Aurobindo Pharma

BSE SENSEX	S&P CNX
72,696	22,513

AUROBINDO

Stock Info

Bloomberg	ARBP IN
Equity Shares (m)	581
M.Cap.(INRb)/(USDb)	742.7 / 7.9
52-Week Range (INR)	1320 / 994
1, 6, 12 Rel. Per (%)	24/26/10
12M Avg Val (INR M)	1609
Free float (%)	48.2

Financials Snapshot (INR b)

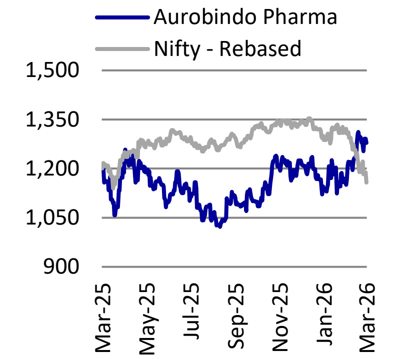
Y/E MARCH	FY26E	FY27E	FY28E
Sales	334.8	368.4	410.4
EBITDA	68.9	78.5	88.2
Adj. PAT	36.1	44.4	51.5
EBIT Margin (%)	15.3	16.4	16.9
Cons. Adj. EPS (INR)	62.2	76.5	88.8
EPS Gr. (%)	2.0	22.9	16.0
BV/Sh. (INR)	620.9	693.4	776.2
Ratios			
Net D:E	-0.1	-0.1	-0.2
RoE (%)	10.5	11.6	12.1
RoCE (%)	9.2	10.7	11.3
Payout (%)	6.4	5.2	6.8
Valuations			
P/E (x)	20.6	16.7	14.4
EV/EBITDA (x)	10.6	8.8	7.5
Div. Yield (%)	0.3	0.3	0.5
FCF Yield (%)	2.8	5.0	3.9
EV/Sales (x)	2.2	1.9	1.6

Shareholding pattern (%)

As On	Dec-25	Sep-25	Dec-24
Promoter	51.8	51.8	51.8
DII	27.7	27.6	25.2
FII	13.9	14.2	16.3
Others	6.6	6.4	6.7

FII includes depository receipts

Stock Performance (1-year)



CMP: INR1,279 TP: INR1,500 (+17%) Buy

Backward & forward integration unlocking PenG value chain

Large-scale fermentation + 6-APA conversion + policy support driving throughput and margin expansion

We visited the PEN-G plant of Aurobindo Pharma (ARBP) to gain insight into the manufacturing complexities and the degree of integration between processes:

- **Under the Production-Linked Incentive (PLI) scheme, ARBP constructed the PEN-G and 6-APA plants within a record three-year period and ramped up production following the start of the PEN-G plant in Jul'25. The 6-APA plant is likely to scale up meaningfully over the next 3-4 months.**
- **The plant has a substantial fermentation capacity of ~7,600 KL and features backward integration extending to glucose manufacturing.**
- **Notably, ARBP is forward integrated to manufacture 6-APA and is in the process of further forward integration to produce amoxicillin and other APIs that require PEN-G as a raw material.**
- **Considering robust operational efficiency and financial support from the Government of India, we project an EBITDA of INR5.5-INR6.6b from this project over the next 12 months.**
- **Overall, we expect a 21% earnings CAGR over FY26-28, aided by: 1) biosimilars/ EU market prospects, and 2) benefits from the PLI-led PENG-project and the integration of Lannett. We value ARBP at 16x 12M forward earnings to arrive at our TP of INR1,500. Reiterate BUY.**

PEN-G/6-APA integrated manufacturing to drive optimum throughput

- On a 127-acre land parcel, ARBP has constructed the PEN-G plant with a capacity of 15,000TPA and the 6-APA plant with a capacity of 5,400 TPA. About 230 acres of land are available for further expansion.
- The company has constructed a desalination plant to make seawater suitable for the process, consuming ~18m3 of water daily.
- ARBP has 39 fermenters with a capacity of 325 KL each (17 units), 125 KL fermenters (12 units), and 56 KL fermenters (10 units).
- The technology, degree of backward integration, and scale of operations distinguish ARBP from its peers in this manufacturing setup.
- Maize serves as the primary feedstock for producing glucose, a key energy source for microorganisms. Another essential raw material, phenylacetic acid (PAA), is also manufactured in-house, thereby minimizing operational costs.
- Apart from physical infrastructure, ARBP has effectively developed inoculum to significantly improve yield.
- ARBP also employs a semi-continuous fermentation process to optimize both production and process productivity.
- In addition to maximizing process productivity, ARBP has improved overall cost efficiency through an in-house 52MW power plant, solvent recovery systems, and the in-house manufacturing of certain reagents.

