

India

REDUCE (previously ADD)

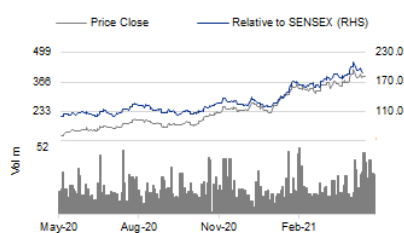
Consensus ratings*: Buy 26 Hold 0 Sell 0

Current price:	Rs389
Target price:	Rs352
Previous target:	Rs360
Up/downside:	-9.5%
InCred Research / Consensus:	-26.0%
Reuters:	HALC.NS
Bloomberg:	HNDL IN
Market cap:	US\$11,987m
	Rs8,74,634m
Average daily turnover:	US\$84.4m
	Rs6157.5m
Current shares o/s:	2,220.0m
Free float:	65.4%

*Source: Bloomberg

Key changes in this note

- Net sales raised by 2% for FY22F & FY23F
- EBITDA decreased by 22% for FY23F
- PAT decreased by 64% for FY23F



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	11.4	17.0	211.8
Relative (%)	5.3	17.9	88.8

Major shareholders	% held
Promoter & Promoter Group	34.6
ICICI Prudential MF	4.7
SBI Mutual Fund	3.1

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Hindalco Industries Ltd

Downgrade to Reduce

- Rising supply chain inventory and subsiding user fears of stockouts will likely cap primary aluminum and aluminum product prices, in our view.
- As scrap collection picks up pace, we expect supply chain inventory to rise to 112 days in CY21F from the bottom of 84 days in CY20.
- Novelis's gross profits to fall from 2QFY22F and aluminum prices to decline in coming months. High capex will keep debt elevated. Downgrade to Reduce.

Aluminum price is driven by fear of supply chain shortages

While refined aluminum is in oversupply and the overall supply chain inventory is rising, the fear of disruptions is leading to hoarding of metal by users. Our model indicates that supply chain inventory (including exchange inventory) will rise by 112 days in CY21F, driven by higher scrap and primary metal production. The scrap generation model (Source: International Aluminum Institute) indicates that old scrap generation was subpar in CY20 and in the first couple of months of CY21 created a rush to cover supply to users. The same resulted in the almost doubling of US Midwest premium (Source: www.Investing.com). We believe a fall in this premium will be the first sign of the stress on the supply chain easing.

Novelis's gross profits to decline, high capex to restrain cash flows

Novelis made its highest gross profit ever of US\$726/tonne in 4QFY21. There are many signs that supply chain shortages persist in the US and North America as: 1) the US has imposed anti-dumping duty and import duty in the country in CY21, leading to supply chain scarcity; 2) COVID and winter in the first couple of months of CY21 led to problems in scrap collection, worsening the shortage; 3) auto makers, already impacted by semiconductor shortages, will not take chances on auto sheets and, hence, could be overstocking, in our view. We believe this phenomenon could sustain for one more quarter, but rising scrap supply (Figure 7 shows how changes in prices spur scrap supply) and, at the same time, rising primary production will lower gross profits. High capex commitment (US\$1.5bn over the next five years and at least US\$1.2bn-1.5bn in maintenance capex) will keep debt high.

We value HNDL at 7.56x EV/EBITDA FY23F, downgrade to Reduce

We value Hindalco at 7.56x (in line with the historical trading multiples of the last 11 years) FY23F consolidated EBITDA to arrive at our TP of Rs352 (from Rs564). At our target price, the stock will trade at 0.95x P/B and 21x FY23F EPS. The RoE's of the company will decline to 4.6% IN FY23F from the peak of 8.8% in FY21. Upside risks are sustained supply chain shortages in North America that could keep Novelis gross profits at high levels, resulting in higher EBITDA, hence, stock price.

Financial Summary

	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
Revenue (Rsm)	11,81,440	13,19,850	15,57,595	15,73,947	15,55,171
Operating EBITDA (Rsm)	1,44,060	1,75,360	1,85,728	1,62,666	1,45,836
Net Profit (Rsm)	37,670	51,820	49,759	32,673	19,259
Core EPS (Rs)	17.8	24.8	22.4	14.7	8.7
Core EPS Growth	(28.1%)	39.6%	(9.5%)	(34.3%)	(41.1%)
FD Core P/E (x)	22.98	16.69	17.37	26.45	44.87
DPS (Rs)	0.0	4.0	4.0	4.0	4.0
Dividend Yield	0.00%	0.00%	1.03%	1.03%	1.03%
EV/EBITDA (x)	8.51	7.55	6.87	7.64	8.28
P/FCFE (x)	5.65	(9.23)	7.39	19.04	19.95
Net Gearing	67.3%	70.3%	63.4%	56.6%	51.2%
P/BV (x)	1.48	1.30	1.22	1.18	1.17
ROE	6.8%	8.8%	7.3%	4.5%	2.6%
% Change In Core EPS Estimates			(41.29%)	(63.73%)	
InCred Research/Consensus EPS (x)			0.56	0.35	0.17

SOURCES: INCRED RESEARCH ESTIMATES, COMPANY REPORTS, PRICED AS AT 21 MAY 2021

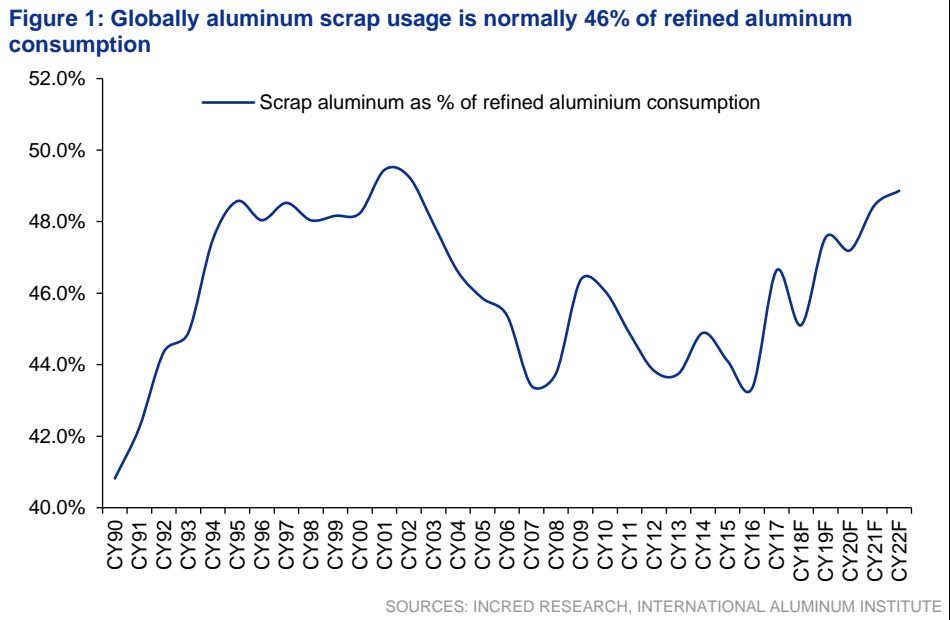
Downgrade to Reduce

Aluminium propelled by supply chain shortages

The world over the need to have higher inventory is propelling aluminum demand. The fear of supply chain shortages is ruling everywhere, and we believe aluminum is no exception despite production outpacing demand by 0.6mt in 1QCY21 (Source: Hindalco 4QFY21 results presentation). The same shortages helped Novelis to post its highest-ever gross profits in 4QFY21. We expect aluminum price to correct and Novelis's gross profit/tonne to decline in the coming quarters.

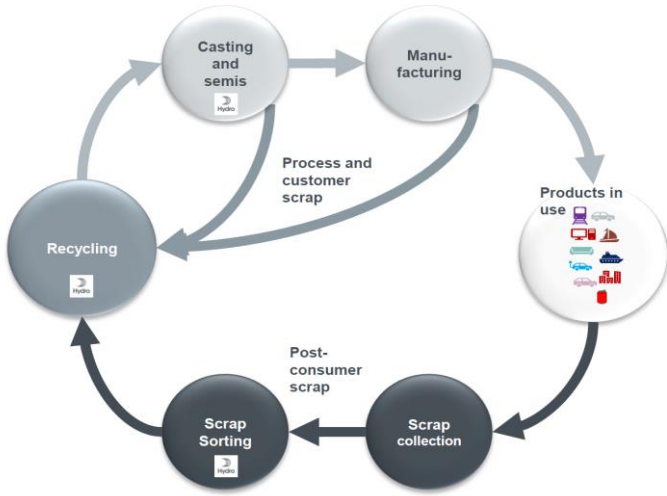
Scrap is an important part of global aluminum supply chain ►

Aluminum scrap is an unappreciated commodity. Old (scrap from automobiles, buildings, airplanes, etc) and factory (created while manufacturing products from aluminum) scrap form ~30% of global aluminum sales and, hence, are the most important parts of the supply chain analysis.



