



Asia
China
Resources
Metals & Mining

Industry
Jiangxi Copper

Date
6 March 2018

**Recommendation
Change**

Remain positive on copper; upgrade to Buy on undemanding valuation

Results likely missed consensus on bad debts but copper outlook is positive and valuation is undemanding; upgrading to Buy

Jiangxi Copper has historically offered the most direct exposure to the copper price, both in terms of operations and share price correlation but the latter relationship has faded in the past seven months. Our review highlights weaker disclosure and the incidence of bad debts as probable factors and we look for greater clarity with the full results release in late March. We have revised our projections to reflect latest price moves, the inclusion of preferential tax treatment and our bullish copper outlook and see 20% upside to our fair value and upgrade the shares to BUY. We retain our copper sector preference for China Moly and Zijin and our Sell rating on JXC-A on valuation grounds.

Outlook for copper still positive; earnings growth despite potential bad debts

From an industry perspective, we remain positive on copper and expected growing deficits towards 2020, supported by slow supply growth globally, potential disruptions, and higher-than-consensus expectations for Chinese copper demand (~4% pa) over the next several years. Based on our latest copper price forecast of \$7,175/t and \$7,500/t in 2018 and 2019, we raise 2018/2019 earnings to RMB3.2b and RMB4.4b, suggesting 76%yoy growth in 2018 and 37%yoy in 2019, respectively.

DCF mine of life; risks

Our target price of HKD14.2 is based on a life-of-mine DCF methodology, 8.4% WACC (3.9% Rf, 5.6% MRP and Beta of 1.1). With 20% potential upside, we upgrade JXC-H to Buy. The stock is trading at 10.5x/7.7x 2018/2019 DBE EPS, 20% and 30%+ lower than its global peers. We however maintain a Sell rating on JXC-A on demanding valuation. Risks for JXC- H shares include a weaker copper price, higher unit cost of production and potential bad debts. For JXC-A risks: higher copper price due to copper mine disruptions, lower production cost if the company takes further initiatives on cost cut and lower bad debt.

Sharon Ding
Research Analyst
+852-2203-5716

James Kan
Research Analyst
+852-2203 6146

Key Changes		
Company	Target Price	Rating
0358.HK	12.70 to 14.20	Hold to Buy

Source: Deutsche Bank

Companies featured				
	2016A	2017E	2018E	
Jiangxi Copper (0358.HK),HKD12.00				Buy
P/E (x)	69.1	18.6	10.5	
EV/EBITDA (x)	5.5	4.6	4.6	
Price/book (x)	0.7	0.7	0.7	

Source: Deutsche Bank



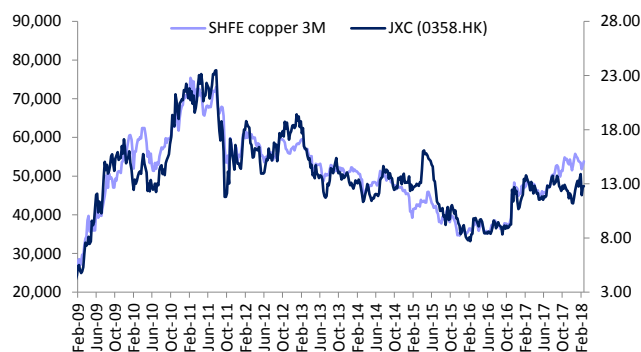
Laggard in the copper space

As a pure copper play of 210kt mined copper, Jiangxi Copper's share price had been highly correlated to copper price historically. However, it has underperformed the copper market price since 2H2017, not to mention its peers in the HKex, including MMG, Zijin and China Moly (Figure 1 and Figure 2).

There are several reasons for this: first, investors generally don't like JXC's reporting quality, especially when MMG's flagship project Las Bambas with 400ktpa+ mined copper came into commission in 2016; second, JXC booked large amounts of bad debt in 2016 and in 2017 as well, which worries investors; third, the board secretary had retired earlier but the company has yet to assign people to this role, causing limited investor communications.

