

APL Apollo Tubes

BSE SENSEX

60,737

S&P CNX

18,162


Stock Info

Bloomberg	APAT IN
Equity Shares (m)	166
M.Cap.(INRb)/(USD\$b)	213.5 / 2.8
52-Week Range (INR)	1050 / 266
1, 6, 12 Rel. Per (%)	-12/15/156
12M Avg Val (INR M)	450
Free float (%)	63.2

Financials Snapshot (INR b)

Y/E MARCH	2022E	2023E	2024E
Sales	117.8	149.1	170.7
EBITDA	9.0	11.3	13.6
Adj. PAT	5.6	7.4	9.0
EBITDA margin (%)	7.7	7.6	8.0
Cons. Adj. EPS (INR)	20.5	26.7	32.5
EPS Gr. (%)	56.8	30.4	21.9
BV/Sh. (INR)	85.2	110.4	141.2

Ratios

Net D:E	0.1	-0.1	-0.2
RoE (%)	27.9	27.3	25.9
RoCE (%)	25.9	26.7	26.2
Payout (%)	6.6	5.6	5.4

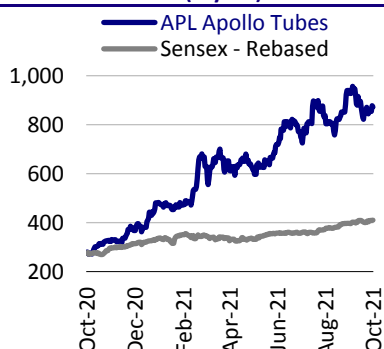
Valuations

P/E (x)	41.8	32.0	26.3
EV/EBITDA (x)	26.3	20.6	16.7
Div. Yield (%)	0.2	0.2	0.2
FCF Yield (%)	0.4	2.1	3.0

Shareholding pattern (%)

As On	Jun-21	Mar-21	Jun-20
Promoter	36.9	37.0	38.4
DII	9.4	10.0	15.5
FII	25.7	24.2	0.0
Others	28.0	28.8	46.1

FII Includes depository receipts

Stock Performance (1-year)

CMP: INR855
TP: INR1,035 (+21%)
Buy
Growing applications, paving way for a growth phase

We analyzed the shifting trends in the Structural Tube industry, driven by growing consumption of steel tubes in Construction projects, coupled with growing acceptance and increasing applications of steel tubes. Key drivers of APAT's performance include: a) growing usage of structural tubes as a replacement to RCC, b) first-mover advantage by installing DFT in India, and c) leadership position to help benefit from this shift.

Integration of structural tubes in Construction projects

- India is currently witnessing growing acceptance for structural tubes in Construction projects due to a multitude of benefits. Structural tubes offer: i) 40-50% less dead weight, ii) higher strength-to-weight ratio, iii) higher load carrying capacity, iv) faster completion time, v) higher carpet areas, etc. when compared to RCC structures.
- From an environmental point of view, structural steel tubes cause no air pollution, can be recycled, and the used steel has a good monetary value even after decades.
- The Structural Steel Tube market, as percentage of steel consumption, across the globe/Europe/North America stood at 9%/11%/7% as against 4% in India. Usage of structural steel tubes in Construction projects (in India) is currently pegged at just 10-15%. This is due to non-availability of large size tubes, limited size range, large MOQ (minimum order quantity), high lead time, and wastage.
- In the domestic market, overall cost per sq. ft. for an RCC structure is ~INR4,000, whereas for a steel tube structure it stands ~INR4,200. Completion time for construction of steel tube structures is significantly lower (completion time for a 'G+8' building takes 2-3 years for RCC structures, whereas for steel tube structures the duration is just 9-18 months), leading to lower interest cost, faster turnaround time, and higher cost saving.
- Global steel tube players have better realizations and higher revenue share from Building Material and Infrastructure (20-40%), leading to higher operating margin. APAT's global counterparts have operating margin in the 14-19% range (refer Exhibit 4), as compared to APAT's 8% (as on FY21).
- Going forward, we expect the application of structural steel tubes to increase significantly, with an increasing shift from RCC to structural tubes. The Structural Tube market in India is expected to increase to 22MMT from 4MMT over CY21-30E.