Tushar Manudhane - Research Analyst (Tushar.Manudhane@MotilalOswal.com)
Research Analyst - Vipul Mehta (Vipul.Mehta@MotilalOswal.com) | **Eshita Jain** (Eshita.Jain@MotilalOswal.com)

Government support through a minimum import price in place now

- The Director General of Foreign Trade (DGFT) notified in Jan'26 that imports of Penicillin-G for domestic consumption are restricted at values not less than INR2,216 (USD24) per kg for the next one year.
- Similarly, imports of 6-APA for domestic consumption are restricted at values below INR3,405 (USD37) per kg. Amoxicillin sales are also limited to values less than INR2,733 (USD29.7) per kg.
- Volume-wise, out of the planned 15,000MT of Pen-G output, 3,000MT is earmarked for domestic sales, while 12,000MT will be converted into ~6,000MT of 6-APA used in antibiotics such as amoxicillin, ampicillin, piperacillin, sulbactam, and tazobactam.
- The domestic demand for PEN-G equivalent is between 12,000 and 13,000TPA. The entire demand for 6-APA, about 4,000 TPA, is currently met through imports, while ARBP can fulfill the entire domestic demand. The domestic demand for Amoxicillin salts is 4000TPA.
- The company invested INR35b in a large-scale penicillin manufacturing complex in Kakinada, with reported allocations of INR27b for Pen-G and INR8b for 6-APA.
- The minimum import duty on these products, combined with the availability of manufacturing capacity, would not only enable domestic sales but also enhance the economic viability of investments in this PLI project.

Valuation and view

- We expect a 9%/14%/21% revenue/EBITDA/PAT CAGR over FY26-28. We expect ARBP's earnings to be driven by 1) the scale-up of the PEN-G plant, 2) increased external sales of 6-APA, 3) higher off-take in the EU markets, and 4) new product launches/market share gains in the US and the integration of Lannett.
- We value ARBP at 16x 12M forward earnings to arrive at our TP of INR1,500.