With our positive view on the copper outlook, we believe JXC's share price will eventually catch up. We expect earnings to grow 76% and 37% in 2018 and 2019, respectively, even as we budget RMB1bn for bad debts in 2018.

Figure 1: JXC-H has underperformed the copper price since late 2017



Source: Deutsche Bank, Bloomberg Finance LP

Figure 2: Relative stock price performance – JXC vs. peers

		YTD	TTM	from 2016
Jiangxi Copper	0358.HK	-7%	-8%	31%
Zijin Mining	2899.HK	11%	31%	78%
China Molybdenum	3993.HK	20%	124%	265%
MMG	1208.HK	27%	81%	335%
Average of peers		19%	79%	226%

Source: Deutsche Bank, Bloomberg Finance LP

Revise TP to HKD14.2 and upgrade to Buy on undemanding valuation

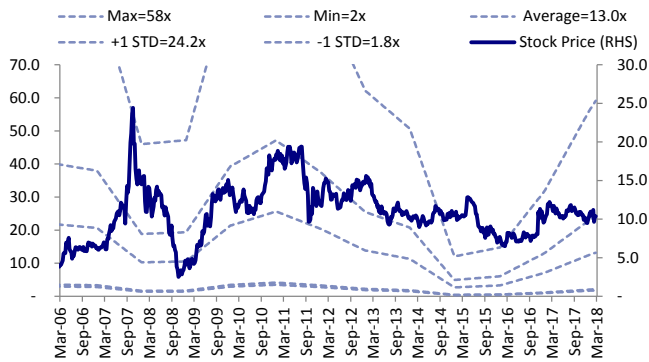
We revise up Jiangxi Copper's earnings estimates and our target price, thanks to a higher copper price assumption (although this is partly offset by a lower USDCNY) and a preferential tax rate of 15% (vs. 25% previously).

Our target price of HKD14.2 is based on a life-of-mine DCF methodology, 8.4% WACC (3.9% Rf, 5.6% MRP and Beta of 1.1). With 20% potential upside, we upgrade JXC-H to Buy. The stock is trading at 10.5x/7.7x 2018/2019 DBE EPS, 20% and 30%+ lower than its global peers, and also lower than its long-term historical average PE of 13.5x. From a PB perspective, JXC is trading at 0.68x 2018 DBE BVPS, almost 40% lower than its average PBx of 1.1x. We however maintain a Sell rating on JXC-A on demanding valuation.

Risks include a stronger or weaker copper price, and potential bad debts.