Leading companies acknowledge the importance of scrap – unheard of until a few years ago ➤

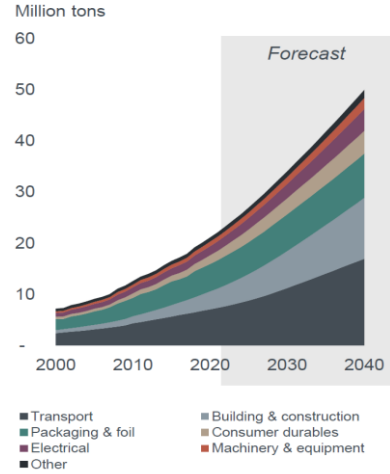
Figure 2: Scrap recycling process as identified in Hydro’s investor presentation



SOURCES: INCRED RESEARCH, HYDRO INVESTOR PRESENTATION

Figure 3: Hydro estimates that by 2040 ~50mt of aluminum will come from scrap

Global estimated recovery from post-consumer scrap collected

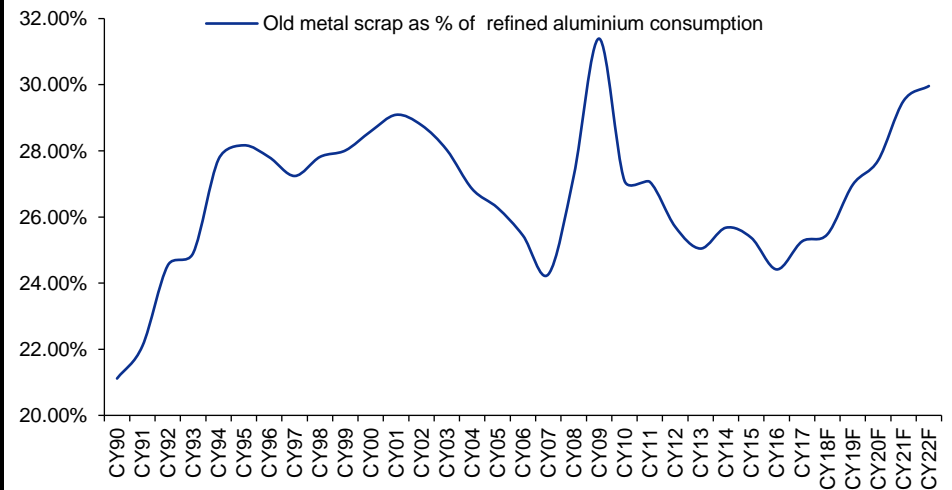


SOURCES: INCRED RESEARCH, HYDRO INVESTOR PRESENTATION

Old scrap is the main driver of overall scrap supply ➤

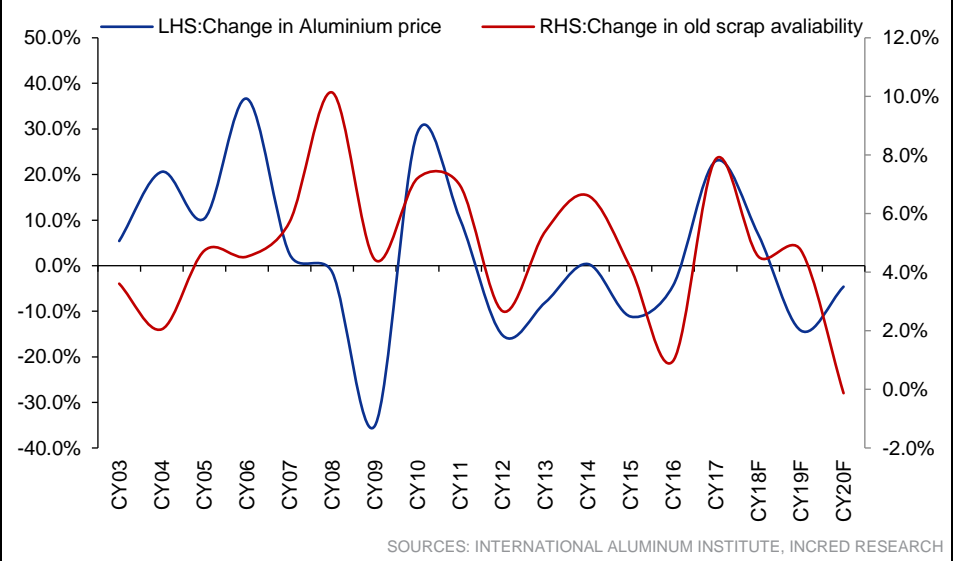
Old scrap comes out of a used-metal pool of aluminum (to date the world has a pool of 1.5bn tonnes). The old metal scrap supply depends on the primary metal’s price change.

Figure 4: Globally old metal scrap forms 30% of the overall refined aluminum consumption



SOURCES: INTERNATIONAL ALUMINIUM INSTITUTE, INCRED RESEARCH ESTIMATES

Figure 5: Global used-metal aluminum availability is in sync with primary aluminum prices



Rapid rise in CY21 primary metal prices has led to increased old scrap metal supply ➤

The aluminum price rise in the first three to four months of this calendar year has been quite rapid. At the same time, the western world was impacted by COVID, leading to the unavailability of scrap which led to a rapid rise in scrap prices as a percentage of aluminum sales. Since then, things have smoothed and scrap as a percentage of aluminum has started to fall. The rate of change of scrap as a percentage of aluminum prices points to falling aluminum prices.

Figure 6: Increased scrap availability seen in the fall in scrap prices as % of primary aluminum price

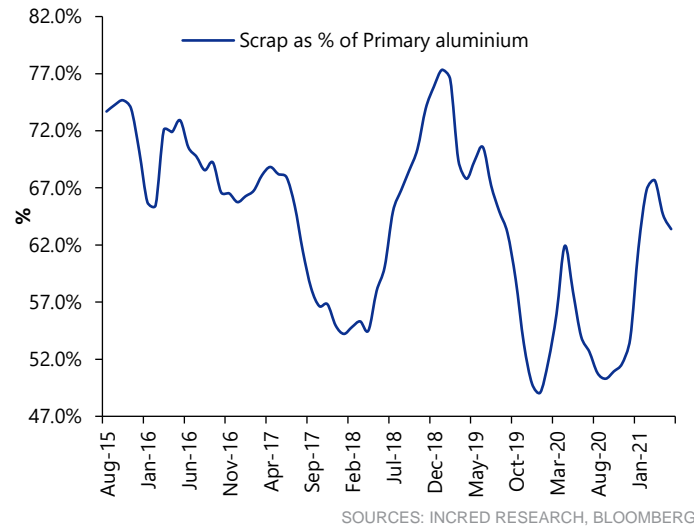
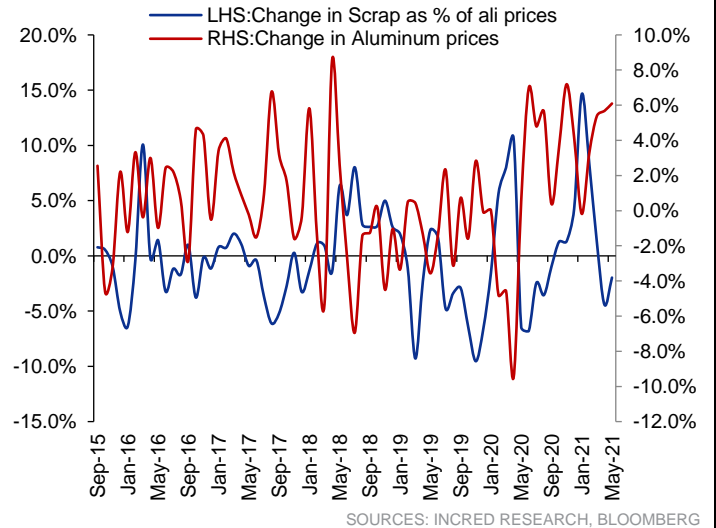
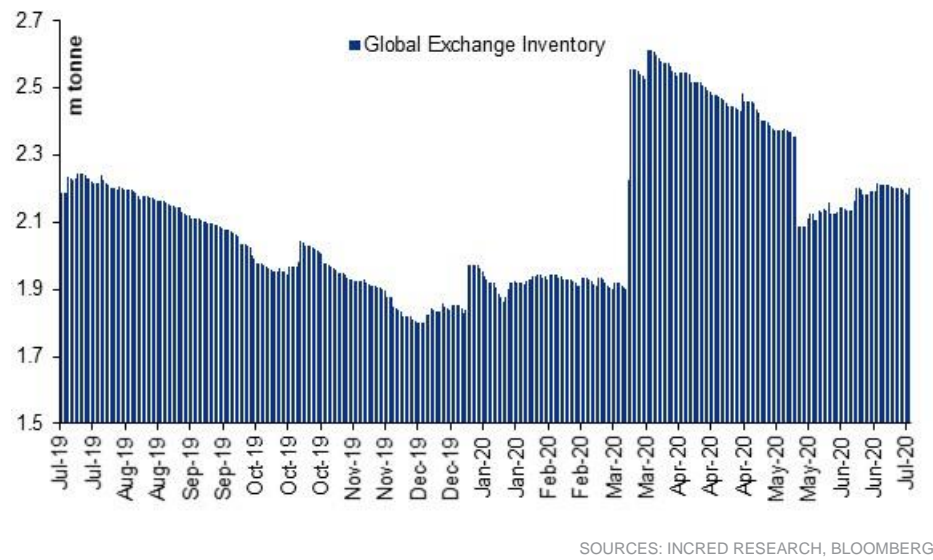