APAT to lead the space by pioneering DFT in India

- APAT was the first domestic player to introduce Direct Forming Technology (DFT) in India, an Italian technology used for tube manufacturing. With the introduction of DFT, APAT will be able to manufacture tubes tailor-made to client requirements, require less lead time, and be able to take small MOQs even for non-standard sizes. Tubes manufactured with cut-to-length (as per design) leads to lower wastages, thereby reducing overall cost.

Sumant Kumar - Research Analyst (Sumant.Kumar@motilalosal.com)

Research Analyst: Yusuf Inamdar (Yusuf.Inamdar@motilalosal.com) | **Darshit Shah** (Darshit.Shah@MotilalOswal.com)

Investors are advised to refer through important disclosures made at the last page of the Research Report.

 Motilal Oswal research is available on www.motilalosal.com/Institutional-Equities, Bloomberg, Thomson Reuters, Factset and S&P Capital.

- By using this technology, APAT reduced turnaround time due to reduced need of fabrication work and improved working capital cycle due to lesser inventory.
- The company is also able to manufacture large jumbo tubes, which is not possible under the conventional methods.
- As a testimony to increasing transition to structural tubes, the Delhi government recently announced construction of seven hospital building at different locations using 100% structural steel tubes (first of its kind), with APAT being the sole supplier. The entire project is expected to be completed in a record time of five months.

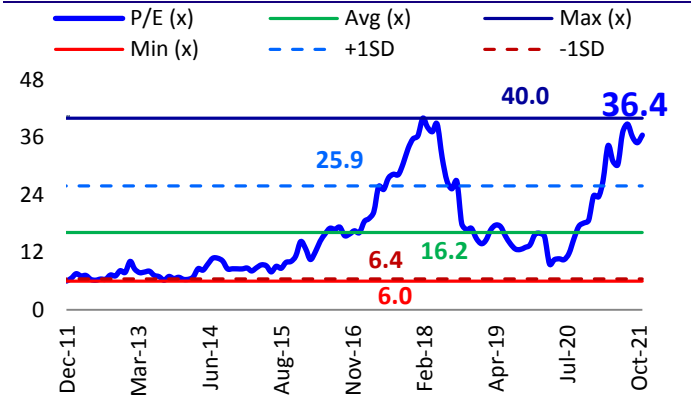
APAT best placed to benefit from a growing industry

- Globally, consumption of heavy structural tubes is higher (30-40% of overall steel tubes consumption), whereas for APAT the number is pegged ~6%. Going forward, with higher adoption of structural tubes in Real Estate and Infrastructure projects, share of structural tubes is expected to improve, leading to improvement in EBITDA/MT and operating margins for companies.
- India's Structural Steel Tube industry is pegged at 4MMT, or ~4% of overall steel consumption as compared to the global average of 7%. As per the management, overall steel consumption in India is expected to clock 9% CAGR to 227MMT. With the growing acceptance of structural tubes, the consumption share (as a percentage of overall steel consumption) is expected to increase by 520bp to 10%, taking overall volumes of structural tubes to 22MMT (17% CAGR over CY19-30E).
- APAT currently dominates the domestic market with ~50% share. The cumulative market share of the next five domestic players stands at just 38%. It is best placed to benefit from the growing Structural Steel Tubes industry on the back of: i) industry leading market share, ii) first mover advantage (installation of DFT at plant locations), and iii) strong brand name.
- On the back of strong demand outlook and faster turnaround time (WC days at four in FY21), we expect APAT to record 18% CAGR growth over FY21-24E (to 2.7MMT).

Valuation and view

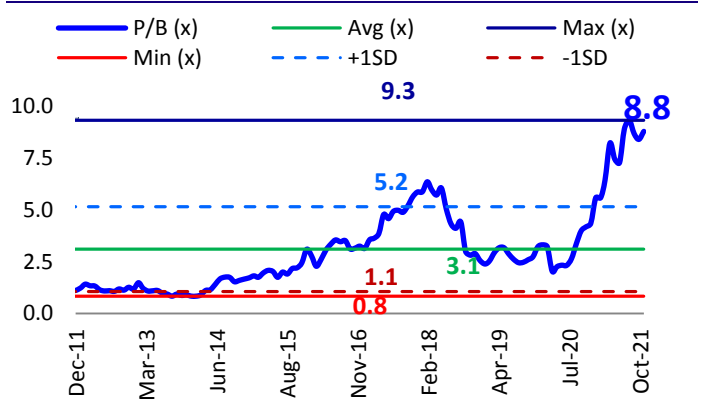
- We expect strong volume growth and improved profitability on the back of: a) increasing shift towards structural tubes (from RCC structures), b) a pan-India presence, coupled with diverse product offerings, c) behemoth market share, increasing the share of value-added products.
- Several cost-control measures, kicking-in of operating leverage, and growing share of VAP is expected to lead to improved margin and higher cash generation.
- We expect a revenue/EBITDA/PAT CAGR of 26%/26%/36% over FY21-24E. We value the stock at 35x Sep'23E EPS. Our TP of INR1,035. We maintain our Buy rating.

