IMPORTANT DISCLOSURES

Due to Citigroup Global Markets Limited's involvement as advisor to Cairn Plc in relation to the proposed merger between Cairn India and Vedanta India Limited, Citi Research restricted publication of new research reports and suspended its rating and target price on the 14th of June 2015 ("the Suspension Date"). Please note that the Company price chart that appears in this report and available on Citi Research's disclosure website does not reflect that Citi Research did not have a rating or target price between the Suspension Date and the July 25th 2016 when Citi Research resumed full coverage.

Due to Citigroup Global Markets Limited's involvement as advisor to Cairn Plc in relation to the proposed merger between Cairn India and Vedanta India Limited, Citi Research restricted publication of new research reports and suspended its rating and target price on the 14th of June ("the Suspension Date") 2015. Please note that the Company price chart that appears in this report and available on Citi Research's disclosure website does not reflect that Citi Research did not have a rating or target price between the Suspension Date and the 05th August 2016 when Citi Research resumed full coverage.

Due to Citigroup Global Markets Limited's involvement as a financial advisor to LafargeHolcim Limited on its intra-group reorganization relating to Ambuja Cements Limited and ACC Limited, (the Companies"), Citi Research restricted publication of new Research reports, and suspended its rating and target price on 24th July 2013 (the Suspension Date"). Please note the Company price chart that appears in this report and available on Citi Research's disclosure website does not reflect that Citi Research did not have a rating or target price between the Suspension Date and 26th August 2016 when Citi Research resumed full coverage.

Due to Citigroup Global Markets Limited's involvement as a financial advisor to LafargeHolcim Limited on its intra-group reorganization relating to Ambuja Cements Limited and ACC Limited, (the Companies"), Citi Research restricted publication of new Research reports, and suspended its rating and target price on 24th July 2013 (the Suspension Date"). Please note the Company price chart that appears in this report and available on Citi Research's disclosure website does not reflect that Citi Research did not have a rating or target price between the Suspension Date and 26th August 2016 when Citi Research resumed full coverage.

Rohit Modi, Senior Associate, holds a long position in the securities of National Aluminium.

Rajkumar Choudhary, Analyst, holds a long position in the securities of Coal India,Ambuja Cements.

Rajiv Berlia, Senior Associate, holds a long position in the securities of Hindustan Zinc,NMDC.

Devang Doshi, Supervisory Analyst, holds a long position in the securities of Coal India.

Avinash Mundhra, CFA, Senior Associate, holds a long position in the securities of Vedanta.

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of NMDC, Tata Steel, Coal India.

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from National Aluminium, Steel Authority of India, Hindustan Zinc, NMDC, Tata Steel, Vedanta, JSW Steel, Dalmia Bharat, UltraTech Cement, ACC, Hindalco Industries, Ambuja Cements, Coal India.

Citigroup Global Markets Inc. or its affiliates expects to receive or intends to seek, within the next three months, compensation for investment banking services from National Aluminium, Steel Authority of India, Hindustan Zinc, NMDC, Vedanta, JSW Steel, ACC, Ambuja Cements, Coal India.

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from National Aluminium, Steel Authority of India, Hindustan Zinc, NMDC, Tata Steel, Vedanta, JSW Steel, Dalmia Bharat, UltraTech Cement, ACC, Hindalco Industries, Ambuja Cements, Coal India in the past 12 months.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as investment banking client(s): National Aluminium, Steel Authority of India, Hindustan Zinc, NMDC, Tata Steel, Vedanta, JSW Steel, Dalmia Bharat, UltraTech Cement, ACC, Hindalco Industries, Ambuja Cements, Coal India.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, securities-related: National Aluminium, Steel Authority of India, NMDC, Tata Steel, Vedanta, JSW Steel, Dalmia Bharat, UltraTech Cement, Hindalco Industries, Coal India.

Citigroup Global Markets Inc. currently has, or had within the past 12 months, the following as clients, and the services provided were non-investment-banking, non-securities-related: National Aluminium, Steel Authority of India, Hindustan Zinc, NMDC, Tata Steel, Vedanta, JSW Steel, Dalmia Bharat, UltraTech Cement, ACC, Hindalco Industries, Ambuja Cements, Coal India.

Citigroup Global Markets Inc. and/or its affiliates has a significant financial interest in relation to National Aluminium, Steel Authority of India, NMDC, Vedanta, JSW Steel, Dalmia Bharat, Hindalco Industries, Coal India. (For an explanation of the determination of significant financial interest, please refer to the policy for managing conflicts of interest which can be found at www.citiVelocity.com.)

Disclosure for investors in the Republic of Turkey: Under Capital Markets Law of Turkey (Law No: 6362), the investment information, comments and recommendations stated here, are not within the scope of investment advisory activity. Investment advisory service is provided in accordance with a contract of engagement on investment advisory concluded between brokerage houses, portfolio management companies, non-deposit banks and clients. Comments and recommendations stated here rely on the individual opinions of the ones providing these comments and recommendations. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations. Furthermore, Citi Research is a division of Citigroup Global Markets Inc. (the “Firm”), which does and seeks to do business with companies and/or trades on securities covered in this research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report, however investors should also note that the Firm has in place organisational and administrative arrangements to manage potential conflicts of interest of this nature.

