Indian companies valuation

	Price	EV/ EBITDA (x)		P/B (x)	
	(INR)	FY23E	FY24E	FY23E	FY24E
Steel					
Tata	105	5.9	4.4	1.1	1.0
JSW	668	11.6	5.7	2.5	2.0
JSP	559	5.8	4.5	1.4	1.2
SAIL	87	7.2	4.6	0.6	0.6
Non-ferrous					
Vedanta	280	6.0	5.1	2.2	2.1
Hindalco	386	5.0	3.5	1.4	1.1
Nalco	80	5.7	3.9	1.1	1.0
Mining					
Coal	217	2.4	3.7	2.2	1.9
HZL	311	6.5	5.3	4.1	3.9
NMDC	113	4.1	3.3	1.7	1.5

Global companies valuation

Company	M.Cap	EV/EBITDA (x)		P/B (x)
	USD b	CY22/ FY23	CY23/ FY24	CY22/ FY23
Steel				
AM	23	3.9	3.5	0.4
SSAB	7	4.1	5.1	1.1
Nucor	36	6.1	7.2	1.8
POSCO	21	4.3	3.8	0.5
JFE	7	6.0	6.2	0.4
Aluminum				
Norsk Hydro	14	5.6	4.8	1.4
Alcoa	7	6.1	3.0	1.3
Zinc				
Teck	18	3.9	3.8	0.9
Korea Zinc	8	7.9	7.1	1.2
Iron ore				
Vale	71	3.6	3.8	1.7
FMG	43	4.9	5.7	2.3
Diversified				
BHP	146	5.1	5.1	3.2
Rio	109	4.8	4.7	1.9

When China sneezes, the world catches a cold

The risky 'relay loans'

- The effect of that "sneeze" ripples through the metals and mining industry globally. China accounts for more than 50% of global metal consumption with majority of demand coming from infrastructure and construction.
- Over the last two years, China has been facing headwinds in its construction sector with issues revolving around the Covid-19 pandemic and bankruptcy filed by some of the largest construction companies in the country. However, in the last two months, the construction sector seems to be improving with support from the government.
- Though the monthly capital supply has improved by 3.4% to CNY7.75t and China property markets have showed signs of improvement with new home prices across major cities increasing, total unsold inventory continues to stand at a staggering 655m. sq. mts. as on Feb '23.
- The property market in couple of cities is under massive stress and banks have restored to drastic and desperate measures such as extending the age limit of mortgage to as high as 95 years. These multi-generational 'relay loans' are expected to lift Chinese real estate market from their historic downturn.
- 'The floor space of houses newly started' is a prime indicator of the upcoming construction season in China and this has slowed down in Jan-Feb '23 to 136m sq. mts. (down 9.3% YoY).
- While sales of live-in homes in major cities such as Beijing, Shenzhen, and Shanghai have improved 80%/80%/141% MoM, respectively, in Feb '23, developers are still operating under pressure. The construction sector continues to struggle as the capital received from self-raised funds and payment from home buyers were down 18%/11%, respectively.
- One of the top Chinese property developers 'Country Garden Holdings' is expected to post losses in over 14 years due to the sluggish property market.
- However, the Chinese government is undertaking several steps to boost the demand for housing, which contributes over a fourth of China's GDP. In order to improve the general public sentiments, the government is taking several steps, such as cutting on lending rates, providing liquidity support to developers to complete stalled projects, and speeding the allotment of homes.
- PBOC recently lowered its Reserve Requirement Ratio (RRR) by 25bps to give some breather to lenders to reduce their benchmark lending rates and drive the disbursal of loans and lower mortgage rates.
- The proposed restructuring agreement by Evergrande with a group of major creditors is a positive sign in the struggling Chinese real estate sector.
- Chinese metal sentiments have started to improve with BF capacity utilization rising to 89% (5m high), Chinese shipbuilders receiving new orders totaling 9.25DWT (up 63.6% YoY), and export prices being stable WoW at USD695/t.
- However, considering multiple macroeconomic events, we believe steel prices would be range bound till end of March.

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The enthusiasm continues to dip in India

- The price of long steel has been continuously sliding since the start of Feb '23 and has corrected INR800/t WoW to INR60,800/t. The demand for long products from the domestic market has seen a decline over the last few weeks with the conclusion of project stocking.
- Similarly flats too have corrected INR700/t to INR60,000/t but HRC prices continue to be above the Feb '23 levels. Though the prices in domestic markets have corrected, flat steel products command better pricing in export markets. Flat steel prices, which were under hibernation since mid Feb '23, were up USD8/t WoW to USD716/t. Better offers from Europe drove the prices in flat products.
- The premium commanded by long steel products over flat steel products have eroded over the last one month from INR3,400/t to INR800/t.
- Though flat steel/long steel prices have corrected by 1.2%/1.3% WoW respectively, key input raw material such as coking coal has corrected 6.1% WoW and 10.3% MoM to USD357/t, which will help steel and aluminum companies protect their spreads.

No price revision seen in NMDC

- Surprisingly, for the longest time since Apr'22, NMDC has not declared any price revision in almost 50 days.
- NMDC price movement is correlated to multiple indicators such as Odisha iron ore index, domestic pellet prices, global iron ore prices, and domestic sponge iron.
- All the above indicators are actively trading, for instance, Odisha iron ore is currently trading at INR5,700/t (up 6% MoM) and pellet is trading at INR9,500/t (down 2% MoM).
- International iron ore prices had a robust head start in CY23, but thereafter, it has experienced a rollercoaster ride. Iron ore in the international market is currently range bound with Chinese regulators warning companies against hoarding of iron ore. Iron ore inventories across 35 ports in China have declined for three consecutive weeks.
- BF capacity utilization improving to five months high, coupled with low inventory levels and increased steel demand before the peak construction season in China, will drive the demand for iron ore.
- However, one must closely monitor the price revision from NMDC.

Cyclone Freddy and worsening logistic bottlenecks hamper global balance of coal and iron ore

- African nations, such as Mozambique and South Africa, are one of the key exporters of coal and iron ore across the globe.
- Mozambique is currently struggling with Cyclone Freddy, which is termed as the longest and the most energetic storm to be ever recorded. Export of coal has been adversely impacted and Indian companies such as JSP, which operates coal mines at Mozambique has paused its exports post flooding.
- Similarly, shortages of locomotives (including locomotive parts), increased cases of vandalism, and logistic bottlenecks from coal mines to Richards Bay Coal Terminal have added to the vows in international markets.

Non – ferrous metals rally

- Bailouts of Credit Suisse, reduction in RRR by PBOC, improvement in non-farm payroll in USA and liquidity infusion in USA have improved sentiments for nonferrous metals. Zinc, lead, and nickel improved 1%/0.2%/1% WoW, respectively.
- However, aluminum continued to drag down and has been one of the worst performing non-ferrous over the last one year (down 34% YoY). If aluminum continues to slide down, it will adversely impact the margins of non-integrated aluminum companies.
- With tariffs/ban on Russian aluminum by USA/Canada, we believe HNDL will be the biggest beneficiary. HNDL is one of the lowest costs producing company with strong presence in North America.
- Gold was benefitted the most. Gold improved by 6.5% WoW to USD2,000/oz.
- However, considering lower confidence in the financial sector and multiple macro-economic scenario unfolding at the same time, we believe, non-ferrous would be range bound till end of Mar '23.

Commodities and forex tracker

		UoM	Spot	WoW (%)	MoM (%)
Steel	India HRC (ex-Mum)	INR/t	60,000	-1	3
	India TMT Prime (ex-Mum)	INR/t	60,800	-1	-3
	India TMT Secondary (ex-Mum)	INR/t	56,100	-1	-1
	Korea HRC - FoB	USD/t	685	0	5
	China HRC Dom.	USD/t	639	-3	2
	China HRC - FoB	USD/t	695	0	5
Coking coal	India Prem HCC CNF	USD/t	357	-6	-10
	India 64 Mid Vols CNF	USD/t	320	-7	-12
	India Low Vols PCI CNF	USD/t	319	-7	-11
Metalics	Iron Ore Fines (Odisha Index) Fe 62%	INR/t	5,700	0	6
	Iron Ore Fines (China - CNF) Fe 62%	USD/t	132	2	6
	Europe Scrap HMS 1&2(80:20)	USD/t	455	-5	3
	C-DRI (ex-Raipur)	INR/t	32,200	-3	-3
Thermal Coal	RB1 (6000 NAR) SA FoB	USD/t	151	2	-4
	RB2 (5500 NAR), SA FoB	USD/t	123	-7	-5
	Indonesia (4200 GAR) Futures	USD/t	75	-2	5
Non-Ferrous	Copper	USD/t	8,621	0	-3
	Aluminum	USD/t	2,232	0	-4
	Zinc	USD/t	2,933	1	-3
	Lead	USD/t	2,068	0	1
	Nickel	USD/t	23,147	1	-9
	Alumina	USD/t	366	0	0
	Ali UBC Scrap	USD/t	1,631	-1	-4
	Ali UBC Scrap Spread	USD/t	601	3	-6
FX	INR:USD	x	82.5	1	0
	USD:EUR	"	1.07	-1	0
	USD:GBP	"	1.22	0	1
	CNY:USD	"	6.89	1	0
	JPY:USD	"	132	-1	-1

CONTENTS

Source: SteelMint, JPC, Bloomberg, Company and MOFSL estimates

FERROUS: India – prices

Exhibit 1: HRC - Mumbai (INR/t)

Exhibit 2: TMT Primary – Mumbai (INR/t)

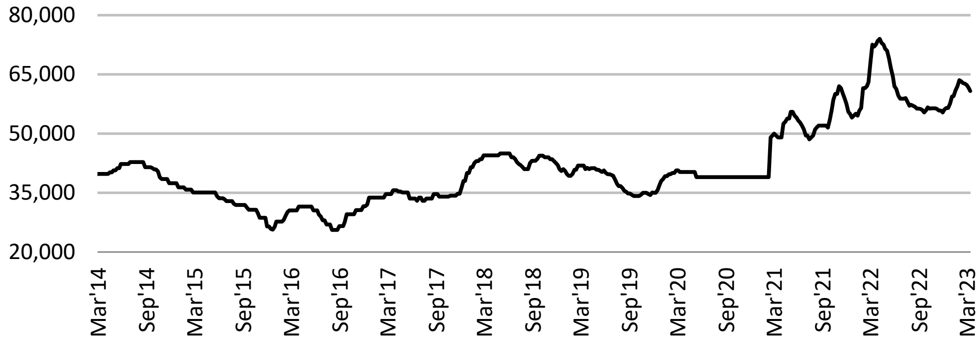


Exhibit 3: C-DRI (sponge iron), ExW-Raipur (INR/t)

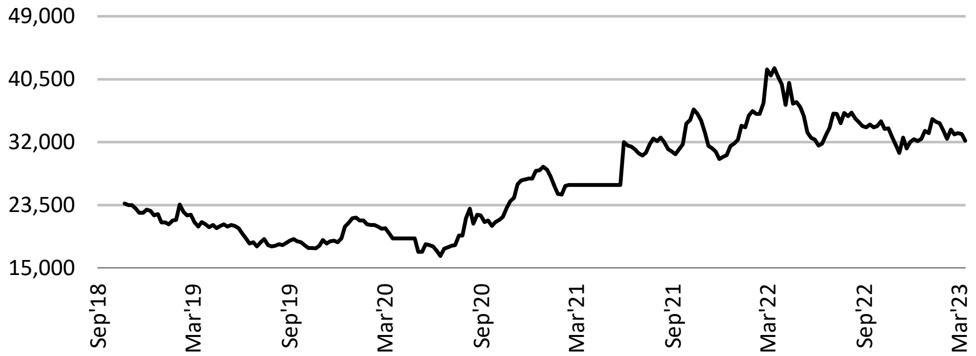


Exhibit 4: Domestic Pellet – Barbil – 63% Fe (INR/t)

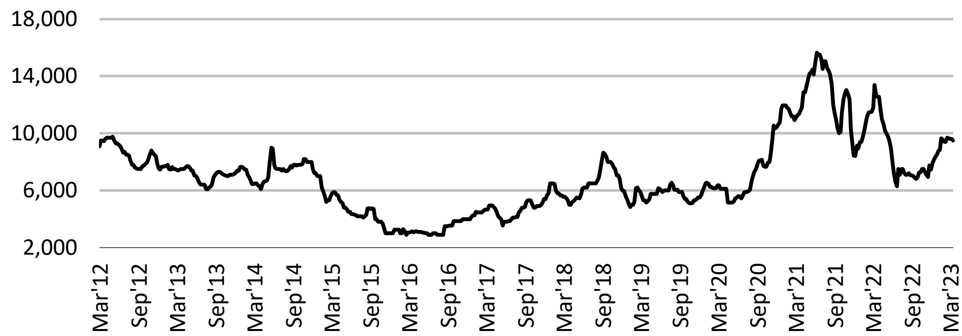


Exhibit 5: Iron Ore Fines Odisha – Fe 62% (INR/t)

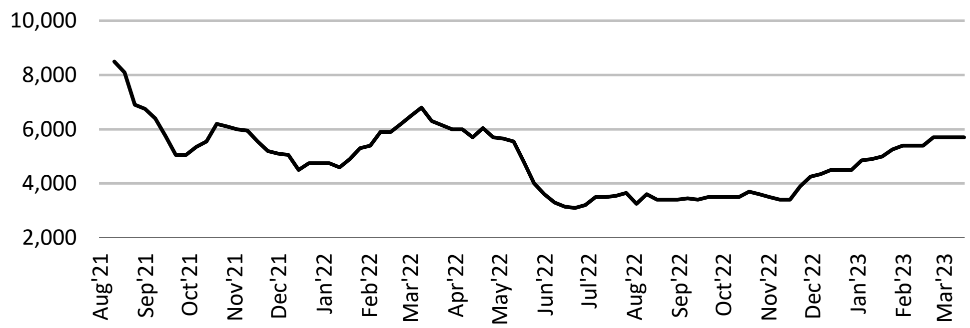


Exhibit 6: NMDC Fines – Fe 64% (INR/t)

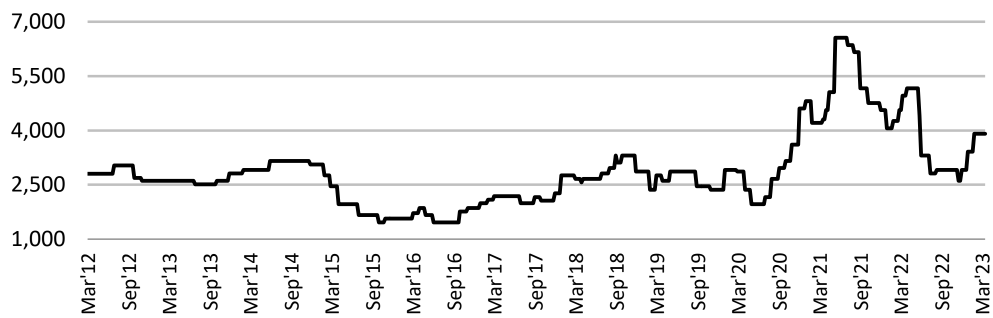
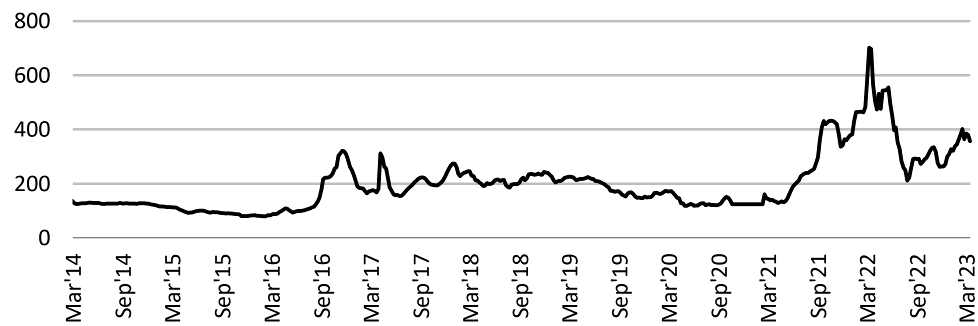
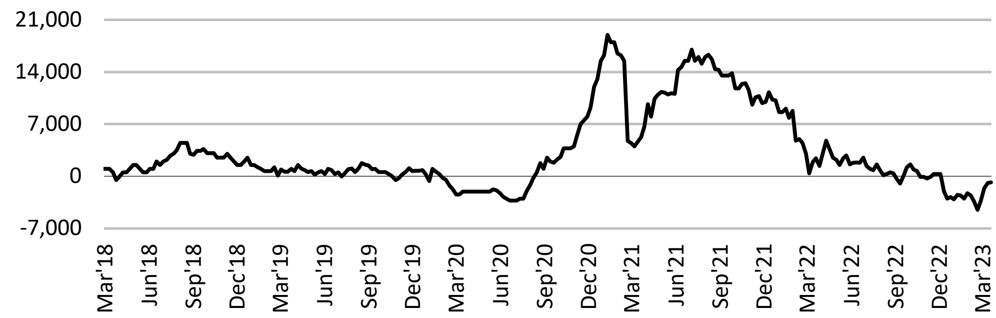