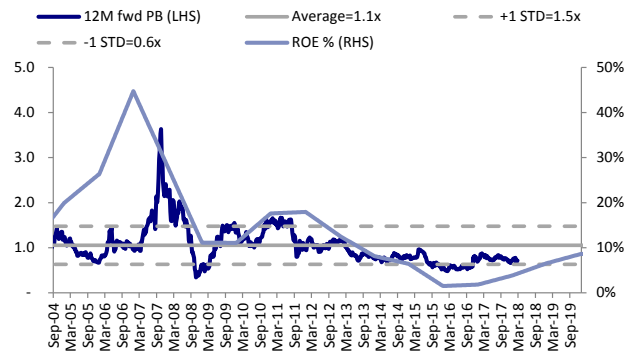


Figure 3: Jiangxi Copper 12-month forward PE band



Source: Deutsche Bank, Bloomberg Finance LP

Figure 4: Jiangxi Copper 12-month forward PB vs. ROE



Source: Deutsche Bank, Bloomberg Finance LP

Figure 5: Global copper comps

Company	Ticker	Rating	Listing Curr	Price local (list curr)	Target Price	M. cap (US\$m)	PE (x)		PB (x)		EPS Growth % (rec)		ROE %		EV/EBITDA	
							2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
Jiangxi Copper	0358.HK	Buy	HKD	12.0	14.2	7,980	10.5	7.7	0.7	0.7	76.2	37.1	6.5	8.6	4.7	4.4
Copper																
China Molybdenum	3993.HK	Buy	HKD	6.2	6.4	28,208	15.6	13.6	2.6	2.3	112.7	14.4	17.4	18.0	6.0	5.3
Zijin Mining	2899.HK	Buy	HKD	3.5	3.6	15,169	15.5	12.3	2.1	1.9	5.1	26.3	13.9	16.5	7.6	6.5
Glencore	GLEN.L	Buy	GBP	365.8	450	72,933	11.5	12.7	1.4	1.3	7.2	(9.3)	12.3	10.7	4.8	4.6
Vale SA-SP	VALE.N	Hold	USD	13.4	13	70,759	9.4	10.3	1.4	1.3	34.6	(9.5)	16.0	13.2	4.7	5.0
Southern Copper	SCCO.N	NR	USD	53.0	NA	40,932	21.4	NA	3.6	NA	(9.7)	NA	17.5	NA	11.2	NA
Anglo American PLC	AAL.L	Hold	GBP	1706.8	1550	30,492	9.5	12.6	1.2	1.2	(0.4)	(24.8)	13.6	9.8	4.5	5.3
Freeport-McMoRan	FCX.N	Sell	USD	18.3	15.5	26,525	8.0	10.7	2.4	2.1	95.4	(25.3)	34.9	20.7	4.3	5.1
Antofagasta PLC	ANTO.L	Sell	GBP	853.8	900	11,636	14.1	11.2	1.5	1.3	4.3	25.8	10.7	12.5	4.6	3.9
First Quantum Miner	FM.TO	Buy	CAD	20.4	23	10,891	11.3	6.4	1.1	0.9	NA	75.3	10.1	15.5	7.0	4.5
OZ Minerals	OZL.AX	Hold	AUD	9.5	9.1	2,197	16.6	21.1	1.1	1.1	(25.3)	(21.6)	6.7	5.1	6.4	7.3
Average							13.3	12.3	1.8	1.5	24.9	5.7	15.3	13.5	6.1	5.3

Source: Deutsche Bank, Bloomberg Finance LP, Prices as of Mar 5



Model updated: 02 March 2018

Running the numbers

Asia

China

Metals & Mining

Jiangxi Copper

Reuters: 0358.HK

Bloomberg: 358 HK

Buy

Price (2 Mar 18) HKD 12.00

Target Price HKD 14.20

52 Week range HKD 11.16 - 14.26

Market cap (m) HKDm 41,553
USDm 5,307.3

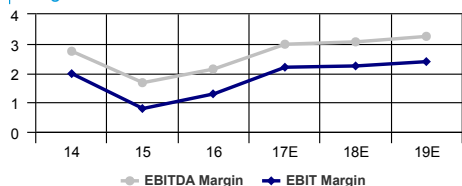
Company Profile

Jiangxi Copper is the largest integrated copper company in China. The company's main scope of operations includes mining, milling, smelting, and processing of non-ferrous metal and rare metals. Jiangxi Copper has a large reserve/resource base, which accounts for around one-third of China's copper reserves/resources. The company owns six mines, one smelter, and six copper product processing plants.

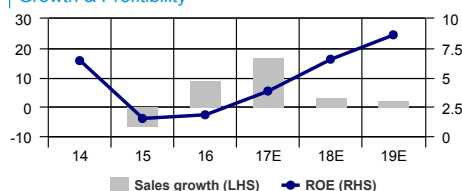
Price Performance



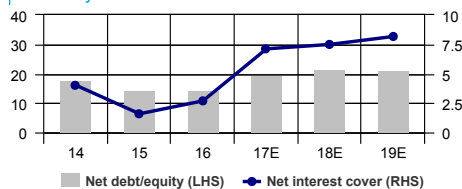
Margin Trends



Growth & Profitability



Solvency



Sharon Ding

+852 2203 5716

sharon.ding@db.com

Fiscal year end 31-Dec

Financial Summary

	2014	2015	2016	2017E	2018E	2019E
DB EPS (CNY)	0.71	0.07	0.11	0.52	0.92	1.27
Reported EPS (CNY)	0.84	0.20	0.24	0.52	0.92	1.27
DPS (CNY)	0.20	0.10	0.15	0.27	0.48	0.66
BVPS (CNY)	13.2	13.3	13.5	13.9	14.4	15.0
Weighted average shares (m)	3,463	3,463	3,463	3,463	3,463	3,463
Average market cap (CNYm)	35,027	33,281	27,507	33,704	33,704	33,704
Enterprise value (CNYm)	32,807	30,812	23,522	32,588	34,183	34,660

