exhibit 68: BHP revenue indexed to FY24A
Near-term revenue upside in copper



Source: BofA Global Research estimates

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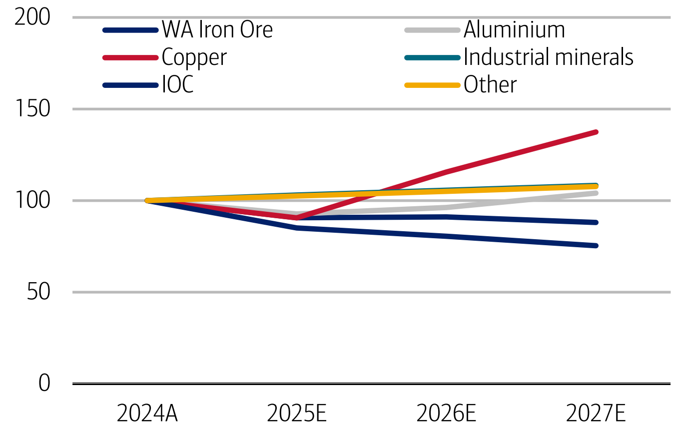
Exhibit 69: RIO revenue indexed to FY24A
Near-term revenue upside in copper



Source: BofA Global Research estimates

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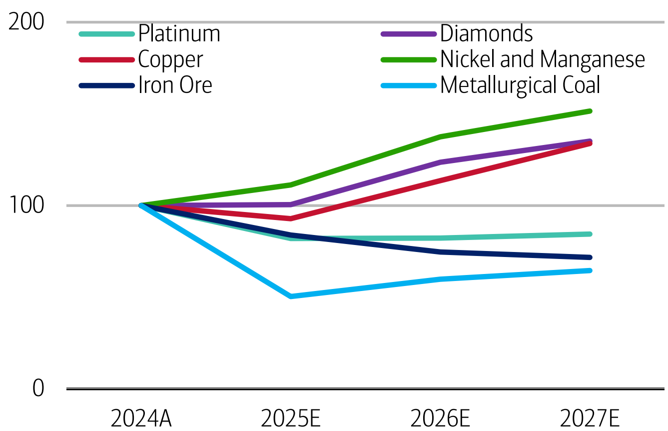
Exhibit 70: AAL revenue indexed to FY24A
Near-term revenue upside in diamonds and copper



Source: BofA Global Research estimates

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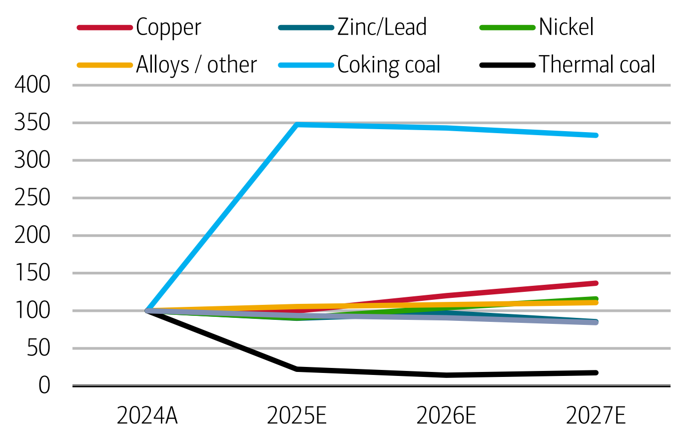
Exhibit 71: GLEN revenue indexed to FY24A
Near-term revenue upside in copper and coking coal



Source: BofA Global Research estimates

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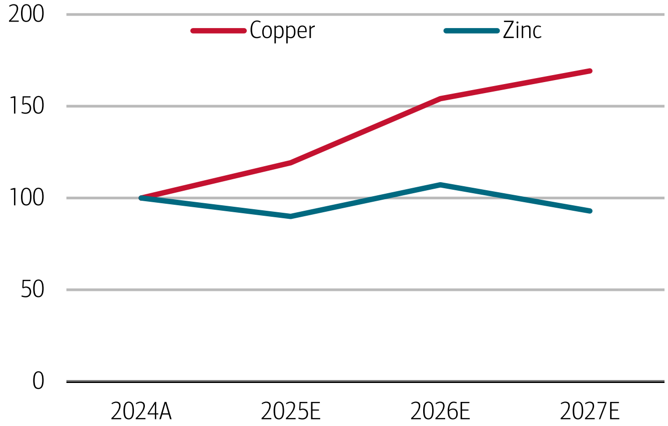
Exhibit 72: Teck revenue indexed to FY24A
Near-term revenue upside in copper



Source: BofA Global Research estimates

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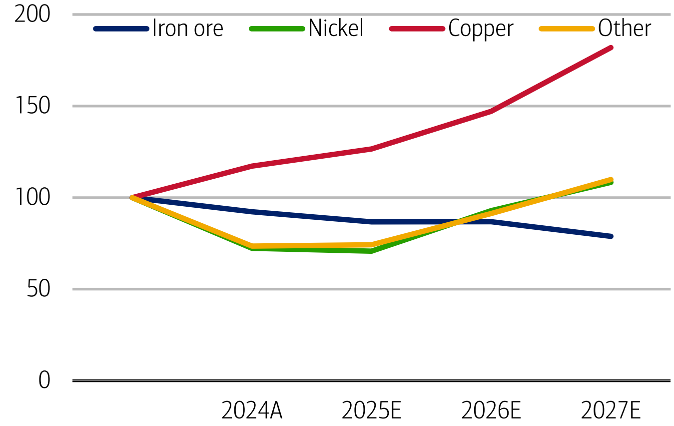
Exhibit 73: Vale revenue indexed to 2024A
Near-term revenue upside in copper



Source: BofA Global Research estimates

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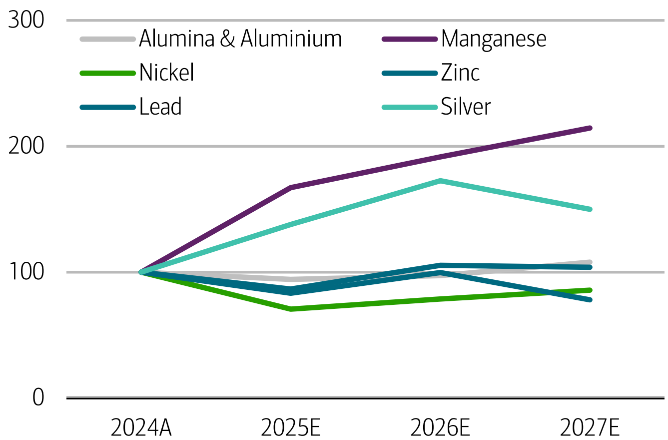
Exhibit 74: South32 revenue indexed to FY24A
Near-term revenue upside in zinc & manganese



Source: BofA Global Research estimates

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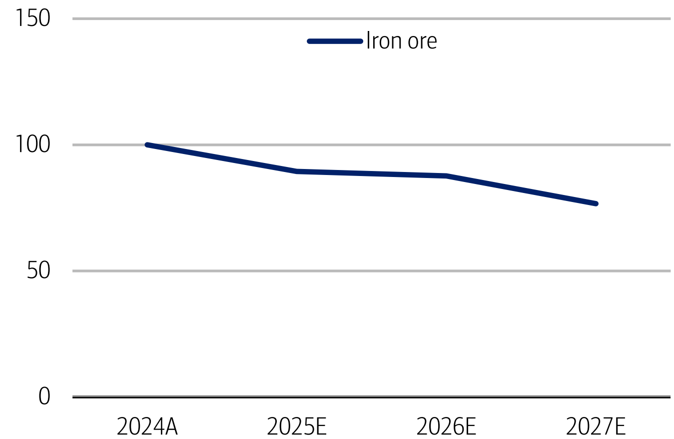
Exhibit 75: FMG revenue indexed to FY24A
Iron ore price drives FMG revenue



Source: BofA Global Research estimates

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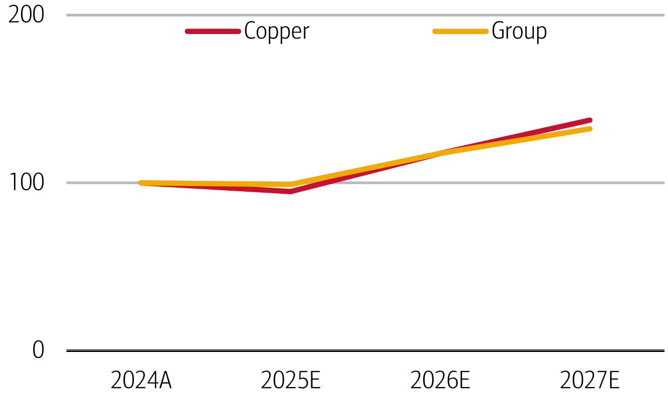
Exhibit 76: Freeport revenue indexed to FY24A
Freeport is effectively a copper "pure play".



Source: BofA Global Research estimates

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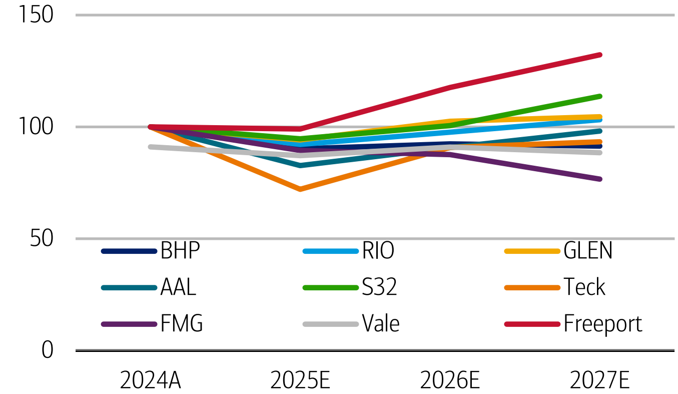
Exhibit 77: Revenue indexed to FY24A, for all Big Miners
From here: Revenue upside for S32, FCX driven by base metals.



Source: BofA Global Research estimates

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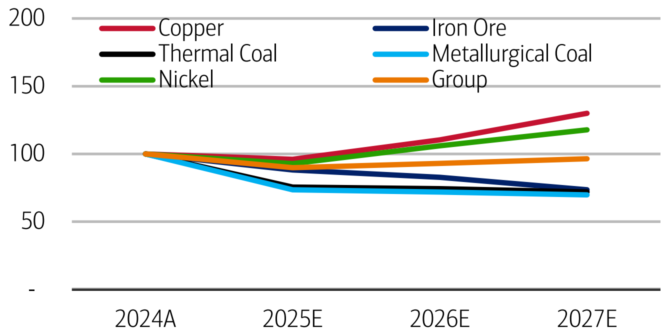
Price (isolated)

Exhibit 78: BHP revenue assuming flat volumes, index=100 in FY24
Price uplift from copper



Source: BofA Global Research estimates

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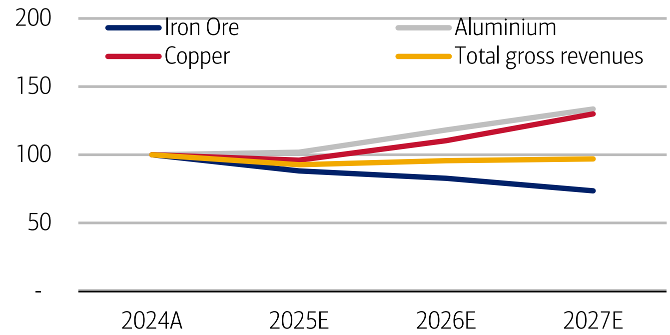
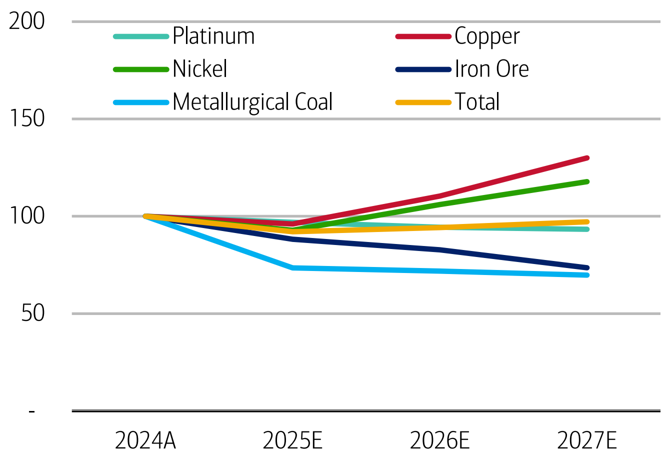
Exhibit 79: RIO revenue assuming flat volumes, index=100 in FY24
Price uplift from copper and aluminium



Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

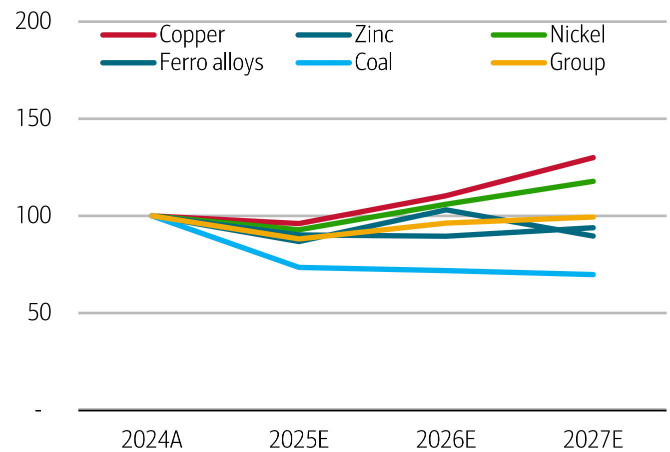
Exhibit 80: AAL revenue assuming flat volumes, index=100 in FY24
Price uplift from copper



Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 81: GLEN revenue assuming flat volumes, index=100 in FY24
Price uplift from copper



Source: BofA Global Research estimates

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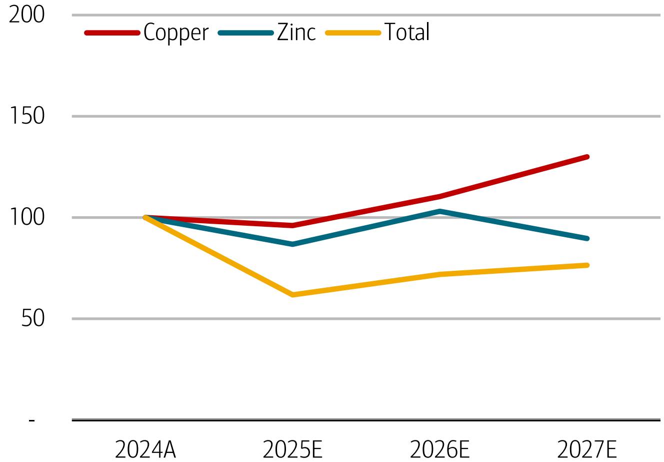
Exhibit 82: TECK revenue assuming flat volumes, index=100 in FY24
Price uplift from copper



Source: BofA Global Research estimates

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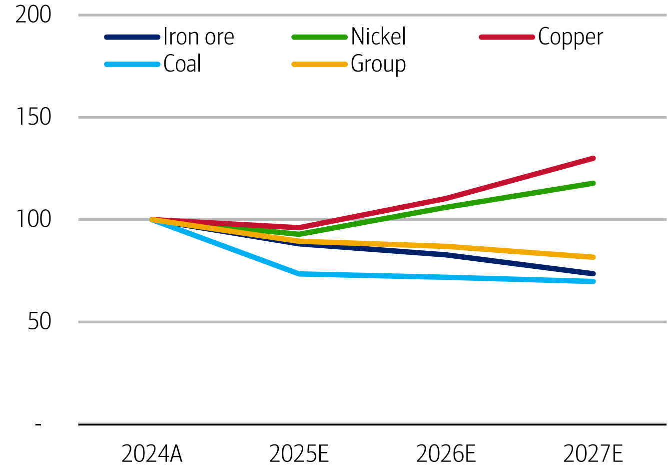
Exhibit 83: VALE revenue assuming flat volumes, index=100 in FY24
Price uplift from copper



Source: BofA Global Research estimates

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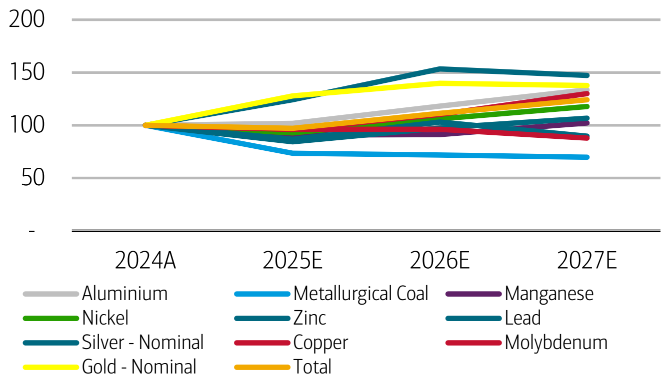
Exhibit 84: S32 revenue assuming flat volumes, index=100 in FY24
Price uplift from aluminium and silver.



Source: BofA Global Research estimates

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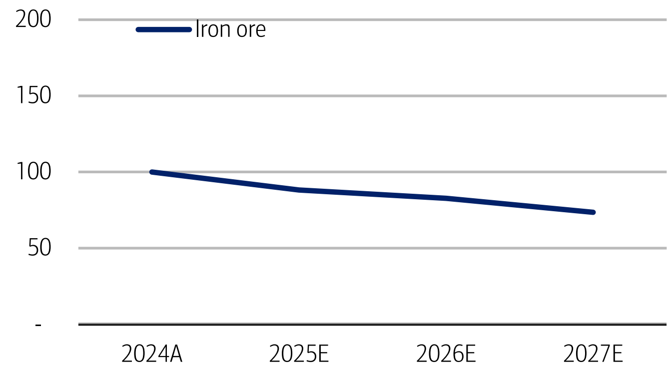
Exhibit 85: FMG revenue assuming flat volumes, index=100 in FY24
We model lower iron ore prices in longer term



Source: BofA Global Research estimates

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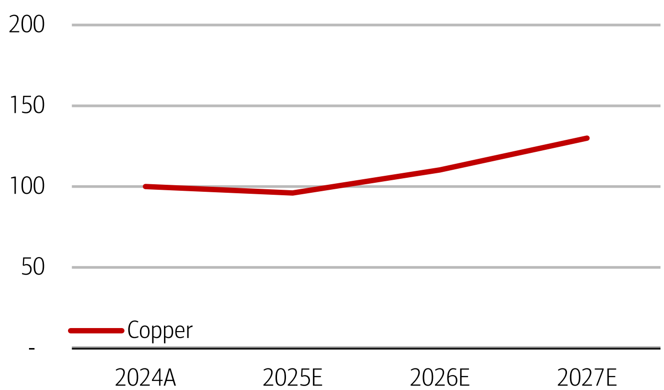
Exhibit 86: FCX revenue assuming flat volumes, index=100 in FY24
Price uplift from copper



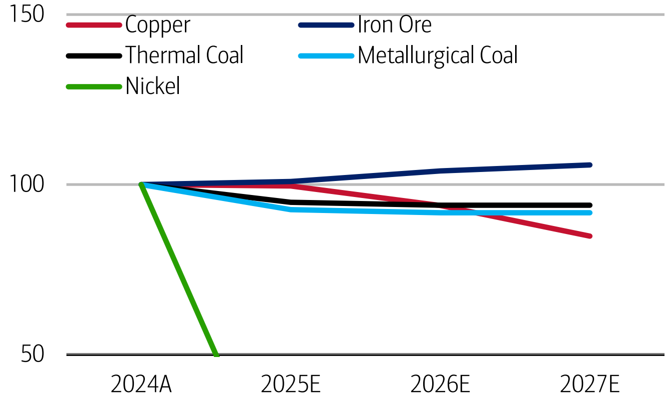
Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Volume (isolated)

Exhibit 87: BHP volume growth assuming flat price, index=100 in FY24

Near-term upside in iron ore

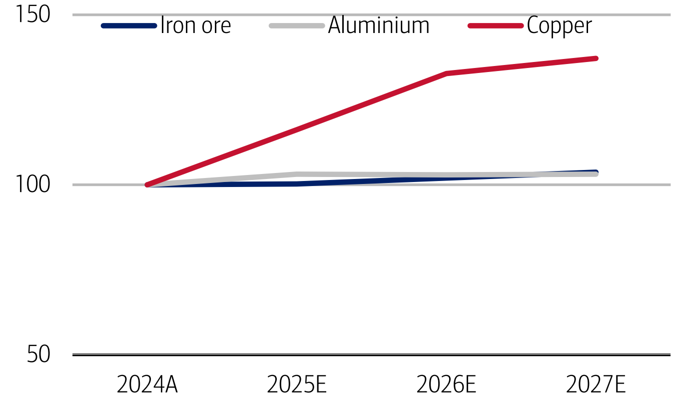


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 88: RIO volume growth assuming flat price, index =100 in FY24

Near-term upside in copper

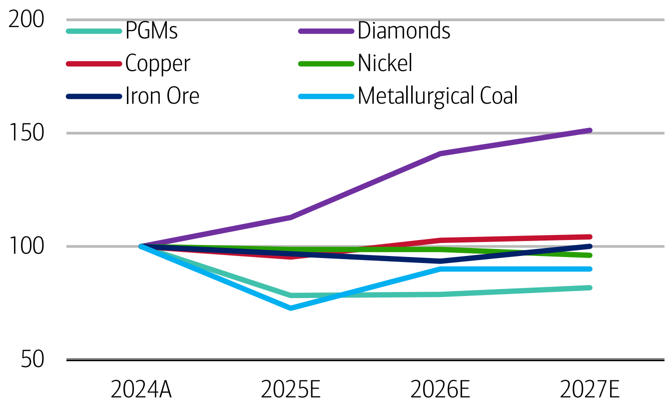


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 89: AAL volume growth assuming flat price, index=100 in FY24

Near-term upside from copper and diamonds

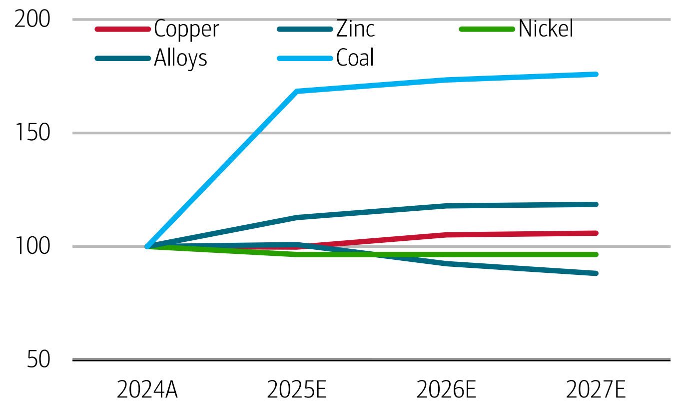


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 90: GLEN volume growth assuming flat price, index = 100 in FY24

Near-term upside from coal and alloys

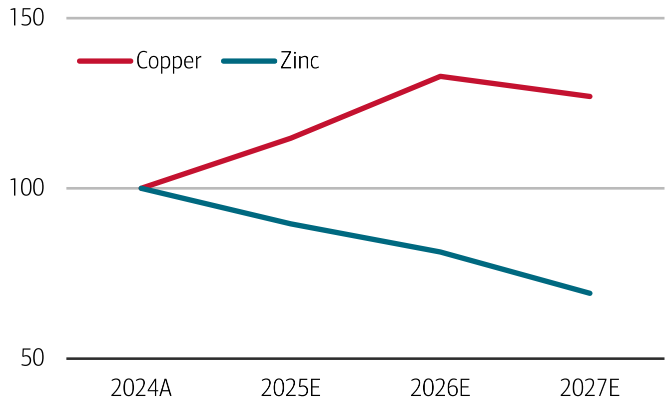


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 91: TECK volume growth assuming flat price, index=100 in FY24

Near-term upside from copper.

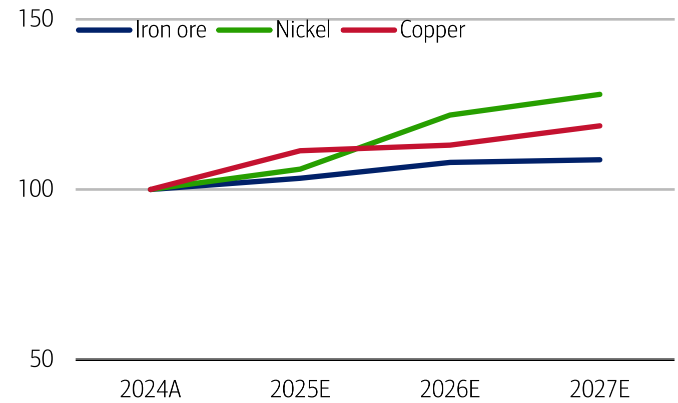


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 92: VALE volume growth assuming flat price, index = 100 in FY24

Volume upside in copper, iron ore and nickel

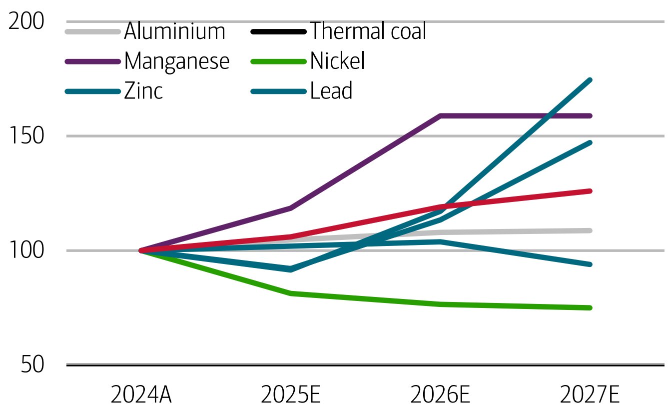


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 93: S32 volume growth assuming flat price, index=100 in FY24

Near-term volume upside from zinc and lead

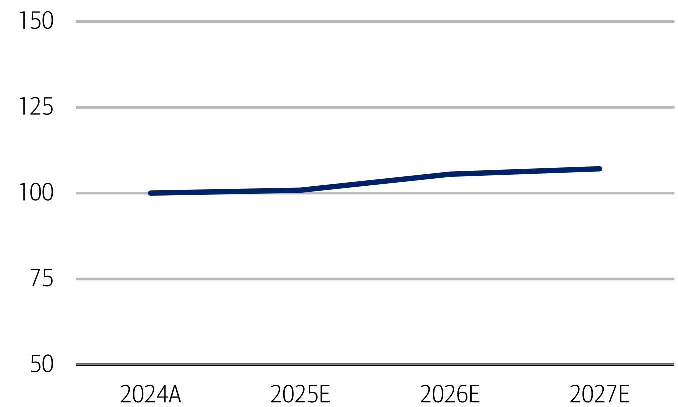


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 94: FMG volume growth assuming flat price, index=100 in FY24

Near-term volumes relatively flat. FMG is an iron ore pure play

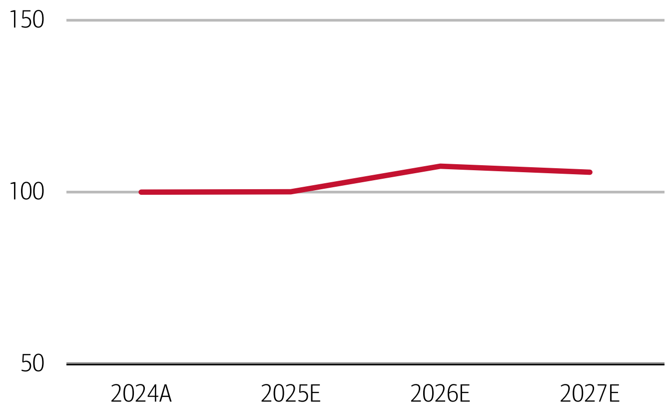


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 95: Freeport volume growth assuming flat price, index=100 in FY24

Near-term small volume upside in copper. Freeport is a copper pure play.



Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Self-help

Our third "bucket" to frame relative share price performance is what we call "self-help". What do we mean? We mean something company specific, usually initiated by management that can drive stock specific value creation. Some examples: (1) Cost cutting programme; (2) Portfolio review / change; (3) Asset disposals; (4) Share buybacks; (5) (Well executed) M&A; and (6) Lawsuits.

Bottom line, this can be a little bit nebulous, but, for us, it is a way to think about drivers other that Commodity Prices & Volume growth. We frame potential "self-help" drivers for our Big Miners universe.

BHP

We think that BHP has recently experienced a period of interesting "self-help". We consider the following:

- Collapsing the DLC (dual-listed company). The discount for the London line of stock was effectively eliminated.
- Merging the oil business with Woodside and then distributing the shares, franked, via a dividend in specie.
- Adding copper exposure by acquiring OZ minerals.
- Samarco: In October 2024, BHP reached a comprehensive agreement with the Brazilian government and public authorities related to the 2015 tailings dam accident in Brazil (Samarco = 50/50 JV with VALE).

From here, what "self-help" actions do we think could help drive BHP specific value?

