MOTILAL OSWAL

23 February 2021
Update | Sector: Metals

Hindalco

BSE SENSEX	S&P CNX
49,744	14,676

ADITYA BIRLA
HINDALCO

Bloomberg	HNDL IN
Equity Shares (m)	2,229
M.Cap.(INRb)/(USDb)	709.6 / 9.6
52-Week Range (INR)	328 / 85
1, 6, 12 Rel. Per (%)	30/32/46
12M Avg Val (INR M)	3124

Financials & Valuations (INR b)

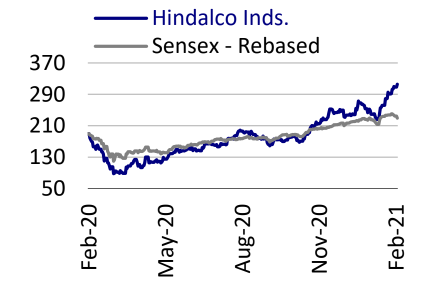
Y/E MARCH	2021E	2022E	2023E
Sales	1,281	1,480	1,537
EBITDA	165.5	195.5	204.4
Adj. PAT	51.3	73.1	82.1
EBITDA Margin (%)	12.9	13.2	13.3
Cons. Adj. EPS (INR)	23.1	32.9	36.9
EPS Gr. (%)	31.9	42.6	12.2
BV/Sh. (INR)	181	211	245
Ratios			
Net D:E	1.3	1.0	0.7
RoE (%)	13.1	16.8	16.2
RoCE (%)	8.4	9.8	10.1
Payout (%)	8.6	9.6	8.6
Valuations			
P/E (x)	13.7	8.7	7.7
P/BV (x)	1.7	1.3	1.2
EV/EBITDA(x)	7.4	5.6	4.9
Div. Yield (%)	0.5	0.9	0.9
FCF Yield (%)	10.7	14.5	17.1

Shareholding pattern (%)

As On	Sep-20	Jun-20	Sep-19
Promoter	34.7	34.7	34.7
DII	25.1	27.3	25.4
FII	19.9	18.8	21.4
Others	20.4	19.3	18.5

FII Includes depository receipts

Stock Performance (1-year)



CMP: INR316 TP: INR390 (+23%) Buy

On a firm footing

Strong cash flows to support growth and deleveraging

- In its virtual analyst meet on Feb 22, Hindalco (HNDL) laid out its strategy and capital allocation roadmap for the next five years. While no new capex plans were announced, the focus remains on growing the downstream business in India and deleveraging the balance sheet, supported by strong cash flows in both India and Novelis. Net debt/EBITDA is targeted to fall to 2.5x by Mar'22 (from the peak of 3.8x in Jun'20).
- We reiterate HNDL as our top non-ferrous pick on the back of a 26% EPS CAGR over FY21–23E, driven by strong volumes, margins, and deleveraging. We roll forward our TP to Mar'22 and raise it to INR390.

Focus on organic growth and deleveraging

- The management expects to generate USD1–1.2b annual cash flow post its normal working capital and maintenance capex. It plans to broadly allocate this as follows: a) growth capex – 50%, b) deleveraging – 30%, c) returns to shareholders – 8–10%, and d) balance to be retained in treasury.
- Allocation toward organic growth capex over the next five years is accordingly guided at ~USD2.5–3.0b – ~USD1.5b in Novelis to grow its capacity to >4.5mtpa (from 4mtpa currently) and the balance USD1–1.5b in India to grow its Downstream business. At the same time, it does not plan to entertain any inorganic growth opportunity.
- Out of the post-Aleris acquisition (gross of debt of USD11.1b), HNDL also plans to repay USD2.9b by Dec'22 – USD2.6b in Novelis and USD0.3b in India. Net debt/EBITDA is targeted to fall to 2.5x by Mar'22 (from the peak of 3.8x in Jun'20) – below the pre-Aleris acquisition level of 2.6x in Mar'20.
- HNDL has also revised its dividend distribution policy to now pay out 8–10% of the consolidated FCF (pre-growth capex). We estimate this to increase the dividend to INR2.5–3/sh from INR1.2/sh in FY20.

Robust business trading at reasonable valuations; Buy

- HNDL is our preferred non-ferrous pick owing to a) its strong profitability in the India Aluminum business from its low-cost integrated operations (top quartile globally), b) a positive outlook for Novelis, driven by recovery in auto demand and cost synergies from Aleris, c) solid FCF generation, which should reduce leverage sharply, and d) reasonable valuations.
- Moreover, with ~75% EBITDA now coming from the non-LME business (Novelis), we see relatively higher stability in HNDL's earnings.
- Even on our conservative LME aluminum assumption of USD1,850/t, the valuation is attractive at 4.9x FY23 EV/EBITDA. A USD100/t change in aluminum price impacts HNDL's FY22E EPS by 11% and our TP by 9%.
- We value it at INR390/sh on FY23 EV/EBITDA – 5x for India and 6x for Novelis. Reiterate **Buy**.

Amit Murarka - Research analyst (Amit.Murarka@motilaloswal.com)
Basant Joshi - Research analyst (Basant.Joshi@motilaloswal.com)

Key highlights from virtual analyst meet

Capital allocation framework

- It is expected to generate cash flow of over USD1–1.2b p.a. cash post its normal working capital and maintenance capex. The focus will be on a) growth capex, b) deleveraging, and c) returns to shareholders.
- Allocation towards growth capex would be ~USD2.5–3.0b over the next five years; it has no plans for large inorganic growth.
- Broad allocation of cash flow post normal working capital and maintenance capex is targeted as follows: 1) growth capex: ~50%, 2) debt reduction: ~30%, 3) shareholder returns: 8–10%, 4) balance to be retained in treasury.

Capex plan for Novelis

- Auto finishing lines at Kentucky (200kt) and Changzhou (100kt) are expected to be commissioned in 1HFY22. The combined capex stands at USD480m.
- Rolling and casting capacity additions at Pinda (100kt) are expected to be commissioned in 2HFY22. This entails capex of USD175m.
- Recycling capacity additions at Greensboro (40kt) involving capex of USD35m would be commissioned in 2HFY22.
- The cold mill expansion at Zhenjiang (200kt) would involve capex of USD300m and would be commissioned by 2HFY24.

Capex plan for Hindalco

- Aluminum upstream – A 500kt capacity addition at Utkal would be commissioned by 1HFY22. This would entail capex of USD200m.
- Specialty alumina – A 70kt expansion with capex of USD40m is expected to be commissioned in 2HFY24.
- Aluminum – USD650m has been earmarked for capacity additions for finishing assets (50kt; to be commissioned in 1HFY22) and extrusion (34kt; to be commissioned in 2HFY23). On the other hand, capacities for FRP (to be commissioned in 2HFY24) and recycling (to be commissioned in 2HFY25) are yet to be decided.
- Copper – USD200m has been earmarked for a 25kt/100kt/210kt capacity addition for Inner Grove Tubes & Alloy Rod/recycling/Copper CCR, to be commissioned in FY24.