Exhibit 7: Premium HCC CNF Paradip (USD/t)



Domestic spreads

Exhibit 8: Prime HRC v/s primary TMT (INR/t)



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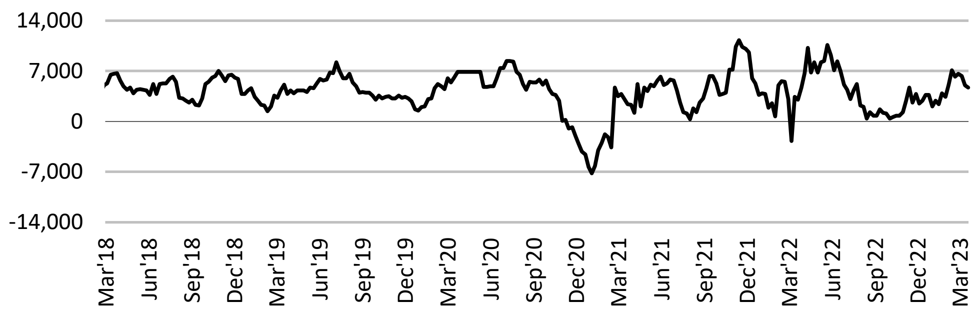


Exhibit 10: Secondary TMT v/s domestic scrap (INR/t)

Exhibit 11: HRC v/s CRC (INR/t)

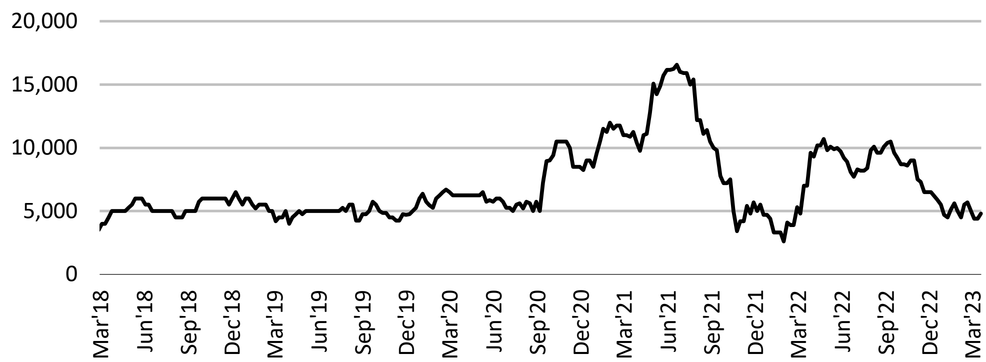


Exhibit 12: HRC – galvanized (INR/t)

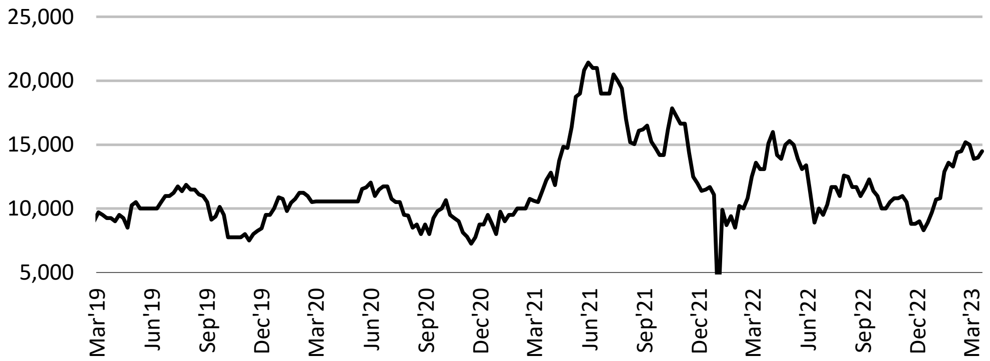
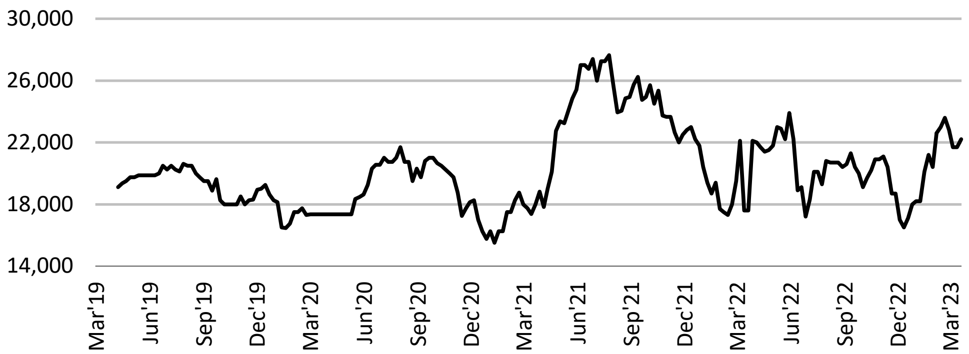


Exhibit 13: HRC – color coated (INR/t)



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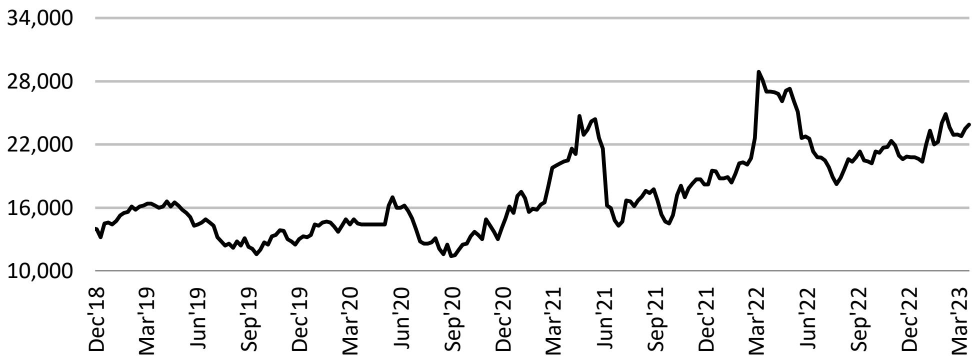


Exhibit 16: DRI v/s pellet (INR/t)

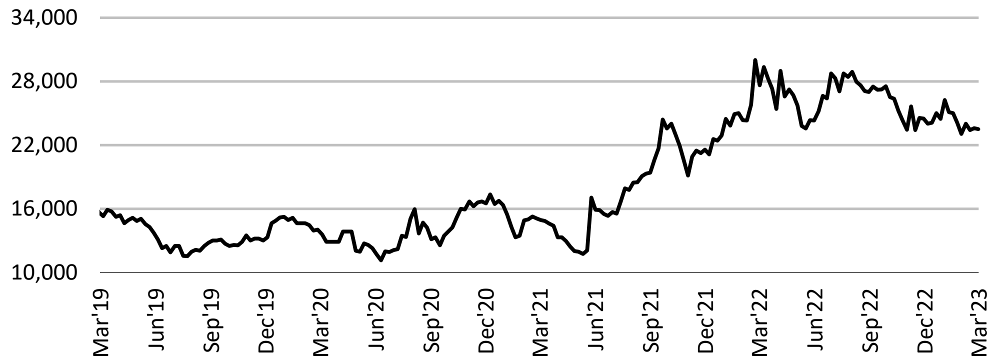
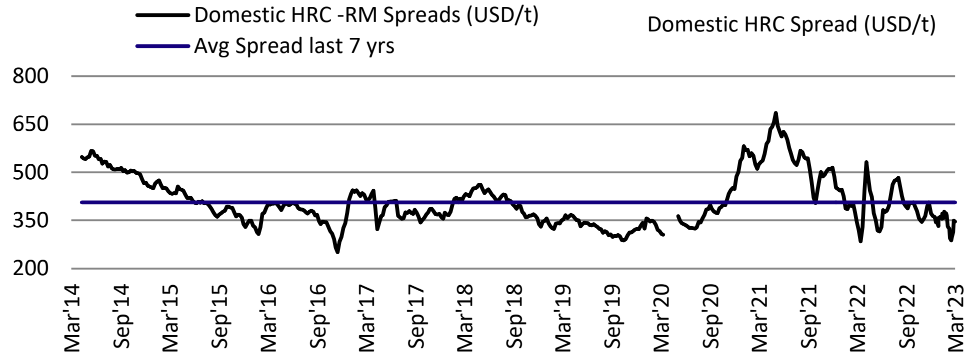
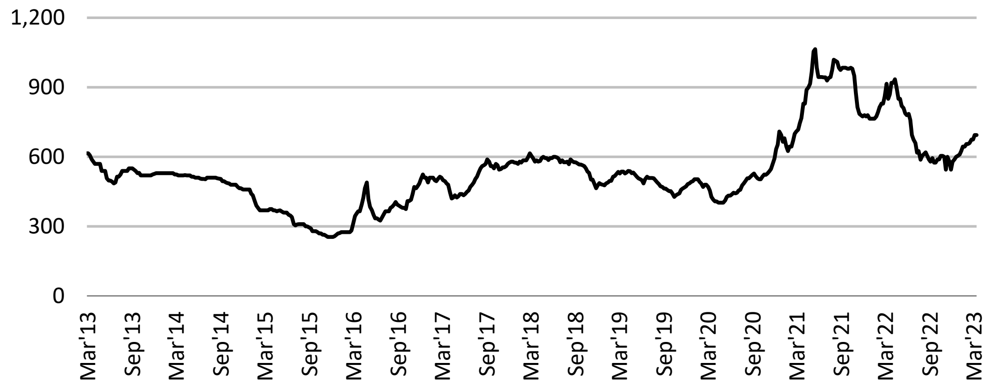


Exhibit 17: India HRC spread (1.6x IO and 0.85x HCC; 1.5-month lag in HCC)



China prices/spreads

Exhibit 18: China HRC FoB (USD/t)



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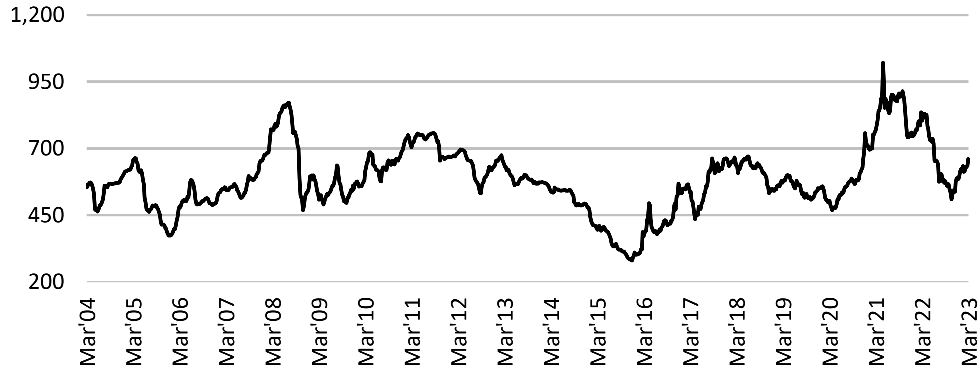


Exhibit 20: China domestic TMT (USD/t)

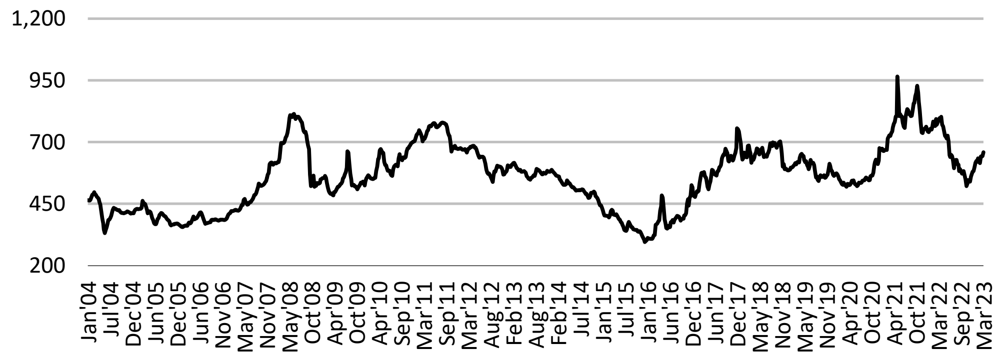


Exhibit 21: China domestic wire rod (USD/t)

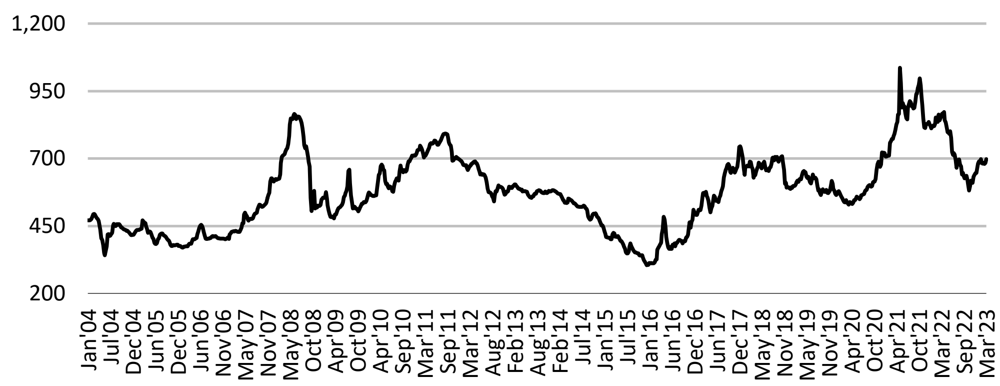
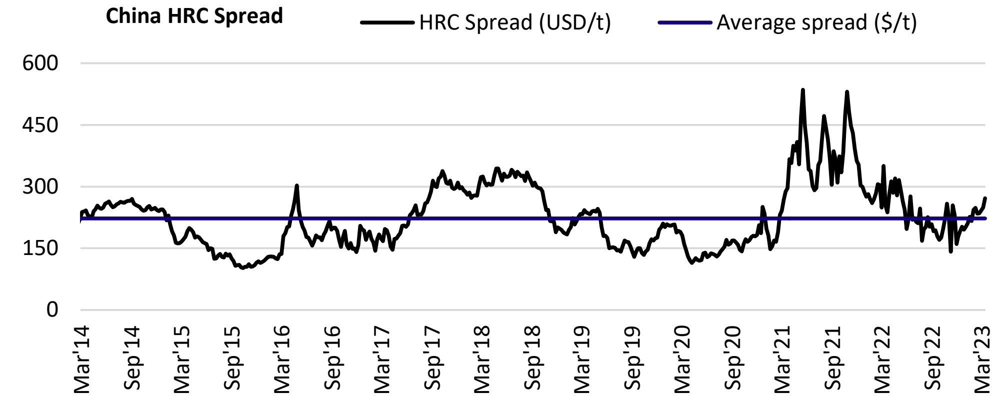