Exhibit 1: Valuation snapshot

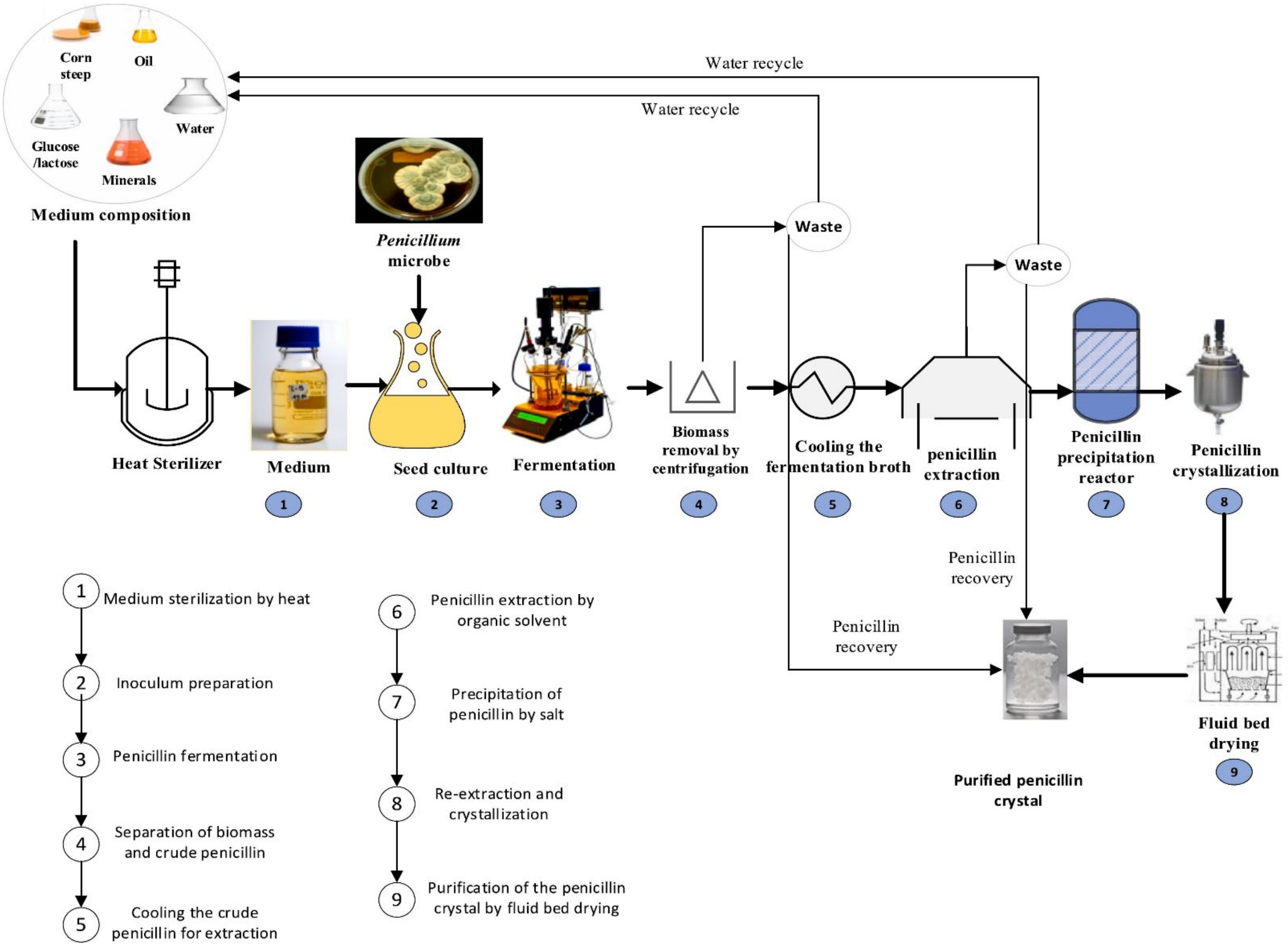
Company	Reco	MCap	EPS (INR)			EPS Gr. YoY (%)			P/E (x)			EV/EBITDA (x)			ROE (%)		
		(USDb)	FY26E	FY27E	FY28E	FY26E	FY27E	FY28E	FY26E	FY27E	FY28E	FY26E	FY27E	FY28E	FY26E	FY27E	FY28E
Ajanta Pharma	Buy	3.9	84.5	100.5	113.2	13.0	18.9	12.7	33.1	27.9	24.7	24.5	20.6	18.9	25.3	25.0	23.5
Alembic Pharma	Neutral	1.4	35.1	43.5	52.9	20.4	24.1	21.6	18.4	14.8	12.2	12.0	10.1	8.2	12.6	13.9	14.9
Alkem Lab	Neutral	6.7	207.7	180.8	199.2	14.7	-12.9	10.2	24.8	28.5	25.8	22.1	20.1	18.2	19.3	15.0	15.0
Aurobindo Pharma	Buy	8.1	62.2	76.5	88.8	2.0	22.9	16.0	20.6	16.7	14.4	10.6	8.8	7.5	10.5	11.6	12.1
Biocon	Buy	5.4	2.8	6.8	8.9	89.6	139.0	30.8	129.1	54.0	41.3	19.4	15.5	13.3	2.1	4.9	6.0
Cipla	Neutral	10.8	54.0	53.6	61.6	-14.0	-0.7	14.9	22.7	22.8	19.8	15.9	15.4	12.9	12.4	11.1	11.5
Dr Reddy's Labs	Neutral	11.5	66.2	66.1	68.5	-1.7	-0.1	3.7	18.9	19.0	18.3	12.5	10.8	9.8	15.2	13.4	12.3
ERIS Lifescience	Neutral	1.9	34.0	47.4	57.5	32.8	39.2	21.3	37.3	26.8	22.1	17.3	14.4	12.2	15.4	18.5	19.0
Gland Pharma	Buy	2.8	57.5	71.4	83.3	35.7	24.1	16.6	28.0	22.6	19.4	16.0	13.1	10.9	9.9	11.0	11.5
Glenmark Pharma.	Buy	6.6	20.2	75.9	87.1	-57.7	276	14.8	103.4	27.5	24.0	42.1	17.5	15.2	6.3	20.7	19.6
Glaxosmit Pharma	Neutral	4.3	62.6	70.8	80.4	16.2	13.0	13.6	36.4	32.2	28.4	28.1	24.3	20.8	41.7	36.6	32.7
Granules India	Buy	1.5	23.9	32.0	39.0	23.8	34.2	21.7	24.3	18.1	14.9	13.3	10.7	9.0	14.8	17.1	17.6
Ipca Labs.	Buy	4.2	45.5	52.0	61.6	26.4	14.3	18.5	33.7	29.5	24.9	20.4	17.3	14.4	15.5	15.6	16.1
Lupin	Neutral	11.3	109.1	103.1	108.4	51.6	-5.5	5.2	21.1	22.3	21.2	13.4	13.7	12.3	24.8	18.8	16.6
Mankind Pharma	Buy	8.8	46.1	64.1	74.0	-1.0	39.3	15.4	41.7	30.0	26.0	24.1	20.0	16.8	12.6	15.9	16.3
Rubicon Research	Buy	1.4	14.4	19.0	25.3	76.3	32	33.4	53.0	40.2	30.2	33.0	26.5	20.6	26.9	23.0	24.8
Sun Pharma	Buy	45.4	48.4	56.1	65.1	2.8	15.9	16.1	36.3	31.3	27.0	24.3	20.9	18.0	15.2	15.6	16.0
Torrent Pharma.	Neutral	15.4	59.6	67.0	97.3	3.2	12.4	45.2	70.7	62.9	43.3	33.6	23.0	19.1	14.3	10.2	13.8
Zydus Lifesciences	Neutral	9.5	44.0	44.6	49.0	-4.5	1.4	9.9	19.6	19.3	17.6	12.9	11.8	10.5	16.9	14.7	14.1