USD2.6b deleveraging plans at Novelis

- USD1.1b of the bridge loan would be repaid by end-FY21, of which USD500m was already repaid in 3QFY21 and the balance would be paid in 4QFY21.
- Short Term of USD900m was repaid in 2Q and 3QFY21.
- Of a USD1.7b term loan due in 2022, USD1.1b would be refinanced and the balance of USD600m would be repaid from the cash flows.

USD0.3b deleveraging plans at Hindalco

- Of INR bonds of USD810m due in 2022, USD540m would be refinanced and the balance of USD270m would be repaid in 2022.

Dividend policy

- It would distribute a dividend in the range of 8–10% of Free Cash Flow at the consolidated level (defined as Cash Flow after meeting interest, tax, other statutory dues, maintenance capital expenditure, and working capital requirements at the Consolidated Level, but before considering strategic capital expenditure and debt repayments/pre-payments) of the relevant year.

Beverage Cans business outlook

- 1) Sustainable packaging preferences, 2) the shift from other substrates (such as glass and steel) to aluminum cans, and 3) increasing demand for new beverage types (such as sparkling water, spiked seltzer, canned cocktails, and energy drinks) would drive long-term aluminum can sheet demand at a 3–5% CAGR over the medium term.
- In North America, Cans accounted for 67% of beverage packaging in CY19 v/s 30% in CY14. In Brazil, Cans accounted for 57% of beer packaging v/s 52% in CY19.

Automotive business outlook

- Aluminum automotive sheet global demand is expected to grow at a CAGR of 10% p.a over CY20–25.
- Trucks & SUVs, with a growing share of the vehicle production mix in North America (~75%), have rapidly recovered.
- It currently represents 23% of the total aluminum pounds per vehicle; this is expected to increase to 30% by 2030, driven by the continued replacement of steel with aluminum on hang-on parts and BiW.

Specialties business outlook

- Increased demand for sustainable products is driving shipments and innovation in high recycled alloys.
- With acquired assets, North America represents more than 50% of the global Specialties portfolio, while demand is being driven by a strong Housing market in the US.

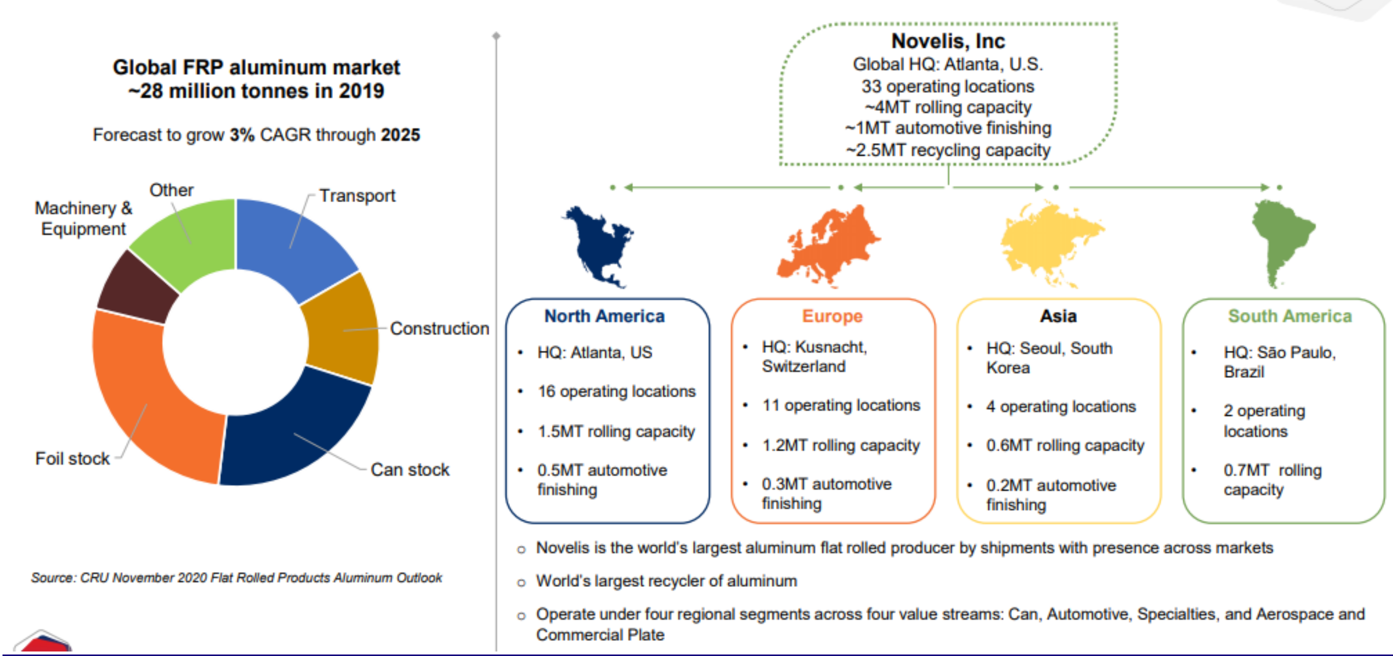
Aerospace business outlook

- It is seeing moderate recovery as demand has started picking up, led by multi-year OEM order backlogs.
- Novelis is well-positioned to capture long-term aircraft demand, predominantly in the Asia-Pacific, which accounts for 41% of the global order book for aircraft.

Domestic business outlook

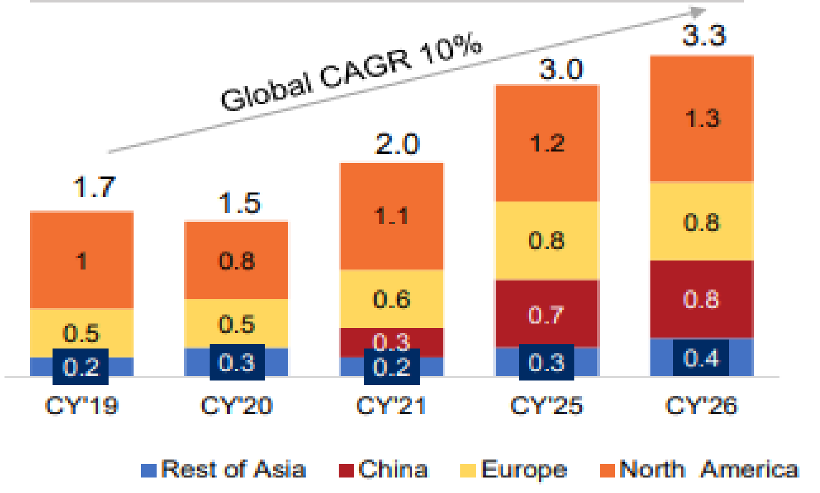
- Domestic aluminum consumption is expected to double to 7.2mt by 2030, driven by urban housing demand, a focus on electric vehicles, growth in packaging demand, and demand from white goods.
- Refined copper demand is expected to grow at 7–8% to 785kt over the next 8–10 years from FY22E.