Figure 7: Rate of change of scrap price as % of aluminum prices indicates an imminent fall in aluminum



Global exchange inventory is increasing ➤

Figure 8: Global exchange inventory rose significantly after hitting bottom in Mar 2021



Refined metal market oversupplied, prices to fall in coming years ➤

All the debates about refined metal shortages and supply cuts were settled by the Hindalco presentation, which indicated an oversupplied primary metal market. Add to it scrap, which would have increased in supply because of higher metal prices, and we are in for significantly oversupplied markets which should result in a fall in aluminum prices.

Figure 9: In 1QCY21, global aluminum production rose by 6% and consumption by 16%, leading to a primary metal surplus of 0.6mt

Global Aluminium Industry

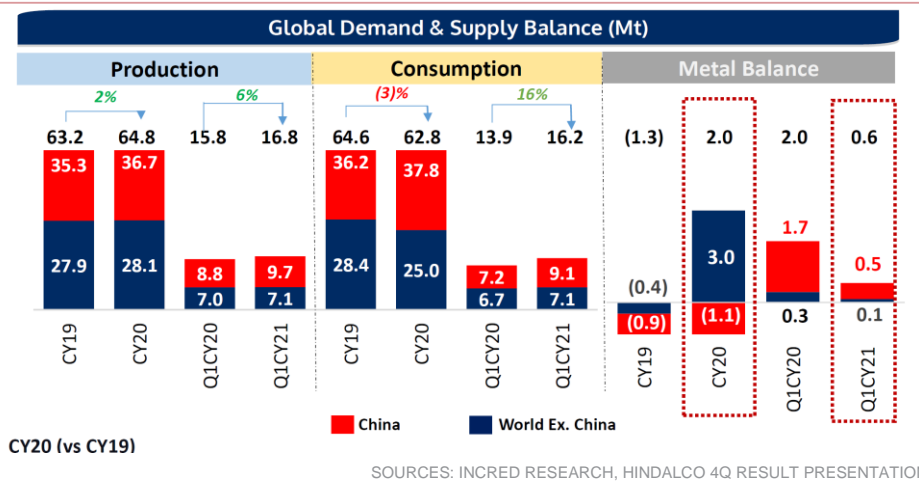
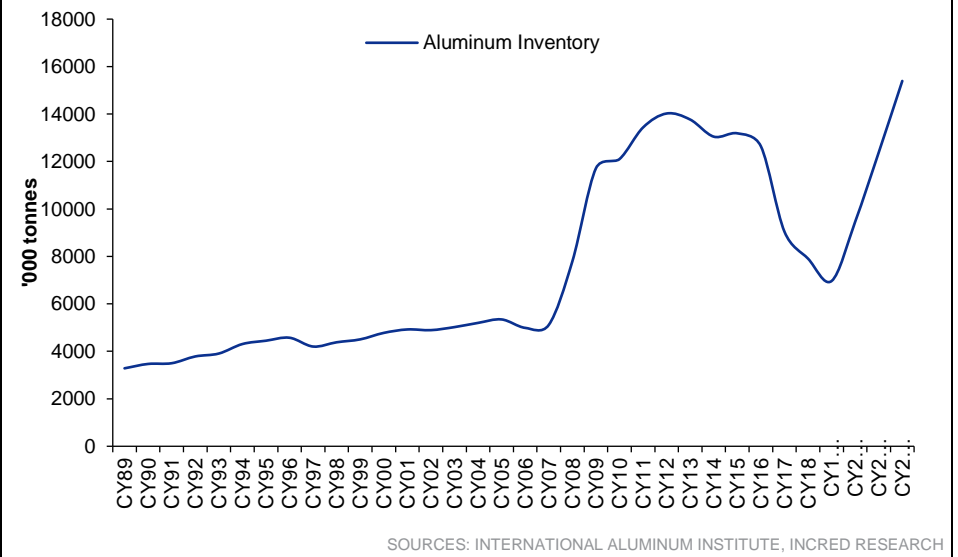


Figure 10: Supply chain is getting filled with aluminum. Inventory is increasing and we expect prices to correct soon



Aluminium prices currently cover ~100% of the cost curve

Figure 11: As of now almost the entire ~80mt of primary aluminum capacity is viable

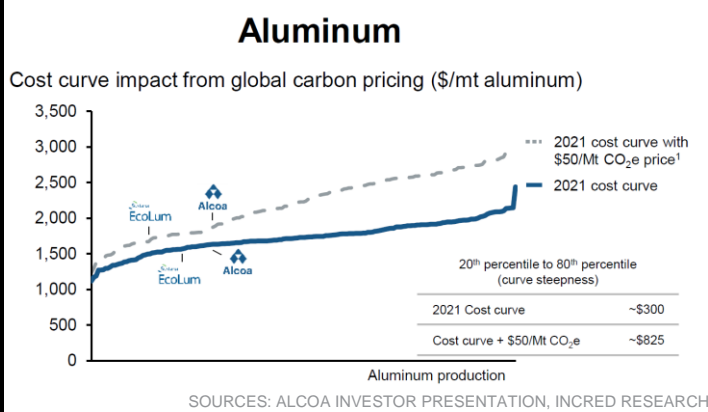
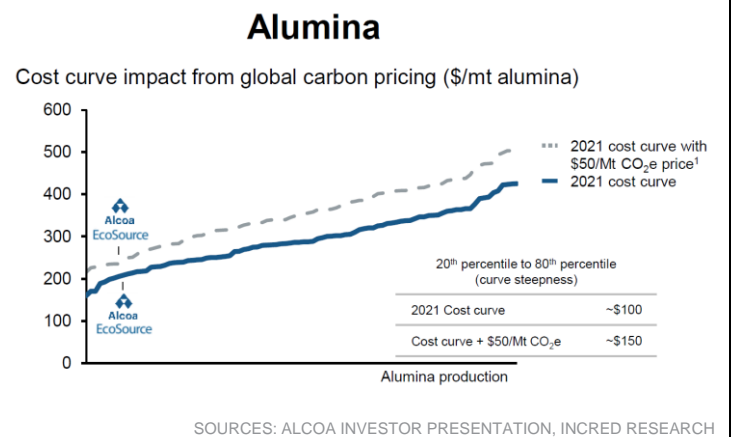


Figure 12: All alumina capacities are viable as of now



USD weakness is the only thing going for aluminum

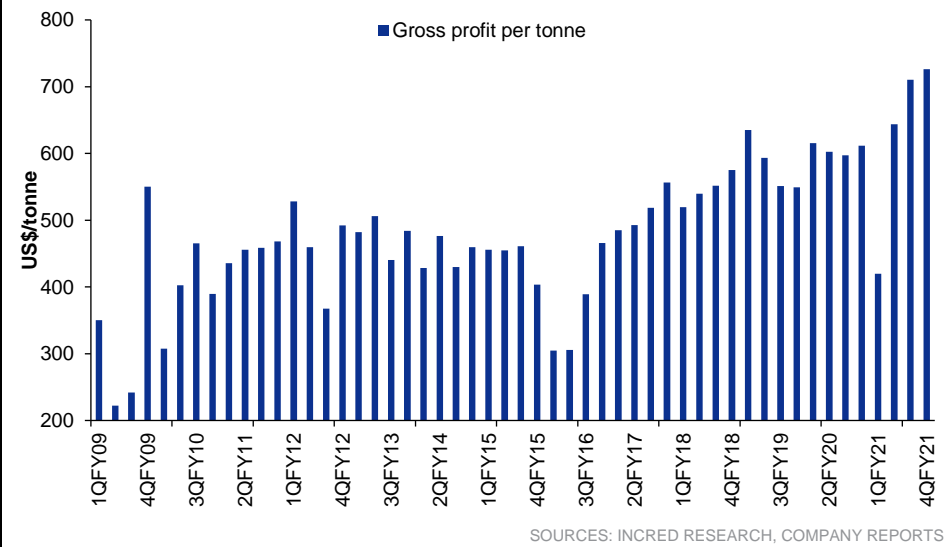
USD weakness is the only thing going for aluminum, but incremental power of liquidity to lift prices of commodities is going down. Do not be surprised if aluminum corrects despite USD weakness.