Exhibit 22: China HRC spread (1.6x IO and 0.85x HCC)

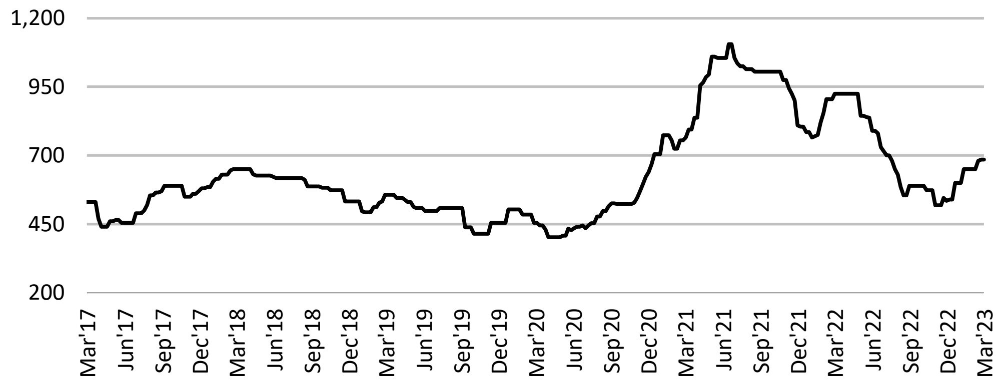


Global prices

Exhibit 23: Northern Europe HRC domestic (USD/t)

Exhibit 24: North America HRC domestic (USD/short ton)

Exhibit 25: Korea HRC FOB (USD/t)



Inventories

Exhibit 26: India steel inventory (mt)

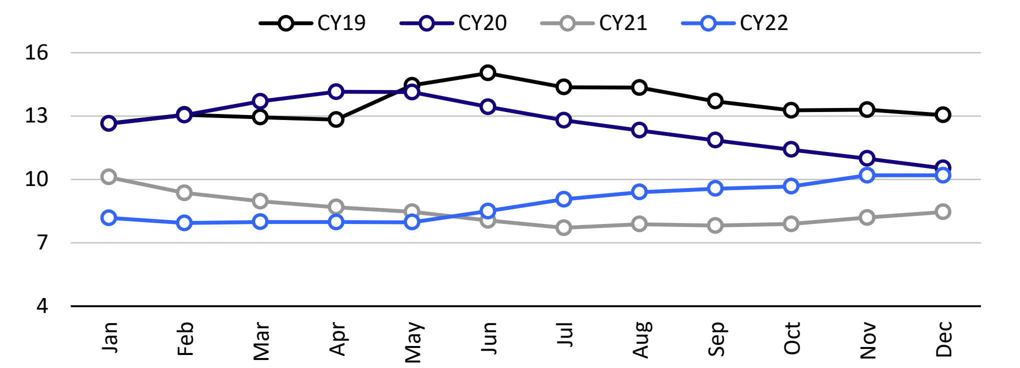


Exhibit 27: China wire rod and TMT inventory (mt)

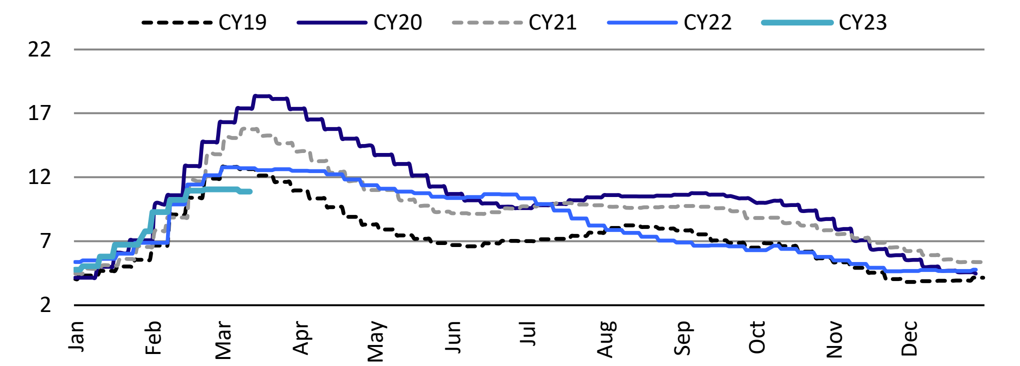
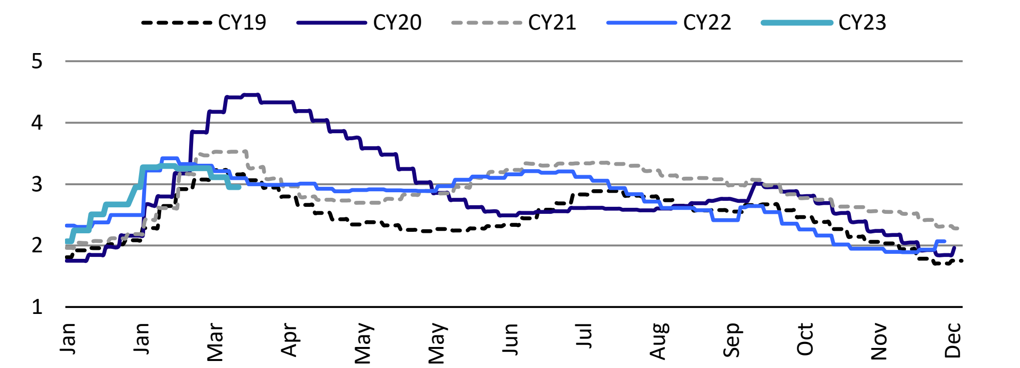
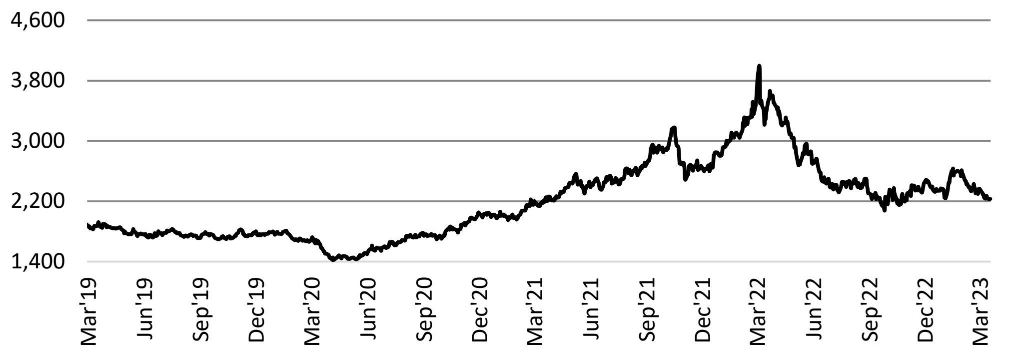


Exhibit 28: China HRC inventory (mt)



NON-FERROUS: Aluminum

Exhibit 29: LME spot (USD/t)



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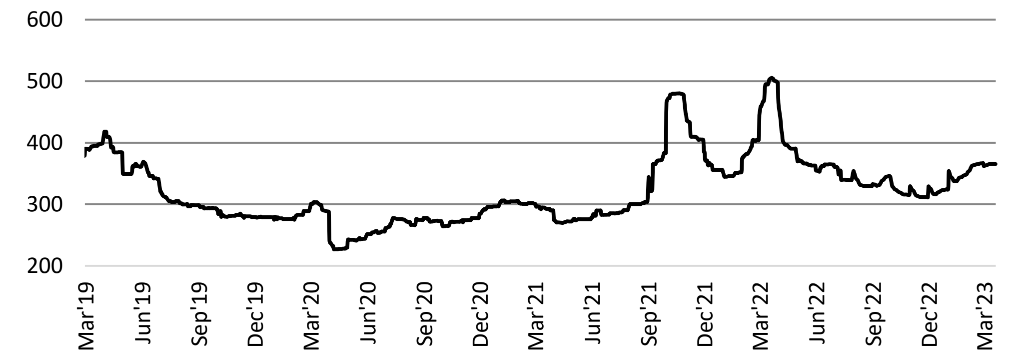


Exhibit 31: Caustic soda (USD/t)

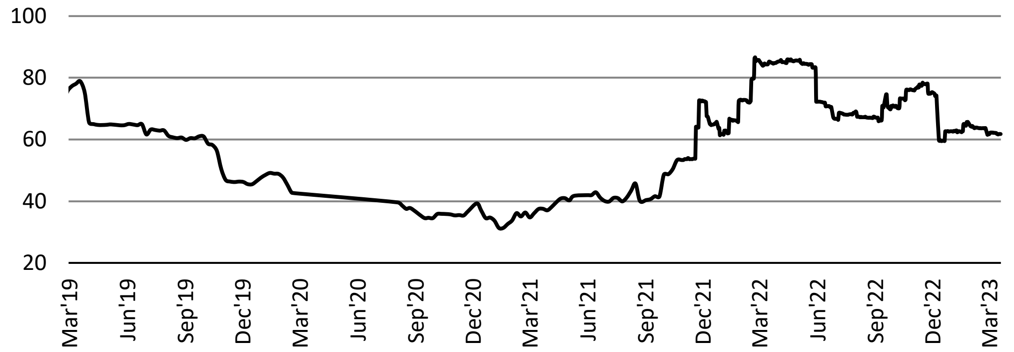


Exhibit 32: Total inventory (LME + SHFE, mt)

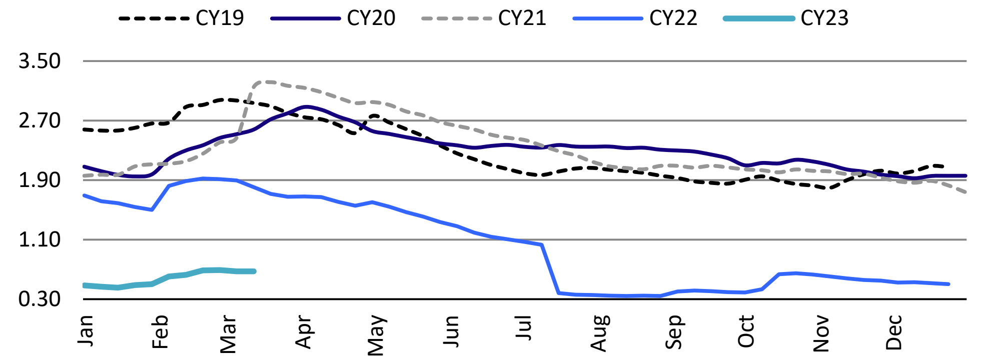


Exhibit 33: Ingot premiums (mt)

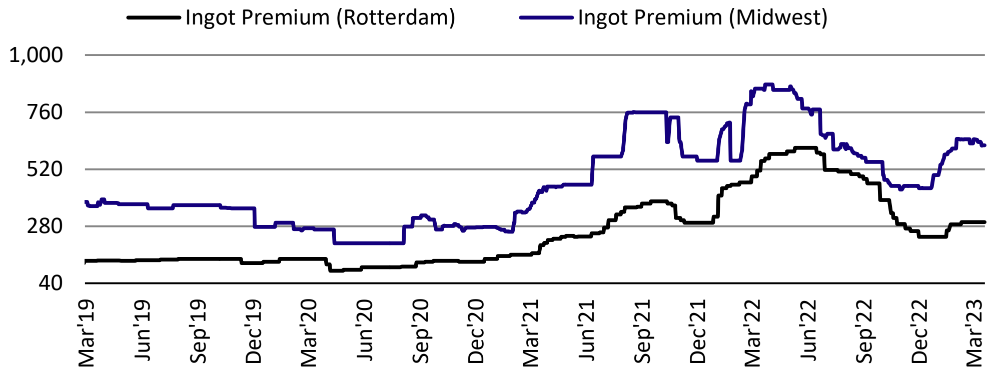


Exhibit 34: Aluminum scrap spread (USD/t)

Copper

Exhibit 35: LME spot (USD/t)

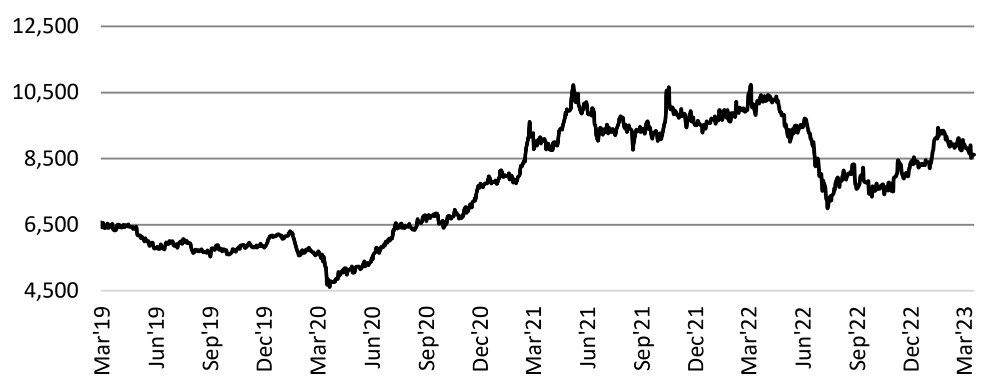
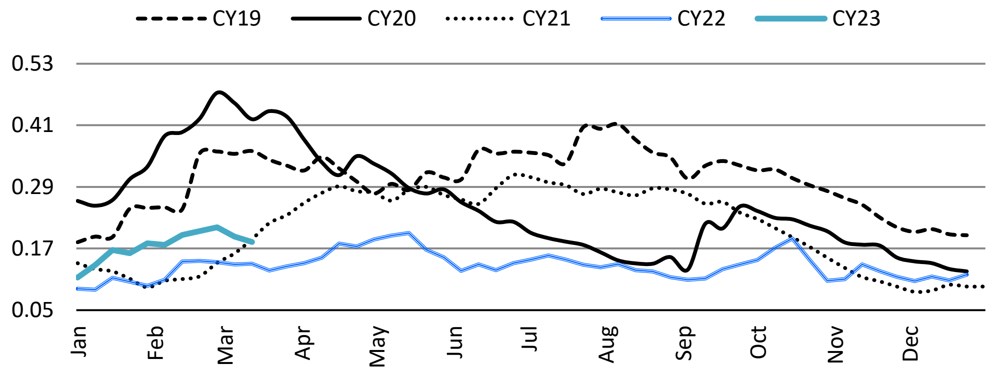


Exhibit 36: Total inventory (LME+SHFE, mt)



Zinc

Exhibit 37: LME spot (USD/t)