Exhibit 1: Snapshot of Novelis' global operations



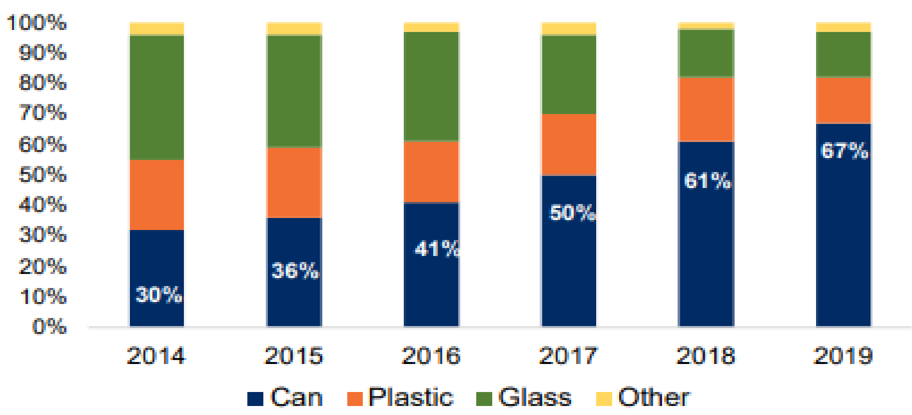
Source: Company

Exhibit 2: Aluminum automotive sheet demand to grow at 10% CAGR over CY19–26



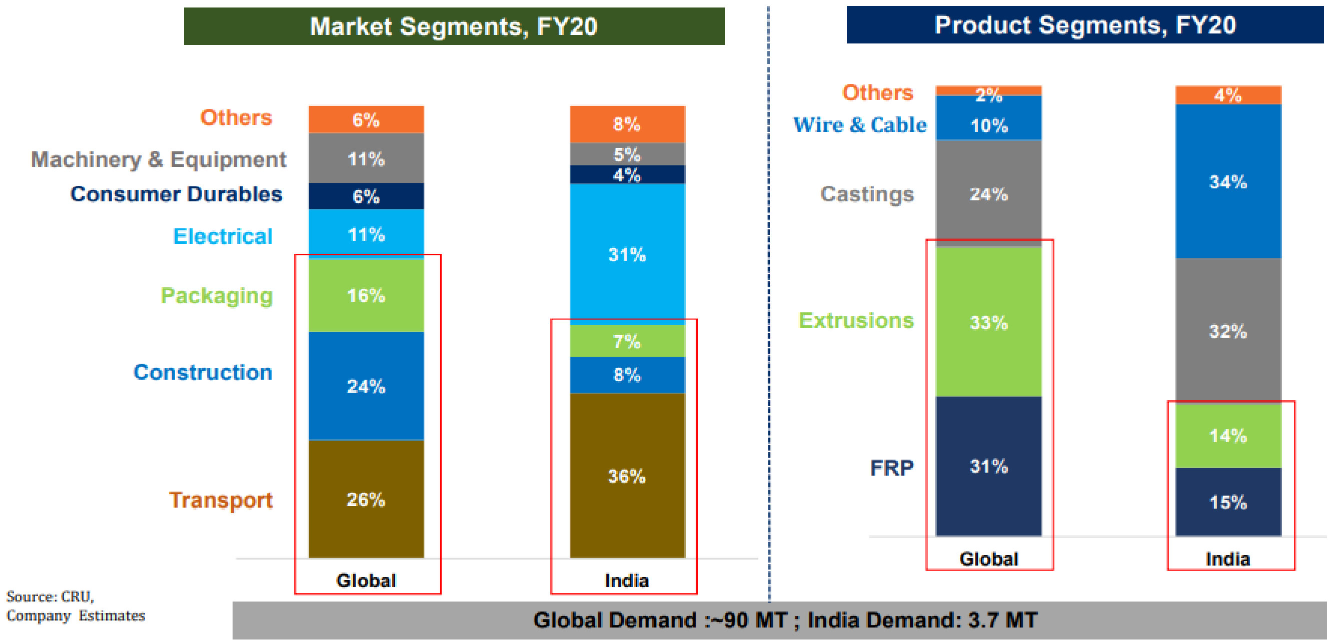
Source: Company

Exhibit 3: Packaging trend for new beverages has shifted to cans in North America



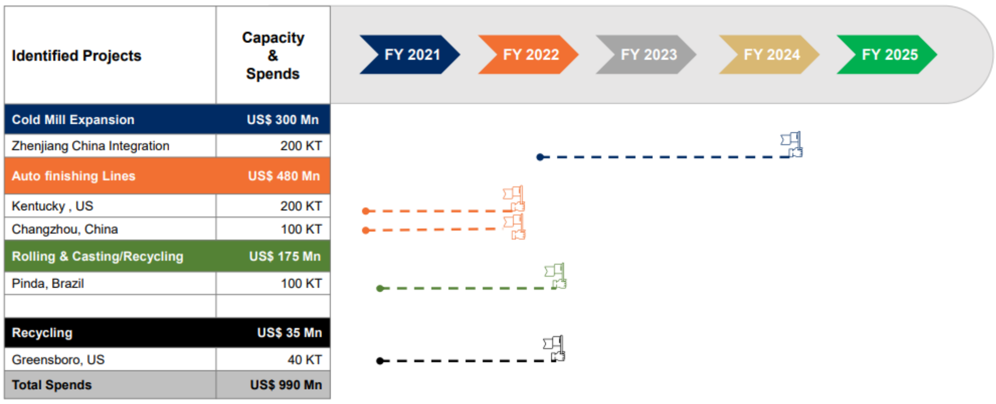
Source: Company

Exhibit 4: Under-penetration in India's aluminum demand from FRP and Extrusions provides opportunity for growth



Source: Company

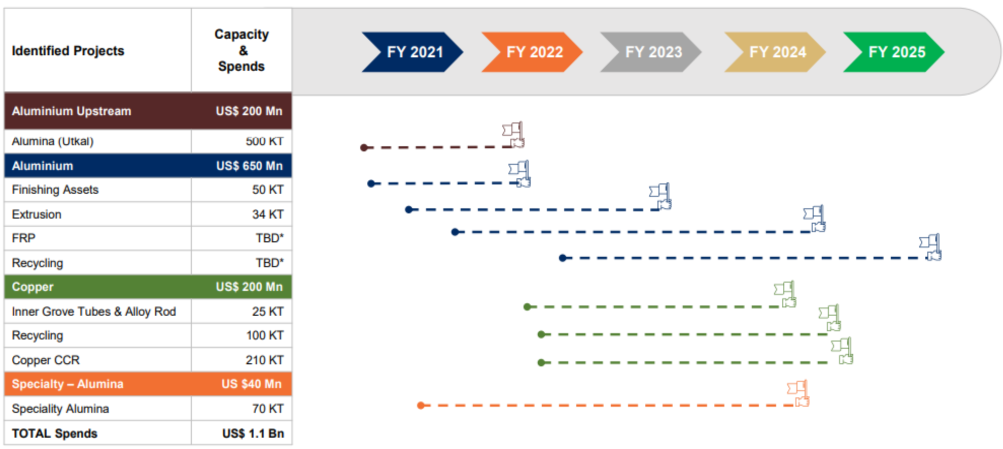
Exhibit 5: Novelis' capacity expansion timelines and capex outlay