Analysts’ compensation is determined by Citi Research management and Citigroup’s senior management and is based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates (the “Firm”). Compensation is not linked to specific transactions or recommendations. Like all Firm employees, analysts receive compensation that is impacted by overall Firm profitability which includes investment banking, sales and trading, and principal trading revenues. One factor in equity research analyst compensation is arranging corporate access events between institutional clients and the management teams of covered companies. Typically, company management is more likely to participate when the analyst has a positive view of the company.

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

For important disclosures regarding the companies that are the subject of this public appearance, please see https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures".

Citi Research Equity Ratings Distribution

	12 Month Rating			Catalyst Watch		
Data current as of 30 Jun 2018	**Buy**	**Hold**	**Sell**	**Buy**	**Hold**	**Sell**
Citi Research Global Fundamental Coverage	53%	36%	11%	5%	93%	2%
% of companies in each rating category that are investment banking clients	65%	64%	55%	64%	64%	66%

Guide to Citi Research Fundamental Research Investment Ratings:

Citi Research stock recommendations include an investment rating and an optional risk rating to highlight high risk stocks.

Risk rating takes into account both price volatility and fundamental criteria. Stocks will either have no risk rating or a High risk rating assigned.

Investment Ratings: Citi Research investment ratings are Buy, Neutral and Sell. Our ratings are a function of analyst expectations of expected total return ("ETR") and risk. ETR is the sum of the forecast price appreciation (or depreciation) plus the dividend yield for a stock within the next 12 months. The target price is based on a 12 month time horizon. The Investment rating definitions are: Buy (1) ETR of 15% or more or 25% or more for High risk stocks; and Sell (3) for negative ETR. Any covered stock not assigned a Buy or a Sell is a Neutral (2). For stocks rated Neutral (2), if an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of Citi Research management not to assign a target price and, thus, not derive an ETR. Analysts may place covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and / or trading in the company's securities (e.g. trading suspension). As soon as practically possible, the analyst will publish a note re-establishing a rating and investment thesis. To satisfy regulatory requirements, we correspond Under Review and Neutral to Hold in our ratings distribution table for our 12-month fundamental rating system. However, we reiterate that we do not consider Under Review to be a recommendation. Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

Catalyst Watch Upside/Downside calls:

Citi Research may also include a Catalyst Watch Upside or Downside call to highlight specific near-term catalysts or events impacting the company or the market that are expected to influence the share price over a specified period of 30 or 90 days. A Catalyst Watch Upside (Downside) call indicates that the analyst expects the share price to rise (fall) in absolute terms over the specified period. A Catalyst Watch Upside/Downside call will automatically expire at the end of the specified 30/90 day period; the analyst may also close a Catalyst Watch call prior to the end of the specified period in a published research note. A Catalyst Watch Upside or Downside call may be different from and does not affect a stock's fundamental equity rating, which reflects a longer-term total absolute return expectation. For purposes of FINRA ratings-distribution-disclosure rules, a Catalyst Watch Upside call corresponds to a buy recommendation and a Catalyst Watch Downside call corresponds to a sell recommendation. Any stock not assigned to a Catalyst Watch Upside or Catalyst Watch Downside call is considered Catalyst Watch Non-Rated (CWNR). For purposes of FINRA ratings-distribution-disclosure rules, we correspond CWNR to Hold in our ratings distribution table for our Catalyst Watch Upside/Downside rating system. However, we reiterate that we do not consider CWNR to be a recommendation. For all Catalyst Watch Upside/Downside calls, risk exists that the catalyst(s) and associated share-price movement will not materialize as expected.

NON-US RESEARCH ANALYST DISCLOSURES

Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the FINRA Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets India Private Limited	Raashi Chopra, CFA

OTHER DISCLOSURES

Any price(s) of instruments mentioned in recommendations are as of the prior day's market close on the primary market for the instrument, unless otherwise stated.

European regulations require that where a recommendation differs from any of the author's previous recommendations concerning the same financial instrument or issuer that has been published during the preceding 12-month period that the change(s) and the date of that previous recommendation are indicated. For fundamental coverage please refer to the price chart or rating change history within this disclosure appendix or the issuer disclosure summary at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

European regulations require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to Citi Research's Products can be found at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

The proportion of all Citi Research research recommendations that were the equivalent to "Buy","Hold","Sell" at the end of each quarter over the prior 12 months (with the % of these that had received investment firm services from Citi in the prior 12 months shown in brackets) is as follows: Q2 2018 Buy 33% (70%), Hold 43% (64%), Sell 23% (57%), RV 0.6% (89%); Q1 2018 Buy 32% (71%), Hold 44% (63%), Sell 24% (56%), RV 0.4% (98%); Q4 2017 Buy 32% (70%), Hold 44% (65%), Sell 24% (57%), RV NA (NA); Q3 2017 Buy 32% (70%), Hold 44% (64%), Sell 24% (58%), RV NA (NA). For the purposes of disclosing recommendations other than for equity or high yield recommendations (whose definitions can be found in their corresponding disclosure sections), "Buy" means a positive directional trade idea; "Sell" means a negative directional trade idea; and "Relative Value" means any trade idea which does not have a clear direction to the investment strategy.