Exhibit 1: One-year forward P/E (x)



Source: Company, MOFSL

Exhibit 2: One-year forward P/B (x)



Source: Company, MOFSL

Exhibit 3: Per sq. ft. cost analysis

(INR/sq. ft.)	RCC structures	Steel tube structures
Land cost	1,000	1,000
Structural cost	1,500	1,700
Finishing cost	1,000	1,000
Other expenses	500	500
Total	4,000	4,200

Note: Assumed land and other expenses for comparison purpose.

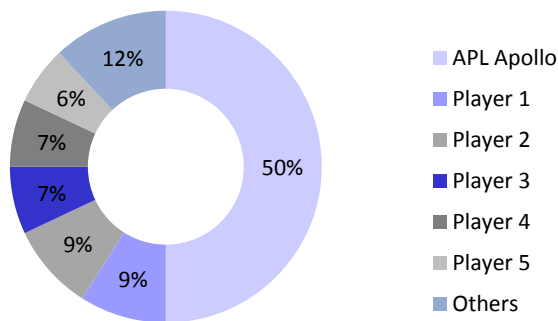
Source: Company, MOFSL

Exhibit 4: Global peer benchmarking

	Revenue (INR b)	EBITDA margin	Revenue share from building material and Infra. (%)	Capacities (in MMT)
SSAB	68	14%	40	1.1
Maruichi	106	17%	40	1.4
Zekelman	185	19%	20	2.8
APL Apollo	85	8%	6	2.6

