

India

REDUCE (previously ADD)

Consensus ratings*:	Buy 7	Hold 1	Sell 2
Current price:	Rs94		
Target price:	Rs85 ▲		
Previous target:	Rs60		
Up/downside:	-9.6%		
InCred Research / Consensus:	-11.5%		
Reuters:	NALU.NS		
Bloomberg:	NACL IN		
Market cap:	US\$2,362m		
	Rs172,460m		
Average daily turnover:	US\$41.9m		
	Rs3062.7m		
Current shares o/s:	0.0m		
Free float:	48.7%		

*Source: Bloomberg

Key changes in this note

- FY22F EPS increased by 45.3%
- FY23F EPS increased by 52.4%



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	(0.6)	28.5	150.7
Relative (%)	(7.2)	15.2	65.4

Major shareholders	% held
Promoter & Promoter Group	51.3
Bharat 22 ETF	3.4
Mirae Asset Arbitrage Fund	1.7

Analyst(s)

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National Aluminium Co Ltd

Downgrade to REDUCE

- The rise in primary aluminium prices (driven by supply chain congestion) is giving us false comfort. Scrap aluminium and alumina indicate otherwise.
- The US is facing a severe primary metal crunch because of port congestion, which is indicated by unprecedentedly high mid-west aluminium premium.
- Aluminium prices currently are an aberration, but NALCO stock is pricing in sustainability of the same. Downgrade to REDUCE with a TP of Rs85.

Aluminum prices building a mirage of structural change

Like all commodities, aluminium is also on a rampage and is hitting new highs daily. Port congestion because of new COVID-19 protocols is creating supply uncertainties and, as always, it creates a mirage of rampaging demand. The best indicator of congestion is the rising US mid-west premium, which is now at US\$760/tonne. US imports ~3 mn tonnes of primary aluminium and exports around 2 mn tonnes of aluminium scrap (Data source: USGS). One can imagine the surplus of aluminum scrap in global markets as despite 2 mn tonnes (around 7% of global scrap consumption) supply is uncertain and still scrap prices are not moving up. We have shown in the report that Chinese smelters are better in carbon emission and energy consumption (Source: International Aluminum Institute) compared to world average. However, they have still some of the highly polluting Soderberg technology-based smelters which need to be closed down. As supply chain problems ease, the arbitrage opportunity in locking the backwardation in aluminium acquisition cost (arbitrage = 3-month aluminium prices + 3-month premium – 15-month aluminium prices - 15-month premium) will fade and things will become normal.

Can aluminium rise from current levels? May be, but it won't sustain

While its always possible that aluminium prices may rise from their current levels, but as argued earlier, it won't sustain at those levels for a long time. Having said that, the stock (more so in a rampaging bull market) will price that in. Hence, while it is possible that the stock can rise from their current levels, but as of now risk-reward ratio is unfavourable for the investor. Reduce all aluminum plays which are long on aluminum prices.

We downgrade stock to REDUCE with a 12-month TP of Rs85/share

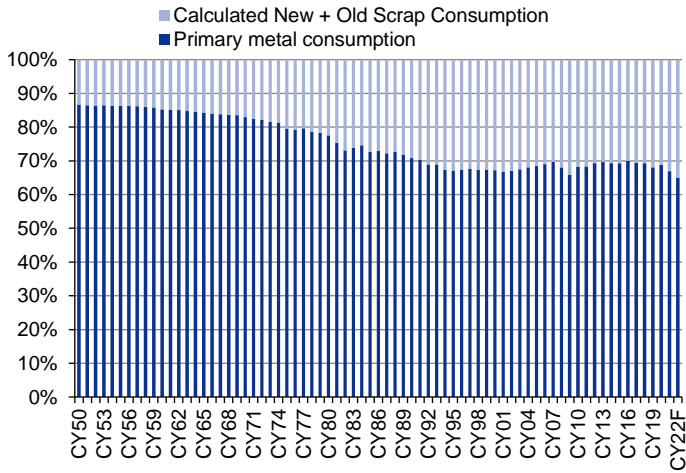
NALCO is trading at +2 SD of its long-term mean on Price/Book Value basis and on EV/EBITDA basis it is at 4.7 X one-year forward earnings, which is near to the historical mean. Normally, at such unsustainable aluminium prices the stock would have traded at a much lower valuation, but as we have argued earlier, as of now market believes that the rise in aluminum prices is structural. We value the stock at 4.7X EV/EBITDA (in line with historical average) and downgrade it to REDUCE with a 12-month TP of Rs85/share.

Financial Summary	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
Revenue (Rsm)	84,718	89,558	123,614	123,407	123,679
Operating EBITDA (Rsm)	4,892	17,828	33,700	31,474	29,851
Net Profit (Rsm)	1,382	12,995	21,714	19,533	18,401
Core EPS (Rs)	0.7	7.0	11.6	10.5	9.9
Core EPS Growth	(92.0%)	840.3%	67.1%	(10.0%)	(5.8%)
FD Core P/E (x)	126.71	13.48	8.06	8.97	9.52
DPS (Rs)	1.5	2.5	6.2	6.2	6.2
Dividend Yield	1.60%	2.66%	6.60%	6.60%	6.60%
EV/EBITDA (x)	(4.14)	(1.09)	(0.22)	(0.36)	(0.48)
P/FCFE (x)	37.56	21.21	11.69	11.30	12.15
Net Gearing	(20.3%)	(18.3%)	(7.4%)	(10.4%)	(12.2%)
P/BV (x)	1.75	1.64	1.72	1.60	1.50
ROE	1.4%	12.6%	20.8%	18.5%	16.3%
% Change In Core EPS Estimates			45.27%	52.42%	
InCred Research/Consensus EPS (x)			1.55	1.31	4.06

SOURCES: INCRED RESEARCH, COMPANY REPORTS

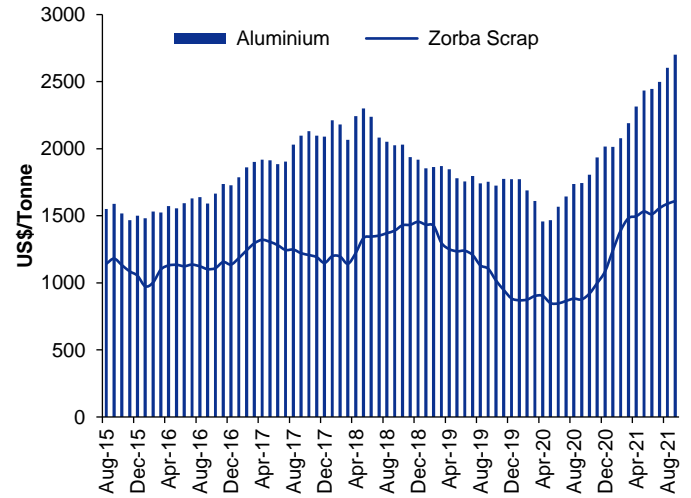
Key charts

Figure 1: Aluminium scrap accounts for ~32% of overall metal consumption



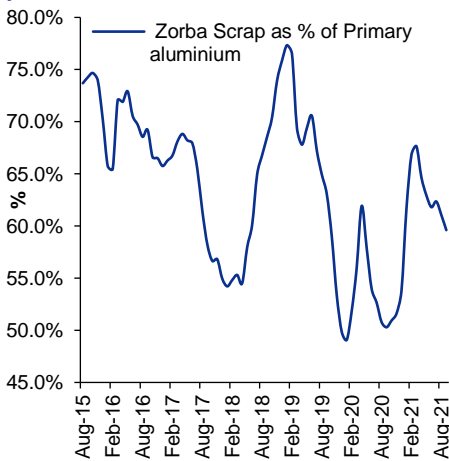
SOURCES: INCRED RESEARCH, INTERNATIONAL ALUMINIUM INSTITUTE

Figure 2: Despite the rapid rise in aluminium prices, aluminium scrap prices have not moved much



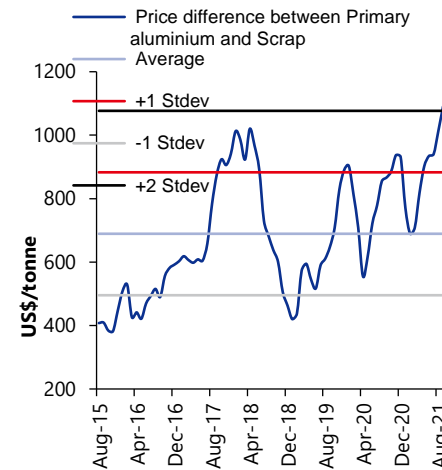
SOURCES: INCRED RESEARCH, INTERNATIONAL ALUMINIUM INSTITUTE

Figure 3: In fact, scrap prices as a % of aluminium prices are well below their peak



