

GS Australian Bulks, Base Metals & Steel

Coverage summary, forecasts and spot pricing scenarios

May 2025

Priced as of 9 May 2025

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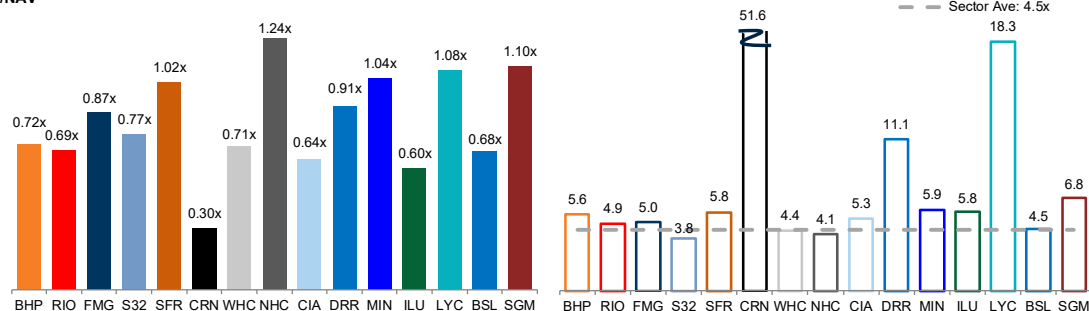
Coverage summary

Buy: BHP, RIO, S32, CIA, ILU & BSL

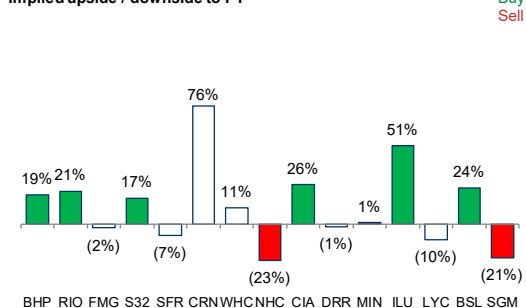
Sell: NHC, MIN & SGM

Ticker	GS Rating	Key Commodities	Priced: 8-May-25	Last	12mth Price Target		NAV Valuation		NTM EV/ EBITDA Valuation			M&A	NTM Div		
			Market Cap US\$bn	Price A\$/sh	A\$/sh	Upside/ Downside %	NAV A\$/sh	P/NAV (x)	A\$/sh	Current Multiple (GSe)	Applied Target Multiple	GSe A\$/sh	Yield	TSR	NTM FCF Yield
BHP	Buy	Fe/Cu/Met Coal/Potash/Nickel	122.1	37.9	45.1	19%	52.9	0.72x	37.2	5.6	6.0x	-	4%	23%	3%
RIO	Buy	Fe/Cu/Al/Lithium/Minerals	101.7	116.1	140.8	21%	169.1	0.69x	112.2	4.9	6.0x	-	5%	26%	(2%)
FMG	Neutral	Fe (low grade)	31.2	16.0	15.6	(2%)	18.3	0.87x	12.9	5.0	4.5x	-	5%	3%	4%
S32	Buy	Al/Alumina/Cu/Zn/Mn	8.2	2.8	3.3	17%	3.7	0.77x	3.0	3.8	5.0x	-	3%	21%	12%
SFR	Neutral	Cu/Zn/Pb	3.1	10.3	9.6	(7%)	10.1	1.02x	9.1	5.8	5.5x	-	1%	(6%)	9%
CRN	Neutral	Met Coal	0.2	0.17	0.30	76%	0.57	0.30x	0.0	51.6	1.0x	-	9%	86%	(95%)
WHC	Neutral	Met/Thermal Coal	2.8	5.2	5.7	11%	7.3	0.71x	4.2	4.4	3.5x	-	2%	13%	10%
NHC	Sell	Thermal/Met Coal	2.1	3.8	2.9	(23%)	3.0	1.24x	2.7	4.1	3.0x	-	6%	(17%)	3%
CIA	Buy	Fe (high grade)	1.6	4.5	5.7	26%	7.1	0.64x	3.1	5.3	4.0x	9.2	6%	32%	(10%)
DRR	Neutral	Fe & lithium	1.2	3.7	3.6	(1%)	4.0	0.91x	3.3	11.1	10.0x	-	5%	4%	(0%)
MIN	Sell	Fe/Crushing/Lithium	2.6	20.7	21.0	1%	19.9	1.04x	21.7	5.9	6.0x	-	0%	2%	(18%)
ILU	Buy*	Min Sands/Rare Earths	1.2	4.1	6.2	51%	6.9	0.60x	6.0	5.8	6.0x	-	1%	52%	(49%)
LYC	Neutral	Rare Earths	4.7	8.0	7.2	(10%)	7.4	1.08x	6.9	18.3	12.0x	-	0%	(10%)	(2%)
BSL	Buy	Steel (value add)	6.5	23.2	28.7	24%	34.2	0.68x	26.9	4.5	5.3x	-	3%	26%	(1%)
SGM	Sell	Steel/Scrap	1.9	15.3	12.0	(21%)	13.9	1.10x	11.3	6.8	5.0x	-	1%	(20%)	9%
Weighted Average								0.76x			5.5		5%	20%	0%
Simple Average								0.83x			9.5		4%	16%	(9%)

P/NAV



Implied upside / downside to PT



* Conviction List – Director' Cut

Source: Company data, FactSet, Goldman Sachs Global Investment Research.

Commodity & FX forecasts

Calendar year	Unit	Spot	2023	2024	Q1'25	Q2'25	Q3'25	Q4'25	2025	2026	2027	2028	LT (real)	LT (nom)
Base Metals													Est	Est
Aluminium	US\$/lb.	1.07	1.02	1.10	1.19	1.03	0.93	1.01	1.04	1.15	1.29	1.36	1.20	1.39
Copper	US\$/lb.	4.28	3.85	4.15	4.24	3.91	3.80	4.08	4.01	4.61	4.84	5.07	4.57	5.30
Nickel	US\$/lb.	6.96	9.74	7.63	7.07	7.26	7.26	7.26	7.21	7.48	8.27	9.05	8.48	9.83
Zinc	US\$/lb.	1.17	1.20	1.26	1.29	1.20	1.22	1.27	1.25	1.36	1.47	1.57	1.45	1.68
Lead	US\$/lb.	0.88	0.97	0.94	0.89	0.91	0.91	0.91	0.90	0.91	0.96	1.01	0.92	1.07
Precious Metals														
Gold	US\$/oz	3,314	1,943	2,387	2,862	3,197	3,230	3,263	3,138	3,333	3,323	3,314	2,850	3,304
Silver	US\$/oz	32.5	23.4	28.2	31.9	35.3	35.7	36.0	34.7	36.8	36.9	37.0	32.0	37.1
Bulks														
Iron ore (65% Fe)	US\$/t	109	132	124	117									
Iron ore (62% Fe)	US\$/t	98	120	110	104	98	95	90	97	88	89	91	80	93
Iron ore (58% Fe)	US\$/t	83	104	95	89									
Iron ore (58% Fe - Low Alumina)	US\$/t	116												
FMG realised price (GSe)*	US\$/t	83	105	92	87	83	80	75	81	73	73	73	66	77
%		84%	88%	84%	84%	84%	84%	83%	84%	83%	83%	83%	83%	83%
CIA realised price (GSe)*	US\$/t	109	130	117	111	110	110	113	111	120	120	120	121	140
%		111%	108%	108%	114%	116%	122%	125%	115%	137%	137%	137%	151%	151%
Lump premium	US\$/t	9.8	9.5	8.7	9.3									
Freight - Aus/China	US\$/t	7.7	8.7	10.1	7.6	10.0	10.0	10.0	9.4	10.0	10.5	11.1	10.0	11.6
Aus Hard Coking Coal (Qld)	US\$/t	191	296	241	185	180	180	180	181	200	218	237	220	255
US Hard Coking Coal (USEC)	US\$/t													
US High Vol A (USEC)	US\$/t													
US High Vol B (USEC)	US\$/t													
PCI	US\$/t	138	219	165	141	130	130	130	133	144	152	160	145	168
Semi-soft (SSCC)	US\$/t	98	195	144	118	115	115	115	116	116	124	131	120	139
Thermal (6000 kcal)	US\$/t	104	172	191	110	100	100	105	104	105	105	105	90	104
Thermal (5500 kcal)	US\$/t	70	144	94	90	75	75	75	79	68	72	77	70	81
Manganese ore (44%)	US\$/mnu	4.50	4.74	5.39	4.76	5.00	5.00	5.00	4.94	5.50	5.71	5.93	5.30	6.14
Bauxite	US\$/t	80	60	64	80	80	75	75	78	68	67	66	57	66
Alumina	US\$/t	349	344	502	516	360	380	390	411	390	399	408	360	417
Ilmenite	US\$/t	347	403	371	345	0	0	0	0	0	0	0	0	0
Rutile (ILU ave price)*	US\$/t	1,300	1,563	1,368	1,350	1,350	1,360	1,370	1,358	1,436	1,497	1,542	1,352	1,568
Zircon (ILU ave price)*	US\$/t	1,850	2,062	1,873	1,738	1,727	1,726	1,726	1,729	1,807	1,848	1,916	1,683	1,951
Potash	US\$/t	352	383	295	310	300	320	320	313	310	354	397	380	441
Uranium	US\$/lb	71	61	87	69	70	70	70	70	75	77	79	70	81
Steel														
US Midwest HRC	US\$/st	905	920	777	815	875	850	825	841	815	833	851	750	869
US Busheling Scrap	US\$/lt	455	472	412	440	450	450	450	448	447	456	466	410	475
East Asia HRC	US\$/t	469	569	513	469	500	500	500	492	579	591	603	530	614
East Asia Scrap	US\$/t	335	403	371	343	368	357	347	354	382	388	394	345	400
Turkey HRC	US\$/t	480	638	558	502	560	560	560	545	630	651	671	597	692
Turkey Scrap	US\$/t	339	395	381	358	400	400	400	390	400	398	396	340	394
BSL North Star Spread (lagged)	US\$/t	499	479	410	388	458	430	423	424	413	424	435	389	450
BSL Aus Steel Products (lagged)	US\$/t	187	203	164	190	215	230	237	218	250	263	280	267	309
BSL North Star Spread	US\$/t	499	497	393	418	448	421	424	428	413	425	436	389	450
BSL Aus Steel Products (ASP)	US\$/t	187	179	178	182	230	237	248	224	257	270	288	267	309
Lithium and Rare Earths														
Lithium carbonate	US\$/t	8,302	32,694	11,167	9,222	10,000	10,500	11,000	10,180	13,250	16,000	16,695	15,000	17,389
Lithium hydroxide	US\$/t	8,290	33,398	10,083	8,534	9,500	10,000	10,500	9,634	12,750	15,500	16,155	14,500	16,809
Spodumene 6%	US\$/t	735	3,712	974	808	800	800	825	808	969	1,155	1,264	1,185	1,374
NdPr (China)	US\$/kg	58	75	54	59	65	65	70	65	74	80	83	75	87
Dysprosium (China)	US\$/kg	228	329	256	223	246	246	265	245	279	296	312	284	329
Terbium (China)	US\$/kg	973	1,303	813	854	940	940	1,013	937	1,067	1,130	1,194	1,085	1,258
Currencies														
AUD:USD		0.64	0.66	0.66	0.63	0.62	0.62	0.62	0.62	0.62	0.65	0.67	0.70	0.70
CAD:USD		0.72	0.74	0.73	0.70	0.70	0.70	0.70	0.70	0.71	0.73	0.74	0.76	0.76
USD:ZAR		18.2	18.5	18.3	18.5	18.5	18.7	18.8	18.6	19.6	18.7	17.9	17.00	17.0
BRL:USD		0.18	0.20	0.19	0.17	0.17	0.17	0.16	0.17	0.15	0.16	0.18	0.19	0.19
USD:CLP		936	840	944	963	953	954	956	957	968	921	874	827	827

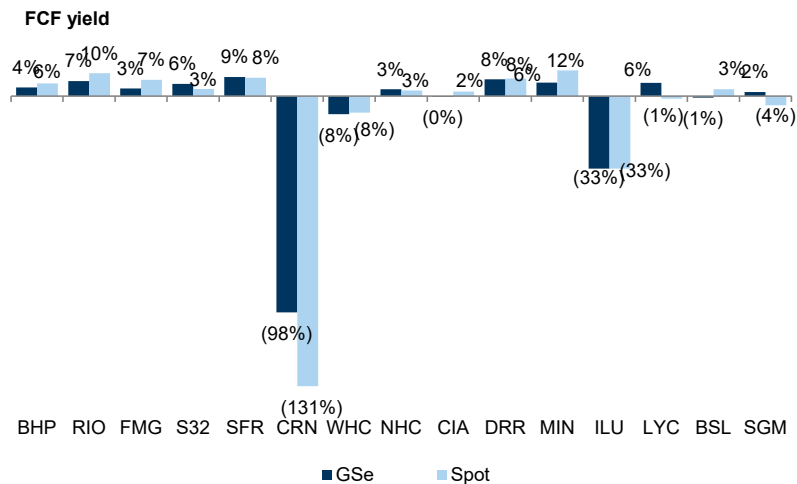
Source: Company data, Bloomberg, Platts, SMM, Asian Metals, FactSet, Goldman Sachs Global Investment Research.

* Spot rutile and zircon are CIF. ILU average achieved price is FOB. FMG spot scenario uses GSe Fe price realisations. CIA realised price includes high grades 66% fines and 69% DRI feed

* Spot steel spreads not lagged. Prices above reflect prices captured in company models and may not reflect latest forecast by commodity team updates. Forecast lithium prices for China (chemicals excl. VAT).

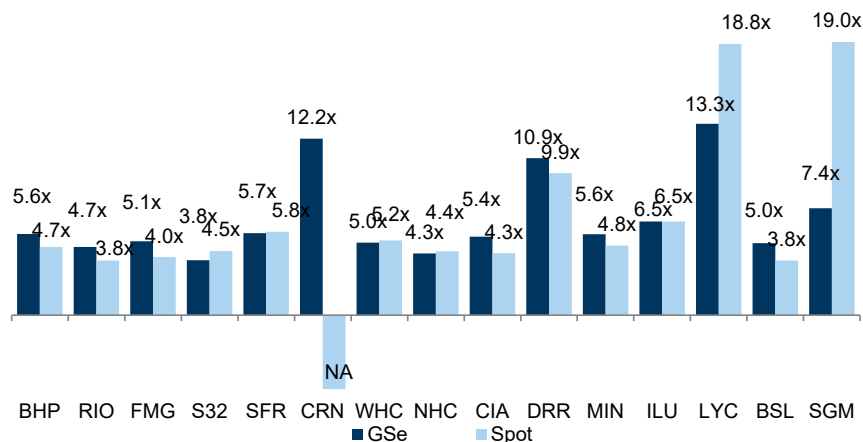
GSe base case vs at spot prices and FX

FY/CY26 FCF Yield

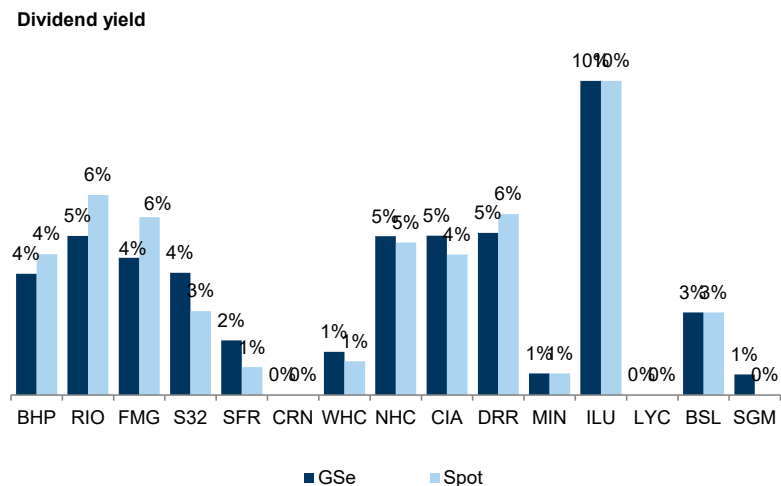


EV/EBITDA

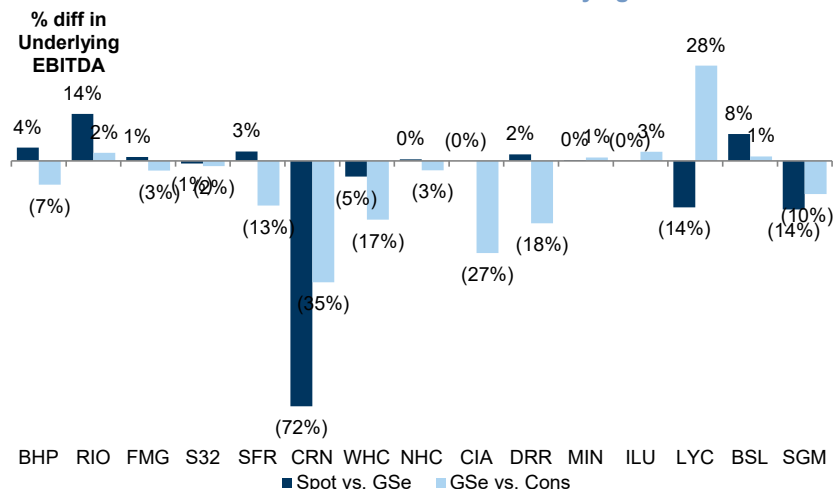
FY/CY26 EV/EBITDA



FY/CY26 Dividend Yield



% difference in FY/CY26 Underlying EBITDA



Source: Company data, Bloomberg, Platts, FactSet, Goldman Sachs Global Investment Research. * ILU spot scenario assumes spot FX only