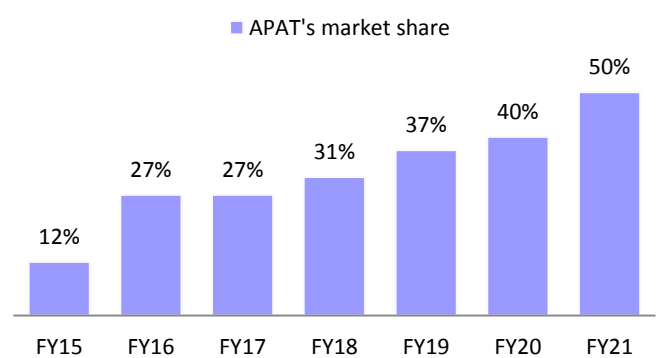
Source: Company, MOFSL

Exhibit 5: Industry leader with ~50% market share



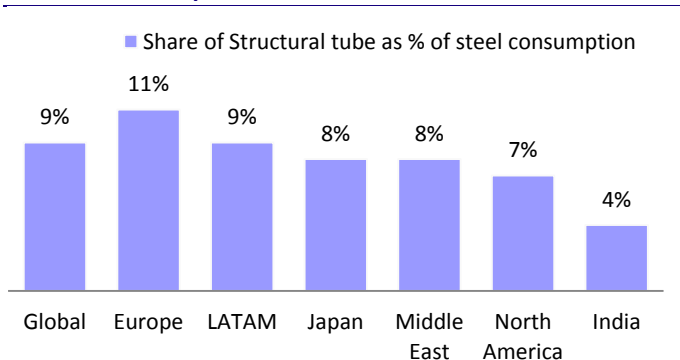
Source: Company, MOFSL

Exhibit 6: Consistent gain in market share



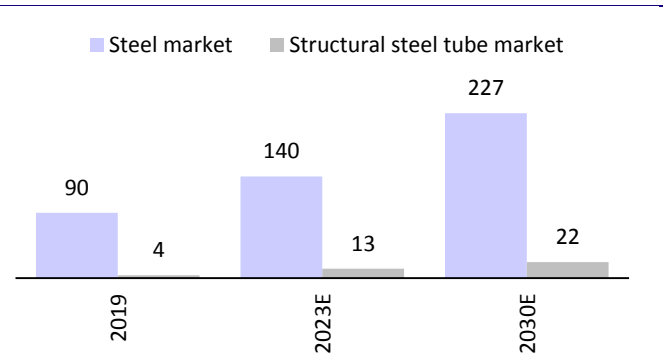
Source: Company, MOFSL

Exhibit 7: Lower penetration of structural tubes in India



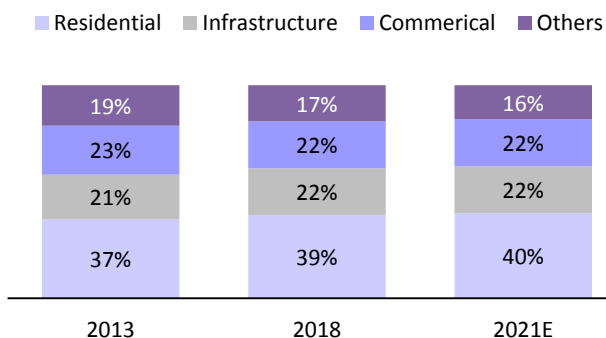
Source: Company, MOFSL

Exhibit 8: Expect Structural Steel Tube industry to clock 17% CAGR over CY19-30E



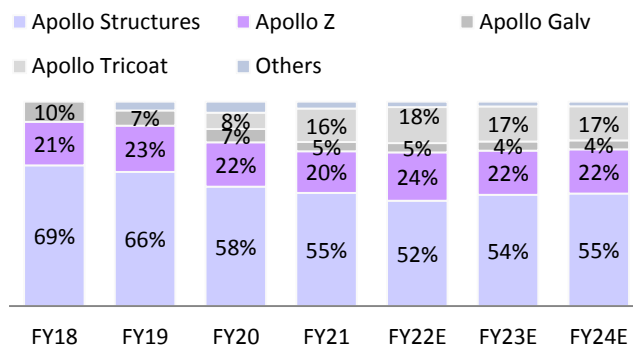
Source: Company, MOFSL

Exhibit 9: Global structural steel tube uses – segment-wise break-up



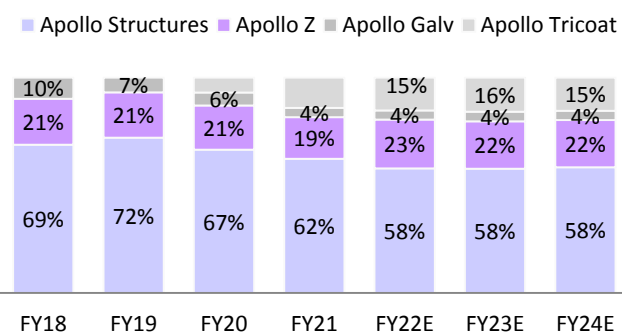
Source: Company, MOFSL

Exhibit 10: Product-wise revenue composition – showcasing increase in revenue share of VAP



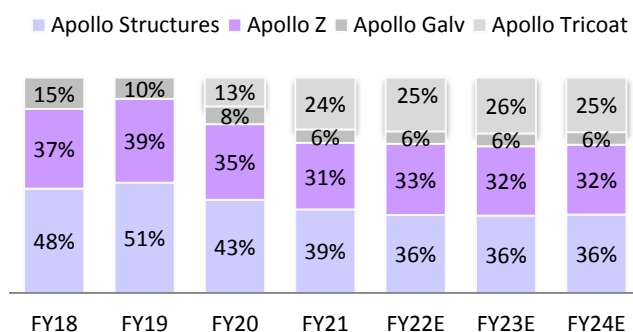
Source: Company, MOFSL

Exhibit 11: Product-wise volume composition



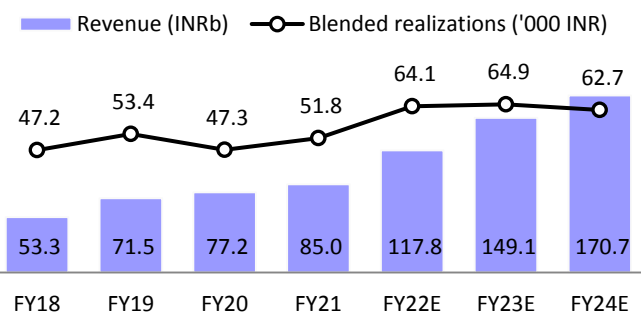
Source: Company, MOFSL

Exhibit 12: Product-wise revenue composition – showcasing increase in revenue share of VAP