European regulations require a 5 year price history when past performance of a security is referenced. CitiVelocity's Charting Tool (https://www.citivelocity.com/cv2/#go/CHARTING_3_Equities) provides the facility to create customisable price charts including a five year option. This tool can be found in the Data & Analytics section under any of the asset class menus in CitiVelocity (https://www.citivelocity.com/). For further information contact CitiVelocity support (https://www.citivelocity.com/cv2/go/CLIENT_SUPPORT). The source for all referenced prices, unless otherwise stated, is DataCentral, which sources price information from Thomson Reuters. Past performance is not a guarantee or reliable indicator of future results. Forecasts are not a guarantee or reliable indicator of future performance.

Investors should always consider the investment objectives, risks, and charges and expenses of an ETF carefully before investing. The applicable prospectus and key investor information document (as applicable) for an ETF should contain this and other information about such ETF. It is important to read carefully any such prospectus before investing. Clients may obtain prospectuses and key investor information documents for ETFs from the applicable distributor or authorized participant, the exchange upon which an ETF is listed and/or from the applicable website of the applicable ETF issuer. The value of the investments and any accruing income may fall or rise. Any past performance, prediction or forecast is not indicative of future or likely performance. Any information on ETFs contained herein is provided strictly for illustrative purposes and should not be deemed an offer to sell or a solicitation of an offer to purchase units of any ETF either explicitly or implicitly. The opinions expressed are those of the authors and do not necessarily reflect the views of ETF issuers, any of their agents or their affiliates.

Citigroup Global Markets India Private Limited and/or its affiliates may have, from time to time, actual or beneficial ownership of 1% or more in the debt securities of the subject issuer.

Citi Research generally disseminates its research to the Firm's global institutional and retail clients via both proprietary (e.g., Citi Velocity and Citi Personal Wealth Management) and non-proprietary electronic distribution platforms. Certain research may be disseminated only via the Firm's proprietary distribution platforms; however such research will not contain changes to earnings forecasts, target price, investment or risk rating or investment thesis or be otherwise inconsistent with the author's previously published research. Certain research is made available only to institutional investors to satisfy regulatory requirements. Individual Citi Research analysts may also opt to circulate published research to one or more clients by email; such email distribution is discretionary and is done only after the research has been disseminated. The level and types of services provided by Citi Research analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with the Firm and legal and regulatory constraints.

Pursuant to Comissão de Valores Mobiliários Rule 598 and ASIC Regulatory Guide 264, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies) or visiting company sites. Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Research does not set a predetermined frequency for publication, if the Product is a fundamental equity or credit research report, it is the intention of Citi Research to provide research coverage of the covered issuers, including in response to news affecting the issuer. For non-fundamental research reports, Citi Research may not provide regular updates to the views, recommendations and facts included in the reports. Notwithstanding that Citi Research maintains coverage on, makes recommendations concerning or discusses issuers, Citi Research may be periodically restricted from referencing certain issuers due to legal or policy reasons. Where a component of a published trade idea is subject to a restriction, the trade idea will be removed from any list of open trade ideas included in the Product. Upon the lifting of the restriction, the trade idea will either be re-instated in the open trade ideas list if the analyst continues to support it or it will be officially closed. Citi Research may provide different research products and services to different classes of customers (for example, based upon long-term or short-term investment horizons) that may lead to differing conclusions or recommendations that could impact the price of a security contrary to the recommendations in the alternative research product, provided that each is consistent with the rating system for each respective product.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in **Australia** through Citigroup Global Markets Australia Pty Limited. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. Citigroup Global Markets Australia Pty Limited is not an Authorised Deposit-Taking Institution under the Banking Act 1959, nor is it regulated by the Australian Prudential Regulation Authority. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in **Brazil** by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários ("CVM"), BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBIMA – Associação Brasileira das Entidades dos Mercados Financeiro e de Capitais. Av. Paulista, 1111 - 14º andar(parte) - CEP: 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of **Canada** by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. This product is available in **Chile** through Banchile Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros. Agustinas 975, piso 2, Santiago, Chile. The Product is made available in **Germany** by Citigroup Global Markets Deutschland AG ("CGMD"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGMD, Reuterweg 16, 60323 Frankfurt am Main. Research which relates to

"securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in **Hong Kong** by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. The Product is made available in **India** by Citigroup Global Markets India Private Limited (CGM), which is regulated by the Securities and Exchange Board of India (SEBI), as a Research Analyst (SEBI Registration No. INH000000438). CGM is also actively involved in the business of merchant banking and stock brokerage in India, and is registered with SEBI in this regard. CGM's registered office is at 1202, 12th Floor, FIFC, G Block, Bandra Kurla Complex, Bandra East, Mumbai – 400098. CGM's Corporate Identity Number is U99999MH2000PTC126657, and its contact details are: Tel:+9102261759999 Fax:+9102261759961. The Product is made available in **Indonesia** through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in **Israel** through Citibank NA, regulated by the Bank of Israel and the Israeli Securities Authority. Citibank, N.A, Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in **Italy** by Citigroup Global Markets Limited, which is authorised by the PRA and regulated by the FCA and the PRA. Via dei Mercanti, 12, Milan, 20121, Italy. The Product is made available in **Japan** by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Otemachi Park Building, 1-1-1 Otemachi, Chiyoda-ku, Tokyo 100-8132 Japan. If the Product was distributed by SMBC Nikko Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Citi Velocity website. If you have questions regarding Citi Velocity, please call (81 3) 6270-3019 for help. The Product is made available in **Korea** by Citigroup Global Markets Korea Securities Ltd., which is regulated by the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities Ltd.
http://dis.kofia.or.kr/websquare/index.jsp?w2xPath=/wq/fundMgr/DISFundMgrAnalystList.xml&divisionId=MDIS03002002000000&serviceId=SDIS03002002000.
The Product is made available in Korea by Citibank Korea Inc., which is regulated by the Financial Services Commission and the Financial Supervisory Service. Address is Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. This research report is intended to be provided only to Professional Investors as defined in the Financial Investment Services and Capital Market Act and its Enforcement Decree in Korea. The Product is made available in **Malaysia** by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. The Product is made available in **Mexico** by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In **New Zealand** the Product is made available to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ('FAA') through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in **Pakistan** by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in the **Philippines** through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. The Product is made available in **Poland** by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul.Senatorska 16, 00-923 Warszawa. The Product is made available in the **Russian Federation** through AO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in **Singapore** through Citigroup Global Markets Singapore Pte. Ltd. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore Branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold//Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited investors as defined under the Securities and Futures Act (Cap. 289). Citigroup Global Markets (Pty) Ltd. is incorporated in the **Republic of South Africa** (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in the **Republic of China** through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the license scope and the applicable laws and regulations in the Republic of China. CGMTS is regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS]. Pursuant to the applicable laws and regulations in the Republic of China, the recipient of the Product shall not take advantage of such Product to involve in any matters in which the recipient may have conflicts of interest. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the

Product must take into account existing public information on such security or the financial products or any registered prospectus. The Product is made available in **Thailand** through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 399 Interchange 21 Building, 18th Floor, Sukhumvit Road, Klongtoey Nua, Wattana ,Bangkok 10110, Thailand. The Product is made available in **Turkey** through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the **U.A.E**, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA") to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different Citi Research ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in **United Kingdom** by Citigroup Global Markets Limited, which is authorised by the Prudential Regulation Authority ("PRA") and regulated by the Financial Conduct Authority ("FCA") and the PRA. This material may relate to investments or services of a person outside of the UK or to other matters which are not authorised by the PRA nor regulated by the FCA and the PRA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in **United States** by Citigroup Global Markets Inc, which is a member of FINRA and registered with the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is authorised by the PRA and regulated by the FCA and the PRA.

The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted.

Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product.

Citi Research product may source data from dataCentral. dataCentral is a Citi Research proprietary database, which includes the Firm's estimates, data from company reports and feeds from Thomson Reuters. The source for all referenced prices, unless otherwise stated, is DataCentral. Past performance is not a guarantee or reliable indicator of future results. Forecasts are not a guarantee or reliable indicator of future performance. The printed and printable version of the research report may not include all the information (e.g., certain financial summary information and comparable company data) that is linked to the online version available on the Firm's proprietary electronic distribution platforms.

© 2018 Citigroup Global Markets Inc. Citi Research is a division of Citigroup Global Markets Inc. Citi and Citi with Arc Design are trademarks and service marks of Citigroup Inc. and its affiliates and are used and registered throughout the world. All rights reserved. The research data in this report is not intended to be used for the purpose of (a) determining the price or amounts due in respect (or to value) of one or more financial products or instruments and/or (b) measuring or comparing the performance of a financial product, a portfolio of financial instruments, or a collective investment undertaking, and any such use is strictly prohibited without the prior written consent of Citi Research. Any unauthorized use, duplication, redistribution or disclosure of this report (the "Product"), including, but not limited to, redistribution of the Product by electronic mail, posting of the Product on a website or page, and/or providing to a third party a link to the Product, is prohibited by law and will result in prosecution. The information contained in the Product is intended solely for the recipient and may not be further distributed by the recipient to any third party. Where included in this report, MSCI sourced information is the exclusive property of Morgan Stanley Capital International Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, redisseminated or used to create any financial products, including any indices. This information is provided on an "as is" basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI, Morgan Stanley Capital International and the MSCI indexes are services marks of MSCI and its affiliates. Part of this product may contain Sustainalytics proprietary information that may not be reproduced, used, disseminated, modified nor published in any manner without the express written consent of Sustainalytics. Sustainalytics, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Any information attributed to Sustainalytics is provided solely for informational purposes and on its own should not be considered an offer to buy or sell a security. Neither Sustainalytics nor all its third-party suppliers provide investment advice (as defined in the applicable jurisdiction) or any other form of (financial) advice. The information is provided "as is" and, therefore Sustainalytics assumes no responsibility for errors or omissions. Sustainalytics cannot be held liable for damage arising from the use of this product or information contained herein in any manner whatsoever. The Firm accepts no liability whatsoever for the actions of third parties. The Product may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the Product refers to website material of the Firm, the Firm has not reviewed the linked site. Equally, except to the extent to which the Product refers to website material of the Firm, the Firm takes no responsibility for, and makes no representations or warranties whatsoever as to, the data and information contained therein. Such address or hyperlink (including addresses or hyperlinks to website material of the Firm) is provided solely for your convenience and information and the content of the linked site does not in any way form part of this document. Accessing such website or following such link through the Product or the website of the Firm shall be at your own risk and the Firm shall have no liability arising out of, or in connection with, any such referenced website.