Source: MOFSL, Company

Pen-G manufacturing process snapshot

- The industrial production of PEN-G begins with raw material preparation, using maize as the primary feedstock. Approximately 600–700 metric tons of maize are processed daily on a large industrial scale to produce about 300–400 metric tons of glucose, which serves as the main carbon and energy source for microbial growth. This stage also generates by-products such as germ oil, germ cake, gluten, fibers, and corn steep liquor, which are utilized as cattle or poultry feed.
- Medium (1): Essential nutrients required for the growth of microorganisms in the medium.
- Seed Culture (2): This is used for the initial growth of microorganisms utilizing a sugar source. Inoculum (penicillin-producing microbe – a fungus) naturally secretes PEN-G.
- Main Fermenter (3): Once the desired biomass concentration is achieved in the seed fermenter, it is transferred to the main fermenter. PEN-G is naturally produced by the microorganism through the consumption of nutrients, primarily glucose. Phenylacetic acid is added as a precursor, and ammonia is used to adjust the pH. Dissolved oxygen is essential for the survival of microorganisms. This process is conducted under specific temperature and pressure conditions to optimize PEN-G production.

Exhibit 2: Manufacturing process flow of PEN-G



Source: MOFSL, Company

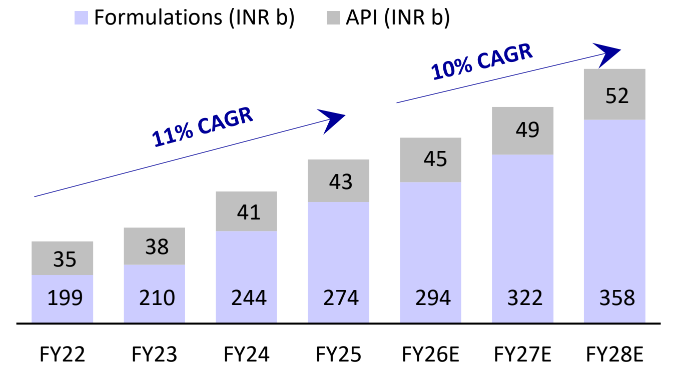
- Biomass Removal by Centrifugation (4): The fermentation broth undergoes a centrifugation process to separate the microorganisms from the PEN-G.
- The fermentation broth is cooled (5) during the harvest process.
- Subsequently, the broth undergoes an extraction process (6) to separate PEN-G, followed by precipitation (7) and crystallization (8).
- Particularly, for 6-APA, PENG is transferred to the next manufacturing stage through the pipeline in liquid form.
- ***The core of the production process lies in the fermentation stage, which utilizes the high-yield fungal strain Penicillium chrysogenum. This strain has been developed through in-house strain improvement programs to maximize productivity and consistency.***
- ***ARBP employs an intermediate semi-continuous operation to maintain optimal production conditions and ensure continuous output, thereby maximizing yield and fermenter efficiency.***
- Overall, the process is characterized by strict control over process parameters, optimized fermentation protocols, and rigorous raw material and in-process quality checks, ensuring consistent and reproducible outputs at scale.

6-APA: Integrated conversion improves cost efficiency/supply chain control

- ARBP further strengthened its antibiotic value chain through its subsidiary Qule Pharma, which operates a dedicated 6-APA manufacturing facility with an installed capacity of ~5,400 MT per annum, backed by an investment of ~INR4.2b.
- The conversion of Pen-G to 6-APA (chemical synthesis) is carried out through an enzymatic hydrolysis process using penicillin acylase (penicillin amidase). This enzyme selectively cleaves the side chain from Pen-G. In this reaction (Pen-G + H_2O → 6-APA + phenylacetic acid), the β-lactam core structure (6-APA) is preserved, while phenylacetic acid is released and recovered as a valuable byproduct.
- The process is typically conducted in an aqueous medium under controlled conditions (pH ~7.5-8.5 / temperature ~25-35°C), often employing immobilized enzymes to enhance stability, efficiency, and reusability. After the reaction, downstream processing involves the separation and purification of 6-APA, along with the recovery of phenylacetic acid, ensuring optimal process economics.
- The 6-APA serves as a core building block for high-volume semi-synthetic penicillins, such as amoxicillin, ampicillin, and piperacillin, where different side chains are chemically attached to tailor their therapeutic properties.
- Thus, the integration of 6-APA not only strengthens ARBP's presence in the antibiotic value chain but also provides strategic flexibility to expand into higher-value formulations, supporting long-term growth and margin improvement.

