Deutsche Bank
Markets Research

Rating
Hold

Asia
China

Consumer
Retail / Wholesale Trade

Company
Shanghai Jahwa

Reuters	Bloomberg	Exchange	Ticker
600315.SS	600315 CH	SHH	600315

Date
25 September 2017

Company Update

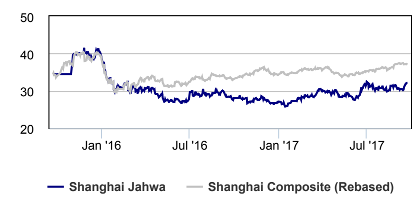
Price at 22 Sep 2017 (CNY)	32.17
Price target - 12mth (CNY)	30.04
52-week range (CNY)	32.44 - 25.79
Shanghai Composite	3,353

Valuation & Risks

Anne Ling
Research Analyst
+852-2203 6177

Louise Li
Research Associate
+852-2203 6152

Price/price relative



Performance (%)	1m	3m	12m
Absolute	2.8	4.8	12.8
Shanghai Composite	1.9	6.5	10.2

Source: Deutsche Bank

Key indicators (FY1)	
ROE (%)	7.7
Net debt/equity (%)	-6.9
Book value/share (CNY)	8.23
Price/book (x)	3.9
Net interest cover (x)	49.1
Operating profit margin (%)	9.0

Source: Deutsche Bank

Trading suspension related to potential acquisition; better visibility of Herborist

Event – Shanghai Jahwa suspended trading from 21 Sept on potential acquisition

Shanghai Jahwa announced on 21 Sept. 2017 to suspend trading for no more than five working days from the announced date. The company received a notice from its parent company, Shanghai Jahwa Group, that it was preparing a significant asset restructuring, which might involve Jahwa's related asset or equity acquisition. According to Jahwa, it will decide whether the related event can be defined as a significant asset restructuring and will announce the progress within five working days.

Deutsche Bank view

Trading in the shares of Jahwa remains suspended. Based on our understanding, there is no potential asset at the parent company level that can be injected into the listco. **We believe the market might relate its announcement with Ping An's recent acquisition of Tsumura,** which has a similar product positioning as Jahwa's Herborist.

For reference, ChinaPing An (2318.HK, Buy), the controlling shareholder of Jahwa, announced on 22 Sept. 2017 that it had reached a strategic agreement with Tsumura & Co. (4540.TT), the largest producer of Kampo extract intermediates and granular Kampo formulations in Japan. Tsumura issued 7.7m shares to Ping An at a consideration of RMB1.6bn. Once the acquisition is completed, Ping An will own 10% of the total shares and will become the largest shareholder of Tsumura. Ping An will set up a JV to further develop the Kampo extract and formulations business globally.

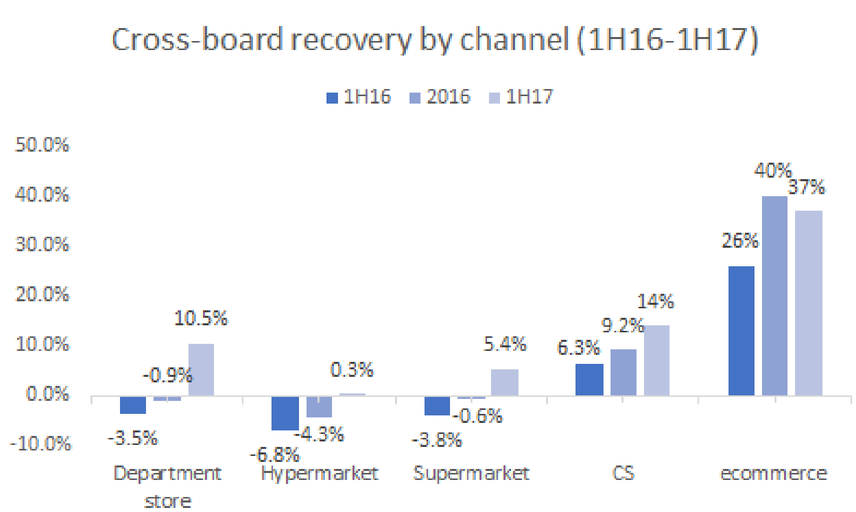
Below is our 2H17 operation update. While we believe Jahwa's outlook is improving with sales growth resuming for most core brands, its selling expense ratio is likely to remain high at 37% in 2H17E (1H – 49%). Thus, we believe it is fairly valued at 41x 2018E PE and 32x 2019E PE.