VALUATION AND RISKS

We value Nalco at 6x Mar19E EV/EBITDA (in-line with global peers) and arrive at a target price of Rs88. We also adjust for the capex pertaining to the alumina expansion, wind power and coal blocks.

Key downside risks that could cause the stock to trade below our target price include: lower-than-expected aluminium/alumina prices, rupee appreciation, lower volumes than we expect, and higher coal costs.

Our TP for SAIL is Rs83 based on EV/EBITDA valuation. We prefer EV/EBITDA as a valuation metric for Indian steel companies given their high debt/equity levels. We value SAIL on 5.5x Sep-19E EV/EBITDA, which is at a premium to global peers currently trading at ~5x. We think a premium to global peers is warranted as SAIL stands to benefit from India's superior growth potential relative to other markets. Our multiple is at a discount to TSL's target multiple of 6x as we believe TSL should benefit from company-specific upsides such as its JV with Thyssen.

Key upside risks that could sustain the shares above our target price include: (1) higher volumes, (2) higher steel prices, (3) lower coal/wage costs than we expect, and (4) rupee depreciation. Key downside risks that could drive the shares below our target price include: (1) lower volumes, (2) lower steel prices, (3) higher coal/wage costs than we expect, and (4) rupee appreciation.

We value HZL at 8x Sep'1E9 EV/EBITDA, at a premium to peers such as Boliden, Korea Zinc, Nyrstar (~4.5-6.5x). We think a premium is warranted on ore integration, stable fundamentals, visibility on the use of cash.

Key downside risks that could cause HZL shares to trade below our target price include: (1) Lower-than-expected zinc, lead and silver prices, (2) Higher-than-expected rupee appreciation, (3) Lower volumes than we expect, (4) Higher royalties. Key upside risks include: (1) Continued rally in Zinc, lead and better than expected silver prices. (2) Faster than expected ramp up of mines. (3) Rupee depreciation.

We use a combination of DCF and PE vs. DCF to better capture current earnings potential in addition to asset valuation. For DCF, we have modeled cash flows out to FY47 based on NMDC's existing reserves and resources (proven, probable, and resources) of ~1.7bn tonnes (est). We do not account for any terminal value due to lack of visibility on future reserves to arrive at our DCF-based fair value of Rs96 (use a WACC of 12%). For PE, we ascribe a 9.5x multiple (NMDC's historical mean ~10x) on Sep'19E EPS and attain a fair value of Rs123. Equally weighting the two methodologies we get a target price of Rs110.

Based on our sensitivity analysis, every 1% change in prices we estimate would impact EPS by ~1%; every 1% change in volumes impacts EPS by ~1%. Upside risks that could result in the NMDC stock continuing to trade above our target price include: (1) divestment of steel plant, (2) higher volumes, (3) higher prices, (4) additional reserves, and (5) lower costs.

We use SOTP to arrive at our target price of Rs750. We value TSL at 6x Sep19 EV/EBITDA (6.5x Mar19 earlier) − in line with its mean based on consensus forecasts since 2011 and at a premium to global players (~5x) − strong India EBITDA, restructuring upsides at Europe (TSL and Thyssen have indicated proposed synergies from the JV at between €400-600m pa over 2-3 years which we do not incorporate in estimates). We lower target multiple as global multiples have corrected. We incorporate impact of the BSL acquisition in our estimates (based on information available so far). We add the value of investments (Rs24/sh, factoring a holdco discount).

Downside risks that could impede the stock from reaching our target price include: 1) weaker steel prices, 2) higher raw material prices, 3) FX trends, 4) lower volumes than we expect, 5) unsuccessful discussions on the Pension Scheme.

Our target price of Rs360 is based on SOTP of individual business. Our SOTP derived value is based on 1) Cairn at NAV (DCF over the life of its oilfields), 2) HZL at Citi's TP with a 10% hold co discount, 3) 0.5x P/B for the equity invested in Talwandi Sabo, 4) 6x Mar19 EV/EBITDA-based fair values for others.

