

# Navin Fluorine

BSE SENSEX  
57,315S&P CNX  
17,073

CMP: INR4,000

TP: INR4,195 (+5%)

Neutral



|                       |             |
|-----------------------|-------------|
| Bloomberg             | NFIL IN     |
| Equity Shares (m)     | 49          |
| M.Cap.(INRb)/(USDb)   | 198.1 / 2.6 |
| 52-Week Range (INR)   | 4213 / 2219 |
| 1, 6, 12 Rel. Per (%) | 17/8/35     |
| 12M Avg Val (INR M)   | 937         |

## Financials & Valuations (INR bn)

| Y/E March   | FY22E | FY23E | FY24E |
|-------------|-------|-------|-------|
| Sales       | 13.1  | 20.3  | 23.9  |
| EBITDA      | 3.5   | 5.9   | 6.9   |
| PAT         | 2.6   | 4.4   | 5.2   |
| EPS (INR)   | 51.9  | 88.9  | 104.9 |
| EPS Gr. (%) | 2     | 71    | 18    |
| BV/Sh.(INR) | 375   | 446   | 530   |

## Ratios

|            |       |       |       |
|------------|-------|-------|-------|
| Net D:E    | (0.2) | (0.2) | (0.2) |
| RoE (%)    | 14.7  | 21.6  | 21.5  |
| RoCE (%)   | 14.6  | 21.5  | 21.4  |
| Payout (%) | 20.0  | 20.0  | 20.0  |

## Valuations

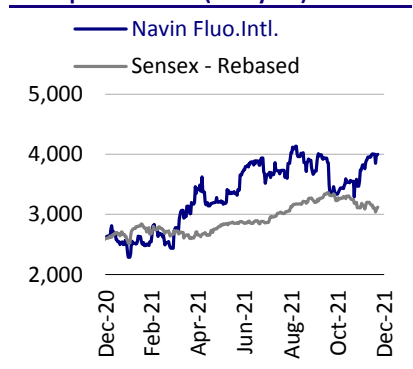
|                |      |      |      |
|----------------|------|------|------|
| P/E (x)        | 76.3 | 44.6 | 37.8 |
| P/BV (x)       | 10.6 | 8.9  | 7.5  |
| EV/EBITDA (x)  | 55.1 | 32.5 | 27.4 |
| Div. Yield (%) | 0.3  | 0.4  | 0.5  |
| FCF Yield (%)  | 0.0  | 0.8  | 1.6  |

## Shareholding pattern (%)

| As On    | Sep-21 | Jun-21 | Sep-20 |
|----------|--------|--------|--------|
| Promoter | 30.2   | 30.2   | 30.5   |
| DII      | 15.2   | 15.2   | 20.3   |
| FII      | 26.4   | 26.7   | 21.1   |
| Others   | 28.2   | 28.0   | 28.1   |

FII Includes depository receipts

## Stock performance (one-year)



## Agrochemicals: An ever growing opportunity – Volume II

Around 53% of new Agro APIs are Fluorinated molecules

- In continuation of [our recent study on the ever increasing use of fluorine in Life Sciences/Pharmaceuticals](#), we dive into its Agrochemical applications. Similar to our findings in the Pharmaceutical space, currently ~53% of Agrochemicals are organofluorine compounds (compared to a 40% in 2000).
- Organofluorine compounds have emerged as attractive synthetic building blocks in both the Pharmaceutical and Agrochemicals industry. The similarities between them include the design of target molecules and biological functions, and the considerations to Lipinski's rules to estimate the probability of success. Fluorinated herbicides and fungicides have some similarities to fluoro-pharmaceuticals, whereas insecticides and acaricides are different; although a major differentiator/key consideration is the increase in costs, which limits their use in Agrochemicals, especially in developing countries.
- In this report, we discuss about the uses of fluorine in the Agrochemical space. NFIL has recently entered into a five year (INR8b) contract with a global MNC for supply of a key Fluoro-Agrochemical intermediate.

## Lipophilicity of fluorine atoms – the novel solution to biological resistance...

- Currently, over 1,200 Agrochemicals are listed. However, their resistance to pesticides is an ever more frequently occurring phenomenon. A continuous supply of novel Agrochemicals with higher efficiency, selectivity, and low toxicity is required.
- Fluorine is the second smallest element after hydrogen. Selecting small organic molecules to act as a ligand to target biomolecules (enzymes, proteins, DNA) on the surface or inside cells is crucial for bioactive reagents. These ligands generally interact with biomolecules to form complexes, controlling the biological processes in insects, plants, and bacteria.
- Addition of fluorine atoms to active compounds can improve their binding by altering hydrogen-bonding and ionic interactions, and lipophilicity. A highly lipophilic compound is crucial, particularly in the case of insecticides, for the translocation via the surface of insects. Higher lipophilicity renders herbicides more resistant to being washed out by rain.