- **Long-term target – Self-owned brands to achieve RMB10bn sales.** To recap, Jahwa announced a five-year plan in 2013; i.e., it targets to achieve total sales of RMB12bn with RMB10bn coming from self-owned brands and RMB2bn from acquisitions by 2018. Due to the management change and market slowdown, the time frame for achieving the targets has been extended. For its RMB10bn sales target from self-owned brands, we now estimate RMB1.5-2bn will come from Herborist (vs. RMB3bn previously), RMB1.5-2bn from Liushen (RMB2bn previously) and RMB2bn from Tommee Tippee (RMB641m in 2017e), RMB1bn from GF, RMB500m from Maxam and ~RMB300m each from Giving, Dr.Yu, and HomeAegis.

- **Company restructuring to become brand-driven vs. channel-driven**. Jahwa has been actively undertaking internal business restructuring since the appointment of Ms Zhang Dongfang as the CEO in Nov. 2016. It restructured the original channel-driven organization structure to a brand-driven structure. It appointed Mr Yu Wei as Chief Marketing Officer in April 2017 and Mr Ye Weixin as Chief Sales Offer in Sept. 2017 to strengthen its brand and channel management, respectively.

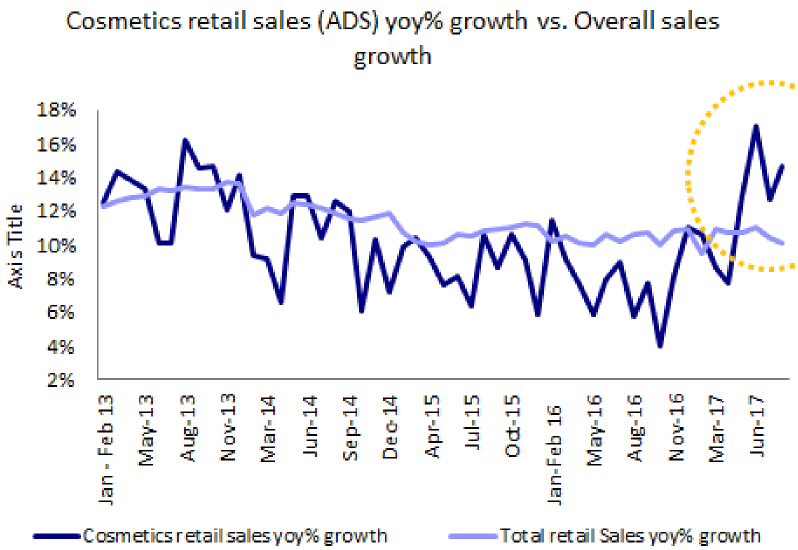
- **Herborist improvement in channels with more sophisticated sales staff** - The optimized organization structure looks to have helped the performance of various brands since the beginning of 2017. Herborist realized double-digit growth in 1H17, the first positive growth in department stores since 2015. During its 1H17 results meeting, management guided that it expected Herborist's growth in 2H17 to accelerate, backed up by new product launches and the new brand ambassador's endorsement. Its new products have been welcomed particularly in department stores ytd, benefiting from the consumer upgrade trend (premium segments - those with a tag price of RMB400 or above, for example, are doing well). The new channel strategy (i.e. directly involving the operation of wholesalers' front-line sales by offering training programs), which has been implemented since 2016, is also helping Herborist to better execute its marketing campaign and new product launches. Meanwhile, its other brands including Maxam and HomeAegis have also resumed positive growth this year vs. negative growth last year. The company is keeping its double-digit sales growth target (ex-Kao) on a full-year basis.

Figure 1: China cosmetic market has seen recovery across all channels since 2H16



Source: China Market Monitor, Nielson. Note: skin care and color cosmetics in department store, HBC in hypermarket and supermarket, skin care and HBC in CS, beauty, mother care, HBC in ecommerce

Figure 2: Cosmetics outperformed overall retail sales since May 2017



Source: NBS, note: ADS means above designated size.

From this report, we mark Louise Li as a secondary analyst for Shanghai Jahwa.

Forecasts and ratios

Year End Dec 31	2015A	2016A	2017E	2018E	2019E
Sales (CNYm)	5,792.6	5,266.3	6,278.2	6,928.9	7,615.7
EBITDA (CNYm)	788.8	372.8	719.0	894.8	1,057.0
Reported NPAT (CNYm)	2,210.0	216.0	414.3	527.4	678.5
Reported EPS FD(CNY)	3.28	0.32	0.62	0.78	1.01
DB EPS FD(CNY)	3.28	0.32	0.62	0.78	1.01
DB EPS growth (%)	145.5	-90.2	92.4	27.2	28.6
PER (x)	12.3	91.0	52.3	41.1	32.0
EV/EBITDA (x)	29.5	42.8	27.7	21.7	17.8
DPS (net) (CNY)	0.99	0.10	0.19	0.24	0.31
Yield (net) (%)	2.4	0.3	0.6	0.8	1.0

