

Indian Oil | HOLD

4Q18 Result: Margin gain on operational efficiency

IOCL reported EBITDA of INR 110.2bn (-17% QoQ/+150% YoY) including inventory gain of INR 34.42bn. Adjusting for inventory gain, EBITDA at INR 75.78bn would have been below JMFe of INR 83.93 bn. Segmentally, in the refining segment, inventory gain of INR 24.5 bn (translating to c.\$2.5 / barrel) resulted into reported GRM of \$9.12 / barrel against JMFe of \$7.5 / barrel. Distillate yield improved to 82.3% and fuel loss reduced to 8.4% in 4Q18 helped improve GRM. Further, IOC processed 16 new crude grades which helped improve margins and de-risk future supply. In pipeline segment, IOC increased throughput to 22.6 MMT in 4Q18. In marketing segment, IOC reported an EBITDA of INR 30 bn and adjusting for inventory gain of INR 10bn EBITDA would have been c.INR 20 bn. Petrochemicals and Pipeines segments reported EBITDA of INR 16.89bn and INR 17.47 bn respectively. IOC guided for CapEx of c. INR 200 bn across business verticals in FY19. Over the last 3 months, IOC's stock price has corrected by c. 25% on back of concerns related to impact of high crude price. We maintain HOLD rating with a revised TP of INR 200 (INR 212 previously) and await Government policy on pricing of sensitive petro-products in high crude price environment.

- **Improved margins through productive implementation:** Paradip refinery processed 12.73 MMT (92% utilisation) in FY18 as compared to 8.23 MMT in FY17. GRMs at Paradip refinery can increase further because during FY18, Paradip processed only 13% heavy crude (designed for 40%). Also, Mathura & Panipat refineries commenced BS VI grade auto fuel production on back of successful commissioning of Octomax unit in Mathura refinery. The unit is based on in-house developed technology and was commissioned without any cost overrun. In petrochemical business, FY18 EBITDA declined to INR 61 bn (INR 76 bn in FY17) on account of lower capacity utilisation of 67% in FY18 against 97% in FY17 due to plant shut-down.
- **Takeaways from management commentary:** (i) For FY18, refinery segment reported GRM of \$8.49 / barrel in FY18 as against \$7.77 per barrel in FY17. This was achieved due to improvement in MS crack by \$1 / barrel and HSD crack by \$2.8 / barrel. (ii) IOC guided for a CapEx of INR 200bn in FY19 of which, 42% is earmarked for refineries, 12% for gas pipeline, 11% petrochemical, 25-26% for marketing and rest for E&P gas business. (iii) All CapEx will be through internal accruals. (iv) Ennore LNG terminal is expected to be completed by Oct'18 (current physical progress at 92%) and work to lay pipeline from terminal to customer will start shortly, (v) IOC said they have off-take agreement of c.1.5 MMTPA of gas from Ennore terminal.
- **Maintain HOLD with a revised TP of INR 200 (INR 212 previously):** IOC's stock price has corrected by c. 25% on back of policy concerns in a high crude price scenario. This clarity is likely to be announced over the next few days. We roll-forward to March 19 (from September 18) but reduce the TP (based on EV/EBITDA) from INR 212 to INR 200 mainly on back of marginally higher debt. Key risk is Government policy in higher crude price environment.



Mehul Thanawala

mehul.thanawala@jmfll.com | Tel: (91 22) 66303063

Recommendation and Price Target

Current Reco.	HOLD
Previous Reco.	HOLD
Current Price Target (12M)	200
Upside/(Downside)	30.3%
Previous Price Target	212
Change	-5.7%

Key Data – IOCL IN

Current Market Price	INR154
Market cap (bn)	INR1,490.8/US\$21.8
Free Float	15%
Shares in issue (mn)	4,856.0
Diluted share (mn)	9,712.0
3-mon avg daily val (mn)	INR2,392.7/US\$35.0
52-week range	231/152
Sensex/Nifty	34,345/10,430
INR/US\$	68.4