Valuation Metrics

P/E (DB) (x)	14.3	134.9	69.1	18.6	10.5	7.7
P/E (Reported) (x)	12.1	48.3	32.7	18.6	10.5	7.7
P/BV (x)	0.78	0.56	0.69	0.70	0.68	0.65
FCF Yield (%)	nm	2.6	6.6	nm	2.7	7.9
Dividend Yield (%)	2.0	1.0	1.9	2.8	5.0	6.8
EV/Sales (x)	0.2	0.2	0.1	0.1	0.1	0.1
EV/EBITDA (x)	6.0	9.9	5.5	4.6	4.6	4.3
EV/EBIT (x)	8.4	21.0	9.0	6.3	6.3	5.8

Income Statement (CNYm)

Sales revenue	198,264	185,228	201,728	235,318	242,956	248,519
Gross profit	7,233	5,405	8,270	9,638	10,355	11,058
EBITDA	5,437	3,098	4,314	7,015	7,440	8,076
Depreciation	1,462	1,567	1,641	1,774	1,923	2,066
Amortisation	49	63	66	68	70	72
EBIT	3,925	1,467	2,607	5,173	5,447	5,939
Net interest income/(expense)	-977	-923	-969	-727	-727	-727
Associates/affiliates	24	-282	-51	0	0	0
Exceptionals/extraordinary	0	0	0	0	0	0
Other pre-tax income/(expense)	941	955	496	-2,218	-793	170
Profit before tax	3,912	1,216	2,084	2,229	3,927	5,382
Income tax expense	1,013	478	1,089	357	628	861
Minorities	0	49	154	56	99	136
Other post-tax income/(expense)	0	0	0	0	0	0
Net profit	2,899	690	841	1,816	3,200	4,385
DB adjustments (including dilution)	-443	-443	-443	0	0	0
DB Net profit	2,456	247	398	1,816	3,200	4,385

Cash Flow (CNYm)

Cash flow from operations	1,740	2,268	4,326	2,863	5,401	7,174
Net Capex	-2,269	-1,410	-2,500	-4,000	-4,500	-4,500
Free cash flow	-530	858	1,826	-1,137	901	2,674
Equity raised/(bought back)	0	0	0	0	0	0
Dividends paid	-1,806	-715	-519	-948	-1,670	-2,289
Net inc/(dec) in borrowings	5,743	-4,520	-8,733	500	0	0
Other investing/financing cash flows	-3,679	1,444	-1,370	-727	-727	-727
Net cash flow	-272	-2,933	-8,796	-2,312	-1,496	-341
Change in working capital	-3,471	-807	-993	-851	109	516

Balance Sheet (CNYm)

Cash and other liquid assets	19,394	16,705	8,260	5,949	4,453	4,111
Tangible fixed assets	21,276	21,977	21,449	25,046	27,623	30,058
Goodwill/intangible assets	830	1,144	1,218	730	696	662
Associates/investments	11,975	11,298	13,133	13,133	13,133	13,133
Other assets	41,841	38,627	43,324	44,306	45,009	45,868
Total assets	95,316	89,751	87,384	89,164	90,914	93,832
Interest bearing debt	27,857	23,607	15,184	15,684	15,684	15,684
Other liabilities	20,439	18,315	23,377	23,169	23,121	23,638
Total liabilities	48,296	41,922	38,561	38,853	38,805	39,322
Shareholders' equity	45,728	45,902	46,598	48,030	49,729	51,995
Minorities	1,292	1,927	2,225	2,281	2,380	2,516
Total shareholders' equity	47,020	47,829	48,823	50,311	52,109	54,511
Net debt	8,462	6,902	6,924	9,735	11,231	11,573