Source: Deutsche Bank estimates, company data

Model updated: 16 August 2017

Running the numbers

Asia

China

Retail / Wholesale Trade

Shanghai Jahwa

Reuters: 600315.SS Bloomberg: 600315 CH

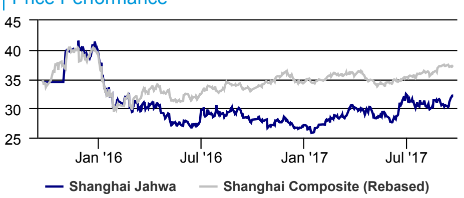
Hold

Price (22 Sep 17)	CNY 32.17
Target Price	CNY 30.04
52 Week range	CNY 25.79 - 32.44
Market cap (m)	CNYm 21,686 USDm 3,289.7

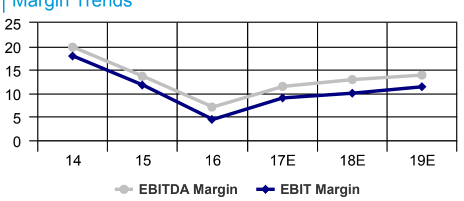
Company Profile

Listed in 2001 on Shanghai Stock Exchange, Shanghai Jahwa (SJ) is the leading cosmetic and household chemical company in China. Its brand names include Herborist, Liushen, Maxam, etc. Consumers in China, especially Shanghai are familiar with its toilet water product which has 70% market share.

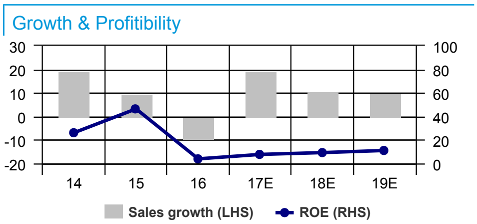
Price Performance



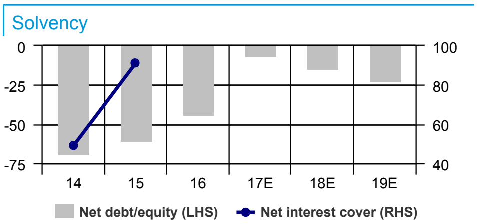
Margin Trends



Growth & Profitibility



Solvency



Anne Ling
+852 2203 6177 anne.ling@db.com

Fiscal year end 31-Dec	2014	2015	2016	2017E	2018E	2019E
Financial Summary						
DB EPS (CNY)	1.34	3.28	0.32	0.62	0.78	1.01
Reported EPS (CNY)	1.34	3.28	0.32	0.62	0.78	1.01
DPS (CNY)	0.61	0.99	0.10	0.19	0.24	0.31
BVPS (CNY)	5.7	8.5	7.8	8.2	8.8	9.5
Weighted average shares (m)	672	674	675	674	674	674
Average market cap (CNYm)	23,791	27,259	19,657	21,686	21,686	21,686
Enterprise value (CNYm)	20,373	23,301	15,965	19,897	19,397	18,795
Valuation Metrics						
P/E (DB) (x)	26.5	12.3	91.0	52.3	41.1	32.0
P/E (Reported) (x)	26.5	12.3	91.0	52.3	41.1	32.0
P/BV (x)	6.07	4.64	3.47	3.91	3.67	3.40
FCF Yield (%)	3.3	nm	1.0	nm	3.0	3.7
Dividend Yield (%)	1.7	2.4	0.3	0.6	0.8	1.0
EV/Sales (x)	3.9	4.0	3.0	3.2	2.8	2.5
EV/EBITDA (x)	19.5	29.5	42.8	27.7	21.7	17.8
EV/EBIT (x)	21.5	34.3	68.4	35.2	28.0	21.7
Income Statement (CNYm)						
Sales revenue	5,286	5,793	5,266	6,278	6,929	7,616
Gross profit	3,262	3,420	3,219	4,033	4,461	4,926
EBITDA	1,047	789	373	719	895	1,057
Depreciation	100	109	139	153	201	190
Amortisation	0	0	0	0	0	0
EBIT	947	680	234	566	694	867
Net interest income(expense)	25	49	69	-12	-8	9
Associates/affiliates	170	147	-12	10	11	12
Exceptionals/extraordinaries	0	1,735	0	0	0	0
Other pre-tax income/(expense)	0	0	0	0	0	0
Profit before tax	1,142	2,611	291	564	697	888
Income tax expense	235	401	75	150	170	210
Minorities	10	0	0	0	0	0
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	898	2,210	216	414	527	678
DB adjustments (including dilution)	0	0	0	2	2	0
DB Net profit	898	2,210	216	416	530	678
Cash Flow (CNYm)						
Cash flow from operations	886	-1,625	670	717	791	953
Net Capex	-99	-494	-481	-2,498	-139	-152
Free cash flow	787	-2,119	189	-1,782	653	801
Equity raised/(bought back)	0	2	-1	0	0	0
Dividends paid	-413	-680	-65	-131	-164	-211
Net inc/(dec) in borrowings	12	1	24	1,996	0	0
Other investing/financing cash flows	515	3,640	-1,294	0	0	0
Net cash flow	901	844	-1,147	83	489	590
Change in working capital	31	-530	668	76	54	57
Balance Sheet (CNYm)						
Cash and other liquid assets	2,634	3,477	2,330	2,414	2,902	3,492
Tangible fixed assets	414	646	690	3,035	2,973	2,936
Goodwill/intangible assets	0	0	0	0	0	0
Associates/investments	797	494	1,398	1,408	1,419	1,432
Other assets	1,689	3,542	3,213	3,473	3,640	3,816
Total assets	5,534	8,159	7,632	10,330	10,935	11,676
Interest bearing debt	12	13	37	2,033	2,033	2,033
Other liabilities	1,717	2,418	2,332	2,748	2,990	3,264
Total liabilities	1,728	2,431	2,368	4,781	5,023	5,297
Shareholders' equity	3,805	5,729	5,264	5,549	5,912	6,379
Minorities	0	0	0	0	0	0
Total shareholders' equity	3,805	5,729	5,264	5,549	5,912	6,379
Net debt	-2,622	-3,464	-2,294	-381	-870	-1,459
Key Company Metrics						
Sales growth (%)	19.4	9.6	-9.1	19.2	10.4	9.9
DB EPS growth (%)	12.2	145.5	-90.2	92.4	27.2	28.6
EBITDA Margin (%)	19.8	13.6	7.1	11.5	12.9	13.9
EBIT Margin (%)	17.9	11.7	4.4	9.0	10.0	11.4
Payout ratio (%)	45.7	30.2	31.2	31.2	31.2	31.2
ROE (%)	26.1	46.4	3.9	7.7	9.2	11.0
Capex/sales (%)	1.9	8.5	9.1	39.8	2.0	2.0
Capex/depreciation (x)	1.0	4.6	3.5	16.3	0.7	0.8
Net debt/equity (%)	-68.9	-60.5	-43.6	-6.9	-14.7	-22.9
Net interest cover (x)	nm	nm	nm	49.1	91.2	nm