Identified Projects	Capacity & Spends
Cold Mill Expansion	US$ 300 Mn
Zhenjiang China Integration	200 KT
Auto finishing Lines	US$ 480 Mn
Kentucky , US	200 KT
Changzhou, China	100 KT
Rolling & Casting/Recycling	US$ 175 Mn
Pinda, Brazil	100 KT
Recycling	US$ 35 Mn
Greensboro, US	40 KT
Total Spends	US$ 990 Mn

Source: Company

Exhibit 6: Hindalco India's capacity expansion timelines and capex outlay



Identified Projects	Capacity & Spends
Aluminium Upstream	US$ 200 Mn
Alumina (Utkal)	500 KT
Aluminium	US$ 650 Mn
Finishing Assets	50 KT
Extrusion	34 KT
FRP	TBD*
Recycling	TBD*
Copper	US$ 200 Mn
Inner Grove Tubes & Alloy Rod	25 KT
Recycling	100 KT
Copper CCR	210 KT
Specialty – Alumina	US $40 Mn
Speciality Alumina	70 KT
TOTAL Spends	US$ 1.1 Bn

Source: Company

Valuation and view

- HNDL is our preferred non-ferrous pick owing to: a) its strong profitability in the India Aluminum business from low-cost integrated operations (top quartile globally), b) a positive outlook for Novelis, driven by recovery in auto demand and cost synergies from Aleris, c) solid FCF generation, which should reduce leverage sharply, and d) reasonable valuations.
- Moreover, with ~75% EBITDA now coming from the non-LME business (Novelis), we see relatively higher stability in HNDL's earnings. We expect margins for the Novelis business to remain strong over USD480/t.
- While we expect aluminum prices to sustain on the back of demand recovery, higher inventory could limit a further upside. We conservatively factor in average LME of USD1,850/t in FY22 and FY23 – around 10% lower than spot. A USD100/t change in aluminum prices impacts HNDL's FY22E EPS by 11% and our TP by 9%.
- Even on our conservative LME aluminum assumption of USD1,850/t, the valuation is attractive at 4.9x FY23 EV/EBITDA.
- We value it at INR390/sh on FY23 EV/EBITDA (5x for India and 6x for Novelis) and add the value of investments in the group companies at a 10% discount to market price. Reiterate **Buy**.

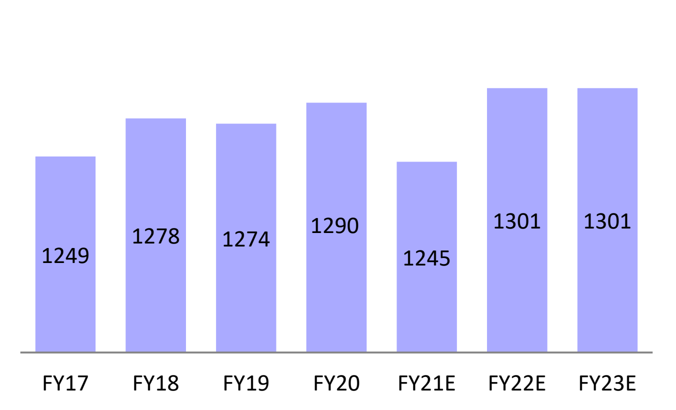
Exhibit 7: Target price derivation

INR m	Multiple (x)	FY23E EBITDA	EV	INR per share
India operations	5.0	55,657	278,286	125
Novelis	6.0	148,774	892,643	401
Enterprise value			1,170,930	526
Net debt			362,205	163
Equity value (a)			**808,725**	**364**
Investment in listed securities at 10% discount (b)			**57,810**	**26**
Target price (INR/share) (a+b)				**390**