## ...with minimal risks to human health

- Besides its use in crop protection, Agrochemicals are used to safeguard human health from parasitic infectious diseases such as malaria, the Zika virus, and dengue fever, which are spread by mosquitos.
- Currently, a new Agrochemical cannot be approved unless its effects on air, water, soil, and human health are known. The robustness (strong C-F bonds) of Fluoro-Agrochemicals is advantageous, but the same possesses a huge risk of bio-accumulation via the food cycle. Trifluralin (a trifluoromethyl compound), which had been a very prominent drug for half a century, was eventually banned in the European Union in CY08, owing to its toxicity to aquatic and human life.

Swarnendu Bhushan- Research Analyst (Swarnendu.Bhushan@MotilalOswal.com)

Sarfranz Bhimani, CFA - Research Analyst (Sarfranz.Bhimani@MotilalOswal.com)

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

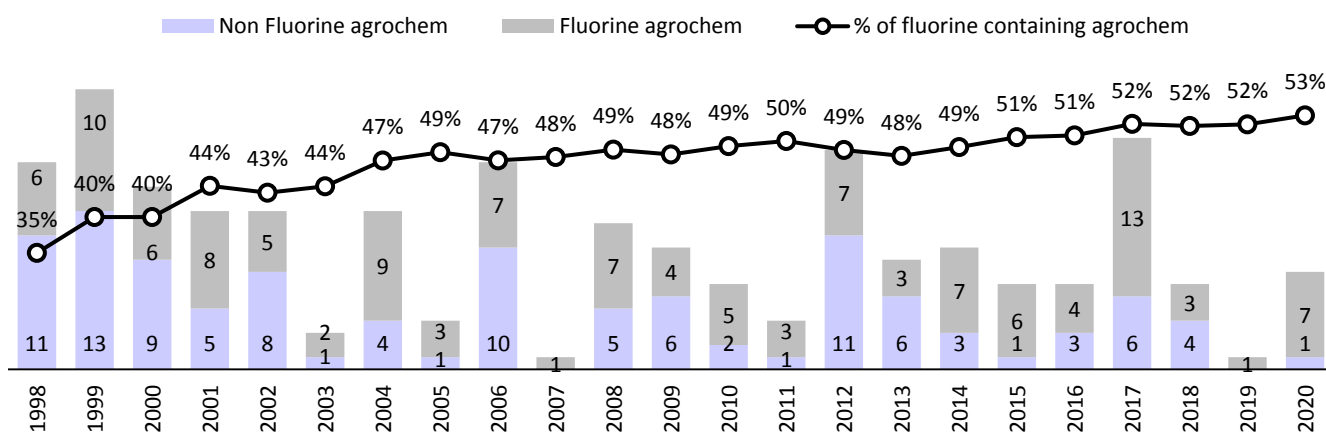
Motilal Oswal research is available on [www.motilaloswal.com/Institutional-Equities](http://www.motilaloswal.com/Institutional-Equities), Bloomberg, Thomson Reuters, Factset and S&P Capital.

- The Stockholm Convention was started in CY04 to protect human health and the environment from persistent organic pollutants (POPs). Initially, 12 POPs were listed, which has now been expanded to 38 POPs (18 pesticides, 13 industrial chemicals, and 7 unintentional products). **However, 17 of the 18 pesticides POPs are organochlorine-based Agrochemicals, with only one organofluorine Agrochemical (refer Exhibit 4). This may indicate that Fluoro-Agrochemicals are of lower environmental toxicity than organochlorine Agrochemicals.**

**Valuation and view – a forerunner to upcoming demand**

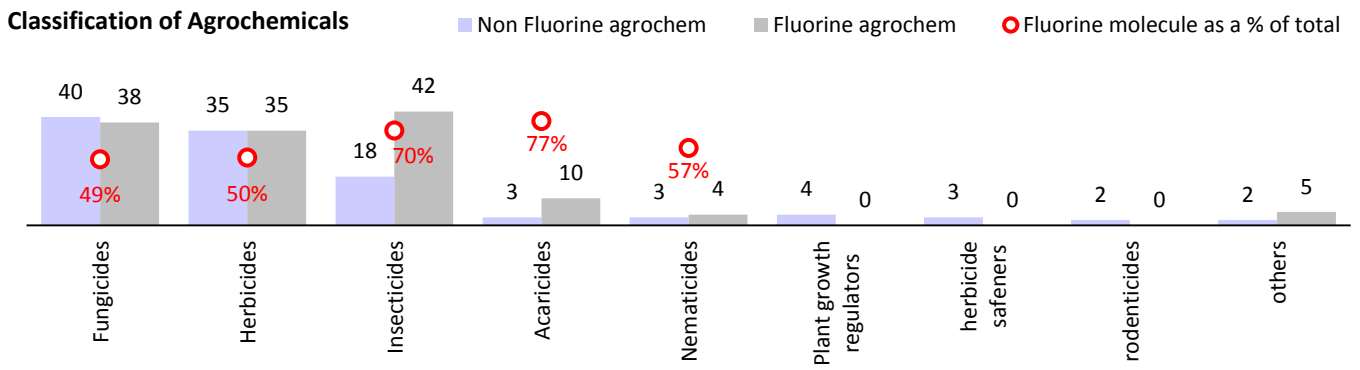
- NFIL intends to leverage its R&D capabilities and deep fluorination expertise to partner with global companies, thus helping it grow further. Currently, NFIL has three R&D centers (at Surat, Devas, and Manchester, employing a total of 120 people) and **the management is evaluating the prospects of another R&D center on the outskirts of Mumbai for the Specialty Chemicals segment. Over the near-to-medium term, NFIL plans to add another 30-80 people in this department.**
- The company has entered into a five-year contract with a large MNC for manufacturing and supply of a key Fluoro-Agrochemical intermediate. **As is now common in the Pharmaceutical industry, Fluoro-Agrochemicals (especially with a stereogenic carbon center) will most likely receive increased attention in the near future. The management has been reiterating huge opportunities in both the Agro and Pharma space.**
- It is looking for an additional land parcel for such opportunities, although near term opportunities will be fulfilled at existing facilities.
- The stock is trading at 45x/38x FY23E/FY24E EPS of INR89/INR105, with an expected improvement in return ratios to ~22% (up 500bp v/s FY21), despite a huge capex (INR7b over the next three years). We value the company at 40x FY24E EPS to arrive at our TP of INR4,195 and maintain our Neutral rating. **We await a right entry point on dips, highlighting our aforementioned optimism on fluorination chemistry.**