Key downside risks that could cause Vedanta shares to trade below our target price include: lower commodity prices, rupee appreciation, and lower volumes.

We arrive at our TP of Rs19,600 based on 16x Sep 19 EV/EBITDA (multiple in line with UltraTech as Shree's cost/volume advantage has narrowed). We use EV/EBITDA as our primary valuation tool (vs. EV/t) as it better captures the leverage to cement prices. At our TP, Shree would trade at an EV/t of $260 on its expanded capacity of ~39mtpa (replacement cost is $105-110). Note the EBITDA includes subsidies which inflate the TP by ~Rs1,000/sh.

Based on our sensitivity analysis, every 1% change in price would affect EBITDA by ~3%, and a 1% change in volumes by ~1%. Downside risks that could impede the stock from reaching our target price include: 1) lower pricing, 2) lower volumes, 3) higher costs, 4) CCI penalty.

EV/EBITDA is our preferred valuation metric for JSTL due to its high debt/equity levels. JSTL's standalone and coated business account for majority of its consolidated EBITDA. We value the combined entity at 6x Mar19 EV/EBITDA − in line with global peers and at a discount to Tata Steel's target of 6.5x to arrive at our target price of Rs295. We use a lower multiple vs. Tata Steel: 1) historical trends; 2) TSL could benefit from JV synergies (not accounted for in estimates).

Key upside risks that could cause the shares to trade above our target price include: 1) attractive M&A, 2) lower raw material costs if captive mines start, 3) higher steel prices than forecast. Downside risks include: 1) lack of captive ore (preference for high grade ore by Chinese should keep grade premiums elevated), 2) weaker than expected steel prices on weak demand.

We value Dalmia at 14.5x Sep19E EV/EBITDA. Our target multiple is at a discount to our target multiple for ULTC (16x) as ~50% of Dalmia's capacity is in the South (low capacity utilization). We adjust for a minority stake (33%) in Calcom. The implied EV/t at our TP is $210. We arrive at a per share value of Dalmia Bharat shares using 1) post-merger share count and 2) multiplying by the swap ratio – existing DBL shareholders would receive two shares of the new entity for each share in DBL.

Based on our sensitivity analysis, 1% change in cement realizations impacts EBITDA by ~3.5%; 1% change in volumes would impact by ~1.5%. Downside risks that could impede the stock from reaching our target price include: 1) lower pricing, 2) lower volumes, 3) higher costs, 4) CCI penalty.

We arrive at our TP of Rs5,130 based on 16x Sep19E EV/EBITDA. The target multiple is in line with the 5-yr average. We continue to use EV/EBITDA as our primary valuation tool (vs. EV/t) as it better captures the leverage to cement prices, and use EV/t as a reality check. At our TP, ULTC would trade at $240 EV/t (96.5mtpa); replacement cost is $110/t.

Based on our sensitivity analysis, every 1% change in price would affect EBITDA by ~ 3.5% and a 1% change in volume by 1%. Downside risks that could impede the stock from reaching our target price for ULTC include lower prices, weaker demand, higher costs vs. expectations, and a weak economy.

Our Rs2,000 TP on ACC is based on a target multiple of 13x Sep'19E EV/EBITDA, which is at a discount to Ambuja's mean multiple since 2012 of 14.5x, this is because of the delay in the merger of ACC and Ambuja which lowers ACC's growth visibility. At our target price, ACC would trade at EV/t of ~$155 vs replacement cost of $110-120 (more recent capex announcements at $90-100).

Based on our sensitivity analysis, 1% change in cement realizations impacts EBITDA by ~5%; 1% change in volumes would impact by ~1.6%. Downside risks that could impede the stock from reaching our target price include: 1) lower pricing, 2) lower volumes, 3) higher costs, and 4) CCI penalty.

We value Hindalco using SOTP and arrive at a TP of Rs325. We use EV/EBITDA as our preferred valuation tool given Hindalco's high debt levels. Continue to value Hindalco's commodity business at 6x EV/EBITDA (global peers are at 5.5x); roll from Mar to Sep19. Value Novelis at 6.5x (premium due to stable nature of business) and add the value of investments (factoring a holdco discount. Our issuer weighting for Novelis is Marketweight. In applying our High Yield rating methodology (as described in our Disclosures) for the issuer and particular financial instruments, we examined the relevant sectors and markets and considered the following factors, among others: increasing mix towards value-add products, large global scale, significant market position, relatively elevated leverage metrics, free cash flow generation ability, aluminum industry headwinds, pass-through cost provisions which limit earnings volatility, and implicit parent support.

Key downside factors that could result in the Hindalco stock continuing to trade below our target price include: lower LME, higher-than-expected rupee appreciation, higher coal costs, lower EBITDA/t and volumes for Novelis. 1% chg in LME impacts consolidated EBITDA by 1%. Key risks to our ratings include: declining beverage can market, softening end-market demand, especially for autos, ability to refinance debt, local premiums more volatile than anticipated. If the impact on the issuer from any of these factors proves to be greater/less than we anticipate, the issuer/issues performance could deviate from our weightings and ratings.