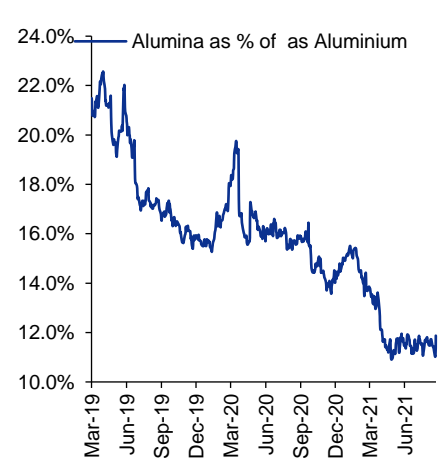
SOURCES: INCRED RESEARCH, BLOOMBERG

Figure 4: Price differential between aluminium scrap and aluminium is at +2 SD



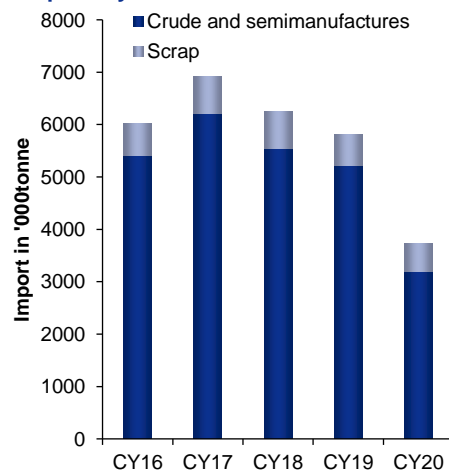
SOURCES: INCRED RESEARCH, BLOOMBERG

Figure 5: Even alumina is at a much lower level compared to normal 16-17% of aluminium



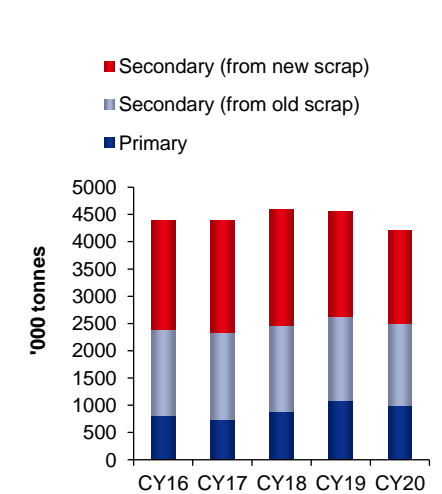
SOURCES: INCRED RESEARCH, BLOOMBERG

Figure 6: Rise in aluminium is led by the US, which depends heavily on import of the primary metal



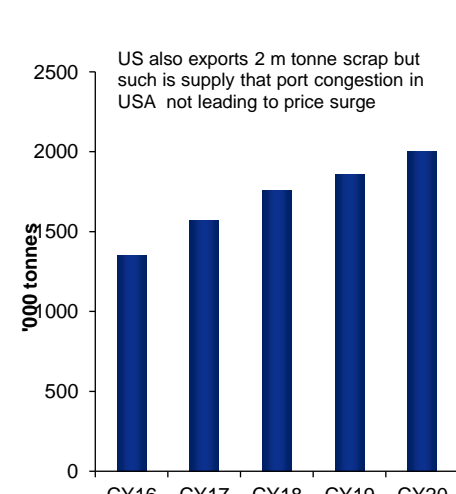
SOURCES: INCRED RESEARCH, USGS

Figure 7: Production from primary source is very low at 1 mn tonne in USA



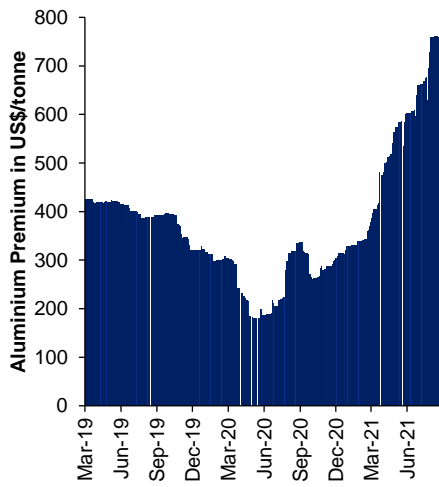
SOURCES: INCRED RESEARCH, USGS

Figure 8: US also exports ~2 mn tonnes of scrap to global markets



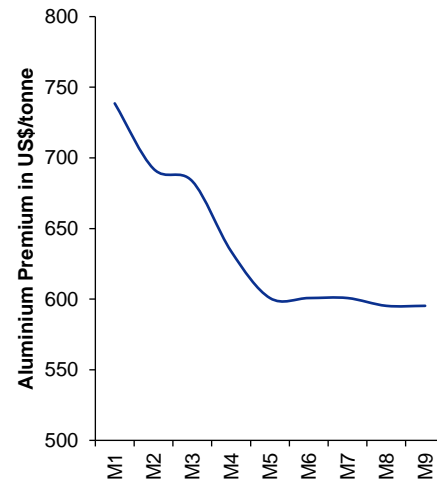
SOURCES: INCRED RESEARCH, USGS

Figure 9: Spot aluminium premium has risen steadily in the US



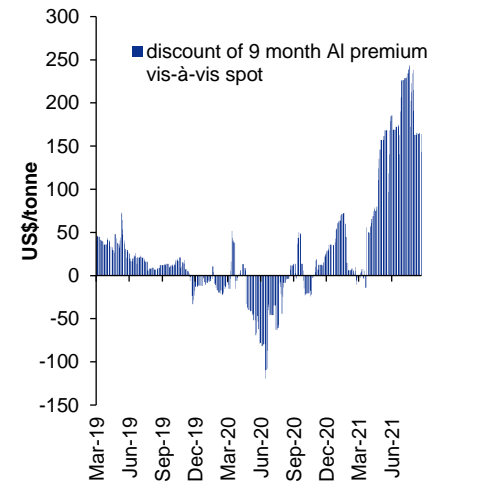
SOURCES: INCRED RESEARCH, LME

Figure 10: 9-month aluminium premium is at a 20% discount vis-à-vis cash premium



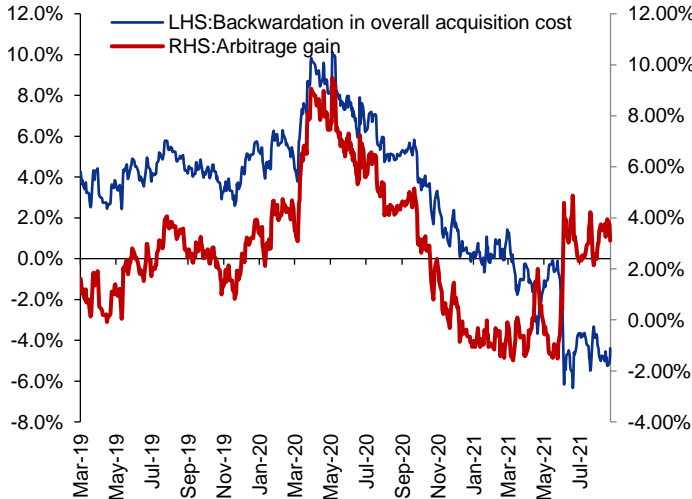
SOURCES: INCRED RESEARCH, LME

Figure 11: 9-month aluminium premium's discount vis-à-vis cash premium is near all-time high



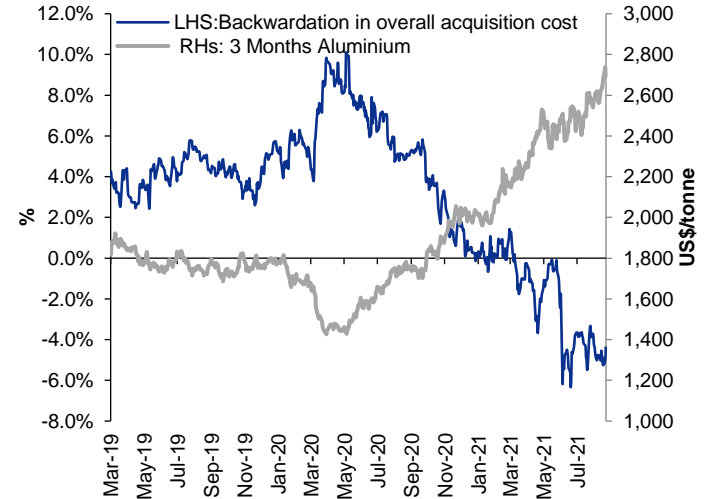
SOURCES: INCRED RESEARCH, LME

Figure 12: Backwardation in overall acquisition cost of 3-month and 15-month aluminium leads to arbitrage opportunity