**Exhibit 1: Fluoro/Non-Fluoro-Agrochemicals assigned new ISO common names**



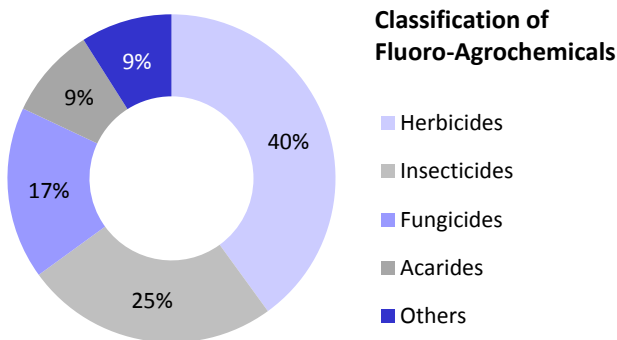
Source: Industry, Iscience, MOSFL

**Exhibit 2: Classification of Agrochemicals by new ISO common names**



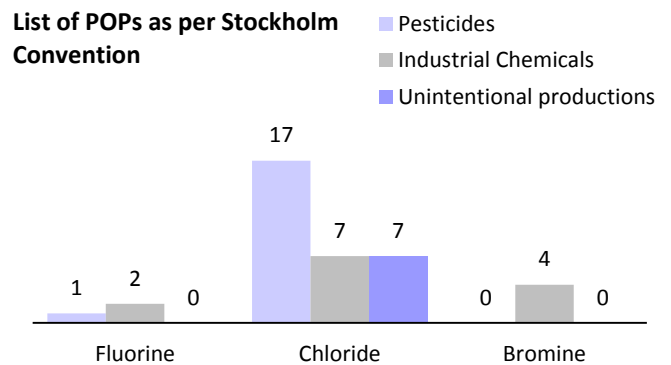
Source: Industry, Iscience, MOSFL

**Exhibit 3: Fluoro-Agrochemicals are majorly used in Herbicides and Insecticides**



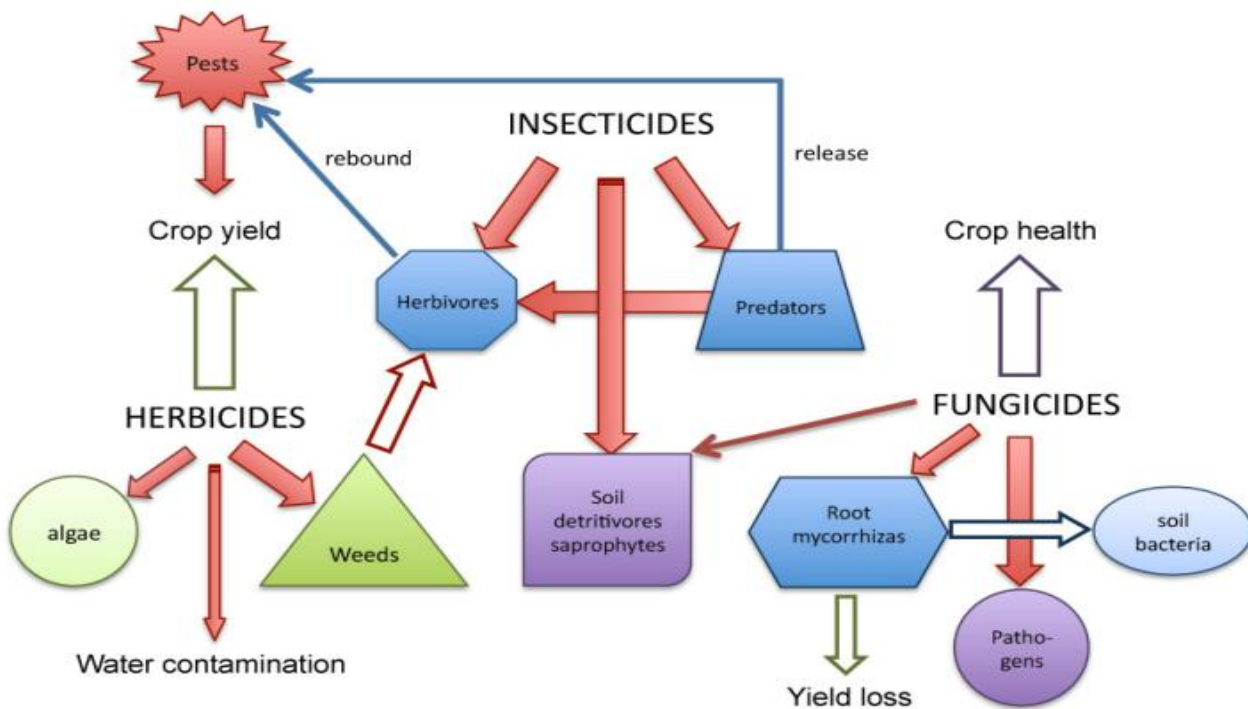
Source: Industry, Iscience, MOSFL

**Exhibit 4: List of POPs as per the Stockholm Convention has only one Fluoro-Agrochemical (in a total of 18 chemicals)**



Source: Industry, Iscience, MOSFL

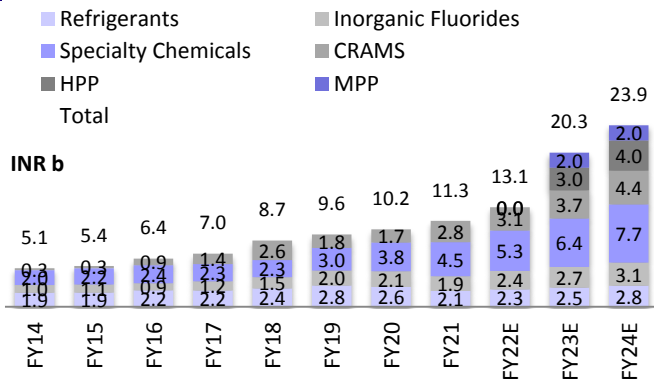
**Exhibit 5: Diagram showing the main impact of pesticides on soil, plant, and arthropod communities. Red arrows indicate a decrease and blue arrows indicate an increase; empty arrows indicate indirect effects**