Source: Company data, Deutsche Securities estimates

Investment Thesis

Outlook

2017 Outlook - resumption of sales growth for core brand with cost control. We expect NP of RMB414m for 2017 on 10% growth in self-owned brands to RMB4.9bn. We have incorporated TT into our model. We lower our 2017-19 NP by 5-14%. While we expect 2H sales growth to accelerate to 14%, higher opex cost will weight on margins.We maintain our rating at Hold, as we believe the benefit of this acquisition already factored in the current price.

Valuation

As most of Shanghai Jahwa's business comes from China, we use the China COE provided by Deutsche Bank's economics team. We use a beta of 0.7x, which is slightly higher than its average over the past two years. Thus, the company's COE is 7.82%. We use a long-term growth rate of 1.5% given the structural challenge among cosmetics brands. This is still within the 0-2% range that we apply to the consumer sector (as China is one of the key drivers in the cosmetics segment globally).

Risks

Downside industry risks: 1) slower sector growth, 2) significant competition from international/regional companies, 3) channel disruption and 4) regulatory issues that could affect the company's business strategy. Downside company risks: 1) failure to achieve double-digit organic growth in 2017, 2) failure to capture consumer demand and changes in preferences and 3) failure to secure growth of TT. Upside industry risks: 1) faster-than-expected industry recovery, and 2) competition from foreign players not being as significant as expected. Upside company risks: 1) acquisition of new brands, which is not in our forecasts; 2) better-than-expected new product launches and 3) strategic partners (e.g. industry players) taking a stake in the company.

Appendix 1

Important Disclosures

*Other information available upon request

Disclosure checklist

Company	Ticker	Recent price*	Disclosure
Shanghai Jahwa	600315.SS	32.17 (CNY) 22 Sep 2017	NA