GSe base case vs at spot prices and FX

			Under. EBITDA (\$bn)				Under. NPAT (\$bn)			Free Cash Flow (\$bn)			Net Debt/(Cash) (\$bn)			EPS (cps)			DPS (cps)			EV/EBITDA			P/E		
YE	Crncy		2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	
Major diversified and Iron ore																											
BHP	June	USD	GSe	25.1	24.1	24.4	10.1	9.5	9.8	3.8	4.7	5.5	12.7	13.9	14.0	200	186	193	100	93	96	5.4	5.6	5.6	12.1	12.9	12.5
			Spot	26.0	28.3	28.6	10.5	11.9	12.7	4.8	7.1	8.6	11.9	11.9	10.1	208	235	250	104	117	125	5.1	4.7	4.6	11.6	10.3	9.6
			Diff	4%	17%	17%	4%	26%	30%	26%	49%	57%	(6%)	(15%)	(28%)	4%	26%	30%	4%	26%	30%	(4%)	(16%)	(17%)	(4%)	(21%)	(23%)
RIO	Dec	USD	GSe	22.9	24.4	26.9	9.9	10.0	12.1	(1.8)	6.9	8.5	14.5	13.7	12.2	610	618	748	364	374	453	5.1	4.7	4.2	10.3	10.1	8.4
			Spot	26.0	29.4	32.0	12.1	13.6	15.8	0.7	10.5	12.4	12.1	9.9	6.8	744	839	974	453	509	591	4.4	3.8	3.4	8.4	7.5	6.4
			Diff	14%	20%	19%	22%	36%	30%	140%	52%	44%	(16%)	(28%)	(45%)	22%	36%	30%	24%	36%	30%	(14%)	(20%)	(20%)	(18%)	(26%)	(23%)
FMG	June	USD	GSe	7.6	6.6	6.4	3.4	2.7	2.5	1.7	1.1	0.5	2.0	2.8	3.7	109	89	80	66	44	40	4.4	5.1	5.5	9.3	11.4	12.7
			Spot	7.7	8.2	9.0	3.4	3.8	4.4	1.8	2.3	2.5	1.9	1.8	1.5	111	125	143	67	62	71	4.3	4.0	3.6	9.1	8.1	7.1
			Diff	1%	23%	42%	2%	40%	78%	5%	115%	405%	(4%)	(38%)	(60%)	2%	40%	78%	2%	40%	78%	(1%)	(21%)	(34%)	(2%)	(29%)	(44%)
Aluminium and Alumina																											
S32	June	USD	GSe	1.9	2.1	2.6	0.8	0.9	1.4	1.5	0.4	0.4	(0.3)	(0.3)	(0.0)	18	21	31	6	7	12	4.2	3.8	3.1	10.1	8.8	6.0
			Spot	1.9	1.8	1.8	0.8	0.8	0.7	1.5	0.3	(0.1)	(0.3)	(0.1)	0.4	14	11	10	6	5	5	4.2	4.5	4.8	10.2	10.5	11.6
			Diff	(1%)	(12%)	(33%)	(1%)	(16%)	(48%)	(1%)	(40%)	122%	3%	61%	13072%	(22%)	(45%)	(68%)	(1%)	(26%)	(60%)	1%	17%	56%	1%	19%	93%
Copper																											
SFR	June	USD	GSe	0.49	0.57	0.70	0.10	0.19	0.36	0.22	0.27	0.27	0.22	(0.04)	(0.19)	22	41	78	0	11	31	7.1	5.7	4.5	33.4	17.6	9.2
			Spot	0.51	0.56	0.57	0.11	0.18	0.27	0.24	0.25	0.19	0.21	(0.04)	(0.13)	24	40	59	0	9	24	6.9	5.8	5.5	30.4	18.2	12.2
			Diff	3%	(2%)	(18%)	10%	(3%)	(25%)	5%	(4%)	(30%)	(5%)	(1%)	28%	10%	(3%)	(25%)	-	(21%)	(25%)	(3%)	2%	23%	(9%)	4%	33%
Coal																											
CRN	Dec	USD	GSe	(0.04)	0.06	0.31	(0.23)	(0.17)	0.02	(0.18)	(0.18)	0.00	0.34	0.53	0.53	(13)	(10)	1	1	0	1	(12.0)	12.2	2.3	(0.8)	(1.1)	9.1
			Spot	(0.08)	(0.05)	0.28	(0.25)	(0.25)	(0.00)	(0.20)	(0.25)	(0.03)	0.37	0.62	0.65	(15)	(15)	(0)	1	0	0	-	(15.8)	3.0	(0.8)	(0.7)	(39.4)
			Diff	(72%)	187%	(10%)	(11%)	(52%)	123%	(13%)	(34%)	750%	7%	16%	22%	(11%)	(52%)	123%	0%	-	(94%)	-	229%	29%	10%	34%	531%
WHC	June	AUD	GSe	1.36	1.10	1.42	0.27	0.11	0.34	1.23	(0.35)	0.60	0.70	1.22	0.81	34	14	43	12	7	17	3.7	5.0	3.6	16.1	39.2	12.6
			Spot	1.30	1.06	1.37	0.25	0.09	0.31	1.20	(0.32)	0.51	0.73	1.22	0.87	31	11	39	12	5	16	3.9	5.2	3.8	17.6	50.1	14.0
			Diff	(5%)	(3%)	(3%)	(8%)	(22%)	(10%)	(2%)	8%	(15%)	4%	0%	7%	(8%)	(22%)	(10%)	0%	(22%)	(10%)	5%	3%	5%	9%	28%	12%
NHC	Jul	AUD	GSe	0.83	0.69	0.74	0.43	0.32	0.37	0.06	0.10	0.27	(0.33)	(0.23)	(0.32)	50	38	45	29	19	22	3.5	4.3	3.9	7.5	9.9	8.7
			Spot	0.83	0.68	0.78	0.43	0.31	0.39	0.07	0.08	0.31	(0.34)	(0.22)	(0.35)	51	36	48	29	18	24	3.5	4.4	3.7	7.5	10.3	8.1
			Diff	0%	(3%)	5%	1%	(4%)	8%	5%	(17%)	16%	(1%)	6%	(11%)	1%	(4%)	8%	1%	(4%)	8%	(1%)	3%	(6%)	(1%)	4%	(7%)
Small iron ore and Lithium																											
CIA	Mar	CAD	GSe	0.47	0.53	0.80	0.15	0.19	0.35	(0.41)	(0.01)	0.22	0.67	0.75	0.59	29	37	67	30	20	17	6.0	5.4	3.4	14.6	11.2	6.2
			Spot	0.47	0.66	1.16	0.15	0.27	0.53	(0.41)	0.04	0.38	0.67	0.70	0.40	29	53	103	30	20	26	6.0	4.3	2.2	14.6	7.9	4.1
			Diff	(0%)	24%	44%	0%	41%	54%	(0%)	650%	76%	0%	(7%)	(33%)	(0%)	41%	54%	0%	0%	54%	0%	(21%)	(36%)	(0%)	(29%)	(35%)
DRR	June	AUD	GSe	0.23	0.20	0.19	0.14	0.13	0.12	(0.15)	0.15	0.13	0.29	0.26	0.22	27	25	23	20	19	18	9.9	10.9	11.4	13.7	14.9	15.8
			Spot	0.23	0.22	0.23	0.14	0.15	0.15	(0.15)	0.15	0.15	0.29	0.26	0.22	27	28	29	20	21	22	9.8	9.9	9.3	13.4	13.4	12.7
			Diff	2%	11%	23%	2%	12%	25%	0%	4%	15%	(0%)	0%	(0%)	2%	12%	25%	2%	12%	25%	(2%)	(10%)	(19%)	(2%)	(10%)	(20%)
MIN	June	AUD	GSe	1.02	1.60	1.77	(0.21)	0.11	0.18	(1.76)	0.25	0.59	5.40	4.89	4.14	(109)	58	90	0	14	45	9.3	5.6	4.6	(19.1)	36.1	23.2
			Spot	1.02	1.80	2.04	(0.21)	0.25	0.37	(1.75)	0.48	0.90	5.39	4.59	3.48	(108)	127	186	0	34	93	9.3	4.8	3.7	(19.3)	16.4	11.2
			Diff	0%	12%	15%	1%	121%	107%	1%	91%	55%	(0%)	(6%)	(16%)	1%	121%	107%	-	143%	107%	(0%)	(14%)	(20%)	(1%)	(55%)	(52%)
Rare Earths and Mineral Sands																											
ILU	Dec	AUD	GSe	0.42	0.55	0.58	0.08	0.13	0.09	(0.87)	(0.59)	0.26	1.06	1.76	1.66	18	30	21	5	40	31	6.9	6.5	6.0	22.9	13.9	20.2
			Spot	0.42	0.55	0.58	0.08	0.13	0.09	(0.87)	(0.59)	0.26	1.06	1.76	1.66	18	30	21	5	40	31	6.9	6.5	6.0	22.9	13.9	20.2
			Diff	(0%)	(0%)	0%	0%	(0%)	0%	0%	(0%)	0%	(0%)	0%	(0%)	(0%)	0%	0%	0%	(0%)	(0%)	(0%)	0%	0%	(0%)	0%	(0%)
LYC	June	AUD	GSe	0.14	0.54	0.88	0.05	0.30	0.55	(0.29)	0.11	0.41	0.00	(0.18)	(0.52)	6	32	58	0	0	0	51.1	13.3	7.7	140.5	24.3	13.5
			Spot	0.12	0.39	0.63	0.04	0.19	0.35	(0.29)	(0.02)	0.21	0.01	(0.05)	(0.24)	4	20	38	0	0	19	59.1	18.8	11.2	195.3	39.1	20.8
			Diff	(14%)	(28%)	(28%)	(28%)	(38%)	(35%)	(2%)	119%	(48%)	204%	75%	54%	(28%)	(38%)	(35%)	-	-	-	16%	42%	45%	39%	61%	55%
Steel																											
BSL	June	AUD	GSe	1.50	2.17	2.48	0.49	1.00	1.18	(0.08)	(0.07)	0.83	0.23	0.67	0.10	112	235	275	60	60	60	6.9	5.0	4.1	20.9	10.1	8.6
			Spot	1.62	2.74	3.21	0.58	1.43	1.73	0.00	0.32	1.32	0.14	0.20	(0.86)	132	336	405	60	60	60	6.3	3.8	2.9	17.6	7.1	5.9
			Diff	8%	26%	30%	18%	43%	47%	101%	586%	58%	(37%)	(70%)	988%	18%	43%	47%	0%	0%	0%	(8%)	(24%)	(30%)	(16%)	(30%)	(32%)
SGM	June	AUD	GSe	0.40	0.44	0.51	0.09	0.13	0.17	0.51	0.05	0.13	0.29	0.28	0.18	44	65	87	28	10	24	8.2	7.4	6.2	34.8	23.6	17.6
			Spot	0.34	0.18	0.26	0.04	(0.08)	(0.02)	0.46	(0.12)	(0.07)	0.34	0.47	0.50	23	(44)	(12)	21	(22)	(13)	9.6	19.0	13.5	66.8	(35.2)	(126.9)
			Diff	(14%)	(59%)	(49%)	(48%)	167%	114%	(9%)	328%	155%	16%	65%	171%	(48%)	167%	114%	(25%)	328%	155%	18%	155%	116%	92%	249%	820%

GSe base case vs at spot prices and FX

YE Crncy				Dividend Yield (%)			FCF Yield (%)			EBITDA Margin (%)			ROA (%)			ROCE (%)			Gearing (ND/ND+E)			Leverage (ND/EBITDA)		
				2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027
Major diversified and Iron ore																								
BHP	June	USD	GSe	4%	4%	4%	3%	4%	5%	49%	49%	49%	10%	9%	9%	15%	13%	13%	20%	20%	19%	0.5x	0.6x	0.6x
			Spot	4%	4%	5%	4%	6%	7%	50%	53%	53%	10%	11%	11%	15%	16%	16%	19%	17%	13%	0.5x	0.4x	0.4x
RIO	Dec	USD	GSe	5%	5%	6%	(2%)	7%	8%	45%	47%	48%	8%	8%	9%	14%	12%	14%	17%	16%	13%	0.6x	0.6x	0.5x
			Spot	6%	6%	7%	1%	10%	12%	48%	51%	52%	10%	11%	12%	17%	16%	17%	14%	11%	7%	0.5x	0.3x	0.2x
FMG	June	USD	GSe	6%	4%	4%	5%	3%	2%	49%	47%	46%	11%	8%	7%	17%	13%	11%	9%	12%	15%	0.3x	0.4x	0.6x
			Spot	7%	6%	6%	6%	7%	8%	50%	53%	55%	11%	11%	12%	17%	18%	19%	9%	7%	6%	0.3x	0.2x	0.2x
Aluminium and Alumina																								
S32	June	USD	GSe	3%	4%	7%	18%	6%	5%	31%	36%	42%	6%	6%	9%	8%	10%	13%	(3%)	(4%)	(0%)	(0.2x)	(0.2x)	(0.0x)
			Spot	3%	3%	3%	18%	3%	(1%)	31%	32%	31%	6%	5%	5%	8%	8%	7%	(3%)	(1%)	4%	(0.1x)	(0.1x)	0.2x
Copper																								
SFR	June	USD	GSe	0%	2%	5%	7%	9%	9%	44%	46%	50%	3%	5%	9%	6%	9%	15%	10%	(2%)	(7%)	0.4x	(0.1x)	(0.3x)
			Spot	0%	1%	2%	8%	8%	6%	44%	45%	44%	3%	5%	7%	7%	9%	12%	10%	(2%)	(5%)	0.4x	(0.1x)	(0.2x)
Coal																								
CRN	Dec	USD	GSe	9%	0%	7%	(95%)	(98%)	2%	(2%)	3%	12%	(10%)	(7%)	1%	(20%)	(15%)	2%	29%	45%	44%	(7.7x)	9.1x	1.7x
			Spot	9%	0%	0%	(108%)	(131%)	(15%)	(4%)	(2%)	11%	(11%)	(11%)	(0%)	(22%)	(23%)	(0%)	31%	53%	55%	(4.8x)	(12.1x)	2.3x
WHC	June	AUD	GSe	2%	1%	3%	29%	(8%)	14%	23%	21%	25%	2%	1%	2%	6%	4%	7%	9%	15%	11%	0.5x	1.1x	0.6x
			Spot	2%	1%	3%	28%	(8%)	12%	22%	20%	24%	2%	1%	2%	6%	3%	7%	10%	16%	11%	0.6x	1.1x	0.6x
NHC	July	AUD	GSe	8%	5%	6%	2%	3%	8%	43%	37%	37%	12%	9%	10%	23%	14%	15%	(15%)	(9%)	(12%)	(0.4x)	(0.3x)	(0.4x)
			Spot	8%	5%	6%	2%	3%	10%	43%	36%	38%	13%	9%	10%	23%	14%	16%	(15%)	(9%)	(14%)	(0.4x)	(0.3x)	(0.5x)
Small iron ore and Lithium																								
CIA	Mar	CAD	GSe	7%	5%	4%	(19%)	(0%)	10%	29%	30%	39%	5%	6%	10%	6%	7%	14%	32%	33%	25%	1.4x	1.4x	0.7x
			Spot	7%	4%	6%	(19%)	2%	18%	29%	35%	48%	5%	8%	14%	6%	11%	21%	32%	31%	17%	1.4x	1.0x	0.3x
DRR	June	AUD	GSe	6%	5%	5%	(8%)	8%	7%	95%	94%	93%	29%	27%	25%	66%	34%	33%	0%	(85%)	229%	1.3x	1.3x	1.2x
			Spot	6%	6%	6%	(8%)	8%	8%	95%	94%	95%	29%	30%	31%	67%	38%	39%	71%	62%	53%	1.3x	1.1x	0.9x
MIN	June	AUD	GSe	0%	1%	2%	(43%)	6%	14%	21%	26%	28%	(2%)	1%	1%	(6%)	(3%)	(2%)	56%	49%	42%	5.3x	3.1x	2.3x
			Spot	0%	1%	2%	(43%)	12%	22%	21%	29%	31%	(2%)	2%	3%	(6%)	(1%)	(0%)	56%	46%	35%	5.3x	2.6x	1.7x
Rare Earths and Mineral Sands																								
ILU	Dec	AUD	GSe	1%	10%	8%	(49%)	(33%)	14%	35%	35%	33%	2%	2%	2%	3%	5%	4%	31%	40%	38%	2.6x	3.2x	2.9x
			Spot	1%	10%	8%	(49%)	(33%)	14%	35%	35%	33%	2%	2%	2%	3%	5%	4%	31%	40%	38%	2.6x	3.2x	2.9x
LYC	June	AUD	GSe	0%	0%	0%	(16%)	6%	23%	25%	50%	58%	2%	9%	14%	3%	12%	18%	0%	(6%)	(16%)	0.0x	(0.3x)	(0.6x)
			Spot	0%	0%	2%	(16%)	(1%)	12%	22%	42%	50%	1%	6%	10%	2%	7%	12%	0%	(2%)	(8%)	0.1x	(0.1x)	(0.4x)
Steel																								
BSL	June	AUD	GSe	3%	3%	3%	(1%)	(1%)	8%	9%	12%	13%	3%	6%	6%	4%	8%	9%	2%	5%	1%	0.2x	0.3x	0.0x
			Spot	3%	3%	3%	0%	3%	13%	10%	15%	17%	4%	8%	9%	5%	12%	13%	1%	2%	(6%)	0.1x	0.1x	(0.3x)
SGM	June	AUD	GSe	2%	1%	2%	17%	2%	4%	6%	6%	7%	2%	3%	4%	4%	5%	6%	10%	9%	6%	0.7x	0.6x	0.4x
			Spot	1%	(1%)	(1%)	15%	(4%)	(2%)	5%	3%	4%	1%	(2%)	(1%)	3%	(3%)	(0%)	11%	15%	16%	1.0x	2.6x	1.9x

Source: Company data, Bloomberg, Platts, FactSet, Goldman Sachs Global Investment Research. * ILU spot scenario assumes spot FX only

GSe base case vs. VA Consensus

				Revenue (\$bn)			Opex (\$bn)			Underlying EBITDA (\$bn)			Underlying NPAT (\$bn)			Free Cash Flow (\$bn)			Net Debt (\$bn)		
YE	Crncy			2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027	2025	2026	2027
BHP	Jun	USD	GSe	50.83	49.12	49.82	(25.77)	(25.00)	(25.41)	25.06	24.13	24.41	10.12	9.45	9.78	3.78	4.73	5.50	12.67	13.88	13.98
			Cons.	50.76	49.37	49.34	(24.87)	(23.73)	(23.96)	25.90	25.64	25.38	9.92	10.48	10.36	4.34	5.38	6.32	13.28	14.92	15.48
			%	0%	(1%)	1%	4%	5%	6%	(3%)	(6%)	(4%)	2%	(10%)	(6%)	(13%)	(12%)	(13%)	(5%)	(7%)	(10%)
RIO	Dec	USD	GSe	50.64	51.81	56.56	(27.76)	(27.36)	(29.61)	22.88	24.45	26.95	9.90	10.02	12.14	(1.79)	6.91	8.55	14.46	13.72	12.25
			Cons.	51.37	53.41	55.86	(28.21)	(29.04)	(30.23)	23.16	24.37	25.63	10.08	10.25	10.94	(0.88)	5.66	7.06	13.26	13.82	13.13
			%	(1%)	(3%)	1%	(2%)	(6%)	(2%)	(1%)	0%	5%	(2%)	(2%)	11%	104%	22%	21%	9%	(1%)	(7%)
FMG	Jun	USD	GSe	15.43	14.16	13.85	(7.82)	(7.53)	(7.50)	7.61	6.63	6.35	3.36	2.74	2.47	1.69	1.07	0.49	2.02	2.81	3.72
			Cons.	15.32	14.58	14.04	(7.71)	(7.63)	(7.94)	7.61	6.94	6.10	3.53	3.01	2.34	1.76	1.57	1.14	1.90	2.49	2.90
			%	1%	(3%)	(1%)	1%	(1%)	(6%)	0%	(4%)	4%	(5%)	(9%)	5%	(4%)	(32%)	(57%)	6%	13%	28%
S32	Jun	USD	GSe	6.04	5.62	6.33	(4.14)	(3.57)	(3.70)	1.90	2.05	2.63	0.81	0.93	1.35	1.46	0.45	0.37	(0.29)	(0.34)	(0.00)
			Cons.	6.40	6.35	6.77	(4.50)	(4.23)	(4.23)	1.90	2.12	2.54	0.70	0.84	1.12	1.20	0.26	0.59	(0.08)	0.04	(0.04)
			%	(6%)	(11%)	(6%)	(8%)	(16%)	(13%)	(0%)	(3%)	4%	16%	11%	21%	22%	72%	(36%)	276%	(863%)	(92%)
SFR	Jun	USD	GSe	1.14	1.25	1.41	(0.64)	(0.68)	(0.71)	0.49	0.57	0.70	0.10	0.19	0.36	0.22	0.27	0.27	0.22	(0.04)	(0.19)
			Cons.	1.17	1.26	1.36	(0.65)	(0.65)	(0.66)	0.52	0.61	0.70	0.11	0.19	0.27	0.25	0.29	0.38	0.21	(0.05)	(0.36)
			%	(3%)	(1%)	3%	(1%)	4%	8%	(5%)	(6%)	(1%)	(13%)	(2%)	33%	(10%)	(9%)	(30%)	7%	(16%)	(49%)
CRN	Dec	USD	GSe	2.09	2.22	2.55	(2.13)	(2.16)	(2.23)	(0.04)	0.06	0.31	(0.23)	(0.17)	0.02	(0.18)	(0.18)	0.00	0.34	0.53	0.53
			Cons.	2.13	2.51	2.76	(2.18)	(2.31)	(2.35)	(0.05)	0.21	0.41	(0.27)	(0.15)	0.03	(0.31)	(0.10)	0.08	0.40	0.56	0.49
			%	(2%)	(12%)	(8%)	(2%)	(6%)	(5%)	(7%)	(71%)	(24%)	(16%)	12%	(18%)	(42%)	76%	(95%)	(15%)	(4%)	8%
WHC	Jun	AUD	GSe	5.97	5.35	5.77	(4.61)	(4.26)	(4.35)	1.36	1.10	1.42	0.27	0.11	0.34	1.23	(0.35)	0.60	0.70	1.22	0.81
			Cons.	6.02	5.83	6.08	(4.59)	(4.44)	(4.48)	1.42	1.38	1.61	0.27	0.29	0.45	1.25	(0.22)	0.38	0.77	1.18	1.13
			%	(1%)	(8%)	(5%)	0%	(4%)	(3%)	(4%)	(21%)	(11%)	0%	(62%)	(23%)	(1%)	57%	58%	(10%)	3%	(28%)
NHC	Jul	AUD	GSe	1.92	1.88	1.98	(1.09)	(1.19)	(1.25)	0.83	0.69	0.74	0.43	0.32	0.37	0.06	0.10	0.27	(0.33)	(0.23)	(0.32)
			Cons.	1.97	1.90	1.97	(1.10)	(1.14)	(1.19)	0.87	0.76	0.79	0.47	0.37	0.33	0.06	0.23	0.41	(0.27)	(0.26)	(0.47)
			%	(3%)	(1%)	1%	(1%)	4%	5%	(5%)	(8%)	(6%)	(10%)	(13%)	11%	11%	(56%)	(35%)	23%	(12%)	(33%)
CIA	Mar	CAD	GSe	1.61	1.76	2.07	(1.14)	(1.23)	(1.27)	0.47	0.53	0.80	0.15	0.19	0.35	(0.41)	(0.01)	0.22	0.67	0.75	0.59
			Cons.	1.60	1.89	1.96	(1.13)	(1.24)	(1.27)	0.47	0.66	0.70	0.15	0.28	0.30	(0.30)	0.18	0.33	0.58	0.46	0.24
			%	0%	(7%)	6%	0%	(1%)	0%	(1%)	(18%)	15%	(3%)	(31%)	16%	38%	(105%)	(34%)	17%	62%	144%
DRR	Jun	AUD	GSe	0.24	0.22	0.20	(0.01)	(0.01)	(0.01)	0.23	0.20	0.19	0.14	0.13	0.12	(0.15)	0.15	0.13	0.29	0.26	0.22
			Cons.	0.25	0.26	0.23	(0.02)	(0.02)	(0.02)	0.23	0.24	0.22	0.15	0.16	0.14	(0.14)	0.17	0.15	0.27	0.21	0.16
			%	(4%)	(16%)	(13%)	(32%)	(13%)	(11%)	(2%)	(16%)	(13%)	(6%)	(17%)	(13%)	9%	(11%)	(13%)	8%	19%	35%
MIN	Jun	AUD	GSe	4.93	6.12	6.42	(3.91)	(4.52)	(4.64)	1.02	1.60	1.77	(0.21)	0.11	0.18	(1.76)	0.25	0.59	5.40	4.89	4.14
			Cons.	4.54	5.19	5.19	(3.68)	(3.55)	(3.46)	0.86	1.64	1.73	(0.77)	0.26	0.31	(1.59)	0.38	0.44	5.59	5.27	4.93
			%	9%	18%	24%	6%	28%	34%	18%	(3%)	2%	(72%)	(56%)	(44%)	10%	(34%)	32%	(3%)	(7%)	(16%)
ILU	Dec	AUD	GSe	1.17	1.57	1.76	(0.76)	(1.03)	(1.18)	0.42	0.55	0.58	0.08	0.13	0.09	(0.87)	(0.59)	0.26	1.06	1.76	1.66
			Cons.	1.16	1.41	1.65	(0.70)	(0.91)	(1.05)	0.45	0.50	0.60	0.15	0.15	0.16	(0.74)	(0.59)	(0.01)	0.93	1.53	1.60
			%	1%	11%	6%	8%	12%	12%	(8%)	10%	(4%)	(48%)	(13%)	(44%)	18%	(0%)	(2104%)	14%	15%	4%
LYC	Jun	AUD	GSe	0.58	1.08	1.51	(0.43)	(0.54)	(0.63)	0.14	0.54	0.88	0.05	0.30	0.55	(0.29)	0.11	0.41	0.00	(0.18)	(0.52)
			Cons.	0.57	1.06	1.44	(0.43)	(0.61)	(0.75)	0.14	0.45	0.69	0.06	0.27	0.46	(0.30)	0.18	0.38	(0.06)	(0.24)	(0.59)
			%	1%	2%	5%	(0%)	(12%)	(16%)	4%	20%	27%	(13%)	13%	19%	(6%)	(40%)	8%	(105%)	(24%)	(12%)
BSL	Jun	AUD	GSe	16.36	18.10	19.12	(14.85)	(15.93)	(16.64)	1.50	2.17	2.48	0.49	1.00	1.18	(0.08)	(0.07)	0.83	0.23	0.67	0.10
			Cons.	16.18	17.05	17.60	(14.70)	(15.05)	(15.39)	1.48	2.01	2.22	0.47	0.84	0.96	(0.00)	0.22	0.89	0.09	0.35	(0.17)
			%	1%	6%	9%	1%	6%	8%	2%	8%	12%	3%	20%	23%	5469%	(130%)	(6%)	139%	92%	(157%)
SGM	Jun	AUD	GSe	7.11	7.14	7.42	(6.71)	(6.70)	(6.91)	0.40	0.44	0.51	0.09	0.13	0.17	0.51	0.05	0.13	0.29	0.28	0.18
			Cons.	7.27	7.50	7.86	(6.85)	(7.02)	(7.32)	0.42	0.48	0.54	0.08	0.15	0.20	0.51	0.18	0.22	0.01	(0.08)	(0.16)
			%	(2%)	(5%)	(6%)	(2%)	(5%)	(6%)	(3%)	(9%)	(7%)	2%	(14%)	(13%)	(1%)	(70%)	(39%)	3532%	(448%)	(213%)
Total vs. Cons (M.Cap wtd.)				0%	-2%	1%	1%	0%	1%	-2%	-3%	1%	-1%	-6%	3%	154%	-4%	-14%	34%	-27%	-11%
Total vs. Cons (Simple avg.)				-1%	-2%	1%	-2%	0%	1%	-1%	-8%	0%	-11%	-12%	-2%	374%	-18%	-156%	260%	-79%	-26%