Source: Industry, MOFSL

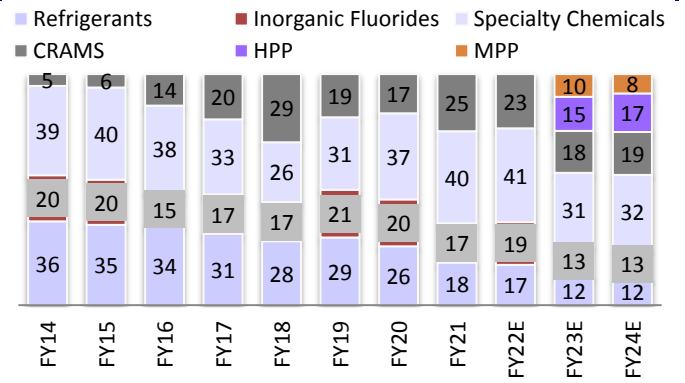
**Financials story in charts**

**Exhibit 6: Expect ~28% revenue CAGR over FY21-24E**



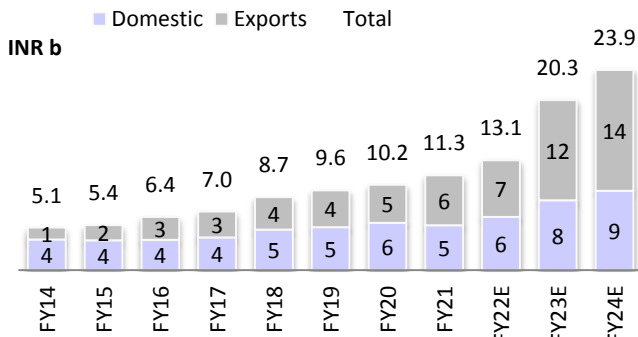
Source: Company, MOFSL

**Exhibit 7: ...with Specialty Chemicals and CRAMS CAGR of ~20%**



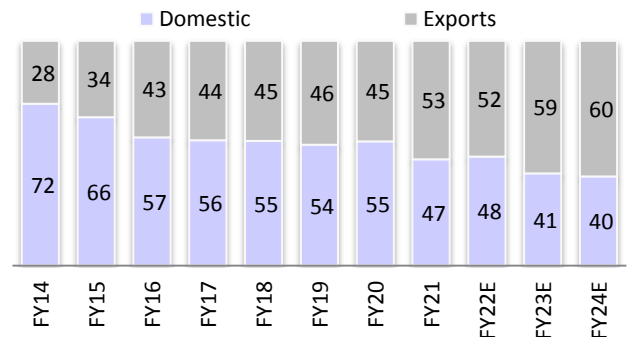
Source: Company, MOFSL

**Exhibit 8: Exports constitute ~53% of total revenue in FY21...**



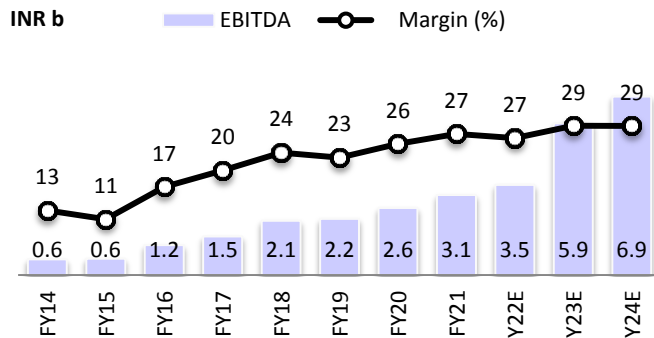
Source: Company, MOFSL

**Exhibit 9: ...and is set to grow to ~60% over FY23-24E**



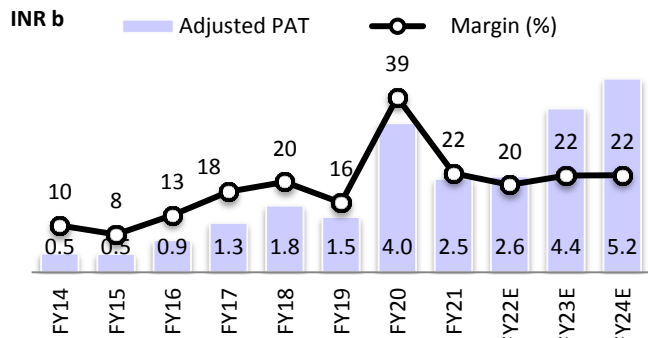
Source: Company, MOFSL

**Exhibit 10: Expect EBITDA CAGR of ~31% over FY21-24E...**



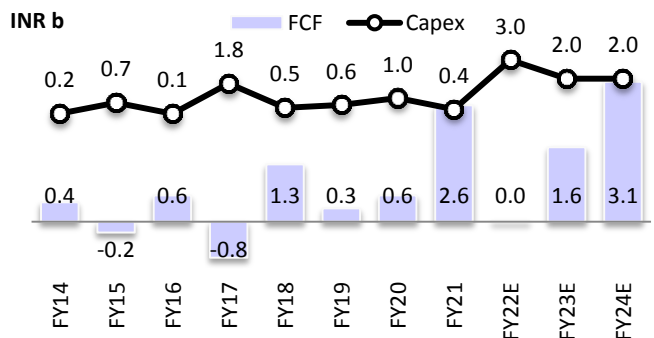
Source: Company, MOFSL

**Exhibit 11: ...with a PAT CAGR of ~27% over the same period**



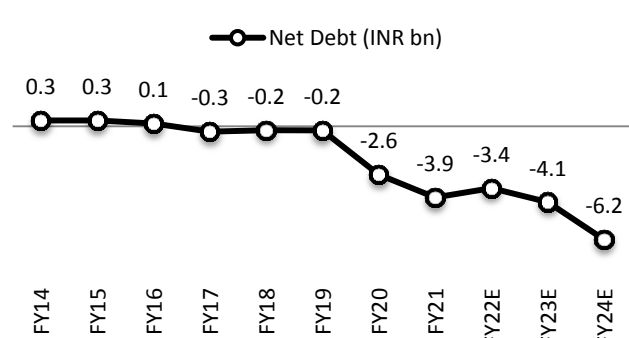
Source: Company, MOFSL

**Exhibit 12: Capex for the next three years stands at INR7b...**



Source: Company, MOFSL

**Exhibit 13: ...which will be funded by internal accruals**



Source: Company, MOFSL

## Financials and valuations

### Standalone Income Statement

|                                     | (INR m)      |              |              |              |               |               |               |               |               |
|-------------------------------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| Y/E March                           | FY16         | FY17         | FY18         | FY19         | FY20          | FY21          | FY22E         | FY23E         | FY24E         |
| <b>Total Income from Operations</b> | <b>6,785</b> | <b>7,368</b> | <b>8,861</b> | <b>9,551</b> | <b>10,223</b> | <b>11,331</b> | <b>13,144</b> | <b>20,349</b> | <b>23,948</b> |
| Change (%)                          | 16.1         | 8.6          | 20.3         | 7.8          | 7.0           | 10.8          | 16.0          | 54.8          | 17.7          |
| Gross Margin (%)                    | 57.0         | 57.9         | 56.6         | 52.3         | 54.5          | 54.9          | 55.8          | 55.8          | 55.8          |
| <b>EBITDA</b>                       | <b>1,161</b> | <b>1,499</b> | <b>2,107</b> | <b>2,181</b> | <b>2,607</b>  | <b>3,108</b>  | <b>3,500</b>  | <b>5,904</b>  | <b>6,942</b>  |
| Margin (%)                          | 17.1         | 20.3         | 23.8         | 22.8         | 25.5          | 27.4          | 26.6          | 29.0          | 29.0          |