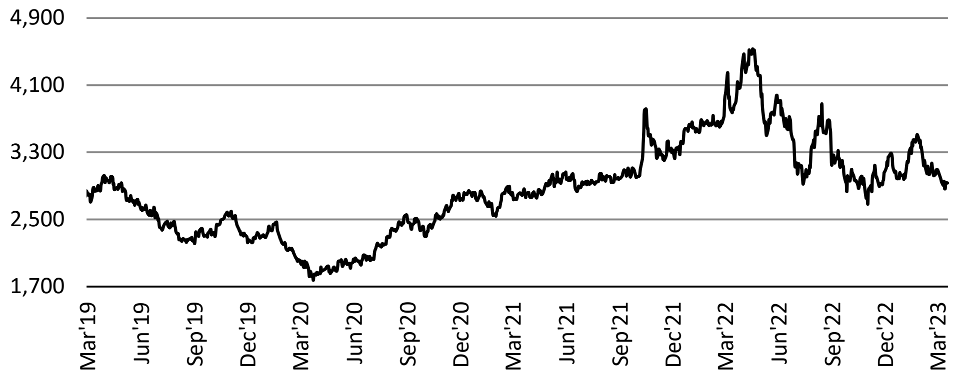
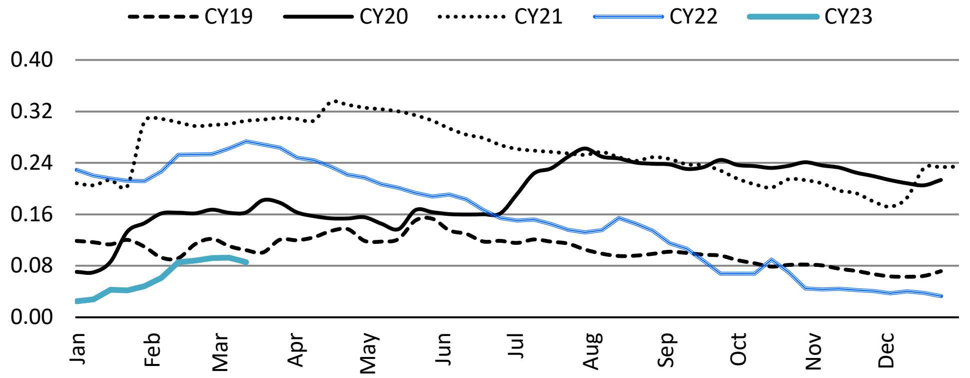


Exhibit 38: Total inventory (LME+SHFE, mt)



Lead

Exhibit 39: LME spot (USD/t)

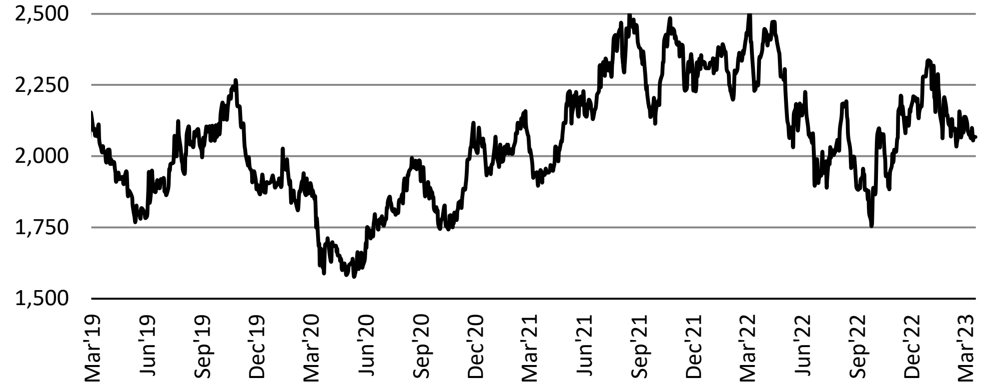
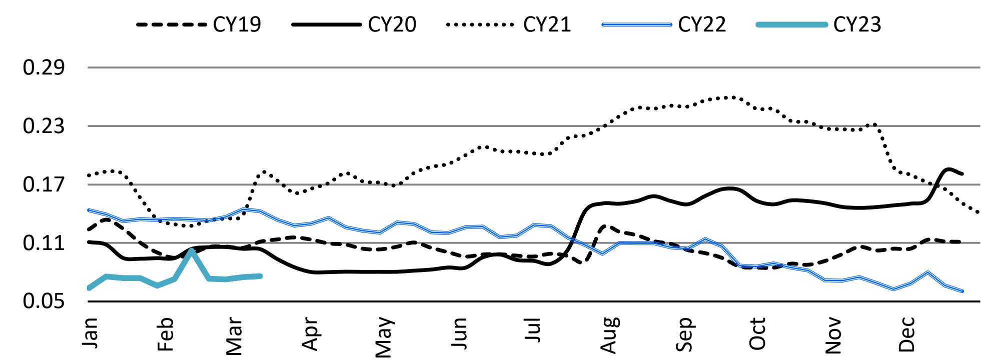


Exhibit 40: Total inventory (LME+SHFE, mt)



Nickel

Exhibit 41: Nickel spot (USD/t)

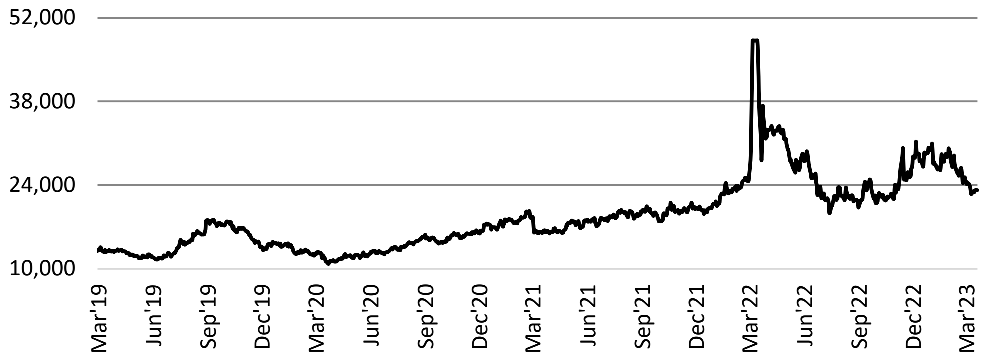
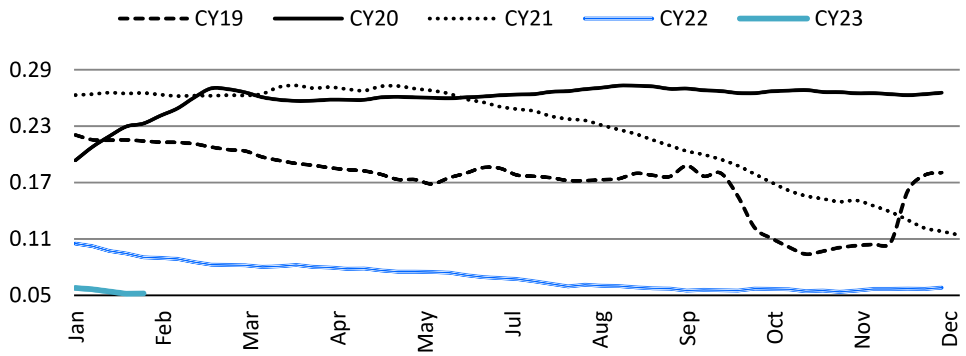


Exhibit 42: Total inventory (LME+SHFE, mt)



India steel production, consumption, EXIM, and inventory

Exhibit 43: Crude steel production (mt)

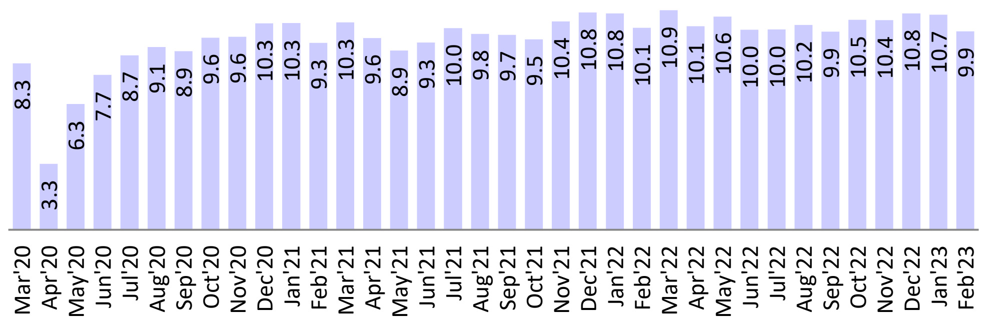


Exhibit 44: Finished steel production (mt)

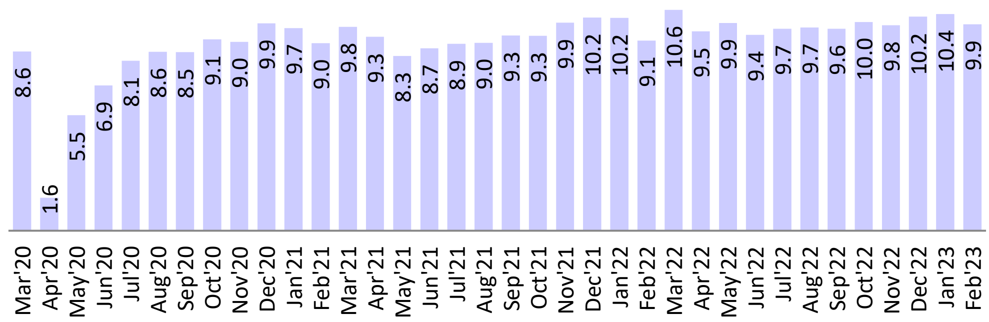


Exhibit 45: Imports including semis (kt)

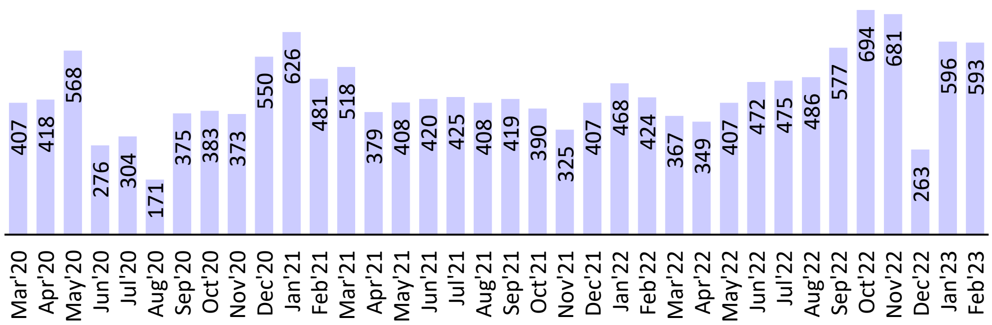


Exhibit 46: Exports including semis (kt)

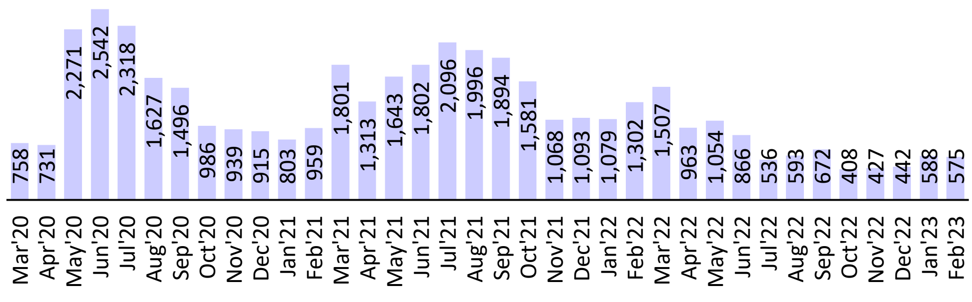


Exhibit 47: Net imports/(exports) of finished steel (kt)

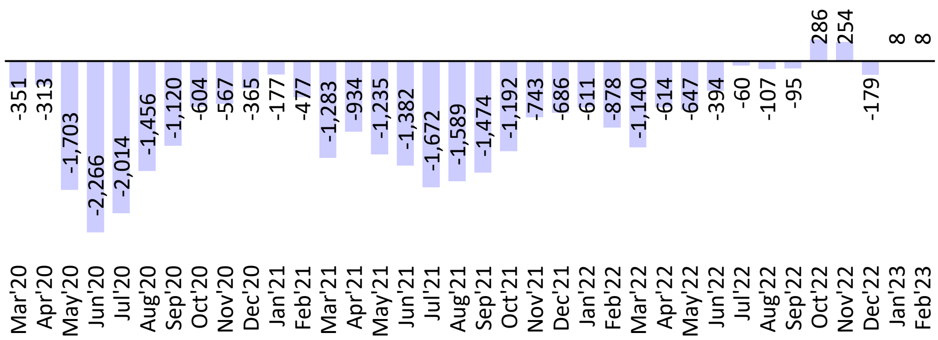
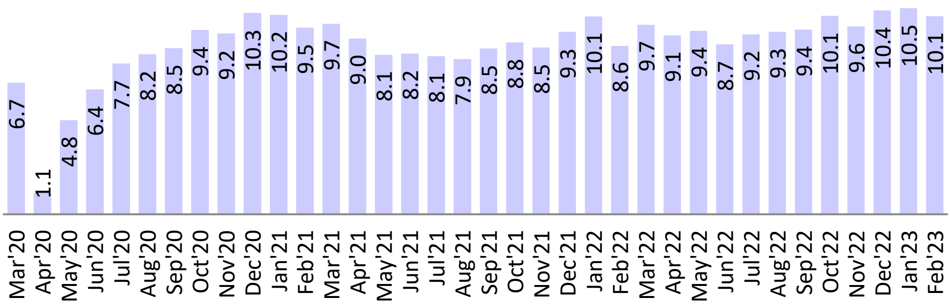


Exhibit 48: Steel consumption (mt)



Global production trends

Exhibit 49: World crude steel production and China's share

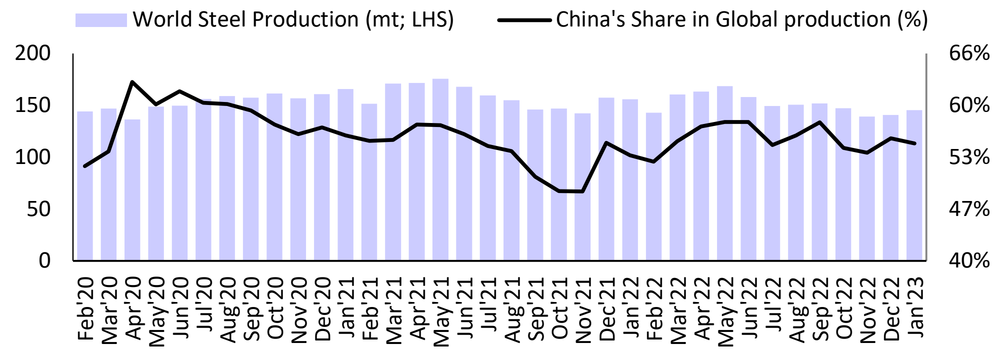


Exhibit 50: Crude steel production in China (mt)

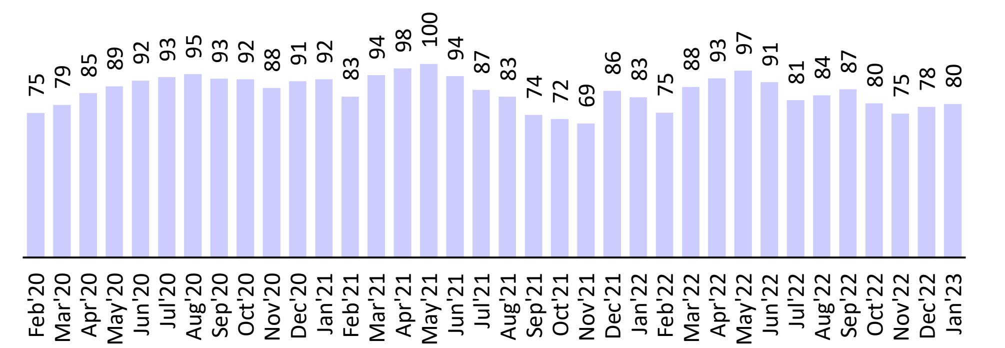


Exhibit 51: Crude steel production in Japan (mt)