Price Performance

%	1M	6M	12M
Absolute	-5.1	-22.2	-27.6
Relative*	-4.8	-23.9	-36.0

* To the BSE Sensex

Financial Summary	(INR mn)				
Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Net Sales	34,71,764	35,98,732	42,40,387	39,64,506	39,75,098
Sales Growth (%)	-20.6	3.7	17.8	-6.5	0.3
EBITDA	2,10,486	3,17,811	3,96,651	3,68,198	3,98,703
EBITDA Margin (%)	6.1	8.8	9.4	9.3	10.0
Adjusted Net Profit	1,12,422	1,91,064	2,13,461	2,05,077	2,13,921
Diluted EPS (INR)	23.2	39.3	22.0	21.1	22.0
Diluted EPS Growth (%)	113.2	70.0	-44.1	-3.9	4.3
ROIC (%)	11.3	19.0	19.4	15.6	14.7
ROE (%)	14.4	20.3	20.3	17.6	16.5
P/E (x)	6.7	3.9	7.0	7.3	7.0
P/B (x)	0.8	0.7	1.4	1.2	1.1
EV/EBITDA (x)	5.5	3.9	3.3	3.9	3.6
Dividend Yield (%)	4.5	4.5	2.5	2.4	2.5

Source: Company data, JM Financial. Note: Valuations as of 23/May/2018

JM Financial Research is also available on:
Bloomberg - JMFR <GO>,
Thomson Publisher & Reuters
S&P Capital IQ and FactSet

Please see Appendix I at the end of this report for Important Disclosures and Disclaimers and Research Analyst Certification.

4Q18 result review

Exhibit 1. Key number

Particular	Unit	Mar-18	Mar-18E	Variance	Dec-17	QoQ	Mar-17	YoY
		Actual	Estimate		Actual		Actual	
Net Sales	INR mn	11,73,685	11,31,114	4%	11,06,669	6%	10,03,375	17%
Total Expenditure	INR mn	10,63,473	10,47,189	2%	9,73,982	9%	9,59,289	11%
EBITDA	INR mn	1,10,213	83,926	31%	1,32,687	-17%	44,086	150%
EBITDA margin	%	9.4%	7.4%		12.0%		4.4%	
PBT	INR mn	80,329	66,174	21%	1,22,522	-34%	35,849	124%
PAT	INR mn	52,181	44,336	18%	78,832	-34%	37,206	40%
OCI	INR mn	-16,640	0	NA	31,337	NA	-9,875	NA
Total Comprehensive income	INR mn	35,541	44,336	NA	1,10,170	NA	27,331	NA
PAT margin	%	4.4%	3.9%		7.1%		3.7%	

Source: Company, JM Financial

Exhibit 2. Operational and financial highlights

Highlights:	Unit	Mar-18	Mar-18E	Variance	Dec-17	QoQ	Mar-17	YoY
Operational:		Actual	Estimate		Actual		Actual	
Crude Thruput	MMT	17.15	17.30	-1%	18.23	-6%	17.09	0%
Market Sales	MMT	22.56	19.50	16%	22.81	-1%	21.10	7%
GRM (3M)	\$/bbl	9.12	7.50	22%	12.32	-26%	8.95	2%
Financial:								
Net Sales	INR mn	11,73,685	11,31,114	4%	11,06,669	6%	10,03,375	17%
(Increase)/Decrease in Inventory	INR mn	-22,778	0		-17,099		-88,543	
Consumption of Raw Material	INR mn	5,43,987	5,59,004	-3%	5,00,470	9%	4,70,242	16%
Purchase of Products for Resale	INR mn	4,26,275	3,80,294	12%	3,90,170	9%	4,15,031	3%
Employee Cost	INR mn	29,419	30,238	-3%	23,595	25%	42,020	-30%
Other Expenditure	INR mn	86,490	77,653	11%	76,846	13%	1,20,540	-28%
Total Expenditure	INR mn	10,63,473	10,47,189	2%	9,73,982	9%	9,59,289	11%
EBITDA	INR mn	1,10,213	83,926	31%	1,32,687	-17%	44,086	150%
EBITDA Margin	%	9%	7%		12%		4%	
Depreciation	INR mn	19,336	17,668	9%	17,151	13%	17,290	12%
EBIT	INR mn	90,876	66,258	37%	1,15,537		26,796	239%
EBIT Margin	%	8%	6%		10%		3%	
Other Income	INR mn	2,481	8,537	-71%	13,534	-82%	20,593	-88%
Interest and Other Borrowing cost	INR mn	13,029	8,621	51%	6,549	99%	11,541	13%
Exceptional (Income)/Expense + Prior Period Items	INR mn	0	0		0		0	
PBT	INR mn	80,329	66,174	21%	1,22,522	-34%	35,849	124%
Total tax	INR mn	28,148	21,837	29%	43,690		-1,358	-2173%
Tax Rate	%	35%	33%		36%		-4%	
PAT	INR mn	52,181	44,336	18%	78,832	-34%	37,206	40%
OCI	INR mn	-16,640			31,337		-9,875	
Total Comprehensive income	INR mn	35,541			1,10,170		27,331	
PAT Margin	%	4%	4%		7%		4%	
EPS	INR/share	5.51	9.35	-41%	16.63	-67%	7.85	-30%