Key Company Metrics

Sales growth (%)	nm	-6.6	8.9	16.7	3.2	2.3
DB EPS growth (%)	na	-90.0	61.3	356.3	76.2	37.1
EBITDA Margin (%)	2.7	1.7	2.1	3.0	3.1	3.2
EBIT Margin (%)	2.0	0.8	1.3	2.2	2.2	2.4
Payout ratio (%)	23.9	50.2	61.8	52.2	52.2	52.2
ROE (%)	6.4	1.5	1.8	3.8	6.5	8.6
Capex/sales (%)	1.2	0.8	1.2	1.7	1.9	1.8
Capex/depreciation (x)	1.6	0.9	1.5	2.2	2.3	2.1
Net debt/equity (%)	18.0	14.4	14.2	19.4	21.6	21.2
Net interest cover (x)	4.0	1.6	2.7	7.1	7.5	8.2

Source: Company data, Deutsche Securities estimates



Appendix 1

Important Disclosures

*Other information available upon request

Disclosure checklist			
Company	Ticker	Recent price*	Disclosure
Jiangxi Copper	600362.SS	17.98 (CNY) 5 Mar 2018	14
Jiangxi Copper	0358.HK	11.82 (HKD) 5 Mar 2018	6, 9, 13, 14

*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.

Important Disclosures Required by U.S. Regulators

Disclosures marked with an asterisk may also be required by at least one jurisdiction in addition to the United States. See Important Disclosures Required by Non-US Regulators and Explanatory Notes.

6. Deutsche Bank and/or its affiliate(s) owns one percent or more of a class of common equity securities of this company calculated under computational methods required by US law.
14. Deutsche Bank and/or its affiliate(s) has received non-investment banking related compensation from this company within the past year.

Important Disclosures Required by Non-U.S. Regulators

Disclosures marked with an asterisk may also be required by at least one jurisdiction in addition to the United States. See Important Disclosures Required by Non-US Regulators and Explanatory Notes.

6. Deutsche Bank and/or its affiliate(s) owns one percent or more of a class of common equity securities of this company calculated under computational methods required by US law.
9. Deutsche Bank and/or its affiliate(s) owns one percent or more of any class of common equity securities of this company calculated under computational methods required by India law.
13. As of the end of the preceding week, Deutsche Bank and/or its affiliate(s) owns one percent or more of a class of common equity securities of this company.

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>

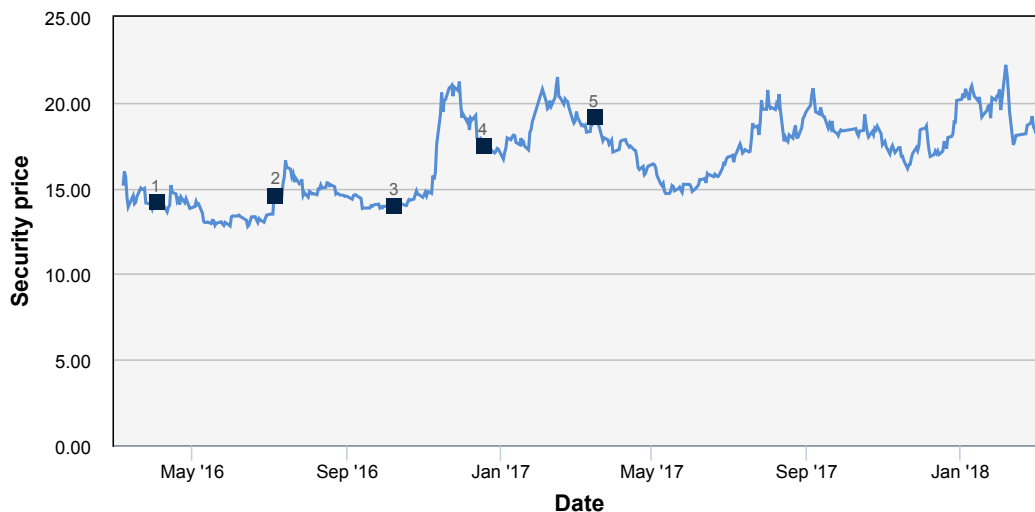
Analyst Certification

The views expressed in this report accurately reflect the personal views of the undersigned lead analyst about the subject issuers and the securities of those issuers. In addition, the undersigned lead analyst has not and will not receive any compensation for providing a specific recommendation or view in this report. Sharon Ding