- Future Facing Commodity growth strategy: BHP continues to advance its Future Facing commodities (FFCs) exposure with the completion of the formation of Vicuña Corp, a 50/50 joint venture with Lundin Mining to advance the Filo del Sol and Josemaria projects in Argentina. According to BHP, the combined projects could be a top 10 global copper operation (>300 ktpa). We expect further details in 1H CY25 of the development plans. In Canada, Jansen Stage 1 (potash) is now 63% complete, with first production scheduled for late 2026.

Rio Tinto

Unlike BHP, we think Rio Tinto's more recent history is perhaps more indicative of "self-harm" than it is self-help. We consider:

- Juukan Gorge incident in Australia in 2020. Rio Tinto destroyed a sacred site leading to the forced resignation of the CEO and major local and global fallout for the company.

- Iron ore. The company structurally undercapitalized its iron ore business for several years under previous management teams. This led to a fall in the production of the highest quality iron ore product.

- Mongolia. The Oyu Tolgoi copper "mega project" was late, over budget and had both technical and government relation issues.

That said, for Rio Tinto, we now see all of these issues are in the past. The company has acknowledged the issues and, in our view, dealt with them appropriately. For Juukan Gorge, the company has apologized and is fundamentally changing its approach to ESG & local community engagement. In Iron ore, the company's new Gudai Darri iron ore mine effectively "fixes" the undercapitalization issue by adding c. 50 Mtpa of new replacement iron ore mining capacity. In 2023 we visited Mongolia to see the ramp-up of the Oyu Tolgoi underground. What about "self-help" from here? We consider the following possibilities.

- The company finds a way to engage with local communities allowing projects such as Jadar (Lithium) & Resolution (Copper) to start to move ahead.

- The company is working on a new carbon free approach to smelting Aluminium called Elysis that, longer term, could be a game changer for the industry in our view.

- What about M&A? RIO has "done" a deal (see report: Arcadium) Key question "from here": Now what? Does RIO have a mandate for further (bigger?) M&A? Or should we just look for (considered) organic growth. RIO says large scale M&A is not off the agenda. Equally, the company notes it is difficult to justify large premiums and that M&A in the copper sector is very competitive. We highlight recent news reports of discussion between RIO and Glencore regarding a potential business combination (see our note on the report).

Glencore

SFO/DOJ controversy now in the past: For Glencore we note that the company experienced a significant period of controversy as various government agencies (US: Department of Justice DoJ, US: CFTC and UK: Serious Fraud Office SFO) investigated the company on corruption-related charges. The company cooperated with the authorities, ultimately agreeing to pay significant fines of c. $1.5 bn in 2022. Inasmuch as these issues are resolved and Glencore has implemented an upgraded ethics and compliance programme, "from here" we consider the potential for ongoing reputational improvement / repair as time passes.

On this, we note that the US DoJ filed to terminate monitorships with Glencore in March 2025. From Glencore: The Company has engaged constructively with the monitors and made significant progress over the last two years in enhancing our Compliance programme. The Company is pleased that the US Department of Justice has recognised these efforts and terminated the monitorships earlier than scheduled.

Teck coking coal assets. After completing the acquisition of Teck's coking coal assets (EVR = Elk Valley Resources), along with BHP's BMA Australian met coal business, GLEN is now the "other" Tier 1 supplier of high-quality seaborne coking coal.

What about other "self-help" from here?

Coal spin: The company has discussed potentially spinning its coal assets out as a separately listed entity with the hope / view that the remaining base metal assets might see a relative re-rating. However, GLEN engaged with shareholders who apparently preferred to keep coal. We think investors appreciate the strong cash flow from coal, particularly if it is channelled to capital returns / buybacks. GLEN plans to "run down" its thermal coal assets over time and will keep and run EVR (Elk Valley Resources) steelmaking coal).

Growth: At its FY24 results, GLEN discussed its high-quality optionality in copper but explained it will not sanction projects until the mooted deficit arrives. To us, the risk is that investors discount these growth options, i.e., if the company isn't ready to commit, are they really good projects?

Anglo American

Asset Review: After unsolicited approach from BHP in May 2024, Anglo American announced its own restructuring plan. In short, Anglo will shed all assets except copper, iron ore and its fertilizer project. For choice, happening faster than we thought with better outcomes. We like the 'NewCo' = leaner, more cash generative and less capital intense business, ultimately higher "quality", c. 65-70% of "value" coming from copper (we are bullish copper).

Woodsmith: Anglo American, as part of its own restructuring efforts, announced in May 2024 that the Woodsmith project would be slowed to support deleveraging = effectively putting the project on hold. Anglo plans to continue with the sinking of the service shaft through the key sandstone area. On balance, we think that the market does not view the group's Woodsmith fertilizer project favourably.

Vale

Samarco: As with BHP, in October 2024, VALE reached a comprehensive agreement with the Brazilian authorities related to the 2015 tailings dam accident in Brazil (Samarco = 50/50 JV with BHP). The settlement was comprehensive and while there are some global lawsuits still pending, there could be overlap between the settled agreement with Brazilian authorities and the outstanding global lawsuits.

Governance / Uncertainty / CEO change: After controversy in Brazil about the CEO selection process at VALE, the succession process was concluded with a new and highly regarded management team including the strong duo of Gustavo Pimenta and Marcelo Bacci as CEO & CFO.

Base Metals: Operational turnaround and value crystallization.

Teck

Portfolio evolution: Teck has been exiting low-multiple businesses, typically hydrocarbons related that stop (some) investors from owning the shares. The company sold its 21.3% stake the Fort Hills energy project to Suncor Energy in 2023. The completed the sale of its coking coal assets to Glencore in H2 2024.

With these transactions completed, the remaining company is a focussed producer of base metals, mainly copper with potential for material rerating.

Dual share sunset: TECK is controlled via a dual share class structure whereby the owners of the A shares exercise control over the company despite owning a relatively small share of the company's share capital. "A" shares have 100x the voting rights of "B" shares. As part of recent restructuring efforts, the company announced a sunset clause on this structure, which could eventually lead to just one share class and no blocking stake for the founding family.

QB2/Collahuasi: We consider potential to unlock value via "adjacencies" – the company's Quebrada Blanca II (QB2) project is located right next to the Collahuasi mine a joint venture between Glencore and Anglo American. Contiguous ore bodies can often lead to material synergies.

Project approval: The company has several brownfield and greenfield projects which, in conjunction with partners, it could progress to the sanctioning phase. We think these events could be an interesting catalyst for shares.

Freeport-McMoRan

Indonesia: Freeport experienced a period of considerable uncertainty as the Indonesian government pushed for: (1) a greater share of ownership in the world-class Grasberg mine; and (2) a local smelter to treat copper concentrates in Indonesia. Both these issues have now been effectively resolved. From here? We consider:

Novel leach: With many of its mines having operated for decades, often as SXEW (solvent extracting/electrowinning) sites, we think that Freeport has very interesting optionality for "novel leach" which could unlock low capital intensity, low cost copper production from lower grade primary sulphide resources, many of which have already been mined (as waste).

South32

Portfolio Pivot: We note South32's ongoing portfolio evolution. In 2021 the company divested its thermal coal operations in South Africa pivoting away from fossil fuels. In February 2024, South32 agreed to divest its Illawara coking coal operation "for value", in our view.

South32's strategy is to focus increasingly on producing metals critical to the energy transition. To this end, the company is investing in base metal projects including buying a 45% stake in the Sierra Gorda copper mine in Chile (Partner KGHM) and in February 2024, finally approving the development of the Taylor zinc-lead-silver deposit at its Hermosa project in Arizona.

We estimate base metals including the integrated alumina/aluminium segment will contribute more than c. 80% to group EBITDA post the agreed sale of Illawarra Met Coal. We believe South32 will continue to be acquisitive in the future with a particular focus on copper.

We also expect further portfolio optimisation as Cerro Matoso nickel is potentially divested while S32 is keen to add another producing or near-producing copper asset to its portfolio.

Fortescue

Fortescue has changed its strategy in recent years to pivot from being an iron ore pure play to an integrated green technology, energy and metals company.

Fortescue is the world's fourth-largest iron ore producer, although it also has ambitions to achieve net zero emissions and become one of the world's largest suppliers of green hydrogen by 2030. To achieve this, billions of dollars will be spent on decarbonizing its iron ore operations in the Pilbara and (possibly, subject to policy developments) investing in green hydrogen and ammonia projects around the world.

On the one hand, Fortescue may achieve an ESG premium if it achieves its net zero emissions targets while we have questions about the green energy investments achieving returns above the company's cost of capital.

Company summaries

iQprofile[SM] BHP Group Limited

Key Income Statement Data (Jun)	2023A	2024A	2025E	2026E	2027E
(US$ Millions)					
Sales	**54,211**	**56,943**	**49,518**	**49,883**	**47,843**
Operating Expenses	-26,812	-31,455	-24,948	-24,421	-24,225
EBITDA	**27,956**	**29,016**	**24,381**	**25,222**	**23,126**
Depreciation & Amortization	-5,061	-5,295	-5,490	-5,442	-5,308
EBIT	**22,895**	**23,721**	**18,891**	**19,780**	**17,818**
Net Interest & Other income	-1,531	-1,489	-1,554	-1,619	-1,530
Pretax Income	21,401	16,048	18,032	19,118	17,488
Tax (expense) / Benefit	-7,077	-6,447	-6,786	-6,919	-6,328
Minorities	-1,403	-1,704	-1,659	-2,094	-1,784
Net Income (Reported b/f Exceptionals)	**12,921**	**7,897**	**9,587**	**10,105**	**9,375**
Exceptional Items (After Tax)	37	-6,184	695	957	1,200
Key Cash Flow Statement Data					
Net Income (Reported)	12,921	7,897	9,587	10,105	9,375
Depreciation & Amortization	-5,061	-5,295	-5,490	-5,442	-5,308
Change in Working Capital	-263	-847	486	-51	183
Deferred Taxation Charge	0	0	0	0	0
Other Adjustments, Net	-552	7,085	839	622	687
Cash Flow from Operations	**18,701**	**20,665**	**16,758**	**16,203**	**16,586**
Capital Expenditure	-7,083	-9,273	-9,538	-9,089	-8,911
(Acquisition) / Disposal of Investments	-6,720	-37	-2,399	0	0
Other Cash inflow / (Outflow)	738	548	388	333	333
Cash Flow from Investing	**-13,065**	**-8,762**	**-11,548**	**-8,755**	**-8,578**
Shares Issue / (Repurchase)	NA	NA	NA	NA	NA
Cost of Dividends Paid	-13,268	-7,675	-6,401	-4,728	-4,772
Cash Flow from Financing	**-10,315**	**-11,669**	**-8,367**	**-6,532**	**-6,742**
Free Cash Flow	**11,618**	**11,392**	**7,220**	**7,115**	**7,675**
Net Debt	**11,166**	**9,120**	**12,277**	**11,361**	**10,095**
Change in Net Debt	10,833	-2,046	3,157	-916	-1,266
Key Balance Sheet Data					
Cash & Equivalents	12,428	12,501	9,344	10,260	11,526
Other Current Assets	1,109	840	840	840	840
Property, Plant & Equipment	71,818	71,629	74,862	77,744	80,601
Investments	1,115	1,229	1,229	1,229	1,229
Total Assets	**101,296**	**102,362**	**103,561**	**107,290**	**111,132**
Short-Term Debt	7,136	2,007	2,007	2,007	2,007
Other Current Liabilities	11,907	12,289	11,651	11,523	11,475
Long-Term Debt	16,458	19,614	19,614	19,614	19,614
Other Non-Current Liabilities	17,269	19,377	18,329	16,521	15,992
Total Liabilities	**52,766**	**53,242**	**51,561**	**49,624**	**49,049**
Net Asset	48,530	49,120	51,999	57,666	62,083
Minorities	4,034	4,309	4,002	4,291	4,104
Shareholder Funds	44,496	44,811	47,998	53,375	57,979
iQ*method[SM] - Bus Performance					
Return On Average Assets	23.3%	23.3%	18.3%	18.8%	16.3%
Return on Equity	29.2%	30.6%	22.1%	19.9%	16.8%
EBIT Margin	42.6%	31.5%	39.6%	41.6%	39.8%
EBITDA Margin	51.6%	40.1%	50.6%	52.5%	50.8%
iQ*method[SM] - Quality of Earnings					
Price / EBITDA	4.7x	4.5x	5.4x	5.2x	5.7x
Price / Free Cash Flow	11.0x	11.2x	17.7x	17.9x	16.6x
Tax Rate (Effective)	33.1%	40.2%	37.6%	36.2%	36.2%
Net Debt-to-Equity Ratio	23.0%	18.6%	23.6%	19.7%	16.3%
Interest Cover (EBITDA Basis)	13.6x	13.2x	11.9x	13.0x	12.6x
Key Metrics					
Franking (%)	100%	100%	100%	100%	100%

BHP in brief

BofA Recommendation: Buy

BHP is a diversified miner that provides greater earnings stability and less volatile cash flows vs. pure play mining companies. Earnings are driven by price and production and shares tend to trade according to earnings and NPV expectations. BHP's assets are low-cost and longer-life "franchise" assets, so the company has less sensitivity to prices than many of its peers.

Key investment considerations

BHP provides quality exposure to higher-for-longer iron ore and coking coal prices and an expected increase in copper price.

Company overview

BHP is the world's largest mining company and a top 3 global producer of iron ore, seaborne metallurgical coal and copper in concentrate. BHP has some of the world's best undeveloped resources, and it is this inventory of resources & growth projects that we expect will allow the company to maintain its position as a leading global resource company.

Recent major events

1H FY25 earnings and dividends were in line with expectations. All guidance items were maintained with the exception of FY25 production for WAIO, which is no longer expected to be in the upper half of the range following wet weather in February. Main focus was net debt approaching the upper end of the $5-15bn target range in FY25; organic growth options in copper; and management talking down large scale M&A as valuations appear stretched.

Projects: Jansen potash project in Canada is 66% complete and has transitioned from shaft development into underground mine development, aiming for first production in late CY26. In WAIO, over the medium term, BHP plans to grow production to >305 Mtpa (100% basis) and reduce unit costs to <US$17.50/t through increased volumes and improved labour productivity. In Copper, we expect a FID (final investment decision) in FY27 to install a two-stage smelter at Olympic Dam, which will increase capacity to 500 ktpa of copper, partially supplied by Prominent Hill and potentially Oak Dam.

“Crown jewel” assets

Western Australia Iron ore, Queensland coal, Escondida. Soon Jansen? (Potash)

iQprofile℠ Rio Tinto plc

Key Income Statement Data (Dec)	2023A	2024A	2025E	2026E	2027E
(US$ Millions)					
Sales	54,041	53,658	50,921	51,642	55,479
EBITDA Adjusted	23,892	23,314	20,872	21,760	24,806
Depreciation & Amortization	(5,334)	(5,918)	(5,644)	(5,938)	(6,166)
EBIT Adjusted	18,558	17,396	15,228	15,822	18,641
Net Interest & Other Income	(1,713)	(876)	(617)	(1,098)	(1,256)
Tax Expense / Benefit	(3,832)	(4,041)	(4,068)	(4,314)	(5,048)
Net Income (Adjusted)	11,755	10,867	9,035	8,535	10,089
Average Fully Diluted Shares Outstanding	1,621	1,623	1,623	1,623	1,623
Key Cash Flow Statement Data					
Net Income (Reported)	10,058	11,552	9,035	8,535	10,089
Depreciation & Amortization	5,334	5,918	5,644	5,938	6,166
Change in Working Capital	(926)	57.0	82.6	(24.9)	(166)
Deferred Taxation Charge	0	0	0	0	0
Other CFO	694	(1,928)	(1,194)	(1,165)	(1,163)
Cash Flow from Operations	**15,160**	**15,599**	**13,568**	**13,282**	**14,926**
Capital Expenditure	(7,086)	(9,621)	(12,568)	(12,003)	(11,741)
(Acquisition) / Disposal of Investments	NA	NA	NA	NA	NA
Other CFI	124	27.0	(7,008)	0	0
Cash Flow from Investing	**(6,962)**	**(9,594)**	**(19,576)**	**(12,003)**	**(11,741)**
Share Issue / (Repurchase)	0	0	0	0	0
Cost of Dividends Paid	(6,470)	(7,025)	(6,080)	(4,957)	(4,654)
Increase (decrease) debt	1,930	(559)	5,000	5,000	0
Other CFF	(760)	391	0	0	0
Cash Flow from Financing	**(5,300)**	**(7,193)**	**(1,080)**	**43.0**	**(4,654)**
Total Cash Flow (CFO + CFI + CFF)	**2,898**	**(1,188)**	**(7,088)**	**1,322**	**(1,468)**
FX and other changes to cash	0	10.0	0	0	0
Change in Cash	2,898	(1,178)	(7,088)	1,322	(1,468)
Change in Net Debt	(968)	619	12,088	3,678	1,468
Net Debt	3,328	3,947	16,035	19,713	21,181
Key Balance Sheet Data					
Property, Plant & Equipment	66,468	68,573	82,505	88,570	94,145
Goodwill	797	727	727	727	727
Other Intangibles	4,389	2,804	2,804	2,804	2,804
Other Non-Current Assets	10,385	11,562	11,265	10,939	10,611
Trade Receivables	3,945	4,241	4,008	4,066	4,339
Cash & Equivalents	9,673	8,495	1,407	2,729	1,261
Other Current Assets	7,892	6,384	6,085	6,164	6,583
Total Assets	103,549	102,786	108,801	115,999	120,470
Long-Term Debt	12,177	12,262	17,262	22,262	22,262
Other Non-Current Liabilities	22,288	20,816	19,325	17,834	16,343
Short-Term Debt	824	180	180	180	180
Other Current Liabilities	11,919	11,563	11,114	11,226	11,752
Total Liabilities	47,208	44,821	47,881	51,502	50,537
Total Equity	56,341	57,965	60,920	64,498	69,933
Total Equity & Liabilities	103,549	102,786	108,801	115,999	120,470
Business Performance*					
Return On Capital Employed	15.7%	14.6%	11.6%	10.8%	12.2%
Return On Equity	22.3%	19.8%	15.9%	14.2%	15.6%
Operating Margin	28.7%	30.7%	28.0%	28.3%	31.3%
Free Cash Flow (MM)	8,074	5,978	1,000	1,279	3,186
Quality of Earnings*					
Cash Realization Ratio	1.29x	1.44x	1.50x	1.56x	1.48x
Asset Replacement Ratio	1.33x	1.63x	2.23x	2.02x	1.90x
Tax Rate	27.8%	25.9%	29.9%	31.9%	31.3%
Net Debt/Equity	5.91%	6.81%	26.3%	30.6%	30.3%
Interest Cover	19.2x	22.8x	16.6x	12.9x	13.5x

Rio Tinto in brief

BofA Recommendation: Buy

RIO is positioning itself as the diversified miner with the highest ROCE and cash distributions to shareholders, pointing to its record to date and a strategy that demands limited incremental capital to drive modest production growth. We see RIO as a 'Blue Chip' and dependable steward of capital, as it has solid cash flows from tier-1 assets and a dependable dividend yield. We are less negative iron ore than some in the market.

Key investment considerations

We rate RIO Buy, as it appears undervalued and provides quality exposure to an expected increase in aluminium and copper prices, while we see iron ore troughing. RIO's iron ore business was structurally undercapitalized and had a significant ESG incident (Juukan Gorge) leading to the departure of senior management. These issues have been addressed. New mines are offsetting quality and production challenges. Gudai-Darri reached nameplate production (43 Mtpa) within 12 months of commissioning. Growth from here: Gudai-Darri "creep" to 50 Mtpa and Rhodes Ridge project (first ore expected 2030) will offset depletion and allow incremental growth.

Simandou is the world's largest undeveloped high-grade (65.3% Fe) iron ore project. RIO continues to work with the Government of Guinea, Chinalco, Baowu and WCS (Winning Consortium Simandou) toward development of the project. RIO guides first production in late 2025. We take a more conservative view and model first ore in 2026 and a three-year ramp-up to nameplate of 60 Mtpa (RIO share: 27 Mtpa) by 2029. Overall, we think the high-grade, low-impurity product complements RIO's benchmark "Pilbara-blend" Iron Ore.

On valuation, RIO trades on c. 0.6x P/NPV, below the historical average 0.79x and at the lower end of the historical trading range 0.7-1x through the cycle (+/-1 standard deviation). As such, we think that RIO looks compelling on valuation.

Company overview

Rio Tinto is the world's second-largest mining company, with operations in Australia, Africa, the Americas, Europe and Central/SE Asia. Rio Tinto is the world's largest producer of aluminium, second-largest producer of iron ore and a top 5 producer of alumina, uranium, mined copper, export thermal & coking coal, and diamonds.

Recent major events

Rio has properly committed to lithium, announcing an investment to expand lithium production at its Rincon property in Argentina (see report:: Rincon) and the acquisition of Arcadium lithium (see report: Arcadium). By the time RIO is done, capital employed in the business should be $10 bn+. Investors like the Arcadium acquisition, seeing it as well timed relative to the cycle (Lithium down c. 85% from its peak). Question: Does Arcadium mean that RIO is "done" with big M&A for now? (see report: M&A).

Projects: Rio's major growth projects remain on track. In Pilbara Iron Ore, construction of Western Range is over 50% complete with first ore planned for 2025 while the pre-feasibility study for the 40 Mtpa Rhodes Ridge project should be completed by the end of 2025. At Simandou in Guinea, construction is continuing with production targeted for late 2025. At Rincon in Argentina, the lithium carbonate starter project is scheduled for completion in first half of 2025. At Oyu Tolgoi in Mongolia, ramp-up is continuing delivering a copper head grade of c.2% for the underground mine.

"Crown jewel" assets

Pilbara iron ore assets, Escondida, bauxite assets and Canadian aluminium smelters with captive hydropower / long-term power contracts. Now Oyu Tolgoi (copper) as the underground mine ramps up.

iQprofile℠ Anglo American

Key Income Statement Data (Dec)	2023A	2024A	2025E	2026E	2027E
(US$ Millions)					
Sales	30,652	27,290	23,395	24,954	27,142
EBITDA Adjusted	9,958	8,460	6,928	7,649	8,876
Depreciation & Amortization	(2,685)	(3,072)	(2,821)	(3,056)	(3,196)
EBIT Adjusted	7,273	5,388	4,107	4,592	5,680
Net Interest & Other Income	(587)	(751)	(749)	(806)	(862)
Tax Expense / Benefit	(2,251)	(1,864)	(1,167)	(1,397)	(1,779)
Net Income (Adjusted)	2,932	1,937	1,320	1,449	1,975
Average Fully Diluted Shares Outstanding	1,214	1,212	1,212	1,212	1,212
Key Cash Flow Statement Data					
Net Income (Reported)	283	(3,068)	1,020	1,449	1,975
Depreciation & Amortization	2,685	3,072	2,821	3,056	3,196
Change in Working Capital	(1,167)	1,787	379	(147)	(191)
Deferred Taxation Charge	0	0	0	0	0
Other CFO	4,695	6,312	1,445	1,511	1,660
Cash Flow from Operations	**6,496**	**8,103**	**5,665**	**5,869**	**6,640**
Capital Expenditure	(5,876)	(5,532)	(5,756)	(5,460)	(5,199)
(Acquisition) / Disposal of Investments	200	177	1,000	0	0
Other CFI	116	220	0	0	0
Cash Flow from Investing	**(5,560)**	**(5,135)**	**(4,756)**	**(5,460)**	**(5,199)**
Share Issue / (Repurchase)	(274)	(135)	(135)	(135)	(135)
Cost of Dividends Paid	(1,567)	(1,014)	(489)	(598)	(609)
Increase (decrease) debt	2,547	1,298	0	2,500	0
Other CFF	(3,929)	(989)	(1,745)	(1,811)	(1,960)
Cash Flow from Financing	**(3,223)**	**(840)**	**(2,369)**	**(44.3)**	**(2,704)**
Total Cash Flow (CFO + CFI + CFF)	**(2,287)**	**2,128**	**(1,460)**	**365**	**(1,263)**
FX and other changes to cash	(37.0)	(49.0)	0	0	0
Change in Cash	(2,324)	2,079	(1,460)	365	(1,263)
Change in Net Debt	4,871	(781)	1,460	2,135	1,263
Net Debt	10,824	10,043	11,503	13,638	14,902
Key Balance Sheet Data					
Property, Plant & Equipment	43,949	40,844	42,780	45,183	47,187
Goodwill	1,479	940	940	940	940
Other Intangibles	NA	NA	NA	NA	NA
Other Non-Current Assets	3,789	3,422	3,422	3,422	3,422
Trade Receivables	4,516	3,228	2,715	2,915	3,173
Cash & Equivalents	6,088	8,167	6,707	7,072	5,808
Other Current Assets	6,723	8,265	7,431	7,756	8,176
Total Assets	66,544	64,866	63,995	67,288	68,706
Long-Term Debt	15,172	16,191	16,191	18,691	18,691
Other Non-Current Liabilities	10,400	10,546	10,546	10,546	10,546
Short-Term Debt	1,740	2,019	2,019	2,019	2,019
Other Current Liabilities	7,615	7,577	6,609	6,986	7,474
Total Liabilities	34,927	36,333	35,365	38,242	38,730
Total Equity	31,617	28,533	28,630	29,046	29,976
Total Equity & Liabilities	66,544	64,866	63,995	67,288	68,706
Business Performance*					
Return On Capital Employed	6.47%	8.58%	4.37%	4.85%	5.82%
Return On Equity	11.2%	8.46%	6.30%	6.73%	8.78%
Operating Margin	13.6%	-0.63%	15.5%	17.5%	19.9%
Free Cash Flow (MM)	(545)	1,510	(1,154)	(708)	177
Quality of Earnings*					
Cash Realization Ratio	2.22x	4.18x	4.29x	4.05x	3.36x
Asset Replacement Ratio	2.19x	1.80x	2.04x	1.79x	1.63x
Tax Rate	62.6%	NM	40.5%	39.3%	39.1%
Net Debt/Equity	34.2%	35.2%	40.2%	47.0%	49.7%
Interest Cover	11.7x	6.85x	5.22x	5.46x	6.35x

Anglo American in brief

BofA Recommendation: Buy

Anglo American's earnings are a function of the prices of its main products – platinum, copper, coal, iron ore and nickel. Shares tend to trade based on expectations for earnings. We think Anglo's combination of price, volume and self-help are compelling. Post the recent correction, we think shares present particularly compelling value.

Key investment considerations

- Restructuring continues after BHP's unsolicited approach in 2024. AAL will shed all assets except copper, iron ore and its fertilizer project. For choice, happening faster than we thought with better outcomes. NewCo = leaner, more cash generative and less capital intense, ultimately higher "quality", c. 65-70% of "value" coming from copper.

- Coal sales: Headline US$4.9 bn total. First completed in January US$1 bn inflow. Rest later this year. Nickel sale: Headline. US$500 mn. Completion in Q3. Platinum (PGM) spin: Transaction costs US$400-500 mn. Cost savings: $1 bn achieved, $1.3 bn run-rate, $800 to go, $500 more from corporate costs by end-2025.

- Beyond restructuring: AAL announced a compelling transaction with Codelco to create JV between Los Bronces / Andina mines. Should create c. $5 bn of NPV, value to be shared between partners.

Company overview

Anglo American is a global diversified resources company with listings in London and South Africa. Key operating regions are South Africa, South America and Australia. Since moving its primary listing to London, the group has been transformed from a diversified industrial conglomerate into a focussed resource company by divesting non-core assets and acquiring growth projects.

Recent major events

Anglo American has laid out the timeline for the previously announced Amplats spin. Distribution of Amplats shares to shareholders = Target June, to be approved at AGM (Annual General Meeting) on April 30th. Anglo will keep 19.9% of Amplats to start to "manage flowback", i.e., will dividend less of the company out to shareholders who might be sellers.

Timetable for upcoming events: Approval at AGM on April 30th. Separation in June. As a reminder, in Q4 2024, Anglo American sold a second tranche of AMS shares (17.5mn shares, 6.6% of company) into the market for total proceeds of c. $520 mn (see report: Amplats placement). This follows a placement of 13.9 mn shares earlier in 2024, which raised $400 mn. Anglo (AAL) will keep a 19.9% stake in Amplats, (for now) = perhaps less flowback. From discussions, investors asking if this stake could be a cash proxy to help manage Anglo's balance sheet metrics.

The portfolio transformation is ongoing. Coal: Sale agreed with completion expected by Q3'25. Nickel: Sale agreed with completion expected by Q3'25. PGMs: Demerger on track and expected to start trading on London Stock Exchange in June 2025. Diamonds: still planning to exit De Beers for value, likely by late 2025.