We value Ambuja at 14.5x Sep’19 EV/EBITDA. Our target multiple for Ambuja is in line with the mean since 2012 and ~10% discount to our multiple for ULTC (largest player, more growth visibility). We value its 50% holding in ACC at our TP of Rs2,000 for ACC (we incorporate a ~20% hold co discount given postponement of the merger with ACC). At our TP of Rs300, Ambuja would trade at $175 EV/t vs. replacement cost of $110-120 (more recent capex announcements at $90-100).

Based on our sensitivity analysis, every 1% change in price would affect EBITDA by ~5% and a 1% change in volume by ~1.7%. Downside risks that could cause the shares to trade below our target price include lower prices, weaker demand, higher costs vs. expectations, and a weak economy.

We arrive at our target price of Rs350 for CIL by using an average of: (1) DCF + a 30% premium for probable reserves and (2) 12x Sep19E PE, set at a ~10% premium to the high-end of global peers’ trading range of 7-11x P/E; we value at a premium given the resource base and limited exposure to global volatility. Our TP calculation incorporates both CIL's asset valuation and also its earnings potential. Our DCF assumptions include a WACC of 11.7% which is calculated based on a beta of 1.0 (relative to Sensex), a risk free rate of 7.8% and an ERP of 6%, cost of debt of 6.8% (post tax), and a target debt-to-total-capital ratio of 30%. We apply a 30% premium to our DCF fair value to account for probable reserves (8.3bn tonnes - an additional 78% over the proven reserves), which we have not incorporated in our valuation. We have not taken a terminal value and thus also use a PE-based valuation as it assumes new reserves replace the exhausted ones.

Key downside risks that could push the stock below our target price include: lower volumes on weaker power demand / coal evacuation bottlenecks, lower prices, lower e-auction volumes/prices, and un-related investments.

CONFLICTS MANAGEMENT POLICY - CITI RESEARCH

This document has been created to disclose effective organisational and administrative arrangements for the identification and management of potential conflicts of interests with respect to Citi Research and is designed to provide clients with such a summary of respective policies and procedures.

The publication of this summary of our policies is not intended to create any third-party rights or duties between Citi and such third-parties that would not exist in the absence of such publication, or to form part of any contract with any client or third-party. Detailed internal policy documents and operating procedures may not be fully represented in the summary that appears below.

Citi Research is committed to providing high-quality, objective, and unbiased research to our retail and institutional investors. In general, these policies apply globally because basic principles of research independence are integral to our global research product regardless of where it is distributed. However, policies may vary according to local law, regulation or custom. Our objective is to maintain the highest professional standards and principles in publishing research. The interests of our investing clients must always come first, and these policies are intended to ensure that those interests are well served.

To this end, we have policies in place to identify, consider and manage potential conflicts of interest and protect the integrity of our relationships with investing and corporate clients. Employee compliance with these policies is mandatory. In addition, employees may not do indirectly that which they are prohibited from doing directly under these policies.

Identification of Conflicts

Senior management of Citi have considered the potential conflicts of interest arising out of the provision of research and determined that these policies are sufficient to manage these potential conflicts. In particular, these policies are designed to consider potential conflicts between recipients of our research and our corporate finance clients (including issuers of investments covered by our research), our investment clients (including sales and trading customers), the trading and investment banking activities of Citi and affiliates, and the personal interests of our officers and employees. References to investment banking in this document include but are not limited to departments within Citi that advise corporate clients with respect to capital raising activities and/or mergers and acquisitions activities.

Despite procedures and policies for the identification and management of potential conflicts, Citi Research may not be aware of all such potential conflicts because it may not be familiar with all the interests of the recipients of research and other clients.

Mechanisms for identifying and managing potential conflicts include:
- Internal guidance and training regarding the identification of possible conflicts before they arise.
- Procedures to ensure that potential conflicts are escalated to the appropriate level within Citi.
- Legal monitoring of potential conflicts arising out of the publication of research in the period before, during and after investment banking transactions.
- Internal arrangements (including physical separation, Chinese walls and other information barriers) for regulating the flow of information between and within business areas.
- Editorial guidelines and procedures for supervisory and compliance review of research prior to publication.

Structural Separation

- Citi Research is part of the Citi Institutional Clients Group ("ICG"). ICG is the business unit of Citi composed of Citi Research, Citi Markets, Citi Corporate and Investment Banking, Citi Transaction Services, Citi Private Bank, and Citi Capital Advisors.
- The Global Head of Citi Research reports directly to the Head of Citi Markets whereas senior investment banking management report into the Chief Executive Officer of ICG.
- Citi Research and investment banking are physically separated to prevent the intentional and unintentional flow of information. Citi Research Equity Research Analysts are also physically separated from equity sales and trading for the same reason.