Source: Company, JM Financial

Exhibit 3. Adjusted results

Highlights:	Unit	Mar-18	Mar-18E	Variance	Dec-17	QoQ	Mar-17	YoY
		Actual	Estimate		Actual		Actual	
GRM	\$/bbl	7.42	7.50	-1%	9.14	-19%	NA	-
EBITDA	INR mn	47,183	83,926	-44%	1,22,127	-61%	13,576	248%
PAT	INR mn	11,237	44,336	-75%	72,038	-84%	5,541	103%

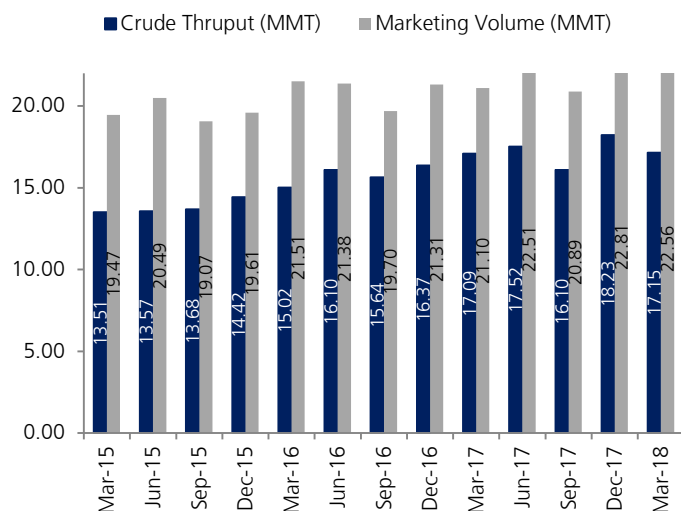
Source: Company, JM Financial

Exhibit 4. Key product marketing volume breakup

Particular\INR	Unit	Mar-18	Mar-18E	Variance	Dec-17	QoQ	Mar-17	YoY
		Actual	Estimate		Actual		Actual	
-LPG	MT	2.83	3.03	-7%	2.81	1%	2.64	7%
-MS	MT	2.70	2.37	14%	2.60	4%	2.46	10%
-HSD	MT	9.13	8.30	10%	9.41	-3%	8.66	5%
-SKO	MT	0.61	0.64	-4%	0.64	-5%	0.77	-20%
Other\INR	MT	6.13	5.16	19%	6.10	1%	5.42	13%
Total petroleum products	MT	21.40	19.50	10%	21.55	-1%	19.95	7%