Source: MOSL

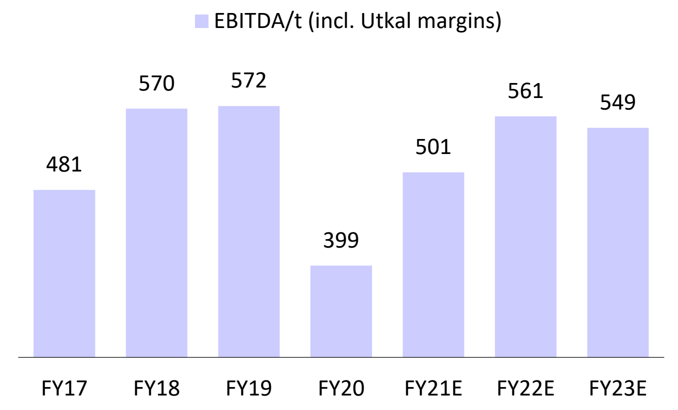
Story in charts

Exhibit 8: India Aluminum volume trend - In '000t



Source: Company, MOFSL

Exhibit 9: Aluminum EBITDA/t to remain strong



Source: Company, MOFSL

Exhibit 10: Novelis' volumes rising with Aleris acquisition…

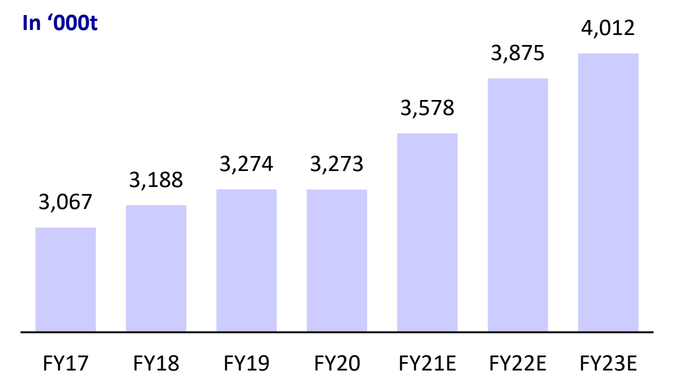


Exhibit 11: …with an improving margin profile

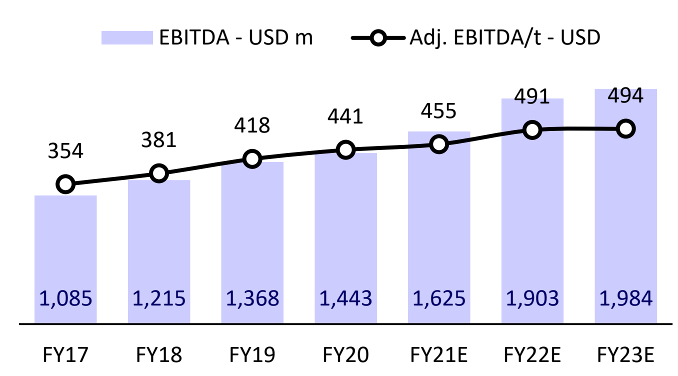
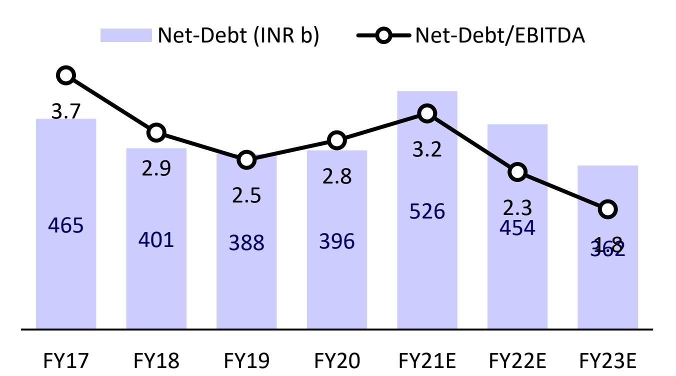
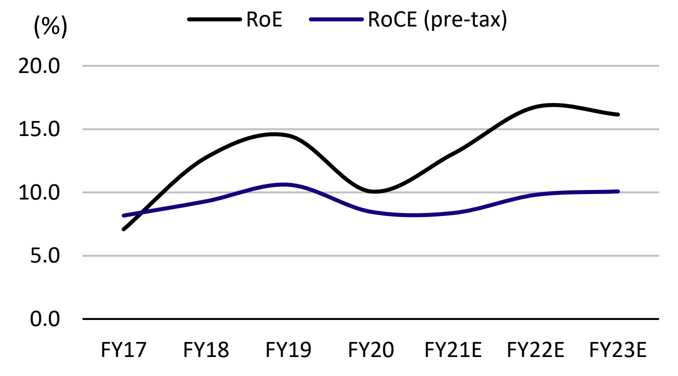


Exhibit 12: Net debt-to-EBITDA to decline to 2.3x in FY22E



Source: MOFSL

Exhibit 13: Return ratios to improve in FY22E



Source: MOFSL

Financials and valuations

Consolidated Income Statement							(INR m)
Y/E March	**FY17**	**FY18**	**FY19**	**FY20**	**FY21E**	**FY22E**	**FY23E**
Net sales	**10,01,838**	**11,51,717**	**13,05,423**	**11,81,440**	**12,81,262**	**14,80,152**	**15,36,529**
Change (%)	1.4	15.0	13.3	-9.5	8.4	15.5	3.8
Total Expenses	8,77,479	10,13,513	11,50,317	10,39,380	11,15,771	12,84,689	13,32,098
EBITDA	**1,24,359**	**1,38,204**	**1,55,105**	**1,42,060**	**1,65,491**	**1,95,463**	**2,04,431**
% of Net Sales	12.4	12.0	11.9	12.0	12.9	13.2	13.3
Depn. and Amortization	44,572	45,062	47,770	50,910	65,708	66,447	67,612
EBIT	**79,786**	**93,141**	**1,07,335**	**91,150**	**99,783**	**1,29,016**	**1,36,820**
Net Interest	57,424	39,107	37,780	41,970	41,640	36,758	33,577
Other income	11,110	10,046	11,271	11,860	15,508	15,824	16,252
PBT before EO	**33,472**	**64,080**	**80,826**	**61,040**	**73,650**	**1,08,083**	**1,19,495**
EO income/(expense)	-76	17,742		-1,840	-1730		
PBT after EO	**33,395**	**81,821**	**80,826**	**59,200**	**71,920**	**1,08,083**	**1,19,495**
Tax	14,326	20,742	25,881	21,570	22,420	35,010	37,475
Rate (%)	42.9	25.4	32.0	36.4	31.2	32.4	31.4
Reported PAT	**19,069**	**61,080**	**54,945**	**37,630**	**49,501**	**73,072**	**82,020**
Minority interests	-174	-1	-7				
Share of asso.	-251	-1,251	5	40	40	40	40
Adjusted PAT	**19,069**	**42,088**	**54,957**	**38,884**	**51,271**	**73,112**	**82,060**
Change (%)	-22.9	120.7	30.6	-29.2	31.9	42.6	12.2

Balance Sheet							(INR m)
Y/E March	**FY17**	**FY18**	**FY19**	**FY20**	**FY21E**	**FY22E**	**FY23E**
Share Capital	2,227	2,229	2,224	2,224	2,224	2,224	2,224
Reserves	4,58,361	5,46,289	5,72,793	5,80,950	6,26,710	6,93,817	7,69,872
Net Worth	**4,60,588**	**5,48,518**	**5,75,017**	**5,83,174**	**6,28,934**	**6,96,041**	**7,72,096**
Minority Interest	62	86	95	100	100	100	100
Total Loans	6,37,515	5,20,155	5,24,150	6,74,190	7,86,781	7,49,401	7,13,173
Deferred Tax Liability	20,168	31,333	36,505	37,610	42,094	49,096	56,591
Capital Employed	**11,18,333**	**11,00,092**	**11,35,767**	**12,95,074**	**14,57,909**	**14,94,638**	**15,41,960**
Gross Block	10,40,510	10,82,644	11,30,670	11,99,704	14,44,968	14,97,279	15,50,742
Less: Accum. Deprn.	3,64,991	4,10,054	4,57,824	5,08,734	5,74,442	6,40,889	7,08,500
Net Fixed Assets	**6,75,518**	**6,72,590**	**6,72,846**	**6,90,970**	**8,70,526**	**8,56,390**	**8,42,242**
Goodwill	1,71,350	1,78,294	1,85,746	2,00,980	2,26,105	2,26,105	2,26,105
Capital WIP	18,139	20,629	40,971	77,210	33,453	28,894	24,335
Investments	62,057	68,778	51,567	31,320	31,360	31,400	31,440
Working capital Assets	**5,29,543**	**5,29,846**	**5,67,157**	**6,85,704**	**7,01,331**	**7,87,230**	**8,61,869**
Inventory	1,82,914	2,16,314	2,21,938	2,23,840	2,45,722	2,81,837	2,94,677
Account Receivables	82,748	99,598	1,14,598	93,450	1,05,309	1,19,629	1,26,290
Cash and Bank Balance	1,72,129	1,19,612	1,36,419	2,78,480	2,60,367	2,95,831	3,50,968
Others (incl. LT)	91,752	94,322	94,203	89,934	89,934	89,934	89,934
Working capital liability	**3,38,275**	**3,70,046**	**3,82,520**	**3,91,110**	**4,04,867**	**4,35,382**	**4,44,031**
Account Payables	1,78,581	2,04,392	2,07,244	1,82,820	1,96,577	2,27,092	2,35,741
Others (incl. LT)	1,59,694	1,65,655	1,75,276	2,08,290	2,08,290	2,08,290	2,08,290
Net Working Capital	**1,91,269**	**1,59,800**	**1,84,637**	**2,94,594**	**2,96,464**	**3,51,849**	**4,17,838**
Appl. of Funds	**11,18,333**	**11,00,092**	**11,35,767**	**12,95,074**	**14,57,909**	**14,94,638**	**15,41,960**