Gse Commodity price vs. VA Cons & Forward curve

Calendar year	Unit		Spot	Q1'25	Q2'25	Q3'25	Q4'25	2025	2026	2027	2028	2029
Gold	US\$/oz	GSe	3,314	2,862	3,197	3,230	3,263	3,138	3,333	3,323	3,314	2,850
		VA Cons.		2,884	3,087	3,107	3,109	3,030	3,027	2,865	2,745	2,635
		%		-1%	4%	4%	5%	4%	10%	16%	21%	8%
		Forw.Curve		2,688	3,188	3,399	3,435	3,435	3,470	3,586	3,761	3,899
Silver	US\$/oz	GSe	32	32	35	36	36	35	37	37	37	32
		VA Cons.		32	33	33	33	33	33	32	31	30
		%		-1%	7%	9%	10%	6%	11%	16%	20%	6%
		Forw.Curve		30	35	33	34	34	34	35	37	37
Copper	US\$/lb.	GSe	4.28	4.24	3.91	3.80	4.08	4.01	4.61	4.84	5.07	4.57
		VA Cons.		4.24	4.18	4.09	4.10	4.16	4.40	4.65	4.77	4.83
		%		0%	-6%	-7%	0%	-4%	5%	4%	6%	-5%
		Forw.Curve		-	4.39	4.26	4.24	4.24	4.22	4.23	4.25	4.27
Nickel	US\$/lb.	GSe	6.96	7.07	7.26	7.26	7.26	7.21	7.48	8.27	9.05	8.48
		VA Cons.		7.07	6.87	7.01	7.22	7.08	7.72	8.10	8.20	8.42
		%		0%	6%	4%	1%	2%	-3%	2%	10%	1%
		Forw.Curve		-	7.29	7.10	7.23	7.23	7.37	-	8.00	8.32
Zinc	US\$/lb.	GSe	1.17	1.29	1.20	1.22	1.27	1.25	1.36	1.47	1.57	1.45
		VA Cons.		1.29	1.24	1.24	1.27	1.23	1.26	1.27	1.29	1.30
		%		0%	-3%	-1%	0%	1%	8%	16%	22%	11%
		Forw.Curve		-	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Aluminium	US\$/lb.	GSe	1.03	1.19	1.03	0.93	1.01	1.04	1.15	1.29	1.36	1.20
		VA Cons.		1.19	1.12	1.10	1.12	1.14	1.19	1.24	1.26	1.25
		%		0%	-8%	-16%	-10%	-8%	-3%	4%	8%	-4%
		Forw.Curve		-	1.14	1.08	1.10	1.10	1.11	1.13	1.15	1.17
Iron ore (62% Fe)	US\$/t	GSe	98	104	98	95	90	97	88	89	91	80
		VA Cons.		104	100	96	98	97	91	87	88	90
		%		0%	-2%	-1%	-8%	-1%	-4%	2%	3%	-11%
		Forw.Curve		99	99	92	90	90	89	-	-	-

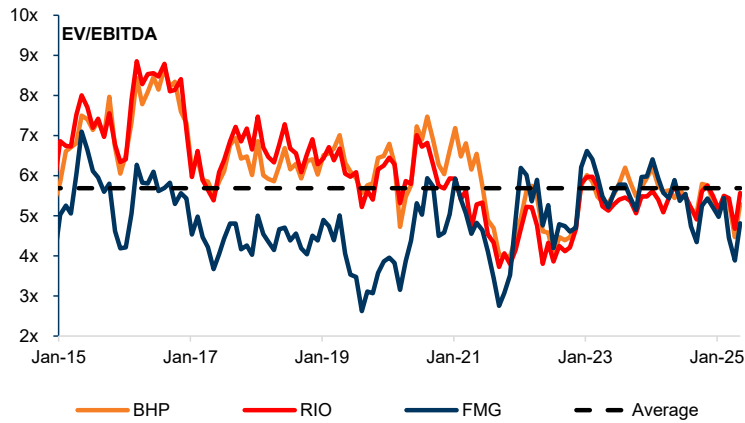
Calendar year	Unit		Spot	Q1'25	Q2'25	Q3'25	Q4'25	2025	2026	2027	2028	2029
Bauxite	US\$/t	GSe	80	80	80	75	75	78	68	67	66	57
		VA Cons.		83	75	72	71	75	70	69	69	69
		%		-3%	7%	4%	6%	4%	-4%	-3%	-4%	-18%
Alumina	US\$/t	GSe	349	516	360	380	390	411	390	399	408	360
		VA Cons.		521	375	374	374	408	380	390	400	409
		%		-1%	-4%	2%	4%	1%	3%	2%	2%	-12%
Hard Coking Coal	US\$/t	GSe	191	185	180	180	180	181	200	218	237	220
		VA Cons.		187	188	192	213	187	195	198	204	208
		%		-1%	-4%	-6%	-15%	-3%	3%	10%	16%	6%
Thermal (6000 kcal)	US\$/t	GSe	104	110	100	100	105	104	105	105	105	90
		VA Cons.		105	103	103	105	103	105	106	106	107
		%		5%	-2%	-3%	0%	1%	0%	-1%	-1%	-16%
Freight - Aus/China	US\$/t	GSe	7.7	7.6	10.0	10.0	10.0	9.4	10.0	10.5	11.1	10.0
		VA Cons.		8.6	10.1	10.0	10.0	9.5	9.8	9.9	10.0	10.0
		%		-12%	-1%	0%	0%	-1%	2%	7%	11%	0%
US Midwest HRC	US\$/st	GSe	905	815	875	850	825	841	815	833	851	750
		VA Cons.		735	831	857	881	864	889	889	887	889
		%		11%	5%	-1%	-6%	-3%	-8%	-6%	-4%	-16%
US Busheling Scrap	US\$/t	GSe	455	440	450	450	450	448	447	456	466	410
		VA Cons.		371	413	464	451	416	429	431	435	441
		%		19%	9%	-3%	0%	8%	4%	6%	7%	-7%
Lithium carbonate	US\$/t	GSe	8,302	9,222	10,000	10,500	11,000	10,180	13,250	16,000	16,695	15,000
		VA Cons.		9,226	9,717	9,975	10,317	10,449	12,025	14,316	16,347	17,282
		%		0%	3%	5%	7%	-3%	10%	12%	2%	-13%
Lithium hydroxide	US\$/t	GSe	8,290	8,534	9,500	10,000	10,500	9,634	12,750	15,500	16,155	14,500
		VA Cons.		8,949	9,740	10,430	10,809	10,618	12,492	14,908	16,843	17,908
		%		-5%	-2%	-4%	-3%	-9%	2%	4%	-4%	-19%
Spodumene 6%	US\$/t	GSe	735	808	800	800	825	808	969	1,155	1,264	1,185
		VA Cons.		839	854	887	907	899	1,034	1,210	1,339	1,398
		%		-4%	-6%	-10%	-9%	-10%	-6%	-5%	-6%	-15%
NdPr (China)	US\$/kg	GSe	58	59	65	65	70	65	74	80	83	75
		VA Cons.		55	60	64	66	60	70	77	81	84
		%		8%	8%	2%	6%	8%	5%	4%	3%	-11%

Source: Company data, Goldman Sachs Global Investment Research, Visible Alpha Consensus Data, FactSet

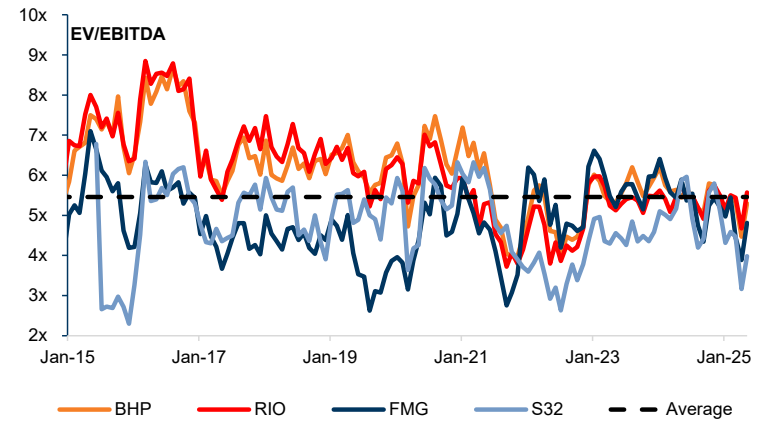
Note: 1) VA Cons. refers to Benchmark prices data for respective commodities from Visible Alpha Consensus Data 2) Forward curve data refers to the forward price for respective commodities in the reference to specific period pulled from FactSet.

Coverage EV/EBITDA - grouped by subsector

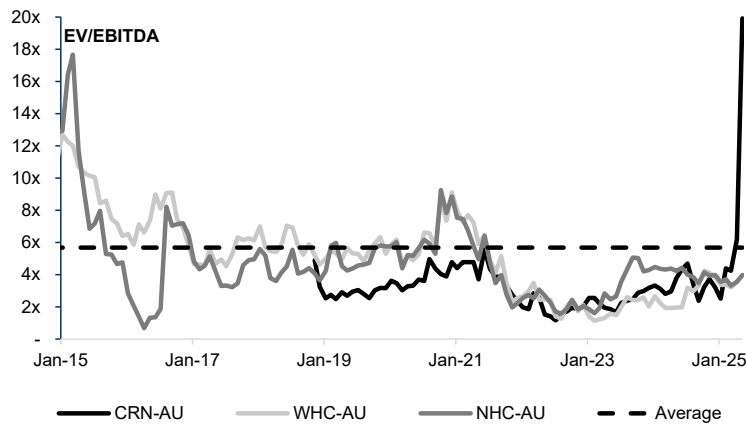
Bulk Iron Ore Miners



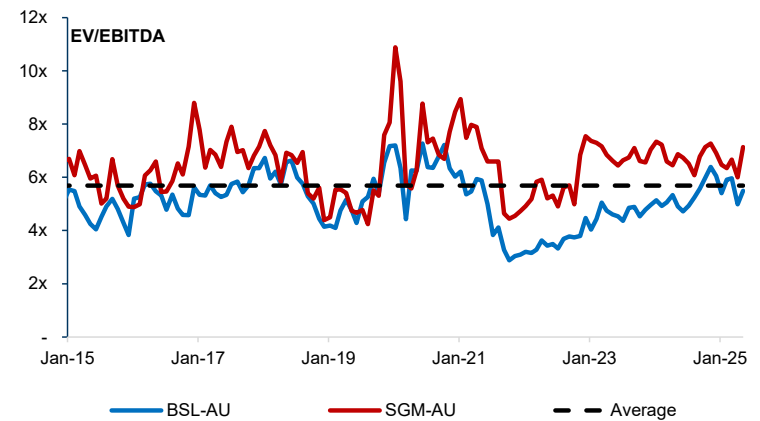
Large Cap Miners and Diversified



Coal

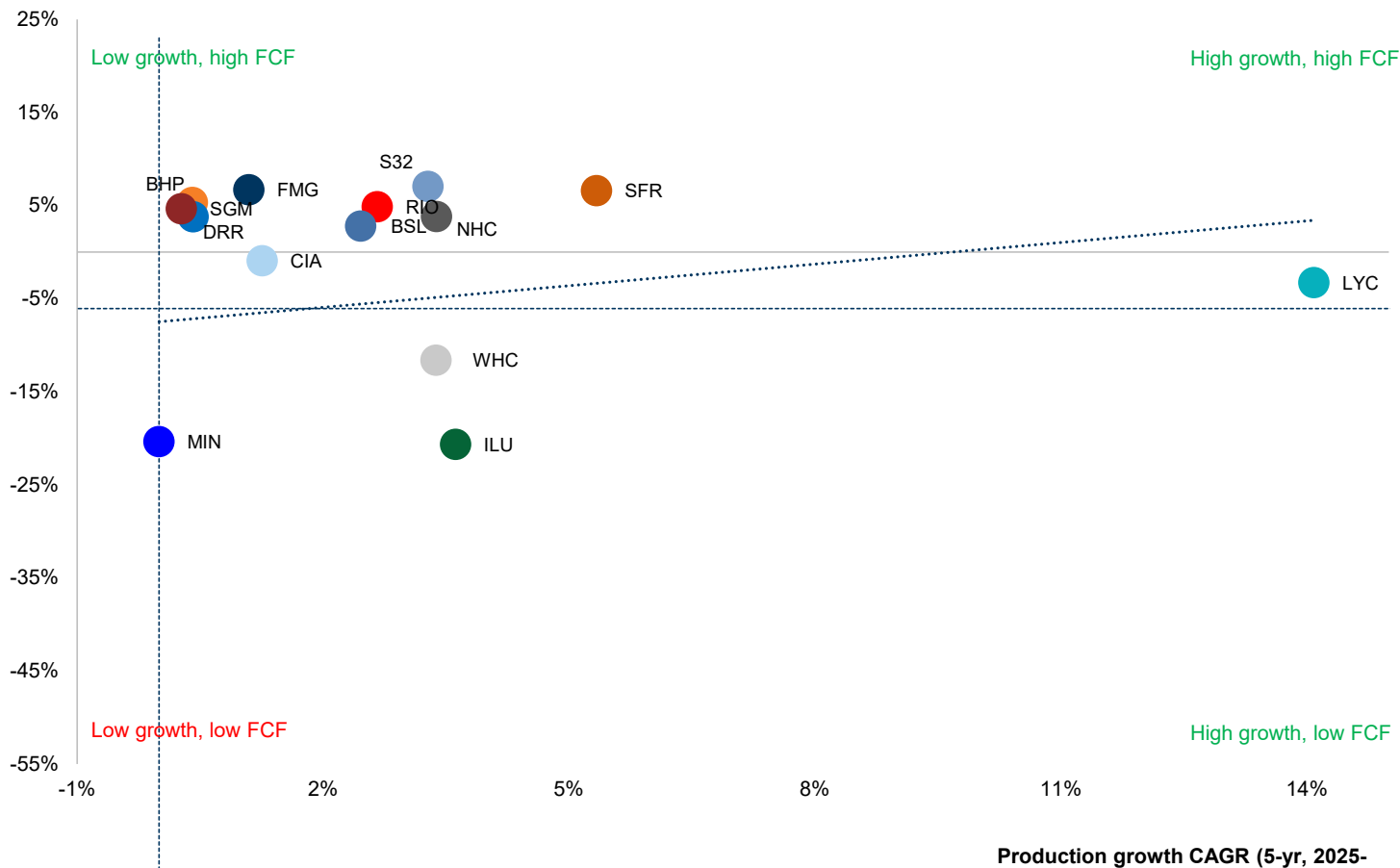


Steel



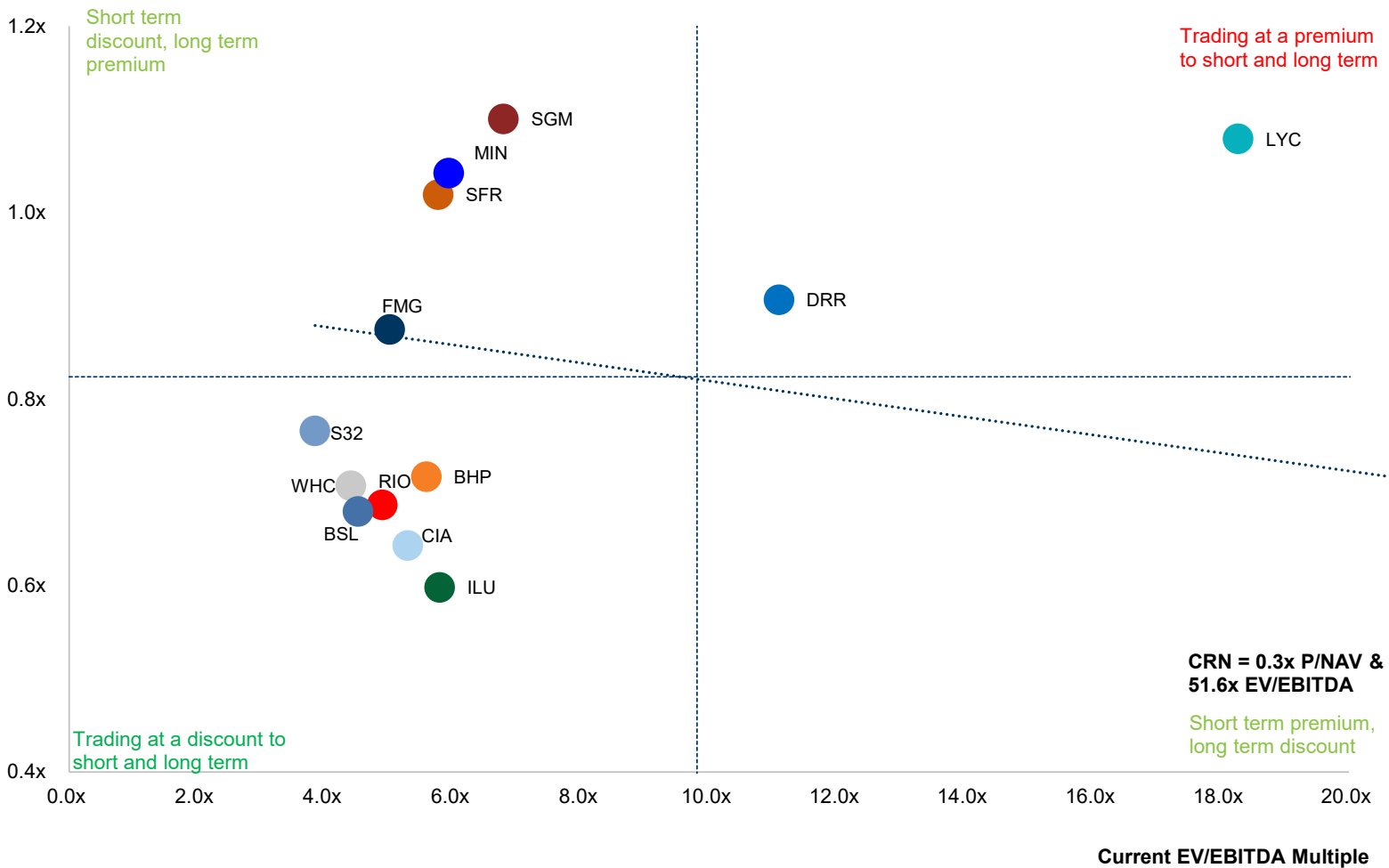
Production growth vs average FCF yield

Average FCF yield



Price/NAV vs EV/EBITDA

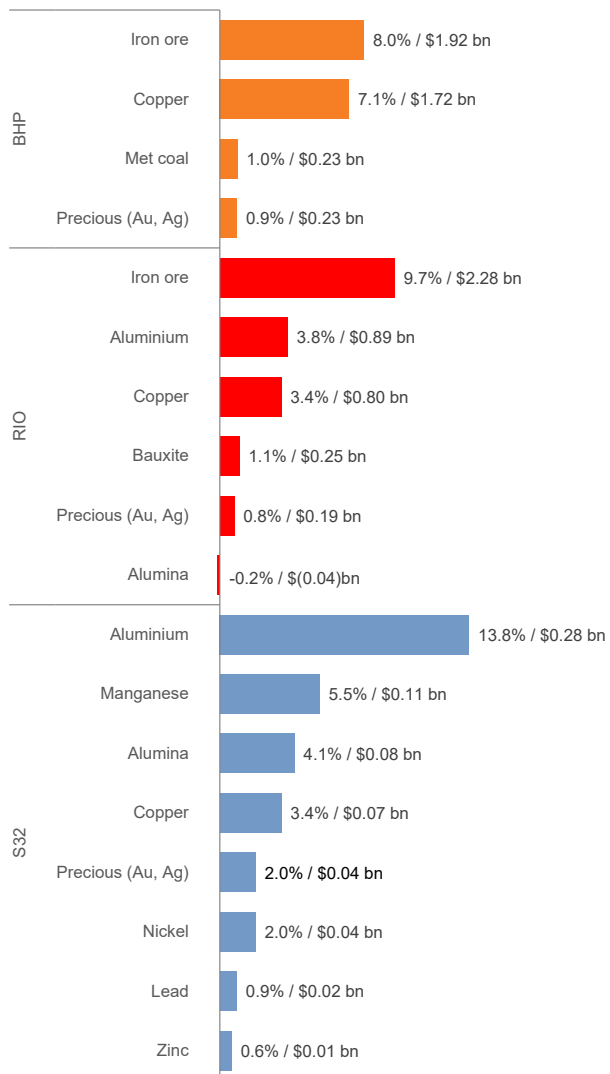
Current P/NAV



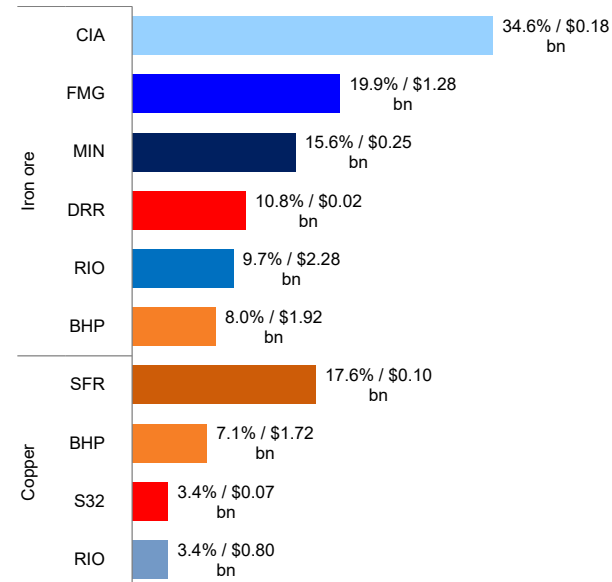
NTM EBITDA sensitivities: +10% change in GSe forecast (1/2)