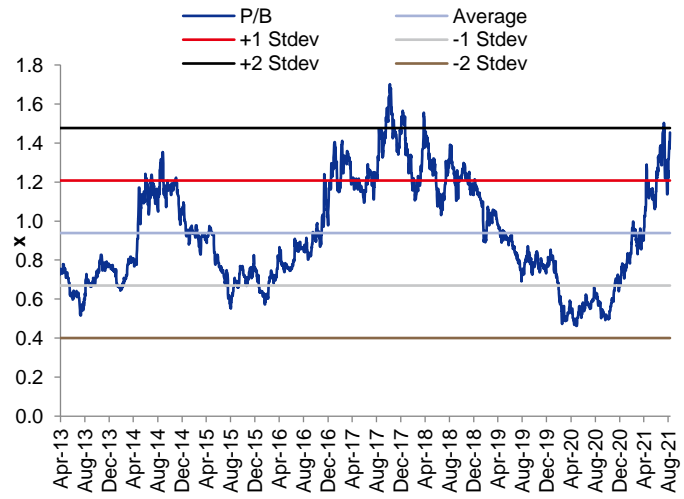
SOURCES: INCRED RESEARCH, LME

Figure 13: The rise in free money and the knowledge that aluminium will overflow in future is raising backwardation



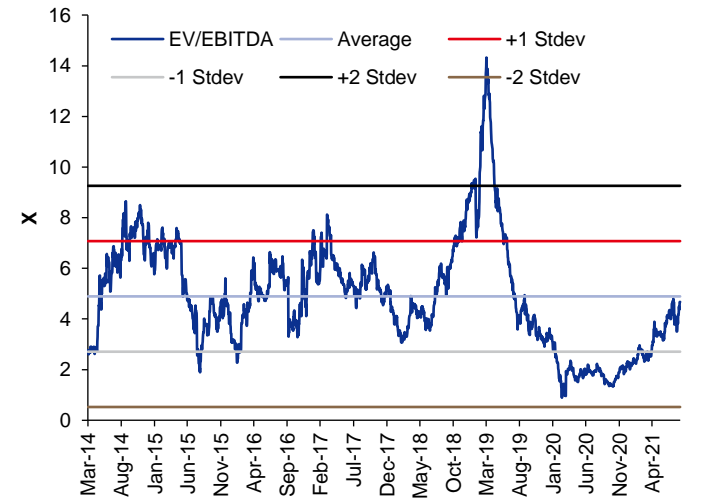
SOURCES: INCRED RESEARCH, LME

Figure 14: NALCO is trading near its highest valuation of last 7 years, risk-reward ratio unfavourable, REDUCE



SOURCES: BLOOMBERG, COMPANY REPORTS, INCRED RESEARCH

Figure 15: Stock is trading at a long-term average valuation on EV/EBITDA basis



SOURCES: BLOOMBERG, COMPANY REPORTS, INCRED RESEARCH

Aluminium prices just too high, must fall

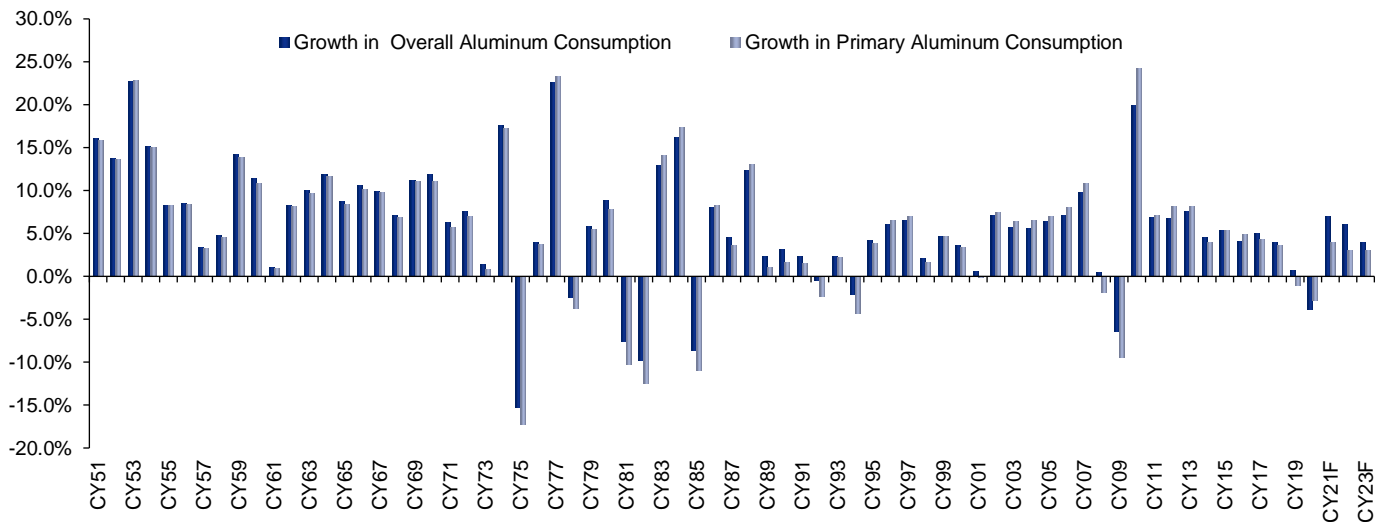
Like all commodities, aluminium is also on a rampage and is hitting new highs daily. Supply chain problems are being baked in as structural changes consequently and extraordinary high earnings can get high PEs as well. While we can't guess the PEs of stocks in the near to medium term, but after the madness they will also collapse. Better to be safe than sorry and sell aluminum plays which are long on the base commodity. We downgrade NALCO to REDUCE from ADD.

Aluminium is pricing in the best of all worlds

Aluminium prices are high because of supply chain problems, and the best indicator of the same is the rise in physical premium of aluminium. The COVID-19 pandemic is leading to supply scarcity as scrap collection would have gone down during the lockdown. Please note that approximately 25% of overall aluminum consumption is accounted for by scrap.

History of aluminium demand growth should be seen on a combined basis along with secondary consumption ➤

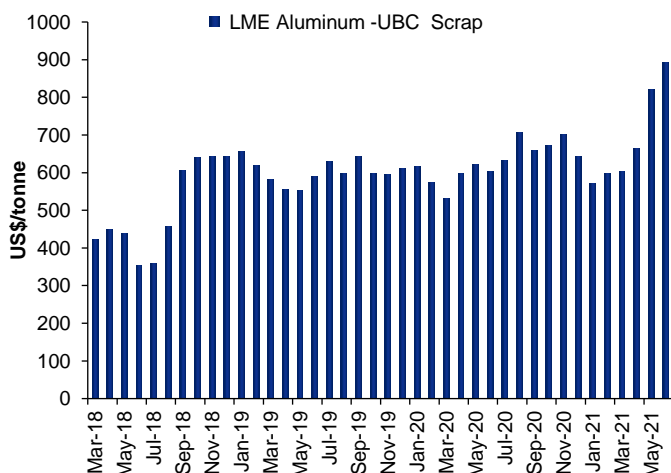
Figure 16: Aluminium demand seen with a lens of primary aluminium will give an erroneous picture of demand and nuances of the cycle will be missed out. To cite an example, while primary metal consumption may increase only 4% in CY21F, overall demand growth can exceed 7%



SOURCES: INCRED RESEARCH, INTERNATIONAL ALUMINIUM INSTITUTE

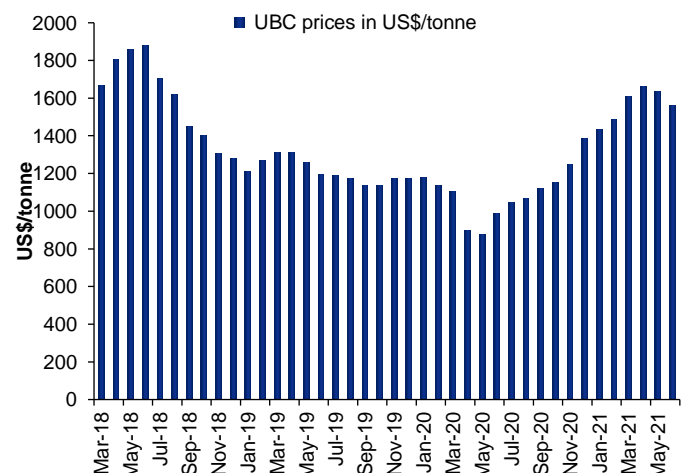
Current scrap prices do not indicate any big bottleneck in scrap collection ➤

Figure 17: In the US, UBC scrap collection is facing COVID-related challenges and hence aluminium spread over UBC has increased