Hindalco: FY21 was best of all worlds, expect earnings to decline, balance sheet to deteriorate

4QFY21 marks the peak of gross profit for Novelis. As the supply chain gets filled with aluminum, we expect prices to decline. High US Midwest aluminum premiums should also fall in coming months.

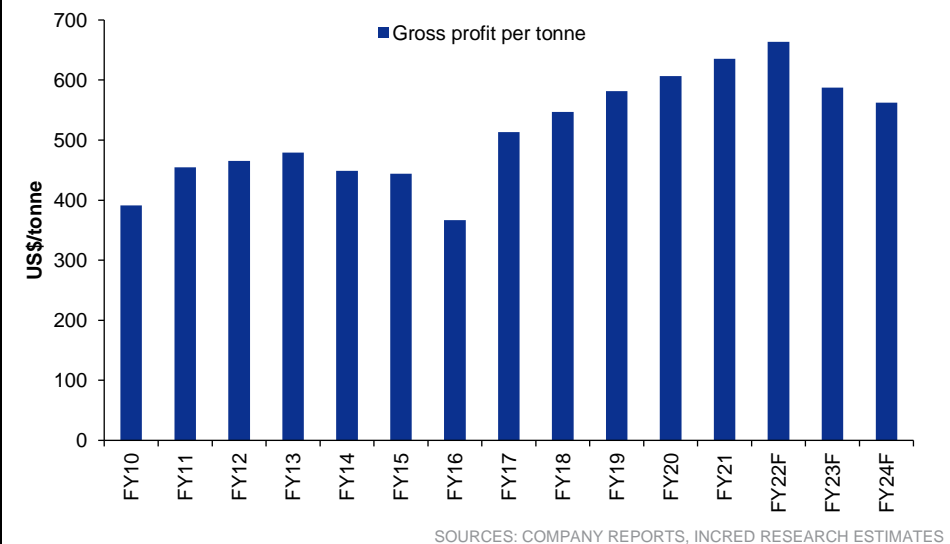
Novelis's 4QFY21 gross profit was its highest ever ➤

Figure 13: 4QFY21 saw the highest-ever gross profit/t for Novelis as supply rushed to cover likely shortages



We expect gross profits to decline in coming quarters as supply chain normalises ➤

Figure 14: Quarterly gross profits will decline slowly over the next few quarters, hence we expect gross profits in FY22F to be at US\$664/t (highest ever)



Fall in US Midwest premiums will indicate easing supply chain ➤

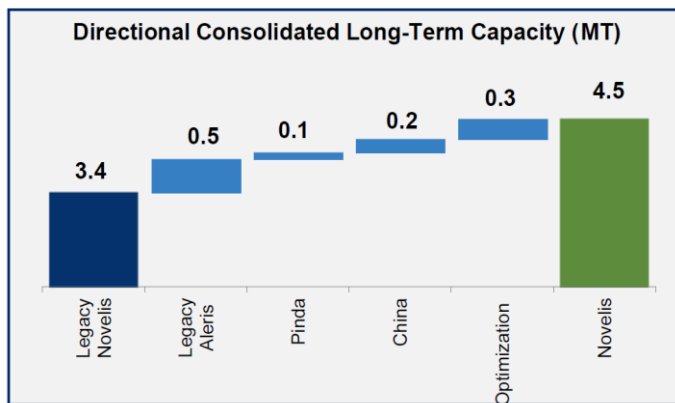
Figure 15: Falling US Midwest aluminum premiums, very high now, will be the first sign of the supply chain easing



Novelis has plans for aggressive capex over next five years ➤

Novelis will see US\$3bn worth of capital expenditure over the next five years. Of US\$3bn, US\$1.5bn will be spent on growth capex (Source: Hindalco Investor Day presentation). We estimate the company will invest at least US\$300m in maintenance capex per annum.

Figure 16: Novelis aims to become a 4.5mt rolled-product company over next 5 years



SOURCES: HINDALCO INVESTOR DAY PRESENTATION, INCRED RESEARCH

Figure 17: Novelis wants to invest US\$1.5bn in organic expansion over next 5 years

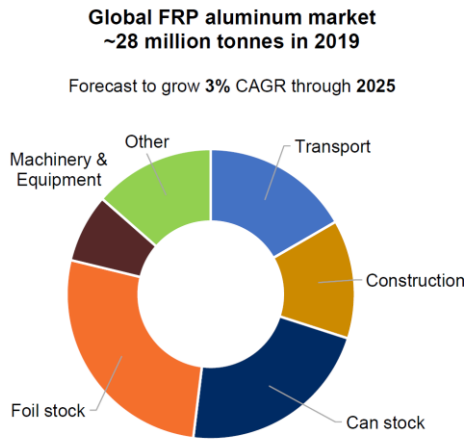
- Approximately \$1.5 billion organic growth capital over next 5 years
- Investing in innovative processes, technologies and capabilities to unlock capacity, capture growth, support sustainability initiatives in line with capital allocation policy
- Zhenjiang, China expansion
- Debottlenecking and capacity expansion
- Casting & recycling
- Efficiency and productivity through digital, IT, R&D, and innovation
- Automotive finishing
- Quality & return-based capital

SOURCES: HINDALCO INVESTOR DAY PRESENTATION, INCRED RESEARCH

Global FRP market likely to do well, but market is fragmented ➤

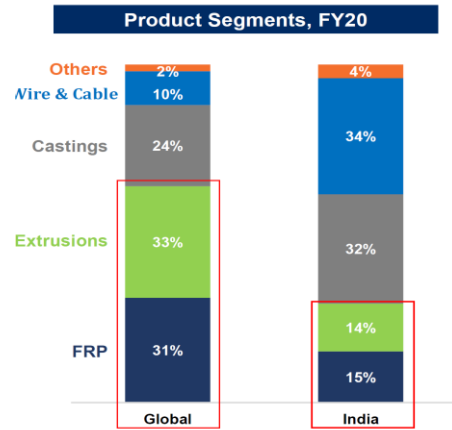
Technology for fibreglass reinforced plastic (FRP) production is easily available. There are multiple equipment makers worldwide who make quality mills for rolling of aluminum. The key to this business's success is not technology but reliability of supply and catering to changing customer demand. While we believe Novelis is high on reliability, fragmented competition will ensure extra-high margins in the business will be short-lived.

Figure 18: Global FRP demand is likely to grow at 3% CAGR



SOURCES: HINDALCO INVESTOR DAY PRESENTATION, INCRED RESEARCH

Figure 19: FRP comprises 31% of the overall aluminum demand

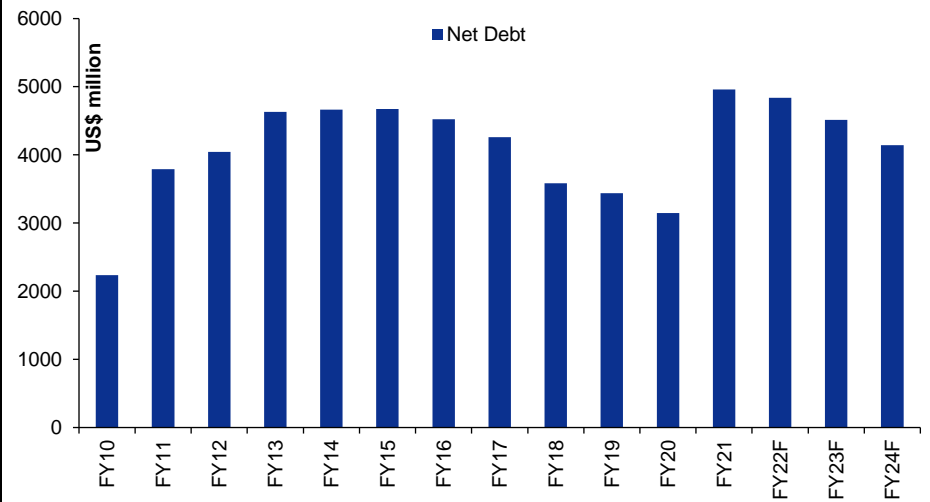


SOURCES: HINDALCO INVESTOR DAY PRESENTATION, INCRED RESEARCH

Hindalco assumes, as do other aluminum companies across the world, that aerospace demand will revive. We have serious concerns about this assumption as leisure and business travel will take a backseat a post-COVID world.