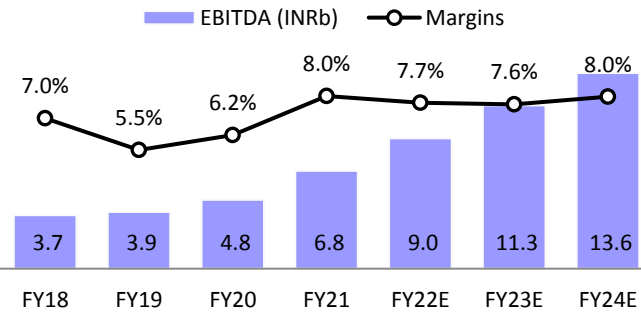
Source: Company, MOFSL

Exhibit 13: Expect 26% revenue CAGR over FY21-24E



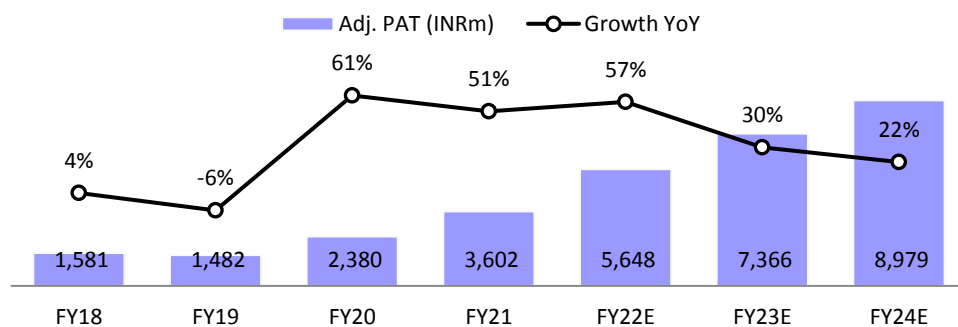
Source: Company, MOFSL

Exhibit 14: Expect 26% EBITDA CAGR over FY21-24E, with stable margin



Source: Company, MOFSL

Exhibit 15: Expect 36% PAT CAGR over FY21-24E



Source: Company, MOFSL

Financials and valuations

Consolidated Income Statement

(INR m)

Y/E March	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
Total Income from Operations	31,383	42,136	39,239	53,348	71,523	77,232	84,998	1,17,790	1,49,087	1,70,675
Change (%)	25.7	34.3	-6.9	36.0	34.1	8.0	10.1	38.6	26.6	14.5
RM Cost	26,807	35,546	32,324	45,483	63,077	65,786	71,648	98,426	1,25,233	1,43,367
Employees Cost	412	629	754	862	1,079	1,422	1,296	1,489	1,938	2,219
Other Expenses	2,348	3,145	2,832	3,292	3,439	5,252	5,266	8,833	10,583	11,514
Total Expenditure	29,567	39,319	35,909	49,637	67,595	72,459	78,210	1,08,748	1,37,754	1,57,100
As a percentage of Sales	94.2	93.3	91.5	93.0	94.5	93.8	92.0	92.3	92.4	92.0
EBITDA	1,816	2,817	3,330	3,710	3,928	4,773	6,787	9,042	11,333	13,576
Margin (%)	5.8	6.7	8.5	7.0	5.5	6.2	8.0	7.7	7.6	8.0
Depreciation	220	341	509	534	643	959	1,028	1,115	1,342	1,480
EBIT	1,596	2,476	2,821	3,176	3,286	3,814	5,759	7,926	9,990	12,096
Int. and Finance Charges	664	695	720	813	1,134	1,073	661	458	300	300
Other Income	45	103	60	80	117	222	359	365	447	512
PBT bef. EO Exp.	977	1,883	2,160	2,443	2,269	2,963	5,458	7,833	10,138	12,308
EO Items	0	-253	0	0	0	0	0	0	0	0
PBT after EO Exp.	977	1,630	2,160	2,443	2,269	2,963	5,458	7,833	10,138	12,308
Total Tax	339	624	639	862	787	403	1,381	1,975	2,551	3,097
Tax Rate (%)	34.7	38.3	29.6	35.3	34.7	13.6	25.3	25.2	25.2	25.2
Minority Interest	0	0	0	0	0	180	475	211	221	232
Reported PAT	638	1,006	1,521	1,581	1,482	2,380	3,602	5,648	7,366	8,979
Adjusted PAT	638	1,259	1,521	1,581	1,482	2,380	3,602	5,648	7,366	8,979
Change (%)	7.6	97.5	20.8	4.0	-6.2	60.5	51.3	56.8	30.4	21.9
Margin (%)	2.0	3.0	3.9	3.0	2.1	3.1	4.2	4.8	4.9	5.3