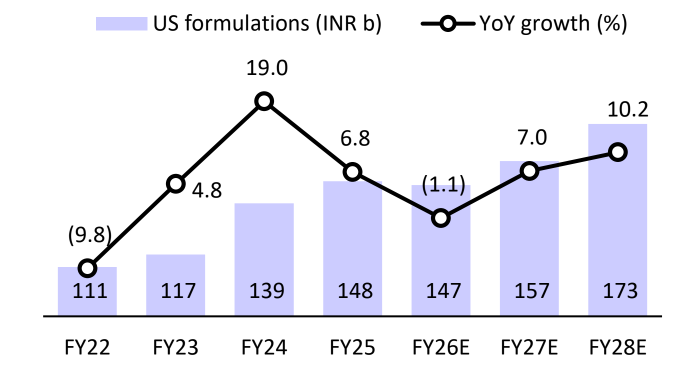
Story in charts

Exhibit 3: Expect sales CAGR of 10% over FY26-28



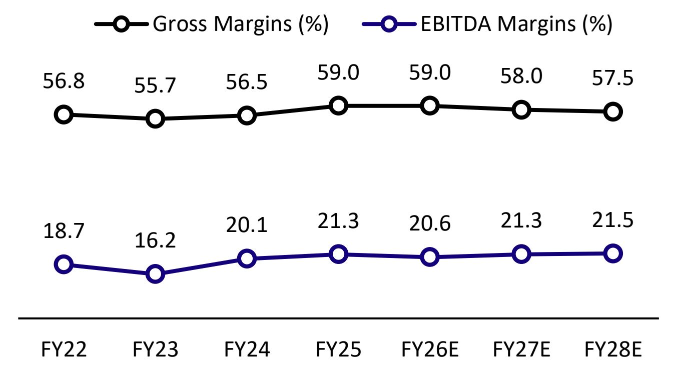
Source: Company, MOFSL

Exhibit 4: US sales to clock a 8.6% CAGR over FY26-28



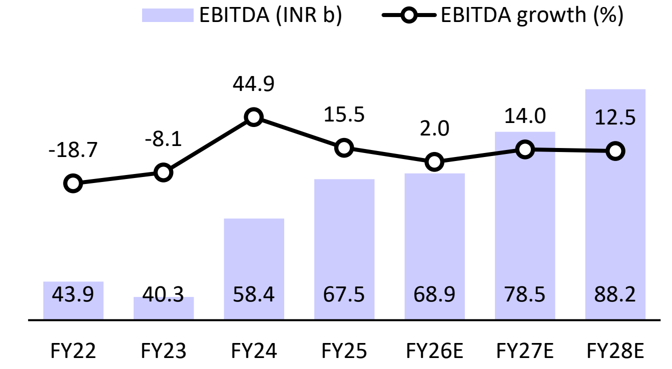
Source: Company, MOFSL

Exhibit 5: EBITDA margin to be in the range of 20-22%



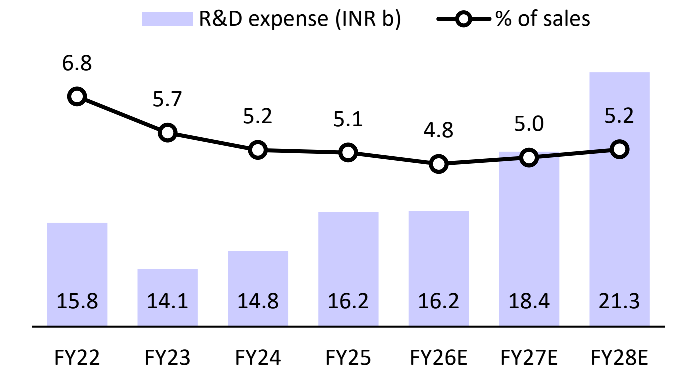
Source: Company, MOFSL

Exhibit 6: EBITDA to clock a 13% CAGR over FY26-28



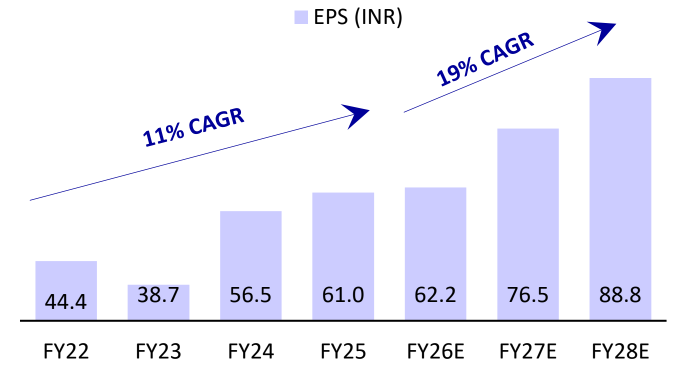
Source: Company, MOFSL

Exhibit 7: R&D expenses to increase over FY26-28



Source: Company, MOFSL

Exhibit 8: Expect an EPS CAGR of 19% over FY26-28



Source: Company, MOFSL

Financials and valuations

Consolidated - Income Statement (INRm)