"Crown jewel" assets

Mogalakwena, Collahuasi, Quellaveco.

iQprofile℠ Glencore

Key Income Statement Data (Dec)	2023A	2024A	2025E	2026E	2027E
(US$ Millions)					
Sales	217,829	230,944	244,567	262,136	288,247
EBITDA Adjusted	17,102	14,358	16,118	17,360	17,935
Depreciation & Amortization	(5,981)	(6,598)	(7,780)	(8,197)	(7,874)
EBIT Adjusted	11,121	7,760	8,338	9,163	10,061
Net Interest & Other Income	(4,619)	(6,856)	(2,137)	(2,033)	(1,949)
Tax Expense / Benefit	(2,207)	(1,696)	(1,705)	(1,953)	(2,193)
Net Income (Adjusted)	6,698	3,692	3,573	4,110	4,793
Average Fully Diluted Shares Outstanding	12,426	12,152	12,152	12,152	12,152
Key Cash Flow Statement Data					
Net Income (Reported)	4,280	(1,634)	3,573	4,110	4,793
Depreciation & Amortization	5,981	6,598	7,780	8,197	7,874
Change in Working Capital	3,752	2,061	(831)	(1,397)	(2,092)
Deferred Taxation Charge	0	0	0	0	0
Other CFO	(2,977)	3,030	(718)	(928)	(1,196)
Cash Flow from Operations	**11,036**	**10,055**	**9,803**	**9,982**	**9,378**
Capital Expenditure	(4,484)	(5,611)	(6,610)	(6,554)	(6,729)
(Acquisition) / Disposal of Investments	(546)	(6,994)	0	0	0
Other CFI	1,475	880	1,227	1,470	1,692
Cash Flow from Investing	**(3,555)**	**(11,725)**	**(5,384)**	**(5,084)**	**(5,037)**
Share Issue / (Repurchase)	(3,672)	(230)	0	0	0
Cost of Dividends Paid	(6,450)	(1,580)	(1,215)	(1,856)	(2,166)
Increase (decrease) debt	3,464	5,866	0	0	0
Other CFF	(828)	(1,914)	(508)	(527)	(495)
Cash Flow from Financing	**(7,486)**	**2,142**	**(1,724)**	**(2,383)**	**(2,661)**
Total Cash Flow (CFO + CFI + CFF)	**(5.00)**	**472**	**2,696**	**2,515**	**1,680**
FX and other changes to cash	7.00	(8.23)	0	0	0
Change in Cash	2.00	464	2,696	2,515	1,680
Change in Net Debt	3,462	5,402	(2,696)	(2,515)	(1,680)
Net Debt	30,316	35,718	33,022	30,507	28,827
Key Balance Sheet Data					
Property, Plant & Equipment	39,233	50,206	49,036	47,379	46,233
Goodwill	0	0	0	0	0
Other Intangibles	0	0	0	0	0
Other Non-Current Assets	20,594	20,740	20,740	20,740	20,740
Trade Receivables	18,385	17,781	18,830	20,183	22,193
Cash & Equivalents	1,925	2,389	5,085	7,600	9,280
Other Current Assets	43,732	39,344	40,835	43,083	46,440
Total Assets	123,869	130,460	134,527	138,985	144,887
Long-Term Debt	21,275	25,264	25,264	25,264	25,264
Other Non-Current Liabilities	14,879	19,827	19,827	19,827	19,827
Short-Term Debt	10,966	12,843	12,843	12,843	12,843
Other Current Liabilities	38,512	36,866	38,575	40,778	44,054
Total Liabilities	85,632	94,800	96,509	98,712	101,988
Total Equity	38,237	35,660	38,018	40,272	42,899
Total Equity & Liabilities	123,869	130,460	134,527	138,985	144,887
Business Performance*					
Return On Capital Employed	7.97%	8.40%	6.32%	6.83%	7.39%
Return On Equity	14.4%	8.76%	8.54%	9.31%	10.3%
Operating Margin	3.99%	1.92%	2.74%	2.73%	2.68%
Free Cash Flow (MM)	7,872	5,172	3,911	4,371	3,846
Quality of Earnings*					
Cash Realization Ratio	1.65x	2.72x	2.74x	2.43x	1.96x
Asset Replacement Ratio	0.75x	0.85x	0.85x	0.80x	0.85x
Tax Rate	40.7%	NM	29.5%	29.6%	29.3%
Net Debt/Equity	79.3%	100%	86.9%	75.8%	67.2%
Interest Cover	4.42x	2.66x	3.65x	4.01x	4.40x

Glencore in brief

BofA Recommendation: Buy

Key commodities for Glencore: Thermal coal, coking coal, copper & zinc. GLEN also stands out for not being exposed to iron ore, like Big Miner peers.

Key investment considerations

GLEN is positioning itself as a leading producer of key metals required for decarbonisation: Copper, Nickel, Cobalt, Zinc ("Battery metals"), and thus as an enabler of climate change. Glencore is a top 5 copper miner with its world class copper assets in Latin America and low capital brownfield optionality in Latam and the DRC (Democratic Republic of the Congo). GLEN also has Class 1 nickel assets in Canada/Norway, growing through Raglan Phase 2 and Onaping Depth projects. On Cobalt, GLEN is a leading global producer with potential to grow production in the DRC.

In our view, GLEN management has been noticeably perturbed by the share price underperformance and, with FY24 results, announced a US$1 bn buyback programme, presently under way. Beyond this, the group is effectively "at" its target gearing level of c. $10 bn and as such, any cash generated "from here" is available for distributions. At FY results, CFO Steve Kalmin suggested that GLEN may consider monetizing non-core assets with a view to increase the size of the buyback. Top-up buybacks could happen "out of cycle" (i.e., without waiting for H1 results). We consider the shares in Bunge that GLEN expects to receive in payment for the sale of its stake in Viterra (BG: Deal to complete "soon").

Company overview

Glencore is one of the world's largest marketers of commodities, with sales of over US$230 bn in 2024. The company is also a major producer of mined commodities including copper, zinc, nickel, cobalt, lead and coal. While the head office is in Baar, Switzerland, the group has offices around the world and major production assets in Africa, South America and Eurasia.

Recent major events

Per our recent note (see report: M&A time again), news reports (Bloomberg, Reuters, *Financial Times*) suggested that Rio Tinto (RIO) and Glencore (GLEN) discussed a business combination. According to the *Financial Times* & Reuters, early-stage discussions happened in October last year but did not progress to a deal.

We are not surprised by mooted discussions on mega-M&A; Big Miners face challenges of: (1) bulking up exposure to copper, a key energy transition metal; (2) replacing depleting resources; and (3) achieving scale to be relevant to large global investors. Factually, we note at least two large-cap mining M&A situations in last two years: GLEN for TECK (in 2023), BHP for Anglo American (in 2024) (see respective reports).

GLEN announced $1 bn buyback to complete before H1 2025 results. Potential for further "top-ups", cashflow permitting.

"Crown jewel" assets

Marketing business, Elk Valley Resources, Collahuasi, Antamina, Katanga.

iQprofile[SM] Vale

iQ**method*[SM] – **Bus Performance

(US$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	21.3%	17.0%	13.5%	9.0%	7.7%
Return on Equity	47.6%	21.7%	20.8%	13.9%	9.2%
Operating Margin	39.3%	34.2%	34.4%	23.9%	21.4%
Free Cash Flow	14,036	9,605	7,230	1,874	783

iQ**method*[SM] – **Quality of Earnings

(US$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	1.2x	1.9x	1.6x	1.5x	2.0x
Asset Replacement Ratio	1.7x	1.9x	2.1x	2.1x	2.2x
Tax Rate	10.4%	11.1%	20.8%	20.0%	20.0%
Net Debt-to-Equity Ratio	21.4%	25.2%	26.9%	34.3%	40.8%
Interest Cover	12.9x	8.0x	7.6x	4.5x	4.1x

Income Statement Data (Dec)

(US$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	43,839	41,784	37,639	34,613	35,210
% Change	-19.8%	-4.7%	-9.9%	-8.0%	1.7%
Gross Profit	19,811	17,695	13,508	10,690	9,955
% Change	-39.2%	-10.7%	-23.7%	-20.9%	-6.9%
EBITDA	20,973	19,132	14,326	12,207	11,489
% Change	-37.9%	-8.8%	-25.1%	-14.8%	-5.9%
Net Interest & Other Income	2,268	(1,946)	(3,207)	(961)	(2,377)
Net Income (Adjusted)	**16,744**	**8,160**	**8,282**	**5,762**	**4,042**
% Change	**-30.7%**	**-51.3%**	**1.5%**	**-30.4%**	**-29.9%**

Free Cash Flow Data (Dec)

(US$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	17,390	10,939	7,678	5,762	4,042
Depreciation & Amortization	3,171	3,070	3,028	3,268	3,268
Change in Working Capital	476	731	957	379	(24)
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	(1,555)	785	1,825	(535)	669
Capital Expenditure	(5,446)	(5,920)	(6,258)	(7,000)	(7,172)
Free Cash Flow	**14,036**	**9,605**	**7,230**	**1,874**	**783**
% Change	**-30.9%**	**-31.6%**	**-24.7%**	**-74.1%**	**-58.2%**
Share / Issue Repurchase	0	0	0	0	0
Cost of Dividends Paid	(6,603)	(5,513)	(3,914)	(2,452)	(2,188)
Change in Debt	(1,070)	1,211	1,834	65	3,610

Balance Sheet Data (Dec)

(US$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	4,736	3,609	4,565	579	288
Trade Receivables	4,319	4,197	3,049	2,676	2,722
Other Current Assets	6,471	10,894	6,088	6,149	6,421
Property, Plant & Equipment	44,938	48,396	47,276	51,008	54,912
Other Non-Current Assets	26,430	27,090	29,174	29,174	29,174
Total Assets	**86,894**	**94,186**	**90,152**	**89,585**	**93,517**
Short-Term Debt	489	1,021	1,110	1,114	1,369
Other Current Liabilities	13,402	13,634	14,050	14,117	11,916
Long-Term Debt	12,223	12,902	14,648	14,708	18,064
Other Non-Current Liabilities	23,422	25,648	18,675	15,201	15,201
Total Liabilities	**49,536**	**53,205**	**48,483**	**45,140**	**46,549**
Total Equity	**37,358**	**40,981**	**41,669**	**44,445**	**46,968**
Total Equity & Liabilities	**86,894**	**94,186**	**90,152**	**89,585**	**93,517**

Vale in brief

BofA Recommendation: Buy

We have a Buy rating on Vale, as after the recent pressure on shares post tariffs, Vale's discounted valuation combined with its improved bottom-up story offer enough margin of safety to accommodate our more cautious iron ore view.

Key investment considerations

- We see Vale trading at 4.2x EV/EBITDA and generating 8.5% FCFE yield (ex-Mariana and Brumadinho expenses) in 2025, which we believe is compelling given our iron ore forecast of US$96/t.
- Vale is the world's largest nickel producer and an important producer of "Class 1" nickel, for use in batteries (EVs). Vale guided at its Vale Day 2024 that its total nickel output should reach 160-175Kt in 2025, 175-210kt in 2026 and over 300Kt after 2030.
- Vale also has significant growth optionality for copper, including its Hu'u project in Indonesia, which can potentially help Vale boost its copper production from 340-370Kt guided in 2025 to over 900Kt.

Company overview

Vale is the largest producer of iron ore and pellets, and the largest nickel producer. Vale also produces copper, coal, copper, manganese, and ferroalloys and holds equity stakes in some steel producers/projects.

Recent major events

- In October 2024, Vale, BHP and Samarco reached a final settlement of R$170 for the Samarco reparation expenses.
- In December 2024, Vale committed to a maximum global contribution of approximately R$11bn, resulting in an additional R$1.7bn in provisions.
- In February 2025, Vale announced a new share buyback program for the acquisition of 120 million shares within a period of 18 months, representing approximately 3% of outstanding shares.

“Crown jewel” assets

Vale has the highest-quality iron ore reserves in the world in Carajás (>65% Fe content), with low impurity levels and best-in-class cash costs. Its integrated logistics of railroad and ports grant it the lowest FOB cash cost in the industry in 2021. Northern System expansions could lift its high-grade capacity to 260Mt/yr vs a current c. 210Mt.

iQprofile℠ Teck Resources

iQ**method* ℠ – **Bus Performance

(C$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	9.6%	5.6%	2.9%	4.7%	7.1%
Return on Equity	20.1%	10.3%	4.9%	4.5%	7.7%
Operating Margin	32.6%	29.1%	13.2%	25.9%	34.5%
Free Cash Flow	2,427	(1,696)	(2,344)	927	2,134

iQ**method* ℠ – **Quality of Earnings

(C$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	1.6x	1.5x	0.9x	2.8x	2.1x
Asset Replacement Ratio	3.1x	3.0x	1.5x	1.2x	1.0x
Tax Rate	28.7%	39.0%	34.6%	38.3%	38.3%
Net Debt-to-Equity Ratio	22.1%	24.2%	-0.7%	2.0%	-5.3%
Interest Cover	27.3x	15.9x	1.7x	2.9x	7.1x

Income Statement Data (Dec)

(C$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	18,628	15,011	13,396	10,397	12,471
% Change	38.2%	-19.4%	-10.8%	-22.4%	20.0%
Gross Profit	8,891	5,143	3,533	3,038	4,708
% Change	75.0%	-42.2%	-31.3%	-14.0%	55.0%
EBITDA	9,570	6,367	4,005	4,475	6,117
% Change	45.6%	-33.5%	-37.1%	11.7%	36.7%
Net Interest & Other Income	739	(96)	205	(698)	(452)
Net Income (Adjusted)	**4,883**	**2,707**	**1,266**	**1,085**	**1,894**
% Change	**118.2%**	**-44.6%**	**-53.2%**	**-14.3%**	**74.6%**

Free Cash Flow Data (Dec)

(C$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	4,873	2,707	1,355	1,085	1,894
Depreciation & Amortization	1,778	1,931	2,239	1,787	1,815
Change in Working Capital	(135)	(990)	(890)	0	0
Deferred Taxation Charge	1,135	620	(2,104)	0	0
Other Adjustments, Net	332	(182)	495	200	200
Capital Expenditure	(5,556)	(5,782)	(3,438)	(2,145)	(1,774)
Free Cash Flow	**2,427**	**-1,696**	**-2,344**	**927**	**2,134**
% Change	**NM**	**NM**	**-38.2%**	**NM**	**130.3%**
Share / Issue Repurchase	(1,158)	(187)	(1,272)	(1,383)	0
Cost of Dividends Paid	(532)	(515)	(514)	(245)	(241)
Change in Debt	(897)	(640)	(2,392)	(411)	(406)

Balance Sheet Data (Dec)

(C$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	1,883	744	5,484	4,406	5,893
Trade Receivables	1,527	2,096	2,080	2,080	2,080
Other Current Assets	4,883	3,625	3,094	3,094	3,094
Property, Plant & Equipment	40,095	45,565	28,796	29,120	29,080
Other Non-Current Assets	3,971	4,163	3,323	3,323	3,323
Total Assets	**52,359**	**56,193**	**42,777**	**42,023**	**43,470**
Short-Term Debt	748	710	541	541	541
Other Current Liabilities	5,116	5,182	3,759	3,959	4,159
Long-Term Debt	6,990	6,885	4,765	4,354	3,948
Other Non-Current Liabilities	12,994	15,124	8,424	8,424	8,424
Total Liabilities	**25,848**	**27,901**	**17,489**	**17,278**	**17,071**
Total Equity	**26,511**	**28,292**	**25,289**	**24,746**	**26,399**
Total Equity & Liabilities	**52,359**	**56,193**	**42,777**	**42,023**	**43,470**

Teck Resources in brief

BofA Recommendation: Buy

Our Buy rating reflects a nearing growth inflection from QB2 (Quebrada Blanca Phase 2) , and a more copper-focused mix post the announced cash sale of its steelmaking coal business. Valuation looks attractive given growth inflecting via QB2 and three expansions, plus early-stage copper growth options.

Key investment considerations

We see TECK as an attractive copper investment, with transformational copper growth from the ramp-up of QB2 set to drive strong free cash flow and an attractive valuation. Post the group's exit of its coal business for cash, TECK's balance sheet is effectively unlevered.

Company overview

Teck is a diversified mining and metals company focused on the production and project development of copper and zinc mines, and holds an interest in tier-one steelmaking coal assets. Headquartered in Vancouver, Canada, the company's shares are listed on the TSX under the symbols TECK/A and TECK/B and the NYSE under the symbol TECK. Teck's key operating and development assets are in North and South America.

Recent major events

Teck Resources (TECK) reported Q4'24 earnings that were mixed vs. BofAe and consensus, with EBITDA light but EPS beating. Q4'24 free cash flow was very strong. Previously provided 2025-2028 guidance is unchanged.

Guidance for TECK's transformational QB2 project and for the rest of the operations remains unchanged vs. that provided on 20-Jan-25. Encouragingly, this is despite the extension (vs. plan) of the planned maintenance shutdown at QB2 in January in order to conduct maintenance and reliability work and complete additional tailings lifts. While we see the additional downtime as a slight concern, we see significant flexibility in 2025 to still attain the production guidance range.

Projects (QB): TECK expects to submit a Declaration of Environmental Impact in H2'25 for the QB debottlenecking and optimization project.

Other Projects: Looking to other copper growth options, for the Highland Valley Copper (HVC) extension project, a provincial environmental assessment decision is expected in H1'25. At Zafranal, early works are underway with a sanctioning decision planned for late 2025. The San Nicolás feasibility study and permits are expected in H2'25. In our view, more time spent on project preparation is positive.

"Crown jewel" assets

QB2 mine, Red Dog zinc mine, interest in the Antamina copper mine.

iQprofile℠ Fortescue Ltd.

Key Income Statement Data (Jun)	2023A	2024A	2025E	2026E	2027E
(US$ Millions)					
Sales	**16,871**	**18,220**	**14,786**	**13,420**	**12,629**
Associates & Other Revenue	0	0	0	0	0
Operating Expenses	(6,908)	(7,512)	(7,940)	(8,056)	(8,348)
EBITDA	**9,963**	**10,708**	**6,847**	**5,365**	**4,281**
Depreciation & Amortization	(1,744)	(2,144)	(2,328)	(2,487)	(2,499)
EBIT	**8,219**	**8,564**	**4,519**	**2,878**	**1,782**
Net Interest & Other income	(126)	(168)	(160)	(180)	(211)
Pretax Income	8,093	8,396	4,359	2,697	1,571
Tax (expense) / Benefit	(2,401)	(2,636)	(1,384)	(857)	(499)
Outside Equity interest in Npat	0	0	0	0	0
Preference dividends	NA	NA	NA	NA	NA
Net Profit b/f Abnormals	**5,692**	**5,760**	**2,975**	**1,841**	**1,072**
Non-Recurring Items	(726)	0	0	0	0
Net Income (Reported)	4,966	5,760	2,975	1,841	1,072
Key Cash Flow Statement Data					
EBITDA	9,963	10,708	6,847	5,365	4,281
Change in Working Capital	(161)	(242)	417	48	40
Other C'flow Items before int & tax	(24)	0	0	0	0
Net Interest Paid	(205)	(168)	(160)	(180)	(211)
Tax Paid	(2,379)	(2,636)	(1,384)	(857)	(499)
Other C'flow from Operations	238	257	0	0	0
Cash Flow from Operations	**7,432**	**7,919**	**5,719**	**4,376**	**3,611**
Capital Expenditure (PP&E)	(2,901)	(2,834)	(4,104)	(4,785)	(4,476)
(Acquisition) / Disposal of Investments	(217)	(30)	0	0	0
Other C'flow from Investing	3	53	0	0	0
Cash Flow from Investing	**(3,115)**	**(2,811)**	**(4,104)**	**(4,785)**	**(4,476)**
Shares Issue / (Repurchase)	0	0	0	0	0
Dividend paid	(3,922)	(4,140)	(2,721)	(1,589)	(964)
Other C'flow from Financing	(1,181)	(210)	(10)	(260)	300
Cash Flow from Financing	**(5,103)**	**(4,350)**	**(2,731)**	**(1,849)**	**(664)**
Free Cash Flow	4,531	5,085	1,615	(409)	(865)
Net Debt	1,034	497	1,603	3,601	5,430
Key Balance Sheet Data					
Cash Equivalents	4,287	4,903	3,787	1,529	0
Receivables & Inventories	1,725	2,199	1,840	1,818	1,844
Property, Plant & Equipment	20,974	21,682	23,458	25,756	27,733
Intangibles	494	583	583	583	583
Other assets	738	693	693	693	693
Total Assets	**28,218**	**30,060**	**30,362**	**30,380**	**30,854**
Payables	1,581	1,811	1,869	1,895	1,961
Provisions	**3,014**	**3,059**	**3,059**	**3,059**	**3,059**
Short term debt & Long term debt	5,321	5,400	5,390	5,131	5,430
Other Liabilities	304	259	259	259	259
Total Liabilities	**10,220**	**10,529**	**10,577**	**10,344**	**10,709**
Total Equity	**17,998**	**19,531**	**19,785**	**20,036**	**20,144**
iQ*method℠ - Bus Performance					
Return on Capital Employed	22.6%	22.5%	11.4%	7.3%	4.4%
Return on Equity	32.2%	30.7%	15.1%	9.2%	5.3%
Operating Margin	48.7%	47.0%	30.6%	21.4%	14.1%
EBITDA Margin	59.1%	58.8%	46.3%	40.0%	33.9%
iQ*method℠ - Quality of Earnings					
Cash Realization Ratio	1.3x	1.4x	1.9x	2.4x	3.4x
Dividend Payout Ratio	63.6%	70.8%	65.0%	65.0%	65.0%
Tax Rate (Reported)	29.7%	31.4%	31.8%	31.8%	31.8%
Net Debt-to-Equity Ratio	5.7%	2.5%	8.1%	18.0%	27.0%
Interest Cover	29.9x	22.2x	16.0x	10.5x	7.1x
Key Metrics					
Franking	100%	100%	100%	100%	100%

Fortescue in brief

BofA Recommendation: Underperform

We rate Fortescue Underperform. As an iron ore "pure-play", FMG offers significant leverage to iron ore prices. Recent steel policy changes in China suggest China will produce materially less steel, leading to lower iron ore demand. With the market moving from deficit to surplus, we believe prices could trade to or through marginal cost. As the market adjusts commodity price assumptions lower, we believe shares will underperform in line with lowered earnings estimates.

Key investment considerations

We maintain a cautious view and downward iron ore price trajectory: Forecast $90/t average in CY2026 and $80/t in CY2027. Fortescue earnings are mainly driven by the spot iron ore prices and shares tend to track moves in this key commodity. Fortescue are also exposed to increased risk on wider quality spread and higher impurity penalties associated with low grade Fe, particularly if steel margins recover and if further environmental-control measures are implemented in China.

Company overview

Fortescue was founded in 2003 and is the world's fourth-largest iron ore producer with annual production of approx. 195 Mt. Fortescue owns and operates its integrated mine, rail and port operations in the Pilbara, Western Australia. The company also recently changed its strategy to be an integrated iron ore and green energy company.

Recent major events

With its recent H12025 results, the group detailed a slower-than-expected ramp-up of the Iron Bridge magnetite (67% Fe) project to nameplate capacity of 22 Mtpa and the pausing of the Phoenix green ammonia project in Arizona, US. At Iron Bridge, the timing to reach 22Mtpa is under review (previously Sept-25) as FMG assesses the performance of the air classification circuit and downstream aero belt conveyor. FMG expects to complete the assessment in the Jun-25 quarter. We assume nameplate will be reached in 2H FY26.

FMG recently confirmed it is slowing activity on various green energy projects due to uncertain market conditions and in particular the Trump administration pausing grants under the Inflation Reduction Act. FMG is pausing its $550 mn Arizona green ammonia project. Feasibility studies and planning approvals are progressing for the Holmaneset Project in Norway and the Pecém Project in Brazil, but timing for a Final Investment Decision is uncertain.

“Crown jewel” assets

Chichester Hub, Solomon Hub and Western Hub in Pilbara, Western Australia. New “Iron Bridge” project will allow the company produce higher quality iron ore.

iQprofile SM Freeport-McMoRan

iQ**method* SM – **Bus Performance

(US$ Millions)	2023A	2024A	2025E	2026E	2027E
Return on Capital Employed	8.3%	9.0%	8.5%	12.0%	12.6%
Return on Equity	13.8%	12.5%	11.4%	14.3%	14.5%
Operating Margin	27.2%	27.0%	27.5%	33.5%	34.8%
Free Cash Flow	455	2,352	1,606	4,175	7,412

iQ**method* SM – **Quality of Earnings

(US$ Millions)	2023A	2024A	2025E	2026E	2027E
Cash Realization Ratio	2.4x	3.3x	3.2x	3.0x	2.9x
Asset Replacement Ratio	2.3x	2.1x	2.2x	1.8x	0.8x
Tax Rate	37.8%	36.5%	40.0%	37.6%	37.6%
Net Debt-to-Equity Ratio	12.7%	14.9%	16.3%	10.7%	-1.9%
Interest Cover	12.1x	21.5x	22.5x	25.5x	30.5x

Income Statement Data (Dec)

(US$ Millions)	2023A	2024A	2025E	2026E	2027E
Sales	22,855	25,455	26,115	30,583	32,721
% Change	0.3%	11.4%	2.6%	17.1%	7.0%
Gross Profit	9,228	9,901	10,211	13,477	14,706
% Change	-5.0%	7.3%	3.1%	32.0%	9.1%
EBITDA	8,795	10,033	10,011	12,881	14,058
% Change	-7.6%	14.1%	-0.2%	28.7%	9.1%
Net Interest & Other Income	(219)	43	81	(402)	(374)
Net Income (Adjusted)	**2,223**	**2,138**	**2,069**	**2,831**	**3,176**
% Change	**-37.3%**	**-3.8%**	**-3.2%**	**36.8%**	**12.2%**

Free Cash Flow Data (Dec)

(US$ Millions)	2023A	2024A	2025E	2026E	2027E
Net Income from Cont Operations (GAAP)	1,833	1,874	2,074	2,833	3,178
Depreciation & Amortization	2,068	2,241	2,241	2,434	2,461
Change in Working Capital	(924)	(29)	0	0	0
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	2,302	3,074	2,277	3,308	3,705
Capital Expenditure	(4,824)	(4,808)	(4,985)	(4,400)	(1,932)
Free Cash Flow	**455**	**2,352**	**1,606**	**4,175**	**7,412**
% Change	**-72.8%**	**416.9%**	**-31.7%**	**159.9%**	**77.5%**
Share / Issue Repurchase	0	(59)	0	0	0
Cost of Dividends Paid	(1,488)	(2,698)	(2,337)	(2,811)	(3,049)
Change in Debt	(1,199)	(480)	0	0	0

Balance Sheet Data (Dec)

(US$ Millions)	2023A	2024A	2025E	2026E	2027E
Cash & Equivalents	5,966	4,659	3,928	5,292	9,656
Trade Receivables	1,664	1,142	1,142	1,142	1,142
Other Current Assets	6,435	7,343	7,343	7,343	7,343
Property, Plant & Equipment	35,295	38,514	41,258	43,225	42,695
Other Non-Current Assets	3,146	3,190	3,190	3,190	3,190
Total Assets	**52,506**	**54,848**	**56,861**	**60,192**	**64,027**
Short-Term Debt	766	41	41	41	41
Other Current Liabilities	5,049	5,455	5,455	5,455	5,455
Long-Term Debt	8,656	8,907	8,907	8,907	8,907
Other Non-Current Liabilities	10,725	11,667	11,667	11,667	11,667
Total Liabilities	**25,196**	**26,070**	**26,070**	**26,070**	**26,070**
Total Equity	**27,310**	**28,778**	**30,791**	**34,122**	**37,957**
Total Equity & Liabilities	**52,506**	**54,848**	**56,861**	**60,192**	**64,027**

Freeport-McMoRan in brief

BofA Recommendation: Buy

We see FCX as blue-chip copper exposure. Our Buy rating reflects a successful transition to underground, block cave mining at Grasberg, a more normalized/stable copper production profile going forward and several potentially value-enhancing growth options including low-grade leaching.

Key investment considerations

- Freeport-McMoRan is one of the few near pure-play copper options and as such can benefit from favourable global copper market conditions.

- FCX also offers meaningful gold exposure (15% of total revenue) and is set to generate strong free cash flow.

- Investment decision by year-end on Bagdad expansion, extension of the Indonesian export permits in 2025 expected during repairs and ramp-up and the Grasberg mining license (beyond 2041) are key catalysts.

Company overview

Freeport McMoRan (FCX) is the world's largest publicly traded copper and molybdenum producer, and amongst the larger gold producers. Its key operating and development assets are in Indonesia, N America, and S America. Revenue totalled $25.5B in 2023.

Recent major events

FCX 2025 copper sales guidance was lowered 5% to 4.0 billion pounds (Blb) driven by reduced operating rates at Grasberg (two planned major maintenance projects) and lower grades at Cerro Verde with FY24 results. However, 2025 gold sales guidance was raised 7% to 1.6 million ounces (Moz). The current Indonesia copper concentrate export license expired on 1-Jan-25; PT-FI (PT Freeport Indonesia) has requested an extension until the repairs to its new smelter are completed (scheduled for mid-2025).

Based on discussions to-date, FCX expects to re-commence exports in Q1'25 and pay a 7.5% export duty. Molybdenum sales guidance for 2025 was slightly reduced to 88Mlb from 90Mlb.