Consolidated Balance Sheet

(INR m)

Y/E March	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
Equity Share Capital	234	234	236	237	239	249	250	552	552	552
Total Reserves	4,717	5,441	6,798	8,141	9,402	13,313	16,697	22,976	29,928	38,424
Net Worth	4,951	5,676	7,034	8,379	9,641	13,562	16,947	23,528	30,480	38,976
Minority Interest	0	0	0	0	0	954	1,383	0	0	0
Total Loans	4,822	6,498	5,944	7,751	8,581	8,338	5,203	2,203	2,203	403
Deferred Tax Liabilities	745	859	813	994	1,200	1,012	1,112	1,112	1,112	1,112
Capital Employed	10,517	13,033	13,790	17,124	19,422	23,865	24,644	26,842	33,794	40,490
Gross Block	6,472	7,291	6,922	9,617	11,626	17,246	18,568	20,554	22,751	24,991
Less: Accum. Deprn.	760	1,058	454	988	1,548	2,507	3,535	4,650	5,993	7,473
Net Fixed Assets	5,712	6,233	6,468	8,628	10,078	14,738	15,033	15,904	16,758	17,518
Goodwill on Consolidation	429	429	230	230	230	1,375	1,375	2,796	2,796	2,796
Capital WIP	240	320	1,224	460	275	101	1,077	1,340	1,393	1,404
Total Investments	191	131	4	11	494	15	15	15	4,515	4,515
Current Investments	0	0	0	0	0	0	0	0	4,500	4,500
Curr. Assets, Loans, and Adv.	6,656	9,491	10,519	12,483	16,663	16,431	16,491	19,276	24,149	32,308
Inventory	3,196	5,944	4,696	5,915	7,835	7,842	7,599	10,428	13,209	15,064
Account Receivables	1,753	2,201	2,949	4,321	5,433	4,764	1,306	2,582	3,268	3,741
Cash and Bank Balance	188	14	16	68	478	456	3,579	715	645	5,458
Loans and Advances	1,520	1,333	2,859	2,179	2,917	3,370	4,006	5,552	7,027	8,044
Curr. Liability and Prov.	2,710	3,572	4,656	4,688	8,317	8,796	9,345	12,488	15,817	18,050
Account Payables	2,063	2,581	4,039	3,793	6,989	7,644	7,859	10,428	13,209	15,064
Other Current Liabilities	375	506	459	814	1,220	979	1,310	1,816	2,298	2,631
Provisions	272	484	157	81	108	173	177	245	310	355
Net Current Assets	3,946	5,920	5,864	7,795	8,346	7,636	7,145	6,788	8,332	14,258
Misc. Expenditure	0	0	0	0	0	0	0	0	0	0
Appl. of Funds	10,517	13,033	13,790	17,124	19,422	23,865	24,644	26,842	33,794	40,490