Novelis’s balance sheet deteriorated in FY21; we expect only slight improvement in FY22F ➤

Figure 20: Novelis’s net debt on balance sheet stood at US\$5bn in FY21; we expect only a minor reduction going forward



SOURCES: INCRED RESEARCH ESTIMATES, COMPANY REPORTS

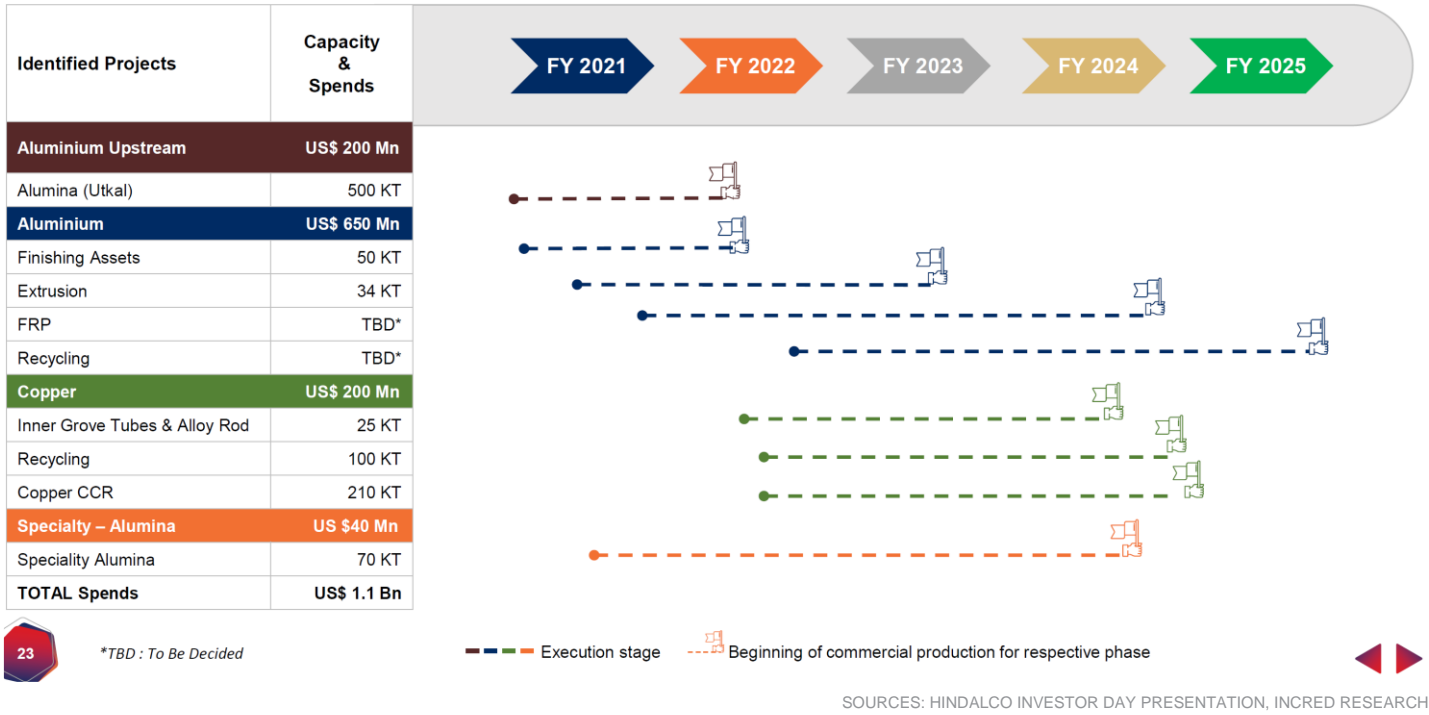
India business – High aluminum price, low copper TC/RC ➤

While we believe aluminum price will fall over the next few months from ~US\$2,400/t, still the yearly average, to hover around US\$2,200/t. The shortage in copper concentrate is leading to a decline in copper treatment charge (TC)/refining charge (RC). We expect TC/RC charges to remain around US\$225/t.

Hindalco planning significant capex in Indian operations ➤

Figure 21: Over the next 4 years Hindalco plans to spend ~Rs80bn on various capex programmes

India Operations : Project Spends - Execution Time Horizon



23 *TBD : To Be Decided

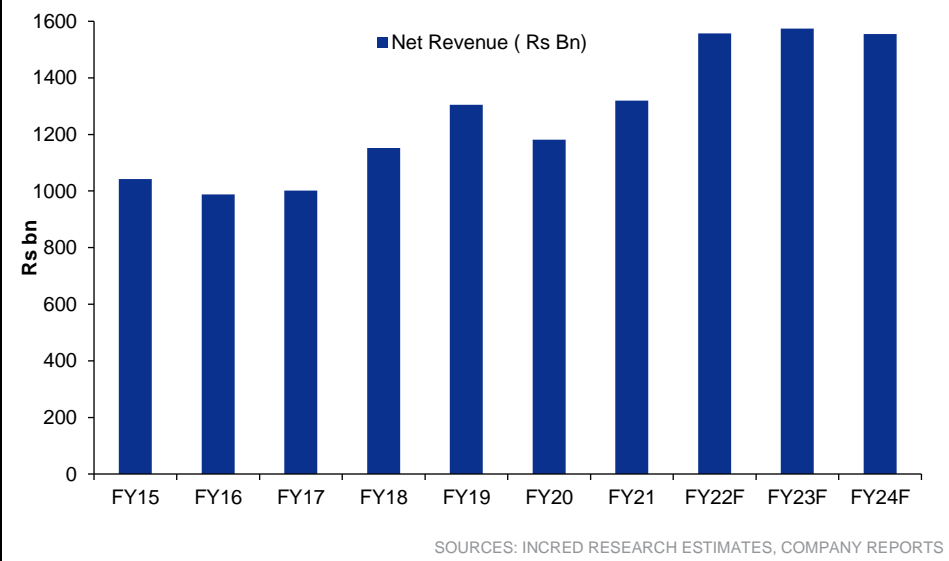
SOURCES: HINDALCO INVESTOR DAY PRESENTATION, INCRED RESEARCH

Earnings and valuation

Higher aluminum prices and gross profits in Novelis will drive EPS and EBITDA growth in FY22F. However, supply chain normalisation will lead to a fall in prices and Novelis's gross profits. We expect revenue, EBITDA, and PAT CAGR of 5.6%, -6%, and -28%, respectively, over FY21-24F. We do not expect significant deleveraging as high capex will keep free cash flow under pressure. Hindalco has made a marked strategy change as it has embarked on a capex drive from balance sheet deleveraging in FY21.

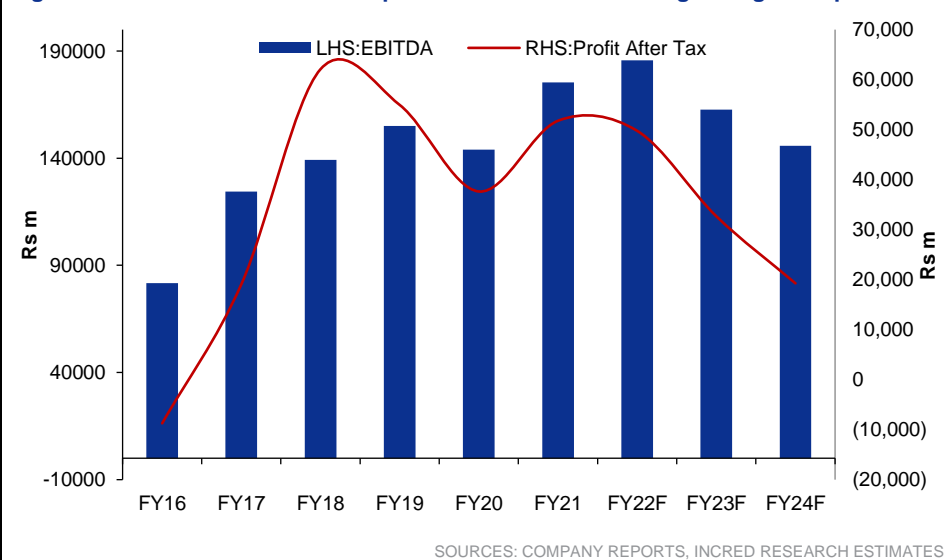
Hindalco's revenue likely to grow at 5.6% CAGR in FY21-24F ▶