Y/E March	FY22	FY23	FY24	FY25	FY26E	FY27E	FY28E
Total Income	**234,555**	**248,554**	**290,019**	**317,237**	**334,780**	**368,397**	**410,422**
Change (%)	-5.3	6.0	16.7	9.4	5.5	10.0	11.4
EBITDA	**43,868**	**40,336**	**58,430**	**67,505**	**68,860**	**78,468**	**88,241**
Margin (%)	18.7	16.2	20.1	21.3	20.6	21.3	21.5
Depreciation	11,265	12,446	15,217	16,494	17,688	18,193	19,064
EBIT	**32,603**	**27,891**	**43,213**	**51,011**	**51,172**	**60,275**	**69,176**
Interest exp	486	1,405	2,897	4,572	3,764	3,052	2,414
Other Income	2,504	2,906	5,186	5,364	5,151	5,100	5,200
PBT bef. EO Exp.	**34,620**	**29,392**	**45,502**	**51,804**	**52,559**	**62,323**	**71,963**
EO Items	-580	-996	2,306	-823	1,034	0	0
PBT after EO Exp.	**34,040**	**28,396**	**47,809**	**50,981**	**53,593**	**62,323**	**71,963**
Current Tax	7,256	6,848	12,110	18,172	17,111	17,762	20,293
Tax Rate (%)	21.3	24.1	25.3	35.6	31.9	28.5	28.2
Less: Minority Int	313	-132	132	-294	58	120	120
Reported PAT	**26,471**	**21,417**	**35,567**	**32,515**	**36,424**	**44,441**	**51,549**
Adjusted PAT	**25,800**	**22,484**	**32,838**	**35,430**	**36,146**	**44,441**	**51,549**
Change (%)	-18.5	-12.9	46.1	7.9	2.0	22.9	16.0
Margin (%)	11.0	9.0	11.3	11.2	10.8	12.1	12.6

Consolidated - Balance Sheet (INRm)

Y/E March	FY22	FY23	FY24	FY25	FY26E	FY27E	FY28E
Equity Share Capital	586	586	586	581	581	581	581
Total Reserves	245,174	267,813	297,842	325,952	360,053	402,171	450,235
Net Worth	**245,760**	**268,398**	**298,428**	**326,533**	**360,634**	**402,752**	**450,816**
Minority Interest	-19	120	80	-64	-65	-66	-68
Deferred Liabilities	1,224	-2,879	-8,561	-9,897	-10,095	-10,297	-10,503
Total Loans	23,728	48,615	63,152	79,417	62,753	49,616	39,254
Capital Employed	**270,692**	**314,255**	**353,099**	**395,989**	**413,226**	**442,005**	**479,500**
Gross Block	158,447	175,442	227,716	252,042	265,042	278,042	291,042
Less: Accum. Deprn.	49,784	62,230	77,447	93,941	111,628	129,822	148,886
Net Fixed Assets	**108,663**	**113,212**	**150,270**	**158,101**	**153,414**	**148,220**	**142,156**
Goodwill on Consolidation	4,754	5,961	5,952	6,180	6,180	6,180	6,180
Capital WIP	29,376	44,964	27,394	32,660	32,660	32,660	32,660
Total Investments	**9,972**	**5,427**	**3,722**	**2,517**	**2,517**	**2,517**	**2,517**
Curr. Assets, Loans&Adv.	**183,567**	**222,561**	**251,251**	**285,462**	**287,686**	**328,744**	**375,929**
Inventory	75,539	85,112	98,082	105,437	112,023	116,575	144,322
Account Receivables	40,123	44,664	48,167	58,543	63,287	75,698	77,587
Cash and Bank Balance	41,900	60,842	62,783	82,355	85,560	109,655	127,205
Loans and Advances	26,006	31,943	42,219	39,127	26,815	26,815	26,815
Curr. Liability & Prov.	**65,639**	**77,870**	**85,489**	**88,931**	**69,230**	**76,316**	**79,943**
Account Payables	27,031	38,713	44,542	41,889	38,605	45,691	49,318
Other Current Liabilities	35,185	35,425	36,123	41,458	30,000	30,000	30,000
Provisions	3,424	3,733	4,825	5,585	625	625	625
Net Current Assets	**117,928**	**144,691**	**165,762**	**196,531**	**218,455**	**252,427**	**295,986**
Appl. of Funds	**270,692**	**314,255**	**353,099**	**395,989**	**413,226**	**442,005**	**479,500**