Freeport is preparing for a potential submission of an environmental impact statement by year-end 2025 on its El Albra operations in Chile to support a mill project similar to Cerro Verde.

"Crown jewel" assets

Grasberg mine in Indonesia, Morenci mine in the U.S., Cerro Verde in Peru.

SWOT analysis

BHP

- **Strengths**: Large scale, low-cost, long-life asset portfolio. High capital returns to shareholders. Exposure to higher-for-longer iron ore and coal prices and an expected strong increase in copper prices.

- **Weakness**: Size = difficult to grow. Relatively few copper growth opportunities = need to grow by acquisition = risky. Historical track record on capital allocation mixed, e.g., write-downs at Jansen project.

- **Opportunities**: Energy transition drives metals demand. China demand recovery to continue supported by green investments. The Jansen Potash project in Canada is ahead of schedule, aiming for first production in late CY26. Catalysts include: Expanding West Australian Iron ore (WAIO) capacity to >305 Mtpa and an FID in FY26 to expand WAIO capacity to 330 Mtpa. In Copper, we expect an FID in FY27 to install a two-stage smelter at Olympic Dam, which will increase capacity to 500 ktpa of copper, partially supplied by Prominent Hill and potentially Oak Dam mines.

- **Threats**: Thermal coal (albeit relatively small) and coking coal exposure gives poor ESG rating for some investors.

Rio Tinto

- **Strengths**: Focused core assets after coal exit, exposure to aluminium. Well-run business. Past the worst of community relations issue. FY24 Net debt US$5.5bn in the context of RIO is effectively “debt free”.

- **Weakness:** Large size = difficult to deliver growth. Relatively limited copper growth opportunities beyond Oyu Tolgoi. ESG related issues = Social / community relations post-Juukan Gorge (Rio aspires to best execution on ESG).

- **Opportunities**: Iron Ore growth: Growth from here: Gudai-Darri “creep” to 50 Mtpa and Rhodes Ridge project will offset depletion and allow incremental growth. Oyu Tolgoi: RIO ramping to c. 0.9 Mtpa of mined copper over the next five years to capitalise on the mined copper deficit, which is largely driven by ramp-up to 500 ktpa at Oyu Tolgoi mine.

- **Threats**: Escondida an important asset, BHP key to driving that asset, may be focussing its attention elsewhere as it undertakes M&A.

Glencore

- **Strengths**: Diversification in terms of its commodity spread. Exposure to "decarbonisation" commodities: copper, nickel, zinc, cobalt. Marketing division. Shareholder return.

- **Weakness**: Exposure to coal, which has increased post-Cerrejon acquisition = some investors may exclude from investment universe. Exposure to sometimes tricky mining regions, i.e., Africa, Kazakhstan. Some lower-quality assets in portfolio relative to peers.

- **Opportunities**: Ongoing reputational improvement / repair as time passes post significant period of controversy and brand reputational damage on regulatory investigations (SFO, DoJ). Coal “call” option on energy surprise. Possibility for top-up buybacks that are “out of cycle”.

- **Threats**: Competition from other trading houses. Keeping and running down coal assets rather than divesting could mean ESG overhang with some investors.

Anglo American

- **Strengths**: Size = optimal for delivering growth relative to larger peers. High quality, desirable copper business. Recent project delivery in copper solid. Nickel exposure, copper exposure.

- **Weakness**: Current cash cow (South African iron ore) relatively lower quality, shorter life. Infrastructure challenges in South Africa. Market unconvinced by Woodsmith fertilizer project value proposition.

- **Opportunities**: Asset review. Restructuring plan: Shedding all assets except copper, iron ore and its fertilizer project. NewCo = leaner, more cash generative and less capital intense. Woodsmith syndication, partnership to underwrite path to market.

- **Threats**: South African political risks, Chilean political risks. Long-term PGM demand story at risk as consumers switch from ICE (internal combustion engine) cars to electric vehicles (EVs).

South32

- **Strengths**: Strong balance sheet. Highly cash generative assets, flagship manganese and alumina assets. Aluminium and copper exposure (we are bullish). Growth potential relative to size.

- **Weakness**: Shorter mine reserves vs other diversified peers. Less opportunity to cut costs through automation relative to bulk peers and due to jurisdictions.

- **Opportunities**: Strong FCF generation could allow further returns to shareholders through buybacks. Development of the Hermosa zinc, silver, lead mine in Arizona. Optionality beyond the Taylor deposit. Expansion of Sierra Gorda mine. Longer-term development assets.

- **Threats**: Project execution. Risk of overpaying as executes on M&A strategy.

Vale

- **Strengths**: Vale's iron ore is global "gold standard" for quality and purity. We see high quality premium for iron ore as more structural as the world tries to decarbonize the steel value chain. Low cash cost/t operations will be even lower with S11D ramp-up and price realization should improve. Large Nickel exposure via 90% ownership of VALE base metals.

- **Weakness**: Geographical iron ore concentration in Brazil entails political and currency risk, including government intervention, higher royalties, etc. Some underperforming high cash cost/t nickel operations. Higher freight costs to China vs its Australian peers.

- **Opportunities**: Large Ni producer, large Class I Ni producer. In the long term, EVs can be strong driver of nickel's demand. Consolidation of West Graham and Crean Hill 3 nickel and copper deposits in the Sudbury mining camp in Canada with SPC Nickel to unlock synergies and growth. JV in Brazil with Anglo American (Minas Rio).

- **Threats**: Lower-than-expected iron ore/nickel prices for long, weaker demand environment (mainly from China) and supply surprising up from Indonesia. Risk of other battery options for EVs that do not involve nickel, e.g., Lithium Iron Phosphate. Ramp-up of other higher grade iron ore production could erode quality premium, e.g., Simandou.

Fortescue

- **Strengths**: Fully integrated mine-to-market operations with ownership of mines, rail, and port, highly automated operations and low cash cost position.

- **Weakness**: Historically, the majority of FMG's iron ore was low grade ore (c. 58% Fe) which attracts a discount to the 62% Fe benchmark. As such, FMG's price realization is negatively correlated to Chinese steel margins. This is changing at the margin with the ramp-up of the Iron Bridge project, which is delivering a much higher grade product.

- **Opportunities**: Invest in Fortescue Energy projects (green hydrogen, renewable energy and electrolyser manufacturing capability). Drive new technologies for decarbonization of mining activities, potentially marketing these to third parties.

- **Threats**: We model a gradual decline in iron ore prices into the medium term. We expect dividend payout to average 65% in FY24 and FY25 (vs. 75% in FY22) owing to reduced cashflows and increased capex relating to decarbonisation and FFI.

Teck

- **Strengths**: High-quality, long-life assets in the U.S., Canada, Peru, and Chile; Growing exposure to copper; Expansion at Quebrada Blanca Phase 2 (QB2). Potential to unlock copper value / deliver rerating post coal business spin-off.

- **Weakness**: Dual share class structure blocks “free” M&A. Mixed track record on project execution, QB2 project over budget.

- **Opportunities**: Early-stage projects in similar commodities and geographies as QB2; Synergy potential between QB2 & Collahuasi. Capital return / deployment of proceeds from coal disposal.

- **Threats**: Falling copper, zinc prices; Risks on project execution.

Freeport

- **Strengths**: Attractive portfolio of copper assets with long lives; Grasberg transition complete; Leverage to "electrification" via copper exposure.

- **Weakness**: Indonesian jurisdiction risk; Reduced ownership of Grasberg; Indonesian smelter capex.

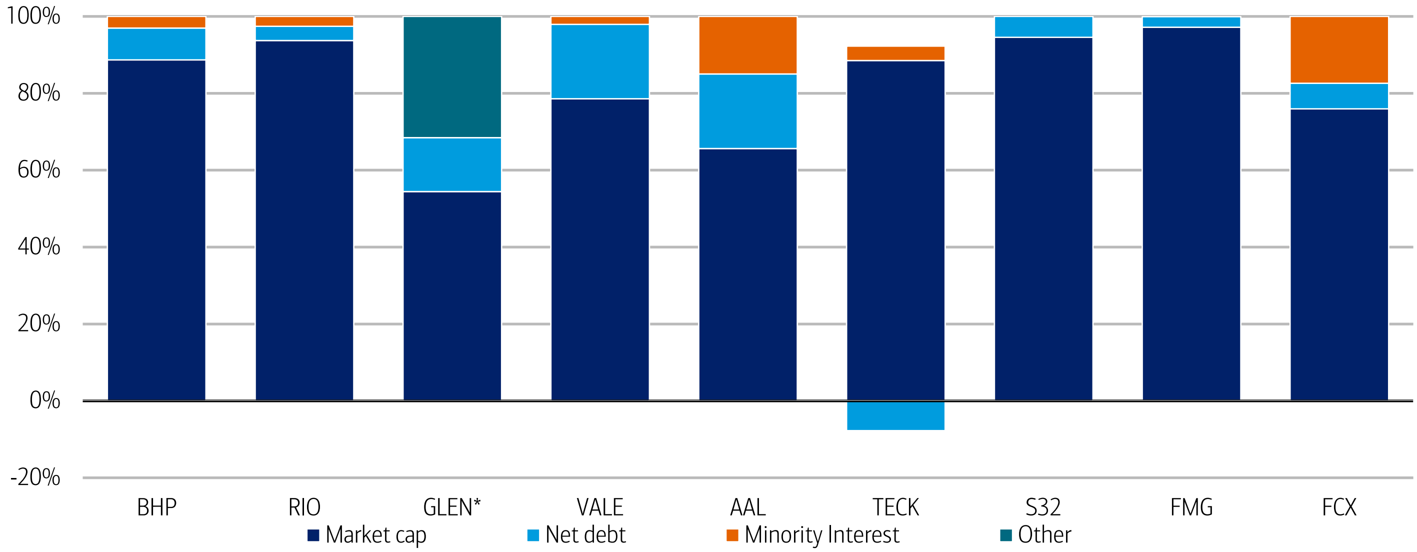
- **Opportunities**: Pure-play copper company that benefits from rising copper prices; NOLs (non-operating losses) to offset U.S. income, Smaller incremental growth opportunities; Novel leach = opportunity on older legacy assets with large above ground inventories of metal. Deleveraging, strong cash flow; Growing potential for return of capital to shareholders.

- **Threats**: Falling copper prices; lower production and higher costs; government relations with Indonesia, Chile, Peru.

Capital structure

Exhibit 96: Big Miners capital structure, 2024A

Most Big Miners have significantly reduced their net debt positions (some even net cash) vs. 2015-2016.

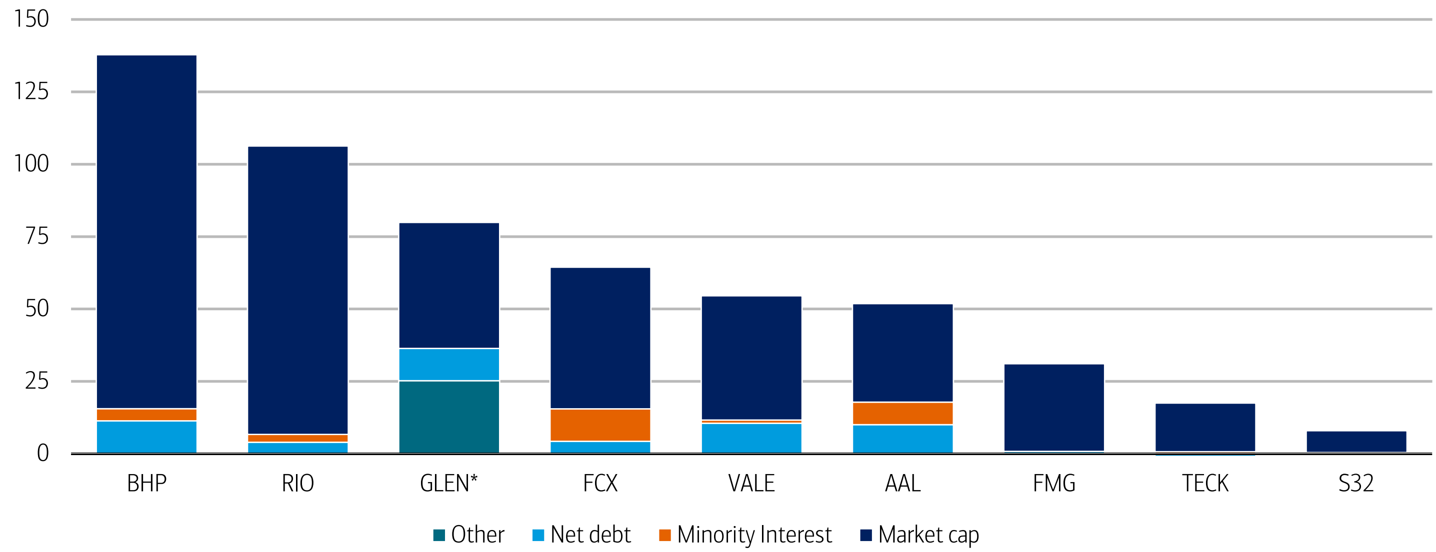


Source: BofA Global Research estimates, company report. *Note: For GLEN we have omitted "negative" minority interest mainly resulting from accumulated losses at the company's Koniambo mine.

BofA GLOBAL RESEARCH

Exhibit 97: Enterprise value breakdown

Note: Since the China hard landing "scare" of 2015, most miners have materially deleveraged and are running balance sheets which are close to net cash.

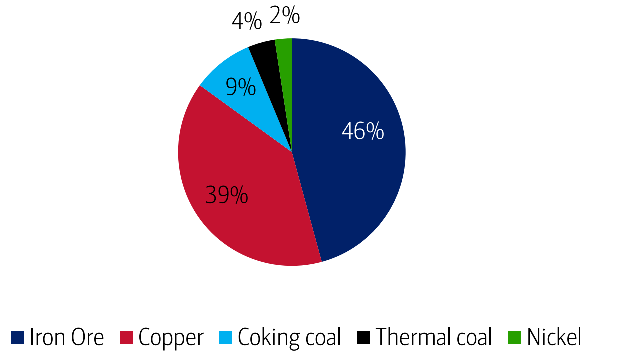


Source: BofA Global Research estimates. *Note: For GLEN we have omitted "negative" minority interest mainly resulting from accumulated losses at the company's Koniambo mine.

BofA GLOBAL RESEARCH

Revenue by commodity

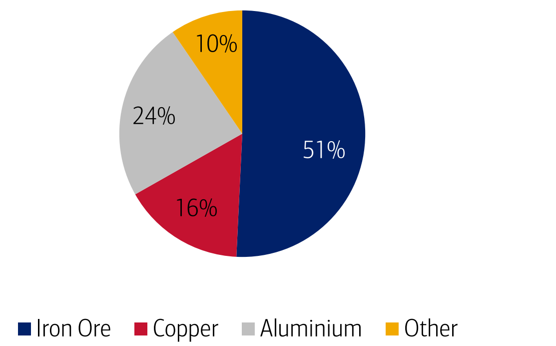
Exhibit 98: BHP revenue by commodity 2024A
Iron ore, copper are key revenue drivers



Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH

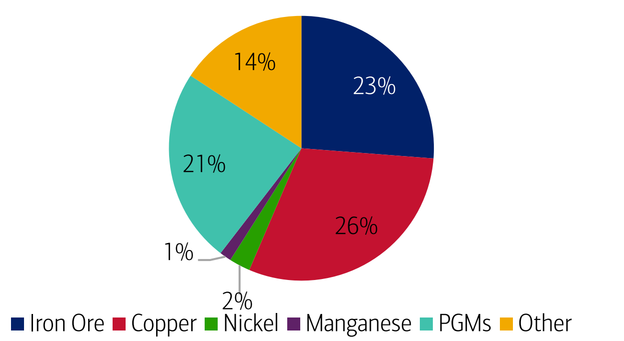
Exhibit 99: Rio Tinto revenue by commodity 2024A
Iron ore, aluminium are key revenue drivers



Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH

Exhibit 100: AAL revenue by commodity 2024A
Iron ore, copper, PGMs are key revenue drivers



Source: BofA Global Research estimates, company report. Note: Other mainly diamonds.

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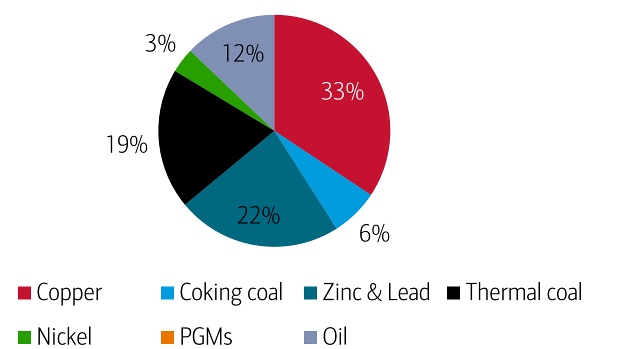
Exhibit 101: GLEN revenue by commodity 2024A
Thermal coal, copper, zinc/lead are key revenue drivers



Source: BofA Global Research estimates, company report. GLEN revenue also shown pro-forma for TECK coking coal acquisition.

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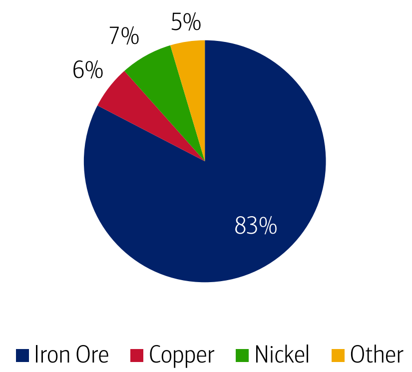
Exhibit 102: Vale revenue by commodity 2024A
Iron ore is the main revenue driver



Source: BofA Global Research estimates, company report

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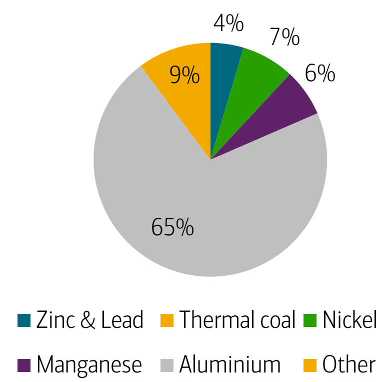
Exhibit 103: South32 revenue by commodity 2024A
Aluminium and coking coal are key revenue drivers



Source: BofA Global Research estimates, company report

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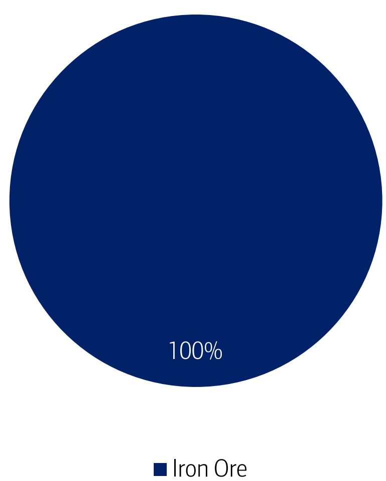
Exhibit 104: Fortescue revenue by commodity 2024A
Iron ore is the key revenue driver



Source: BofA Global Research estimates, company report

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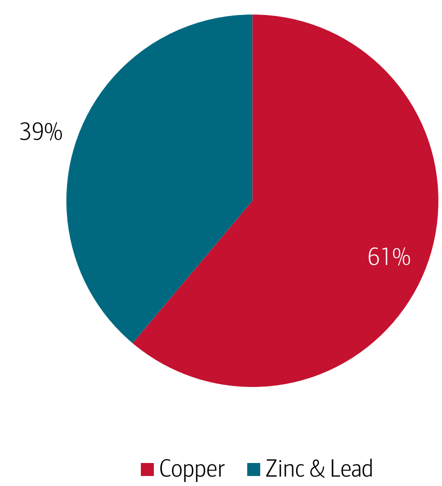
Exhibit 105: Teck revenue by commodity 2024A
Coking coal is the revenue driver



Source: BofA Global Research estimates, company report. TECK shown pro-forma ex-Coking coal.

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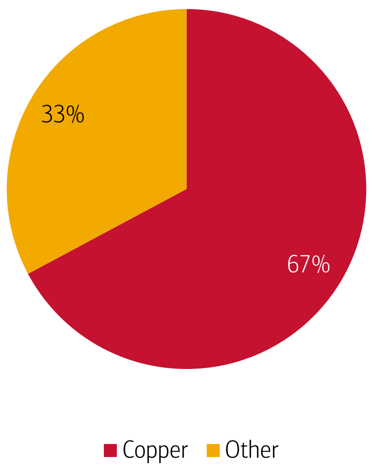
Exhibit 106: Freeport revenue by commodity 2024A
Copper is the key revenue driver



Source: BofA Global Research estimates, company report

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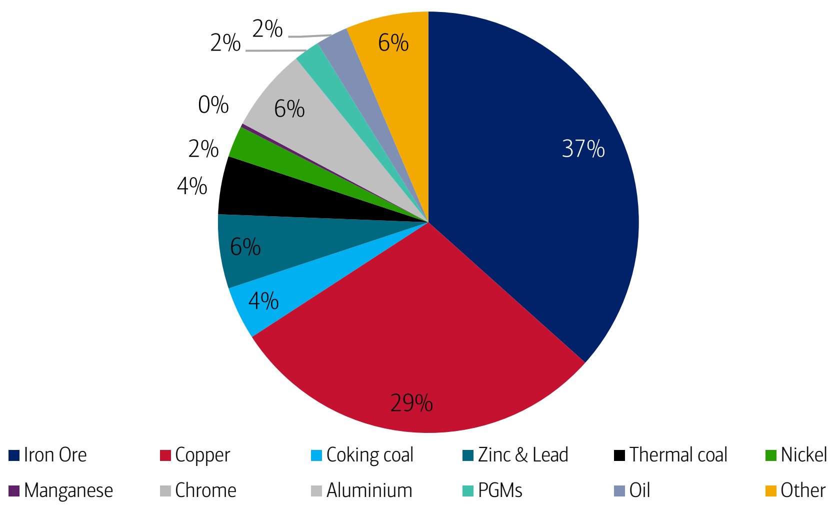
Exhibit 107: Big Miners aggregate revenue by commodity 2024A
Aggregate revenue exposure = iron ore, copper key drivers across Big Miners



Source: BofA Global Research estimates, company reports

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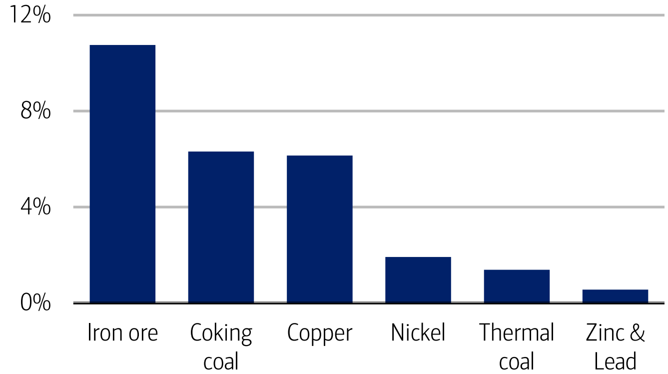
Commodity exposure and market share

Exhibit 108: BHP market share by commodity, 2024A
Iron ore and coking coal = highest market share



Source: BofA Global Research estimates, Woodmac, CRU, Silver institute

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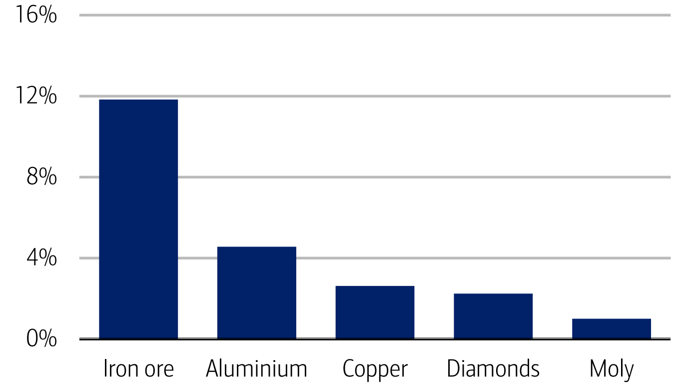
Exhibit 109: RIO market share by commodity, 2024A
Iron ore = c.12% of global production



Source: BofA Global Research estimates, Woodmac, CRU, Silver institute

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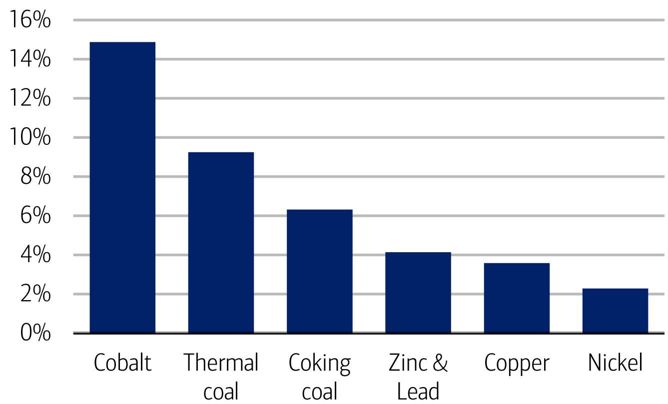
Exhibit 110: GLEN market share by commodity, 2024A
Cobalt and thermal coal = highest market share



Source: BofA Global Research estimates, Woodmac, CRU, Silver institute.

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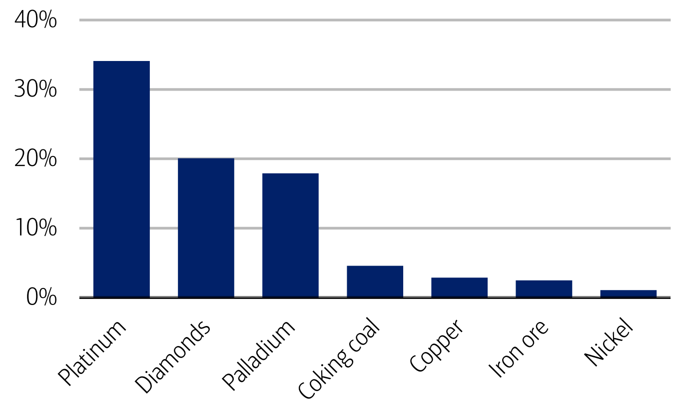
Exhibit 111: AAL market share by commodity, 2024A
Platinum, diamonds and palladium = highest market share



Source: BofA Global Research estimates, Woodmac, CRU, Silver institute

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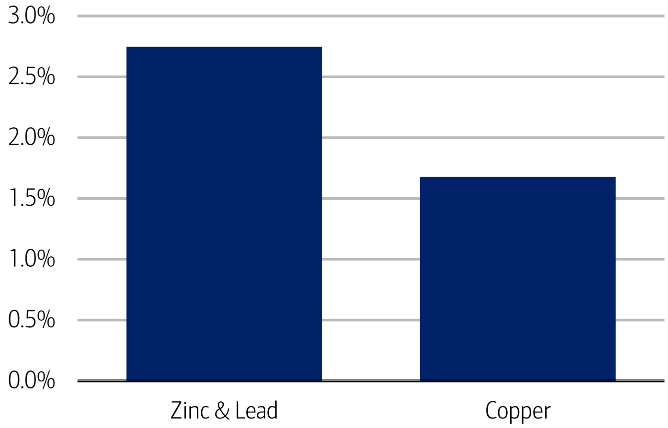
Exhibit 112: TECK market share by commodity, 2024A
Zinc & Lead = highest market share. Teck sold coking coal to Glencore.