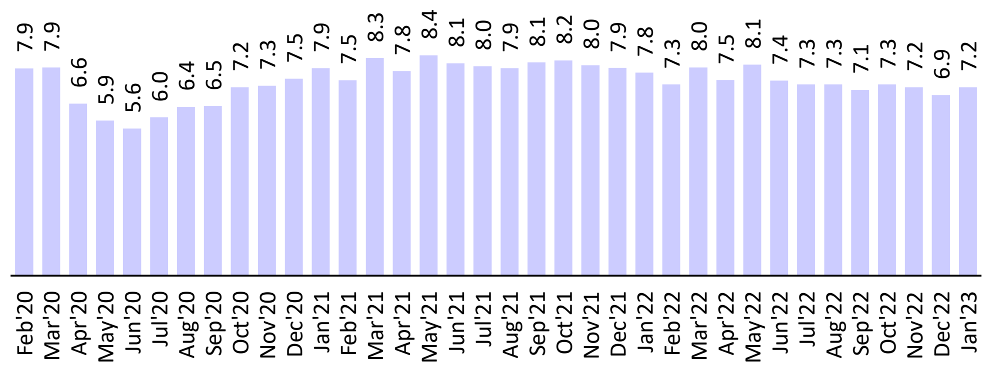


Exhibit 52: Crude steel production in the US (mt)

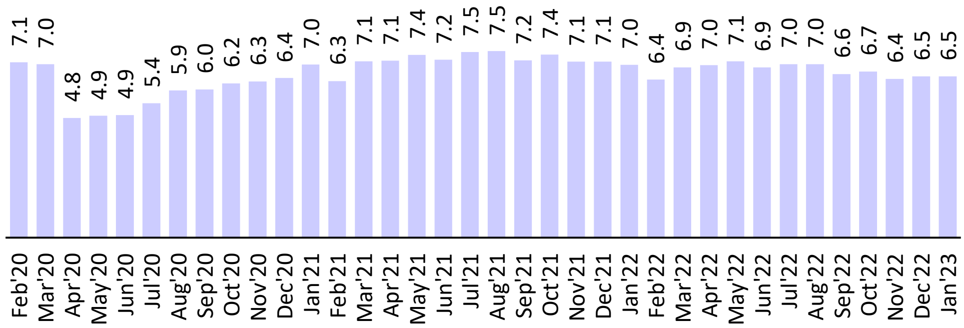


Exhibit 53: Crude steel production in Russia (mt)

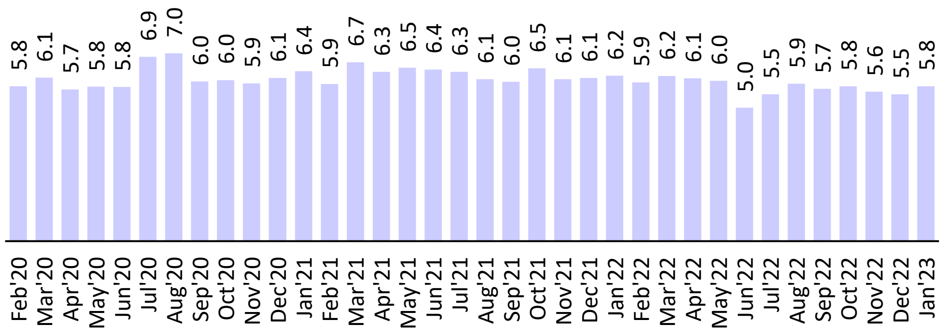
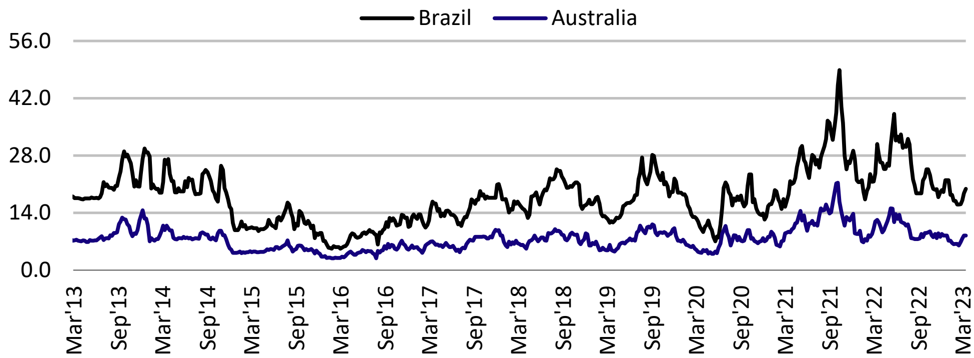


Exhibit 54: Dry bulk freight rates to China (USD/t)



China steel and macro

Exhibit 55: China's gross steel exports (mt)

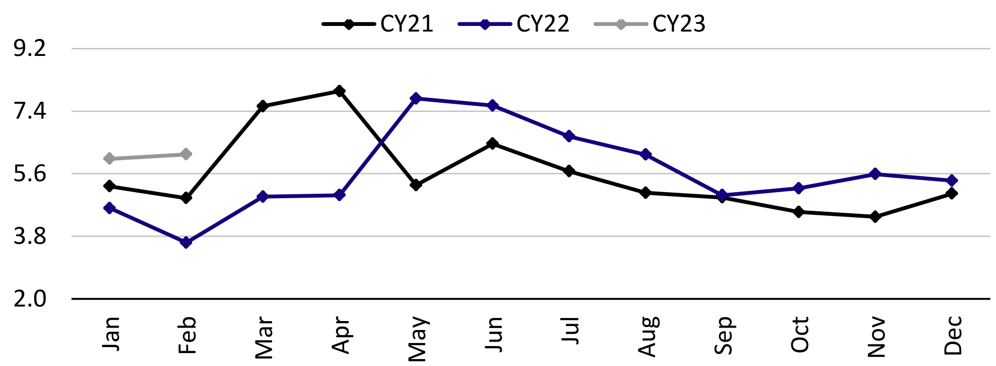


Exhibit 56: China's gross steel imports (mt)

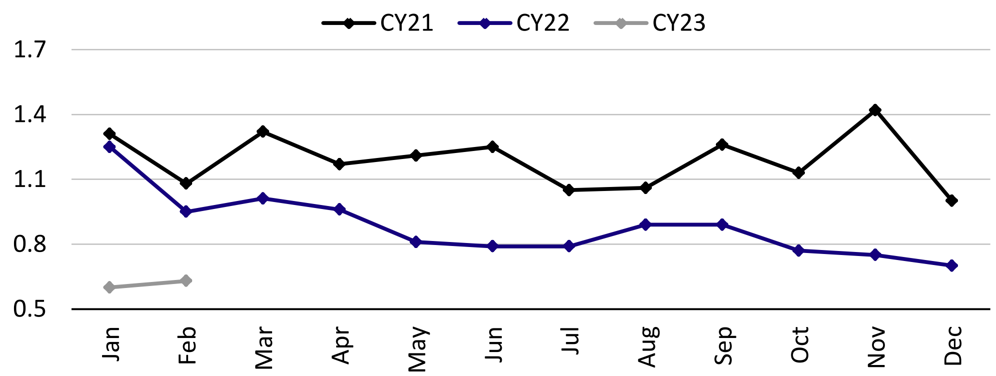


Exhibit 57: China's net steel exports/(imports) (mt)

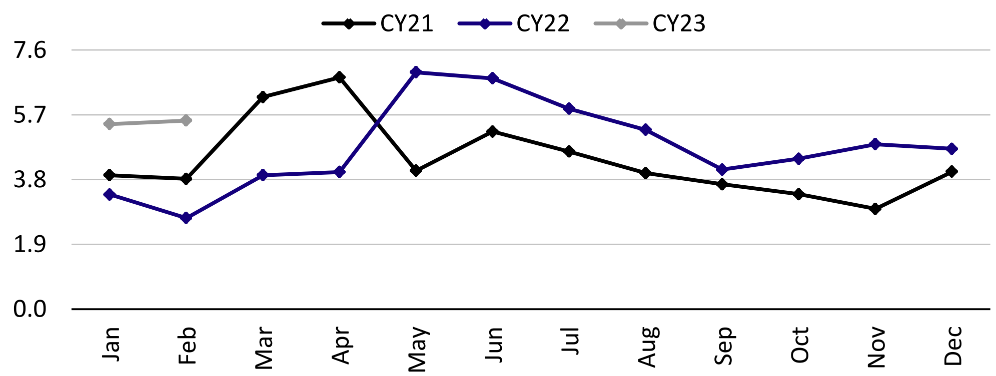


Exhibit 58: China's GDP growth YoY (constant prices)

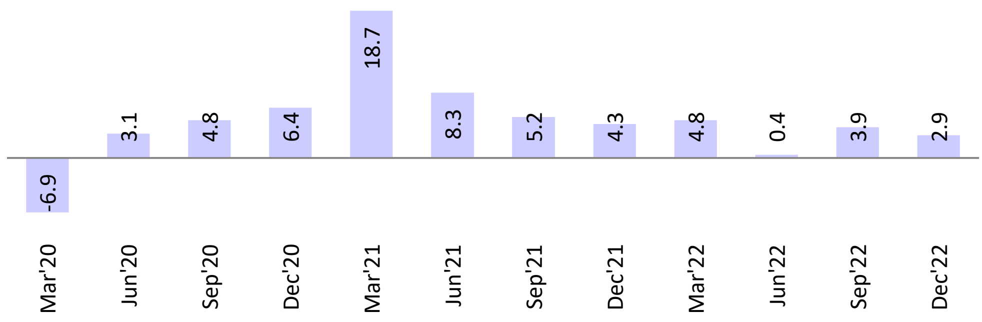


Exhibit 59: Total FAI investments (CNY b)

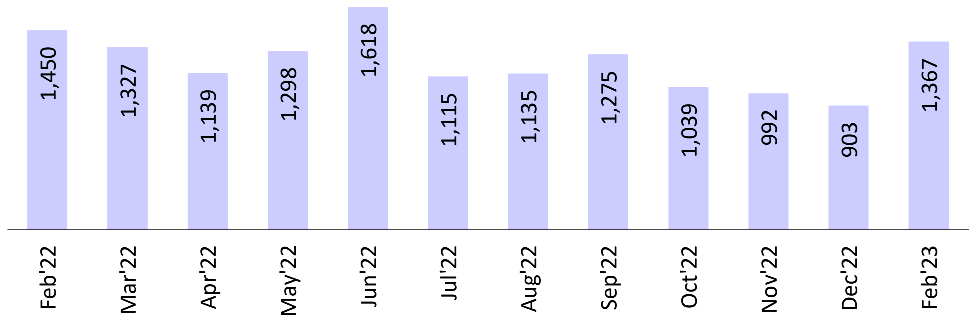


Exhibit 60: Automobile registration (m units)

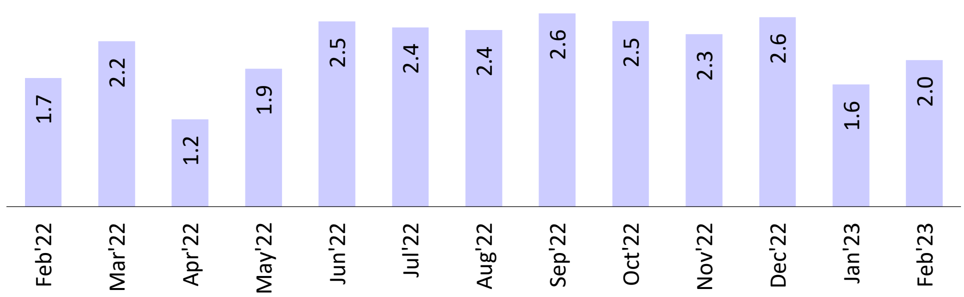


Exhibit 61: Floor space sold (m square meters)

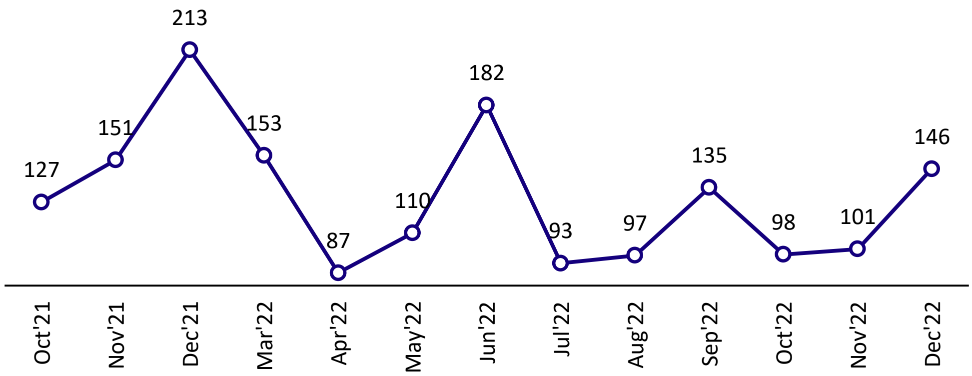


Exhibit 62: Floor space starts (m square meters)

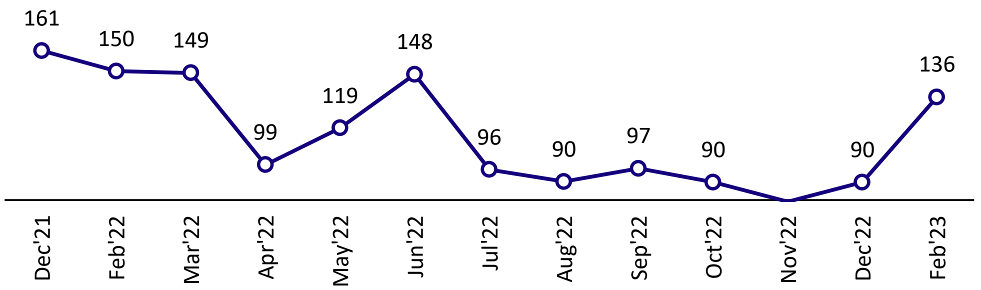


Exhibit 63: Land sales (m square meters)

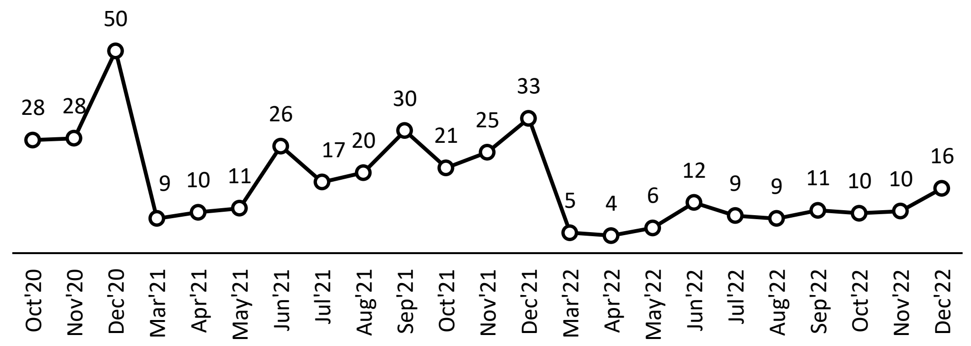


Exhibit 64: Manufacturing PMI

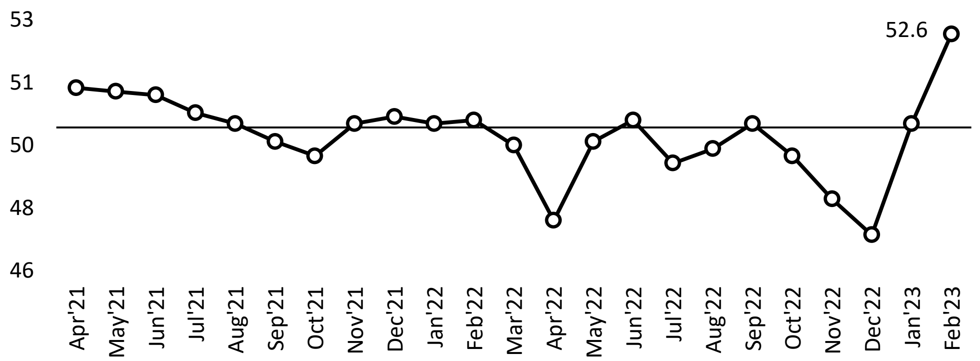
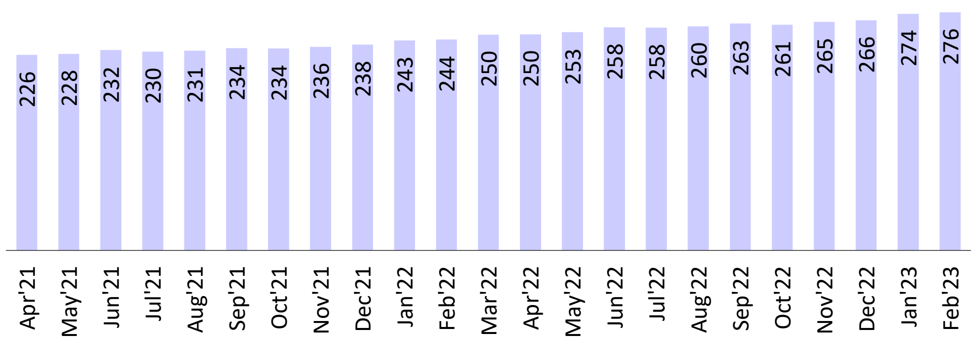