Financials and valuations

Ratios

Y/E March	FY17	FY18	FY19	FY20	FY21E	FY22E	FY23E
Basic (INR)							
EPS	**8.6**	**18.9**	**24.7**	**17.5**	**23.1**	**32.9**	**36.9**
Cash EPS	28.6	47.6	46.2	39.8	51.8	62.7	67.3
BV/Share (adj.)	129.9	166.1	175.0	171.8	181.1	211.3	245.5
DPS	1.1	1.4	1.2	1.2	1.7	2.7	2.7
Payout (%)	15.0	8.7	5.7	8.0	8.6	9.6	8.6
Valuation (x)							
P/E				18.1	13.7	8.7	7.7
Cash P/E				7.9	6.1	4.5	4.2
P/BV				1.8	1.7	1.3	1.2
EV/Sales				0.9	1.0	0.7	0.6
EV/EBITDA				7.7	7.4	5.6	4.9
Dividend Yield (%)				0.4	0.5	0.9	0.9
Return Ratios (%)							
EBITDA Margin (%)	12.4	12.0	11.9	12.0	12.9	13.2	13.3
Net Profit Margin (%)	1.9	3.7	4.2	3.3	4.0	4.9	5.3
RoE	7.1	12.8	14.5	10.1	13.1	16.8	16.2
RoCE (pre-tax)	8.2	9.3	10.6	8.5	8.4	9.8	10.1
RoIC (pre-tax)	9.1	10.8	11.9	10.3	9.8	11.4	12.0
Working Capital Ratios							
Fixed Asset Turnover (x)	1.0	1.1	1.2	1.0	0.9	1.0	1.0
Asset Turnover (x)	0.9	1.0	1.1	0.9	0.9	1.0	1.0
Debtor (Days)	30	32	32	29	30	30	30
Inventory (Days)	67	69	62	69	70	70	70
Payable (Days)	65	65	58	56	56	56	56
Leverage Ratio (x)							
Current Ratio	1.6	1.4	1.5	1.8	1.7	1.8	1.9
Interest Coverage Ratio	1.4	2.4	2.8	2.2	2.4	3.5	4.1
Debt/Equity	1.6	1.1	1.0	1.0	1.3	1.0	0.7

Cash Flow Statement (INR m)

Y/E March	FY17	FY18	FY19	FY20	FY21E	FY22E	FY23E
EBITDA	1,24,359	1,38,204	1,55,105	1,42,060	1,65,491	1,95,463	2,04,431
EO Expense/(income)	3,622	2,617	439	-2,610	-1,730		
Tax paid	-7,797	-14,081	-18,883	-1,020	-17,936	-28,008	-29,980
Change in WC	6,691	-17,862	-16,865	-11,780	-19,984	-19,921	-10,851
CF from Op. Activity	**1,26,875**	**1,08,877**	**1,19,795**	**1,26,650**	**1,25,842**	**1,47,535**	**1,63,600**
(Inc.)/Dec. in FA + CWIP	-29,376	-30,008	-60,053	-67,910	-50,132	-55,132	-55,132
Free Cash Flow to firm	**97,499**	**78,870**	**59,742**	**58,740**	**75,709**	**92,402**	**1,08,467**
(Pur.)/Sale of Inv. and yield	5,667	24,685	6,615	7,110	15,508	15,824	16,252
Others and M&A	3,524	8,052	5,110	10,111	-1,78,337		
CF from Inv. Activity	**-20,185**	**2,730**	**-48,328**	**-50,689**	**-2,12,962**	**-39,308**	**-38,880**
Equity raised/(repaid)	33,141	162	-1,176				
Debt raised/(repaid)	-25,430	-1,22,863	-14,443	1,09,460	1,14,427	-30,000	-30,000
Interest	-60,754	-38,486	-35,813	-40,160	-41,640	-36,758	-33,577
Dividend (incl. tax)	-2,479	-2,938	-3,229	-3,200	-3,781	-6,005	-6,005
CF from Fin. Activity	**-55,523**	**-1,64,124**	**-54,660**	**66,100**	**69,007**	**-72,763**	**-69,582**
(Inc.)/Dec. in Cash	**51,167**	**-52,517**	**16,807**	**1,42,061**	**-18,113**	**35,464**	**55,138**
Add: Opening Balance	1,20,962	1,72,129	1,19,612	1,36,419	2,78,480	2,60,367	2,95,831
Closing Balance	**1,72,129**	**1,19,612**	**1,36,419**	**2,78,480**	**2,60,367**	**2,95,831**	**3,50,968**

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

*In case the recommendation given by the Research Analyst is inconsistent with the investment rating legend for a continuous period of 30 days, the Research Analyst shall within following 30 days take appropriate measures to make the recommendation consistent with the investment rating legend.

Disclosures

The following Disclosures are being made in compliance with the SEBI Research Analyst Regulations 2014 (herein after referred to as the Regulations).

Motilal Oswal Financial Services Ltd. (MOFSL) is a SEBI Registered Research Analyst having registration no. INH000000412. MOFSL, the Research Entity (RE) as defined in the Regulations, is engaged in the business of providing Stock broking services, Investment Advisory Services, Depository participant services & distribution of various financial products. MOFSL is a subsidiary company of Passionate Investment Management Pvt. Ltd.. (PIMPL). MOFSL is a listed public company, the details in respect of which are available on www.motilaloswal.com. MOFSL (erstwhile Motilal Oswal Securities Limited - MOSL) is registered with the Securities & Exchange Board of India (SEBI) and is a registered Trading Member with National Stock Exchange of India Ltd. (NSE) and Bombay Stock Exchange Limited (BSE), Multi Commodity Exchange of India Limited (MCX) and National Commodity & Derivatives Exchange Limited (NCDEX) for its stock broking activities & is Depository participant with Central Depository Services Limited (CDSL) National Securities Depository Limited (NSDL),NERL, COMRIS and CCRL and is member of Association of Mutual Funds of India (AMFI) for distribution of financial products and Insurance Regulatory & Development Authority of India (IRDA) as Corporate Agent for insurance products. Details of associate entities of Motilal Oswal Financial Services Limited are available on the website at http://onlinereports.motilaloswal.com/Dormant/documents/List%20of%20Associate%20companies.pdf