Source: BofA Global Research estimates, Woodmac, CRU, Silver institute.
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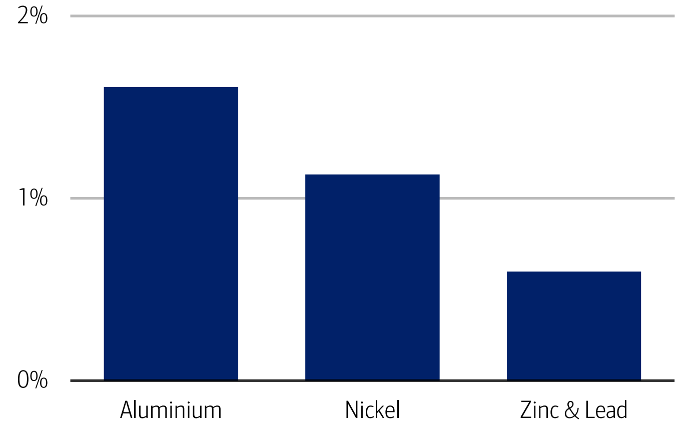
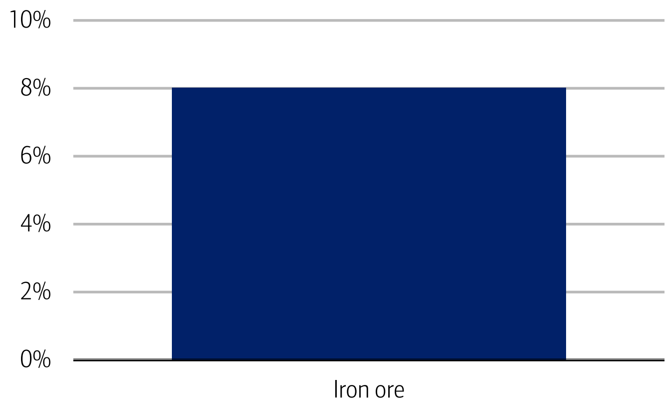
Exhibit 113: S32 market share by commodity, 2024A
Aluminium and nickel = highest market share



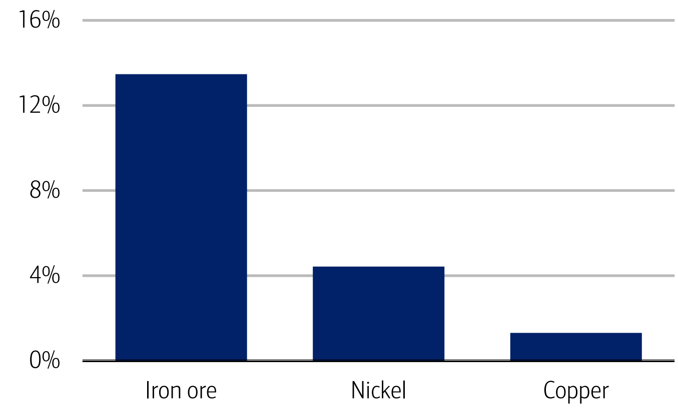
Source: BofA Global Research estimates, Woodmac, CRU, Silver institute
BofA GLOBAL RESEARCH

Exhibit 114: FMG market share by commodity, 2024A
Iron ore pure play, market share of c.8%



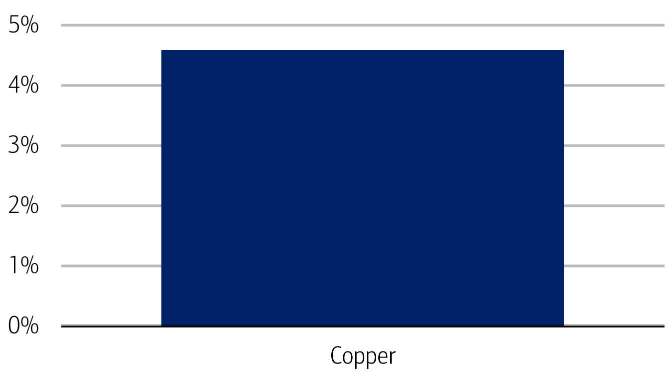
Source: BofA Global Research estimates, Woodmac, CRU, Silver institute
BofA GLOBAL RESEARCH

Exhibit 115: VALE market share by commodity, 2024A
Iron ore = highest market share



Source: BofA Global Research estimates, Woodmac, CRU, Silver institute
BofA GLOBAL RESEARCH

Exhibit 116: FCX market share by commodity, 2024A
Copper pure play with market share of c.5%



Source: BofA Global Research estimates, Woodmac, CRU, Silver institute
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Dupont and leverage analysis

Exhibit 119: Dupont and leverage analysis, BHP, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
27%	2008	79%	195%	41%
12%	2009	64%	193%	16%
24%	2010	60%	180%	26%
33%	2011	70%	178%	41%
21%	2012	57%	193%	23%
25%	2013	41%	185%	19%
26%	2014	38%	177%	18%
10%	2015	36%	177%	6%
-31%	2016	24%	198%	-15%
11%	2017	32%	187%	6%
18%	2018	39%	185%	13%
21%	2019	44%	195%	18%
20%	2020	42%	201%	17%
22%	2021	56%	196%	24%
35%	2022	69%	195%	48%
26%	2023	54%	209%	30%
17%	2024	56%	208%	20%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 120: Dupont and leverage analysis, RIO, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
10%	2008	61%	399%	24%
14%	2009	43%	212%	13%
27%	2010	50%	172%	23%
11%	2011	51%	202%	11%
-6%	2012	43%	205%	-5%
2%	2013	46%	208%	2%
14%	2014	44%	198%	12%
-5%	2015	38%	207%	-4%
14%	2016	38%	195%	10%
22%	2017	42%	187%	17%
34%	2018	45%	183%	28%
16%	2019	49%	194%	15%
23%	2020	46%	188%	20%
36%	2021	62%	182%	40%
24%	2022	57%	183%	25%
18%	2023	52%	184%	18%
22%	2024	52%	177%	20%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 121: Dupont and leverage analysis, GLEN, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
1%	2008	248%	376%	7%
2%	2009	160%	369%	10%
3%	2010	182%	354%	18%
2%	2011	216%	266%	13%
3%	2012	138%	258%	10%
-3%	2013	150%	294%	-15%
1%	2014	145%	296%	5%
-6%	2015	115%	311%	-20%
-1%	2016	123%	285%	-3%
3%	2017	152%	274%	10%
1%	2018	171%	284%	6%

Exhibit 121: Dupont and leverage analysis, GLEN, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
-1%	2019	173%	316%	-4%
-3%	2020	121%	343%	-11%
2%	2021	160%	345%	12%
6%	2022	193%	293%	37%
1%	2023	176%	324%	8%
-1%	2024	177%	366%	-8%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 122: Dupont and leverage analysis, AAL, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
24%	2008	53%	229%	29%
14%	2009	37%	201%	10%
29%	2010	42%	176%	21%
26%	2011	42%	168%	18%
-2%	2012	36%	181%	-1%
1%	2013	41%	190%	1%
-6%	2014	41%	205%	-5%
-29%	2015	39%	244%	-27%
9%	2016	43%	206%	8%
15%	2017	48%	189%	14%
16%	2018	53%	175%	15%
15%	2019	53%	179%	15%
13%	2020	41%	191%	10%
28%	2021	63%	190%	34%
17%	2022	52%	198%	18%
4%	2023	46%	210%	4%
-10%	2024	42%	227%	-10%

Source: BofA Global Research estimates

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Exhibit 123: Dupont and leverage analysis, TECK, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
11%	2008	21%	287%	7%
25%	2009	26%	205%	13%
21%	2010	32%	183%	12%
24%	2011	34%	191%	15%
11%	2012	30%	192%	6%
11%	2013	26%	192%	6%
5%	2014	23%	196%	3%
2%	2015	24%	208%	1%
12%	2016	26%	202%	6%
22%	2017	33%	190%	13%
19%	2018	32%	172%	10%
13%	2019	29%	176%	7%
5%	2020	22%	199%	2%
23%	2021	28%	199%	13%
26%	2022	36%	197%	18%
17%	2023	27%	199%	9%
2%	2024	19%	174%	1%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 124: Dupont and leverage analysis, VALE, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
21%	2016	30%	241%	15%
21%	2017	34%	222%	16%
17%	2018	41%	197%	14%
-10%	2019	41%	229%	-9%
9%	2020	43%	257%	11%
45%	2021	61%	253%	70%
40%	2022	50%	233%	47%
26%	2023	44%	230%	27%
13%	2024	47%	232%	15%

Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 125: Dupont and leverage analysis, S32, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
1%	2015	52%	140%	1%
2%	2016	46%	142%	1%
16%	2017	49%	144%	11%
17%	2018	51%	141%	12%
14%	2019	51%	145%	10%
7%	2020	44%	144%	4%
13%	2021	48%	148%	9%
24%	2022	65%	152%	24%
10%	2023	62%	155%	10%
5%	2024	58%	159%	4%

Source: BofA Global Research estimates

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Exhibit 126: Dupont and leverage analysis, FMG, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
NA	2007	0%	943%	NA
-554%	2008	4%	-4950%	1222%
28%	2009	42%	518%	60%
-142%	2010	61%	355%	-309%
19%	2011	63%	354%	42%
23%	2012	45%	400%	41%
22%	2013	39%	395%	33%
23%	2014	52%	299%	36%
4%	2015	40%	283%	4%
14%	2016	37%	230%	12%
25%	2017	44%	196%	22%
13%	2018	39%	183%	9%
32%	2019	51%	186%	30%
37%	2020	55%	177%	36%
46%	2021	79%	160%	58%
36%	2022	61%	164%	36%
28%	2023	60%	157%	27%
31%	2024	61%	154%	29%

Source: BofA Global Research estimates

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Exhibit 127: Dupont and leverage analysis, FCX, 2024A

Revisiting Dupont formula: ROE can be broken down into net Profit Margin * Asset Turnover * Leverage

NPM	Reference year	Asset turnover	Leverage	ROE
22%	2007	42%	209%	19%
-59%	2008	76%	329%	-147%
23%	2009	58%	242%	33%
29%	2010	65%	202%	38%
27%	2011	65%	173%	31%
22%	2012	51%	166%	19%
16%	2013	33%	245%	13%
-3%	2014	37%	253%	-3%
-78%	2015	33%	364%	-95%
-25%	2016	41%	403%	-42%
12%	2017	44%	330%	18%
14%	2018	44%	244%	14%
-1%	2019	36%	234%	-1%
6%	2020	34%	226%	5%
23%	2021	48%	209%	23%
20%	2022	45%	205%	18%
16%	2023	44%	192%	14%
17%	2024	46%	191%	15%

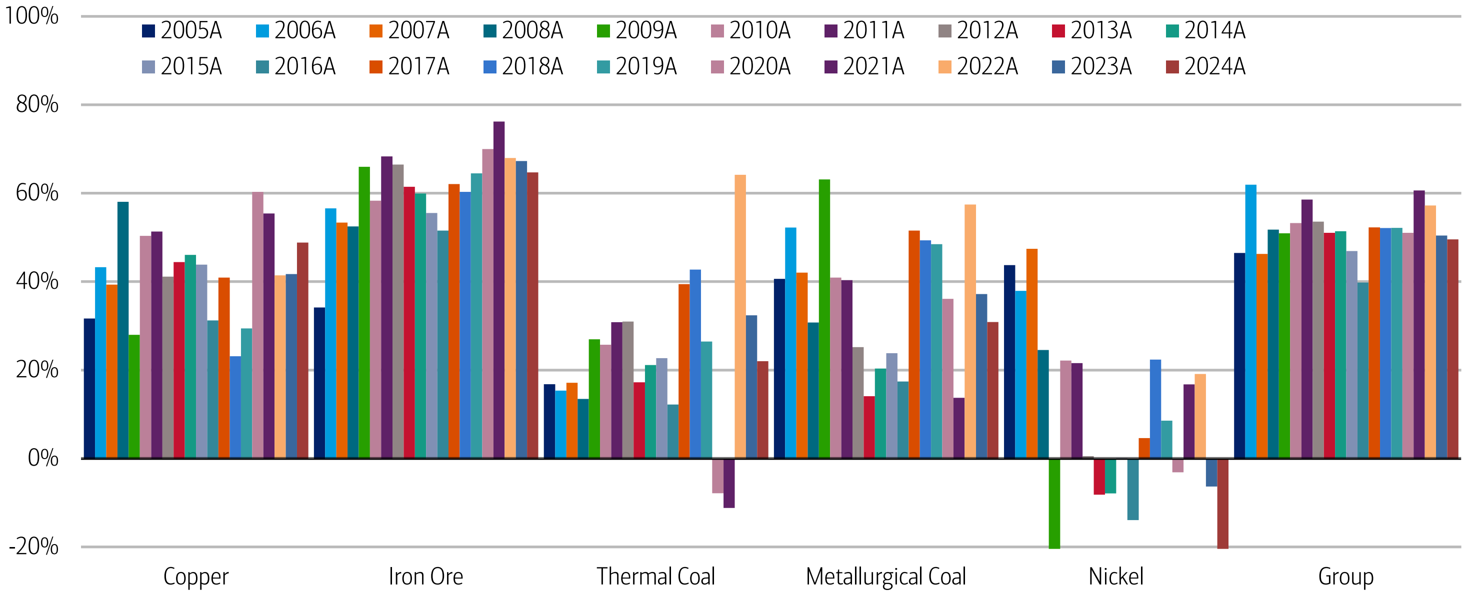
Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Margins and return analysis

Exhibit 126: BHP EBITDA margin history (%)

Group EBITDA margin was 50% for 2024A (calendarized)

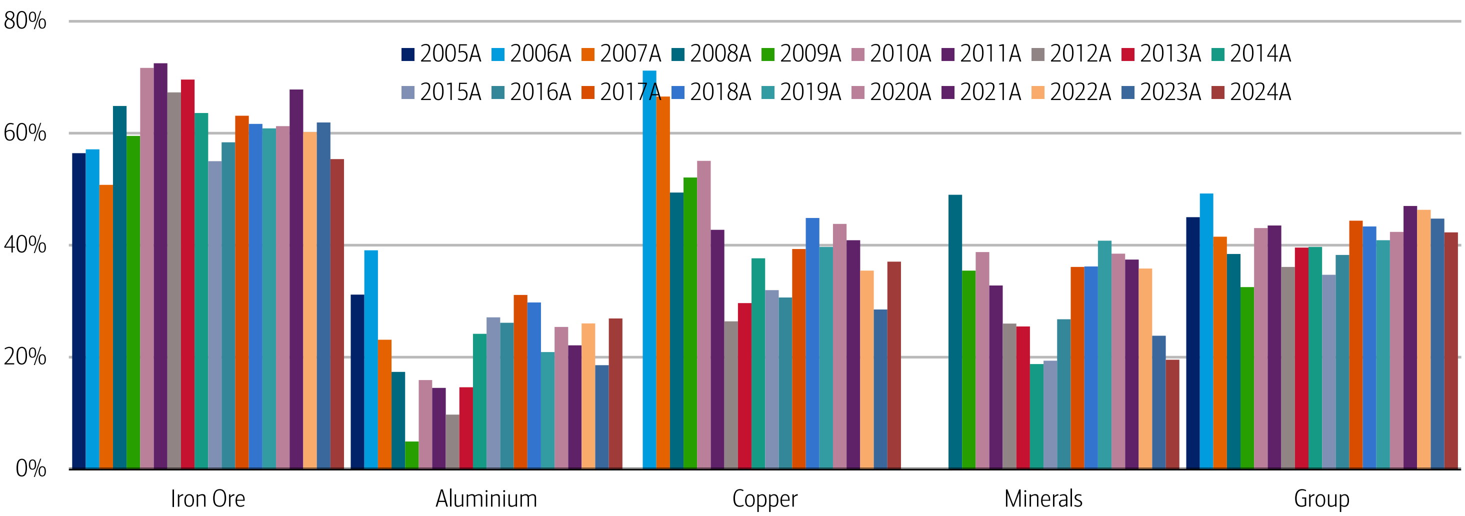


Source: BofA Global Research, Company data

BofA GLOBAL RESEARCH

Exhibit 127: RIO EBITDA margin history (%)

Group EBITDA margin was 42% for 2024A



Source: BofA Global Research, Company data

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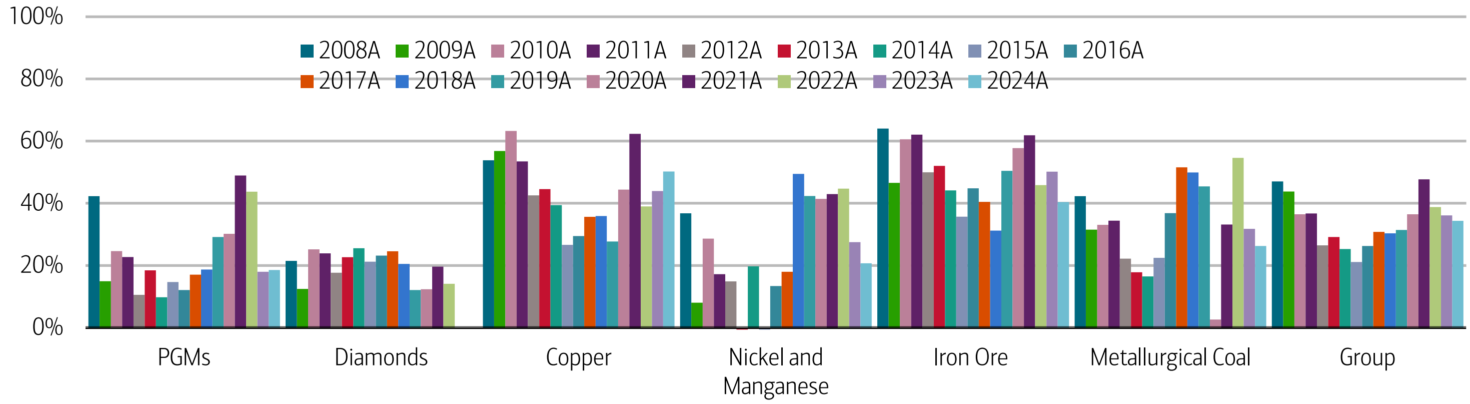
Exhibit 128: AAL EBITDA margin history (%)
Group EBITDA margin was 34% for 2024A



Source: BofA Global Research, Company data

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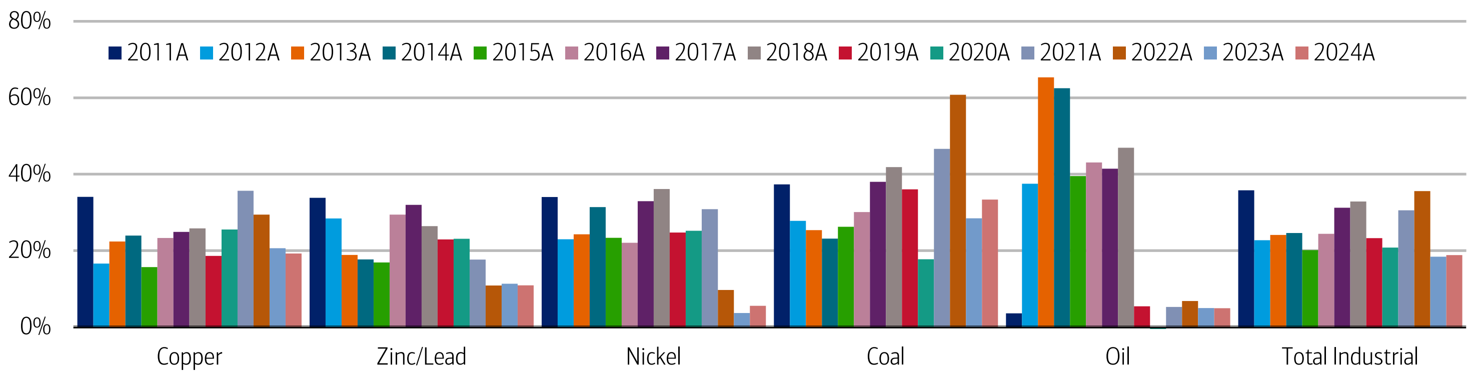
Exhibit 129: GLEN EBITDA margin history (%)
Group EBITDA margin was 18% for 2024A



Source: BofA Global Research, Company data

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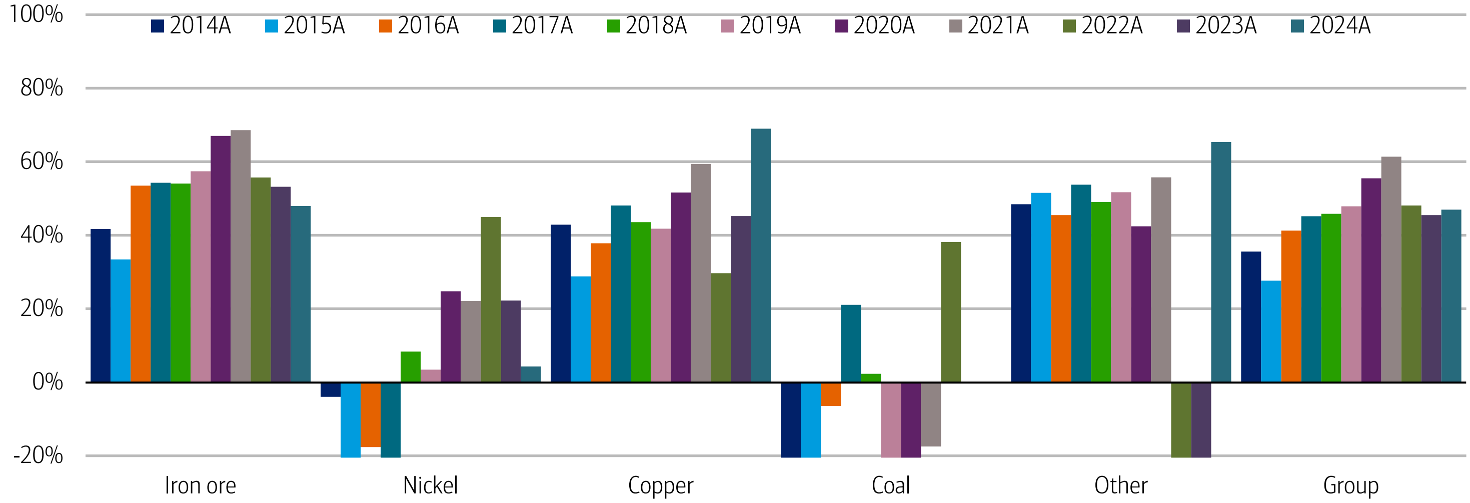
Exhibit 130: Vale EBITDA margin history (%)
Group EBITDA margin was 47% for 2024A



Source: BofA Global Research, Company data

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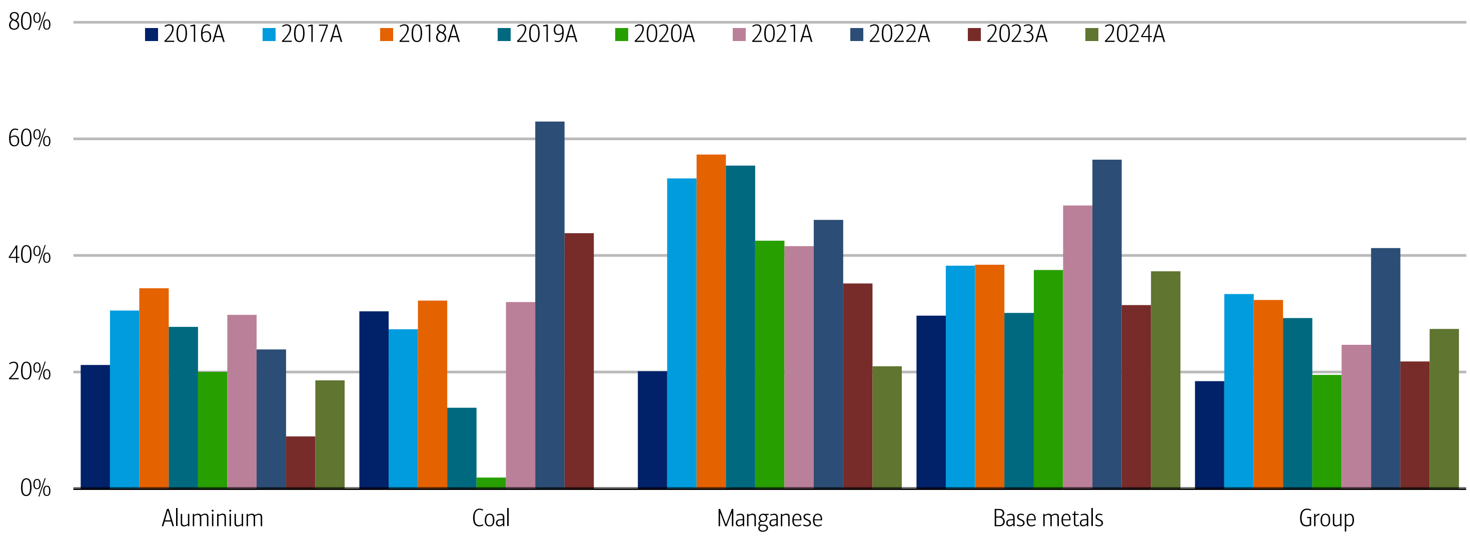
Exhibit 131: South32 EBITDA margin history (%)
Group EBITDA margin was 27% for 2024A



Source: BofA Global Research, Company data

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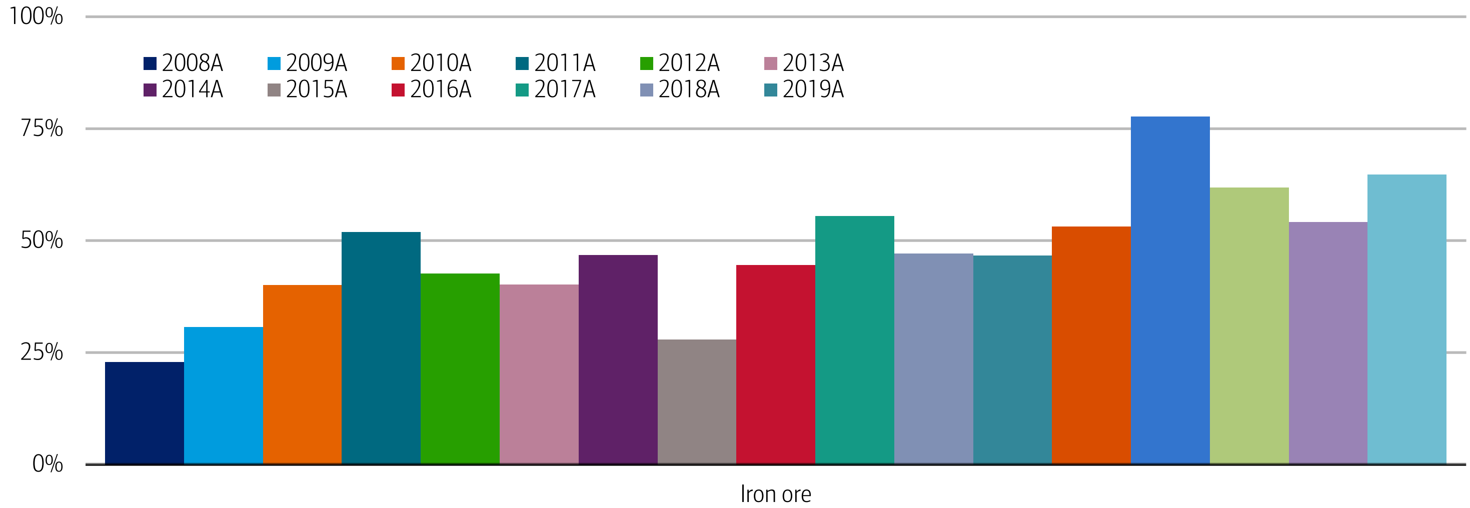
Exhibit 132: FMG EBITDA margin history (%)
Group EBITDA margin was 65% for 2024A



Source: BofA Global Research, Company data

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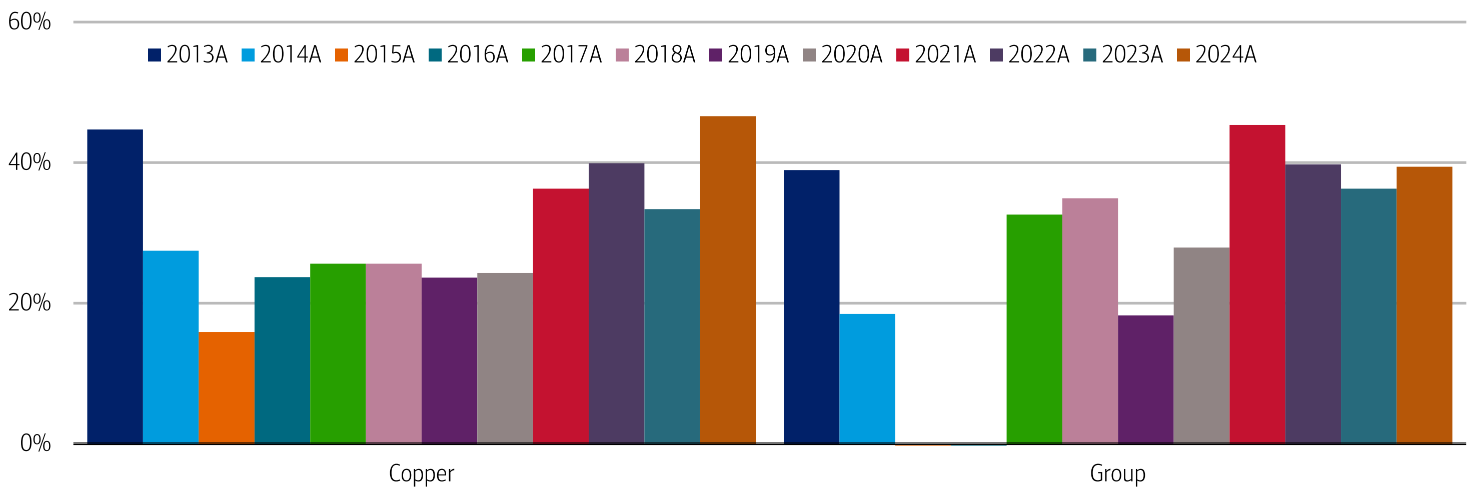
Exhibit 133: FCX EBITDA margin history (%)
Group EBITDA margin was 39% for 2024A



Source: BofA Global Research, Company data

BofA GLOBAL RESEARCH

Acquisition and disposal histories

Exhibit 136: BHP acquisition and disposal history
This is the list of BHP's completed M&A transactions