Financials and valuations

Ratios

Y/E March	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
Basic (INR)										
EPS	2.3	4.6	5.5	5.7	5.4	8.6	13.0	20.5	26.7	32.5
Cash EPS	3.1	5.8	7.4	7.7	7.7	12.1	16.8	24.5	31.6	37.9
BV/Share	17.9	20.6	25.5	30.4	34.9	49.1	61.4	85.2	110.4	141.2
DPS	0.5	0.8	1.0	1.2	1.2	0.0	0.0	1.4	1.5	1.8
Payout (%)	26.5	28.0	22.5	25.3	27.7	0.0	0.0	6.6	5.6	5.4
Valuation (x)										
P/E	370.2	187.4	155.1	149.2	159.2	99.2	65.5	41.8	32.0	26.3
Cash P/E	275.2	147.5	116.2	111.6	111.0	70.7	51.0	34.9	27.1	22.6
P/BV	47.7	41.6	33.6	28.2	24.5	17.4	13.9	10.0	7.7	6.1
EV/Sales	7.7	5.8	6.2	4.6	3.4	3.2	2.8	2.0	1.6	1.3
EV/EBITDA	132.5	86.1	72.7	65.7	62.1	51.3	35.2	26.3	20.6	16.7
Dividend Yield (%)	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.2	0.2
FCF per share	11.5	0.9	11.6	3.5	4.8	-5.4	24.2	3.2	17.8	25.8
Return Ratios (%)										
RoE	13.9	23.7	23.9	20.5	16.5	20.5	23.6	27.9	27.3	25.9
RoCE	11.2	14.5	16.1	14.5	12.9	17.4	20.8	25.9	26.7	26.2
RoIC	10.9	13.6	15.8	14.1	12.4	15.9	19.9	26.5	28.7	32.1
Working Capital Ratios										
Fixed Asset Turnover (x)	4.8	5.8	5.7	5.5	6.2	4.5	4.6	5.7	6.6	6.8
Asset Turnover (x)	3.0	3.2	2.8	3.1	3.7	3.2	3.4	4.4	4.4	4.2
Inventory (Days)	37	51	44	40	40	37	33	32	32	32
Debtor (Days)	20	19	27	30	28	23	6	8	8	8
Creditor (Days)	24	22	38	26	36	36	34	32	32	32
Leverage Ratio (x)										
Current Ratio	2.5	2.7	2.3	2.7	2.0	1.9	1.8	1.5	1.5	1.8
Interest Cover Ratio	2.4	3.6	3.9	3.9	2.9	3.6	8.7	17.3	33.3	40.3
Net Debt/Equity	0.9	1.1	0.8	0.9	0.8	0.6	0.1	0.1	-0.1	-0.2

Consolidated Cash Flow Statement

Y/E March	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22E	FY23E	FY24E
OP/(Loss) before Tax	977	1,630	2,160	2,443	2,269	2,963	5,458	7,833	10,138	12,308
Depreciation	220	341	509	534	0	959	1,028	1,115	1,342	1,480
Interest and Finance Charges	650	669	711	789	0	851	302	93	-147	-212
Direct Taxes Paid	-67	-432	-629	-602	-673	-403	-1,381	-1,975	-2,551	-3,097
(Inc.)/Dec. in WC	1,367	-2,335	330	-2,342	287	725	3,577	-2,507	-1,614	-1,113
CF from Operations	3,146	-127	3,082	823	1,884	5,096	8,983	4,560	7,169	9,366
Others	2	240	72	91	1,693	0	0	0	0	0
CF from Operating incl. EO	3,148	113	3,154	914	3,576	5,096	8,983	4,560	7,169	9,366
(Inc.)/Dec. in FA	27	149	61	48	-2,261	-6,591	-2,298	-3,671	-2,250	-2,250
Free Cash Flow	3,175	261	3,215	961	1,316	-1,495	6,685	889	4,919	7,116
(Pur.)/Sale of Investments	-15	-18	2	2	-390	479	0	0	-4,500	0
Others	-1,829	-1,227	-1,761	-1,703	13	1,763	-4,171	365	447	512
CF from Investments	-1,817	-1,096	-1,697	-1,654	-2,639	-4,349	-6,468	-3,306	-6,303	-1,738
Issue of Shares	0	0	106	100	56	10	1	1,306	0	0
Inc./Dec. in Debt	-443	1,673	-554	1,807	830	-244	-3,135	-3,000	0	-1,800
Interest Paid	-664	-695	-725	-772	-1,014	-1,073	-661	-458	-300	-300
Dividend Paid	-117	-141	-234	-283	-400	0	0	-373	-414	-483
Others	-19	-28	-47	-59	0	538	4,403	-1,594	-221	-232
CF from Fin. Activity	-1,243	809	-1,454	792	-528	-768	609	-4,118	-935	-2,815
Inc./Dec. in Cash	88	-175	2	52	410	-22	3,123	-2,865	-69	4,813
Opening Balance	101	188	14	16	68	478	456	3,579	715	645
Closing Balance	188	13	16	68	478	456	3,579	715	645	5,458

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://online-reports.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 -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.