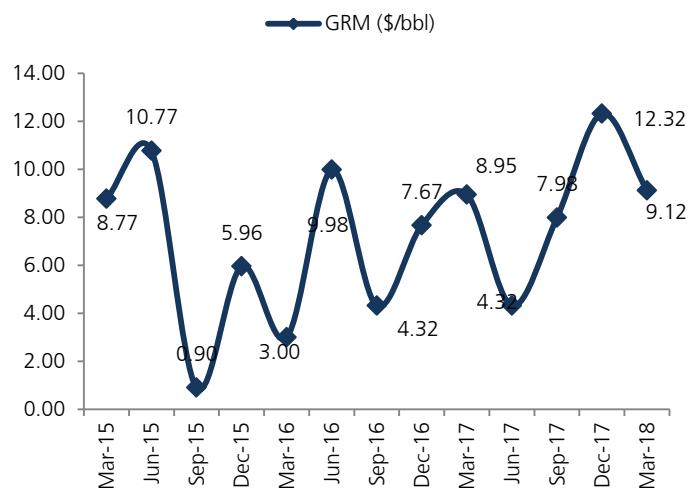
Source: Company, JM Financial

Exhibit 5. Refining throughput and marketing volumes



Source: Company, JM Financial

Exhibit 6. GRM trends



Source: Company, JM Financial

Exhibit 7. Valuations

Particular	Unit	FY2019	FY2020	Multiple	Value (INR) - Mar 19	Methodology
EBITDA (refining + pipeline+petchem)	INR mn	2,59,363	2,83,693	6.0	175	6x FY19E EBITDA (refining + pipeline)
EBITDA (marketing+othelNR)	INR mn	1,08,835	1,15,010	4.0	47	3.5x FY19E EBITDA (marketing)
EV of core business					223	
Investments	Shares (mn)		INR/share		42	
CPCL	77	77	270.0	2	At CMP, 20% holding company discount	
PLNG	188	188	210.0	3	At TP, 20% holding company discount	
ONGC	987	987	175.0	14	At CMP, 20% holding company discount	
OIL	36	36	230.0	1	At TP, 20% holding company discount	
GAIL	41	41	322.0	1	At TP, 20% holding company discount	
Other investments				21	At 1.0x BV of investment in FY17	
Net debt		4,82,484	6,22,175		64.06	
Equity value					200	TP as on Mar'19

Source: Company, JM Financial

Financial Tables (Standalone)

Income Statement					(INR mn)
Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Net Sales	34,71,764	35,98,732	42,40,387	39,64,506	39,75,098
Sales Growth	-20.6%	3.7%	17.8%	-6.5%	0.3%
Other Operating Income	0	0	0	10,000	10,000
Total Revenue	34,71,764	35,98,732	42,40,387	39,74,506	39,85,098
Cost of Goods Sold/Op. Exp	28,93,735	28,35,759	34,32,252	31,47,982	31,06,317
Personnel Cost	71,140	96,579	1,00,794	1,05,834	1,11,125
Other Expenses	2,96,403	3,48,583	3,10,690	3,52,492	3,68,952
EBITDA	2,10,486	3,17,811	3,96,651	3,68,198	3,98,703
EBITDA Margin	6.1%	8.8%	9.4%	9.3%	10.0%
EBITDA Growth	107.3%	51.0%	24.8%	-7.2%	8.3%
Depn. & Amort.	48,186	62,230	70,670	74,103	81,275
EBIT	1,62,300	2,55,581	3,25,981	2,94,094	3,17,429
Other Income	23,222	42,086	34,146	33,299	21,978
Finance Cost	30,899	34,454	34,484	34,426	33,806
PBT before Excep. & Forex	1,54,623	2,63,212	3,25,643	2,92,967	3,05,601
Excep. & Forex Inc./Loss(-)	13,643	0	0	0	0
PBT	1,68,265	2,63,212	3,25,643	2,92,967	3,05,601
Taxes	55,843	72,148	1,12,182	87,890	91,680
Extraordinary Inc./Loss(-)	0	0	0	0	0
Assoc. Profit/Min. Int.(-)	0	0	0	0	0
Reported Net Profit	1,12,422	1,91,064	2,13,461	2,05,077	2,13,921
Adjusted Net Profit	1,12,422	1,91,064	2,13,461	2,05,077	2,13,921
Net Margin	3.2%	5.3%	5.0%	5.2%	5.4%
Diluted Share Cap. (mn)	4,856.0	4,856.0	9,712.0	9,712.0	9,712.0
Diluted EPS (INR)	23.2	39.3	22.0	21.1	22.0
Diluted EPS Growth	113.2%	70.0%	-44.1%	-3.9%	4.3%
Total Dividend + Tax	40,788	40,788	80,657	77,489	80,831
Dividend Per Share (INR)	7.0	7.0	3.9	3.8	3.9