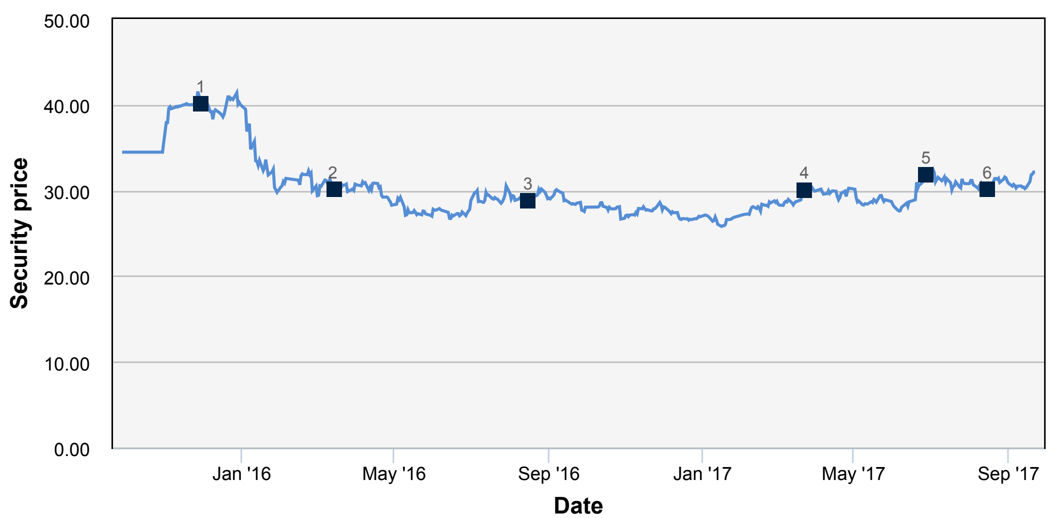
*Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg, and other vendors. Other information is sourced from Deutsche Bank, subject companies, and other sources. For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at http://gm.db.com/ger/disclosure/DisclosureDirectory.eqsr. Aside from within this report, important conflict disclosures can also be found at https://gm/db.com/equities under the "Disclosures Lookup" and "Legal" tabs. Investors are strongly encouraged to review this information before investing.

Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst(s) about the subject issuer and the securities of the issuer. In addition, the undersigned lead analyst(s) has not and will not receive any compensation for providing a specific recommendation or view in this report. Anne Ling

Historical recommendations and target price. Shanghai Jahwa (600315.SS)

(as of 09/22/2017)



Current Recommendations
- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

** Analyst is no longer at Deutsche Bank

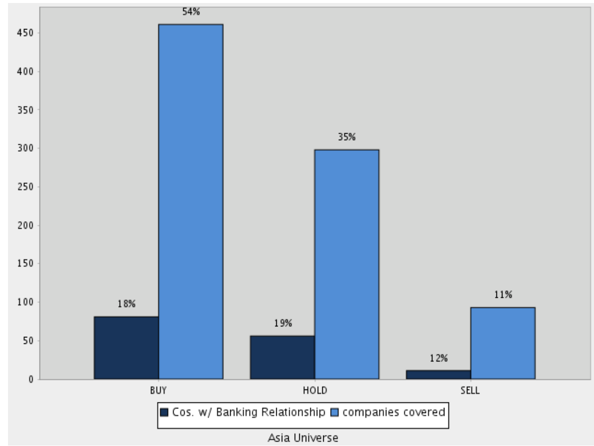
1.	11/30/2015	Hold, Target Price Change CNY 40,67 Anne Ling
2.	03/15/2016	Hold, Target Price Change CNY 25,76 Anne Ling
3.	08/16/2016	Hold, Target Price Change CNY 24,70 Anne Ling
4.	03/24/2017	Hold, Target Price Change CNY 31,60 Anne Ling
5.	06/28/2017	Hold, Target Price Change CNY 32,30 Anne Ling
6.	08/16/2017	Hold, Target Price Change CNY 30,04 Anne Ling

Equity Rating Key

Buy: Based on a current 12- month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus pro-jected dividend yield) , we recommend that investors buy the stock.
Sell: Based on a current 12-month view of total share-holder return, we recommend that investors sell the stock.
Hold: We take a neutral view on the stock 12-months out and, based on this time horizon, do not recommend either a Buy or Sell.

Newly issued research recommendations and target prices supersede previously published research.

Equity rating dispersion and banking relationships



Additional Information

The information and opinions in this report were prepared by Deutsche Bank AG or one of its affiliates (collectively "Deutsche Bank"). Though the information herein is believed to be reliable and has been obtained from public sources believed to be reliable, Deutsche Bank makes no representation as to its accuracy or completeness. Hyperlinks to third-party websites in this report are provided for reader convenience only. Deutsche Bank neither endorses the content nor is responsible for the accuracy or security controls of these websites.

If you use the services of Deutsche Bank in connection with a purchase or sale of a security that is discussed in this report, or is included or discussed in another communication (oral or written) from a Deutsche Bank analyst, Deutsche Bank may act as principal for its own account or as agent for another person.

Deutsche Bank may consider this report in deciding to trade as principal. It may also engage in transactions, for its own account or with customers, in a manner inconsistent with the views taken in this research report. Others within Deutsche Bank, including strategists, sales staff and other analysts, may take views that are inconsistent with those taken in this research report. Deutsche Bank issues a variety of research products, including fundamental analysis, equity-linked analysis, quantitative analysis and trade ideas. Recommendations contained in one type of communication may differ from recommendations contained in others, whether as a result of differing time horizons, methodologies or otherwise. Deutsche Bank and/or its affiliates may also be holding debt or equity securities of the issuers it writes on. Analysts are paid in part based on the profitability of Deutsche Bank AG and its affiliates, which includes investment banking, trading and principal trading revenues.