MOFSL and its associate company(ies), their directors and Research Analyst and their relatives may; (a) from time to time, have a long or short position in, act as principal in, and buy or sell the securities or derivatives thereof of companies mentioned herein. (b) be engaged in any other transaction involving such securities and earn brokerage or other compensation or act as a market maker in the financial instruments of the company(ies) discussed herein or act as an advisor or lender/borrower to such company(ies) or may have any other potential conflict of interests with respect to any recommendation and other related information and opinions.; however the same shall have no bearing whatsoever on the specific recommendations made by the analyst(s), as the recommendations made by the analyst(s) are completely independent of the views of the associates of MOFSL even though there might exist an inherent conflict of interest in some of the stocks mentioned in the research report

MOFSL and / or its affiliates do and seek to do business including investment banking with companies covered in its research reports. As a result, the recipients of this report should be aware that MOFSL may have a potential conflict of interest that may affect the objectivity of this report. Compensation of Research Analysts is not based on any specific merchant banking, investment banking or brokerage service transactions. Details of pending Enquiry Proceedings of Motilal Oswal Financial Services Limited are available on the website at https://galaxy.motilaloswal.com/ResearchAnalyst/PublishViewLitigation.aspx

A graph of daily closing prices of securities is available at www.nseindia.com, www.bseindia.com. Research Analyst views on Subject Company may vary based on Fundamental research and Technical Research. Proprietary trading desk of MOFSL or its associates maintains arm's length distance with Research Team as all the activities are segregated from MOFSL research activity and therefore it can have an independent view with regards to Subject Company for which Research Team have expressed their views.

Regional Disclosures (outside India)

This report is not directed or intended for distribution to or use by any person or entity resident in a state, country or any jurisdiction, where such distribution, publication, availability or use would be contrary to law, regulation or which would subject MOFSL & its group companies to registration or licensing requirements within such jurisdictions.

For Hong Kong:

This report is distributed in Hong Kong by Motilal Oswal capital Markets (Hong Kong) Private Limited, a licensed corporation (CE AYY-301) licensed and regulated by the Hong Kong Securities and Futures Commission (SFC) pursuant to the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong) "SFO". As per SEBI (Research Analyst Regulations) 2014 Motilal Oswal Securities (SEBI Reg No. INH000000412) has an agreement with Motilal Oswal capital Markets (Hong Kong) Private Limited for distribution of research report in Hong Kong. This report is intended for distribution only to "Professional Investors" as defined in Part I of Schedule 1 to SFO. Any investment or investment activity to which this document relates is only available to professional investor and will be engaged only with professional investors." Nothing here is an offer or solicitation of these securities, products and services in any jurisdiction where their offer or sale is not qualified or exempt from registration. The Indian Analyst(s) who compile this report is/are not located in Hong Kong & are not conducting Research Analysis in Hong Kong.

For U.S.

Motilal Oswal Financial Services Limited (MOFSL) is not a registered broker - dealer under the U.S. Securities Exchange Act of 1934, as amended (the"1934 act") and under applicable state laws in the United States. In addition MOFSL is not a registered investment adviser under the U.S. Investment Advisers Act of 1940, as amended (the "Advisers Act" and together with the 1934 Act, the "Acts), and under applicable state laws in the United States. Accordingly, in the absence of specific exemption under the Acts, any brokerage and investment services provided by MOFSL , including the products and services described herein are not available to or intended for U.S. persons. This report is intended for distribution only to "Major Institutional Investors" as defined by Rule 15a-6(b)(4) of the Exchange Act and interpretations thereof by SEC (henceforth referred to as "major institutional investors"). This document must not be acted on or relied on by persons who are not major institutional investors. Any investment or investment activity to which this document relates is only available to major institutional investors and will be engaged in only with major institutional investors. In reliance on the exemption from registration provided by Rule 15a-6 of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act") and interpretations thereof by the U.S. Securities and Exchange Commission ("SEC") in order to conduct business with Institutional Investors based in the U.S., MOFSL has entered into a chaperoning agreement with a U.S. registered broker-dealer, Motilal Oswal Securities International Private Limited. ("MOSIPL"). Any business interaction pursuant to this report will have to be executed within the provisions of this chaperoning agreement.

The Research Analysts contributing to the report may not be registered /qualified as research analyst with FINRA. Such research analyst may not be associated persons of the U.S. registered broker-dealer, MOSIPL, and therefore, may not be subject to NASD rule 2711 and NYSE Rule 472 restrictions on communication with a subject company, public appearances and trading securities held by a research analyst account.

For Singapore

In Singapore, this report is being distributed by Motilal Oswal Capital Markets Singapore Pte Ltd ("MOCMSPL") (Co.Reg. NO. 201129401Z) which is a holder of a capital markets services license and an exempt financial adviser in Singapore.As per the approved agreement under Paragraph 9 of Third Schedule of Securities and Futures Act (CAP 289) and Paragraph 11 of First Schedule of Financial Advisors Act (CAP 110) provided to MOCMSPL by Monetary Authority of Singapore. Persons in Singapore should contact MOCMSPL in respect of any matter arising from, or in connection with this report/publication/communication. This report is distributed solely to persons who qualify as "Institutional Investors", of which some of whom may consist of "accredited" institutional investors as defined in section 4A(1) of the Securities and Futures Act, Chapter 289 of Singapore ("the SFA"). Accordingly, if a Singapore person is not or ceases to be such an institutional investor, such Singapore Person must immediately discontinue any use of this Report and inform MOCMSPL.

Specific Disclosures

1 MOFSL, Research Analyst and/or his relatives does not have financial interest in the subject company, as they do not have equity holdings in the subject company.
2 MOFSL, Research Analyst and/or his relatives do not have actual/beneficial ownership of 1% or more securities in the subject company
3 MOFSL, Research Analyst and/or his relatives have not received compensation/other benefits from the subject company in the past 12 months
4 MOFSL, Research Analyst and/or his relatives do not have material conflict of interest in the subject company at the time of publication of research report
5 Research Analyst has not served as director/officer/employee in the subject company
6 MOFSL has not acted as a manager or co-manager of public offering of securities of the subject company in past 12 months
7 MOFSL has not received compensation for investment banking/ merchant banking/brokerage services from the subject company in the past 12 months
8 MOFSL has not received compensation for other than investment banking/merchant banking/brokerage services from the subject company in the past 12 months
9 MOFSL has not received any compensation or other benefits from third party in connection with the research report
10 MOFSL has not engaged in market making activity for the subject company

The associates of MOFSL may have:

- financial interest in the subject company
- actual/beneficial ownership of 1% or more securities in the subject company
- received compensation/other benefits from the subject company in the past 12 months

- other potential conflict of interests with respect to any recommendation and other related information and opinions.; however the same shall have no bearing whatsoever on the specific recommendations made by the analyst(s), as the recommendations made by the analyst(s) are completely independent of the views of the associates of MOFSL even though there might exist an inherent conflict of interest in some of the stocks mentioned in the research report.
- acted as a manager or co-manager of public offering of securities of the subject company in past 12 months
- be engaged in any other transaction involving such securities and earn brokerage or other compensation or act as a market maker in the financial instruments of the company(ies) discussed herein or act as an advisor or lender/borrower to such company(ies)
- received compensation from the subject company in the past 12 months for investment banking / merchant banking / brokerage services or from other than said services.