| Depreciation                        | 209          | 284          | 382          | 259          | 337           | 407           | 451           | 483           | 525           |
| <b>EBIT</b>                         | <b>952</b>   | <b>1,216</b> | <b>1,725</b> | <b>1,922</b> | <b>2,270</b>  | <b>2,702</b>  | <b>3,050</b>  | <b>5,421</b>  | <b>6,417</b>  |
| Int. and Finance Charges            | 32           | 5            | 7            | 5            | 16            | 14            | 14            | 14            | 14            |
| Other Income                        | 247          | 557          | 906          | 348          | 313           | 745           | 368           | 468           | 534           |
| <b>PBT bef. EO Exp.</b>             | <b>1,167</b> | <b>1,768</b> | <b>2,625</b> | <b>2,265</b> | <b>2,567</b>  | <b>3,433</b>  | <b>3,404</b>  | <b>5,875</b>  | <b>6,937</b>  |
| EO Items                            | 0            | 0            | 0            | 0            | 0             | 662           | 0             | 0             | 0             |
| <b>PBT after EO Exp.</b>            | <b>1,167</b> | <b>1,768</b> | <b>2,625</b> | <b>2,265</b> | <b>2,567</b>  | <b>4,095</b>  | <b>3,404</b>  | <b>5,875</b>  | <b>6,937</b>  |
| Total Tax                           | 302          | 441          | 835          | 780          | -1,431        | 1,103         | 834           | 1,479         | 1,746         |
| Tax Rate (%)                        | 25.9         | 25.0         | 31.8         | 34.5         | -55.7         | 26.9          | 24.5          | 25.2          | 25.2          |
| <b>Reported PAT</b>                 | <b>865</b>   | <b>1,326</b> | <b>1,790</b> | <b>1,485</b> | <b>3,998</b>  | <b>2,992</b>  | <b>2,570</b>  | <b>4,396</b>  | <b>5,191</b>  |
| <b>Adjusted PAT</b>                 | <b>865</b>   | <b>1,326</b> | <b>1,790</b> | <b>1,485</b> | <b>3,998</b>  | <b>2,508</b>  | <b>2,570</b>  | <b>4,396</b>  | <b>5,191</b>  |
| Change (%)                          | 75.1         | 53.4         | 34.9         | -17.0        | 169.3         | -37.3         | 2.5           | 71.1          | 18.1          |
| Margin (%)                          | 12.7         | 18.0         | 20.2         | 15.5         | 39.1          | 22.1          | 19.5          | 21.6          | 21.7          |