Opinions, estimates and projections constitute the current judgment of the author as of the date of this report. They do not necessarily reflect the opinions of Deutsche Bank and are subject to change without notice. Deutsche Bank provides liquidity for buyers and sellers of securities issued by the companies it covers. Deutsche Bank research analysts sometimes have shorter-term trade ideas that are consistent or inconsistent with Deutsche Bank's existing longer term ratings. Trade ideas for equities can be found at the SOLAR link at http://gm.db.com. A SOLAR idea represents a high conviction belief by an analyst that a stock will outperform or underperform the market and/or sector delineated over a time frame of no less than two weeks. In addition to SOLAR ideas, the analysts named in this report may from time to time discuss with our clients, Deutsche Bank salespersons and Deutsche Bank traders, trading strategies or ideas that reference catalysts or events that may have a near-term or medium-term impact on the market price of the securities discussed in this report, which impact may be directionally counter to the analysts' current 12-month view of total return or investment return as described herein. Deutsche Bank has no obligation to update, modify or amend this report or to otherwise notify a recipient thereof if any opinion, forecast or estimate contained herein changes or subsequently becomes inaccurate. Coverage and the frequency of changes in market conditions and in both general and company specific economic prospects make it difficult to update research at defined intervals. Updates are at the sole discretion of the coverage analyst concerned or of the Research Department Management and as such the majority of reports are published at irregular intervals. This report is provided for informational purposes only and does not take into account the particular investment objectives, financial situations, or needs of individual clients. It is not an offer or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Target prices are inherently imprecise and a product of the analyst ' s judgment. The financial instruments discussed in this report may not be suitable for all investors and investors must make their own informed investment decisions. Prices and availability of financial instruments are subject to change without notice and investment transactions can lead to losses as a result of price fluctuations and other factors. If a financial instrument is denominated in a currency other than an investor's currency, a change in exchange rates may adversely affect the investment. Past performance is not necessarily indicative of future results. Unless otherwise indicated, prices are current as of the end of the previous trading session, and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank, subject companies, and in some cases, other parties.

The Deutsche Bank Research Department is independent of other business areas divisions of the Bank. Details regarding our organizational arrangements and information barriers we have to prevent and avoid conflicts of interest with respect to our research is available on our website under Disclaimer found on the Legal tab.

Macroeconomic fluctuations often account for most of the risks associated with exposures to instruments that promise to pay fixed or variable interest rates. For an investor who is long fixed rate instruments (thus receiving these cash flows), increases in interest rates naturally lift the discount factors applied to the expected cash flows and thus cause a loss. The longer the maturity of a certain cash flow and the higher the move in the discount factor, the higher will be the loss. Upside surprises in inflation, fiscal funding needs, and FX depreciation rates are among the most common adverse macroeconomic shocks to receivers. But counterparty exposure, issuer creditworthiness, client segmentation, regulation (including changes in assets holding limits for different types of investors), changes in tax policies, currency convertibility (which may constrain currency conversion, repatriation of profits and/or the liquidation of positions), and settlement issues related to local clearing houses are also important risk factors to be considered. The sensitivity of fixed income instruments to macroeconomic shocks may be mitigated by indexing the contracted cash flows to inflation, to FX depreciation, or to specified interest rates – these are common in emerging markets. It is important to note that the index fixings may -- by construction -- lag or mis-measure the actual move in the underlying variables they are intended to track. The choice of the proper fixing (or metric) is particularly important in swaps markets, where floating coupon rates (i.e., coupons indexed to a typically short-dated interest rate reference index) are exchanged for fixed coupons. It is also important to acknowledge that funding in a currency that differs from the currency in which coupons are denominated carries FX risk. Naturally, options on swaps (swaptions) also bear the risks typical to options in addition to the risks related to rates movements.

Derivative transactions involve numerous risks including, among others, market, counterparty default and illiquidity risk. The appropriateness or otherwise of these products for use by investors is dependent on the investors' own circumstances including their tax position, their regulatory environment and the nature of their other assets and liabilities, and as such, investors should take expert legal and financial advice before entering into any transaction similar to or inspired by the contents of this publication. The risk of loss in futures trading and options, foreign or domestic, can be substantial. As a result of the high degree of leverage obtainable in futures and options trading, losses may be incurred that are greater than the amount of funds initially deposited. Trading in options involves risk and is not suitable for all investors. Prior to buying or selling an option investors must review the "Characteristics and Risks of Standardized Options", at http://www.optionsclearing.com/about/publications/character-risks.jsp. If you are unable to access the website please contact your Deutsche Bank representative for a copy of this important document.