Historical recommendations and target price. Jiangxi Copper (600362.SS)

(as of 03/02/2018)



Current Recommendations

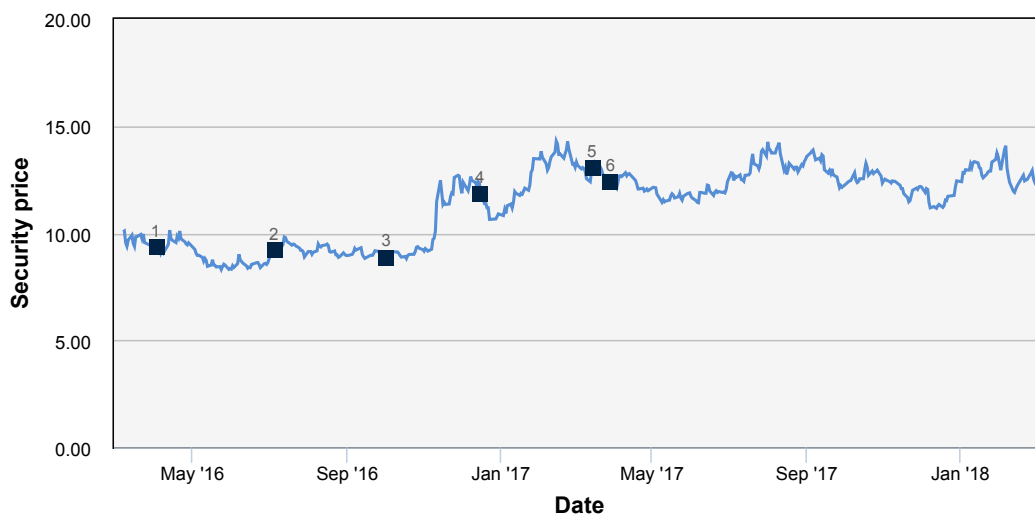
- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

** Analyst is no longer at Deutsche Bank

1.	04/03/2016	Sell, Target Price Change CNY 7,40 James Kan	4.	12/19/2016	Sell, Target Price Change CNY 9,40 James Kan
2.	07/07/2016	Sell, Target Price Change CNY 7,50 James Kan	5.	03/17/2017	Sell, Target Price Change CNY 11,50 James Kan
3.	10/09/2016	Sell, Target Price Change CNY 8,00 James Kan			

Historical recommendations and target price. Jiangxi Copper (0358.HK)

(as of 03/02/2018)



Current Recommendations

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

** Analyst is no longer at Deutsche Bank

1.	04/03/2016	Hold, Target Price Change HKD 8,90 Sharon Ding	4.	12/16/2016	Hold, Target Price Change HKD 10,60 Sharon Ding
2.	07/06/2016	Hold, Target Price Change HKD 8,80 Sharon Ding	5.	03/16/2017	Hold, Target Price Change HKD 13,00 Sharon Ding
3.	10/03/2016	Hold, Target Price Change HKD 9,30 James Kan	6.	03/30/2017	Hold, Target Price Change HKD 12,70 Sharon Ding



Equity Rating Key

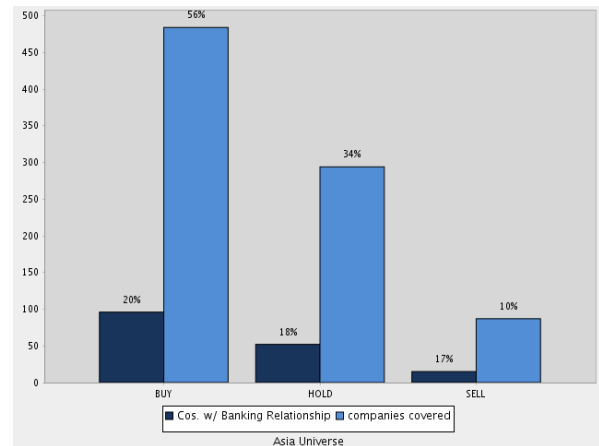
Buy: Based on a current 12- month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus pro-jected dividend yield) , we recommend that investors buy the stock.