### Standalone Balance Sheet

| Y/E March                            | FY16         | FY17         | FY18         | FY19          | FY20          | FY21          | FY22E         | FY23E         | FY24E         |
|--------------------------------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Equity Share Capital                 | 98           | 98           | 99           | 99            | 99            | 99            | 99            | 99            | 99            |
| Total Reserves                       | 7,132        | 8,137        | 9,601        | 10,493        | 13,790        | 16,402        | 18,458        | 21,975        | 26,127        |
| <b>Net Worth</b>                     | <b>7,230</b> | <b>8,235</b> | <b>9,700</b> | <b>10,592</b> | <b>13,889</b> | <b>16,501</b> | <b>18,557</b> | <b>22,074</b> | <b>26,226</b> |
| Total Loans                          | 299          | 0            | 0            | 0             | 0             | 0             | 0             | 0             | 0             |
| Deferred Tax Liabilities             | 213          | 207          | 239          | 295           | 206           | 167           | 167           | 167           | 167           |
| <b>Capital Employed</b>              | <b>7,742</b> | <b>8,443</b> | <b>9,939</b> | <b>10,887</b> | <b>14,096</b> | <b>16,668</b> | <b>18,724</b> | <b>22,241</b> | <b>26,393</b> |
| Gross Block                          | 4,304        | 4,377        | 3,232        | 3,511         | 4,643         | 4,937         | 7,937         | 9,937         | 11,937        |
| Less: Accum. Deprn.                  | 1,633        | 272          | 477          | 715           | 1,053         | 1,459         | 1,910         | 2,393         | 2,918         |
| <b>Net Fixed Assets</b>              | <b>2,671</b> | <b>4,105</b> | <b>2,755</b> | <b>2,796</b>  | <b>3,591</b>  | <b>3,478</b>  | <b>6,027</b>  | <b>7,545</b>  | <b>9,020</b>  |
| Capital WIP                          | 139          | 168          | 201          | 393           | 389           | 365           | 365           | 365           | 365           |
| <b>Total Investments</b>             | <b>2,909</b> | <b>3,157</b> | <b>5,219</b> | <b>5,267</b>  | <b>3,387</b>  | <b>4,503</b>  | <b>4,503</b>  | <b>4,503</b>  | <b>4,503</b>  |
| <b>Curr. Assets, Loans, and Adv.</b> | <b>3,406</b> | <b>3,805</b> | <b>3,817</b> | <b>4,224</b>  | <b>7,042</b>  | <b>10,320</b> | <b>9,924</b>  | <b>13,013</b> | <b>16,255</b> |
| Inventory                            | 627          | 989          | 924          | 929           | 1,361         | 1,543         | 1,723         | 2,581         | 3,039         |
| Account Receivables                  | 1,401        | 1,308        | 1,471        | 1,675         | 2,093         | 2,759         | 2,692         | 4,167         | 4,904         |
| Cash and Bank Balance                | 152          | 297          | 219          | 224           | 2,641         | 3,889         | 3,381         | 4,137         | 6,185         |
| Cash                                 | 93           | 224          | 136          | 127           | 1,692         | 761           | 253           | 1,009         | 3,056         |
| Bank Balance                         | 59           | 74           | 83           | 97            | 890           | 3,128         | 3,128         | 3,128         | 3,128         |
| Loans and Advances                   | 1,226        | 1,211        | 1,203        | 1,397         | 947           | 2,128         | 2,128         | 2,128         | 2,128         |
| <b>Curr. Liability and Prov.</b>     | <b>1,383</b> | <b>2,793</b> | <b>2,053</b> | <b>1,794</b>  | <b>1,644</b>  | <b>1,998</b>  | <b>2,096</b>  | <b>3,186</b>  | <b>3,750</b>  |
| Account Payables                     | 759          | 760          | 889          | 679           | 922           | 1,027         | 1,168         | 1,750         | 2,060         |