Participants in foreign exchange transactions may incur risks arising from several factors, including the following: (i) exchange rates can be volatile and are subject to large fluctuations; (ii) the value of currencies may be affected by numerous market factors, including world and national economic, political and regulatory events, events in equity and debt markets and changes in interest rates; and (iii) currencies may be subject to devaluation or government imposed exchange controls which could affect the value of the currency. Investors in securities such as ADRs, whose values are affected by the currency of an underlying security, effectively assume currency risk.

Unless governing law provides otherwise, all transactions should be executed through the Deutsche Bank entity in the investor's home jurisdiction. Aside from within this report, important conflict disclosures can also be found at https://gm.db.com/equities under the "Disclosures Lookup" and "Legal" tabs. Investors are strongly encouraged to review this information before investing.

Deutsche Bank (which includes Deutsche Bank AG, its branches and all affiliated companies) is not acting as a financial adviser, consultant or fiduciary to you, any of your agents (collectively, "You" or "Your") with respect to any information provided in the materials attached hereto. Deutsche Bank does not provide investment, legal, tax or accounting advice, Deutsche Bank is not acting as Your impartial adviser, and does not express any opinion or recommendation whatsoever as to any strategies, products or any other information presented in the materials. Information contained herein is being provided solely on the basis that the recipient will make an independent assessment of the merits of any investment decision, and it does not constitute a recommendation of, or express an opinion on, any product or service or any trading strategy.

The information presented is general in nature and is not directed to retirement accounts or any specific person or account type, and is therefore provided to You on the express basis that it is not advice, and You may not rely upon it in making Your decision. The information we provide is being directed only to persons we believe to be financially sophisticated, who are capable of evaluating investment risks independently, both in general and with regard to particular transactions and investment strategies, and who understand that Deutsche Bank has financial interests in the offering of its products and services. If this is not the case, or if You are an IRA or other retail investor receiving this directly from us, we ask that you inform us immediately.

United States: Approved and/or distributed by Deutsche Bank Securities Incorporated, a member of FINRA, NFA and SIPC. Analysts located outside of the United States are employed by non-US affiliates that are not subject to FINRA regulations.

Germany: Approved and/or distributed by Deutsche Bank AG, a joint stock corporation with limited liability incorporated in the Federal Republic of Germany with its principal office in Frankfurt am Main. Deutsche Bank AG is authorized under German Banking Law and is subject to supervision by the European Central Bank and by BaFin, Germany ' s Federal Financial Supervisory Authority.

United Kingdom: Approved and/or distributed by Deutsche Bank AG acting through its London Branch at Winchester House, 1 Great Winchester Street, London EC2N 2DB. Deutsche Bank AG in the United Kingdom is authorised by the Prudential Regulation Authority and is subject to limited regulation by the Prudential Regulation Authority and Financial Conduct Authority. Details about the extent of our authorisation and regulation are available on request.

Hong Kong: Distributed by Deutsche Bank AG, Hong Kong Branch or Deutsche Securities Asia Limited.

India: Prepared by Deutsche Equities India Pvt Ltd, which is registered by the Securities and Exchange Board of India (SEBI) as a stock broker. Research Analyst SEBI Registration Number is INH000001741. DEIPL may have received administrative warnings from the SEBI for breaches of Indian regulations.

Japan: Approved and/or distributed by Deutsche Securities Inc.(DSI). Registration number - Registered as a financial instruments dealer by the Head of the Kanto Local Finance Bureau (Kinsho) No. 117. Member of associations: JSDA, Type II Financial Instruments Firms Association and The Financial Futures Association of Japan. Commissions and risks involved in stock transactions - for stock transactions, we charge stock commissions and consumption tax by multiplying the transaction amount by the commission rate agreed with each customer. Stock transactions can lead to losses as a result of share price fluctuations and other factors. Transactions in foreign stocks can lead to additional losses stemming from foreign exchange fluctuations. We may also charge commissions and fees for certain categories of investment advice, products and services. Recommended investment strategies, products and services carry the risk of losses to principal and other losses as a result of changes in market and/or economic trends, and/or fluctuations in market value. Before deciding on the purchase of financial products and/or services, customers should carefully read the relevant disclosures, prospectuses and other documentation. "Moody's", "Standard & Poor's", and "Fitch" mentioned in this report are not registered credit rating agencies in Japan unless Japan or "Nippon" is specifically designated in the name of the entity. Reports on Japanese listed companies not written by analysts of DSI are written by Deutsche Bank Group's analysts with the coverage companies specified by DSI. Some of the foreign securities stated on this report are not disclosed according to the Financial Instruments and Exchange Law of Japan. Target prices set by Deutsche Bank's equity analysts are based on a 12-month forecast period.

Korea: Distributed by Deutsche Securities Korea Co.