Source: Company, JM Financial

Cash Flow Statement					(INR mn)
Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Profit before Tax	1,54,623	2,63,212	3,25,643	2,92,967	3,05,601
Depn. & Amort.	48,186	62,230	70,670	74,103	81,275
Net Interest Exp. / Inc. (-)	7,677	-7,632	338	1,127	11,828
Inc (-) / Dec in WCap.	1,59,348	-34,541	1,15,582	-1,53,422	18,829
Others	13,643	0	0	0	0
Taxes Paid	-54,455	-73,146	-72,765	-87,890	-91,680
Operating Cash Flow	3,29,021	2,10,124	4,39,469	1,26,886	3,25,852
Capex	-2,78,976	-2,25,914	-1,69,091	-2,00,000	-2,00,000
Free Cash Flow	50,046	-15,790	2,70,378	-73,114	1,25,852
Inc (-) / Dec in Investments	1,30,009	-34,332	-2,88,231	0	0
Others	0	0	0	0	0
Investing Cash Flow	-1,48,967	-2,60,246	-4,57,322	-2,00,000	-2,00,000
Inc / Dec (-) in Capital	0	0	47,394	0	0
Dividend + Tax thereon	-40,788	-40,788	-80,657	-77,489	-80,831
Inc / Dec (-) in Loans	-1,27,616	79,014	51,404	-10,000	0
Others	-7,677	7,632	-338	-1,127	-11,828
Financing Cash Flow	-1,76,082	45,858	17,802	-88,616	-92,659
Inc / Dec (-) in Cash	3,973	-4,264	-51	-1,61,730	33,193
Opening Cash Balance	1,156	5,129	865	814	-1,60,917
Closing Cash Balance	5,129	865	814	-1,60,917	-1,27,723

Source: Company, JM Financial

Balance Sheet					(INR mn)
Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Shareholders' Fund	8,81,343	9,97,287	11,01,710	12,29,298	13,62,388
Share Capital	23,697	47,393	94,787	94,787	94,787
Reserves & Surplus	8,57,646	9,49,894	10,06,923	11,34,511	12,67,601
Preference Share Capital	0	0	0	0	0
Minority Interest	0	0	0	0	0
Total Loans	4,24,834	5,03,848	5,55,252	5,45,252	5,45,252
Def. Tax Liab. / Assets (-)	68,590	67,592	1,20,196	1,20,196	1,20,196
Total - Equity & Liab.	13,74,767	15,68,728	17,77,158	18,94,746	20,27,835
Net Fixed Assets	11,23,721	11,86,173	12,82,758	14,08,654	15,27,379
Gross Fixed Assets	15,07,980	17,35,535	18,66,684	20,66,684	22,66,684
Intangible Assets	0	0	0	0	0
Less: Depn. & Amort.	5,94,511	6,56,740	7,27,410	8,01,514	8,82,788
Capital WIP	2,10,251	1,07,378	1,43,484	1,43,484	1,43,484
Investments	3,71,814	4,73,046	4,74,883	4,74,883	4,74,883
Current Assets	7,09,507	9,32,914	10,49,739	8,67,496	8,60,877
Inventories	3,87,391	6,24,011	6,53,132	6,38,962	5,98,898
Sundry Debtors	75,486	85,024	1,01,165	94,822	95,075
Cash & Bank Balances	5,129	865	814	-1,60,917	-1,27,723
Loans & Advances	18,606	29,394	24,985	24,985	24,985
Other Current Assets	2,22,894	1,93,619	2,69,643	2,69,643	2,69,643
Current Liab. & Prov.	8,30,275	10,23,405	10,30,242	8,56,307	8,35,324
Current Liabilities	7,32,445	8,34,158	8,88,626	7,14,691	6,93,708
Provisions & Others	97,830	1,89,247	1,41,616	1,41,616	1,41,616
Net Current Assets	-1,20,768	-90,492	19,497	11,188	25,553
Total - Assets	13,74,767	15,68,728	17,77,137	18,94,725	20,27,815