E: MOFSL Estimates

Financials and valuations

Ratios

Y/E March	FY22	FY23	FY24	FY25	FY26E	FY27E	FY28E
EPS	**44.4**	**38.7**	**56.5**	**61.0**	**62.2**	**76.5**	**88.8**
Cash EPS	63.3	59.7	82.0	89.4	92.7	107.8	121.6
BV/Share	419.5	458.4	509.3	562.2	620.9	693.4	776.2
DPS	3.5	4.0	4.0	4.0	4.0	4.0	6.0
Payout (%)	7.7	10.9	6.6	7.1	6.4	5.2	6.8
Valuation (x)							
P/E	28.8	33.0	22.6	21.0	20.6	16.7	14.4
Cash P/E	20.2	21.4	15.6	14.3	13.8	11.9	10.5
P/BV	3.0	2.8	2.5	2.3	2.1	1.8	1.6
EV/Sales	3.1	3.0	2.6	2.4	2.2	1.9	1.6
EV/EBITDA	16.7	18.3	12.8	11.1	10.6	8.8	7.5
Dividend Yield (%)	0.3	0.3	0.3	0.3	0.3	0.3	0.5
FCF per share	35.7	-13.5	-8.9	13.3	36.3	65.1	49.8
Return Ratios (%)							
RoE	11.1	8.7	11.6	11.3	10.5	11.6	12.1
RoCE	10.3	8.0	10.7	9.5	9.2	10.7	11.3
RoIC	13.7	10.8	14.0	12.2	12.2	14.6	16.2
Working Capital Ratios							
Fixed Asset Turnover (x)	1.5	1.4	1.3	1.3	1.3	1.3	1.4
Inventory (Days)	298	266	265	286	293	270	273
Debtor (Days)	58	62	58	61	66	69	68
Creditor (Days)	99	109	121	121	109	99	99
Working Cap. (Days)	258	219	203	226	251	239	242
Leverage Ratio (x)							
Current Ratio	2.8	2.9	2.9	3.2	4.2	4.3	4.7
Interest Cover Ratio	67	20	15	11	14	20	29
Net Debt/Equity	-0.1	0.0	0.0	0.0	-0.1	-0.1	-0.2

Consolidated - Cash Flow Statement

Y/E March	FY22	FY23	FY24	FY25	FY26E	FY27E	FY28E
OP/(Loss) before Tax	34,620	29,392	45,502	51,804	52,559	62,323	71,963
Depreciation	11,265	12,446	15,217	16,494	17,688	18,193	19,064
Interest / Dividend recieved	-2,018	-1,501	-2,289	-792	-1,387	-2,048	-2,786
Direct Taxes Paid	-7,256	-6,848	-12,110	-18,172	-17,111	-17,762	-20,293
(Inc)/Dec in WC	9,188	-7,821	-19,130	-11,197	-18,720	-9,876	-26,009
CF from Operations	**45,800**	**25,668**	**27,190**	**38,136**	**33,029**	**50,830**	**41,938**
Others	4,364	-996	2,306	-823	1,034	0	0
CF from Operating incl EO	**50,164**	**24,672**	**29,496**	**37,313**	**34,063**	**50,830**	**41,938**
(inc)/dec in FA	-29,242	-32,583	-34,704	-29,592	-13,000	-13,000	-13,000
Free Cash Flow	**20,922**	**-7,912**	**-5,208**	**7,721**	**21,063**	**37,830**	**28,938**
(Pur)/Sale of Investments	4,061	-4,544	-1,705	-1,205	0	0	0
Others	-6,936	-2,650					
CF from Investments	**-32,116**	**-39,777**	**-36,409**	**-30,797**	**-13,000**	**-13,000**	**-13,000**
Change in networth							
Inc/(Dec) in Debt	-25,994	25,027	14,497	16,121	-16,665	-13,137	-10,364
Interest Paid	-486	-1,405	-2,897	-4,572	-3,764	-3,052	-2,414
Dividend Paid	-2,051	-2,342	-2,344	-2,323	-2,323	-2,323	-3,485
Others	-1,162	12,767	-402	3,831	4,896	4,779	4,875
CF from Fin. Activity	**-29,693**	**34,047**	**8,854**	**13,057**	**-17,857**	**-13,733**	**-11,387**
Inc/Dec of Cash	**-11,645**	**18,941**	**1,941**	**19,573**	**3,206**	**24,096**	**17,551**
Opening Balance	54,743	41,900	60,842	62,783	82,355	85,560	109,655
Closing Balance	**41,900**	**60,842**	**62,783**	**82,355**	**85,560**	**109,655**	**127,205**

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 be 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 and BSE enlistment no. 5028. MOFSL, the Research Entity (RE) as defined in the Regulations, is engaged in the business of providing Stock broking services, Depository participant services & distribution of various financial products. MOFSL is a listed public company, the details in respect of which are available on www.motilaloswal.com. MOFSL 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 and is a member of Association of Portfolio Managers in India (APMI) for distribution of PMS products. Details of associate entities of Motilal Oswal Financial Services Ltd. are available on the website at http://onlinereports.motilaloswal.com/Dormant/documents/Associate%20Details.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. As per Regulatory requirements, Research Audit Report is uploaded on www.motilaloswal.com > MOFSL-Important Links > MOFSL Research Analyst Compliance Audit Report.