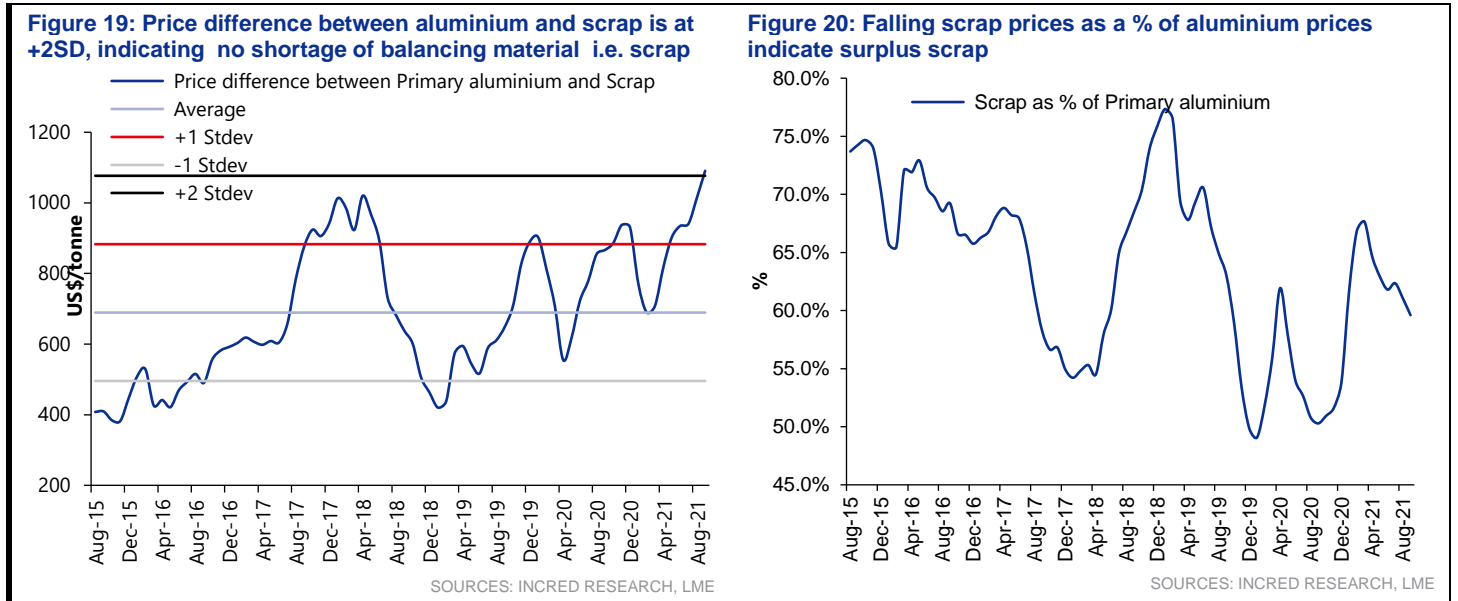
SOURCES: INCRED RESEARCH, LME

Figure 18: UBC prices are down from their peak of Mar-18 when aluminium prices were at much lower levels

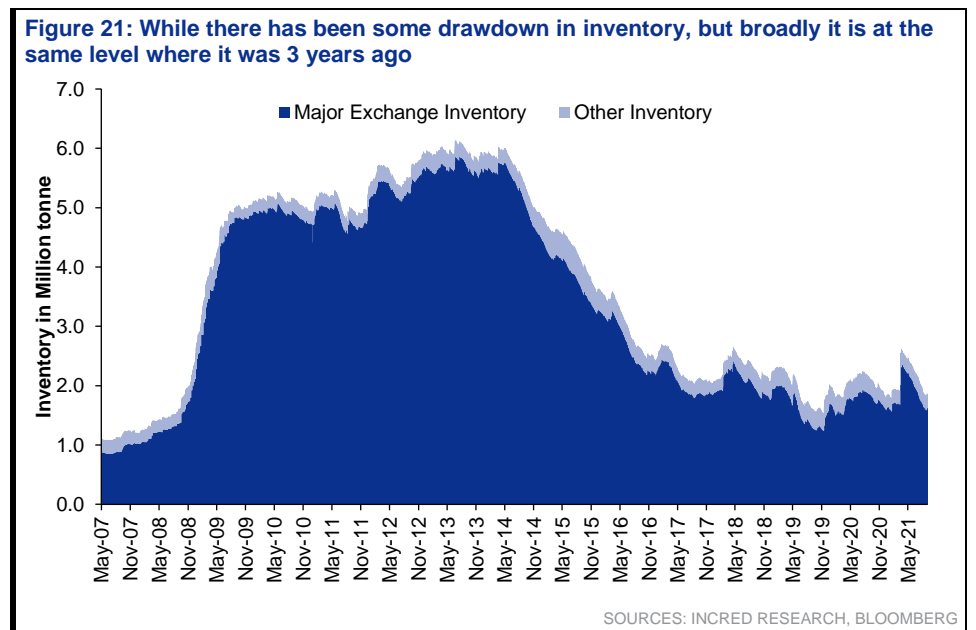


SOURCES: INCRED RESEARCH, LME

Even Zorba scrap (highly traded low grade aluminium scrap) prices are not moving, indicating surplus scrap ➤



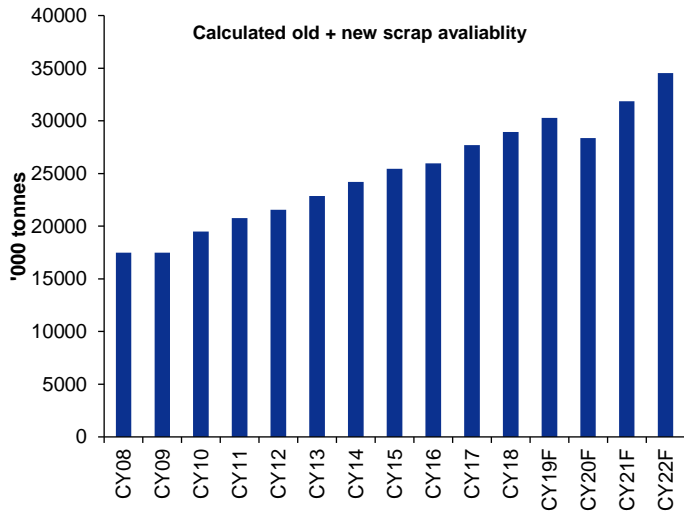
Aluminium inventory has declined a bit, but there is not a major decline as such ➤



With a major COVID vaccination drive in western world, we believe scrap availability has improved vis-à-vis CY20 ➤

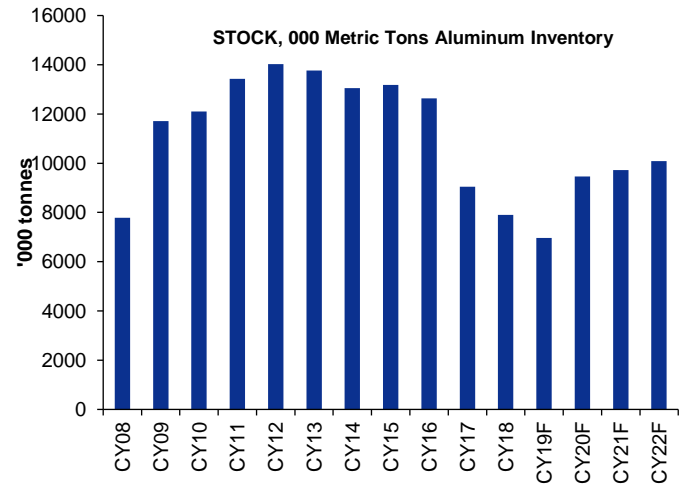
There cannot be any concrete number on scrap availability, but unlike ferrous scrap, aluminium scrap estimation is quite scientific and is based on statistical models. Historically, these models (published by International Aluminium Institute) give quite a robust estimate of scrap generation, which has worked very well over the years.

Figure 22: We estimate that scrap availability is increasing as COVID fears are receding



SOURCES: INCRED RESEARCH, COMPANY REPORTS

Figure 23: After hitting a rock bottom in CY19, aluminium inventory (overall supply chain) is increasing

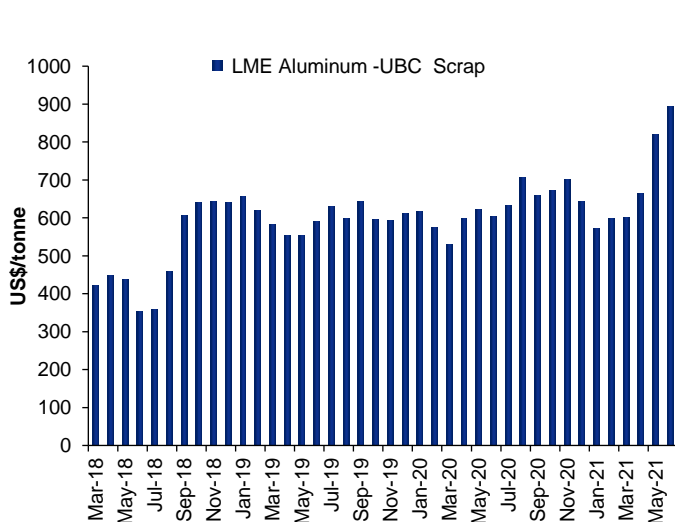


SOURCES: INCRED RESEARCH, COMPANY REPORTS

We have made following adjustments in the IAI model to account for COVID-related issues:

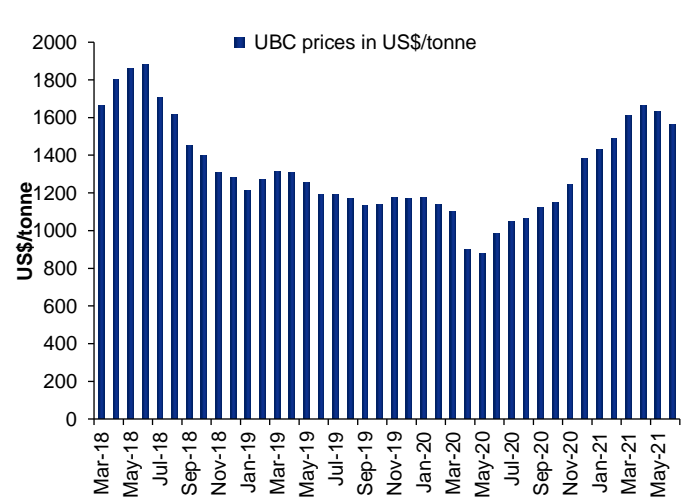
1. We have assumed that only 80% of available aluminium scrap could have been collected in western world in CY20. We also believe that this collection percentage would have increased to 90% in CY21. Please note that normal collection as a % of available scrap as per IAI model is 98%.
2. Almost 40% increase in aluminium prices would have also aided the rise in scrap collection in CY21.
3. Used beverage cans (UBCs) are one of the best indicators of used scrap availability. Despite Delta Covid variant, we have not seen any significant rise in its prices. In fact, LME prices – UBC scrap prices are at a 3-year high now, indicating UBC scrap is in oversupply.

Figure 24: LME aluminium spread over UBC scrap is at a 3 year- high



SOURCES: INCRED RESEARCH, USGS REPORTS

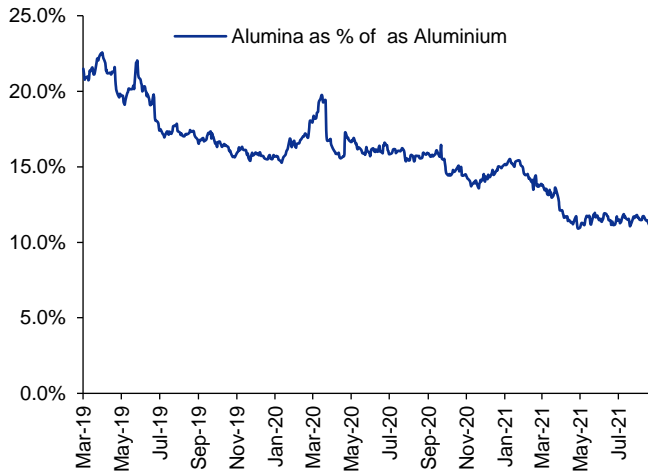
Figure 25: Despite a fervent rally in aluminium (US\$400/tonne), the rise in UBC scrap prices has been only around US\$150/tonne



SOURCES: INCRED RESEARCH, USGS REPORTS

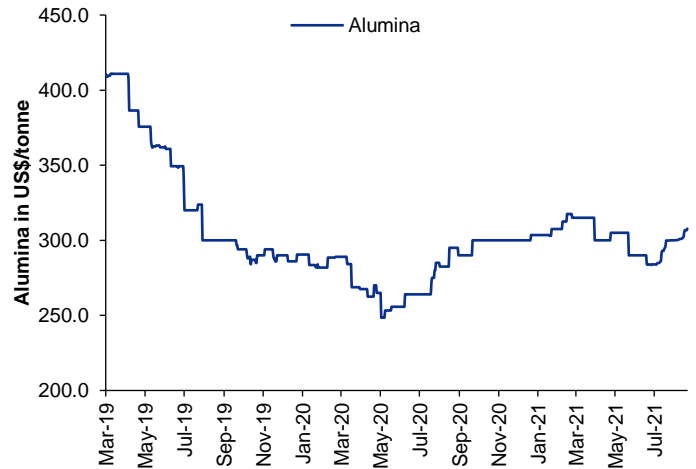
Alumina prices don't indicate any shortage either ➤

Figure 26: Alumina prices are near their 3-year low vis-à-vis aluminium prices



SOURCES: INCRED RESEARCH, LME

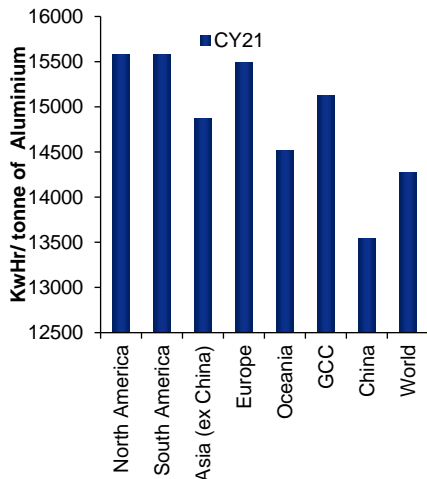
Figure 27: In absolute terms as well, alumina prices are well below their highs of Mar-19



SOURCES: INCRED RESEARCH, LME

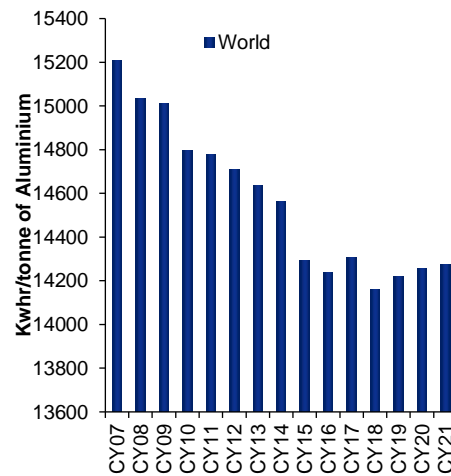
World is increasingly becoming more energy efficient in aluminium production ➤

Figure 28: China consumes lower energy per tonne of aluminium in CY21



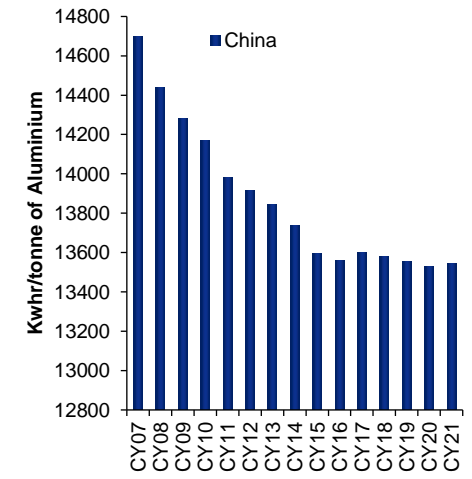
SOURCES: INCRED RESEARCH, INTERNATIONAL ALUMINUM INSTITUTE

Figure 29: Global energy intensity of aluminium production has improved by 6%



SOURCES: INCRED RESEARCH, INTERNATIONAL ALUMINUM INSTITUTE

Figure 30: Chinese energy intensity has improved by 8%



SOURCES: INCRED RESEARCH, INTERNATIONAL ALUMINUM INSTITUTE

Then why are aluminium prices going up? The answer lies in rising US supply chain-related shortage in primary aluminium because of port congestion ➤

While in a normal situation the apparent aluminium consumption in the US is at 5.5-6 mn tonnes, it produces only 4-4.5mn tonnes. However, please note the following facts:

- As the US is a major industrial destination for aerospace and automobile industries, its usage of primary aluminium is much higher.
- It generates ~3 mn tonnes of scrap aluminium out of which 2 mn tonnes is exported outside the country.

Hence, the availability of primary aluminium is critical for the US industrial base. Years of production practices cannot change in a jiffy.