Sensitivity to a +10% change in GSe commodity forecasts

Diversified Miners



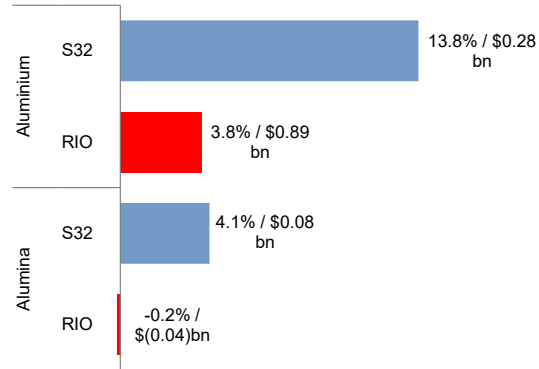
Iron ore and Copper



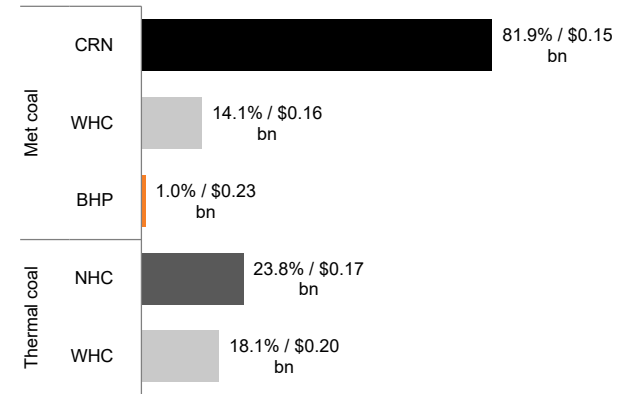
NTM EBITDA sensitivities: +10% change in GSe forecast (2/2)

Sensitivity to a +10% change in GSe commodity forecasts

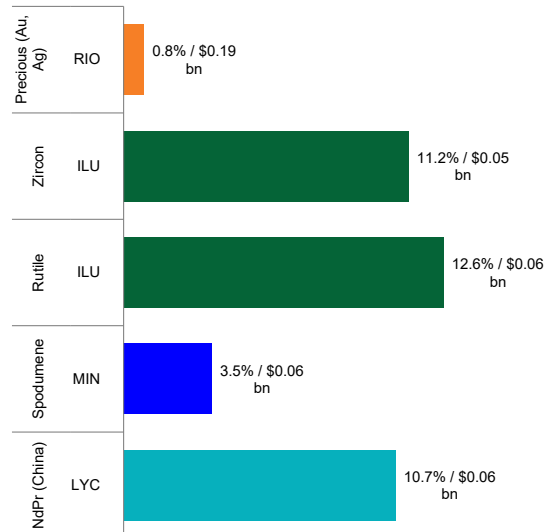
Aluminium & Alumina



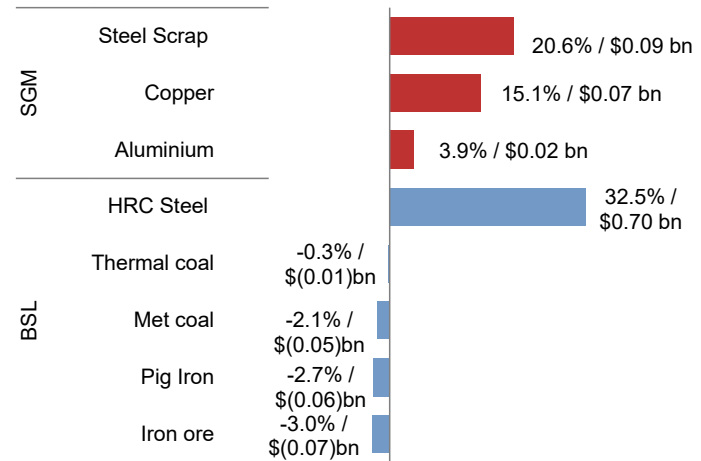
Met & Thermal Coal



Other Metals



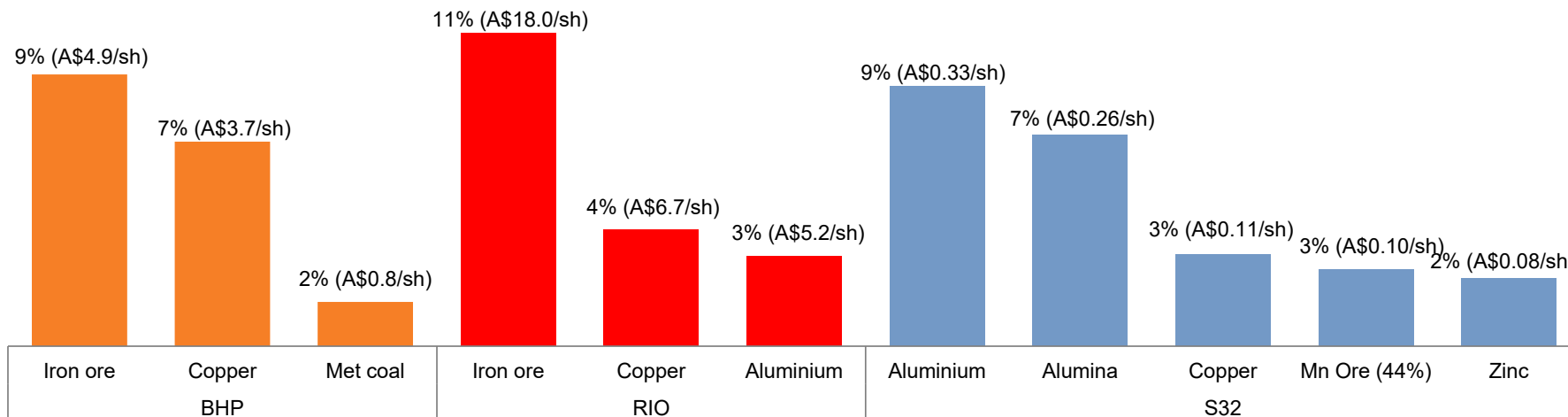
Steel producers/recyclers



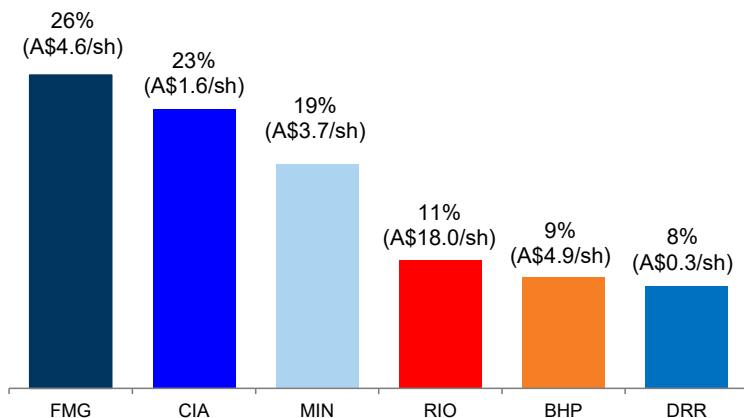
NAVPS sensitivities: +10% change in GSe long run commodity prices (1/2)

% and A\$/sh change from +10% change in long run (2029+) real prices

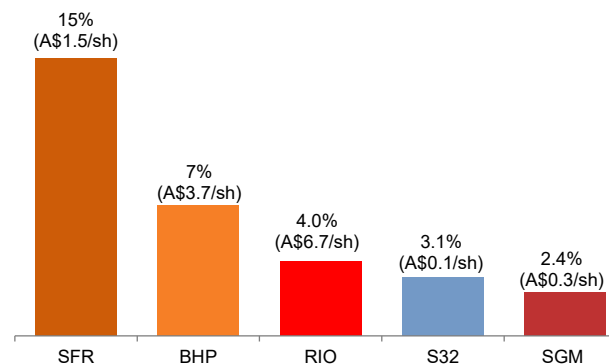
Diversified Miners



Iron ore



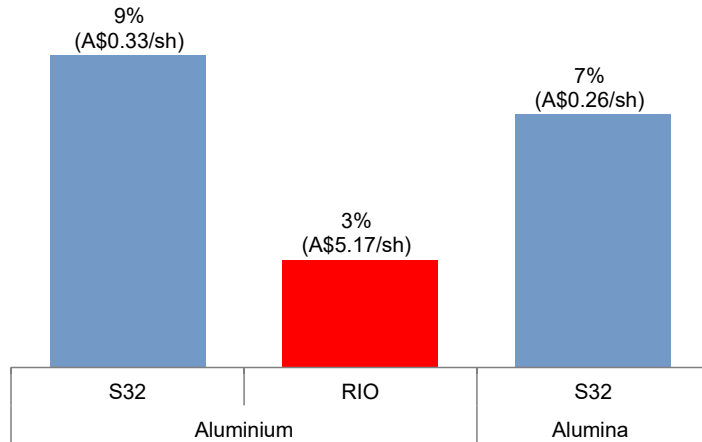
Copper



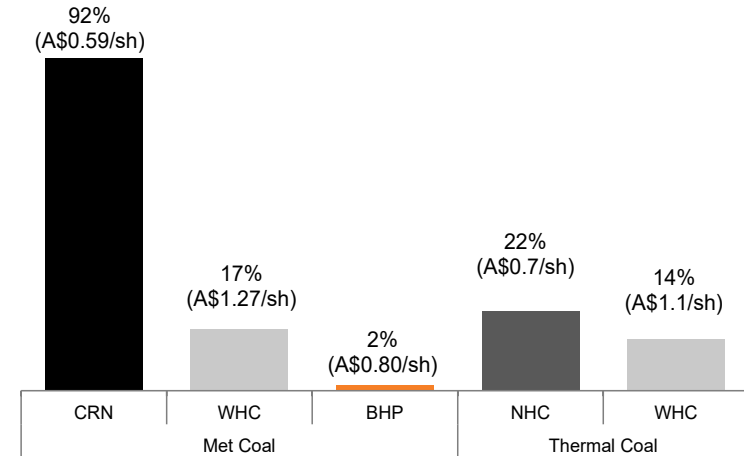
NAVPS sensitivities: +10% change in GSe long run commodity prices (2/2)

% and A\$/sh change from +10% change in long run (2029+) real prices

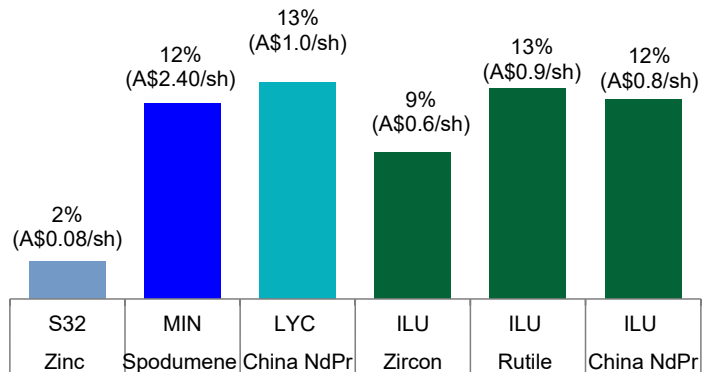
Aluminium & Alumina



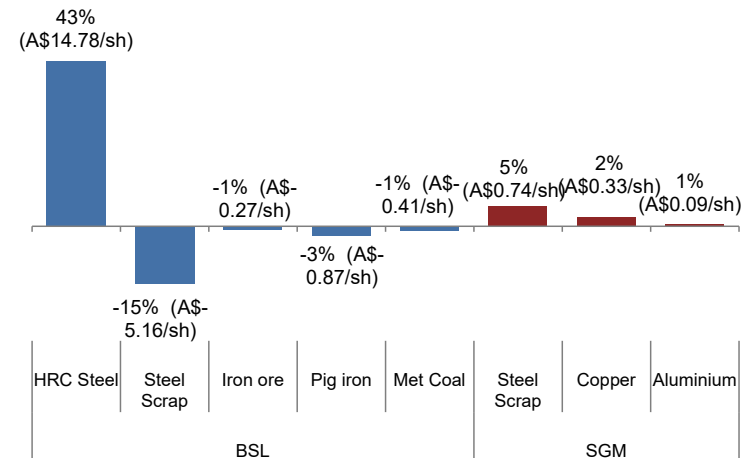
Met & Thermal Coal



Other Metals

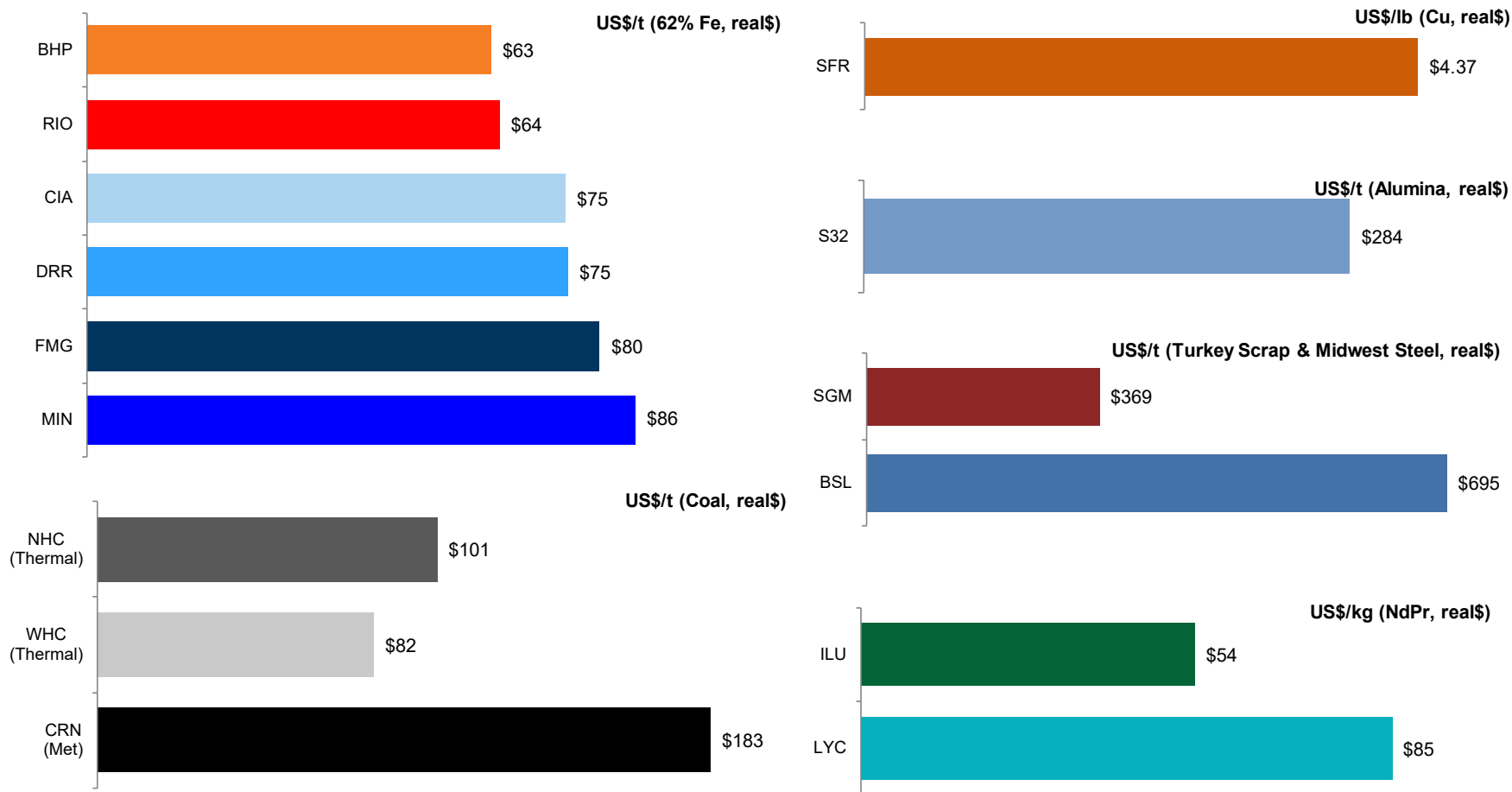


Steel producers/recyclers



What's priced in to our stocks?

What's priced in to our coverage: goal seeking price so that NAV = share price



Iron Ore 62% (US\$/t), Coal (US\$/t), Copper (US\$/lb), Alumina (US\$/t), SGM is Turkey scrap price (US\$/t), NdPr (US\$/kg), BSL steel Midwest (US\$/t).

Rolling NAVPS and EBITDA growth

Rolling NAVPS (A\$/sh)

A\$/sh	2024A	2025E	2026E	2027E	2028E
Major diversified and iron ore					
BHP	50.9	52.9	56.0	65.2	66.5
RIO	181.7	195.3	207.4	210.7	213.3
FMG	19.2	19.9	21.4	22.2	22.7
Aluminium, alumina and manganese					
S32	3.67	4.05	4.60	4.78	4.85
Copper					
SFR	8.41	8.98	9.70	10.21	10.67
Coal					
CRN	0.56	0.73	0.75	0.73	0.73
WHC	4.75	7.28	7.99	8.96	9.37
NHC	3.30	3.05	3.46	3.65	3.78
Small iron ore/mineral sands/lithium					
CIA	7.07	7.65	8.07	8.59	9.12
DRR	4.20	4.03	4.13	4.25	4.37
MIN	18.4	19.9	25.8	30.9	36.1
ILU	6.54	6.90	7.87	8.62	9.07
LYC	6.80	7.39	7.95	8.53	8.87
Steel					
BSL	34.1	36.1	38.1	40.5	43.0
SGM	10.8	13.1	13.7	14.7	15.5

Under. EBITDA (\$bn)

	Crncy	YE	2024A	2025E	2026E	2027E	2028E
Major diversified and iron ore							
BHP	USD	JUN	29.0	25.1	24.1	24.4	25.0
RIO	USD	DEC	23.3	22.9	24.4	26.9	29.1
FMG	USD	JUN	10.7	7.6	6.6	6.4	6.4
Aluminium, alumina and manganese							
S32	USD	JUN	1.80	1.90	2.05	2.63	2.63
Copper							
SFR	USD	JUN	0.36	0.49	0.57	0.70	0.71
Coal							
CRN	USD	DEC	0.12	-0.04	0.06	0.31	0.31
WHC	AUD	JUN	1.36	1.36	1.10	1.42	1.52
NHC	AUD	JUL	0.86	0.83	0.69	0.74	0.64
Small iron ore/mineral sands/lithium							
CIA	CAD	MAR	0.55	0.47	0.53	0.80	0.86
DRR	AUD	JUN	0.23	0.23	0.20	0.19	0.19
MIN	AUD	JUN	1.06	1.02	1.60	1.77	1.81
ILU	AUD	JUN	0.50	0.42	0.55	0.58	0.80
LYC	AUD	JUN	0.13	0.14	0.54	0.88	1.12
Steel							
BSL	AUD	JUN	2.02	1.50	2.17	2.48	2.61
SGM	AUD	JUN	0.30	0.40	0.44	0.51	0.51

NAVPS growth (YoY)

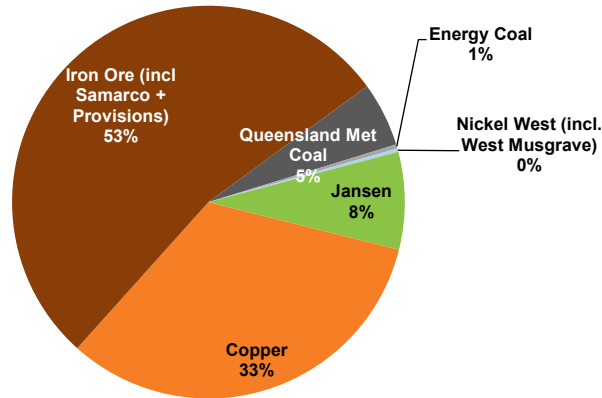
A\$/sh	2024A	2025E	2026E	2027E	2028E
Major diversified and iron ore					
BHP	2%	4%	6%	16%	2%
RIO	10%	7%	6%	2%	1%
FMG	8%	3%	7%	4%	2%
Aluminium, alumina and manganese					
S32	36%	10%	14%	4%	2%
Copper					
SFR	5%	7%	8%	5%	4%
Coal					
CRN	3%	29%	3%	(2%)	0%
WHC	NA	53%	10%	12%	5%
NHC	2%	(8%)	14%	5%	4%
Small iron ore/mineral sands/lithium					
CIA	(0%)	8%	5%	6%	6%
DRR	(1%)	(4%)	3%	3%	3%
MIN	(18%)	8%	30%	20%	17%
ILU	(0%)	5%	14%	10%	5%
LYC	6%	9%	8%	7%	4%
Steel					
BSL	9%	6%	6%	6%	6%
SGM	(3%)	21%	5%	7%	5%

Under. EBITDA (\$bn) growth (YoY)