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") (UEN 201129401Z), which is a holder of a capital markets services license and an exempt financial adviser in Singapore.This report is distributed solely to persons who (a) qualify as "institutional investors" as defined in section 4A(1)(c) of the Securities and Futures Act of Singapore ("SFA") or (b) are considered "accredited investors" as defined in section 2(1) of the Financial Advisers Regulations of Singapore read with section 4A(1)(a) of the SFA. Accordingly, if a recipient is neither an "institutional investor" nor an "accredited investor", they must immediately discontinue any use of this Report and inform MOCMSPL .

In respect of any matter arising from or in connection with the research you could contact the following representatives of MOCMSPL. In case of grievances for any of the services rendered by MOCMSPL write to grievances@motilaloswal.com.

Nainesh Rajani
Email: nainesh.rajani@motilaloswal.com
Contact: (+65) 8328 0276

Specific Disclosures

1. Research Analyst and/or his/her relatives do not have a financial interest in the subject company(ies), as they do not have equity holdings in the subject company(ies).
   MOFSL has financial interest in the subject company(ies) at the end of the week immediately preceding the date of publication of the Research Report: Yes.
   Nature of Financial interest is holding equity shares or derivatives of the subject company
2. Research Analyst and/or his/her relatives do not have actual/beneficial ownership of 1% or more securities in the subject company(ies) at the end of the month immediately preceding the date of publication of Research Report.
   MOFSL has actual/beneficial ownership of 1% or more securities of the subject company(ies) at the end of the month immediately preceding the date of publication of Research Report:No
3. Research Analyst and/or his/her relatives have not received compensation/other benefits from the subject company(ies) in the past 12 months.
   MOFSL may have received compensation from the subject company(ies) in the past 12 months.
4. Research Analyst and/or his/her relatives do not have material conflict of interest in the subject company at the time of publication of research report.
   MOFSL does 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 an officer, director or employee of subject company(ies).
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(ies) in the past 12 months.
8. MOFSL may have received any compensation for products or services other than investment banking or merchant banking or brokerage services from the subject company(ies) in the past 12 months.
9. MOFSL may have received compensation or other benefits from the subject company(ies) or 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 at the end of the month immediately preceding the date of publication of the Research Report or date of the public appearance.
- received compensation/other benefits from the subject company in the past 12 months
- 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.
- 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.
- Served subject company as its clients during twelve months preceding the date of distribution of the research report.

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.

Registered Office Address: Motilal Oswal Tower, Rahimtullah Sayani Road, Opposite Parel ST Depot, Prabhadevi, Mumbai-400025; Tel No.: 022 - 71934200 / 71934263; www.motilaloswal.com. Correspondence Address: Palm Spring Centre, 2nd Floor, Palm Court Complex, New Link Road, Malad (West), Mumbai- 400 064. Tel No: 022 71881000. Details of Compliance Officer: Neeraj Agarwal, Email Id: na@motilaloswal.com, Contact No.:022-40548085.

Grievance Redressal Cell:

Contact Person	Contact No.	Email ID
Ms. Hemangi Date	022 40548000 / 022 67490600	query@motilaloswal.com
Ms. Kumud Upadhyay	022 40548082	servicehead@motilaloswal.com
Mr. Ajay Menon	022 40548083	am@motilaloswal.com
Mr. Neeraj Agarwal	022 40548085	na@motilaloswal.com
Mr. Siddhartha Khemka	022 50362452	po.research@motilaloswal.com

Registration details of group entities.: Motilal Oswal Financial Services Ltd. (MOFSL): INZ000158836 (BSE/NSE/MCX/NCDEX); CDSL and NSDL: IN-DP-16-2015; Research Analyst: INH000000412, BSE enlistment no. 5028, AMFI registered Mutual Fund Distributor and SIF Distributor: ARN .: 146822. IRDA Corporate Agent – CA0579, APMI: APRN00233. Motilal Oswal Financial Services Ltd. is a distributor of Mutual Funds, PMS, Fixed Deposit, Insurance, Bond, NCDs and IPO products.

Customer having any query/feedback/ clarification may write to query@motilaloswal.com. In case of grievances for any of the services rendered by Motilal Oswal Financial Services Limited (MOFSL) write to grievances@motilaloswal.com, for DP to dpgrievances@motilaloswal.com.