Source: Company, JM Financial

Dupont Analysis					
Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
Net Margin	3.2%	5.3%	5.0%	5.2%	5.4%
Asset Turnover (x)	2.4	2.1	2.3	2.1	2.0
Leverage Factor (x)	1.8	1.8	1.7	1.6	1.5
RoE	14.4%	20.3%	20.3%	17.6%	16.5%

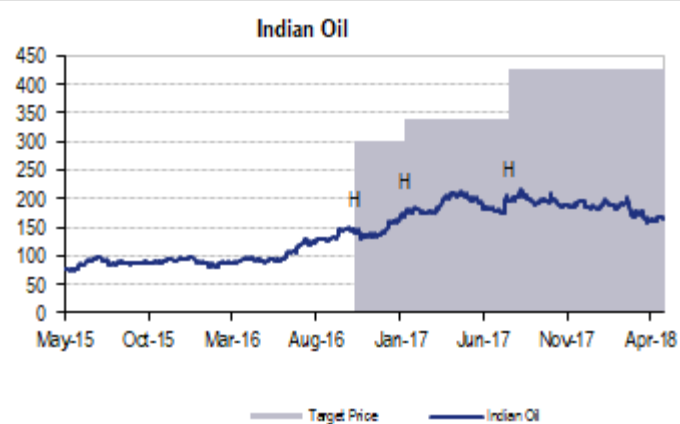
Key Ratios					
Y/E March	FY16A	FY17A	FY18E	FY19E	FY20E
BV/Share (INR)	181.5	205.4	113.4	126.6	140.3
ROIC	11.3%	19.0%	19.4%	15.6%	14.7%
ROE	14.4%	20.3%	20.3%	17.6%	16.5%
Net Debt/Equity (x)	0.5	0.5	0.5	0.6	0.5
P/E (x)	6.7	3.9	7.0	7.3	7.0
P/B (x)	0.8	0.7	1.4	1.2	1.1
EV/EBITDA (x)	5.5	3.9	3.3	3.9	3.6
EV/Sales (x)	0.3	0.3	0.3	0.4	0.4
Debtor days	8	9	9	9	9
Inventory days	41	63	56	59	55
Creditor days	59	66	81	68	67

Source: Company, JM Financial

History of Earnings Estimate and Target Price

Date	Recommendation	Target Price	% Chg.
1-Nov-16	Hold	300	
3-Feb-17	Hold	340	13.3
9-Aug-17	Hold	425	25.0

Recommendation History



APPENDIX I

JM Financial Institutional Securities Limited

(formerly known as JM Financial Securities Limited)

Corporate Identity Number: U67100MH2017PLC296081

Member of BSE Ltd., National Stock Exchange of India Ltd. and Metropolitan Stock Exchange of India Ltd.

SEBI Registration Nos.: Stock Broker - INZ000163434, Research Analyst – INH000000610

Registered Office: 7th Floor, Energy, Appasaheb Marathe Marg, Prabhadevi, Mumbai 400 025, India.