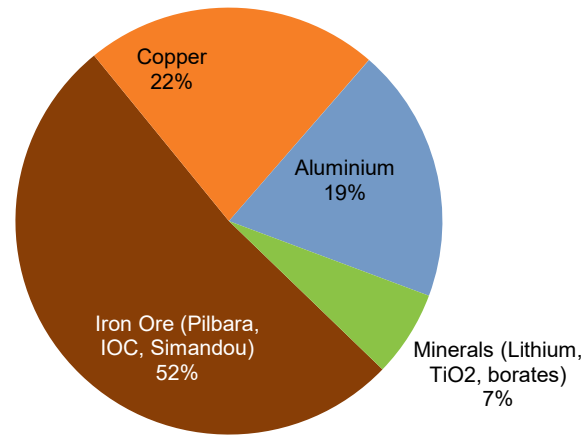
	Crncy	YE	2024A	2025E	2026E	2027E	2028E
Major diversified and iron ore							
BHP	USD	JUN	4%	(14%)	(4%)	1%	3%
RIO	USD	DEC	(3%)	(2%)	7%	10%	8%
FMG	USD	JUN	8%	(29%)	(13%)	(4%)	1%
Aluminium, alumina and manganese							
S32	USD	JUN	(29%)	5%	8%	28%	(0%)
Copper							
SFR	USD	JUN	40%	37%	16%	22%	2%
Coal							
CRN	USD	DEC	(70%)	38%	134%	428%	(2%)
WHC	AUD	JUN	(66%)	1%	(19%)	30%	7%
NHC	AUD	JUL	(51%)	(4%)	(16%)	6%	(13%)
Small iron ore/mineral sands/lithium							
CIA	CAD	MAR	12%	(15%)	14%	50%	8%
DRR	AUD	JUN	4%	(1%)	(10%)	(6%)	(1%)
MIN	AUD	JUN	(40%)	(3%)	57%	11%	2%
ILU	AUD	JUN	(18%)	(16%)	31%	5%	39%
LYC	AUD	JUN	(65%)	9%	275%	64%	27%
Steel							
BSL	AUD	JUN	(11%)	(26%)	44%	14%	5%
SGM	AUD	JUN	(36%)	32%	9%	15%	1%

Large cap miners – NAV and EBITDA split by commodity

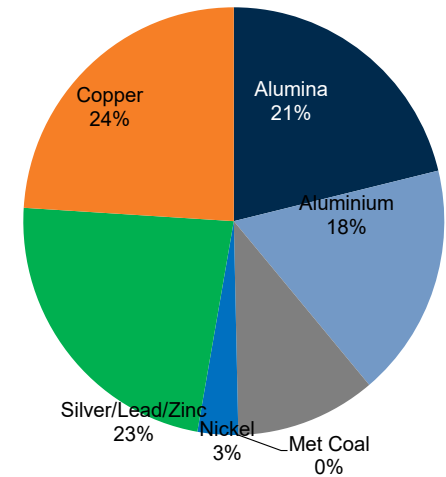
BHP NAV by commodity



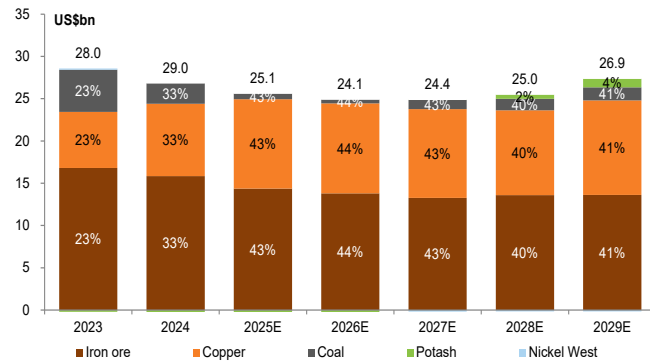
RIO NAV by commodity



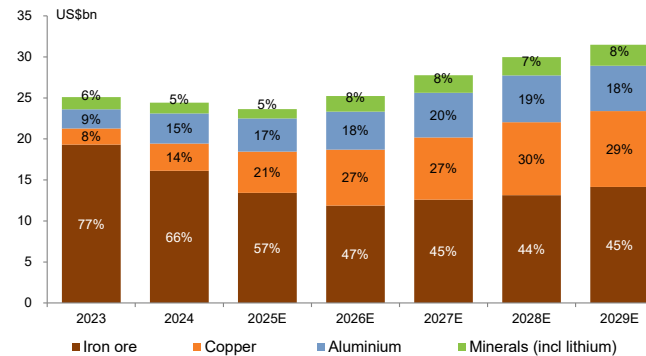
S32 NAV by commodity



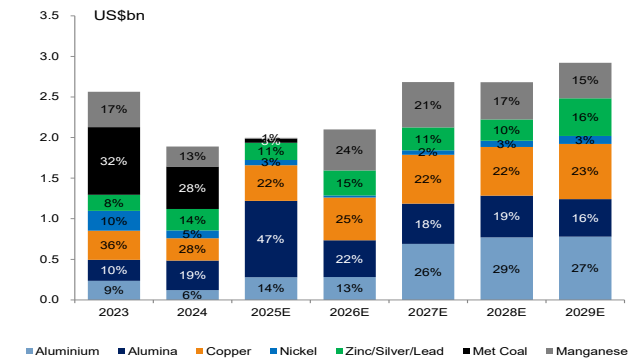
BHP EBITDA by commodity



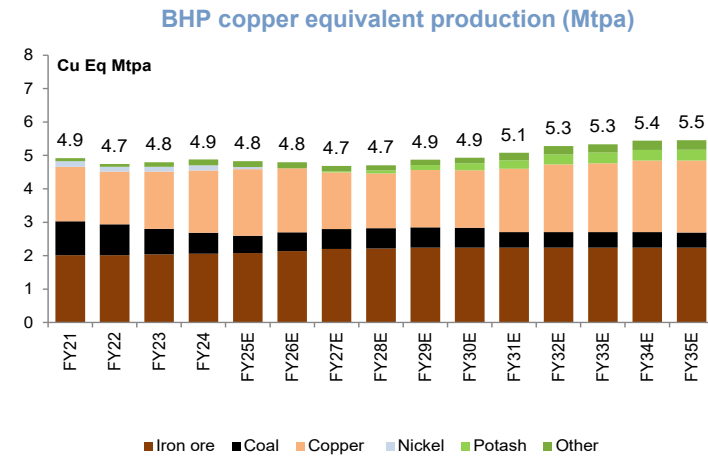
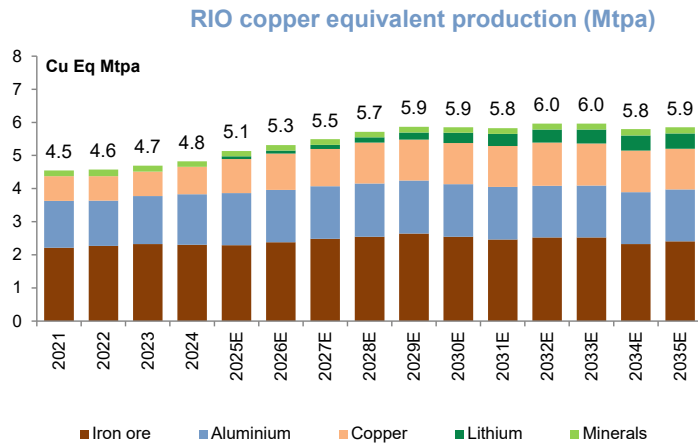
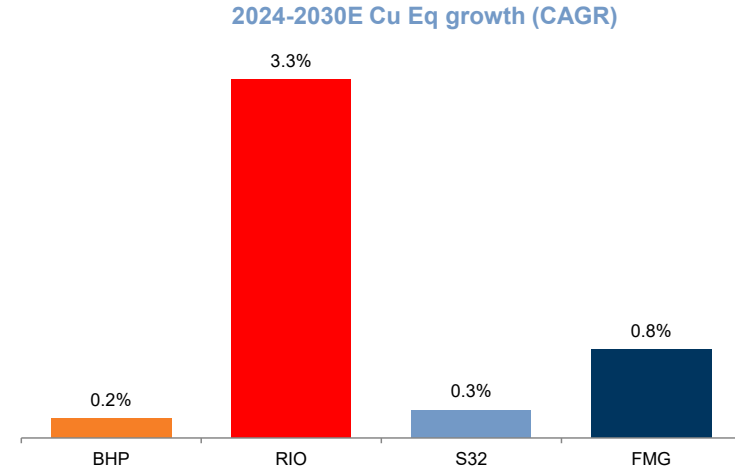
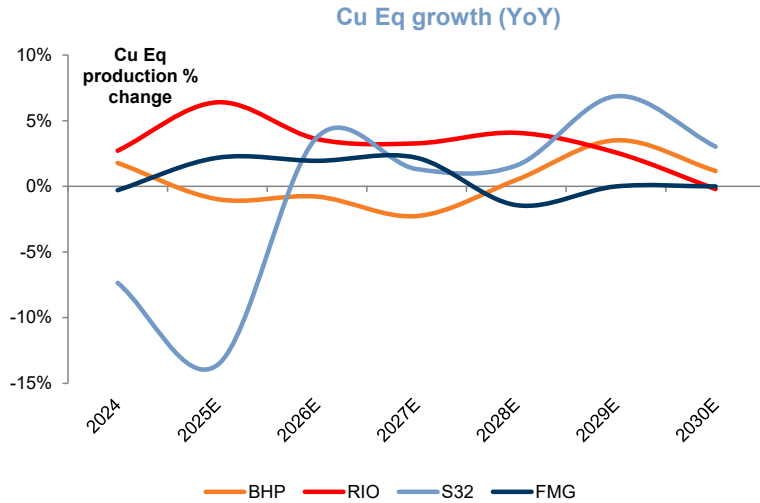
RIO EBITDA by commodity



S32 EBITDA by commodity



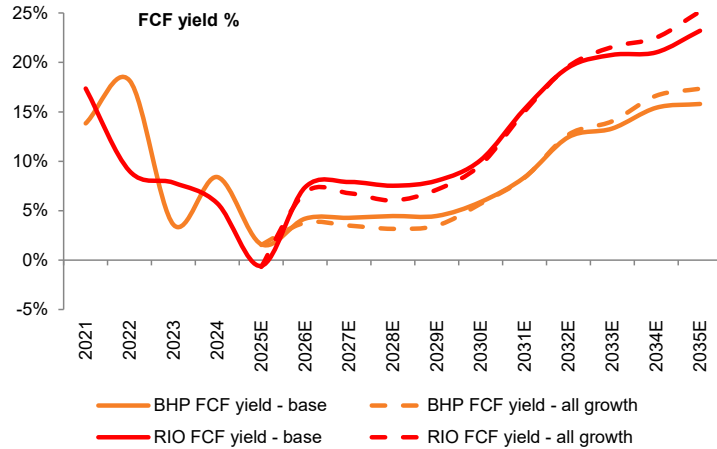
Large cap miners – Cu Eq production growth



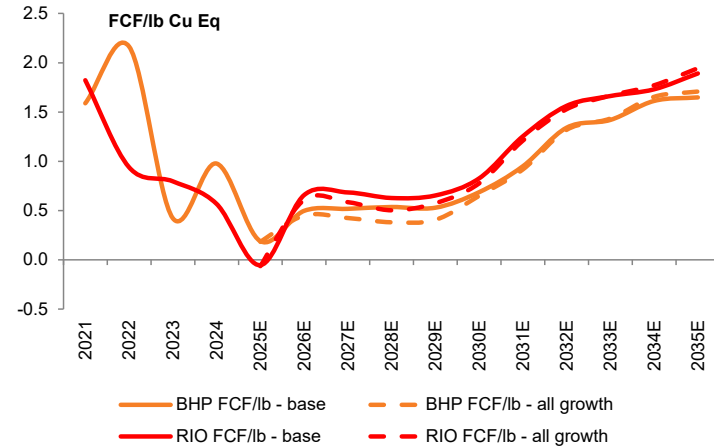
Source: Company data, Bloomberg, Platts, Goldman Sachs Global Investment Research. CuEq calculated using GS long run pricing assumptions.

Large cap miners – FCF

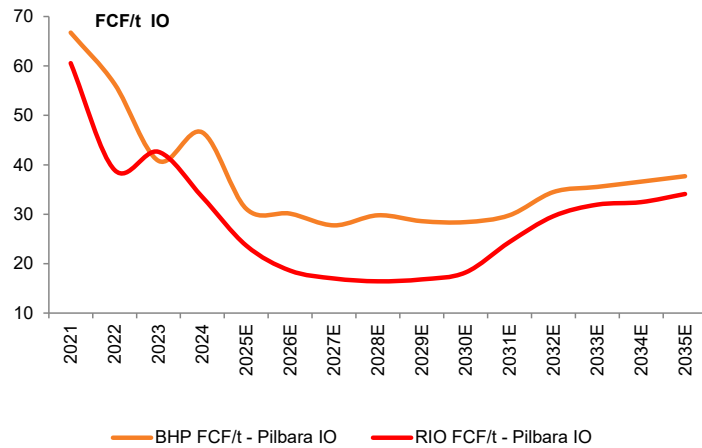
FCF yield %



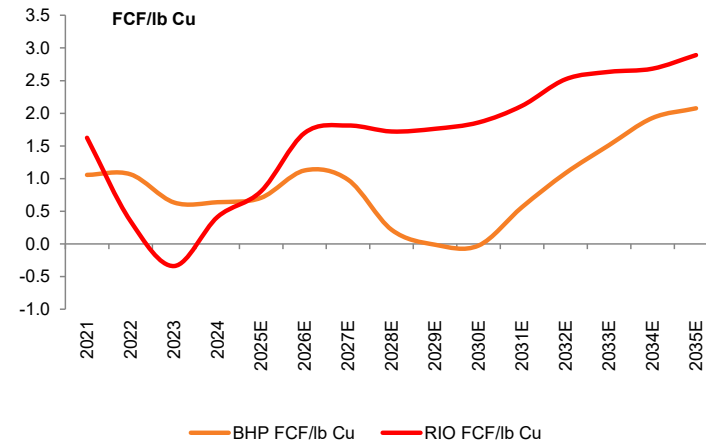
FCF/lb Cu Eq production (attributable)



FCF/ tonne Pilbara IO



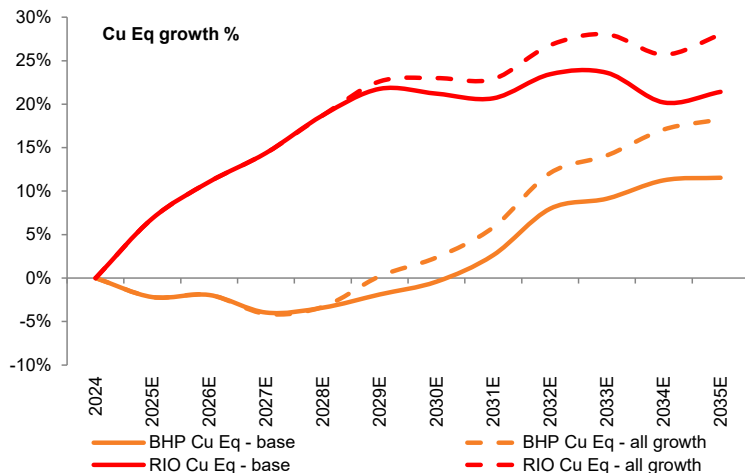
FCF/ lb copper



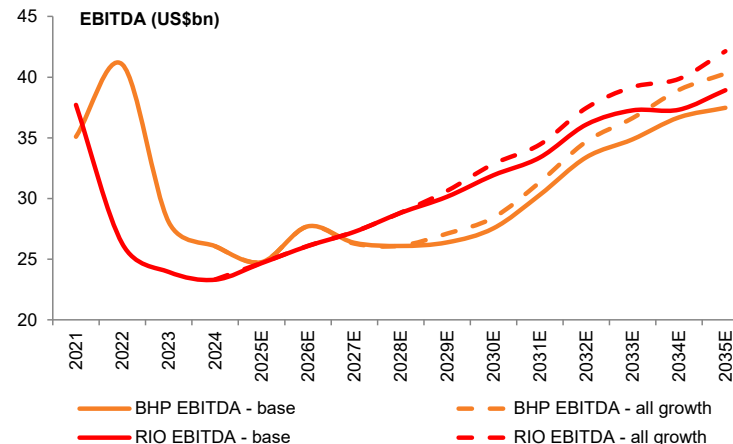
Source: Company data, Bloomberg, Platts, Goldman Sachs Global Investment Research. CuEq calculated using GS long run pricing assumptions.

Large cap miners – Cu Eq production growth, EBITDA, net debt & dividend yield

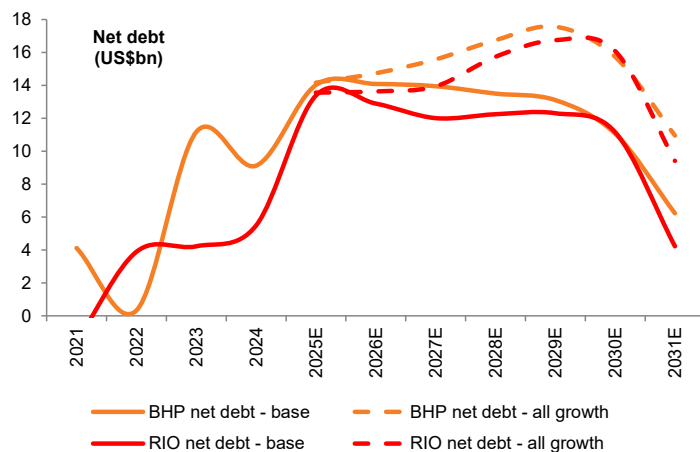
Copper equivalent production growth % (cumulative)



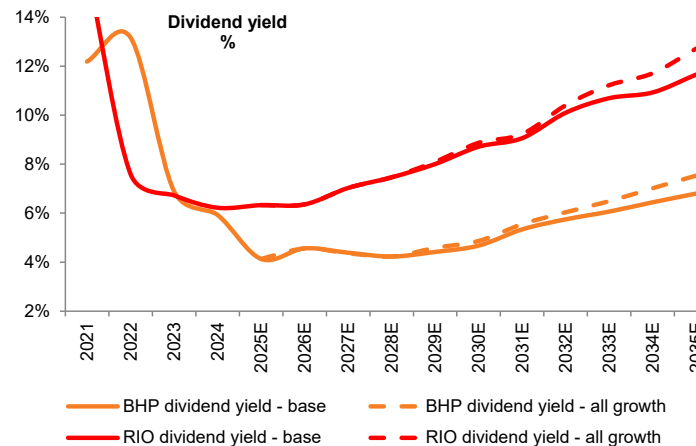
EBITDA (US\$bn)



Net debt (US\$bn)



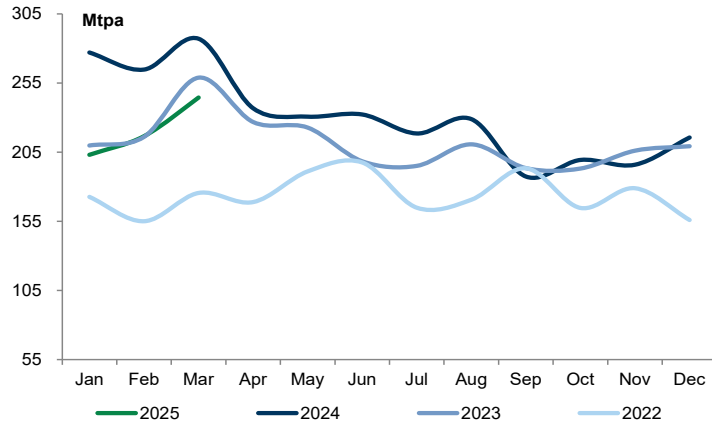
Dividend yield %



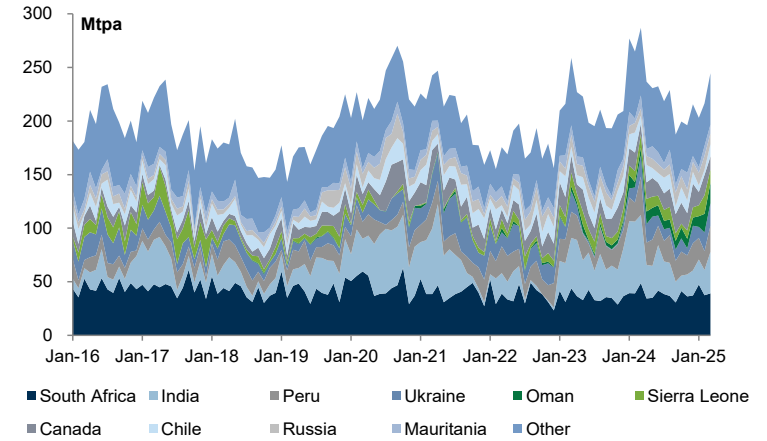
Source: Company data, Bloomberg, Platts, Goldman Sachs Global Investment Research. CuEq calculated using GS long run pricing assumptions.