Date completed	Target	Stake acquired / sold	Total EV ($mn)	Location	Commodity
17/05/2000	Ravensthorpe	40%	20	Australia	Nickel
31/07/2000	Sweet River	67%	327	Brazil	Iron ore
15/09/2000	Cerrejon	33%	Undisclosed	Colombia	Thermal coal
29/11/2000	Rio Algom	100%	2537	Canada	Copper
08/12/2000	La Granja	100%	35	Peru	Copper
25/01/2001	Reynolds Australia Alumina	100%	1490	Australia	Alumina
12/06/2001	Ravensthorpe	50%	15	Australia	Nickel
29/06/2001	BHP Billiton merger		9300		Diversified
02/08/2005	Western Mining Corporation	100%	7300		Diversified
12/05/2008	Anglo Potash	25%	282	Canada	Potash
10/09/2008	New Saraji Project	100%	2450	Australia	Mining services
31/03/2011	Fayetteville Shale assets	100%	4750	USA	Petroleum
26/08/2011	Petrohawk	100%	15100	USA	Petroleum
30/09/2011	HWE	100%	449	Australia	Mining services
19/08/2014	Demerger of the groups aluminium, coal, manganese, nickel and silver assets (South 32)				
05/09/2016	Scarborough area gas fields	50%	-400	Australia	Petroleum
01/09/2018	Fayetteville	100%	-300	USA	Petroleum
01/09/2018	SolGold	6%	36	Ecuador	Copper
01/10/2018	SolGold	5%	59	Ecuador	Copper
01/11/2018	US Onshore Assets	100%	-10500	USA	Petroleum
01/11/2018	Orphan Basin	100%	625	Canada	Petroleum
01/03/2019	Crinum	50%	-36	Australia	Coal
25/11/2019	SolGold	4%	17	Ecuador	Copper
19/06/2020	Albion Downs North and Jericho exploration JVs	50%	Undisclosed	Australia	Nickel
19/06/2020	Honeymoon Well Nickel Project	100%	Undisclosed	Australia	Nickel
07/11/2020	Petroleum - Shenzi / Gulf of Mexico	28%	505	United States	Petroleum
20/05/2021	EnVen Energy Ventures	35%	Undisclosed	Mexico	Petroleum
22/11/2021	Woodside (Merger)	52%	40000	Australia	Petroleum
28/06/2021	Cerrejon	33%	-294	Colombia	Coal
18/11/2022	Oz Minerals	100%	6610	Australia	Copper / Gold
24/10/2022	Jetti Resources	-	-100	United States	Copper
19/10/2023	Ragnar Metals	100%	-6550	Sweden	Nickel, Copper, Lithium
03/11/2023	Carbon Engineering	-	813.01	Canada	Decarbonisation
02/04/2024	Daunia & Blackwater	100%	4000	Australia	Met Coal
14/01/2025	Filo Corp	50%	4000	Argentina/ Chile	Copper

Source: BofA Global Research, Company report

BofA GLOBAL RESEARCH

Exhibit 137: Rio Tinto acquisition and disposal history
This is the list of Rio's completed M&A transactions

Date completed	Target	Stake acquired / sold	Total EV ($mn)	Location	Commodity
21/06/2000	Rio Aluminium	27.60%	887	Australia	Aluminium
31/08/2000	North Ltd	85.50%	1725	Australia	Diversified
17/01/2001	Ashton Mining	100%	392	Canada	Diamonds
26/09/2001	Three Springs Talc	100%	27	Australia	Minerals
16/01/2002	North Jacobs Ranch	100%	379	USA	Coal
31/01/2006	La Granja copper deposit	100%	Undisclosed	Peru	Copper
16/11/2007	Alcan	100%	42934	Global	Aluminium
12/02/2008	Greens Creek	70%	-750	USA	Silver, Gold, Zinc, lead
06/03/2008	Cortez Gold Mine	40%	-1695	USA	Gold
10/07/2008	Kintyre Uranium	100%	-495	Australia	Uranium
27/01/2009	Ningxia aluminium smelter	50%	-125	China	Aluminium
30/01/2009	Potash assets	100%	-1600	LatAm	Potash
09/03/2009	Jacobs Ranch	100%	-761	USA	Coal
22/09/2009	Alcan Composites	100%	-349	Global	Aluminium
28/10/2009	Ivanhoe Mines Ltd	9.70%	388	Canada	Diversified
23/12/2009	Alcan Packaging	100%	-2025	Global	Aluminium
31/12/2010	Ivanhoe Mines Ltd	30.60%	1590	Canada	Diversified
01/08/2011	Riversdale (Rio Tinto Coal Mozambique)	100.00%	4168	Mozambique	Energy
27/09/2011	Ivanhoe Mines Ltd	8.70%	1860	Canada	Diversified
12/01/2012	Hathor	100.00%	550	Canada	Energy
24/01/2012	Ivanhoe Mines Ltd	2.00%	308	Canada	Diversified
05/09/2012	Alcan Cable	100.00%	-185	North America + China	Aluminium
07/09/2012	Richards bay Minerals	50.00%	1700	South Africa	Titanium dioxide
12/12/2012	Palabora	57.70%	-373	South Africa	Copper
12/06/2013	Eagle project	100.00%	-325	USA	Nickel

Exhibit 137: Rio Tinto acquisition and disposal history
This is the list of Rio's completed M&A transactions

Date completed	Target	Stake acquired / sold	Total EV ($mn)	Location	Commodity
29/07/2013	Northparkes	80.00%	-820	Australia	Copper
25/10/2013	Clermont Mine	50.10%	-1015	Australia	Coal
30/07/2014	Coal Mozambique	100.00%	-50	Mozambique	Coal
27/01/2016	Mount Pleasant	100.00%	-224	Australia	Copper
01/03/2016	Bengalla	40.00%	-617	Australia	Coal
01/08/2016	Mt Pleasant	100.00%	-221	Australia	Coal
01/12/2016	Lochaber	100.00%	-410	UK	Aluminium
01/09/2017	Coal & Allied	100.00%	-2690	Australia	Coal
01/06/2018	Winchester South	100.00%	-200	Australia	Coal
01/08/2018	Valeria & Hail Creek	71-82%	-1700	Australia	Coal
01/08/2018	Kestrel	80.00%	-2250	Australia	Coal
01/11/2018	Kitimat Wharf	100.00%	-576	Canada	Infrastructure
01/12/2018	Dunkerque	100.00%	-500	France	Aluminium
01/12/2018	Grasberg	0-40%	-3500	Indonesia	Copper
16/07/2019	Rossing Uranium	68.62%	-6.5	Namibia	Uranium
18/11/2021	Diavik Diamond Mine	40.00%	Undisclosed	Canada	Diamonds
22/12/2021	Rincon lithium project	100%	825	Argentina	Lithium
20/12/2022	Turquoise Hill Resources	49%	3100	Mongolia	Copper
09/03/2023	ClearFlame	-	-30	USA	Decarbonisation
22/08/2023	Henday / Milliken / Carswell projects	60% / 100% / 50%	1.11	USA	Uranium
29/08/2023	La Granja	55%	105	Peru	Copper
11/10/2023	McEwen Copper	-	10	Australia	Copper
16/11/2023	Janice Lake / Saskatchewan	-	Undisclosed (divest.)	Canada	Copper
01/12/2023	Matalco	50%	-700	Canada	Aluminium
12/12/2023	Western Copper & Gold	2%	-3.52	Canada	Gold, Copper, Silver & Molybdenum
26/03/2024	Fort a la corne	75%	Undisclosed (divest.)	Canada	Diamond
06/03/2025	Arcadium Lithium	100%	6700	Global	Lithium

Source: BofA Global Research, Company report

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Exhibit 138: AAL acquisition and disposal history
This is the list of AAL's completed M&A transactions

Date completed	Target	Stake acquired	Total EV ($mn)	Location	Commodity
17/04/2000	Mantos Blancos	22.60%	90	Chile	Copper
04/05/2000	Tarmac	100%	1846	UK	Industrial minerals
27/07/2000	Shell Coal	100%	898	Australia	Coal
12/03/2002	African Rainbow Minerals	34.90%	138	S. Africa	Diversified
06/11/2002	Syktyvkarsky Forestry	68.50%	246	Russia	Forestry
13/11/2002	Disputada	100%	1300	Chile	Copper
28/02/2003	Girrah Coal Deposit	70%	35	Australia	Coal
29/09/2003	Lisheen	50%	55	Ireland	Zinc
05/12/2003	Exxaro Resources	31.60%	931	S. Africa	Diversified
17/02/2005	Samancor Chrome	40%	-469	South Africa	Chrome and ferrochrome
23/04/2007	MMX	49%	1150	Brazil	Iron ore
31/07/2007	Pebble Copper Project	50%	1425	US	Copper
21/12/2007	Foxleigh	70%	620	Australia	Coal
06/08/2008	IronX	63.5%	3493	Brazil	Iron ore
06/12/2010	Skorpion	100.0%	-707	Namibia	Zinc
22/12/2008	IronX	35.3%	1318	Brazil	Iron ore
23/12/2010	Undeveloped coal assets	100%	-577	Australia	Coal
04/01/2011	Moly-Cop and Alta Steel	100%	-1076	Canada	Steel
04/02/2011	Black Mountain Mining	100%	-346	South Africa	Zinc
05/10/2011	Peace River Coal	25.20%	166	Canada	Coal
09/11/2011	Anglo American Sur	24.50%	-5390	Chile	Copper
15/02/2011	Lisheen	100.00%	-546	Ireland	Zinc
24/04/2012	Scaw South Africa	100%	-1,400	South Africa	Steel
16/08/2012	De Beers	85%	5,200	Botswana	Diamonds
11/12/2012	Palabora	16.80%	-103	South Africa	Copper
07/01/2013	Lafarge JV	50%	1,658	UK	Tarmac
01/11/2013	Amapa	100%	-134	Brazil	Iron ore
24/08/2015	Norte Copper	100%	-500	Chile	Copper
14/09/2015	American Norte	100%	-800	Chile	Copper
17/07/2015	Lafarge Tarmac	50%	-1,600	UK	Industrial minerals
24/12/2015	Dartbrook coal	83%	-36	Australia	Coal
20/01/2016	Callide coal	100%	N/A	Australia	Coal
04/04/2016	Foxleigh met coal	70%	N/A	Australia	Coal
30/09/2016	Niobium and Phosphates	100%	-1,500	Brazil	Phosphate
01/12/2016	Exxaro	10%	-215	South Africa	Coal

Exhibit 138: AAL acquisition and disposal history
This is the list of AAL's completed M&A transactions

Date completed	Target	Stake acquired	Total EV ($mn)	Location	Commodity
04/05/2017	Drayton coal	88%	E/V	Australia	Coal
01/03/2018	Eskom-tied thermal coal	100%	-164	South Africa	Coal
01/08/2018	New Largo	73%	-65	South Africa	Coal
01/11/2018	Mototolo JV*	39%	31	South Africa	PGMs
12/09/2019	Elizabeth Bay	100%	-7	Namibia	Diamonds
27/11/2019	Grosvenor mine	12%	-154	Australia	Coal
11/12/2019	Bafokeng Rasimone Platinum Mine	33%	-150	South Africa	Platinum
17/03/2020	Woodsmith / Sirius Minerals	100%	496	UK	Crop nutrients
28/06/2021	Cerrejon	33%	-294	Colombia	Coal
08/02/2023	Canada Nickel Company	10%	8	Canada	Nickel
24/10/2023	Eden GeoPower	-	-12	United States	Mining services
08/02/2024	Thea Energy	-	-20	United States	Mining services
11/02/2025	Peace River Coal	-	undisclosed	Canada	Coal
Pending Disposal	Steelmaking coal business	100%	-3780	Australia	Coal
Pending Disposal	Nickel business	100%	-500	Brazil	Nickel
Pending Disposal	Anglo American Platinum	100%	N/A	Global	PGMs

Source: BofA Global Research, company report

BofA GLOBAL RESEARCH

Exhibit 139: GLEN acquisition and disposal history
This is the list of GLEN's completed M&A transactions

Completion	Target	Stake acquired/sold	Price ($mn)	Location	Commodity
01/02/2010	Vasilkovskoye Gold	60%	1140	Kazakhstan	Gold
01/04/2010	Chemoil Energy Ltd	52%	237	Australia	Petroleum
07/12/2011	Umcebo	43.66%	123	South Africa	Coal
27/03/2012	Optimum Coal Holdings Ltd*	67.77%	376	South Africa	Coal
11/06/2012	Rosh Pinah zinc	80%	141	Namibia	Zinc
11/07/2012	Vals'e European manganese ferroalloys operations	100%	160	Europe	Ferroalloys
25/09/2012	Kazzinc**	69.61	458	Kazakhstan	Zinc
01/01/2013	Viterra	100%	6100	Worldwide	Agriculture
02/05/2013	Xstrata Merger	100%	na	Worldwide	Diversified
01/08/2014	Las Bambas	100%	-7000	Peru	Copper
14/04/2015	Caracal Energy	100%	1350	Chad	Oil
20/10/2016	Grail	100%	-798	Australia	Coal Haulage
01/12/2016	Glencore Agriculture	50%	-3124	Worldwide	Agriculture
13/11/2017	Volcan	37%	734	Peru	Zinc, lead and silver
20/03/2018	Hail Creek+Valeria coal	82% + 71.2%	1700	Australia	Coal
04/05/2018	Hunter Valley	49%	1100	Australia	Coal
01/10/2018	Astron Energy (Chevron South Africa + Chevron Botswana)	75% + 100%	1044	South Africa	Energy
01/01/2019	Ulan	10%	124	Australia	Coal
01/01/2019	Hail Creek	3%	39	Australia	Coal
01/04/2019	Terminales Portuarios Chancay	60%	-11	Peru	Port
26/06/2019	Polymet	43%	243	Minnesota (US)	Copper, Nickel, precious metal
01/12/2020	Disposal of Minera Alumbrera (-50% interest) for Minera Auga Rica Alumbrera (+24.99% interest)	-50% / +24.99%	NA	Argentina	Copper-gold
19/01/2021	Mopani	73%	1500	Zambia	Copper
06/01/2022	Ernest Henry Mining Pty Ltd	100%	591	Australia	Copper
11/01/2022	Cerrejon	67%	588	Colombia	Coal
26/01/2022	Gavilon (through Viterra)	100%	1125	USA	Agriculture
23/11/2022	CSA (Cobar) mine	100%	875	Australia	Copper
26/12/2022	Zanaga Iron Ore	50%	Undisclosed (disv.)	Rep. of Congo	Iron Ore
02/03/2023	Empresa Minera Los Quenuales SA	100%	10	Peru	Mining Services
17/07/2023	Gaspe Copper Mine Ltd	100%	45	Canada	Copper
09/11/2023	Polymet	18%	-73.08	Minnesota (US)	Copper, Nickel, precious metals
04/12/2023	Mineracao Rio do Norte	45%	Undisclosed	Brazil	Bauxite
04/12/2023	Alunorte SA	30%	Undisclosed	Spain	Alumina
25/03/2024	Li-Cycle	-	-75	Canada	Lithium
03/04/2024	Taman Grain Terminal	25%	Undisclosed (disv.)	Russia	Infrastructure
11/07/2024	77% Elk Valley Resources stake from Teck Resources	77%	7300	Canada	Coking Coal

Source: BofA Global Research, company report

BofA GLOBAL RESEARCH

Exhibit 140: VALE acquisition and disposal history
This is the list of VALE's completed M&A transactions

Date	Asset	Type of transaction	Payment US$mn	Business	Notes
Mar-09	Teal	Acquisition	65	Copper	
Apr-09	Argos	Acquisition	306	Coal	
Sep-09	Corumbá	Acquisition	814	Iron Ore	
Sep-09	TK CSA	Acquisition	681	Steel	
Jan-10	Oman's minority holding	Divestment	125	Pellets	
Jan-10	Bayovar's minority holdings	Divestment	660	Fertilizers	
Jan-10	PPSA	Divestment	74	Kaolin	
Jan-10	Valesul	Divestment	31	Aluminum	
Jan-10	Mineral rights to manganese and iron ore	Divestment	16	Manganese	
Jan-10	PCHs	Divestment	20	Energy	
Jan-10	Fertilizantes assets	Acquisition	5.829	Fertilizers	Plus stake of 78.92% in Fosfertil, WC adj. & upstream assets in Brazil.
May-10	Simandou	Acquisition	500	Iron Ore	First tranche, total of a US$ 2.5bn
Jun-10	Belvedere	Acquisition	92	Coal	Additional participation of 24.5%.
Sep-10	SDNC	Acquisition	21	Logistics	
Dec-10	FNS	Acquisition	893	Logistics	
Feb-11	Biopalma	Acquisition	174	Energy	
Feb-11	Alunorte, Albras, CAP e Paragominas	Divestment	503	Aluminum	
Apr-11	Norte Energia S.A.	Acquisition	1.4	Energy	Acquisition of a 9% stake.
Jun-11	Terminal Ultrafertil - TUF	Acquisition	95	Logistics	51% stake in the joint venture.
Dec-11	Vale Fertilizantes	Acquisition	1.217	Fertilizers	Acquisition of the free floating shares.
Feb-12	Carborough Downs	Acquisition	69	Coal	
May-12	Thermal coal assets in Colombia	Divestment	407	Thermal coal	100% of El Hatillo and Carro Largo, 100% of Sociedad Portuária Rio Córdobo and 8.43% stake in Ferrocarriles Del Norte de Colombia S.A.
May-12	CADAM	Divestment	30	Kaolin	
Jun-12	EBM	Acquisition	437	Iron Ore	Additional 10.5% stake.
Oct-12	Manganese Ferroaloys Europe	Divestment	160	Manganese	
Oct-12	Oman (30%)	Divestment	125	Pellets	
Oct-12	10 Ships large ore carriers	Divestment	600	Logistics	
Dec-12	Oil and gas concessions	Divestment	40	Energy	
Dec-12	Araucária	Divestment	234	Fertilizers	
Feb-13	Belvedere	Acquisition	156	Coal	
Feb-13	Salobo and Sudbury	Divestment	1.9	Gold Stream	
Mar-13	Capim Branco I and II	Acquisition	112	Energy	
Sep-13	VLI	Divestment	1.206	General Cargo	
Nov-13	Oil and gas concessions	Divestment	8	Energy	
Nov-13	Norsk Hydro	Divestment	1.811	Aluminum	
Dec-13	Log-in Logística	Divestment	94	Logistics	
Dec-13	Tres Valles	Divestment	25	Copper	
Dec-13	Power Generation Assets Restructure	Divestment	88	Energy	
Dec-13	VLI	Divestment	851	General Cargo	
Dec-13	Fosbrasil	Divestment	52	Fertilizers	
Jun-14	Vale Florestar	Divestment	90	Wood	
Dec-14	Fosbrasil	Divestment	46	Fertilizers	
Mar-15	Salobo - Goldstream	Divestment	900	Copper	
Apr-15	Belo Monte	Divestment	97	Energy	
May-15	4 VLOCs	Divestment	445	Logistics	
Jul-15	4 VLOCs	Divestment	448	Logistics	
Jun-16	3 VLOCs	Divestment	269	Logistics	
Aug-16	Salobo – Goldstream	Divestment	823	Copper	
Dec-16	Capesize vessels	Divestment	140	Logistics	
Mar-17	Coal equity - Mitsui	Divestment	733	Coal	
Aug-17	2 VLOCs	Divestment	178	Logistics	
Sep-15	MBR preferred shares	Divestment	1.072	Iron ore	Sale of 36.4% of MBR's share capital for R$ 4bn.
Dec-17	Lubambe	Divestment	42	Copper	
Dec-17	2 VLOCs	Divestment	178	Logistics	
Jan-18	Vale Fertilizantes	Divestment	1,150	Fertilizers	Also includes 34.2 million shares of Mosaic
May-18	Vale Cubatão	Divestment	255	Fertilizers	
Sep-18	Asset Eagle Downs (50% participation)	Divestment	117	Coal	
Jan-19	New Steel	Acquisition	500	Dry ore processing technique	
Aug-19	Ferrous	Acquisition	550	Iron ore	
Aug-19	Ferrous	Acquisition	525	Minério de ferro	
Dec-19	MBR	Acquisition	R$3.309	Iron Ore	
Dec-19	Henan Longyu	Divestment	$156	Coal	Participação de 25%
Oct-20	PT Indonesia Asahan Aluminium	Divestment	$278	Mining	Participation of 14,9%
Dec-20	VLI	Divestment	R$1,223	Logistics	Participation of 8%
Feb-21	Boston Metal	Acquisition	6	Steel	Participation of 3.24%
Mar-21	VNC	Divestment	555	Nickel	
Jun-21	CLN	Acquisition	2,517	Coal	Acquisition of 50% of remaining shares in CLN
Jun-21	Vale Moçambique	Acquisition	270	Coal	Non-controlling acquisition - 15% stake
Jan-22	Manganese ferroalloy operations	Divestment	40	Manganese ferroalloys	

Exhibit 140: VALE acquisition and disposal history
This is the list of VALE's completed M&A transactions

Date	Asset	Type of transaction	Payment US$mn	Business	Notes
Feb-22	CSI	Divestment	437	Steel	Participation of 50%
Apr-22	Coal assets	Divestment	R$1,285	Coal	
Jul-22	Sistema Centro-Oeste	Divestment	153	Iron Ore, Manganese and Logistics	
Dec-24	Minas Rio 15% stake	Acquisition	157.5	Iron ore	15% stake

Source: BofA Global Research, company report

BofA GLOBAL RESEARCH

Exhibit 141: S32 acquisition and disposal history
This is the list of S32 completed M&A transactions

Date	Asset	Type of transaction	Stake	Payment (US $mn)	Location	Commodity
May-17	Arizona Mining	Acquisition	15%	81	USA	Zinc
Dec-17	Trilogy	Acquisition	6%	10	USA	Copper
Apr-18	Trilogy	Acquisition	6%	15	USA	Copper
Aug-18	Arizona Mining	Acquisition	83%	1300	USA	Zinc
Sep-18	Eagle Downs	Acquisition	50%	133	Australia	Coal
Nov-19	SA Energy Coal	Divestment	92%	5.41	South Africa	Coal
Sep-21	Mozal	Acquisition (additional 25%)	72.10%	250	Mozambique	Aluminium
Feb-22	Sierra Gorda	Acquisition	45%	1550	Chile	Copper
May-22	Mineracao Rio do Norte	Acquisition (additional 18.2%)	33%	40	Brazil	Bauxite
Jul-22	non-core base metals royalties	Divestment (Royalties)	100%	185	UK	Royalties
Aug-22	Aldebaran Resources	Acquisition	10%	7.91	Argentina	Copper, Gold
Aug-24	Eagle Downs	Divestment	50%	15	Australia	Coal
Aug-24	Illawarra Metallurgical Coal	Divestment	100%	1300	Australia	Coal
Pending	American Eagle Gold	Acquisition	20%	22	Canada	Copper

Source: BofA Global Research, company report

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Exhibit 142: FMG acquisition and disposal history
This is the list of FMG's completed M&A transactions

Date	Asset	Type of transaction	Stake	Payment (US$ mn)	Location	Commodity
Jan-22	WAE	Acquisition	100%	223	UK	FFCs
Feb-24	Newman gold project	Divestment	100%	0.07	Australia	Gold
Mar-24	Magmatic Resources	Acquisition	19%	Undisclosed	Australia	Diversified

Source: BofA Global Research, Company report

BofA GLOBAL RESEARCH

Exhibit 143: TECK acquisition and disposal history
This is the list of TECK's completed M&A transactions

Date completed	Target	Stake acquired/divested	Total EV($mn)	Location	Commodity
17/08/2000	Teck Metals	5%	68	Canada, U.S.	Copper, Zinc
30/03/2001	Niobec mine	50%	-31	Canada	Niobium
24/07/2001	Teck Metals	50%	1,203	Canada, U.S.	Copper, Zinc
13/10/2003	Lennard Shelf mining operations	100%	18	Australia	Zinc
03/11/2003	Minera Nuteck	70%	-49	Mexico	
02/03/2004	Highland Valley Copper	34%	60	Canada	Copper
31/03/2004	Teck Cominco Madencilik Sanayi	100%	-11	Türkiye	Precious
30/11/2005	Fort Hills	10%	210	Canada	Energy
14/12/2005	Afton Mill	100%	-15		
14/12/2005	Abacus Mining & Exploration	22%	3	Canada	Copper
31/12/2005	Fort Hills	5%	189	Canada	Energy
10/10/2006	Minas Porocota	25%	-2	Peru	
06/12/2006	Tahera Diamond Corp	19%	26	Canada	Diamonds
28/06/2007	Lease 14 Oil Sand	50%	177	Canada	Energy
28/09/2007	AUR Resources	100%	3,637	Chile, Canada	Copper
01/10/2007	Thunder Lake Properties	100%	-16	Canada	
01/10/2007	Fording Canadian Coal Trust	11%	598	Canada	Coal
26/11/2007	Fort Hills	10%	739	Canada	Energy
08/08/2008	Global Copper Corp	100%	389	Chile, Argentina	Copper
31/10/2008	Fording Canadian Coal Trust	80%	10,997	Canada	Coal
17/12/2008	Minera Santa Rosa	100%	-243	Chile	Gold

Exhibit 143: TECK acquisition and disposal history
This is the list of TECK's completed M&A transactions

Date completed	Target	Stake acquired/divested	Total EV($mn)	Location	Commodity
31/12/2008	Minera Panama	26%	-30	Panama	Copper
20/02/2009	Inversiones Colquijirca	20%	-35	Peru	Plymetallics
01/04/2009	Certain gold assets	50%	-65		Gold
07/07/2009	Pogo gold mine	40%	-245	U.S.	Gold
28/09/2009	Hasancelebi project	51%	2	Türkiye	Gold, silver
17/11/2009	Morelos gold project	79%	-150	Mexico	Gold
31/12/2009	Waneta Dam	33%	-727	Canada	Energy
06/01/2010	Certain Turkish subsidiaries	100%	-85	Türkiye	
25/01/2010	Certain gold assets	100%	-270		Gold
05/04/2012	SilverBirch Energy Corp	12%	503	Canada	Energy
21/06/2012	TV Tower Gold Project	20%	-3	Türkiye	Gold
25/03/2013	Chacay property	100%	3	Chile	Copper
02/07/2013	Zafranal project	20%	-15	Peru	Copper, Gold
15/09/2014	Certain mining properties from Lachlan Star	100%	3	Chile	Copper
17/01/2017	AQM Copper	70%	16	Peru	Copper, Gold
01/03/2017	Wintering Hills	49%	-45	Canada	Energy
01/05/2017	Haib Minerals Pty	70%	-2	Namibia	Copper
18/10/2017	San Nicolas copper/zinc deposit	21%	50	Mexico	Copper, Zinc
04/04/2018	Inversiones Mineras	100%	53	Chile	Copper
26/07/2018	Waneta Dam	66%	-958	Canada	Energy
21/12/2018	Minority stake in Sun Metals Corp	14%	2	Canada	Copper, Gold, Silver
01/04/2019	Minority stake in Quebrada Blanca	30%	-800	Chile	Copper
15/01/2020	1.05 MW SunMine solar energy facility	100%	2	Canada	Energy
29/10/2020	Lorraine Copper-Gold Project	51%	-1	Canada	Copper, Gold, Silver
19/07/2022	Eagle Lake property	100%	Undisclosed (divestment)	Canada	Infrastructure
26/09/2022	Hannan Metals	9%	-1.75	Canada	Base metals
19/12/2022	Quintette assets	100%	-120	British Columbia	Steelmaking coal
02/02/2023	Fort Hills	21%	-1000	Canada	Energy
23/05/2023	Spin off-Teck coal				
25/08/2023	American Eagle Gold Corp	20%	-2.6	Canada	Gold
03/01/2024	20% Elk Valley Resources stake to Nippon Steel	20%	1300	Canada	Coking Coal
11/07/2024	77% Elk Valley Resources stake to Glencore	77%	-7300	Canada	Coking Coal

Source: BofA Global Research, Company report

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Exhibit 144: FCX acquisition and disposal history
This is the list of FCX's completed M&A transactions