| Other Current Liabilities            | 547          | 1,941        | 1,056        | 1,005         | 590           | 824           | 759           | 1,175         | 1,383         |
| Provisions                           | 77           | 91           | 108          | 110           | 131           | 147           | 169           | 261           | 307           |
| <b>Net Current Assets</b>            | <b>2,023</b> | <b>1,012</b> | <b>1,764</b> | <b>2,431</b>  | <b>5,398</b>  | <b>8,322</b>  | <b>7,828</b>  | <b>9,827</b>  | <b>12,505</b> |
| <b>Appl. of Funds</b>                | <b>7,742</b> | <b>8,443</b> | <b>9,939</b> | <b>10,887</b> | <b>14,096</b> | <b>16,668</b> | <b>18,724</b> | <b>22,241</b> | <b>26,393</b> |

## Financials and valuations

### Ratios

| Y/E March                     | FY16  | FY17  | FY18  | FY19  | FY20  | FY21  | FY22E | FY23E | FY24E |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Basic (INR)</b>            |       |       |       |       |       |       |       |       |       |
| EPS                           | 17.5  | 26.8  | 36.2  | 30.0  | 80.8  | 50.7  | 51.9  | 88.9  | 104.9 |
| EPS Growth (%)                | 75.1  | 53.4  | 34.9  | -17.0 | 169.3 | -37.3 | 2.5   | 71.1  | 18.1  |
| Cash EPS                      | 21.7  | 32.5  | 43.9  | 35.2  | 87.6  | 58.9  | 61.0  | 98.6  | 115.5 |
| BV/Share                      | 146.1 | 166.4 | 196.0 | 214.1 | 280.7 | 333.5 | 375.1 | 446.1 | 530.1 |
| DPS                           | 4.2   | 5.3   | 7.0   | 7.8   | 11.0  | 11.0  | 10.4  | 17.8  | 21.0  |
| Payout (%)                    | 28.6  | 26.2  | 19.9  | 41.7  | 17.9  | 18.2  | 20.0  | 20.0  | 20.0  |
| <b>Valuation (x)</b>          |       |       |       |       |       |       |       |       |       |
| P/E                           | 226.9 | 147.9 | 109.6 | 132.1 | 49.1  | 78.2  | 76.3  | 44.6  | 37.8  |
| Cash P/E                      | 182.7 | 121.8 | 90.3  | 112.5 | 45.2  | 67.3  | 65.0  | 40.2  | 34.3  |
| P/BV                          | 27.1  | 23.8  | 20.2  | 18.5  | 14.1  | 11.9  | 10.6  | 8.9   | 7.5   |
| EV/Sales                      | 28.9  | 26.6  | 22.1  | 20.5  | 18.9  | 17.0  | 14.7  | 9.4   | 7.9   |
| EV/EBITDA                     | 169.0 | 130.6 | 93.0  | 89.8  | 74.2  | 61.9  | 55.1  | 32.5  | 27.4  |
| Dividend Yield (%)            | 0.1   | 0.1   | 0.2   | 0.2   | 0.3   | 0.3   | 0.3   | 0.4   | 0.5   |
| FCF per share                 | 11.7  | -16.2 | 25.7  | 5.9   | 11.8  | 52.1  | 0.4   | 33.3  | 62.6  |
| <b>Return Ratios (%)</b>      |       |       |       |       |       |       |       |       |       |
| RoE                           | 13.4  | 17.2  | 20.0  | 14.6  | 32.7  | 16.5  | 14.7  | 21.6  | 21.5  |
| RoCE                          | 12.5  | 16.4  | 19.5  | 14.3  | 32.2  | 16.4  | 14.6  | 21.5  | 21.4  |
| RoIC                          | 17.7  | 19.5  | 25.8  | 27.1  | 55.7  | 25.3  | 25.0  | 34.2  | 33.6  |
| <b>Working Capital Ratios</b> |       |       |       |       |       |       |       |       |       |
| Fixed Asset Turnover (x)      | 2.8   | 2.2   | 2.6   | 3.4   | 3.2   | 3.2   | 2.8   | 3.0   | 2.9   |
| Asset Turnover (x)            | 0.9   | 0.9   | 0.9   | 0.9   | 0.7   | 0.7   | 0.7   | 0.9   | 0.9   |
| Inventory (Days)              | 34    | 49    | 38    | 35    | 49    | 50    | 48    | 46    | 46    |
| Debtor (Days)                 | 75    | 65    | 61    | 64    | 75    | 89    | 75    | 75    | 75    |
| Creditor (Days)               | 41    | 38    | 37    | 26    | 33    | 33    | 32    | 31    | 31    |
| <b>Leverage Ratio (x)</b>     |       |       |       |       |       |       |       |       |       |
| Current Ratio                 | 2.5   | 1.4   | 1.9   | 2.4   | 4.3   | 5.2   | 4.7   | 4.1   | 4.3   |
| Net Debt/Equity               | 0.0   | 0.0   | 0.0   | 0.0   | -0.2  | -0.2  | -0.2  | -0.2  | -0.2  |