Figure 22: Consolidated revenue may grow 5.6% CAGR over FY21-24F

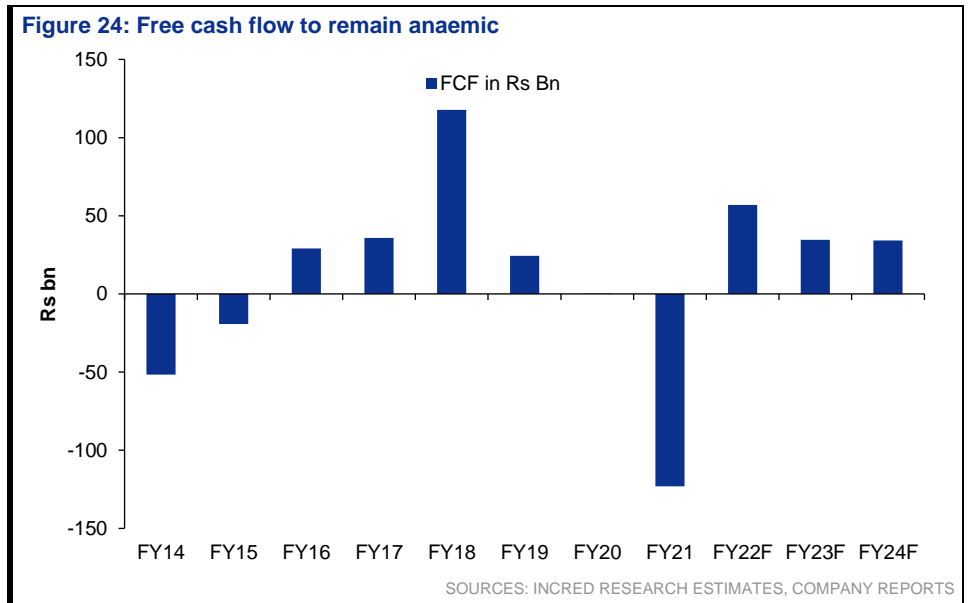


EBITDA to decline at 6.0% CAGR, but higher debt will lead to PAT decline of 28% CAGR ▶

Figure 23: PAT decline will be steeper due to increased leverage & higher depreciation

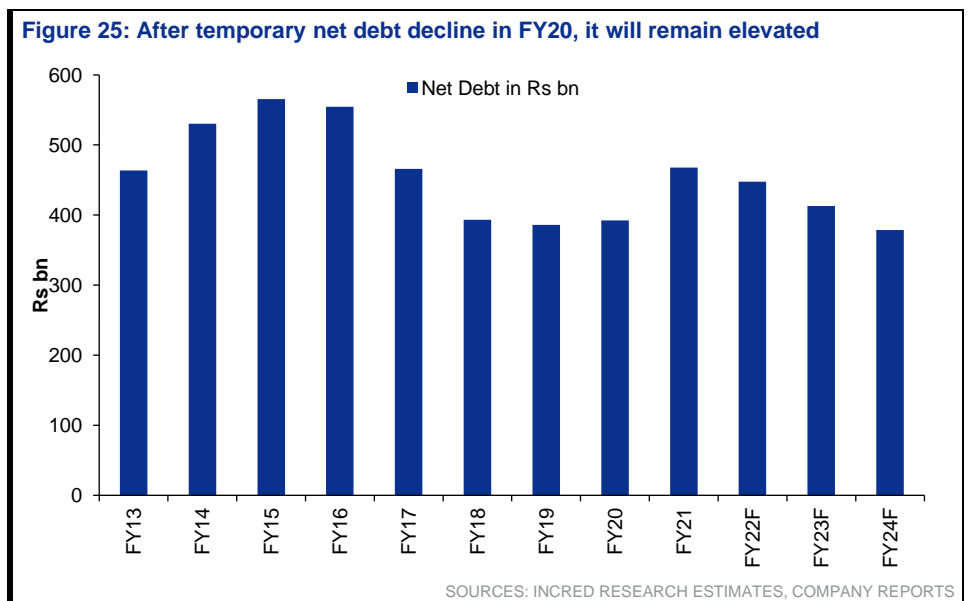


Company’s new focus on capital expenditure will keep free cash flow under stress ➤



Net debt is not likely to decline in coming years ➤

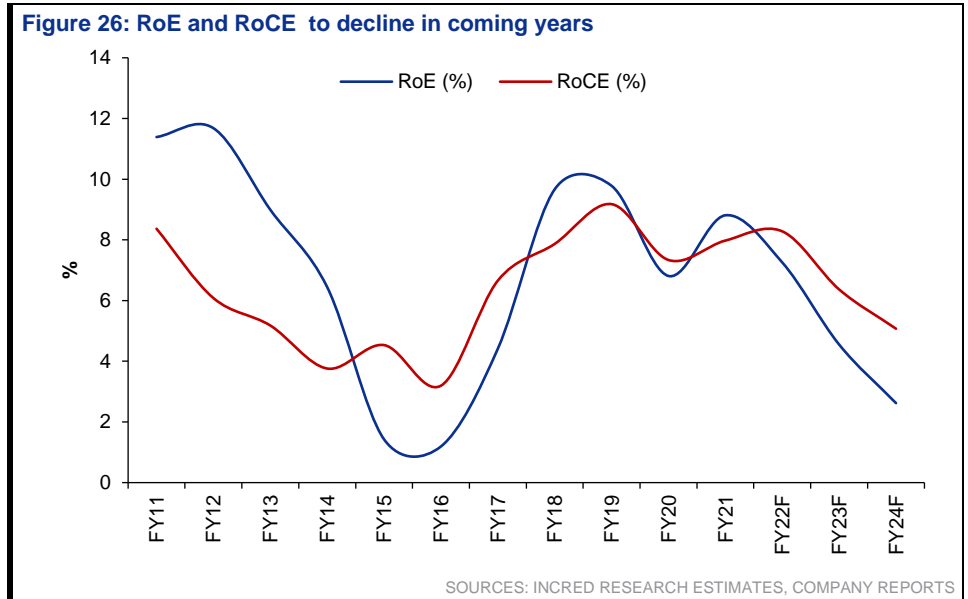
Hindalco has committed to a US\$2.6bn capex plan over the next five years and the continued requirement of maintenance capex means that net debt will stay elevated for some time.



We estimate Hindalco’s RoE & RoCE will decline in future ➤

Rising debt and declining profitability will lead to a decline in RoE and RoCE for the company in the near to medium term. With likely RoE of 8% at the peak of its commodity cycle, Hindalco’s premium valuation at 1.3x FY22F book does not look sustainable.

Figure 26: RoE and RoCE to decline in coming years



On average Hindalco trades at 7.56x EV/EBITDA, we value it at the same level to arrive at a TP of Rs352 ➤

Figure 27: Over the last 11 years Hindalco has traded at 7.56x EV/EBITDA

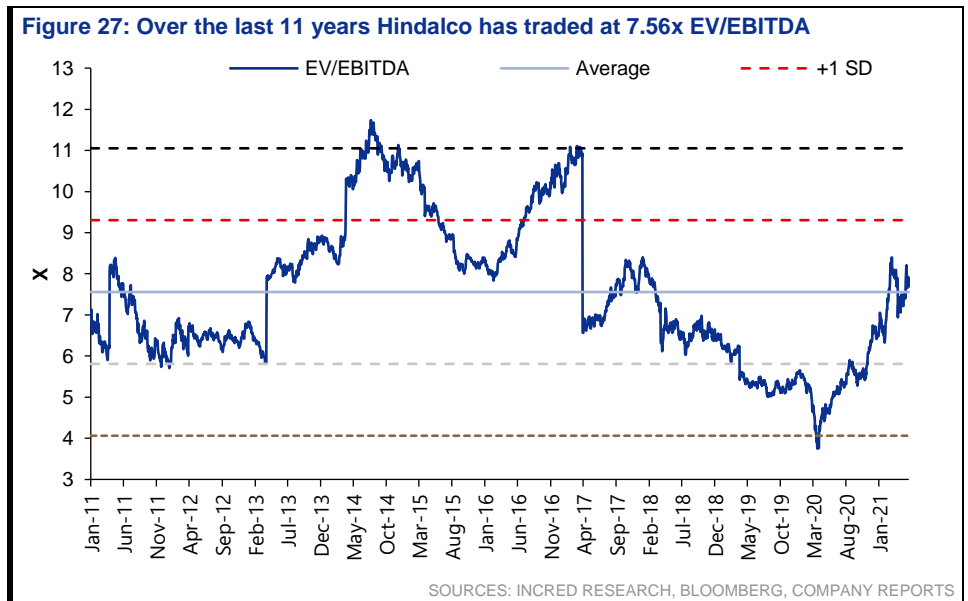


Figure 28: We value Hindalco at historical trading valuations of 7.56x EV/EBITDA to arrive at a TP of Rs352