Board: +9122 6630 3030 | Fax: +91 22 6630 3488 | Email: jmfinancial.research@jmfl.com | www.jmfl.com

Compliance Officer: Mr. Sunny Shah | Tel: +91 22 6630 3383 | Email: sunny.shah@jmfl.com

Definition of ratings	
Rating	Meaning
Buy	Total expected returns of more than 15%. Total expected return includes dividend yields.
Hold	Price expected to move in the range of 10% downside to 15% upside from the current market price.
Sell	Price expected to move downwards by more than 10%

Research Analyst(s) Certification

The Research Analyst(s), with respect to each issuer and its securities covered by them in this research report, certify that:

All of the views expressed in this research report accurately reflect his or her or their personal views about all of the issuers and their securities; and

No part of his or her or their compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

Important Disclosures

This research report has been prepared by JM Financial Institutional Securities Limited (JM Financial Institutional Securities) to provide information about the company(ies) and sector(s), if any, covered in the report and may be distributed by it and/or its associates solely for the purpose of information of the select recipient of this report. This report and/or any part thereof, may not be duplicated in any form and/or reproduced or redistributed without the prior written consent of JM Financial Institutional Securities. This report has been prepared independent of the companies covered herein.

JM Financial Institutional Securities is registered with the Securities and Exchange Board of India (SEBI) as a Research Analyst and a Stock Broker having trading memberships of the BSE Ltd. (BSE), National Stock Exchange of India Ltd. (NSE) and Metropolitan Stock Exchange of India Ltd. (MSEI). No material disciplinary action has been taken by SEBI against JM Financial Institutional Securities in the past two financial years which may impact the investment decision making of the investor.

JM Financial Institutional Securities renders stock broking services primarily to institutional investors and provides the research services to its institutional clients/investors. JM Financial Institutional Securities and its associates are part of a multi-service, integrated investment banking, investment management, brokerage and financing group. JM Financial Institutional Securities and/or its associates might have provided or may provide services in respect of managing offerings of securities, corporate finance, investment banking, mergers & acquisitions, broking, financing or any other advisory services to the company(ies) covered herein. JM Financial Institutional Securities and/or its associates might have received during the past twelve months or may receive compensation from the company(ies) mentioned in this report for rendering any of the above services.

JM Financial Institutional Securities and/or its associates, their directors and employees may; (a) from time to time, have a long or short position in, and buy or sell the securities of the company(ies) mentioned herein or (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) covered under this report or (c) act as an advisor or lender/borrower to, or may have any financial interest in, such company(ies) or (d) considering the nature of business/activities that JM Financial Institutional Securities is engaged in, it may have potential conflict of interest at the time of publication of this report on the subject company(ies).

Neither JM Financial Institutional Securities nor its associates or the Research Analyst(s) named in this report or his/her relatives individually own one per cent or more securities of the company(ies) covered under this report, at the relevant date as specified in the SEBI (Research Analysts) Regulations, 2014.

The Research Analyst(s) principally responsible for the preparation of this research report and members of their household are prohibited from buying or selling debt or equity securities, including but not limited to any option, right, warrant, future, long or short position issued by company(ies) covered under this report. The Research Analyst(s) principally responsible for the preparation of this research report or their relatives (as defined under SEBI (Research Analysts) Regulations, 2014); (a) do not have any financial interest in the company(ies) covered under this report or (b) did not receive any compensation from the company(ies) covered under this report, or from any third party, in connection with this report or (c) do not have any other material conflict of interest at the time of publication of this report. Research Analyst(s) are not serving as an officer, director or employee of the company(ies) covered under this report.

While reasonable care has been taken in the preparation of this report, it does not purport to be a complete description of the securities, markets or developments referred to herein, and JM Financial Institutional Securities does not warrant its accuracy or completeness. JM Financial Institutional Securities may not be in any way responsible for any loss or damage that may arise to any person from any inadvertent error in the information contained in this report. This report is provided for information only and is not an investment advice and must not alone be taken as the basis for an investment decision.

The investment discussed or views expressed or recommendations/opinions given herein may not be suitable for all investors. The user assumes the entire risk of any use made of this information. The information contained herein may be changed without notice and JM Financial Institutional Securities reserves the right to make modifications and alterations to this statement as they may deem fit from time to time.

This report is neither an offer nor solicitation of an offer to buy and/or sell any securities mentioned herein and/or not an official confirmation of any transaction.

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 JM Financial Institutional Securities and/or its affiliated company(ies) 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 a certain category of investors. Persons in whose possession this report may come, are required to inform themselves of and to observe such restrictions.