Exhibit 65: M2 money supply (CNY t)



Commodity monthly heat map

Commodity	UoM	Apr'22	May'22	Jun'22	Jul'22	Aug'22	Sep'22	Oct'22	Nov'22	Dec'22	Jan'23	Feb'23	Mar'23	MoM
Oil and non-ferrous - prices														
Brent Crude	USD/bbl	106	112	120	109	99	90	93	91	81	83	83	80	-3
Copper	USD/t	10,192	9,384	9,071	7,530	7,976	7,735	7,621	8,030	8,362	8,972	8,955	8,770	-2
Aluminum	USD/t	3,255	2,836	2,576	2,402	2,434	2,230	2,243	2,335	2,390	2,483	2,417	2,286	-5
Zinc	USD/t	4,381	3,780	3,667	3,097	3,577	3,136	2,960	2,924	3,115	3,277	3,144	2,975	-5
Lead	USD/t	2,404	2,151	2,074	1,976	2,074	1,874	1,988	2,099	2,219	2,214	2,099	2,090	0
Nickel	USD/t	33,134	28,229	25,877	21,482	22,035	22,774	22,033	25,563	28,986	28,271	26,728	23,466	-12
Alumina	USD/t	403	366	362	346	335	338	320	316	322	343	362	365	1
Aluminum Ingot Premium (Asia - **MJP**)	USD/t	140	120	119	123	121	115	114	114	90	86	82	81	-1
Aluminum Ingot Premium (EU - Rotterdam)	USD/t	585	605	596	515	502	459	351	272	236	257	294	298	1
Aluminum Ingot Premium (US midwest)	USD/t	857	822	740	635	594	553	466	447	454	569	642	634	-1
Aluminum scrap	USD/t	2,103	1,903	1,799	1,669	1,720	1,632	1,644	1,710	1,739	1,759	1,738	1,666	-4
Aluminum scrap spread	USD/t	1,152	933	777	732	714	598	599	626	651	725	679	620	-9
Silver	USD/t	866	771	758	682	681	667	686	743	825	841	758	749	-1
USD:INR (Bloomberg)	INR	76	77	78	80	80	80	82	82	83	82	83	82	0
Ferrous- International Prices														
China HRC domestic	RMB/t	5,235	4,957	4,645	4,223	4,027	3,991	3,931	3,821	4,069	4,187	4,262	4,444	4
China HRC domestic	**USD/t**	814	740	694	627	592	569	547	533	583	616	623	643	3
China TMT domestic	RMB/t	5,090	4,901	4,561	4,204	4,205	4,082	4,046	3,859	4,005	4,196	4,315	4,434	3
China TMT domestic	**USD/t**	791	732	681	624	618	582	563	538	574	618	631	642	2
China HRC FoB	**USD/t**	919	824	755	633	611	585	593	574	593	636	660	688	4
Korea HRC FoB	USD/t	925	876	800	705	605	581	584	534	559	629	662	685	3
North Europe HRC domestic	EUR/t	1,377	1,178	961	850	801	785	725	655	666	714	770	813	6
North America HRC domestic **(USD/short ton)**	USD/st	1,453	1,459	1,198	938	857	819	760	689	682	727	830	1,016	22
India HRC Export FoB (USD/t)	USD/t	1,006	878	718	626	579	581	580	534	563	639	707	713	1
Australia Fe 62% iron ore CNF	USD/t	152	134	131	107	105	99	93	92	111	122	126	129	2
Chinese steel futures														
TMT - Shanghai futures	RMB/t	4,999	4,662	4,508	3,974	3,890	3,734	3,698	3,598	3,939	4,131	4,116	4,268	4
HRC - Shanghai futures	RMB/t	5,133	4,775	4,588	3,968	3,904	3,793	3,726	3,696	4,010	4,168	4,180	4,366	4
Iron ore - Dalian Commodity Exchange	RMB/t	887	837	849	678	712	707	693	696	807	851	873	911	4
Coking coal - Dalian Commodity Exchange	RMB/t	2,987	2,645	2,627	2,056	1,945	1,978	2,067	1,925	1,871	1,863	1,888	1,964	4
China HRC FOB spread over RM (HRC - 1.7x iron ore -.85x HCC)	RMB/t	1,086	1,104	912	1,068	1,040	910	791	876	1,049	1,138	1,092	1,147	5
India steel and metallics prices														
India HRC ex-Mumbai 5-10mm	INR/t	76,725	70,600	62,400	59,440	57,175	55,925	56,920	56,000	53,900	57,589	59,600	60,467	1
Dom HRC prem to India export FoB price	**INR/t**	93	2,759	6,360	9,640	11,143	9,299	9,163	12,295	7,442	5,255	1,161	1,768	52

CRC ex-Mumbai - 0.9mm	INR/t	86,825	80,500	70,875	68,020	67,025	65,850	65,825	62,860	59,525	62,722	64,750	65,000	**0**
Galvanized plain - 120 GSM	INR/t	91,500	84,740	72,300	70,900	68,900	67,500	67,340	65,467	63,600	70,500	74,214	74,600	**1**
Color coated /PPGI ex-Mumbai 90GSM	INR/t	98,375	93,360	81,750	79,160	77,800	76,500	77,080	75,825	71,467	77,256	82,443	82,300	**0**
Wire rod - Primary Producers	INR/t	70,300	67,000	59,338	58,740	57,775	56,440	55,750	55,200	54,000	56,807	59,167	58,433	**-1**
TMT primary - Mumbai	INR/t	73,225	68,500	60,413	58,320	56,838	55,950	56,300	56,000	56,417	60,210	62,957	61,567	**-2**
TMT secondary - Mumbai	INR/t	64,931	59,573	53,681	54,515	55,842	54,777	55,638	52,786	53,308	57,154	56,896	56,235	**-1**
Domestic scrap-HMS(80:20) - Mumbai	INR/t	49,104	45,335	40,827	44,400	44,508	43,169	41,088	35,300	36,350	37,475	36,493	38,335	**5**
Sponge iron (DRI)	INR/t	35,825	32,838	30,488	33,413	33,810	31,598	30,804	28,696	29,873	31,567	31,067	30,843	**-1**
Domestic pellet prices- Barbil - 63% Fe	INR/t	11,444	9,683	7,044	7,360	7,119	6,938	7,231	7,320	7,861	9,085	9,621	9,560	**-1**
Pellet Export Prices - FoB 64%Fe	USD/t	159	138	NA	NA	NA	NA	NA	102	107	116	123	121	**-1**
Domestic ferrous spreads														
Primary HRC v/s primary TMT	INR/t	3,500	2,100	1,988	1,120	338	-25	620	-	-2,517	-2,621	-3,357	-1,100	**-67**
Primary TMT v/s secondary TMT	INR/t	8,294	8,927	6,732	3,805	996	1,173	663	3,214	3,109	3,056	6,061	5,332	**-12**
Secondary TMT v/s domestic Scrap	INR/t	15,827	14,238	12,854	10,115	11,334	11,608	14,550	17,486	16,958	19,679	20,404	17,900	**-12**
Hot rolled v/s cold rolled	INR/t	10,100	9,900	8,475	8,580	9,850	9,925	8,905	6,860	5,625	5,133	5,150	4,533	**-12**
Hot rolled - galvanized Plan	INR/t	14,775	14,140	9,900	11,460	11,725	11,575	10,420	9,467	9,700	12,911	14,614	14,133	**-3**
Hot rolled - color coated	INR/t	21,650	22,760	19,350	19,720	20,625	20,575	20,160	19,825	17,567	19,667	22,843	21,833	**-4**
Sponge iron -NMDC lumps spread	INR/t	25,455	23,488	23,008	26,783	26,840	24,628	23,834	21,981	22,903	23,832	NA	23,363	**NA**
Coking coal														
India premium HCC CNF	USD/t	505	535	404	269	258	286	309	299	277	328	380	375	**-1**
India 64 mid vols coking coal CNF	USD/t	468	498	369	237	239	268	280	260	256	306	349	338	**-3**
NMDC iron ore - Chhattisgarh														
64% Bailadila fines	INR/t	5,160	4,410	3,310	2,810	2,910	2,910	2,910	2,760	2,910	3,510	NA	3,910	**NA**
Iron ore lump	INR/t	6,100	5,500	4,400	3,900	4,100	4,100	4,100	3,950	4,100	4,550	NA	4,400	**NA**
Manganese ore														
Manganese ore, Balaghat Mn 37%, Fe 7.5%	INR/t	18,066	18,066	15,447	16,219	14,598	13,138	13,138	13,138	12,481	13,417	14,088	14,088	**0**
Manganese ore, import India, Mn 37.5%	USD/dmtu	5	5	5	5	5	4	4	4	4	4	5	4	**-5**
Domestic ferro alloys														
Silico manganese	INR/t	1,05,406	88,984	81,968	80,805	77,815	74,311	76,322	75,341	75,420	79,583	76,496	74,510	**-3**
Ferro manganese	INR/t	1,09,385	94,692	87,147	85,486	80,285	76,686	75,550	76,182	74,545	79,820	79,428	77,620	**-2**
Ferro chrome	INR/t	49,104	45,335	40,827	44,400	44,508	43,169	41,088	35,300	36,350	37,475	36,493	38,335	**5**
Freight rates														
Baltic Dry index	Points	2,212	2,919	2,412	2,077	1,398	1,490	1,814	1,299	1,467	936	658	1,388	**111**
Ferrous - inventory														
China HRC	mt	3	3	3	3	3	3	3	2	2	2	3	3	**-8**
China wire rod	mt	3	3	3	2	2	2	2	1	1	1	2	3	**9**
China TMT	mt	9	8	8	7	6	5	5	4	4	5	8	8	**6**
Total steel inventory	**mt**	**15.1**	**13.8**	**13.5**	**12.6**	**10.6**	**9.3**	**8.8**	**7**	**7**	**8**	**13**	**14**	**3**
Non-ferrous - inventory														

Aluminum														
LME	kt	603	526	415	331	281	327	450	539	479	410	521	549	**5**
SHFE	kt	1,038	977	801	393	68	67	64	55	49	71	110	124	**13**
Total	**kt**	**1,641**	**1,503**	**1,215**	**724**	**350**	**394**	**513**	**594**	**528**	**481**	**631**	**673**	**7**
Zinc														
LME	kt	116	89	82	78	74	70	51	43	37	22	25	37	**47**
SHFE	kt	126	116	100	70	67	33	26	1	1	8	44	53	**20**
Total	**kt**	**242**	**205**	**183**	**148**	**141**	**103**	**77**	**44**	**38**	**29**	**70**	**90**	**30**
Lead														
LME	kt	39	38	39	39	39	35	30	27	24	22	23	25	**9**
SHFE	kt	90	87	83	82	68	71	55	46	45	47	56	49	**-13**
Total	**kt**	**130**	**125**	**122**	**121**	**107**	**106**	**86**	**73**	**69**	**69**	**79**	**74**	**-7**
Copper														
LME	kt	118	168	124	133	126	114	137	90	85	82	66	72	**8**
SHFE	kt	36	18	13	16	5	5	35	34	27	49	124	124	**0**
Total	**kt**	**154**	**186**	**137**	**148**	**132**	**119**	**172**	**123**	**112**	**131**	**190**	**195**	**3**
Nickel														
LME	kt	73	73	69	63	56	53	53	51	54	53	47	44	**-5**
SHFE	kt	8	4	3	2	3	3	3	4	3	3	3	3	**13**
Total	**kt**	**81**	**77**	**72**	**64**	**60**	**56**	**56**	**55**	**57**	**55**	**50**	**48**	**-4**

Metals valuation matrix

Exhibit 66: Indian companies valuation

	Rating	CMP (INR)	M-cap (INR b)	EPS (INR)		P/E (x)		EV/EBITDA (x)		P/B(x)	
				FY23E	FY24E	FY23E	FY24E	FY23E	FY24E	FY23E	FY24E
Steel											
Tata	Neutral	105	1,276	8.7	15.8	12.0	6.6	5.9	4.4	1.1	1.0
JSW	Neutral	668	1,615	12.3	79.6	54.3	8.4	11.6	5.7	2.5	2.0
JSP	Buy	559	565	45.8	67.8	12.2	8.2	5.8	4.5	1.4	1.2
SAIL	Neutral	87	358	4.7	12.3	18.3	7.0	7.2	4.6	0.6	0.6
Non-ferrous											
Vedanta	Neutral	280	1,041	29.5	38.5	9.5	7.3	6.0	5.1	2.2	2.1
Hindalco	Buy	386	856	47.4	70.0	8.1	5.5	5.0	3.5	1.4	1.1
Nalco	Neutral	80	146	6.4	11.3	12.4	7.1	5.7	3.9	1.1	1.0
Mining											
Coal	Buy	217	1,338	54.0	33.0	4.0	6.6	2.4	3.7	2.2	1.9
HZL	Neutral	311	1,312	25.2	32.7	12.3	9.5	6.5	5.3	4.1	3.9
NMDC	Buy	113	330	16.3	18.3	6.9	6.2	4.1	3.3	1.7	1.5

Source: MOFSL, Company, Bloomberg(*) denotes MOFSL estimates

Exhibit 67: Global steel comparative valuation

Company	MCap USD m	P/E (x)			EV/EBITDA (x)			P/B (x)			RoE (%)		
		CY21/FY22	CY22/FY23	CY23/FY24	CY21/FY22	CY22/FY23	CY23/FY24	CY21/FY22	CY22/FY23	CY23/FY24	CY21/FY22	CY22/FY23	CY23/FY24
India													
Tata*	15,463	3.2	12.0	6.6	2.8	5.9	4.4	1.2	1.1	1.0	44.6	9.4	15.9
JSW*	19,554	7.5	54.3	8.4	5.5	11.6	5.7	2.4	2.5	2.0	37.5	4.5	26.1
JSP*	6,898	6.5	12.2	8.2	4.2	5.8	4.5	1.6	1.4	1.2	25.9	12.3	16.1
SAIL*	4,330	3.0	18.3	7.0	2.4	7.2	4.6	0.7	0.6	0.6	24.3	3.6	8.9
Japan													
JFE	7,330	3.4	6.0	6.1	4.8	6.0	6.2	0.5	0.4	0.4	15.5	7.8	7.0
Nippon Steel	21,377	5.3	4.2	6.6	5.4	4.7	5.5	0.9	0.7	0.6	18.1	17.8	9.8
Kobe Steel	3,007	7.0	6.5	6.7	5.9	6.5	5.6	0.5	0.5	0.4	7.2	7.4	6.6
Korea													
POSCO	20,605	6.2	7.4	6.3	4.0	4.3	3.8	0.5	0.5	0.4	8.3	6.5	7.3
Hyundai Steel	3,379	3.2	4.9	4.0	3.9	4.3	3.6	0.2	0.2	0.2	7.6	4.7	5.5
US													
Nucor	36,308	5.0	10.0	12.6	3.4	6.1	7.2	2.0	1.8	1.6	43.5	17.5	11.9
US Steel	5,446	2.5	8.7	14.0	1.5	3.6	4.4	0.6	0.7	0.7	26.2	5.9	4.9
Steel Dynamics	17,829	4.7	7.6	11.8	3.3	4.8	6.5	2.3	1.8	1.5	51.9	25.9	14.3
Europe													
AM	23,378	2.5	6.8	5.5	2.1	3.9	3.5	0.4	0.4	0.4	18.8	6.4	7.6
SSAB	6,563	3.1	8.4	11.5	1.7	4.1	5.1	0.7	1.1	1.0	26.0	11.7	8.5
TKA	4,134	4.1	11.3	6.9	0.4	0.4	0.3	0.3	0.3	0.3	8.4	2.9	4.1
VOE	5,979	5.2	5.5	9.2	3.7	3.1	3.9	0.9	0.7	0.7	16.7	13.9	7.8
China													
Baosteel	21,036	9.4	8.1	7.6	5.3	4.6	4.0	0.7	0.7	0.7	7.2	7.9	8.1