Figure 31: Apparent aluminium consumption by the US is 5.5 m tonnes in a normal year

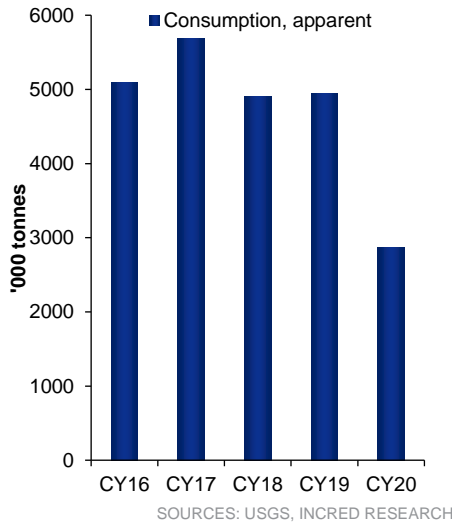


Figure 32: But US production from all sources is ~4.5 mn tonnes

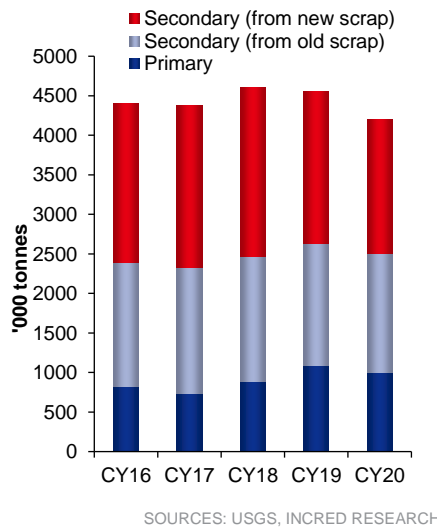
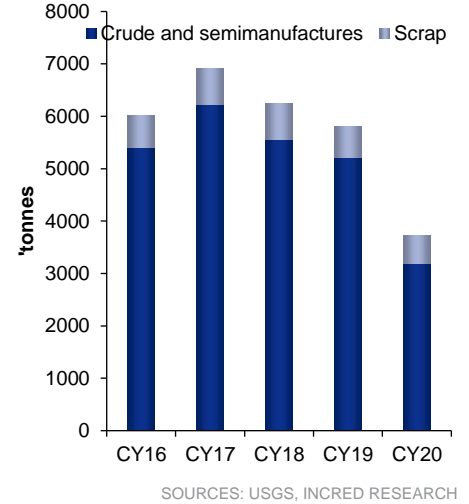


Figure 33: In a normal year, the US imports ~6 mn tonnes of primary aluminium



Why do we say that primary aluminium is in short supply in the US? Because spot premiums are skyrocketing, but future premiums are at a deep discount >

Aluminium premiums are important parameters for ascertaining the demand-supply position in a physical market. Exchange traded aluminium has many other parameters like cost of capital and the extent of speculation in the market. The rise in cash premiums indicates that spot market is undersupplied, but backwardation in premiums indicates that in coming future the market expects adequate supply of aluminium.

Figure 34: Spot aluminium premium has risen steadily in the US

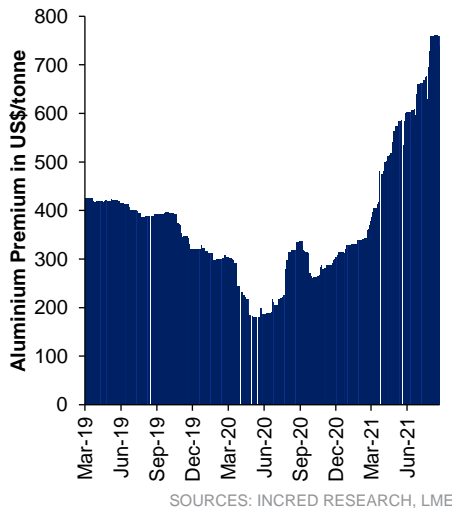


Figure 35: 9-month aluminium premium is at a 20% discount vis-à-vis cash

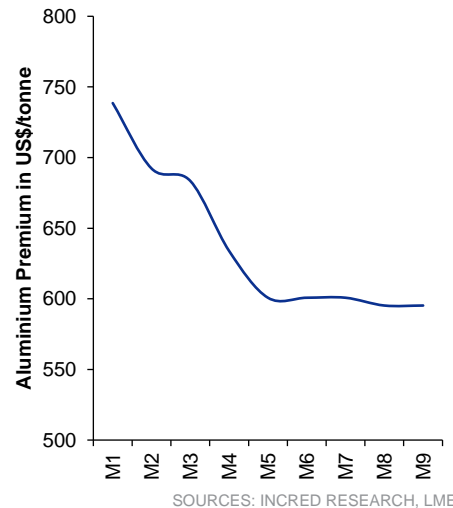
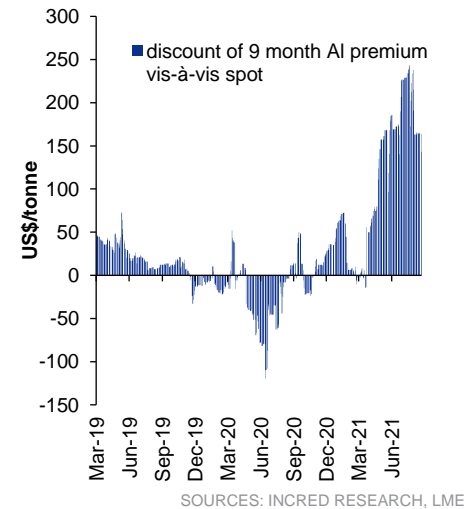


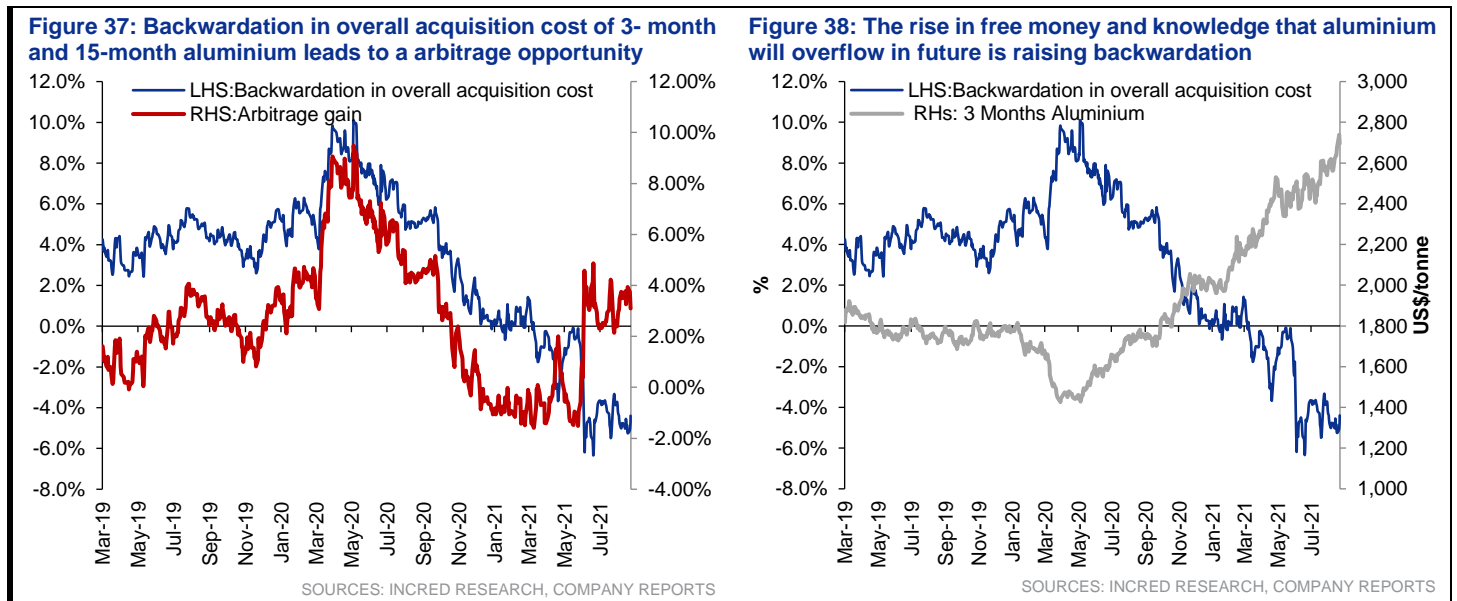
Figure 36: 9-month aluminium premium's discount vis-à-vis cash premium is near all-time high



Backwardation in overall acquisition cost is leading to arbitrage gain >

- It is well known that global market faces no scarcity of aluminium, as shown by scrap prices. This part gets accentuated if there is a widely held belief that in future there will be more surplus than what is there currently.
- Hence the trade-off is:
 - To buy the futures at an acquisition cost which is 15-month aluminium price + 15-month premium.
 - Short 3-month futures at acquisition cost = 3-month LME price + 3-month aluminium premium.

- The cost of money is low. Hence, there is free money to be made and as speculation grows in spot, more money is to be made.



As of now it's a virtuous cycle for making money, but things change pretty fast ►

- Port congestion is leading to the rise in spot aluminium prices, but all of us know that the future is bad and so backwardation increases with every uptick in 3-month aluminium price.
- Now, with the rise in backwardation comes the arbitrageurs who are making free money and, hence, capping the runaway rise.
- This cannot go on for long, which means the reversion will happen sooner rather than later and then the party ends.