The associates of MOFSL has not received any compensation or other benefits from third party in connection with the research report

Above disclosures include beneficial holdings lying in demat account of MOFSL which are opened for proprietary investments only. While calculating beneficial holdings, It does not consider demat accounts which are opened in name of MOFSL for other purposes (i.e holding client securities, collaterals, error trades etc.). MOFSL also earns DP income from clients which are not considered in above disclosures.

Analyst Certification

The views expressed in this research report accurately reflect the personal views of the analyst(s) about the subject securities or issues, and no part of the compensation of the research analyst(s) was, is, or will be directly or indirectly related to the specific recommendations and views expressed by research analyst(s) in this report.

Terms & Conditions:

This report has been prepared by MOFSL and is meant for sole use by the recipient and not for circulation. The report and information contained herein is strictly confidential and may not be altered in any way, transmitted to, copied or distributed, in part or in whole, to any other person or to the media or reproduced in any form, without prior written consent of MOFSL. The report is based on the facts, figures and information that are considered true, correct, reliable and accurate. The intent of this report is not recommendatory in nature. The information is obtained from publicly available media or other sources believed to be reliable. Such information has not been independently verified and no guaranty, representation of warranty, express or implied, is made as to its accuracy, completeness or correctness. All such information and opinions are subject to change without notice. The report is prepared solely for informational purpose and does not constitute an offer document or solicitation of offer to buy or sell or subscribe for securities or other financial instruments for the clients. Though disseminated to all the customers simultaneously, not all customers may receive this report at the same time. MOFSL will not treat recipients as customers by virtue of their receiving this report.

Disclaimer:

The report and information contained herein is strictly confidential and meant solely for the selected recipient and may not be altered in any way, transmitted to, copied or distributed, in part or in whole, to any other person or to the media or reproduced in any form, without prior written consent. This report and information herein is solely for informational purpose and may not be used or considered as an offer document or solicitation of offer to buy or sell or subscribe for securities or other financial instruments. Nothing in this report constitutes investment, legal, accounting and tax advice or a representation that any investment or strategy is suitable or appropriate to your specific circumstances. The securities discussed and opinions expressed in this report may not be suitable for all investors, who must make their own investment decisions, based on their own investment objectives, financial positions and needs of specific recipient. This may not be taken in substitution for the exercise of independent judgment by any recipient. Each recipient of this document should make such investigations as it deems necessary to arrive at an independent evaluation of an investment in the securities of companies referred to in this document (including the merits and risks involved), and should consult its own advisors to determine the merits and risks of such an investment. The investment discussed or views expressed may not be suitable for all investors. Certain transactions -including those involving futures, options, another derivative products as well as non-investment grade securities - involve substantial risk and are not suitable for all investors. No representation or warranty, express or implied, is made as to the accuracy, completeness or fairness of the information and opinions contained in this document. The Disclosures of Interest Statement incorporated in this document is provided solely to enhance the transparency and should not be treated as endorsement of the views expressed in the report. This information is subject to change without any prior notice. The Company reserves the right to make modifications and alternations to this statement as may be required from time to time without any prior approval. MOFSL, its associates, their directors and the employees may from time to time, effect or have effected an own account transaction in, or deal as principal or agent in or for the securities mentioned in this document. They may perform or seek to perform investment banking or other services for, or solicit investment banking or other business from, any company referred to in this report. Each of these entities functions as a separate, distinct and independent of each other. The recipient should take this into account before interpreting the document. This report has been prepared on the basis of information that is already available in publicly accessible media or developed through analysis of MOFSL. The views expressed are those of the analyst, and the Company may or may not subscribe to all the views expressed therein. This document is being supplied to you solely for your information and may not be reproduced, redistributed or passed on, directly or indirectly, to any other person or published, copied, in whole or in part, for any purpose. This report is not directed or intended for distribution to, or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction, where such distribution, publication, availability or use would be contrary to law, regulation or which would subject MOFSL to any registration or licensing requirement within such jurisdiction. The securities described herein may or may not be eligible for sale in all jurisdictions or to certain category of investors. Persons in whose possession this document may come are required to inform themselves of and to observe such restriction. Neither the Firm, not its directors, employees, agents or representatives shall be liable for any damages whether direct or indirect, incidental, special or consequential including lost revenue or lost profits that may arise from or in connection with the use of the information. The person accessing this information specifically agrees to exempt MOFSL or any of its affiliates or employees from, any and all responsibility/liability arising from such misuse and agrees not to hold MOFSL or any of its affiliates or employees responsible for any such misuse and further agrees to hold MOFSL or any of its affiliates or employees free and harmless from all losses, costs, damages, expenses that may be suffered by the person accessing this information due to any errors and delays.

Registered Office Address: Motilal Oswal Tower, Rahimtullah Sayani Road, Opposite Parel ST Depot, Prabhadevi, Mumbai-400025; Tel No.: 022 71934200/ 022-71934263; Website www.motilaloswal.com.CIN no.: L67190MH2005PLC153397.Correspondence Office Address: Palm Spring Centre, 2nd Floor, Palm Court Complex, New Link Road, Malad(West), Mumbai-400 064. Tel No: 022 7188 1000.

Registration Nos.: Motilal Oswal Financial Services Limited (MOFSL)*: INZ000158836(BSE/NSE/MCX/NCDEX); CDSL and NSDL: IN-DP-16-2015; Research Analyst: INH000000412. AMFI: ARN - 146822; Investment Adviser: INA000007100; Insurance Corporate Agent: CA0579;PMS:INP000006712. Motilal Oswal Asset Management Company Ltd. (MOAMC): PMS (Registration No.: INP000000670); PMS and Mutual Funds are offered through MOAMC which is group company of MOFSL. Motilal Oswal Wealth Management Ltd. (MOWML): PMS (Registration No.: INP000004409) is offered through MOWML, which is a group company of MOFSL. Motilal Oswal Financial Services Limited is a distributor of Mutual Funds, PMS, Fixed Deposit, Bond, NCDs,Insurance Products and IPOs.Real Estate is offered through Motilal Oswal Real Estate Investment Advisors II Pvt. Ltd. which is a group company of MOFSL. Private Equity is offered through Motilal Oswal Private Equity Investment Advisors Pvt. Ltd which is a group company of MOFSL. Research & Advisory services is backed by proper research. Please read the Risk Disclosure Document prescribed by the Stock Exchanges carefully before investing. There is no assurance or guarantee of the returns. Investment in securities market is subject to market risk, read all the related documents carefully before investing. Details of Compliance Officer: Name: Neeraj Agarwal, Email ID: na@motilaloswal.com, Contact No.:022-71881085.

* MOSL has been amalgamated with Motilal Oswal Financial Services Limited (MOFSL) w.e.f August 21, 2018 pursuant to order dated July 30, 2018 issued by Hon'ble National Company Law Tribunal, Mumbai Bench.