Iron ore supply

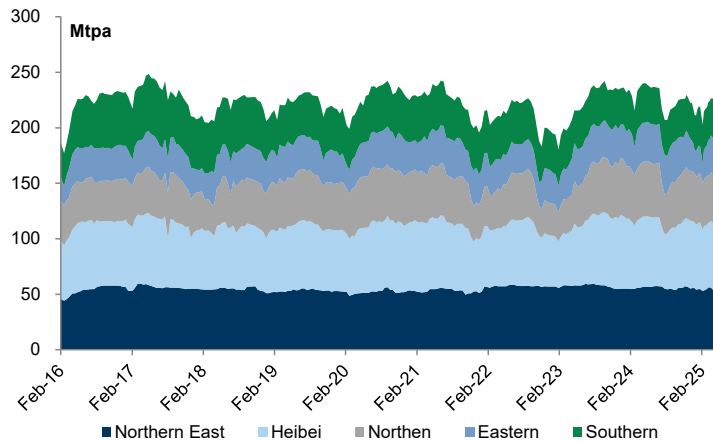
Chinese imports - ex Aus/Brazil



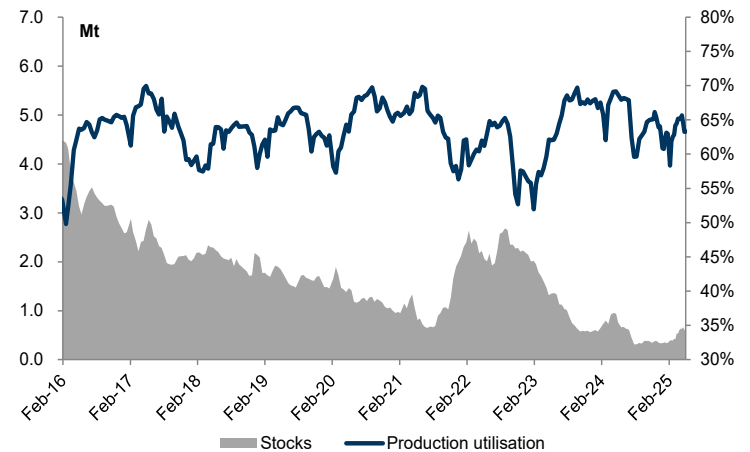
China Ex Aus/Brazil iron ore imports by Country



China domestic iron ore production by region (62% FeEq)

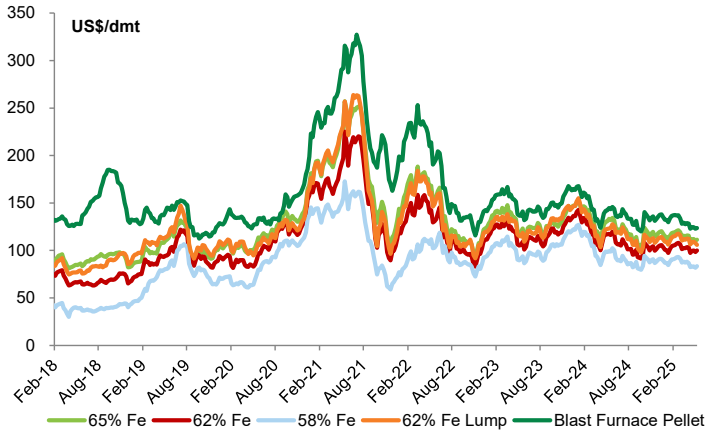


Domestic miner iron ore stocks and utilisation rates

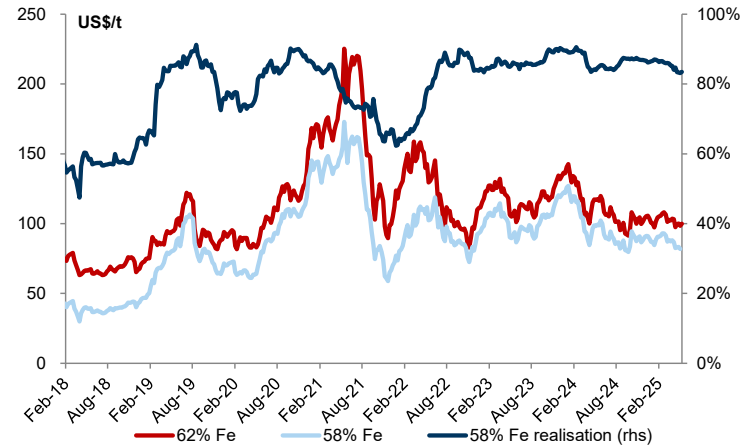


Iron ore prices

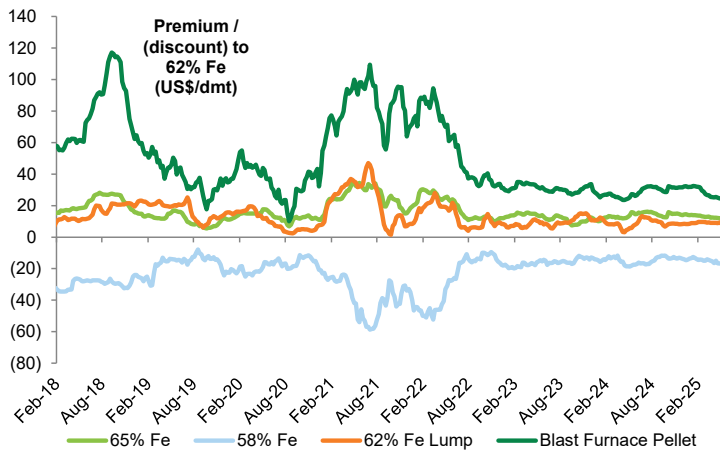
Seaborne iron ore and pellet prices (CIF China)



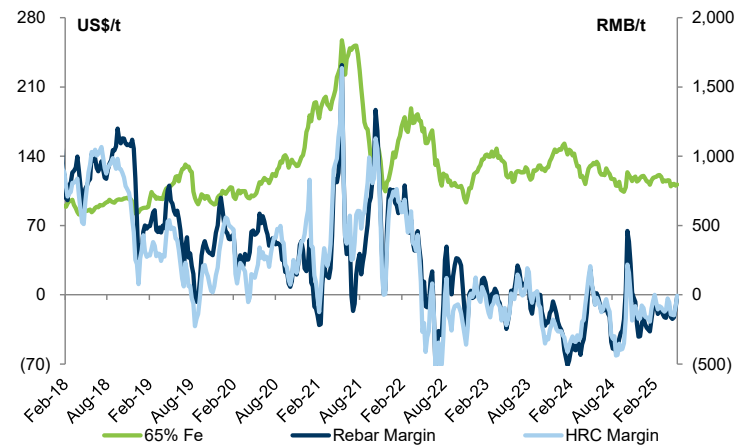
58% Fe price realisations



High / low grade iron ore premiums / vs 62% Fe

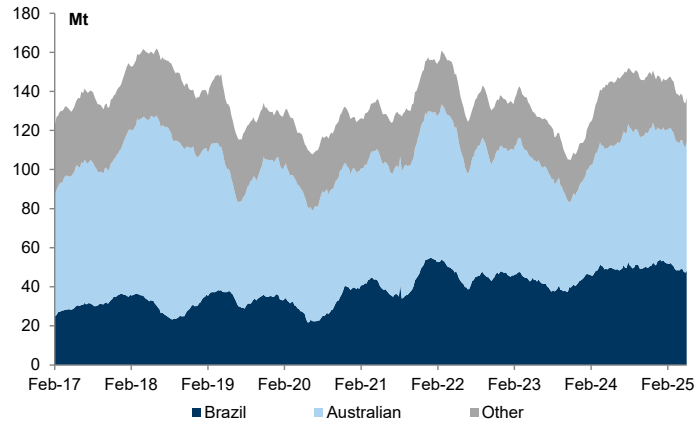


Iron ore pricing vs. Rebar and HRC Margin

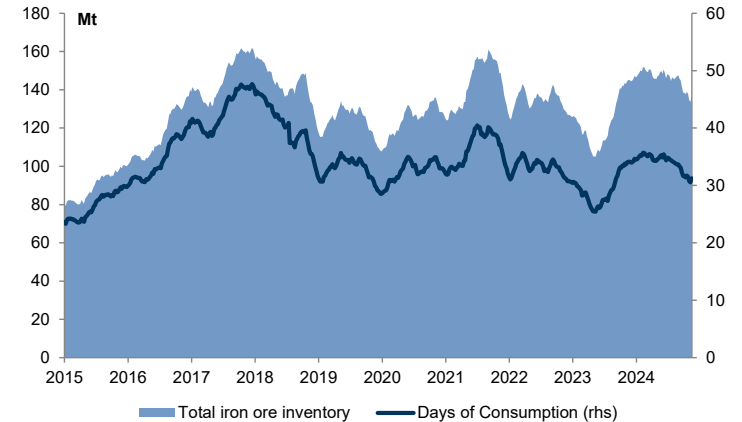


Iron ore inventories

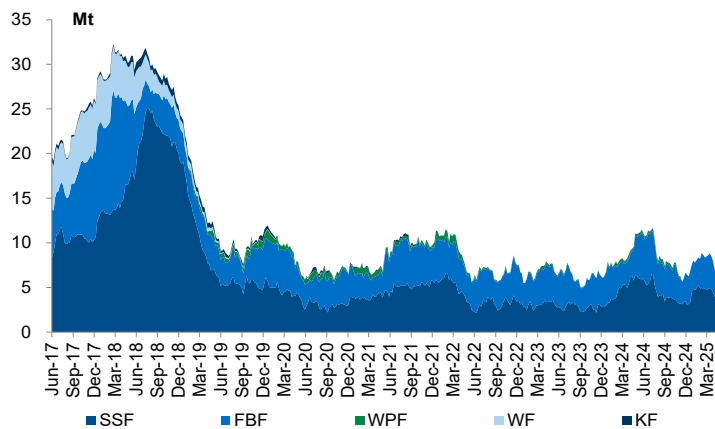
China portside iron ore stockpiles



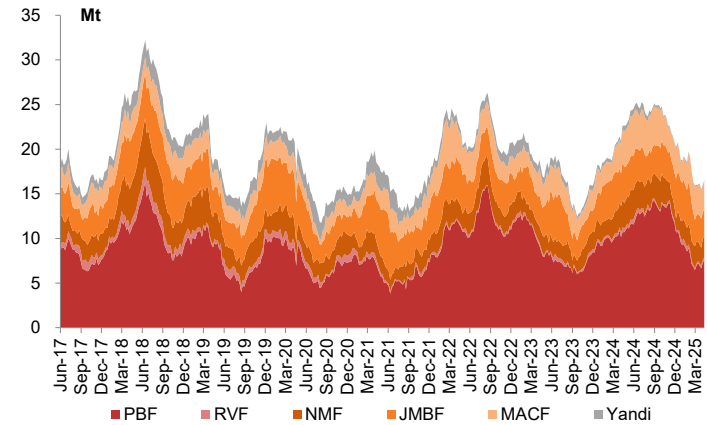
We calculate around 5 weeks of inventory



FMG branded fines stockpile

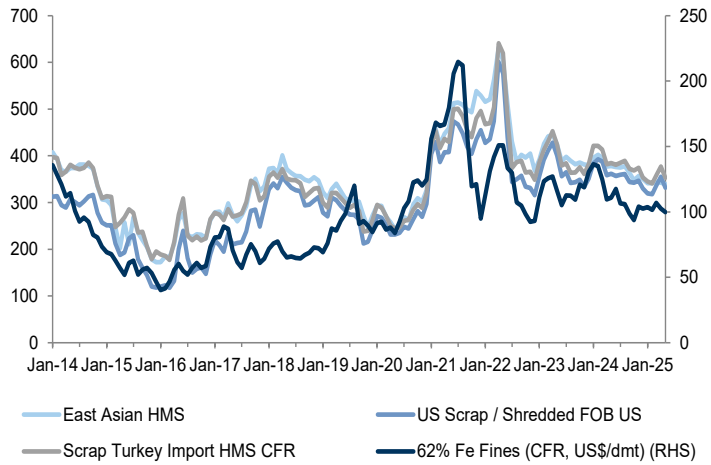


BHP & RIO branded fines stockpile

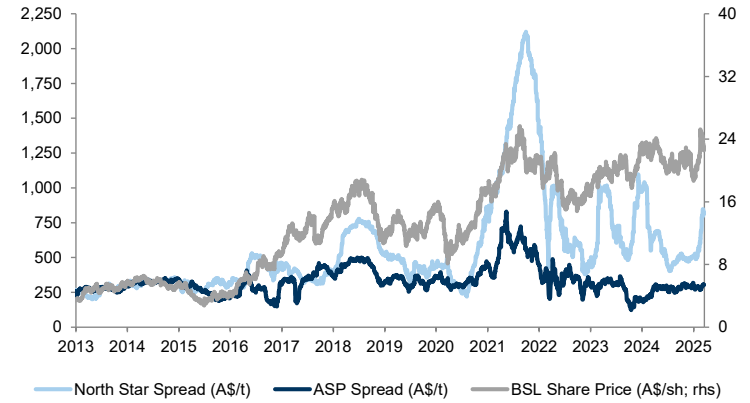


Steel prices & spreads

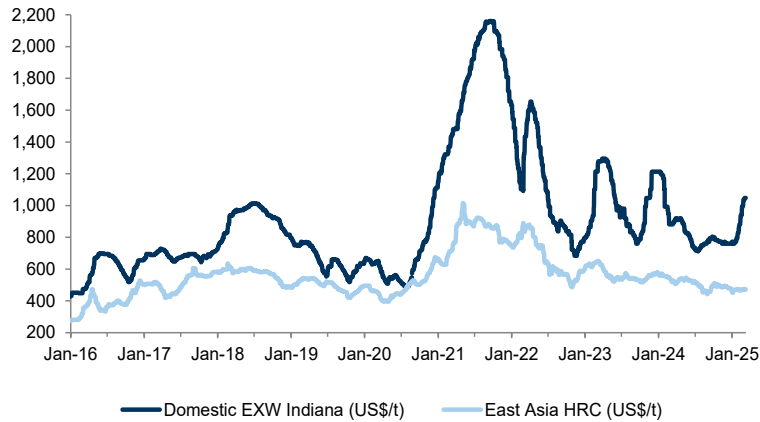
Raw input costs (US\$/t)



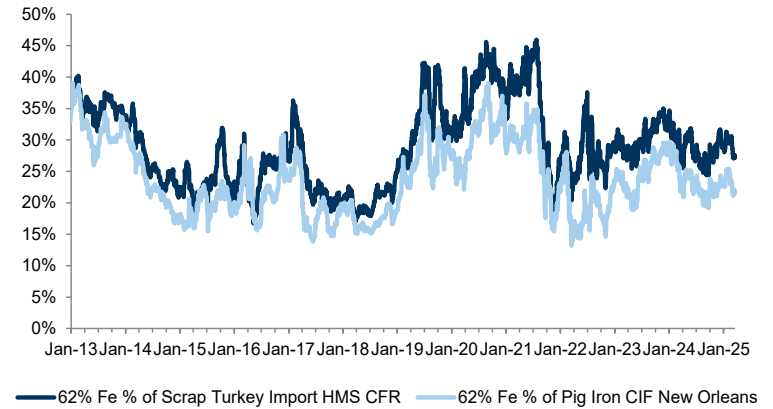
BSL Spreads (spot, A\$) vs. Share Price



HRC price (US Domestic vs East Asian)

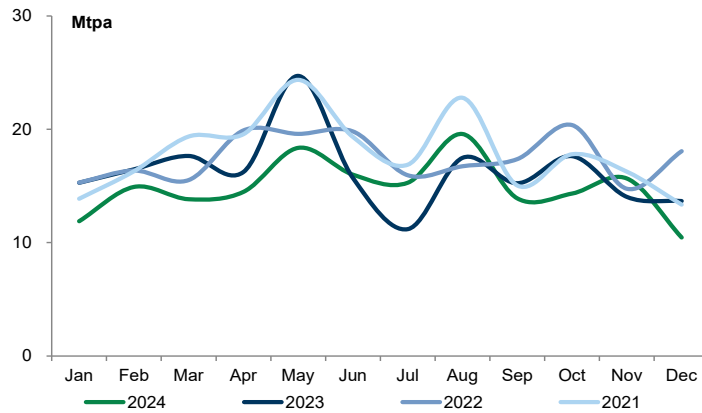


62% Fe as a % of Turkey Scrap & Pig Iron price

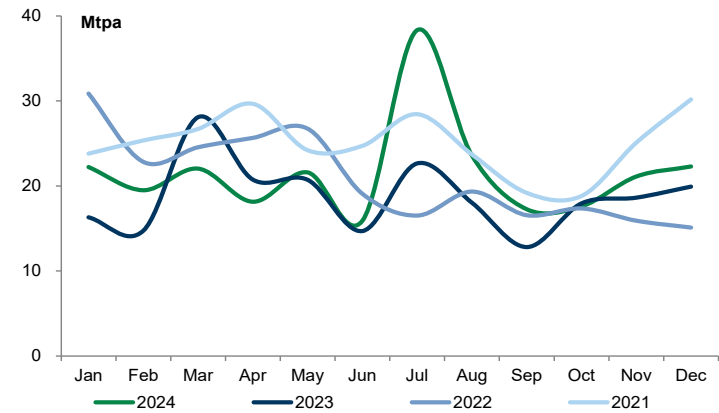


Ferrous scrap trade flow (annualised)

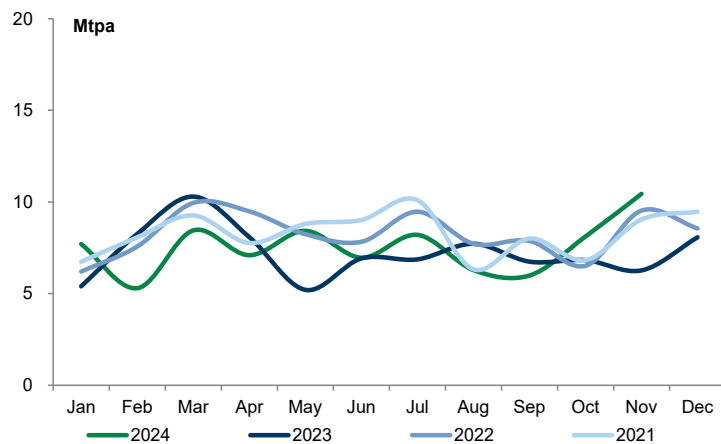
US ferrous scrap exports



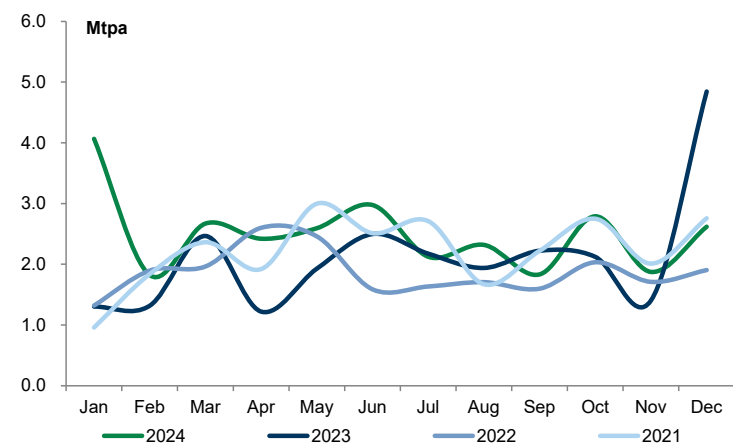
Turkey ferrous scrap imports



UK ferrous scrap exports

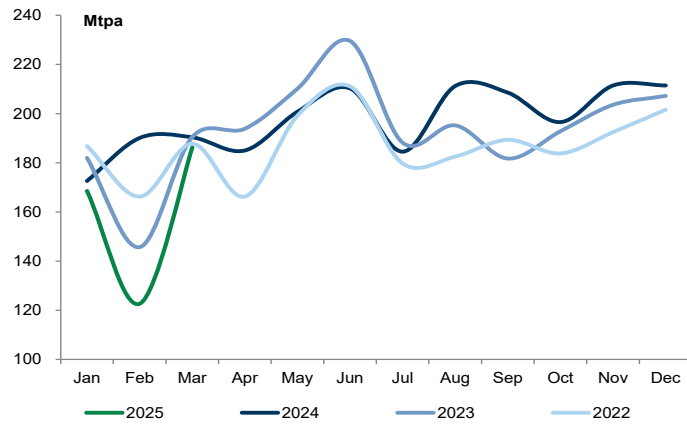


Aus ferrous scrap exports

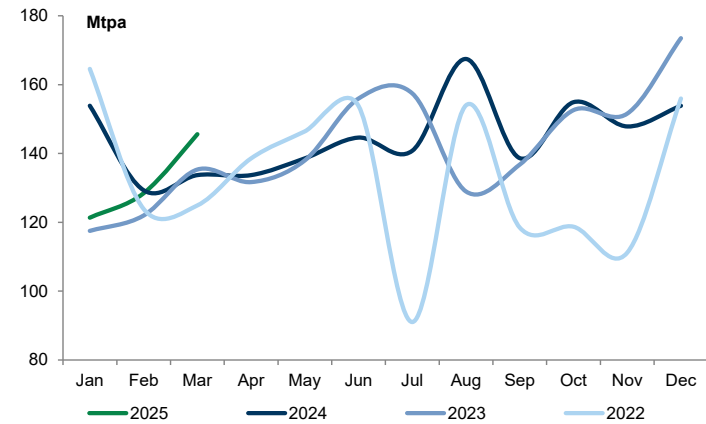


Australia (Qld & NSW) coal exports and China & India coal imports (annualised)