Supervision and Remuneration of Citi Research Analysts

• Compensation of Citi Research analysts is structured to align the interests of research analysts with Citi Research's investing clients and to avoid any incentive inconsistent with the provision of impartial research. As such, compensation of research analysts is determined exclusively by Citi Research management and Citi's senior management and is not linked to specific transactions or recommendations.
• Citi Research analyst compensation is based on established criteria that include the quality and accuracy of the analyst's research and analysis. The Citi Research budget and analyst remuneration is linked to the overall profits of Citi.
• Investment Banking has no input into the Citi Research budget and/or the allocation of Citi Research expenses though revenues and results of the firm as a whole may be considered in determining Citi Research budget and the allocation of Citi Research expenses.
• All Citi Research reports must carry a certification from the research analyst that the views expressed accurately reflect the analyst's personal views about any and all of the subject issuer(s) or securities and that no part of their compensation was, is or will be directly or indirectly related to the specific recommendation(s) or view(s) in that report.

Involvement of analysts in other activities

• Citi Research analysts are not permitted to participate in efforts to solicit investment banking business or to participate in any pitches to prospective investment banking clients.
• Citi Research analysts are not permitted to participate in or attend any company or investment banking sponsored road shows related to a public offering or other investment banking transaction.
• Interactions between Citi Research and investment banking are permitted only if they do not compromise Citi's commitment to research independence.
• Citi Research analyst participation in the capital formation process may be required during several phases of the process, including assessing potential candidates for transactions; vetting of identifiable transactions; addressing Citi internal review committees; and educating investors and sales.
• It is in the interest of Citi Research's investing clients to have independent research analysts comment on potential candidates for transactions and review identifiable transactions to assess the merits of such transactions. The purpose of research vetting is to allow equity research analysts to assess the investment merits and risks; assist Citi in determining the appropriateness of transactions for investing clients; and provide input to Citi's overall view of the proposed transaction.

Avoiding Inappropriate Influences

• Citi Research management makes research coverage decisions independently without any input from investment banking.
• Non-research personnel must never attempt to influence a research analyst's rating or opinion or any other contents of a research publication.
• Neither Citi Research nor any non-Citi Research personnel may offer or accept any inducement to produce favourable research or a specific rating or price target.
• Citi Research analysts shall not provide draft, written research or models to any non-Citi Research personnel (including the subject company) prior to publication, except as expressly permitted by Legal/Compliance solely for the purpose for fact checking.
• Personal investment activities of Citi Research analysts and other Citi employees are regulated by Compliance to prevent conflicts of interest arising between the publication of research and personal investment activity.

Means and Timing of Publication

• Research is required to be distributed only through controlled channels.
• Citi Research generally disseminates its research to the Firm’s global institutional and retail clients via both proprietary (e.g., Citi Velocity and Citi Personal Wealth Management) and non-proprietary electronic distribution platforms. Certain research may be disseminated only via Citi’s proprietary distribution platforms; however such research will not contain changes to earnings forecasts, target price, investment or risk rating or investment thesis or be otherwise inconsistent with the author’s previously published research. Certain research is made available only to institutional investors to satisfy regulatory requirements. Individual Citi Research analysts may also opt to circulate published research to one or more clients by email; such email distribution is discretionary and is done only after the research has been disseminated.
• Citi Research analysts are prohibited from disclosing the proposed timing or content of research prior to its public distribution.
• Except as described above in the context of fact checking investor education research, Citi Research analysts or other employees may not communicate the substance of any research prior to publication either internally (other than to the necessary Citi Research personnel and Legal/Compliance) or outside Citi.
• Written materials produced or distributed by sales and trading should not contain company specific analysis that is of the character of research or might be construed as research and all such materials must be clearly identifiable as market commentary or sales literature as distinct from research materials produced by Citi Research.
•The level and types of services provided by Citi Research analyst to clients may vary depending on various factors such as the client’s individual preferences as to the frequency and manner of receiving communications from analysts, the client’s risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with Citi and legal and regulatory constraints.

Disclosures

• For important disclosures regarding Citi Research, including disclosures with respect to any issuers, please refer to the Citi Research disclosure website at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures
• Where it is disclosed on a research report that Citigroup Global Markets Inc or its affiliates beneficially owns a specified percentage of any class of common equity securities of an issuer, this position reflects information available as of the prior business day. The computation of beneficial ownership of securities is based upon the same standards used to compute ownership for purposes of the reporting requirements under Section 13(d) of the US Securities Exchange Act of 1934.
• We regard ourselves to have a significant financial interest in the issuer if as of the last day of the month immediately preceding the date of publication of the relevant report (or the end of the second most recent month if the relevant report is less than 20 business days after the end of the most recent month) our Corporate and Investment Banking business has: (1) an aggregate net position (long or short) greater than USD25mm in debt securities, and credit derivatives referencing debt securities, issued or backed by the credit of the issuer; and/or (2) an aggregate exposure greater than USD25mm in loans and undrawn commitments to the issuer or to the group of companies with whom, via the issuer, we have a lending relationship.
• Where it is disclosed on a research report that one of the subject companies beneficially owns or controls a specified percentage of any class of common equity

securities of Citigroup Inc, this position reflects information as available at the end of the most recent quarter date. The information is sourced from Bloomberg who do not guarantee the data's accuracy or completeness.