Source: MOFSL, Company, Bloomberg(*) denotes MOFSL estimates

Exhibit 68: Iron ore mining global comparative valuation

Company	M-Cap USD m	P/E (x)			EV/EBITDA (x)			P/B (x)			RoE (%)		
		CY21/FY22	CY22/FY23	CY23/FY24	CY21/FY22	CY21/FY22	CY22/FY23	CY23/FY24	CY21/FY22	CY21/FY22	CY22/FY23	CY23/FY24	CY21/FY22
NMDC*	**3,999**	**3.4**	**6.9**	**6.2**	**2.1**	**4.1**	**3.3**	**1.8**	**1.7**	**1.5**	**41.0**	**25.3**	**25.6**
Vale	71,179	4.5	5.4	6.1	3.9	3.6	3.8	2.0	1.7	1.5	45.7	33.8	27.0
FMG	42,838	6.9	8.5	10.6	4.2	4.9	5.7	2.4	2.3	2.2	36.4	28.2	22.3

Source: MOFSL, Company, Bloomberg(*) denotes MOFSL estimates

Exhibit 69: Diversified miners global comparative valuation

Company	M-Cap USD m	P/E (x) CY21/FY22	P/E (x) CY22/FY23	P/E (x) CY23/FY24	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY22/FY23	P/B (x) CY23/FY24	P/B (x) CY21/FY22	P/B (x) CY21/FY22	RoE (%) CY22/FY23	RoE (%) CY23/FY24	RoE (%) CY21/FY22
Vedanta*	**12,597**	**5.3**	**9.5**	**7.3**	**3.6**	**6.0**	**5.1**	**1.6**	**2.2**	**2.1**	**30.7**	**19.5**	**29.8**
BHP	1,45,571	6.9	9.7	9.9	3.7	5.1	5.1	2.9	3.2	2.9	41.2	33.3	31.8
Rio	1,09,350	7.5	8.9	9.0	4.2	4.8	4.7	2.0	1.9	1.8	27.1	21.6	19.2
Glencore	68,312	3.7	6.1	6.7	2.6	3.6	3.7	1.4	1.4	1.4	43.0	21.0	19.7
Anglo	38,572	6.5	7.5	8.0	3.6	3.7	3.9	1.3	1.2	1.1	22.5	17.6	14.6
South 32	12,290	5.0	8.9	8.0	2.6	4.1	3.6	1.2	1.1	1.0	26.2	12.5	13.0

Source: MOFSL, Company, Bloomberg(*) denotes MOFSL estimates

Exhibit 70: Zinc global comparative valuation

Company	M-Cap USD m	P/E (x) CY21/FY22	P/E (x) CY22/FY23	P/E (x) CY23/FY24	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY22/FY23	P/B (x) CY23/FY24	P/B (x) CY21/FY22	P/B (x) CY21/FY22	RoE (%) CY22/FY23	RoE (%) CY23/FY24	RoE (%) CY21/FY22
HZL*	**15,890**	**13.4**	**12.3**	**9.5**	**7.0**	**6.5**	**5.3**	**3.8**	**4.1**	**3.9**	**29.3**	**32.0**	**42.0**
Korea Zinc	7,980	14.5	14.9	13.1	7.2	7.9	7.1	1.2	1.2	1.1	8.9	7.9	8.5
Teck	17,781	5.3	7.8	8.8	3.1	3.9	3.8	0.9	0.9	0.8	18.0	11.4	9.5

Source: MOFSL, Company, Bloomberg(*) denotes MOFSL estimates

Exhibit 71: Coal global comparative valuation

Company	M-Cap USD m	P/E (x) CY21/FY22	P/E (x) CY22/FY23	P/E (x) CY23/FY24	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY22/FY23	P/B (x) CY23/FY24	P/B (x) CY21/FY22	P/B (x) CY21/FY22	RoE (%) CY22/FY23	RoE (%) CY23/FY24	RoE (%) CY21/FY22
Coal*	**16,195**	**7.7**	**4.0**	**6.6**	**3.5**	**2.4**	**3.7**	**3.1**	**2.2**	**1.9**	**40.3**	**55.6**	**29.1**
China Shenhua	79,925	5.9	6.4	6.5	4.0	4.3	4.3	1.1	1.1	1.0	19.0	16.6	15.8
Banpu	2,530	1.6	3.3	5.4	1.9	2.5	3.1	0.7	0.6	0.7	47.1	18.9	11.3
Bukit Asam	2,875	3.4	4.3	5.5	2.2	2.6	3.2	1.4	1.3	1.2	45.8	32.1	22.6
Adaro Energy	5,669	2.4	3.9	5.4	1.0	1.5	1.9	0.9	1.0	0.9	43.8	25.3	15.8

Source: MOFSL, Company, Bloomberg(*) denotes MOFSL estimates

Exhibit 72: Aluminum global comparative valuation

Company	M-Cap USD m	P/E (x) CY21/FY22	P/E (x) CY22/FY23	P/E (x) CY23/FY24	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY22/FY23	P/B (x) CY23/FY24	P/B (x) CY21/FY22	P/B (x) CY21/FY22	RoE (%) CY22/FY23	RoE (%) CY23/FY24	RoE (%) CY21/FY22
Hindalco*	**10,495**	**6.3**	**8.1**	**5.5**	**4.4**	**5.0**	**3.5**	**1.6**	**1.4**	**1.1**	**28.0**	**17.9**	**22.2**
Nalco*	**1,771**	**5.0**	**12.4**	**7.1**	**2.3**	**5.7**	**3.9**	**1.2**	**1.1**	**1.0**	**25.4**	**9.2**	**15.2**
Alcoa	6,982	10.5	15.7	5.5	3.9	6.1	3.0	1.3	1.3	1.1	14.1	7.3	12.3
Norsk Hydro	13,887	6.2	11.2	9.3	3.7	5.6	4.8	1.3	1.4	1.4	26.4	12.5	14.6
CHALCO	12,690	10.4	10.2	7.8	6.9	6.6	5.4	1.0	0.9	0.8	9.1	9.4	10.6
RUSAL	7,709	3.2	3.2	4.2	3.5	3.7	NA	0.6	0.5	0.5	25.3	20.3	11.5
Alumina	2,737	24.8	67.4	14.5	19.6	14.5	10.2	1.6	1.8	1.7	7.9	2.6	10.9

Source: MOFSL, Company, Bloomberg(*) denotes MOFSL estimates

Exhibit 73: Stainless steel global comparative valuation

Company	M-Cap USD m	P/E (x) CY21/FY22	P/E (x) CY22/FY23	P/E (x) CY23/FY24	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY21/FY22	EV/EBITDA (x) CY22/FY23	P/B (x) CY23/FY24	P/B (x) CY21/FY22	P/B (x) CY21/FY22	RoE (%) CY22/FY23	RoE (%) CY23/FY24	RoE (%) CY21/FY22
JSL	1,825	9.5	13.2	8.3	5.4	7.5	5.2	2.9	2.2	1.8	32.8	18.3	22.7
JSHL	1,608	NA	10.6	9.2	NA	NA	NA	NA	2.2	1.8	NA	20.8	19.8
Acerinox	2,516	3.0	7.1	7.2	2.2	3.8	3.5	0.9	0.8	0.8	31.4	11.9	11.1
Outokumpu	2,527	2.8	10.5	9.5	1.7	3.9	3.5	0.6	0.6	0.5	25.7	4.7	5.4
Aperam	2,700	3.3	7.3	6.0	2.6	4.4	3.8	0.7	0.7	0.6	22.7	9.1	10.5