### Standalone Cash Flow Statement

| Y/E March                    | FY16        | FY17        | FY18          | FY19        | FY20         | FY21          | FY22E         | FY23E         | FY24E         |
|------------------------------|-------------|-------------|---------------|-------------|--------------|---------------|---------------|---------------|---------------|
| OP/(Loss) before Tax         | 1,167       | 1,768       | 2,625         | 2,265       | 2,567        | 4,095         | 3,404         | 5,875         | 6,937         |
| Depreciation                 | 209         | 284         | 382           | 259         | 337          | 407           | 451           | 483           | 525           |
| Others                       | -73         | -519        | -694          | -277        | -210         | -1,054        | 14            | 14            | 14            |
| Direct Taxes Paid            | -261        | -306        | -496          | -710        | -456         | -186          | -834          | -1,479        | -1,746        |
| (Inc.)/Dec. in WC            | -325        | -275        | -90           | -637        | -684         | -305          | -14           | -1,243        | -630          |
| <b>CF from Operations</b>    | <b>717</b>  | <b>951</b>  | <b>1,727</b>  | <b>900</b>  | <b>1,555</b> | <b>2,958</b>  | <b>3,021</b>  | <b>3,650</b>  | <b>5,100</b>  |
| Capex                        | -137        | -1,750      | -457          | -606        | -972         | -382          | -3,000        | -2,000        | -2,000        |
| <b>Free Cash Flow</b>        | <b>581</b>  | <b>-800</b> | <b>1,270</b>  | <b>294</b>  | <b>582</b>   | <b>2,576</b>  | <b>21</b>     | <b>1,650</b>  | <b>3,100</b>  |
| Change in Investments        | 42          | 133         | -1,338        | 190         | 1,706        | -914          | 0             | 0             | 0             |
| <b>CF from Investments</b>   | <b>-314</b> | <b>-196</b> | <b>-1,489</b> | <b>-315</b> | <b>766</b>   | <b>-3,452</b> | <b>-3,000</b> | <b>-2,000</b> | <b>-2,000</b> |
| Inc./(Dec.) in Debt          | -150        | -299        | 0             | 0           | 0            | 0             | 0             | 0             | 0             |
| Interest Paid                | -32         | -5          | -7            | -5          | -16          | -14           | -14           | -14           | -14           |
| Dividend Paid                | -216        | -343        | -350          | -611        | -714         | -394          | -514          | -879          | -1,038        |
| <b>CF from Fin. Activity</b> | <b>-392</b> | <b>-623</b> | <b>-326</b>   | <b>-595</b> | <b>-756</b>  | <b>-437</b>   | <b>-528</b>   | <b>-893</b>   | <b>-1,052</b> |
| <b>Inc./Dec. in Cash</b>     | <b>11</b>   | <b>131</b>  | <b>-87</b>    | <b>-9</b>   | <b>1,565</b> | <b>-931</b>   | <b>-508</b>   | <b>756</b>    | <b>2,047</b>  |
| Opening Balance              | 83          | 94          | 224           | 136         | 127          | 1,692         | 760           | 253           | 1,009         |
| <b>Closing Balance</b>       | <b>93</b>   | <b>224</b>  | <b>136</b>    | <b>127</b>  | <b>1,692</b> | <b>761</b>    | <b>253</b>    | <b>1,009</b>  | <b>3,056</b>  |



| 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](http://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](http://www.nseindia.com), [www.bseindia.com](http://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](http://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.: INP00000670); 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](mailto: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.