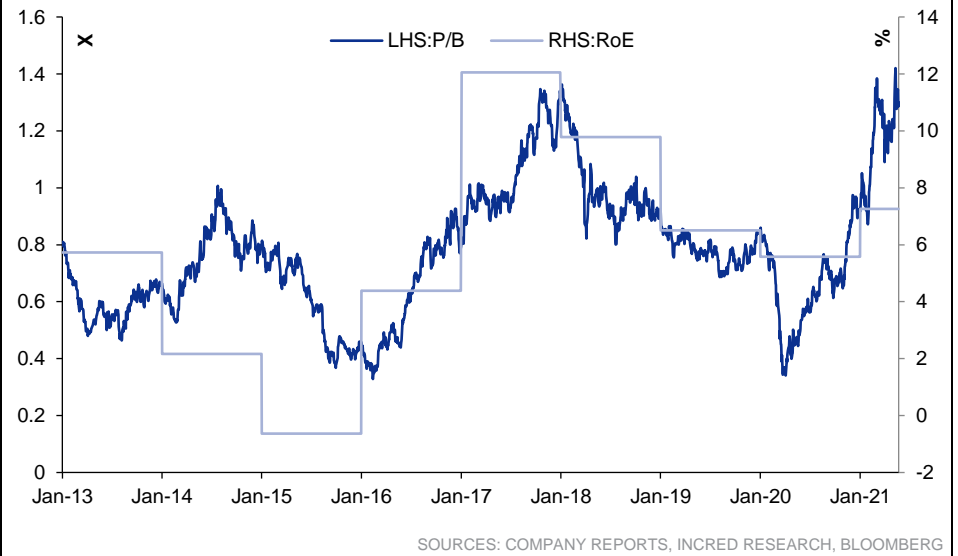
Hindalco valuation		
Item	Unit	Valuation
FY23F EBITDA	Rs m	1,62,666
EV/EBITDA	x	7.6
End-FY22F EV	Rs m	12,29,758
End FY22F net debt	Rs m	4,47,578
End FY22F equity value	Rs m	7,82,181
End FY22F equity value	Rs m	352

SOURCES: INCRED RESEARCH ESTIMATES, BLOOMBERG, COMPANY REPORTS

Market expectation for RoE too high & untenable, in our view ➤

Given the historical trading multiples on P/B, it appears that the market is pricing RoE to reach at least 12% in coming years. Given the likely aluminium price decline and fall in gross profits of Novelis, we estimate RoE will remain around 7% in FY22F and fall further in coming years.

Figure 29: Despite a meagre increase in RoE, stock has re-rated to 1.3x P/B



Earnings estimate revisions

Figure 30: Earnings estimate changes

Rs bn	Old Estimates		New Estimates		Change (%)	
	FY22F	FY23F	FY22F	FY23F	FY22F	FY23F
Consolidated						
Revenue	1,525	1,547	1,558	1,574	2	2
EBITDA	207	209	186	163	-10	-22
PAT	85	90	50	33	-41	-64
EPS (Rs)	38	41	22	15	-41	-64

SOURCES: INCRED RESEARCH ESTIMATES

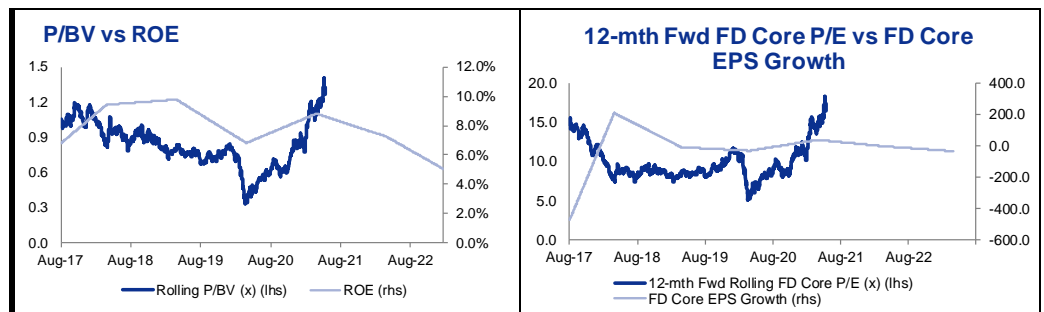
Valuation change summary

Figure 31: Valuation change summary

	Old		New	
	FY22F	FY23F	FY22F	FY23F
Consolidated				
P/BV (x)	1.2	1.1	1.2	1.2
EV/EBITDA (x)	6.2	5.7	6.9	7.6
P/E (x)	10.4	9.8	17.4	26.5

SOURCES: INCRED RESEARCH ESTIMATES

BY THE NUMBERS



Profit & Loss

(Rs mn)	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
Total Net Revenues	11,81,440	13,19,850	15,57,595	15,73,947	15,55,171
Gross Profit	4,98,730	5,54,030	5,91,093	5,75,943	5,61,087
Operating EBITDA	1,44,060	1,75,360	1,85,728	1,62,666	1,45,836
Depreciation And Amortisation	(51,910)	(66,280)	(66,467)	(69,584)	(72,667)
Operating EBIT	92,150	1,09,080	1,19,260	93,083	73,169
Financial Income/(Expense)	(41,970)	(37,380)	(40,266)	(38,426)	(36,731)
Pretax Income/(Loss) from Assoc.	40	50			
Non-Operating Income/(Expense)	11,860	12,220	12,246	12,246	12,246
Profit Before Tax (pre-EI)	62,080	83,970	91,240	66,902	48,684
Exceptional Items	(2,840)	(4,920)			
Pre-tax Profit	59,240	79,050	91,240	66,902	48,684
Taxation	(21,570)	(27,230)	(41,481)	(34,229)	(29,425)
Exceptional Income - post-tax					
Profit After Tax	37,670	51,820	49,759	32,673	19,259
Minority Interests					
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	37,670	51,820	49,759	32,673	19,259
Recurring Net Profit	39,476	55,045	49,759	32,673	19,259
Fully Diluted Recurring Net Profit	39,476	55,045	49,759	32,673	19,259

Cash Flow

(Rs mn)	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
EBITDA	1,44,060	1,75,360	1,85,728	1,62,666	1,45,836
Cash Flow from Invt. & Assoc.					
Change In Working Capital	(11,780)	14,040	647	(171)	(3,509)
(Incr)/Decr in Total Provisions					
Other Non-Cash (Income)/Expense	(12,670)	(11,870)	(4,043)	(109)	1,190
Other Operating Cashflow	50,030	44,730	52,512	50,672	48,977
Net Interest (Paid)/Received	(41,970)	(37,380)	(40,266)	(38,426)	(36,731)
Tax Paid	(1,020)	(12,560)	(41,481)	(34,229)	(29,425)
Cashflow From Operations	1,26,650	1,72,320	1,53,097	1,40,403	1,26,338
Capex	(67,910)	(55,650)	(56,697)	(58,516)	(46,516)
Disposals Of FAs/subsidiaries	840	480			
Acq. Of Subsidiaries/investments					
Other Investing Cashflow	(15,940)	(2,01,200)	9,687		
Cash Flow From Investing	(83,010)	(2,56,370)	(47,010)	(58,516)	(46,516)
Debt Raised/(repaid)	1,09,490	(9,680)	10,895	(36,500)	(36,500)
Proceeds From Issue Of Shares		50			
Shares Repurchased					
Dividends Paid	(3,200)	(2,220)	(8,880)	(8,880)	(8,880)
Preferred Dividends					
Other Financing Cashflow	(40,160)	(36,940)	(40,266)	(38,426)	(36,731)
Cash Flow From Financing	66,130	(48,790)	(38,252)	(83,806)	(82,111)
Total Cash Generated	1,09,770	(1,32,840)	67,835	(1,920)	(2,289)
Free Cashflow To Equity	1,53,130	(93,730)	1,16,982	45,387	43,322
Free Cashflow To Firm	85,610	(46,670)	1,46,354	1,20,313	1,16,554

SOURCES: INCRED RESEARCH, COMPANY REPORTS

BY THE NUMBERS...cont'd

Balance Sheet					
(Rs mn)	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
Total Cash And Equivalents	2,78,480	1,82,260	2,13,457	2,11,537	2,09,248
Total Debtors	94,010	1,29,590	1,38,022	1,40,229	1,38,813
Inventories	2,23,840	3,06,680	2,75,266	2,77,011	2,73,172
Total Other Current Assets	67,050	1,29,870	75,183	75,359	75,036
Total Current Assets	6,63,380	7,48,400	7,01,928	7,04,137	6,96,270
Fixed Assets	7,68,180	8,71,540	8,61,770	8,50,702	8,24,551
Total Investments	31,320	8,130	35,082	35,082	35,082
Intangible Assets	2,00,980	2,33,170	2,31,004	2,31,004	2,31,004
Total Other Non-Current Assets	31,420	35,750	37,223	37,415	36,311
Total Non-current Assets	10,31,900	11,48,590	11,65,078	11,54,203	11,26,948
Short-term Debt	87,170	60,290	50,918	50,918	50,918
Current Portion of Long-Term Debt					
Total Creditors	1,83,000	2,82,800	2,34,789	2,37,513	2,35,207
Other Current Liabilities	1,02,000	1,41,840	1,12,828	1,14,062	1,07,281
Total Current Liabilities	3,72,170	4,84,930	3,98,536	4,02,493	3,93,406
Total Long-term Debt	5,83,790	5,89,850	6,10,117	5,73,617	5,37,117
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	25,970	30,390	30,936	30,936	30,936
Total Non-current Liabilities	6,09,760	6,20,240	6,41,053	6,04,553	5,68,053
Total Provisions	1,30,080	1,26,390	1,21,108	1,21,191	1,21,277
Total Liabilities	11,12,010	12,31,560	11,60,696	11,28,237	10,82,736
Shareholders Equity	5,83,170	6,65,330	7,06,209	7,30,003	7,40,382
Minority Interests	100	100	100	100	100
Total Equity	5,83,270	6,65,430	7,06,309	7,30,103	7,40,482