Source: MOFSL, Company, Bloomberg(*) denotes MOFSL estimates

Metals valuation charts

Exhibit 74: Tata Steel EV/EBITDA

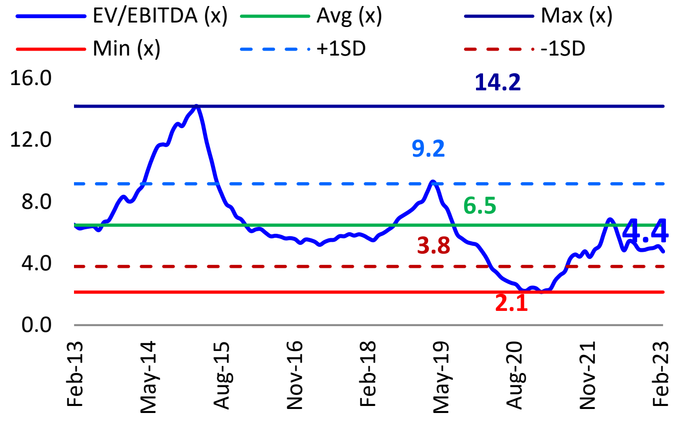


Exhibit 75: Tata Steel P/B

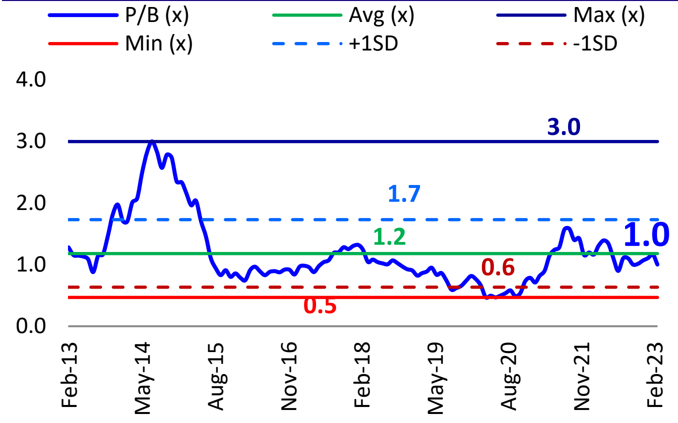


Exhibit 76: JSW Steel EV/EBITDA

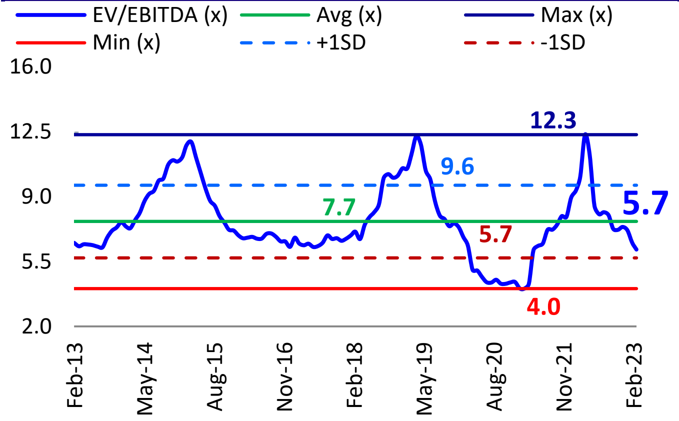


Exhibit 77: JSW Steel P/B

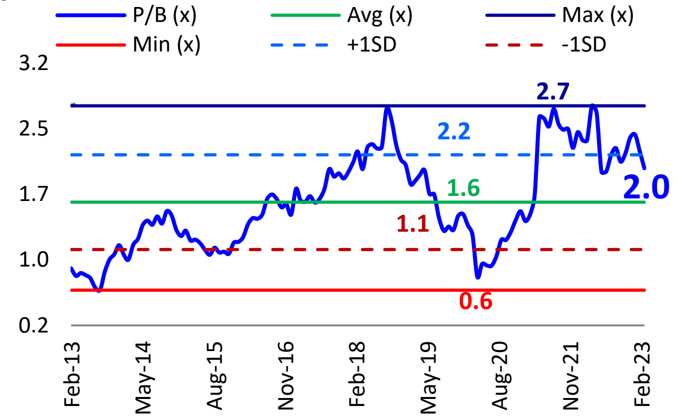


Exhibit 78: JSPL EV/EBITDA

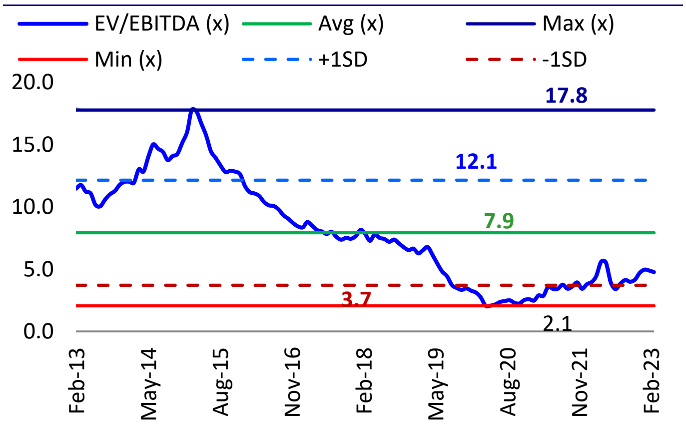


Exhibit 79: JSPL P/B

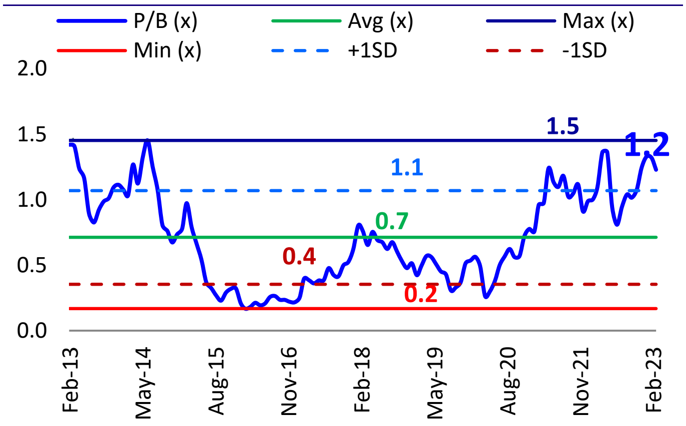


Exhibit 80: SAIL EV/EBITDA

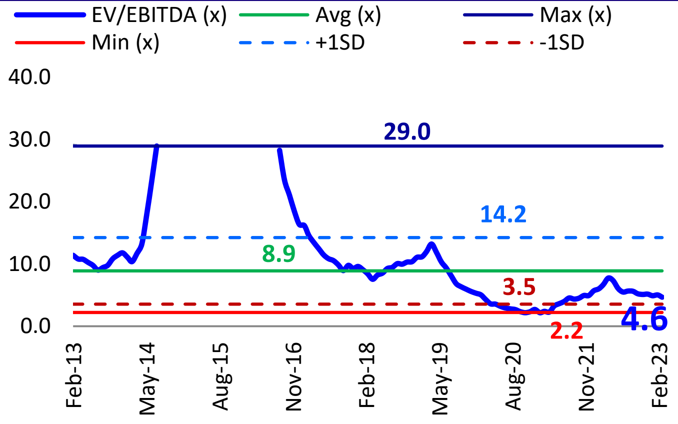


Exhibit 81: SAIL P/B

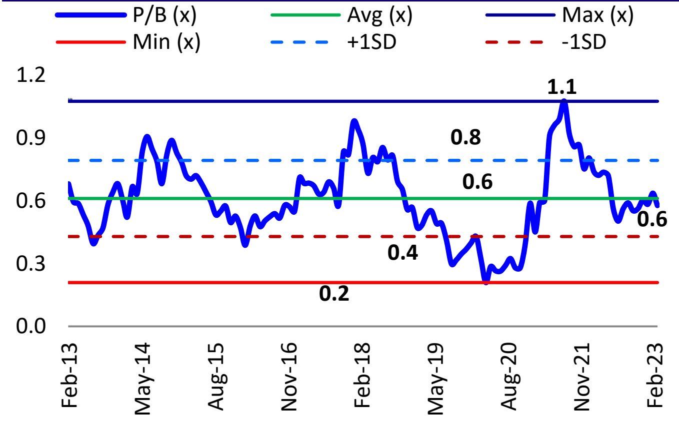


Exhibit 82: NMDC EV/EBITDA

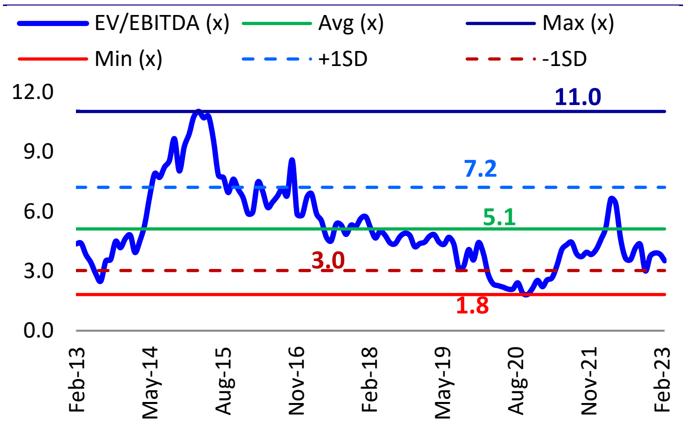


Exhibit 83: NMDC P/B

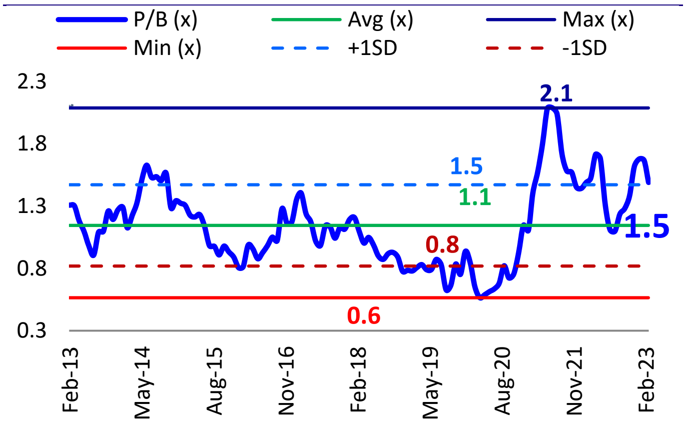


Exhibit 84: Vedanta EV/EBITDA

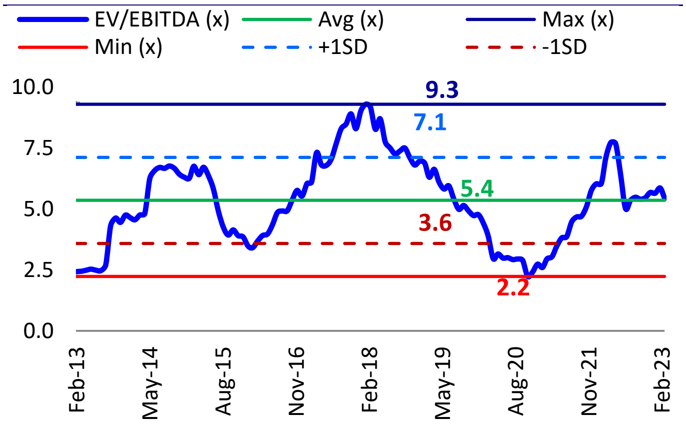


Exhibit 85: Vedanta P/B

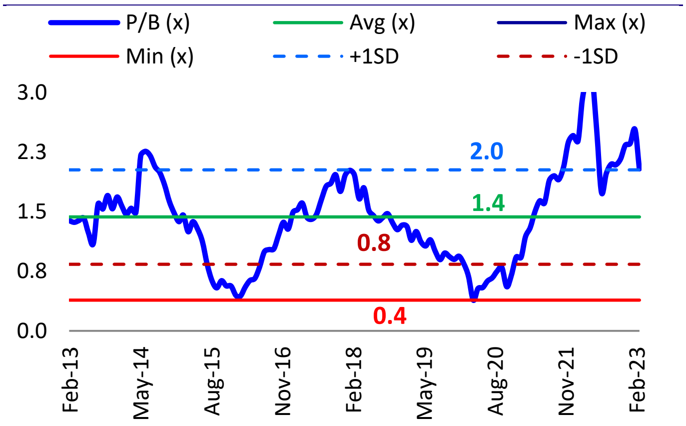


Exhibit 86: Hindustan Zinc EV/EBITDA

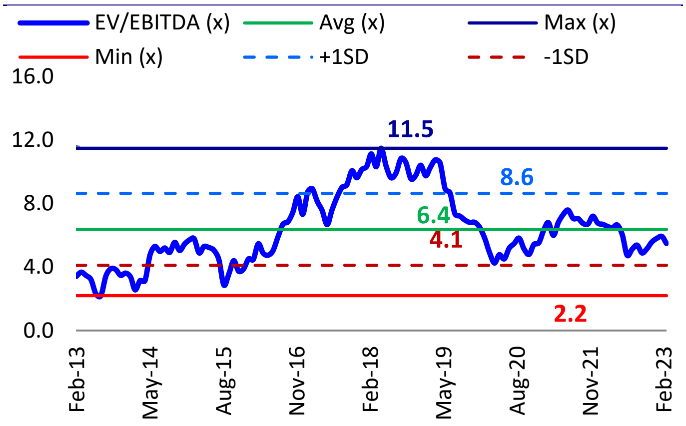


Exhibit 87: Hindustan Zinc P/B

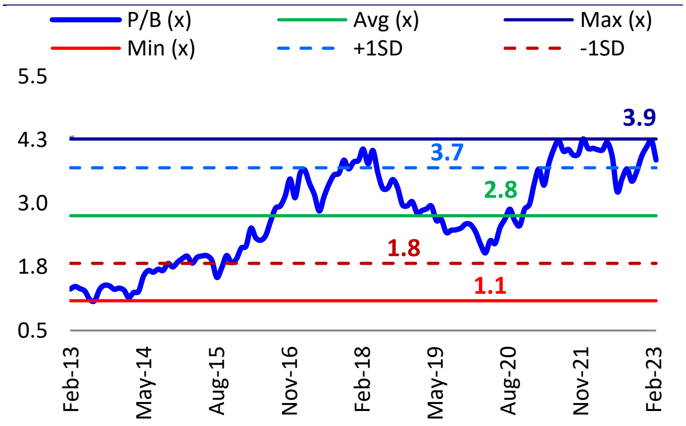


Exhibit 88: Hindalco EV/EBITDA

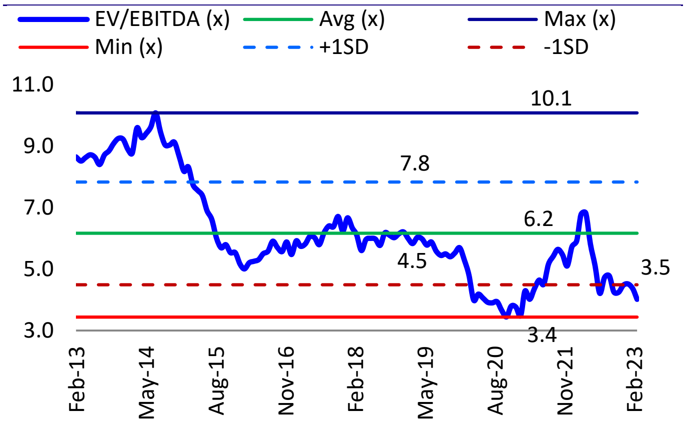


Exhibit 89: Hindalco P/B

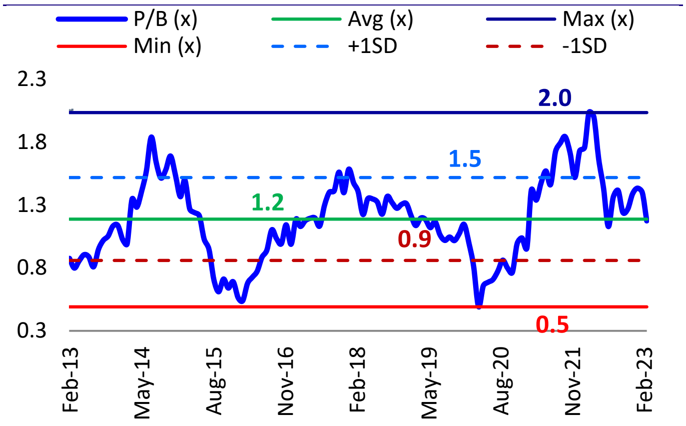


Exhibit 90: Nalco EV/EBITDA

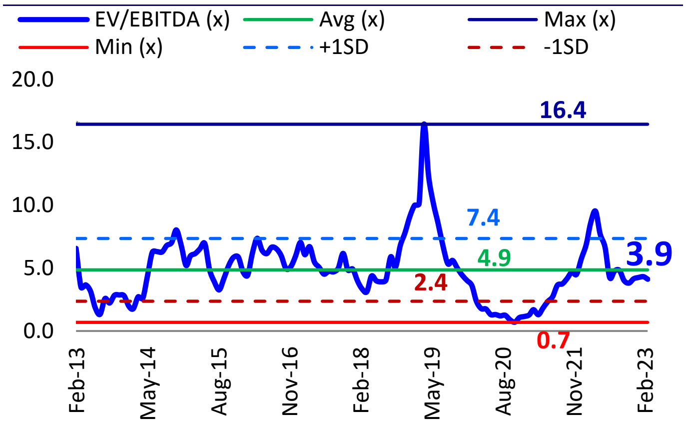
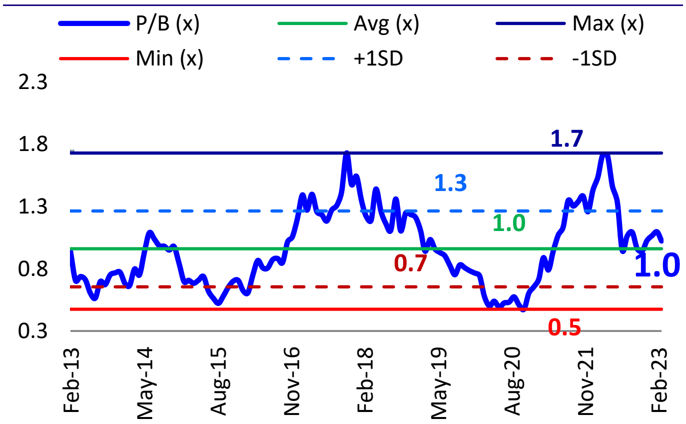


Exhibit 91: Nalco P/B



Performance of metal and mining shares

Exhibit 92: Performance of our Metals coverage on an absolute and relative basis (%)

	Absolute performance (%)						Relative performance to Sensex (%)				
Period	**1W**	**1M**	**3M**	**6M**	**12M**		**1W**	**1M**	**3M**	**6M**	**12M**
Steel											
Tata	-2	-2	-7	-6	-1	-20	-2	-1	-1	0	1
JSW	-1	-1	-8	-10	-2	-2	0	0	-3	-4	0
JSP	-2	-3	-5	3	28	17	-2	-2	0	9	30
SAIL	-2	-1	0	5	7	-12	-2	0	6	11	9
Non-ferrous											
Vedanta	-2	0	-11	-9	-4	-26	-1	2	-5	-3	-2
Hindalco	-3	-4	-10	-16	-7	-33	-2	-3	-5	-10	-5
Nalco	-4	-3	-1	3	3	-32	-4	-2	5	9	5
Mining											
Coal	-2	-2	0	-3	-6	23	-2	-1	5	3	-4
Hind. Zinc	0	3	-4	-3	10	0	0	4	1	3	12
NMDC	-2	-2	-7	-9	25	4	-2	-1	-2	-3	27
SENSEX	-1	-1	-6	-6	-2	0	-	-	-	-	-
NIFTY	-1	-1	-5	-7	-3	-2	-	-	-	-	-
BSE Metals index	-2	-2	-7	-7	0	-12	-	-	-	-	-

Exhibit 93: Performance of global Metal stocks on an absolute basis (%)

	Absolute performance (%)				
Period	**1W**	**1M**	**3M**	**6M**	**12M**
Steel					
India					
Tata	-2	-2	-7	-6	-1
JSW	-1	-1	-8	-10	-2
JSP	-2	-3	-5	3	28
SAIL	-2	-1	0	5	7
Japan					
JFE	-3	-11	-8	0	7
Nippon Steel	-1	-7	-3	31	33
Kobe Steel	-3	-8	14	59	56
Korea					
POSCO	-1	-2	-4	14	38
Hyundai Steel	-1	-4	-5	4	-4
US					
Nucor	0	-7	-14	8	23
US Steel	0	-11	-14	-4	19
Steel Dynamics	0	-11	-17	3	39
Europe					
ArcelorMittal	-1	-8	-12	3	12
SSAB A	0	-10	-10	22	31
ThyssenKrupp	-1	-7	-11	11	11
voestalpine	-1	-6	-9	30	61
China					
Baosteel	-2	-1	6	11	19

Period	Absolute performance (%)					
		1W	1M	3M	6M	12M
Iron ore mining						
NMDC	-2	-2	-7	-9	25	4
Vale	0	-3	-6	-3	21	-14
FMG	-3	-4	-7	3	18	12
Diversified miners						
Vedanta	-2	0	-11	-9	-4	-26
BHP	-1	-6	-11	-6	13	4
Rio	1	-4	-13	-5	11	-6
Glencore	3	-3	-13	-16	-9	-7
Anglo	3	-5	-20	-17	-8	-30
South 32	-3	-6	-11	-2	4	-17
Zinc						
Hind. Zinc	0	3	-4	-3	10	0
Korea Zinc	0	-3	-6	-12	-15	-8
Teck	0	-5	-22	-8	7	-12
Coal						
Coal	-2	-2	0	-3	-6	23
China Shenhua	-1	0	7	11	2	21
Banpu	-3	-5	-6	-25	-26	-8
Bukit Asam	-1	-3	10	1	-11	20
Adaro Energy	-2	-6	-6	-30	-31	0
Aluminum						
Hindalco	-3	-4	-10	-16	-7	-33
Nalco	-4	-3	-1	3	3	-32
Alcoa	0	-12	-17	-8	-8	-53
Norsk Hydro	1	-4	-7	4	11	-14
CHALCO	1	0	-2	17	34	-15
RUSAL	-3	2	2	-1	-1	-7
Alumina	-2	-2	-7	-6	-1	-30
Stainless steel						
JSL	-2	-7	9	33	108	53
JSHL	0	0	17	44	116	58
Acerinox	1	-6	-10	2	5	-9
Outokumpu	0	-6	-7	15	40	10
Aperam	0	-7	-13	15	26	-24

NOTES

Explanation of Investment Rating	
Investment Rating	**Expected return (over 12-month)**
BUY	>=15%
SELL	< - 10%
NEUTRAL	> - 10 % to 15%
UNDER REVIEW	Rating may undergo a change
NOT RATED	We have forward looking estimates for the stock but we refrain from assigning recommendation

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