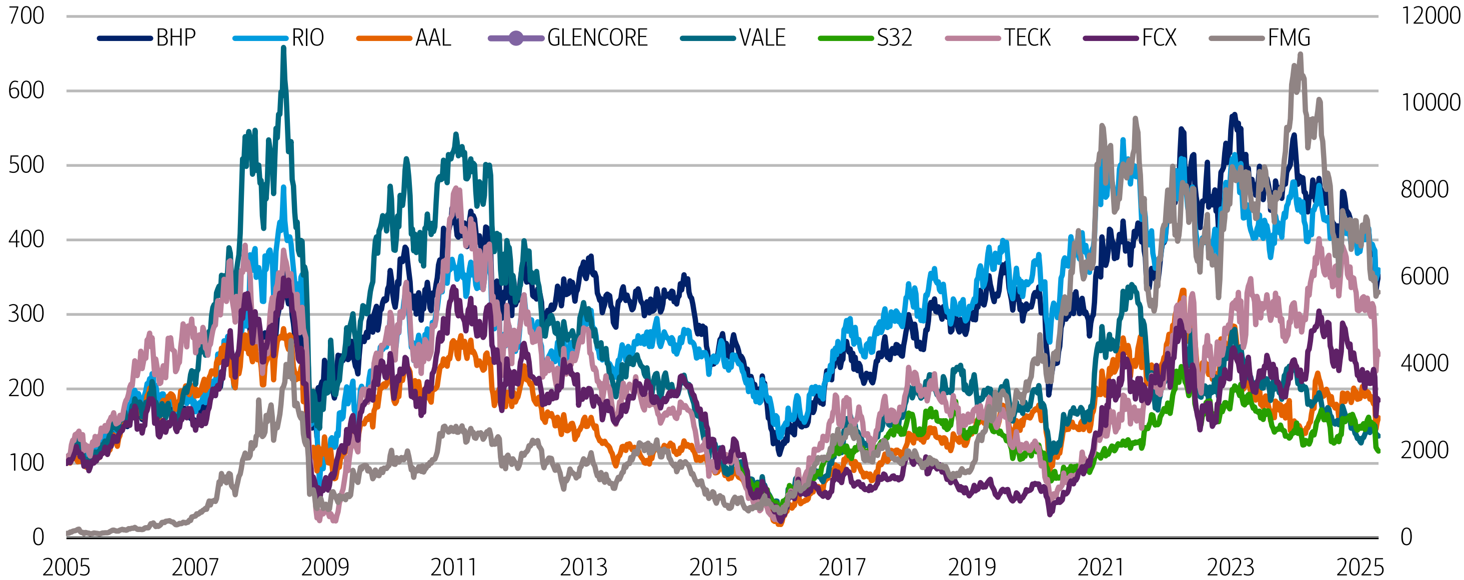
Date completed	Target	Stake acquired/divested	Total EV ($mn)	Location	Commodity
23/08/2002	Indocopper Investama Tbk PT	52%	4	Indonesia	Copper, Gold
24/07/2003	Puncakjaya Power PT	86%	300	Indonesia	Energy
20/03/2007	Phelps Dodge	100%	22,908	U.S., Peru, Congo	Copper
29/03/2013	OM Group, cobalt chemical refinery	100%	325	Finland	Cobalt
31/05/2013	Plains Exploration & Production	100%	10,173	U.S.	Energy
04/06/2013	McMoRan Exploration	100%	2,565	U.S.	Energy
01/11/2013	Mazagan Permit	52%	230	Morocco	Energy
20/06/2014	Eagle Ford-Shale	100%	-3,100	U.S.	Energy
30/06/2014	Apache Corporation's interest in Deepwater Gulf of Mexico	100%	1,400	U.S.	Energy
30/09/2014	Kinetics Dynacast	100%	-55	U.S.	Energy
30/09/2014	Anadarko's Blocks 940 941 984 & 985	19%	500	U.S.	Energy
03/11/2014	Minera Candelaria and Minera Ojos del Salado	80%	-1,800	Chile	Copper
16/01/2015	Power plant		-140		Energy
02/05/2016	Timok Project Upper Zone	55%	-135	Serbia	Copper, gold
31/05/2016	Morenci	13%	-1,000	U.S.	Copper
16/11/2016	Tenke Fungurume	70%	-2,650	Democratic Republic of Congo	Copper
17/11/2016	Cobalt Refinery, Kokkola Cobalt Refinery & Kisanfu Exploration	100%	-150	Finland	Cobalt
15/12/2016	Gulf of Mexico assets	100%	-2,000	U.S.	Energy
03/01/2017	Oil and gas properties	100%	-592	U.S.	Energy
12/07/2017	Madden gas field & Madden Deep unit gas field & Lost Cabin gas plant	14%	-17	U.S.	Energy
02/12/2018	Cobalt cathode precursor		-200	Finland	Cobalt
28/12/2019	CuAu International Holdings		-240	Bermuda	Investment co
13/12/2020	Jenny East Holdings Ltd,Kisanfu Holdings Ltd	95%	-550	Congo	Molybdenum
16/08/2021	Carpo Resources Inc	100%	Undisclosed	Papua New Guinea	Copper

Source: BofA Global Research, Company report

BofA GLOBAL RESEARCH

Share price performance

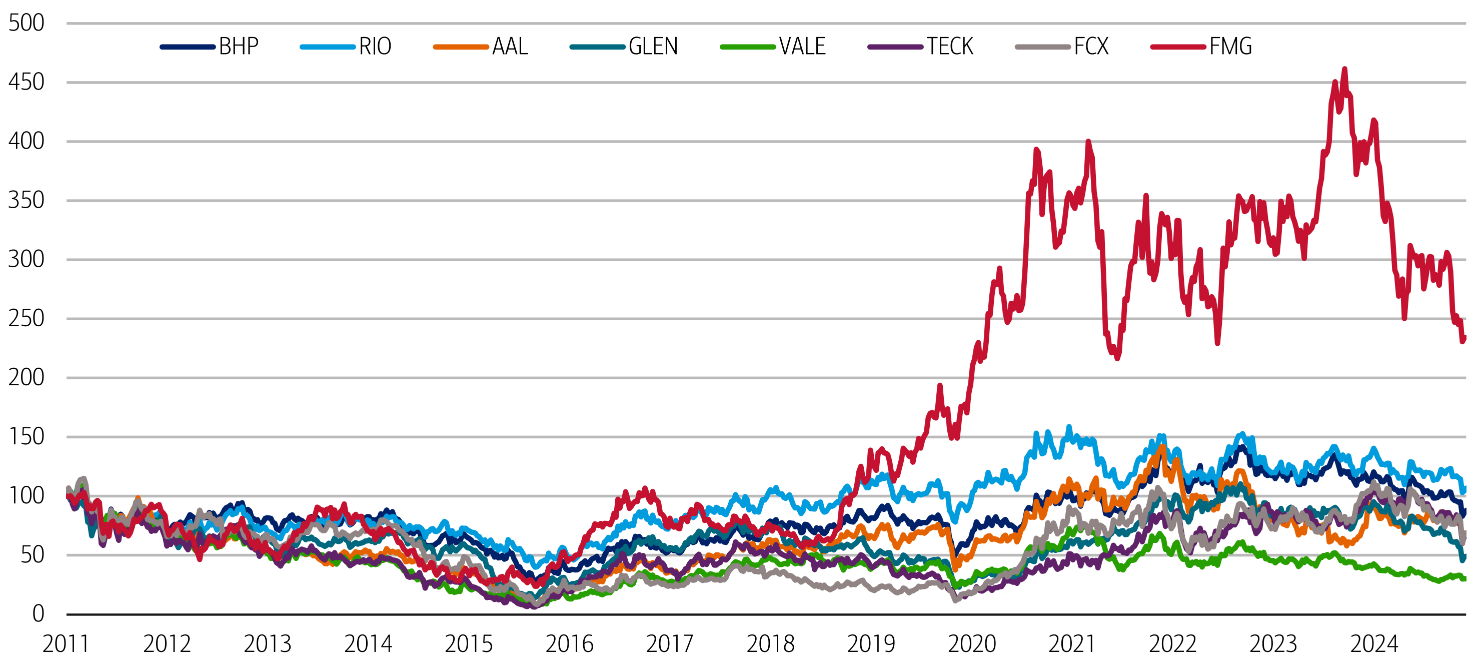
Exhibit 143: Big Miners share price performance (2005 – now)
BHP, RIO and FMG have performed well vs. peers



Source: BofA Global Research estimates, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 144: Big Miners share price performance (2011 – now)
Indexed 100 to May 2011 (GLEN IPO)

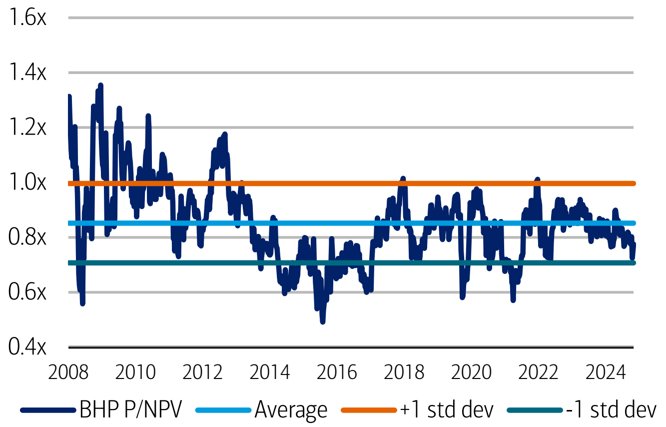


Source: BofA Global Research estimates, Bloomberg

BofA GLOBAL RESEARCH

Historic P/NPV ratios

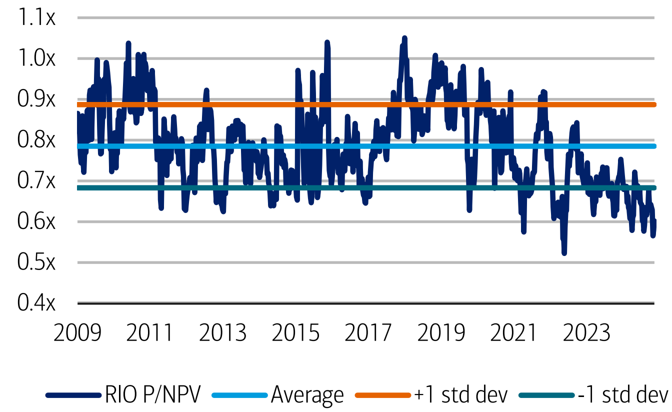
Exhibit 145: Historical P/NPV chart BHP
BHP trades on 0.78x P/NPV, slightly below historical average of 0.85x



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

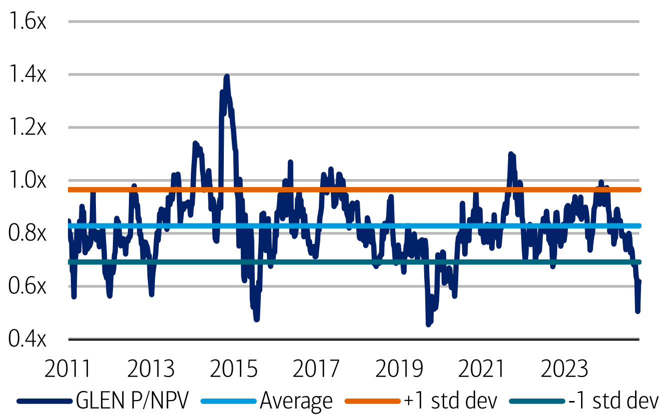
Exhibit 146: Historical P/NPV chart Rio Tinto
Rio trades on 0.6x P/NPV, below historical average of 0.79x



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

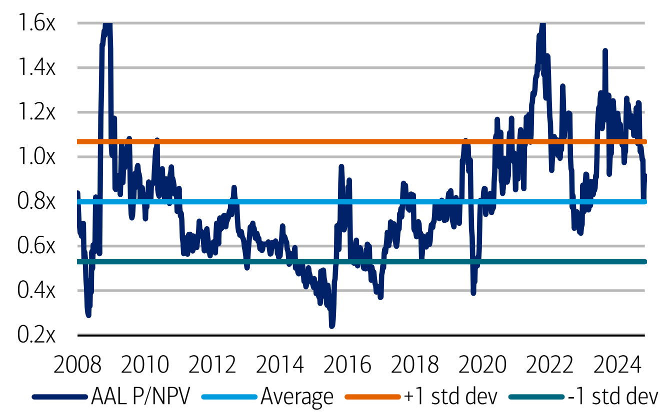
Exhibit 147: Historical P/NPV chart GLEN
GLEN trades on c. 0.6x P/NPV, below historical average of 0.83x



Source: BofA Global Research estimates, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 148: Historical P/NPV chart AAL
AAL trades on 0.92x, above its historical average of 0.8x

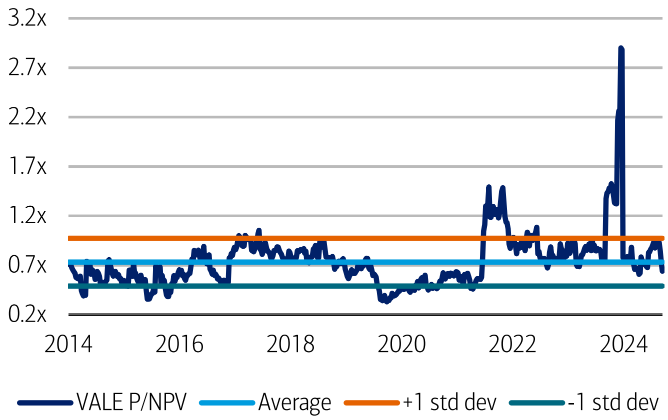


Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH

Exhibit 149: VALE: P/NPV chart

VALE trades on 0.6x P/NPV, below its historical average of 0.73x

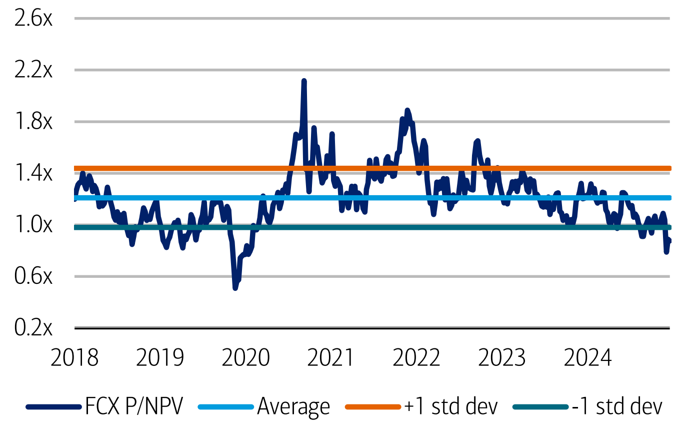


Source: BofA Global Research estimates, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 150: FCX: P/NPV chart

FCX trades on 0.9x P/NPV, below its historical average of 1.2x

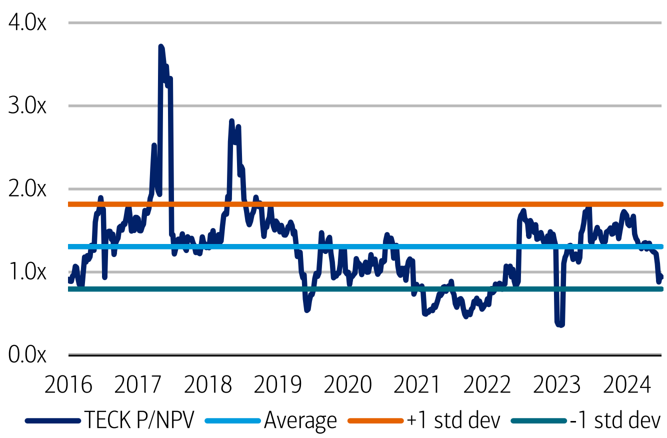


Source: BofA Global Research estimates, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 151: TECK: P/NPV chart

TECK trades on 0.9x P/NPV, below its historical average of 1.3x

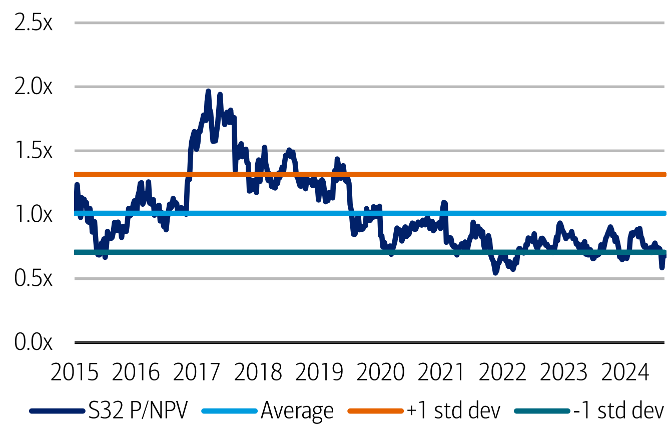


Source: BofA Global Research estimates, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 152: S32: P/NPV chart

S32 trades on 0.7x P/NPV, below its historical average c. 1x

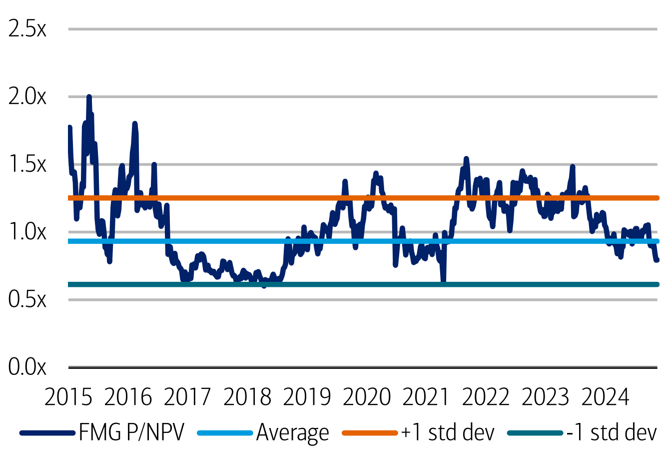


Source: BofA Global Research estimates, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 153: FMG: P/NPV chart

FMG trades on 0.8x, below its historical average of 0.9x P/NPV



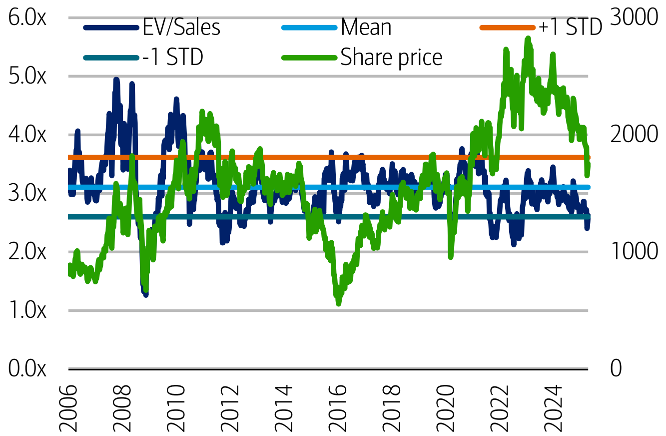
Source: BofA Global Research estimates, Bloomberg

BofA GLOBAL RESEARCH

Historic EV/Sales multiples

Exhibit 154: BHP: EV/Sales

BHP trades at 2.6x EV/Sales, below historic average of 3.1x

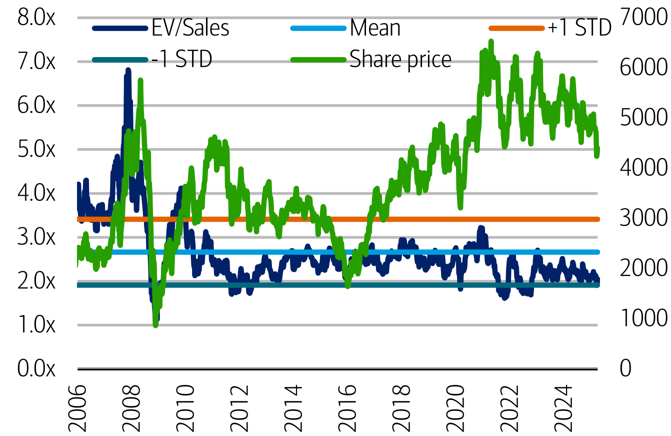


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 155: RIO: EV/Sales

RIO trades at 2.1x EV/Sales, below historic average of 2.7x

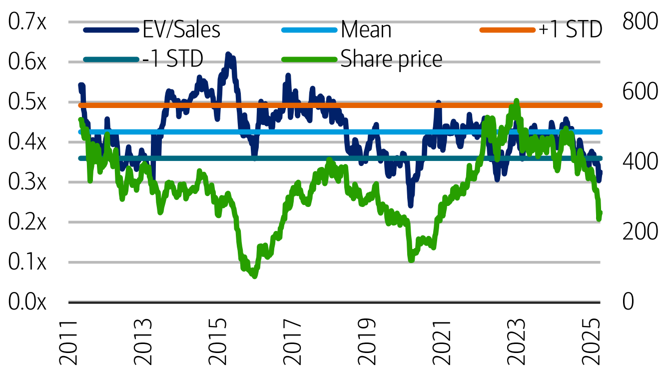


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 156: GLEN: EV/Sales

GLEN trades at 0.3x EV/Sales, below its historic average of 0.4x

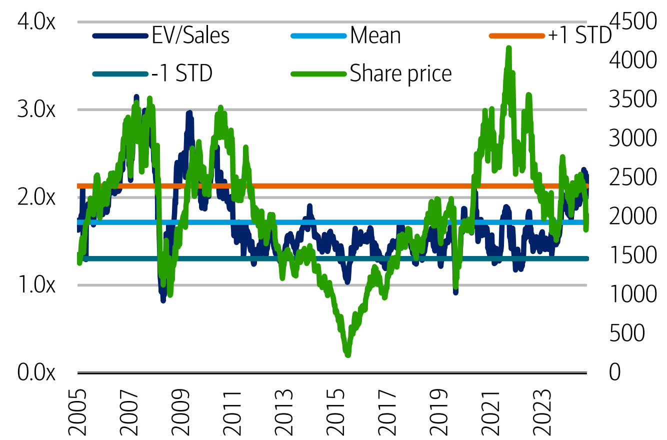


Source: BofA Global Research, Bloomberg. *Note for Glencore we've used group sales hence trading revenues are included. Inasmuch this is a large (c. $200 bn) revenue number with relatively thin margin, this explains the order of magnitude difference in Glencore's EV/Sales vs other large miners

BofA GLOBAL RESEARCH

Exhibit 157: AAL: EV/Sales

AAL trades at 2.2x EV/Sales, above its historic average of 1.7x

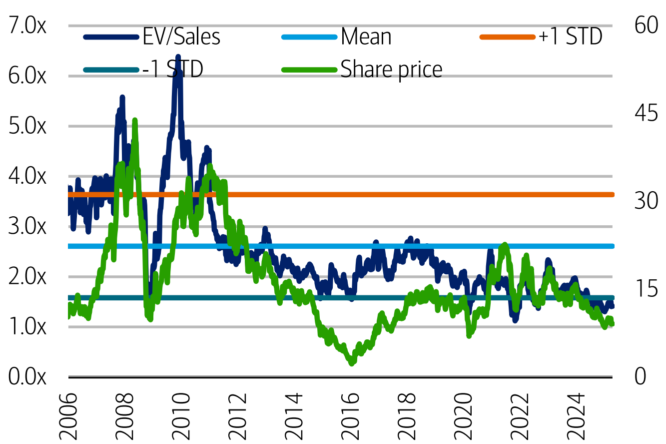


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 158: VALE: EV/Sales

VALE trades at 1.4x EV/Sales, below its historic average of 2.6x

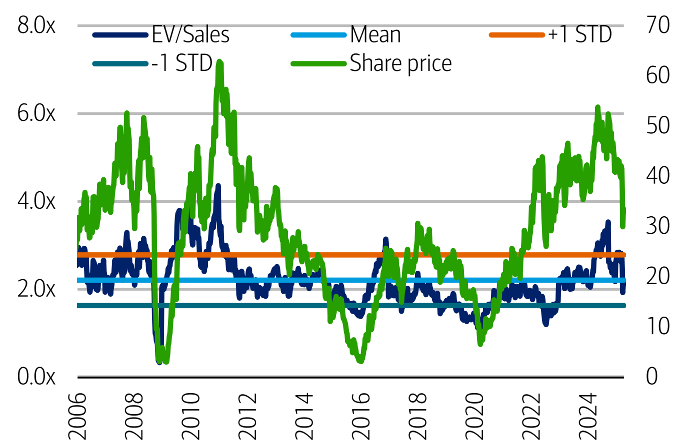


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 159: TECK: EV/Sales

TECK trades at 2.1x EV/Sales, slightly below its historic average of 2.2x

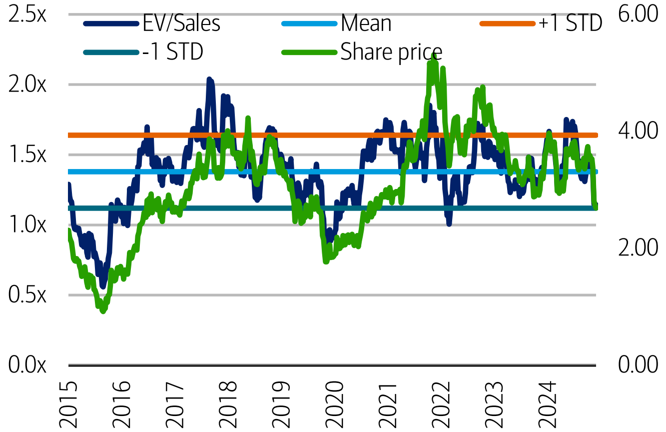


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 160: S32: EV/Sales

S32 trades at 1.1x EV/Sales, below its historic average of 1.4x

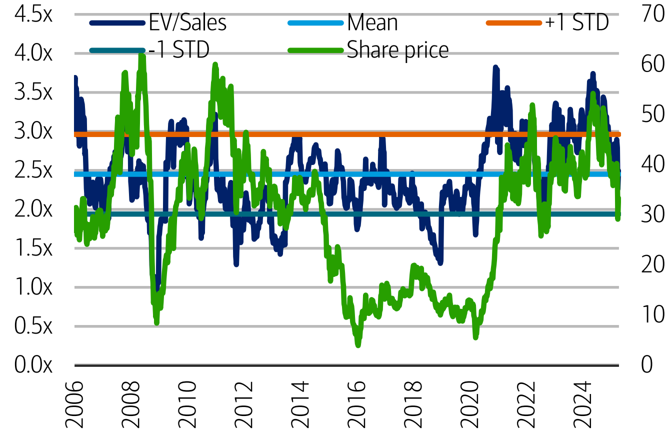


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 161: FCX: EV/Sales

FCX trades at 2.5x EV/Sales, inline with its historic average

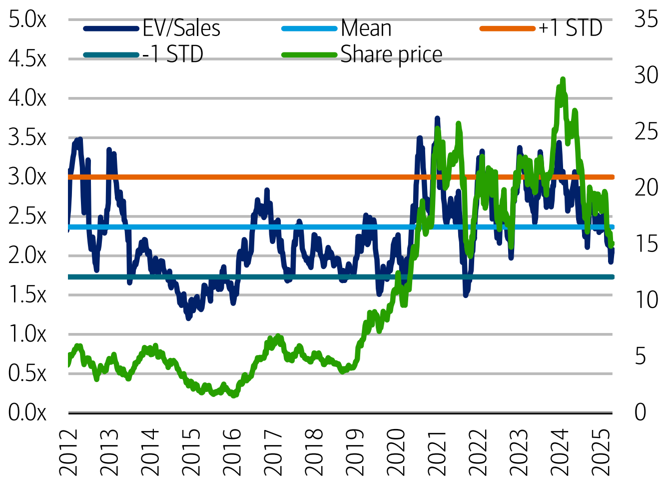


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 162: FMG: EV/Sales

FMG trades at 2.1x EV/Sales, below its historic average of 2.4x

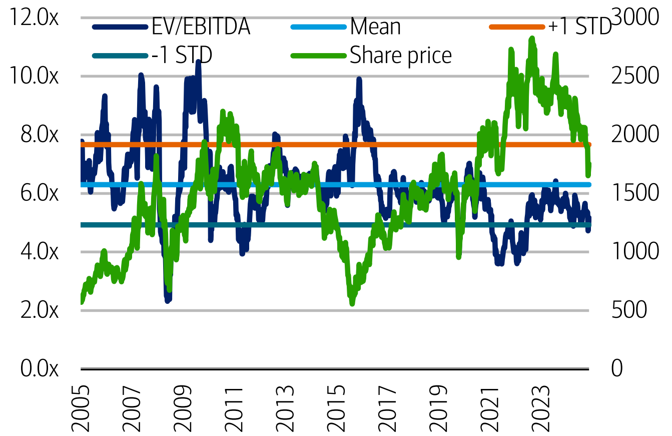


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

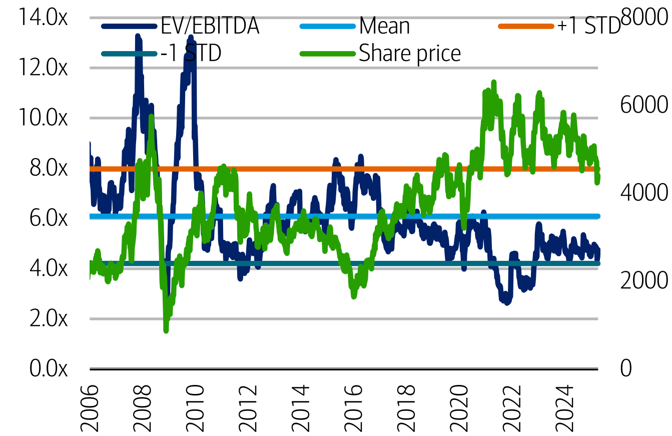
Historic EV/EBITDA ratios

Exhibit 163: BHP: EV/EBITDA
BHP trades at 5.2x EV/EBITDA, below its historic average of 6.3x