Persons who receive this report from JM Financial Singapore Pte Ltd may contact Mr. Ruchir Jhunjhunwala (ruchir.jhunjhunwala@jmfl.com) on +65 6422 1888 in respect of any matters arising from, or in connection with, this report.

Additional disclosure only for U.S. persons: JM Financial Institutional Securities has entered into an agreement with JM Financial Securities, Inc. ("JM Financial Securities"), a U.S. registered broker-dealer and member of the Financial Industry Regulatory Authority ("FINRA") in order to conduct certain business in the United States in reliance on the exemption from U.S. broker-dealer registration provided by Rule 15a-6, promulgated under the U.S. Securities Exchange Act of 1934 (the "Exchange Act"), as amended, and as interpreted by the staff of the U.S. Securities and Exchange Commission ("SEC") (together "Rule 15a-6").

This research report is distributed in the United States by JM Financial Securities in compliance with Rule 15a-6, and as a "third party research report" for purposes of FINRA Rule 2241. In compliance with Rule 15a-6(a)(3) this research report is distributed only to "major U.S. institutional investors" as defined in Rule 15a-6 and is not intended for use by any person or entity that is not a major U.S. institutional investor. If you have received a copy of this research report and are not a major U.S. institutional investor, you are instructed not to read, rely on, or reproduce the contents hereof, and to destroy this research or return it to JM Financial Institutional Securities or to JM Financial Securities.

This research report is a product of JM Financial Institutional Securities, which is the employer of the research analyst(s) solely responsible for its content. The research analyst(s) preparing this research report is/are resident outside the United States and are not associated persons or employees of any U.S. registered broker-dealer. Therefore, the analyst(s) are not subject to supervision by a U.S. broker-dealer, or otherwise required to satisfy the regulatory licensing requirements of FINRA and may not be subject to the Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

JM Financial Institutional Securities only accepts orders from major U.S. institutional investors. Pursuant to its agreement with JM Financial Institutional Securities, JM Financial Securities effects the transactions for major U.S. institutional investors. Major U.S. institutional investors may place orders with JM Financial Institutional Securities directly, or through JM Financial Securities, in the securities discussed in this research report.

Additional disclosure only for U.K. persons: Neither JM Financial Institutional Securities nor any of its affiliates is authorised in the United Kingdom (U.K.) by the Financial Conduct Authority. As a result, this report is for distribution only to persons who (i) have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended, the "Financial Promotion Order"), (ii) are persons falling within Article 49(2)(a) to (d) ("high net worth companies, unincorporated associations etc.") of the Financial Promotion Order, (iii) are outside the United Kingdom, or (iv) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000) in connection with the matters to which this report relates may otherwise lawfully be communicated or caused to be communicated (all such persons together being referred to as "relevant persons"). This report is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this report relates is available only to relevant persons and will be engaged in only with relevant persons.

Additional disclosure only for Canadian persons: This report is not, and under no circumstances is to be construed as, an advertisement or a public offering of the securities described herein in Canada or any province or territory thereof. Under no circumstances is this report to be construed as an offer to sell securities or as a solicitation of an offer to buy securities in any jurisdiction of Canada. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the registration requirement in the relevant province or territory of Canada in which such offer or sale is made. This report is not, and under no circumstances is it to be construed as, a prospectus or an offering memorandum. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon these materials, the information contained herein or the merits of the securities described herein and any representation to the contrary is an offence. If you are located in Canada, this report has been made available to you based on your representation that you are an "accredited investor" as such term is defined in National Instrument 45-106 Prospectus Exemptions and a "permitted client" as such term is defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Under no circumstances is the information contained herein to be construed as investment advice in any province or territory of Canada nor should it be construed as being tailored to the needs of the recipient. Canadian recipients are advised that JM Financial Securities, Inc., JM Financial Institutional Securities Limited, their affiliates and authorized agents are not responsible for, nor do they accept, any liability whatsoever for any direct or consequential loss arising from any use of this research report or the information contained herein.