Key Ratios					
	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
Revenue Growth	(9.5%)	11.7%	18.0%	1.0%	(1.2%)
Operating EBITDA Growth	(7.1%)	21.7%	5.9%	(12.4%)	(10.3%)
Operating EBITDA Margin	12.2%	13.3%	11.9%	10.3%	9.4%
Net Cash Per Share (Rs)	(176.48)	(210.76)	(201.61)	(186.03)	(170.62)
BVPS (Rs)	262.23	299.70	318.11	328.83	333.51
Gross Interest Cover	2.20	2.92	2.96	2.42	1.99
Effective Tax Rate	36.4%	34.4%	45.5%	51.2%	60.4%
Net Dividend Payout Ratio			17.8%	27.2%	46.1%
Accounts Receivables Days	32.22	30.92	31.36	32.26	32.75
Inventory Days	119.16	126.43	109.89	100.99	101.01
Accounts Payables Days	104.32	111.00	97.73	86.37	86.78
ROIC (%)	5.6%	6.5%	5.1%	3.6%	2.3%
ROCE (%)	7.5%	8.2%	8.6%	6.6%	5.3%
Return On Average Assets	4.2%	4.5%	3.8%	2.8%	1.8%

SOURCES: INCRED RESEARCH, COMPANY REPORTS

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Corporate Governance Report:

The disclosure of the survey result of the Thai Institute of Directors Association ("IOD") regarding corporate governance is made pursuant to the policy of the Office of the Securities and Exchange Commission. The survey of the IOD is based on the information of a company listed on the Stock Exchange of Thailand and the Market for Alternative Investment disclosed to the public and able to be accessed by a general public investor. The result, therefore, is from the perspective of a third party. It is not an evaluation of operation and is not based on inside information.

The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey result may be changed after that date. CGS-CIMB Thailand does not confirm nor certify the accuracy of such survey result.

Score Range:	90 - 100	80 – 89	70 - 79	Below 70 or	No Survey Result
Description:	Excellent	Very Good	Good	N/A	N/A

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Corporate Governance Report of Thai Listed Companies (CGR). CG Rating by the Thai Institute of Directors Association (Thai IOD) in 2020, Anti-Corruption 2020

ADVANC – Excellent, Certified, **AMATA** – Excellent, Certified, **ANAN** – Excellent, n/a, **AOT** – Excellent, n/a, **AP** – Excellent, Certified, **ASP** – Excellent, n/a, **AU** – Good, n/a, **BAM** – Very Good, Certified, **BAY** – Excellent, Certified, **BBL** – Very Good, Certified, **BCH** – Good, Certified, **BCP** - Excellent, Certified, **BCPG** – Excellent, Certified, **BDMS** – Excellent, n/a, **BEAUTY** – Good, n/a, **BH** - Good, n/a, **BJC** – Very Good, n/a, **BLA** – Excellent, Certified, **BTS** - Excellent, Certified, **CBG** – Very Good, n/a, **CCET** – n/a, n/a, **CENTEL** – Excellent, Certified, **CHAYO** – Very Good, n/a, **CHG** – Very Good, n/a, **CK** – Excellent, n/a, **COM7** – Very Good, Certified, **CPALL** – Excellent, Certified, **CPF** – Excellent, Certified, **CPN** - Excellent, Certified, **CPNREIT** – n/a, n/a, **CRC** – Very Good, n/a, **DELTA** - Excellent, Certified, **DDD** – Very Good, n/a, **DIF** – n/a, n/a, **DOHOME** – Very Good, n/a, **DREIT** – n/a, n/a, **DTAC** – Excellent, Certified, **ECL** – Excellent, Certified, **EGCO** - Excellent, Certified, **EPG** – Excellent, Certified, **ERW** – Very Good, Certified, **GFPT** - Excellent, Certified, **GGC** – Excellent, Certified, **GLOBAL** – Very Good, n/a, **HANA** - Excellent, Certified, **HMPRO** - Excellent, Certified, **HUMAN** – Good, n/a, **ICHI** – Excellent, Certified, **III** – Excellent, n/a, **INTUCH** - Excellent, Certified, **IRPC** – Excellent, Certified, **ITD** – Very Good, n/a, **IVL** - Excellent, Certified, **JASIF** – n/a, n/a, **JKN** – Excellent, Declared, **JMT** – Very Good, Declared, **KBANK** - Excellent, Certified, **KCE** - Excellent, Certified, **KEX** – n/a, n/a, **KKP** – Excellent, Certified, **KSL** – Excellent, Certified, **KTB** - Excellent, Certified, **KTC** – Excellent, Certified, **LH** - Excellent, n/a, **LPN** – Excellent, Certified, **M** – Very Good, Certified, **MAKRO** – Excellent, Certified, **MC** – Excellent, Certified, **MEGA** – Very Good, n/a, **MINT** - Excellent, Certified, **MTC** – Excellent, Certified, **NETBAY** – Very Good, n/a, **NRF** – n/a, n/a, **OR** – n/a, n/a, **ORI** – Excellent, Certified, **OSP** – Very Good, n/a, **PLANB** – Excellent, Certified, **PRINC** – Very Good, Certified, **PR9** – Excellent, n/a, **PSH** – Excellent, Certified, **PTT** - Excellent, Certified, **PTTEP** - Excellent, Certified, **PTTGC** - Excellent, Certified, **QH** – Excellent, Certified, **RBF** – Good, n/a, **RS** – Excellent, n/a, **RSP** – Good, n/a, **S** – Excellent, n/a, **SAK** – n/a, n/a, **SAPPE** – Very Good, Certified, **SAWAD** – Very Good, n/a, **SCB** - Excellent, Certified, **SCC** – Excellent, Certified, **SCGP** – n/a, n/a, **SHR** – Very Good, n/a, **SIRI** – Excellent, Certified, **SPA** – Very Good, n/a, **SPALI** - Excellent, Declared, **SPRC** – Excellent, Certified, **SSP** - Good, Declared, **STEC** – n/a, n/a, **SVI** – Excellent, Certified, **SYNEX** – Very Good, n/a, **TCAP** – Excellent, Certified, **THANI** – Excellent, Certified, **TISCO** - Excellent, Certified, **TKN** – Very Good, n/a, **TMB** - Excellent, Certified, **TOP** - Excellent, Certified, **TRUE** – Excellent, Certified, **TU** – Excellent, Certified, **TVO** – Excellent, Certified, **VGI** – Excellent, Certified, **WHA** – Excellent, Certified, **WHART** – n/a, n/a, **WICE** – Excellent, Certified, **WORK** – Good, n/a.

- CG Score 2020 from Thai Institute of Directors Association (IOD)

- Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of January 30, 2021) are categorised into: companies that have declared their intention to join CAC, and companies certified by CAC.

Recommendation Framework

Stock Ratings

Definition:

- Add** The stock's total return is expected to exceed 10% over the next 12 months.
- Hold** The stock's total return is expected to be between 0% and positive 10% over the next 12 months.
- Reduce** The stock's total return is expected to fall below 0% or more over the next 12 months.

The total expected return of a stock is defined as the sum of the: (i) percentage difference between the target price and the current price and (ii) the forward net dividend yields of the stock. Stock price targets have an investment horizon of 12 months.

Sector Ratings

Definition:

- Overweight** An Overweight rating means stocks in the sector have, on a market cap-weighted basis, a positive absolute recommendation.
- Neutral** A Neutral rating means stocks in the sector have, on a market cap-weighted basis, a neutral absolute recommendation.
- Underweight** An Underweight rating means stocks in the sector have, on a market cap-weighted basis, a negative absolute recommendation.

Country Ratings

Definition:

- Overweight** An Overweight rating means investors should be positioned with an above-market weight in this country relative to benchmark.
- Neutral** A Neutral rating means investors should be positioned with a neutral weight in this country relative to benchmark.
- Underweight** An Underweight rating means investors should be positioned with a below-market weight in this country relative to benchmark.