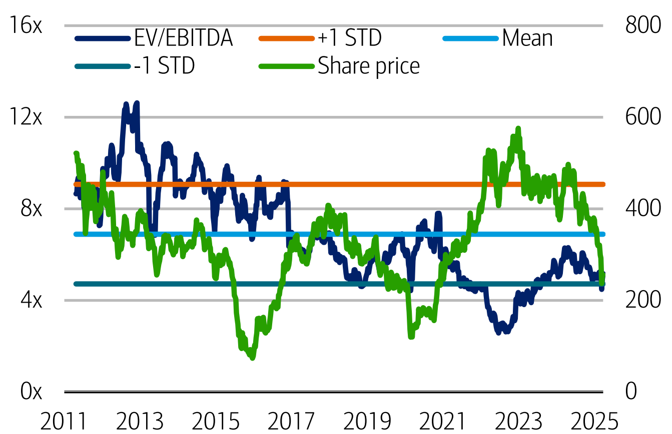
Source: BofA Global Research, Bloomberg
BofA GLOBAL RESEARCH

Exhibit 164: RIO: EV/EBITDA
RIO trades at 4.8x EV/EBITDA, below its historic average of 6.2x



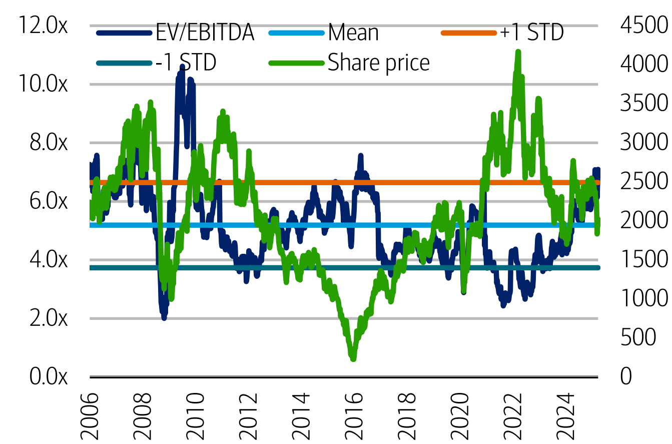
Source: BofA Global Research, Bloomberg
BofA GLOBAL RESEARCH

Exhibit 165: GLEN: EV/EBITDA
GLEN trades at 5.1x EV/EBITDA, below its historic average of 6.9x



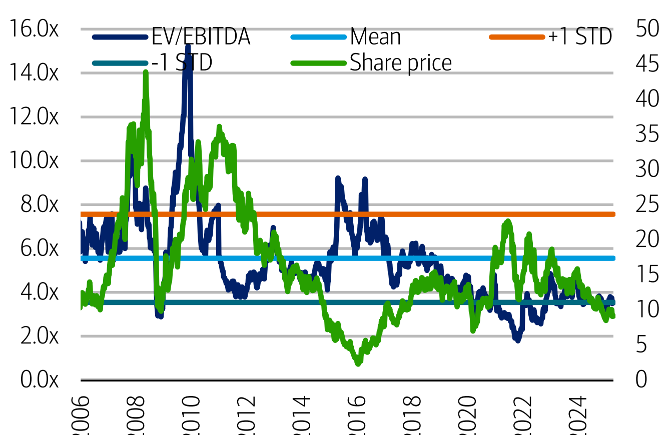
Source: BofA Global Research, Bloomberg
BofA GLOBAL RESEARCH

Exhibit 166: AAL: EV/EBITDA
AAL trades at 7.1x EV/EBITDA, above its historic average of 5.2x



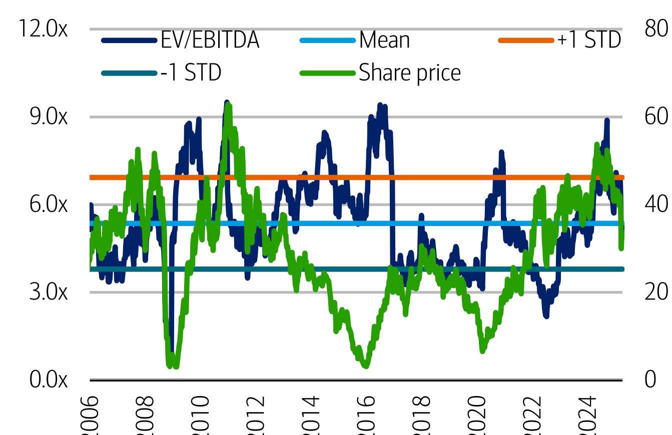
Source: BofA Global Research, Bloomberg
BofA GLOBAL RESEARCH

Exhibit 167: VALE: EV/EBITDA
VALE trades at 3.5x EV/EBITDA, below historic average of 5.5x



Source: BofA Global Research, Bloomberg
BofA GLOBAL RESEARCH

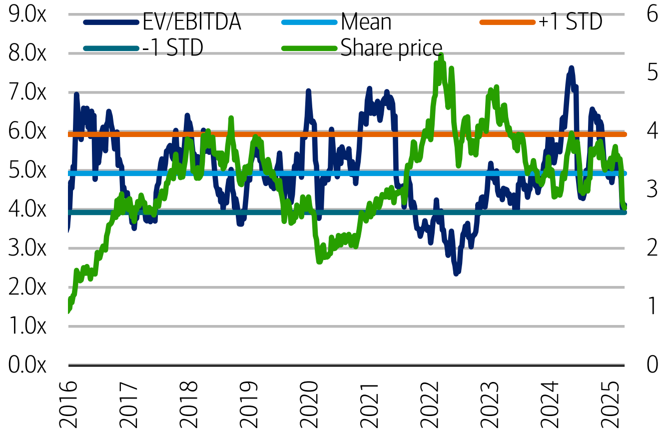
Exhibit 168: TECK: EV/EBITDA
TECK trades at 5.4x EV/EBITDA, inline with its historic average



Source: BofA Global Research, Bloomberg
BofA GLOBAL RESEARCH

Exhibit 169: S32: EV/EBITDA

South32 trades at 4.1x EV/EBITDA, below its historic average of 4.9x

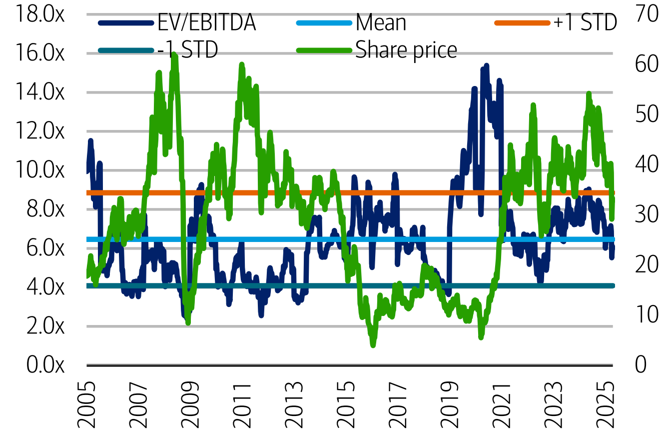


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 170: FCX: EV/EBITDA chart

FCX trades at 6.0x EV/EBITDA, below its historic average of 6.5x

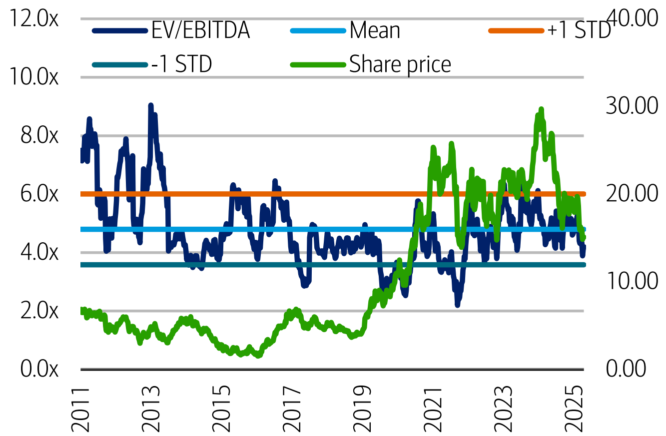


Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 171: FMG: EV/EBITDA

FMG trades at 4.2x EV/EBITDA, below its historic average of 4.8x



Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Price objective basis & risk

Anglo American (AAUKF / NGLOY)

Our price objective of GBp2500/US$16 ADR, 1.0x our multiple- and discounted cash flow (DCF)-derived sum of the parts (SOTP). For DCF inputs, we use a weighted-average cost of capital (WACC) of 9%, terminal growth of 2% if appropriate. We consider the potential for new political leadership in South Africa to arrest the derating of the South African mining sector versus global peers. We assume that Anglo's shares in listed subsidiaries Kumba and Anglo Platinum are valued based on market prices. We value fertilizer based on a risked NPV.

Risks to our price objective are a sustained slowdown in global economic growth (in particular China, the key driver of commodity consumption), a strengthening of the Rand exchange rate, an escalation of other cost pressures such as labour and energy prices, poor operational performance leading to missed production targets. An improving macro outlook leading to higher commodity prices and implementation of the announced asset optimisation target could provide upside risks to our EPS and valuation.

BHP Group Limited (BHPLF / BHP)

Our price objective of A$47/share (US$58/share) represents c. 1.0x our DCF-derived NPV. Our DCF is based on BofA commodity price forecasts and assumes a 9% discount rate. Diversified miners traded in a range of 0.7-1.4x NPV over the last five years with lower multiples paid during periods of economic slowdown and higher multiples paid during periods of rising commodity prices and earnings.

Downside (upside) risks to our price objective are: Global economic slowdown (growth), volatility in commodity prices, operational risks associated with mining, project execution risk, currency pressures and mining cost inflation (deflation).

BHP Group Limited (ZBHPF)

Our price objective of 2200 GBp represents approximately 1.0x our DCF-derived NPV. Our DCF is based on BofA commodity price forecasts and assumes a 9% discount rate. Diversified miners have traded in a range of 0.7-1.4x NPV over the last 5 years with lower multiples paid during periods of economic slowdown and higher multiples paid during periods of rising commodity prices and earnings.

Downside (upside) risks to our price objective are: Global economic slowdown (growth), volatility in commodity prices, operational risks associated with mining, project execution risk, currency pressures and mining cost inflation (deflation).

Fortescue Ltd. (FSUMF)

Our $15.00/sh price objective is set based on c. 0.8x P/NPV target. Key components are a 40-year DCF valuation, which applies a WACC of 9.5% to the estimated life of mine cash flows. Through the cycle, bulk commodity miners trade at 0.6-1.4x NPV with higher multiples being paid during periods of rising commodity prices.

Downside risks: 1) FMG's key commodity, iron ore, is skewed to the demand profile of the major global buyer, China and relative growth of industry suppliers. With slowing Chinese growth, iron ore prices could fall, which could negatively impact FMG also additional growth from industry players above forecasts could lead to lower iron ore prices and also FMG, 2) FMG continues to pay down debt and a decrease in iron ore prices may pressure repayments, however this risk is lower than prior years.

Upside risks: 1) Favourable moves in iron ore above our LT estimates and also a lower the A$/US$ currency would lower FMG's cost position and 2) a slowing of mining growth in Western Australia has seen input prices (labour being key) moderate -- these could fall further and lower costs further than our estimates.

Freeport-McMoRan (FCX)

Our $46.00-per-share price objective blends 8.0x 2025E, 7.5x 2026E EV/EBITDA and 1.0x our net asset value (NAV). The 8.0x EV/EBITDA target multiple is largely in-line with the historical average for copper producers covered by BofA. We think this is appropriate given stable production profile, low unit costs and a improving balance sheet. Our P/NAV multiple of 1.0x is in line with most of the copper producers covered by BofA but is arguably conservative given several potentially value enhancing growth options that we do not currently model. These include a new mill at El Abra, a mill expansion at Bagdad, and low-grade leaching.
Downside risks to our price objective are 1) global economic weakness, 2) Operating disruptions, 3) execution risk at its cost-cutting or expansion programs, 4) stricter or unfavorable regulatory or environmental regulations, particularly at its Indonesian operations, 5) other factors pressuring prices of the commodities it produces, and 6) unfavorable currency moves.
Upside risks are 1) better-than-expected copper and gold prices, 2) a more accommodating operating environment in Indonesia, and 3) further cost-cutting progress.

Glencore (GLCNF / GLNCY)
Our price objective of GBp410 (ADR $10.60) is c.1.0x our discounted cash flow (DCF)- and multiple-derived sum of the parts (SOTP). Through the cycle large-cap diversified miners have traded between 0.7x and 1.3x net present value (NPV, weighted-average cost of capital: c.10%, terminal growth rate: 2%) with higher multiples being paid during periods of rising commodity prices. Shares of more financially and operationally leveraged vehicles, such as Glencore, tend to trade at premiums to NPV during periods of positive outlook for miners and lower multiples during periods of challenging economic outlook.

Upside/downside risks to our price objective are commodity prices being stronger/weaker than our forecasts, trading profits being better/worse than our estimates, better/worse-than-modelled cost savings at industrial assets, positive/negative operational surprises at the group's industrial assets, a rise/decline in the market value of the group's listed assets.

Rio Tinto Ltd (RTNTF)
Our $150/share price objective is based on 1.00x net present value (NPV). Our NPV uses 9% WACC and 2% terminal growth rate. Through the cycle, diversified miners tend to trade between 0.7-1.4x NPV. Since the GFC, they have traded towards the lower end of this range. Rio Tinto Ltd. tends to trade at a premium to its London listing (Rio Tinto Plc.) due to the availability of franking credits to Australian investors - this premium has averaged 9% over the last 12 years.

Downside risks to our PO are 1) commodity prices, which could be lower than our forecasts, resulting in lower-than-forecast earnings, 2) unsuccessful project execution, and 3) operational problems at mines and smelters.

Upside risks to our PO are 1) China growth is higher vs. our expectations 2) Iron ore price surprises to the upside.

Rio Tinto Plc (RTPPF / RIO)
Our price objective of GBp 7300 (ADR: US$94) is based on c.1.0x our NPV estimate. Our NPV uses 9% WACC and 2% terminal growth rate. Diversified miners have historically traded in a range of 0.7-1.4x NPV.
Downside risks :1) commodity prices, which could be lower than our forecasts, resulting in lower-than-forecast earnings, 2) unsuccessful project execution, and 3) operational problems at mines and smelters.
Upside risks: 1) China growth is higher vs. our expectations, 2) Iron ore price surprises to the upside.

South32 Ltd (SHTLF)
Our A$3.90/sh price objective is set broadly in line with 1.0x our DCF-derived NPV, calculated using BofA commodity prices and a 10% WACC and 0% terminal growth rate.

Downside (upside) risks to our price objective are: Global economic slowdown (growth), volatility in commodity prices, operational risks associated with mining, project execution risk, currency pressures and mining cost inflation (deflation).

Teck Resources (YTECK / TECK)
We set our price objective (PO) for TECK at $53 per share (C$74 per share). This is based on 8.0x 2025E EBITDA, 7.5x 2026E EV/EBITDA and 1.20x NAV for the base metals business. The 8.0 EV/EBITDA target multiple is at the mid of the range of 4.0-10.0x used to value the copper producers. Given TECK's copper volume growth, it's suite of additional organic copper production growth options, and relatively attractive jurisdictional exposure, the market could assign a higher multiple to the base metal business. We assume CADUSD = 1.40.

Downside risks to our price objective are: 1) global economic weakness, specifically in China and India, 2) excess supply given China's position and recent elevated prices, 3) unplanned Teck operating disruptions, 4) stricter regulatory or environmental measures, 5) other factors pressuring prices of the commodities it produces.

Upside risks to our price objective are: the potential to monetize its copper projects, especially if copper prices exceed our expectations, and potentially greater success in its cost-savings/efficiency initiatives.

Vale (VALE / VALEF)

Our US$12 (R$74/ share) PO is based on a 50/50 blended valuation approach. On multiples, we use a 4.5x 2025E EV/EBITDA (close to the past 5 years average, as our price forecast is now on a more normalized level, although above our long-term price, which is why we use a multiple below the "fair" 5.0x) and our DCF using a WACC of 11.9% and terminal growth rate of 2.5%.

Downside risks to our price objective: 1) weaker than expected iron ore prices, 2) a global economic slowdown, negatively impacting metals prices, 3) appreciation of the Brazilian Real and the Canadian Dollar (80% of Vale's costs are denominated in those currencies), without an offsetting increase in metal prices, 4) slowdown in infrastructure spending or global steel production, mainly in China, 5) higher freight rates, reducing Vale's competitiveness in China, 6) higher government intervention, and 7) more fallout from its Brumadinho tailings dam tragedy.

Upside risks: 1) Stronger than expected iron ore prices, 2) stronger than expected global economic growth, 3) acceleration of infrastructure spending or global steel production, mainly in China, and 4) change in China's policy on steel production cuts.

Analyst Certification

We, Jason Fairclough, Caio Ribeiro, Guilherme Rosito and Lawson Winder, CFA, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Special Disclosures

BofA Securities is currently acting as financial advisor to Bunge Ltd in connection with its proposed merger with Viterra Ltd, together with certain affiliates of Glencore PLC, Canada Pension Plan Investment Board, and British Columbia Investment Management Corp, which was announced on June 13, 2023.

BofA Securities is now acting as an advisor to the independent board of Anglo American Platinum in respect of the demerger by Anglo American, which announced on 14 May 2024.

EMEA - Metals & Mining, Steel, Paper Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Anglo American	AAUKF	AAL LN	Jason Fairclough
	Anglo American plc	NGLOY	NGLOY US	Jason Fairclough
	Antofagasta	ANFGF	ANTO LN	Jason Fairclough
	ArcelorMittal	AMSYF	MT NA	Patrick Mann, CFA
	ArcelorMittal	MT	MT US	Patrick Mann, CFA
	Atalaya Mining Plc	XPGBF	ATYM LN	Jason Fairclough
	BHP Group Limited	BHPLF	BHP AU	Jason Fairclough
	BHP Group Limited	ZBHPF	BHP LN	Jason Fairclough
	BHP Group-ADR	BHP	BHP US	Jason Fairclough
	Eramet	ERMAF	ERA FP	Jason Fairclough
	Glencore	GLCNF	GLEN LN	Jason Fairclough
	Glencore Plc	GLNCY	GLNCY US	Jason Fairclough
	Hochschild Mining	HCHDF	HOC LN	Jason Fairclough
	METLEN Energy & Metals	MYTHF	MYTIL GA	Jason Fairclough
	Mondi plc	MONDY	MONDY US	Patrick Mann, CFA
	Mondi Plc	MONDF	MNDI LN	Patrick Mann, CFA
	Mondi Plc	XDPMF	MNP SJ	Patrick Mann, CFA
	Norsk Hydro	NHYDY	NHYDY US	Jason Fairclough
	Norsk Hydro	NHYKF	NHY NO	Jason Fairclough
	Rio Tinto Ltd	RTNTF	RIO AU	Jason Fairclough
	Rio Tinto Plc	RIO	RIO US	Jason Fairclough
	Rio Tinto Plc	RTPPF	RIO LN	Jason Fairclough
	SIG Group	SCBGF	SIGN SW	Patrick Mann, CFA
	Smurfit WestRock	SW	SW US	Patrick Mann, CFA
	Smurfit WestRock	SWRLN	SWR LN	Patrick Mann, CFA
	South32 Ltd	SHTLF	S32 AU	Jason Fairclough
	South32 Ltd	XKTPF	S32 LN	Jason Fairclough
	South32 Ltd	XMWTF	S32 SJ	Jason Fairclough
	Stora Enso	SEOJF	STERV FH	Patrick Mann, CFA
	Stora Enso	SEOAY	SEOAY US	Patrick Mann, CFA
	Thyssenkrupp	TYEKF	TKA GY	Jason Fairclough
	Yellow Cake Plc	YLLXF	YCA LN	Jason Fairclough
NEUTRAL				
	Fresnillo plc	FNLPF	FRES LN	Jason Fairclough
	Harmony	HMY	HMY US	Jason Fairclough
	Harmony Gold	HGMCF	HAR SJ	Jason Fairclough
	SCA	SVCBF	SCAB SS	Patrick Mann, CFA
	Voestalpine	VLPNF	VOE AV	Patrick Mann, CFA
UNDERPERFORM				
	Aurubis	AIAGF	NDA GY	Jason Fairclough
	Boliden	BOLIF	BOL SS	Jason Fairclough
	Fortescue Ltd.	FSUMF	FMG AU	Jason Fairclough
	Imerys	IMYSF	NK FP	Jason Fairclough
	Sappi Limited	SPPJF	SAP SJ	Patrick Mann, CFA
	Sappi Limited	SPPJY	SPPJY US	Patrick Mann, CFA
	SSAB	SSAAF	SSABA SS	Patrick Mann, CFA
	UPM-Kymmene	UPMKF	UPM FH	Patrick Mann, CFA
RSTR				
	Verallia	VRLAF	VRLA FP	Patrick Mann, CFA
RVW				
	Ferrexpo plc	FEEXF	FXPO LN	Jason Fairclough

North America - Metals and Mining Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Agnico Eagle Mines	AEM	AEM US	Lawson Winder, CFA
	Alamos Gold	YAGI	AGI CN	Lawson Winder, CFA
	Alamos Gold	AGI	AGI US	Lawson Winder, CFA

North America - Metals and Mining Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Cameco Corporation	YCCO	CCO CN	Lawson Winder, CFA
	Cameco Corporation	CCJ	CCJ US	Lawson Winder, CFA
	CMC	CMC	CMC US	Sathish Kasinathan
	Freeport-McMoRan	FCX	FCX US	Lawson Winder, CFA
	Hudbay Minerals	YHBM	HBM CN	Lawson Winder, CFA
	HudBay Minerals	HBM	HBM US	Lawson Winder, CFA
	IAMGOLD	YIMG	IMG CN	Lawson Winder, CFA
	IAMGOLD Corp.	IAG	IAG US	Lawson Winder, CFA
	Ivanhoe Mines	YIVN	IVN CN	Lawson Winder, CFA
	Ivanhoe MInes	IVPAF	IVPAF US	Lawson Winder, CFA
	Kinross Gold	KGC	KGC US	Lawson Winder, CFA
	Lundin Mining	XLPRF	LUMI SS	Lawson Winder, CFA
	Lundin Mining Corp	YLUN	LUN CN	Lawson Winder, CFA
	Lundin Mining Corp	LUNMF	LUNMF US	Lawson Winder, CFA
	MP Materials	MP	MP US	Lawson Winder, CFA
	New Gold Inc.	YNGD	NGD CN	Lawson Winder, CFA
	New Gold Inc.	NGD	NGD US	Lawson Winder, CFA
	Newmont Corporation	NEM	NEM US	Lawson Winder, CFA
	Newmont Corporation	XNCRF	NEM AU	Lawson Winder, CFA
	Nucor	NUE	NUE US	Lawson Winder, CFA
	Pan American Silver	PAAS	PAAS US	Lawson Winder, CFA
	Steel Dynamics	STLD	STLD US	Lawson Winder, CFA
	Teck Resources	YTECK	TECK/B CN	Lawson Winder, CFA
	Teck Resources Ltd	TECK	TECK US	Lawson Winder, CFA
	Triple Flag Precious Metals Corp.	YTFPM	TFPM CN	Lawson Winder, CFA
	Triple Flag Precious Metals Corp.	TFPM	TFPM US	Lawson Winder, CFA
	Wheaton Precious Metals	WPM	WPM US	Lawson Winder, CFA
NEUTRAL				
	Barrick Gold	GOLD	GOLD US	Lawson Winder, CFA
	Cleveland-Cliffs	CLF	CLF US	Lawson Winder, CFA
	First Quantum	FQVLF	FQVLF US	Lawson Winder, CFA
	First Quantum Minerals	YFM	FM CN	Lawson Winder, CFA
	Franco-Nevada	YFNV	FNV CN	Lawson Winder, CFA
	Franco-Nevada	FNV	FNV US	Lawson Winder, CFA
	Reliance, Inc.	RS	RS US	Lawson Winder, CFA
UNDERPERFORM				
	Alcoa Corporation	AA	AA US	Lawson Winder, CFA
	B2Gold Corp	YBTO	BTO CN	Lawson Winder, CFA
	B2Gold Corp	BTG	BTG US	Lawson Winder, CFA
	Centerra Gold	YCG	CG CN	Lawson Winder, CFA
	Centerra Gold	CGAU	CGAU US	Lawson Winder, CFA
	Eldorado Gold	EGO	EGO US	Lawson Winder, CFA
	Eldorado Gold	YELD	ELD CN	Lawson Winder, CFA
	Nexa Resources	NEXA	NEXA US	Lawson Winder, CFA
	Royal Gold	RGLD	RGLD US	Lawson Winder, CFA
	SSR Mining Inc.	SSRM	SSRM US	Lawson Winder, CFA
	SSR Mining Inc.	YSSRM	SSRM CN	Lawson Winder, CFA

Latin America - Natural Resources Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Empresas CMPC SA	XEMCF	CMPC CI	Guilherme Rosito
	Ero Copper Corp	ERO	ERO US	Guilherme Rosito
	Ero Copper Corp	YERO	ERO CN	Guilherme Rosito
	Klabin S.A	XLWDF	KLBN11 BZ	Caio Ribeiro
	Klabin S.A	KLBAY	KLBAY US	Caio Ribeiro
	Petrobras	PBRQF	PETR3 BZ	Caio Ribeiro
	Petrobras	PBR	PBR US	Caio Ribeiro
	Petrobras PN	PBRA	PBR/A US	Caio Ribeiro
	Petrobras PN	PTRBF	PETR4 BZ	Caio Ribeiro
	PRIO SA	HRTPF	PRIO3 BZ	Caio Ribeiro

Latin America - Natural Resources Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	Suzano	XXRTF	SUZB3 BZ	Caio Ribeiro
	Suzano S.A.	SUZ	SUZ US	Caio Ribeiro
	Vale	VALE	VALE US	Caio Ribeiro
	Vale	VALEF	VALE3 BZ	Caio Ribeiro
	Vibra Energia SA	XUBRF	VBBR3 BZ	Leonardo Marcondes
	Vista Energy	VSOGF	VISTAA MM	Leonardo Marcondes
	Vista Energy	VIST	VIST US	Leonardo Marcondes
	YPF SA	YPF	YPF US	Leonardo Marcondes
	YPF SA	YPFSF	YPFD AR	Leonardo Marcondes
NEUTRAL				
	Braskem SA-A	BAKAF	BRKM5 BZ	Leonardo Marcondes
	Braskem SA-ADR	BAK	BAK US	Leonardo Marcondes
	Brava Energia	XPXXF	BRAV3 BZ	Leonardo Marcondes
	Dexco SA	DURXF	DXCO3 BZ	Guilherme Rosito
	Empresas Copec SA	PZDCF	COPEC CI	Guilherme Rosito
	Gerdau S. A.	GGBUF	GGBR4 BZ	Caio Ribeiro
	Gerdau S.A.	GGB	GGB US	Caio Ribeiro
	Metalurgica Gerdau	MZGPF	GOAU4 BZ	Caio Ribeiro
	Orbia	MXCHF	ORBIA* MM	Leonardo Marcondes
	PetroReconcavo	XPXYF	RECV3 BZ	Leonardo Marcondes
	Ultrapar	XLRUF	UGPA3 BZ	Leonardo Marcondes
	Ultrapar Pa-ADR	UGP	UGP US	Leonardo Marcondes
	Usiminas SA	USNZY	USNZY US	Caio Ribeiro
	Usiminas SA	USSPF	USIM5 BZ	Caio Ribeiro
UNDERPERFORM				
	Alpek SAB de CV	ALPKF	ALPEKA MM	Leonardo Marcondes
	Bradespar	BRDQF	BRAP4 BZ	Caio Ribeiro
	Companhia Brasileira de Alumínio	XZUDF	CBAV3 BZ	Guilherme Rosito
	CSN	SIDHF	CSNA3 BZ	Caio Ribeiro
	CSN	SID	SID US	Caio Ribeiro
	CSN Mineracao	XZRAF	CMIN3 BZ	Caio Ribeiro
	Ecopetrol S.A.	XESSF	ECOPETL CB	Caio Ribeiro
	Ecopetrol S.A.	EC	EC US	Caio Ribeiro
	Grupo Mexico	GMBXF	GMEXICOB MM	Caio Ribeiro
	Southern Copper	SCCO	SCCO US	Caio Ribeiro
	Ternium	TX	TX US	Caio Ribeiro

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Coverage Universe	Count	Percent	Inv. Banking Relationships [R1]	Count	Percent
Buy	61	58.65%	Buy	29	47.54%
Hold	22	21.15%	Hold	10	45.45%
Sell	21	20.19%	Sell	10	47.62%

Equity Investment Rating Distribution: Global Group (as of 31 Mar 2025)

Coverage Universe	Count	Percent	Inv. Banking Relationships [R1]	Count	Percent
Buy	1867	54.40%	Buy	1108	59.35%
Hold	774	22.55%	Hold	466	60.21%
Sell	791	23.05%	Sell	368	46.52%

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster[R2]
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

[R2]Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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