NALCO is a direct play on aluminium prices, REDUCE

National Aluminium Company Ltd (NALCO) is the integrated aluminium manufacturer in India. NALCO is 51% owned by the Government of India. The company's profitability is directly a function of aluminium prices, and hence any likely decline in aluminium prices will be bad for profitability of the company. We have factored in US\$2400/tonne aluminium and US\$300/tonne alumina prices in our earnings estimate to arrive at higher-than-consensus earnings. Aluminium is set to decline, but like the upswing we won't know the extent of downswing in aluminium prices. Our earnings estimates are unlikely to have an upside risk, but it does have a downside risk

NALCO is the integrated aluminium producer in India ►

NALCO is one of the largest integrated bauxite-alumina-aluminium-power complex in the country. The company has a 68.25 lakh TPA bauxite mine & 21.00 lakh TPA (normative capacity) alumina refinery located at Damanjodi in Koraput district of Odisha, and 4.60 lakh TPA aluminium smelter & a 1,200MW captive power plant located at Angul in Odisha. NALCO has bulk shipment facilities at Vizag port for export of alumina/aluminium and import of caustic soda, and also utilizes the facilities at Kolkata and Paradeep ports.

NALCO plans to expand its capacity for aluminium and alumina ►

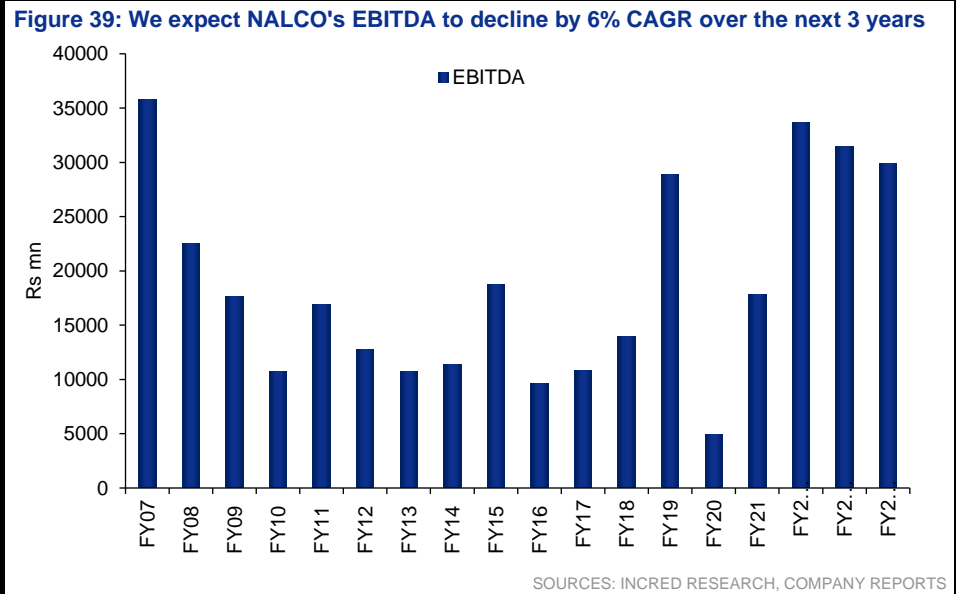
The company is moving ahead with its extensive plan for brownfield and greenfield expansion projects, which includes the ongoing 5th stream refinery project of 1 MTPA capacity at its existing alumina refinery at Damanjodi (brownfield), development of Pottangi bauxite mines, Utkal D&E coal mines in Odisha, and

establishment 5 lakh TPA brownfield smelter along with 1400 MW captive power plant in Odisha.

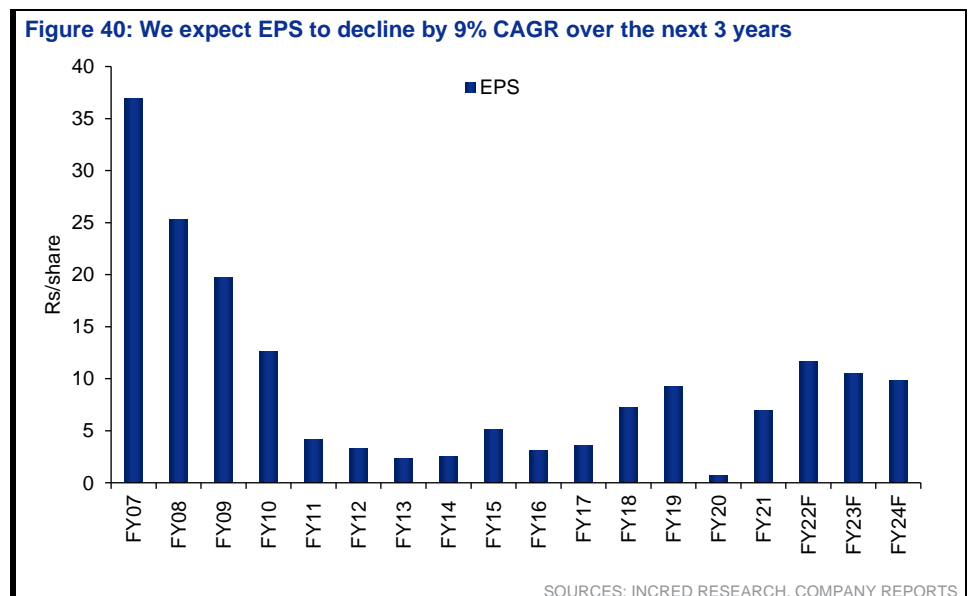
Our earnings estimates factor in US\$2,400/tonne aluminum and US\$300/tonne alumina prices ➤

We are factoring in US\$2400/tonne of aluminum prices and US\$300/tonne alumina in our earnings estimates. Please note that NALCO has ~1 mn tonne excess alumina which it can sell in international markets. Normally, it sells alumina on tender basis and, hence, price realization happens with a lag

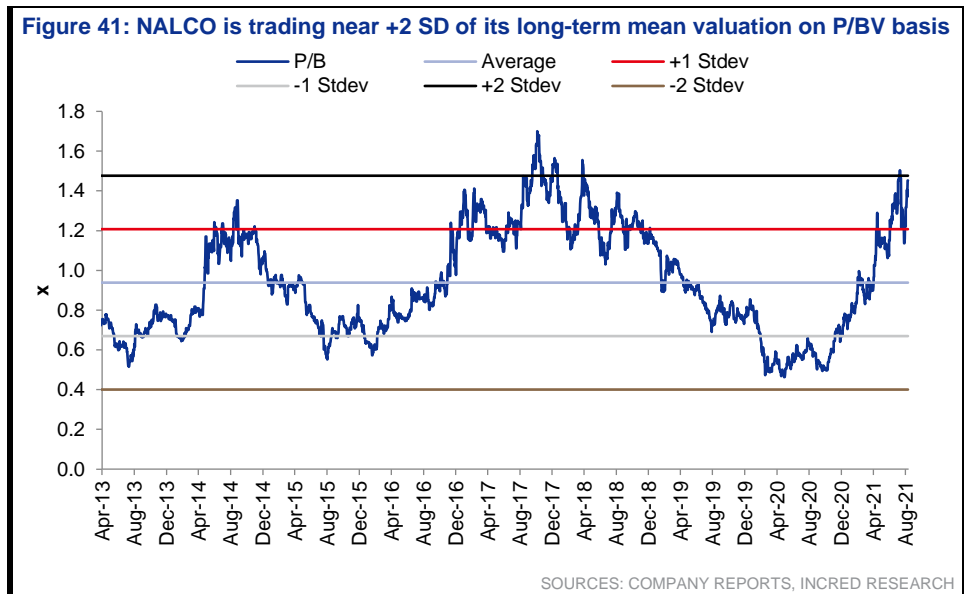
We expect EBITDA to decline by 6% CAGR over FY22-24F ➤



EPS is likely to decline by 9% CAGR over FY21-24F ➤



NALCO trades at +2 SD on P/BV basis of its long-term mean ➤



EV/EBITDA may be the more relevant metric to look at, given high cash generation because of the commodity upcycle ➤

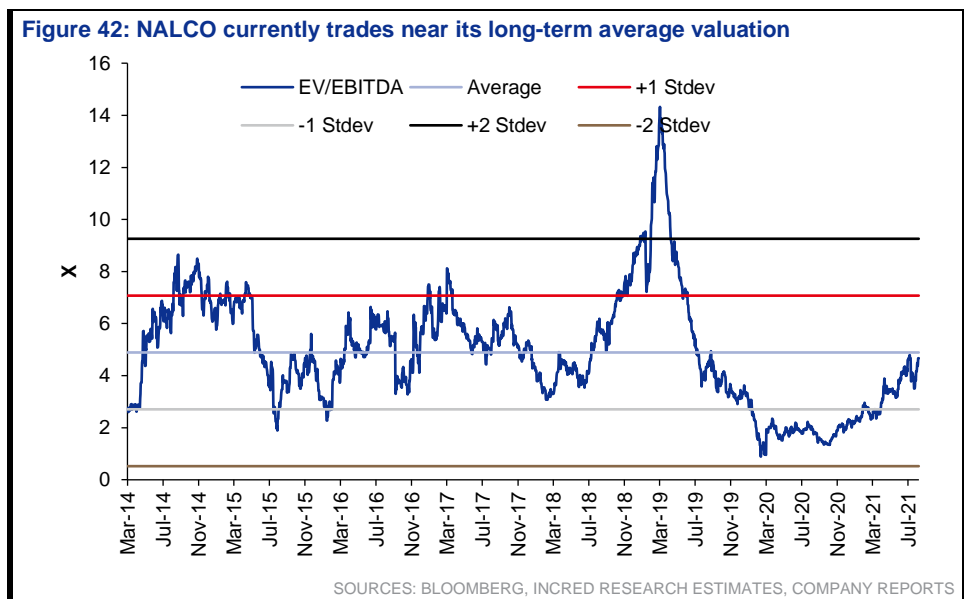


Figure 43: We value NALCO at 4.7x September 23F EV/EBITDA to arrive at our TP of Rs85/share