South Africa: Deutsche Bank AG Johannesburg is incorporated in the Federal Republic of Germany (Branch Register Number in South Africa: 1998/003298/10).

Singapore: by Deutsche Bank AG, Singapore Branch or Deutsche Securities Asia Limited, Singapore Branch (One Raffles Quay #18-00 South Tower Singapore 048583, +65 6423 8001), which may be contacted in respect of any matters arising from, or in connection with, this report. Where this report is issued or promulgated in Singapore to a person who is not an accredited investor, expert investor or institutional investor (as defined in the applicable Singapore laws and regulations), they accept legal responsibility to such person for its contents.

Taiwan: Information on securities/investments that trade in Taiwan is for your reference only. Readers should independently evaluate investment risks and are solely responsible for their investment decisions. Deutsche Bank research may not be distributed to the Taiwan public media or quoted or used by the Taiwan public media without written consent. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation to trade in such securities/instruments. Deutsche Securities Asia Limited, Taipei Branch may not execute transactions for clients in these securities/instruments.

Qatar: Deutsche Bank AG in the Qatar Financial Centre (registered no. 00032) is regulated by the Qatar Financial Centre Regulatory Authority. Deutsche Bank AG - QFC Branch may only undertake the financial services activities that fall within the scope of its existing QFCRA license. Principal place of business in the QFC: Qatar Financial Centre, Tower, West Bay, Level 5, PO Box 14928, Doha, Qatar. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Business Customers, as defined by the Qatar Financial Centre Regulatory Authority.

Russia: This information, interpretation and opinions submitted herein are not in the context of, and do not constitute, any appraisal or evaluation activity requiring a license in the Russian Federation.

Kingdom of Saudi Arabia: Deutsche Securities Saudi Arabia LLC Company, (registered no. 07073-37) is regulated by the Capital Market Authority. Deutsche Securities Saudi Arabia may only undertake the financial services activities that fall within the scope of its existing CMA license. Principal place of business in Saudi Arabia: King Fahad Road, Al Olaya District, P.O. Box 301809, Faisaliah Tower - 17th Floor, 11372 Riyadh, Saudi Arabia.

United Arab Emirates: Deutsche Bank AG in the Dubai International Financial Centre (registered no. 00045) is regulated by the Dubai Financial Services Authority. Deutsche Bank AG - DIFC Branch may only undertake the financial services activities that fall within the scope of its existing DFSA license. Principal place of business in the DIFC: Dubai International Financial Centre, The Gate Village, Building 5, PO Box 504902, Dubai, U.A.E. This information has been distributed by Deutsche Bank AG. Related financial products or services are only available to Professional Clients, as defined by the Dubai Financial Services Authority.

Australia: Retail clients should obtain a copy of a Product Disclosure Statement (PDS) relating to any financial product referred to in this report and consider the PDS before making any decision about whether to acquire the product. Please refer to Australian specific research disclosures and related information at https://australia.db.com/australia/content/research-information.html

Australia and New Zealand: This research is intended only for "wholesale clients" within the meaning of the Australian Corporations Act and New Zealand Financial Advisors Act respectively.

Additional information relative to securities, other financial products or issuers discussed in this report is available upon request. This report may not be reproduced, distributed or published without Deutsche Bank's prior written consent.

David Folkerts-Landau
Group Chief Economist and Global Head of Research

Raj Hindocha
Global Chief Operating Officer
Research

Michael Spencer
Head of APAC Research
Global Head of Economics

Steve Pollard
Head of Americas Research
Global Head of Equity Research

Anthony Klarman
Global Head of
Debt Research

Paul Reynolds
Head of EMEA
Equity Research

Dave Clark
Head of APAC
Equity Research

Pam Finelli
Global Head of
Equity Derivatives Research

Andreas Neubauer
Head of Research - Germany

Spyros Mesomeris
Global Head of Quantitative
and QIS Research

International locations

Deutsche Bank AG
Deutsche Bank Place
Level 16
Corner of Hunter & Phillip Streets
Sydney, NSW 2000
Australia
Tel: (61) 2 8258 1234

Deutsche Bank AG
Mainzer Landstrasse 11-17
60329 Frankfurt am Main
Germany
Tel: (49) 69 910 00

Deutsche Bank AG
Filiale Hongkong
International Commerce Centre,
1 Austin Road West,Kowloon,
Hong Kong
Tel: (852) 2203 8888

Deutsche Securities Inc.
2-11-1 Nagatacho
Sanno Park Tower
Chiyoda-ku, Tokyo 100-6171
Japan
Tel: (81) 3 5156 6770

Deutsche Bank AG London
1 Great Winchester Street
London EC2N 2EQ
United Kingdom
Tel: (44) 20 7545 8000

Deutsche Bank Securities Inc.
60 Wall Street
New York, NY 10005
United States of America
Tel: (1) 212 250 2500