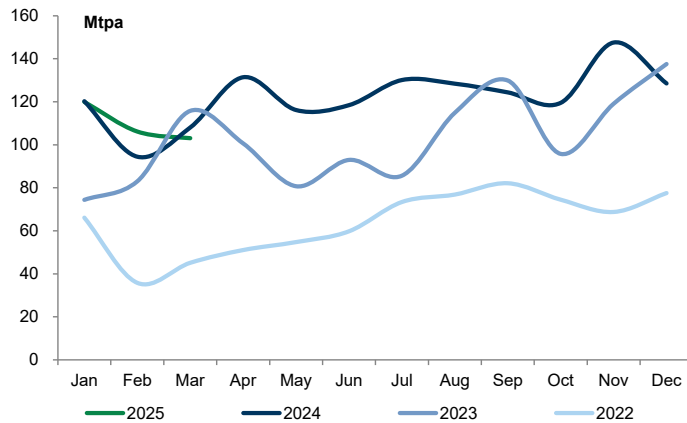
QLD coal exports



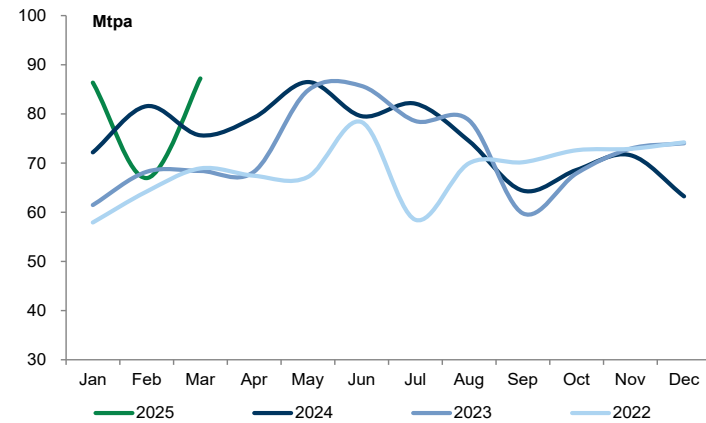
NSW coal exports



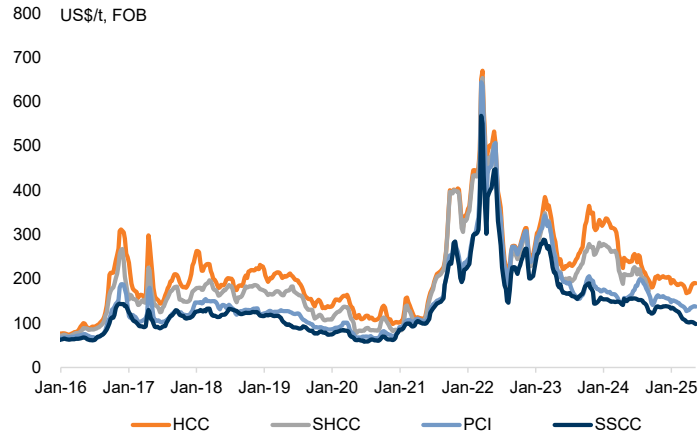
China met coal imports



India met coal imports



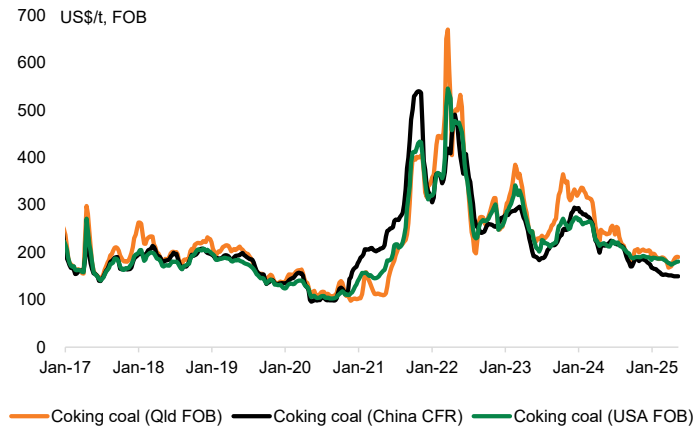
Australian HCC, PCI and Semi-Soft prices



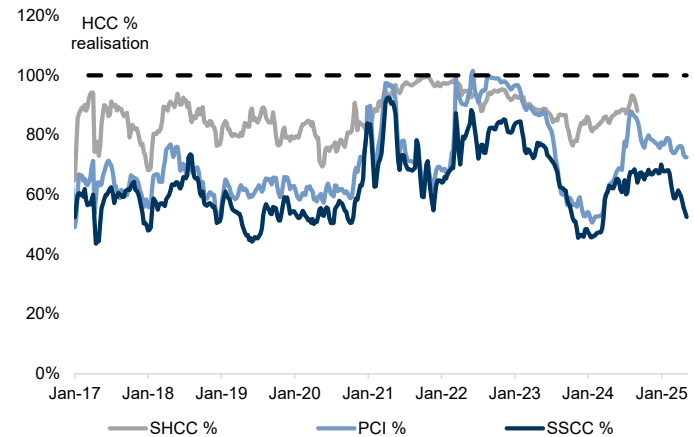
Australian thermal prices (FOB NEWC)



Australia, US and China met coal prices

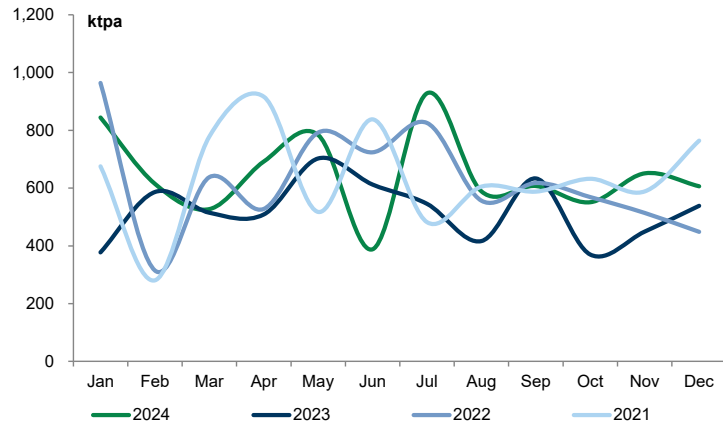


HCC price realisation

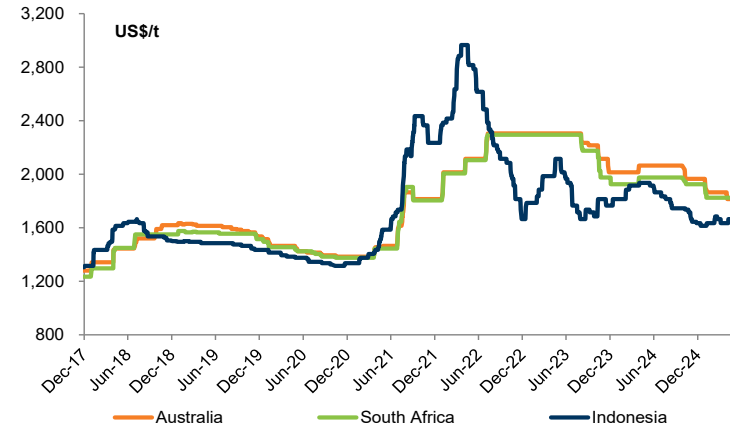


Zircon imports & pricing. Rutile & RE (NdPr) pricing

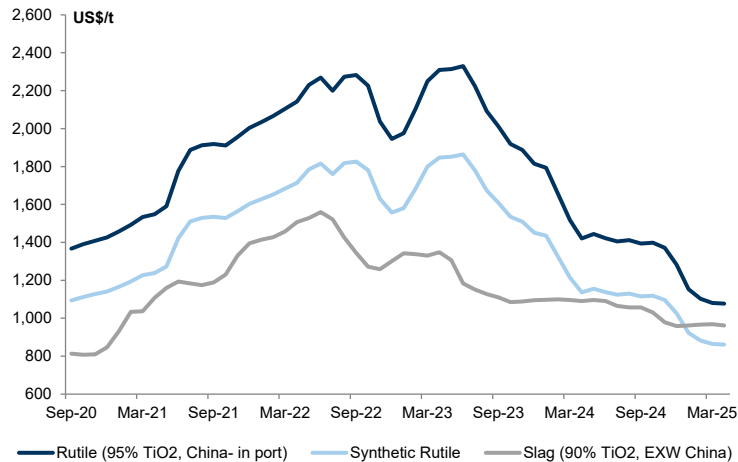
Chinese zirconium silicate imports (66% eq.)



Zircon prices – Australia, South Africa & Indonesia



Rutile Pricing

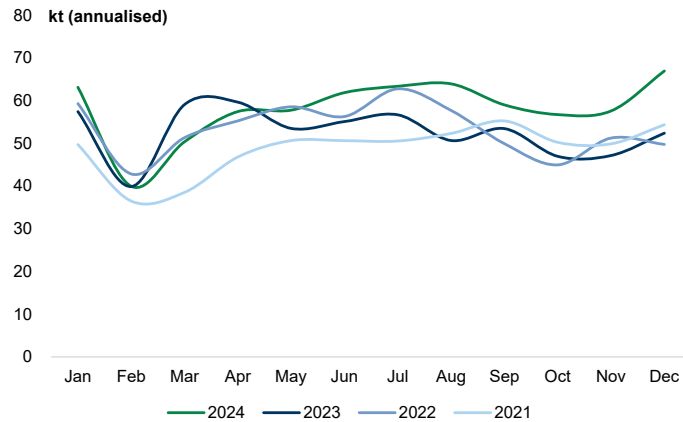


NdPr Pricing

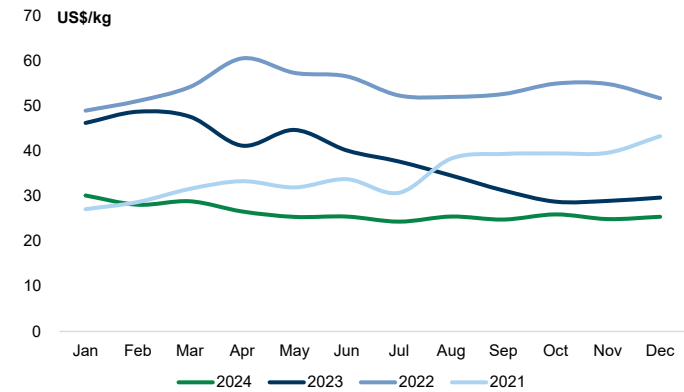


China NdFeB Exports (annualised), NdFeB export price & Rare-earth trade flows

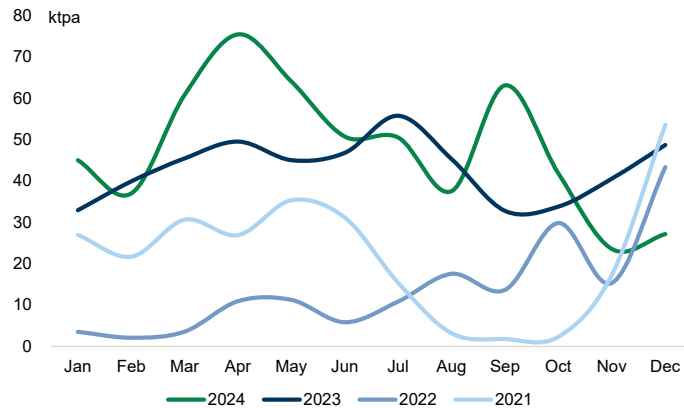
China total NdFeB exports (annualised)



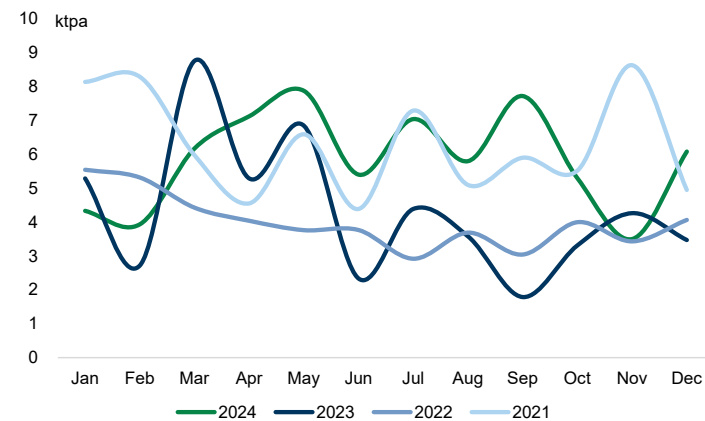
China NdFeB Alloy Magnet average export price



China imports of Rare-earth products (minerals and oxides)



China exports of Rare-earth products (minerals and oxides)



	Annual				2024				2025				2026			
	2023	2024	2025	2026	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Iron Ore Traded Demand																
China (consumption)	1,396	1,360	1,328	1,302	344	357	331	328	347	346	327	309	320	342	328	313
YoY growth	1%	-3%	-2%	-2%	-3%	-4%	-8%	5%	1%	-3%	-1%	-6%	-8%	-1%	1%	1%
China (reported imports)	1,181	1,238			310	301	308									
Ex-China	355	374	386	404	92	94	94	95	97	97	97	95	101	102	102	100
YoY growth	-6%	5%	3%	5%	6%	4%	4%	7%	5%	3%	4%	1%	5%	5%	5%	5%
India	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Asia	223	224	232	242	56	55	57	56	58	58	59	58	60	60	61	60
EU-27	70	86	87	91	22	22	21	21	22	22	21	21	23	23	22	22
North America	3	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1
Middle East	23	26	26	27	4	7	6	8	7	7	6	7	7	7	7	7
Other	37	35	37	42	9	9	9	9	9	10	9	9	10	11	11	10
Global	1,750	1,734	1,714	1,707	437	451	425	423	443	442	424	405	421	443	430	412
YoY growth	-1%	-1%	-1%	0%	-1%	-2%	-5%	5%	2%	-2%	0%	-4%	-5%	0%	1%	2%
Iron Ore Traded Supply																
Low-Cost Supply	1,557	1,597	1,613	1,658	371	408	416	405	370	403	423	418	376	419	434	429
YoY growth	4%	3%	1%	3%	5%	4%	4%	-1%	0%	-1%	1%	3%	1%	4%	3%	3%
Australia	927	938	944	965	219	245	235	239	216	244	239	246	219	252	243	250
Brazil	393	400	402	409	87	99	115	102	88	95	115	105	88	97	117	107
South Africa	61	64	66	60	16	15	17	15	18	16	16	16	15	15	15	15
Canada	58	61	63	66	13	13	18	16	13	14	20	16	14	15	20	17
Sweden	33	20	21	21	2	6	5	7	5	5	6	6	5	5	6	6
West & Central Africa	32	30	36	55	7	8	7	8	9	9	8	9	13	15	13	15
Chile	16	15	15	15	4	4	4	3	4	4	4	4	3	4	4	4
Peru	22	26	25	24	8	6	6	6	6	5	6	7	7	5	6	6
Iran	18	21	21	21	6	5	5	5	5	6	5	5	5	6	5	5
Ukraine	18	34	34	34	9	9	7	8	9	9	8	8	9	9	8	8
Russia	10	9	9	9	2	2	2	3	2	2	2	2	2	2	2	2
Flex Supply	241	182	143	114	68	69	32	13	56	54	27	7	40	47	23	4
YoY growth	-4%	-24%	-21%	-20%	-2%	-19%	-49%	-46%	-18%	-22%	-18%	-42%	-29%	-13%	-13%	-39%
India	39	31	6	-5	13	9	5	3	3	2	2	0	0	-1	-1	-3
China domestic (implied)	202	152	137	119	55	60	27	9	53	52	25	7	40	48	24	7
Global	1,798	1,780	1,757	1,772	439	477	449	418	426	456	449	425	415	466	457	434
YoY growth	2%	-1%	-1%	1%	4%	0%	-3%	-3%	-3%	-4%	0%	2%	-3%	2%	2%	2%
Iron Ore Balance																
Supply-Demand	48	46	43	65	3	27	24	-5	-17	14	26	21	-6	23	27	21
Change in China port stocks	-12	29	15	37	24	5	1	-2	-3	-8	3	24	8	1	4	24
Iron Ore Price	118	109	97	86	122	112	100	103	103	97	97	90	89	87	87	80

World Copper Market Balance

'000 tonnes	2019	2020	2021	2022	2023	2024	2025	2026
Market Balance								
Refined Production	23,573	24,095	24,567	24,763	26,015	27,061	27,164	27,575
Refined Consumption	23,683	23,413	24,892	24,894	25,954	26,712	27,063	27,695
Market balance	-110	682	-325	-131	61	349	100	-120
Reported inventories	849	1,221	650	542	455	785	885	765
y/y change	-100	372	-571	-108	-87	330	100	-120
Production								
Mine Production before disruption allowance	20,571	20,620	21,141	21,765	22,413	23,001	23,774	24,997
Disruption allowance							2.6%	5.0%
Mine Production	20,571	20,620	21,141	21,765	22,413	23,001	23,150	23,747
y/y change	-0.3%	0.2%	2.5%	2.9%	3.0%	2.6%	0.7%	2.6%
Change in Copper Concentrate Inventories	-	(300)	(100)	300	(100)	(210)	(60)	50
Scrap used in Smelting & Refining	3,537	3,710	3,875	3,864	4,085	4,411	4,517	4,628
	-2.1%	4.9%	4.4%	-0.3%	5.7%	8.0%	2.4%	2.5%
Refined Production	23,573	24,095	24,567	24,763	26,015	27,061	27,164	27,575
	-0.6%	2.2%	2.0%	0.8%	5.1%	4.0%	0.4%	1.5%
Consumption								
Total Copper Consumption	30,450	29,660	31,864	32,061	32,580	33,328	33,823	34,600
y/y change	-1%	-3%	7%	1%	1.6%	2.3%	1.5%	2.3%
Scrap used at Mills (directly melted)	6,768	6,247	6,972	7,168	6,626	6,615	6,760	6,905
y/y change	0.6%	-7.7%	11.6%	2.8%	-7.6%	-0.2%	2.2%	2.1%
Refined Copper Consumption	23,683	23,413	24,892	24,894	25,954	26,712	27,063	27,695
y/y change	-1.0%	-1.1%	6.3%	0.0%	4.3%	2.9%	1.3%	2.3%
Total Scrap Consumption	10,305	9,958	10,847	11,032	10,711	11,026	11,276	11,533
y/y change	-0.3%	-3.4%	8.9%	1.7%	-2.9%	2.9%	2.3%	2.3%
Copper price, \$/t	6020	6197	9295	8793	8,520	9,253	8,850	10,170

World Aluminium Market Balance

'000 tonnes	2019	2020	2021	2022	2023	2024	2025	2026	2027
Market balance									
Primary Production	63,286	64,751	67,402	68,838	70,697	72,770	74,006	75,423	76,356
Primary Consumption	64,636	62,824	68,962	69,226	70,202	72,623	73,426	75,062	77,078
Market balance	-1350	1928	-1560	-389	494	147	580	361	-722
Reported inventories	4,557	4,422	3,957	3,134	3,177	3,312	3,862	4,212	3,512
y/y change	-453	-135	-465	-824	43	135	550	350	-700
Production									
Primary Production	63,286	64,751	67,402	68,838	70,697	72,770	74,006	75,423	76,356
y/y change	-1.1%	2.3%	4.1%	2.1%	2.7%	2.9%	1.7%	1.9%	1.2%
China	35,352	36,745	38,524	40,080	41,584	43,069	44,200	45,000	45,200
World Ex-China	27,934	28,007	28,878	28,757	29,112	29,701	29,807	30,423	31,155
Consumption									
Total Aluminium Consumption	92,337	89,045	94,828	95,759	97,945	100,468	101,595	103,923	107,043
y/y change	0.2%	-3.6%	6.5%	1.0%	2.3%	2.6%	1.1%	2.3%	3.0%
of which									
Grid & Power Infrastructure	10,165	10,155	10,977	11,207	11,668	12,554	13,053	13,414	13,745
EVs & Renewables	1,627	2,220	3,342	5,116	7,641	9,164	10,575	12,268	13,991
Electrification share of demand	13%	14%	15%	17%	20%	22%	23%	25%	26%
China building	11,479	11,513	11,898	11,692	11,792	11,101	10,276	9,630	8,812
Traditional excl. China building	69,067	65,157	68,610	67,743	66,843	67,649	67,691	68,612	70,495
Primary Aluminium Consumption	64,636	62,824	68,962	69,226	70,202	72,623	73,426	75,062	77,078
y/y change	-0.9%	-2.8%	9.8%	0.4%	1.4%	3.4%	1.1%	2.2%	2.7%
Total Scrap Consumption	29,548	28,002	27,762	28,447	29,701	29,854	30,201	30,939	32,106
y/y change	2.7%	-5.2%	-0.9%	2.5%	4.4%	0.5%	1.2%	2.4%	3.8%
Aluminium price, \$/t	1,811	1,729	2,485	2,710	2,284	2,453	2,300	2,540	2,800

GS Zinc S/D Model

('000 tonnes)	2016	2017	2018	2019	2020	2021	2022E	2023E	2024E	2025E
Consumption - DM										
US	1077	1078	1078	1024	942	1018	1038	1028	1058	1085
% change y/y	1%	0%	0%	-5%	-8%	8%	2%	-1%	3%	3%
Japan	450	452	445	427	385	400	392	392	400	410
% change y/y	1%	0%	-2%	-4%	-10%	4%	-2%	0%	2%	3%
Western Europe	1932	1956	1920	1824	1624	1754	1710	1693	1743	1796
% change y/y	1%	1%	-2%	-5%	-11%	8%	-3%	-1%	3%	3%
Other DM	1502	1524	1486	1461	1315	1407	1378	1365	1406	1448
% change y/y	1%	1%	-3%	-2%	-10%	7%	-2%	-1%	3%	3%
Sub- DM	4961	5010	4930	4737	4265	4578	4518	4477	4607	4738
% change y/y	1%	1%	-2%	-4%	-10%	7%	-1%	-1%	3%	3%
Consumption - EM										
China	6643	6797	6800	6850	6950	7054	6772	6908	7080	7257
% change y/y	4%	2%	0%	1%	1%	2%	-4%	2%	3%	3%
India	685	703	701	673	554	637	650	653	673	703
% change y/y	8%	3%	0%	-4%	-18%	15%	2%	1%	3%	5%
Russia	185	186	187	189	185	191	194	195	199	202
% change y/y	0%	1%	1%	1%	-2%	3%	2%	1%	2%	2%
Brazil	230	230	227	225	203	233	238	239	244	249
% change y/y	2%	0%	-1%	-1%	-10%	15%	2%	1%	2%	2%
Other EM	1347	1345	1322	1306	1175	1269	1295	1301	1334	1374
% change y/y	0%	0%	-2%	-1%	-10%	8%	2%	1%	3%	3%
Sub- EM	9090	9260	9237	9243	9067	9384	9148	9295	9529	9785
% change y/y	3%	2%	0%	0%	-2%	3%	-3%	2%	3%	3%
Global Consumption	14051	14269	14166	13980	13332	13962	13666	13772	14136	14523
% change y/y	2%	2%	-1%	-1%	-5%	5%	-2%	1%	3%	3%
Ex-China consumption	7408	7472	7366	7130	6382	6908	6894	6865	7056	7266
% change y/y	1%	1%	-1%	-3%	-10%	8%	0%	0%	3%	3%
Global Production										
Mine Production	12085	12549	12855	12884	12418	12973	12848	13424	14063	14459
% change y/y	-8%	4%	2%	0%	-4%	4%	-1%	4%	5%	3%
Refined Production (incl DLA)	13900	13700	13593	13947	13734	13858	13316	13945	14615	15182
% change y/y	1%	-1%	-1%	3%	-2%	1%	-4%	5%	5%	4%
Global Balance	-151	-569	-574	-33	401	-104	-350	173	479	659