Target Price Methodology

Item	Unit	Valuation
FY23F EBITDA	Rs million	31473.7
FY24F EBITDA	Rs million	29850.8
September 23 EBITDA	Rs million	30662.2
EV/EBITDA multiple	x	4.7
Enterprise value		144112.5
Cash and investment		15027.0
Target Price	Rs/Share	85

SOURCES: INCRED RESEARCH, COMPANY REPORTS

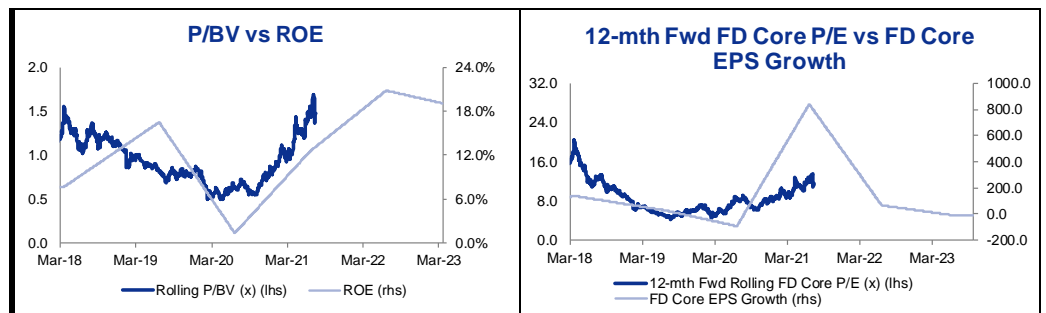
Earnings revision table

Figure 44: We increase our EPS estimates by 45.3% for FY22F and by 52.4% for FY23F

Rs mn	Old Estimates		New Estimates		Change (%)	
	FY22F	FY23F	FY22F	FY23F	FY22F	FY23F
Revenue	1,08,756	1,08,557	1,23,614	1,23,407	13.7	13.7
EBITDA	24,191	21,555	33,700	31,474	39.3	46.0
PAT	14,947	12,816	21,714	19,533	45.3	52.4
EPS (Rs/share)	8.01	6.87	11.64	10.47	45.3	52.4

SOURCES: INCRED RESEARCH, COMPANY REPORTS

BY THE NUMBERS



Profit & Loss

(Rs mn)	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
Total Net Revenues	84,718	89,558	123,614	123,407	123,679
Gross Profit	71,346	76,461	106,617	106,380	106,623
Operating EBITDA	4,892	17,828	33,700	31,474	29,851
Depreciation And Amortisation	(5,298)	(6,058)	(5,829)	(5,911)	(5,994)
Operating EBIT	(406)	11,770	27,871	25,563	23,857
Financial Income/(Expense)	(57)	(71)	(41)	(41)	(41)
Pretax Income/(Loss) from Assoc.					
Non-Operating Income/(Expense)	2,726	1,466	1,123	523	718
Profit Before Tax (pre-EI)	2,262	13,165	28,952	26,044	24,534
Exceptional Items					
Pre-tax Profit	2,262	13,165	28,952	26,044	24,534
Taxation	(880)	(170)	(7,238)	(6,511)	(6,134)
Exceptional Income - post-tax					
Profit After Tax	1,382	12,995	21,714	19,533	18,401
Minority Interests					
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	1,382	12,995	21,714	19,533	18,401
Recurring Net Profit	1,382	12,995	21,714	19,533	18,401
Fully Diluted Recurring Net Profit	1,382	12,995	21,714	19,533	18,401

Cash Flow

(Rs mn)	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
EBITDA	4,892	17,828	33,700	31,474	29,851
Cash Flow from Invt. & Assoc.					
Change In Working Capital	(7,917)	4,228	(2,602)	16	(21)
(Incr)/Decr in Total Provisions					
Other Non-Cash (Income)/Expense	953	507			
Other Operating Cashflow	(352)	473	165	165	165
Net Interest (Paid)/Received	(57)	(71)	(41)	(41)	(41)
Tax Paid	(1,005)	(975)	(7,238)	(6,511)	(6,134)
Cashflow From Operations	(3,486)	21,990	23,984	25,102	23,820
Capex	(8,448)	(11,726)	(10,000)	(10,000)	(10,000)
Disposals Of FAs/subsidiaries	674	324			
Acq. Of Subsidiaries/investments					
Other Investing Cashflow	16,501	(2,635)	999	400	595
Cash Flow From Investing	8,727	(14,037)	(9,001)	(9,600)	(9,405)
Debt Raised/(repaid)	(579)	303			
Proceeds From Issue Of Shares		(1,701)			
Shares Repurchased					
Dividends Paid	(6,185)	(4,606)	(11,563)	(11,563)	(11,563)
Preferred Dividends					
Other Financing Cashflow	(9)	2	(41)	(41)	(41)
Cash Flow From Financing	(6,773)	(6,002)	(11,604)	(11,604)	(11,604)
Total Cash Generated	(1,531)	1,951	3,378	3,897	2,810
Free Cashflow To Equity	4,662	8,256	14,983	15,502	14,415
Free Cashflow To Firm	5,299	8,024	15,024	15,543	14,456

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	20,355	19,982	7,997	11,894	14,705
Total Debtors	1,401	1,474	2,034	2,031	2,035
Inventories	16,969	14,763	20,377	20,343	20,388
Total Other Current Assets	6,853	6,845	6,845	6,845	6,845
Total Current Assets	45,578	43,063	37,253	41,113	43,973
Fixed Assets	89,115	92,359	96,530	100,619	104,626
Total Investments	2,773	3,133	3,133	3,133	3,133
Intangible Assets					
Total Other Non-Current Assets	8,031	8,551	8,551	8,551	8,551
Total Non-current Assets	99,918	104,043	108,214	112,303	116,309
Short-term Debt	123	461	461	461	461
Current Portion of Long-Term Debt					
Total Creditors	7,729	9,395	12,968	12,946	12,975
Other Current Liabilities	19,347	10,642	10,642	10,642	10,642
Total Current Liabilities	27,200	20,498	24,071	24,049	24,078
Total Long-term Debt					
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	1,521	4,530	4,530	4,530	4,530
Total Non-current Liabilities	1,521	4,530	4,530	4,530	4,530
Total Provisions	16,894	15,271	15,271	15,271	15,271
Total Liabilities	45,615	40,299	43,872	43,850	43,878
Shareholders Equity	99,881	106,807	101,595	109,566	116,403
Minority Interests					
Total Equity	99,881	106,807	101,595	109,566	116,403

Key Ratios					
	Mar-20A	Mar-21A	Mar-22F	Mar-23F	Mar-24F
Revenue Growth	(26.3%)	5.7%	38.0%	(0.2%)	0.2%
Operating EBITDA Growth	(83.1%)	264.4%	89.0%	(6.6%)	(5.2%)
Operating EBITDA Margin	5.8%	19.9%	27.3%	25.5%	24.1%
Net Cash Per Share (Rs)	10.85	10.47	4.04	6.13	7.64
BVPS (Rs)	53.56	57.27	54.47	58.75	62.41
Gross Interest Cover	(7.07)	166.24	671.61	615.98	574.88
Effective Tax Rate	38.9%	1.3%	25.0%	25.0%	25.0%
Net Dividend Payout Ratio	202.4%	35.9%	53.3%	59.2%	62.8%
Accounts Receivables Days	8.20	5.86	5.18	6.01	6.00
Inventory Days	396.72	442.18	377.32	436.43	435.83
Accounts Payables Days	280.96	238.63	240.13	277.75	277.37
ROIC (%)	(0.3%)	12.2%	20.1%	17.3%	15.6%
ROCE (%)	(0.4%)	10.4%	24.5%	22.2%	19.5%
Return On Average Assets	1.0%	8.9%	14.9%	13.1%	11.8%

SOURCES: INCRED RESEARCH, COMPANY REPORTS

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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	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, **TIDLOR** – n/a, n/a, **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.