Million tonnes (Mt)	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Met coal seaborne demand													
China (Seaborne and Mongolia)	64	75	73	55	64	103	100	99	99	99	98	97	95
India	58	62	57	72	69	72	73	79	85	91	97	103	110
Japan	58	56	46	54	50	49	48	48	48	48	47	46	45
Western Europe	81	78	65	73	66	62	63	62	62	62	62	61	61
South Korea	36	36	34	36	33	34	34	35	35	36	35	35	35
Others (Brazil, Middle East, Vietnam, Mexico etc)	28	31	33	32	33	30	30	32	35	38	40	42	45
Global met coal seaborne demand	327	338	308	322	315	351	347	356	364	373	378	384	389
% growth (yoy)	2.4%	3.4%	-8.8%	4.4%	-2.1%	11.3%	-1.0%	2.4%	2.3%	2.5%	1.4%	1.5%	1.3%
Met coal seaborne supply													
Australia	181	191	169	168	162	155	160	167	177	184	186	185	185
US	49	45	37	39	40	41	35	36	36	37	37	37	37
Canada	32	32	27	27	28	31	30	31	30	29	28	28	26
Russia	33	37	36	43	57	61	62	65	65	59	61	63	69
Mozambique	8	6	5	5	5	6	4	5	3	1	2	3	5
Mongolia	21	25	18	11	19	40	40	40	41	41	39	38	36
Indonesia	3	4	4	6	7	9	13	13	11	12	11	11	13
Others (Vietnam etc)	7	7	6	6	6	5	4	4	5	7	7	8	8
Global met coal seaborne supply	333	347	302	305	324	350	347	362	368	370	371	373	378
% growth (yoy)	2.9%	4.1%	-13.0%	1.0%	6.3%	8.1%	-0.8%	4.2%	1.7%	0.5%	0.4%	0.5%	1.3%
Seaborne balance and inventory													
Balance	6	9	-6	-17	9	-1	0	6	4	-3	-7	-11	-11
Met coal price (nominal \$)													
Hard coking coal (US\$/t)	208	179	125	225	367	296	283	240	248	251	255	263	271
Semi-soft (US\$/t)	124	94	69	155	287	195	158	130	135	137	139	143	148
PCI (US\$/t)	136	111	78	163	332	219	170	160	161	162	162	167	172

GS Thermal Coal S/D Model

Imports	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
Asia	877	844	861	839	977	1,004	950	969	983
Top Asia	865	836	852	831	969	995	941	960	974
Top 5	742	692	722	702	835	854	791	800	803
Mainland China	225	232	268	229	373	400	340	352	359
India	188	161	141	166	179	181	188	195	203
Japan	143	134	140	141	127	126	120	114	108
South Korea	119	102	104	103	97	90	86	81	77
Taiwan	67	63	69	63	59	57	57	57	57
SE Asia and other S Asia	123	144	130	129	134	142	150	160	171
Malaysia	32	33	33	32	35	35	37	38	40
Philippines	30	27	31	32	36	40	41	43	45
Vietnam	33	46	24	32	36	42	46	50	55
Thailand	22	24	24	21	18	18	19	19	19
Pakistan	6	14	17	13	9	6	8	10	11
Other Asia	12	8	9	8	8	9	9	9	9
Europe and Americas	197	157	179	180	142	115	105	97	87
Europe	157	121	138	146	113	87	79	73	64
EU	105	71	88	102	68	42	35	29	20
Top EU	71	50	64	68	51	31	25	21	15
Germany	30	20	27	31	19	13	11	9	6
Netherlands	27	18	27	20	17	11	9	6	3
Poland	14	11	10	18	15	6	6	6	6
Other EU	34	21	24	34	17	11	10	8	5
Med	52	51	50	44	45	44	44	44	44
Turkey	32	35	31	32	35	35	35	36	37
Morocco	10	10	11	11	10	9	8	7	7
Americas	41	35	41	33	29	29	26	24	23
Top Americas	31	28	34	26	24	23	21	19	18
Brazil	21	18	22	19	18	18	17	17	16
Chile	10	10	11	8	6	5	4	3	2
Other Americas	10	7	7	7	6	5	5	5	5
World Main Imports	1,074	1,000	1,040	1,019	1,120	1,120	1,055	1,066	1,070
World Other Imports	20	17	16	18	20	20	20	21	22
World Total Imports	1,094	1,018	1,056	1,037	1,140	1,139	1,076	1,088	1,092
Exports	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
Indonesia and Australia	671	606	632	645	723	749	725	720	720
Indonesia	459	407	434	467	521	545	520	520	520
Australia	212	200	199	179	202	204	205	200	200
Russia and South Africa	271	256	257	233	239	207	206	200	194
Russia	191	182	191	161	165	138	138	135	133
South Africa	79	74	66	72	74	69	68	65	61
Colombia, US, and Canada	115	82	98	98	109	112	106	101	98
Colombia	76	52	56	54	56	58	56	56	56
United States	37	25	37	36	45	47	44	40	38
Canada	2	5	5	8	8	7	6	5	4
World Main Exports	1,057	944	988	977	1,071	1,068	1,037	1,021	1,012
World Other Exports	84	72	77	79	82	75	74	73	71
World Total Exports	1,142	1,016	1,065	1,055	1,153	1,143	1,111	1,093	1,083
Trade Imbalances	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
GS Deficit (raw timing)	-47	2	-9	-18	-13	-4	-36	-6	8
GS Deficit (adj timing)	-49	3	-16	-17	1	-17	-38	-7	8
Asia - (Indonesia + Australia)	205	237	228	194	254	255	225	249	263
(Indonesia + Australia)/Asia	77%	72%	73%	77%	74%	75%	76%	74%	73%
(Europe + Americas) - (CO + US + CA)	82	75	81	81	33	3	-1	-4	-11
(CO + US + CA)/(Europe + Americas)	58%	52%	55%	55%	77%	97%	101%	104%	113%

Source: Goldman Sachs Global Investment Research
Unit: Million metric ton

Li ('000 tonnes LCE)	2020	2021	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Global demand											
Consumption - batteries	200	361	562	786	989	1261	1547	1796	2152	2575	3090
% change y/y	42%	80%	56%	40%	26%	27%	23%	16%	20%	20%	20%
EV	113	247	398	557	704	923	1115	1308	1560	1912	2339
ESS	10	17	33	73	101	129	195	214	266	278	327
E-buses, two-wheeler EVs	20	33	48	64	84	102	120	146	187	235	263
Portable electronics	39	41	46	47	48	50	53	56	60	63	67
Other	18	24	37	46	51	57	64	73	79	87	95
Consumption - ex batteries	130	137	141	144	148	151	155	158	162	165	169
% change y/y	-2%	5%	3%	2%	3%	2%	2%	2%	2%	2%	2%
Ceramics	32	34	35	36	37	38	39	40	41	42	43
Glass-ceramics	27	28	29	30	31	31	32	33	34	35	36
Other	71	74	77	78	80	82	83	85	86	88	90
Restocking demand	20	72	127	60	32	88	94	90	91	91	80
% of global demand		15%	18%	6%	3%	6%	6%	5%	4%	3%	2%
Global demand (excl. restocking)	331	498	703	930	1137	1413	1702	1954	2314	2740	3259
Global demand (incl. restocking)	351	570	830	990	1169	1501	1796	2045	2404	2831	3339
% change y/y	23%	63%	46%	19%	18%	28%	20%	14%	18%	18%	18%
Global Refined Supply	375	509	743	1045	1442	2125	2524	2879	3101	3255	3324
Brine	172	228	318	372	505	704	838	974	1057	1128	1152
China	36	60	79	114	135	229	271	307	314	320	327
Ex-China	137	168	239	257	370	475	568	667	744	807	825
Spodumene	189	236	342	534	747	1081	1322	1523	1633	1689	1706
China	10	7	14	30	59	86	127	183	190	196	203
Ex-China	179	229	328	504	688	996	1195	1340	1444	1493	1503
Other (Lepidolite or Clay)	13	45	83	140	190	339	363	382	410	439	467
China	13	45	83	140	190	339	363	382	409	435	462
Ex-China	0	0	0	0	0	0	0	0	2	3	5
World output	375	509	743	1045	1442	2125	2524	2879	3101	3255	3324
% change y/y		36%	46%	41%	38%	47%	19%	14%	8%	5%	2%
Total output (adj. for disruption)	375	504	721	967	1269	1764	2095	2389	2574	2702	2759
% change y/y		35%	43%	34%	31%	39%	19%	14%	8%	5%	2%
Battery Scrap Supply	5	10	17	33	50	73	91	93	121	219	336
% change y/y		2%	2%	3%	4%	4%	4%	4%	5%	8%	12%
Global Balance	29	-56	-93	10	150	336	390	438	290	90	-244
as % of global supply	8%	-11%	-13%	1%	12%	19%	19%	18%	11%	3%	-9%

We see a structural deficit emerging over the medium term

Supply & Demand - NdPr

'000 tonnes	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Consumption																
Batteries, Alloys, Catalysts, Ceramics etc	1.7	1.8	1.9	2.0	2.0	1.8	1.9	2.3	2.2	2.3	2.3	2.4	2.4	2.4	2.5	2.5
Magnets																
EV Drivetrain	2.5	2.7	3.3	3.7	4.2	6.0	8.8	10.4	13.9	19.3	23.0	26.0	28.9	31.5	34.3	38.5
Other automobile (parts, electronics, aircon)	4.2	4.8	5.2	5.5	5.7	5.0	5.7	6.3	6.8	7.2	7.7	8.2	8.8	9.4	10.1	10.8
Renewable energy / WIND	1.4	1.3	1.5	1.5	2.0	2.9	2.9	3.5	5.1	6.6	8.4	9.6	11.5	13.4	14.2	15.3
Consumer electronics	7.5	7.0	6.4	5.7	5.4	5.0	5.0	5.0	5.0	4.9	4.9	4.9	4.9	4.8	4.8	4.8
Other (air conditioners, industrial motors, MRI)	27.1	27.7	29.4	30.4	31.6	30.3	32.8	35.2	35.7	35.7	36.7	37.8	39.0	40.1	41.4	42.6
Total Magnets	42.7	43.5	45.9	46.9	48.8	49.3	55.2	60.4	66.4	73.7	80.8	86.6	93.0	99.3	104.7	112.0
Inventory movements and other	0.6	0.7	0.7	0.7	0.7	0.7	0.7	4.7	5.8	2.3	0.9	1.0	1.0	1.1	1.2	1.3
Total demand	45.1	46.0	48.5	49.6	51.6	51.7	57.8	67.4	74.4	78.3	84.0	90.0	96.5	102.9	108.4	115.8
% growth		2%	5%	2%	4%	0%	12%	17%	10%	5%	7%	7%	7%	7%	5%	7%
Production																
Australia	3.2	4.5	5.4	5.6	5.6	4.9	5.4	5.8	6.0	7.5	10.3	11.4	15.3	18.2	18.8	19.0
China	41.3	38.5	33.4	33.6	35.8	30.8	34.4	40.5	53.0	53.8	55.1	55.7	55.0	53.7	52.4	51.1
SE Asia	0.0	0.0	0.0	2.5	3.1	5.0	4.3	3.0	5.5	5.1	4.3	4.3	4.3	4.3	4.3	4.3
North America	0.9	0.0	0.0	2.8	4.3	6.0	6.8	6.8	7.1	7.3	7.1	7.0	8.0	9.3	9.2	9.0
Africa	0.0	0.0	0.0	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Rest-of-World	0.1	0.2	0.1	0.0	0.0	0.4	0.4	0.5	0.6	0.7	1.1	1.3	1.4	1.7	1.7	1.9
Disruption allowance	0.0	0.0	0.0	0.0	0.0	0.0	-1.0	-1.1	-1.5	-1.5	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7
Mined supply	45.6	43.3	38.9	44.8	49.0	47.2	50.6	55.7	71.1	73.1	76.7	78.5	82.7	85.7	85.0	83.9
Recovered/refined supply	42.3	41.1	35.0	40.0	40.1	35.1	37.3	44.5	56.9	58.4	61.4	62.8	66.2	68.6	68.0	67.1
Recycled	7.6	8.1	9.9	12.0	14.7	17.1	19.0	20.6	22.2	24.0	25.9	28.0	30.2	32.6	35.2	38.0
Total supply	49.9	49.3	44.9	52.0	54.9	52.3	56.3	65.1	79.0	82.4	87.3	90.7	96.4	101.2	103.2	105.2
% growth		-1%	-9%	15.8%	5.4%	-5%	8%	16%	21%	4%	6%	4%	6%	5%	2%	2%
Net balance	4.8	3.3	-3.5	2.4	3.3	0.5	-1.5	-2.3	4.6	4.1	3.3	0.8	-0.1	-1.7	-5.2	-10.7

Source: Company data, WoodMac, TZMI, Goldman Sachs Global Investment Research.

We see a structural deficit over medium term

Zircon Supply & Demand

'000 tonnes		2016	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Consumption																
North America	kt	100	102	104	102	86	95	103	106	108	110	112	114	117	119	121
Europe	kt	217	219	222	211	169	182	191	172	181	185	188	192	196	200	204
China	kt	580	597	615	566	509	560	583	525	546	556	568	579	591	602	614
Japan	kt	42	42	43	42	33	35	37	35	35	35	36	37	38	38	39
Other Asia-Pacific	kt	164	166	169	164	139	146	153	146	147	150	153	156	159	162	166
Rest of World	kt	78	78	79	77	62	65	68	68	66	68	69	70	72	73	75
Total demand		1180	1205	1232	1161	999	1084	1135	1051	1082	1104	1126	1149	1172	1195	1219
% growth		2%	2%	2%	-6%	-14%	8%	5%	-7%	3%	2%	2%	2%	2%	2%	2%
Production																
Australia	kt	446	520	513	452	432	511	474	456	351	391	448	446	415	479	513
South Africa	kt	360	377	350	370	280	270	280	251	290	282	278	286	281	277	272
India	kt	30	30	22	22	20	17	17	17	17	17	17	17	17	17	17
USA	kt	60	71	64	45	40	5	5	5	10	20	20	20	20	20	20
China	kt	60	60	40	30	15	15	15	15	15	15	15	15	15	15	15
Indonesia	kt	50	50	53	65	77	77	79	75	75	75	75	75	75	75	75
Africa (Mozambique, Senegal etc)	kt	187	201	207	224	177	194	219	256	260	256	250	247	253	280	297
Rest-of-World	kt	67	67	67	55	40	33	23	23	28	33	33	33	33	33	33
Total supply		1260	1376	1317	1264	1081	1123	1111	1098	1046	1089	1136	1139	1109	1195	1241
% growth		-4%	9%	-4.2%	-4.1%	-14%	4%	-1%	-1%	-5%	4%	4%	0%	-3%	8%	4%
Net balance		80	171	86	102	82	39	-24	47	-36	-15	10	-10	-62	0	22

Source: Company data, Goldman Sachs Global Investment Research, TZMI

Ticker	Company Name	GS SUSTAIN Sector	ESG fund ownership			UN SDGs		EU Green Taxonomy		GS SUSTAIN ESG Framework				GS SUSTAIN Climate Transition	
			Relative weight	Change (Δ%)	# of ESG funds with ownership	% net revenue alignment		% eligible revenue	% aligned revenue	E&S Headline	E&S Momentum	E&S Disclosure	Gov - Global	Transpa- rency	Perform- ance
BHP.AX	BHP Group Ltd.	Mining & Metals	-86%	0%	71	15%	Aligned	0%	-	58%	8%	93%	80%	83%	76%
RIO.AX	Rio Tinto Ltd.	Mining & Metals	-10%	17%	281	35%	Aligned	10%-15%	-	42%	42%	96%	80%	84%	36%
FMG.AX	Fortescue Metals Group	Steel	83%	67%	285	0%	-	5%-10%	-	80%	79%	92%	57%	84%	78%
S32.AX	South32 Ltd.	Mining & Metals	-76%	-4%	71	48%	Aligned	35%-40%	-	15%	10%	93%	94%	60%	14%
SFR.AX	Sandfire Resources	Mining & Metals	-46%	-4%	44	80%	Aligned	0%	-	58%	42%	89%	94%	40%	99%
CRN.AX	Coronado Global Resources Inc.	Steel	-98%	2%	2	-100%	Misaligned	0%	-	72%	66%	83%	88%	40%	45%
WHC.AX	Whitehaven Coal Ltd.	Oil & Gas Producers	-99%	0%	6	-99%	Misaligned	0%	-	19%	90%	73%	70%	47%	29%
NHC.AX	New Hope Corp.	Oil & Gas Producers	-99%	1%	5	-97%	Misaligned	0%	-	32%	56%	62%	31%	47%	56%
CIA.AX	Champion Iron Ltd.	Steel	-24%	47%	43	10%	Aligned	0%	-	75%	0%	88%	57%	38%	100%
DRR.AX	Deterra Royalties Ltd.	Steel	-29%	40%	44	0%	-	0%	-	100%	59%	42%	70%	36%	67%
MIN.AX	Mineral Resources	Mining & Metals	2%	-29%	208	55%	Aligned	15%-20%	15%	14%	48%	89%	88%	44%	84%
ILU.AX	Iluka Resources	Mining & Metals	47%	29%	33	20%	Aligned	0%	-	26%	8%	74%	97%	43%	30%
LYC.AX	Lynas Rare Earths Ltd.	Mining & Metals	79%	-61%	75	100%	Aligned	0%	-	22%	42%	74%	80%	57%	87%
BSL.AX	BlueScope Steel	Steel	8%	26%	202	10%	Aligned	95%-100%	48%	85%	0%	75%	57%	84%	56%
SGM.AX	Sims Metal Management	Steel	44%	-515%	73	90%	Aligned	85%-90%	90%	100%	59%	96%	44%	74%	100%

- **ESG Framework:** Our proprietary ESG framework assesses companies' ESG performance through a number of pillars - (i) Governance, (ii) Operational Environmental & Social (including momentum), (iii) Product Alignment, (iv) Controversies, and (v) ESG Fund Ownership. [GS SUSTAIN: The PM's Guide to the ESG Revolution III](#)
- **ESG Fund Ownership:** Aggregates the fund holdings across a universe of ~3,000 ESG funds to analyze how over/ underweight stocks and sector are in ESG funds relative to their benchmark weighting. The full dataset provides absolute and momentum ESG ownership detail for well over 10,000 securities. [GS SUSTAIN: ESG Nifty 50 Series: A first look at ESG ownership changes amid macro turmoil](#)
- **UN SDG revenue alignment:** The [UN Sustainable Development Goals](#) (SDGs) have emerged as one of the most commonly used frameworks for taxonomizing impact across a broad set of sustainability challenges. Our SDG alignment tool employs granular revenue data, GS analyst inputs and other company metadata to map alignment, exposure and misalignment to ten of the SDGs we deem to be most investable.
- **EU Taxonomy revenue alignment.** We see the [EU Taxonomy](#) as one of the most seminal regulatory developments driving standardization in reporting for corporates/asset managers. Our EU Taxonomy alignment tool maps company revenues to Taxonomy-defined activities to estimate potential Taxonomy-eligible and aligned revenue based on technical screening checks where data exist, and "Do No Significant Harm" and "Minimum Social Safeguards" criteria.
- **Climate Transition Tool:** [Our GS Climate Transition Tool](#) fuses existing climate-related disclosures with GS SUSTAIN proprietary datasets to provide a lens into the (i) Transition Plan Transparency and (ii) Transition Performance of companies. The Transparency framework is an absolute assessment of companies disclosures across metrics demonstrating whether a company has a transition strategy in place (e.g., targets), how integrated the strategy is with the broader business strategy (e.g., climate-linked compensation incentives), and considers the quality of reporting (e.g., granularity of data, verification, TCFD-alignment, etc). The Transition Performance framework is a sector-relative assessment, factoring in the carbon emissions profile of a company and current and future Green Revenue and Green Capex exposures.

Disclosure Appendix

As of May 9, 2025

Disclosure Appendix

Reg AC

We, Paul Young, Chris Bulgin, Hugo Nicolaci, Isaac Brooke and Marcus Dosanjh, hereby certify that all of the views expressed in this report accurately reflect our personal views about the subject company or companies and its or their securities. We also certify that no part of our compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in this report.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

GS Factor Profile

The Goldman Sachs Factor Profile provides investment context for a stock by comparing key attributes to the market (i.e. our universe of rated stocks) and its sector peers. The four key attributes depicted are: Growth, Financial Returns, Multiple (e.g. valuation) and Integrated (a composite of Growth, Financial Returns and Multiple). Growth, Financial Returns and Multiple are calculated by using normalized ranks for specific metrics for each stock. The normalized ranks for the metrics are then averaged and converted into percentiles for the relevant attribute. The precise calculation of each metric may vary depending on the fiscal year, industry and region, but the standard approach is as follows:

Growth is based on a stock's forward-looking sales growth, EBITDA growth and EPS growth (for financial stocks, only EPS and sales growth), with a higher percentile indicating a higher growth company. **Financial Returns** is based on a stock's forward-looking ROE, ROCE and CROCI (for financial stocks, only ROE), with a higher percentile indicating a company with higher financial returns. **Multiple** is based on a stock's forward-looking P/E, P/B, price/dividend (P/D), EV/EBITDA, EV/FCF and EV/Debt Adjusted Cash Flow (DACF) (for financial stocks, only P/E, P/B and P/D), with a higher percentile indicating a stock trading at a higher multiple. The **Integrated** percentile is calculated as the average of the Growth percentile, Financial Returns percentile and (100% - Multiple percentile).

Financial Returns and Multiple use the Goldman Sachs analyst forecasts at the fiscal year-end at least three quarters in the future. Growth uses inputs for the fiscal year at least seven quarters in the future compared with the year at least three quarters in the future (on a per-share basis for all metrics).

For a more detailed description of how we calculate the GS Factor Profile, please contact your GS representative.

M&A Rank

Across our global coverage, we examine stocks using an M&A framework, considering both qualitative factors and quantitative factors (which may vary across sectors and regions) to incorporate the potential that certain companies could be acquired. We then assign a M&A rank as a means of scoring companies under our rated coverage from 1 to 3, with 1 representing high (30%-50%) probability of the company becoming an acquisition target, 2 representing medium (15%-30%) probability and 3 representing low (0%-15%) probability. For companies ranked 1 or 2, in line with our standard departmental guidelines we incorporate an M&A component into our target price. M&A rank of 3 is considered immaterial and therefore does not factor into our price target, and may or may not be discussed in research.

Quantum

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Goldman Sachs Investment Research global Equity coverage universe

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