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 those 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, perspectives 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 may be 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 a specified sector over a time frame of no less than two weeks and no more than six months. In addition to SOLAR ideas, analysts may occasionally discuss with our clients, and with Deutsche Bank salespersons and 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 an opinion, forecast or estimate changes or 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 or of the Research Department Management, and 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. Performance calculations exclude transaction costs, unless otherwise indicated. 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 also sourced from Deutsche Bank, subject companies, and other parties.

The Deutsche Bank Research Department is independent of other business divisions of the Bank. Details regarding organizational arrangements and information barriers we have established to prevent and avoid conflicts of interest with respect to our research are 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 liquidation of positions), and settlement issues related to local clearing houses are also important risk factors. 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. 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. Funding in a currency that differs from the currency in which coupons are denominated carries FX risk. Options on swaps (swaptions) the risks typical to options in addition to the risks related to rates movements.

Derivative transactions involve numerous risks including market, counterparty default and illiquidity risk. The appropriateness of these products for use by investors depends on the investors' own circumstances, including their tax position, their regulatory environment and the nature of their other assets and liabilities; 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 – up to theoretically unlimited losses. 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: (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.

Deutsche Bank is not acting as a financial adviser, consultant or fiduciary to you or any of your agents with respect to any information provided in this report. Deutsche Bank does not provide investment, legal, tax or accounting advice, and is not acting as an impartial adviser. Information contained herein is being provided on the basis that the recipient will make an independent assessment of the merits of any investment decision, and is not meant for retirement accounts or for any specific person or account type. The information we provide is 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 or your agent are an IRA or other retail investor receiving this directly from us, we ask that you inform us immediately.

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 risk and conflict disclosures can also be found at <https://gm.db.com> on each company ' s research page and under the "Disclosures Lookup" and "Legal" tabs. Investors are strongly encouraged to review this information before investing.

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, including those regarding contacts with issuer companies.



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 (save that any research relating to futures contracts within the meaning of the Hong Kong Securities and Futures Ordinance Cap. 571 shall be distributed solely by Deutsche Securities Asia Limited). The provisions set out above in the "Additional Information" section shall apply to the fullest extent permissible by local laws and regulations, including without limitation the Code of Conduct for Persons Licensed or Registered with the Securities and Futures Commission. .

India: Prepared by Deutsche Equities India Private Limited (DEIPL) having CIN: U65990MH2002PTC137431 and registered office at 14th Floor, The Capital, C-70, G Block, Bandra Kurla Complex Mumbai (India) 400051. Tel: + 91 22 7180 4444. It is registered by the Securities and Exchange Board of India (SEBI) as a Stock broker bearing registration nos.: NSE (Capital Market Segment) - INB231196834, NSE (F&O Segment) INF231196834, NSE (Currency Derivatives Segment) INE231196834, BSE (Capital Market Segment) INB011196830; Merchant Banker bearing SEBI Registration no.: INM000010833 and Research Analyst bearing SEBI Registration no.: INH000001741. DEIPL may have received administrative warnings from the SEBI for breaches of Indian regulations. The transmission of research through DEIPL is Deutsche Bank's determination and will not make a recipient a client of DEIPL. Deutsche Bank and/or its affiliate(s) may have debt holdings or positions in the subject company. With regard to information on associates, please refer to the "Shareholdings" section in the Annual Report at: <https://www.db.com/ir/en/annual-reports.htm>.

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: This report is issued 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 by Deutsche Bank 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 undertake only the financial services activities that fall within the scope of its existing QFCRA license. Its 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 only to Business Customers, as defined by the Qatar Financial Centre Regulatory Authority.

Russia: The 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 undertake only the financial services activities that fall within the scope of its existing CMA license. Its 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 undertake only the financial services activities that fall within the scope of its existing DFSA license. Its 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 available only to Professional Clients, as defined by the Dubai Financial Services Authority.

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. Please refer to Australia-specific research disclosures and related information at <https://australia.db.com/australia/content/research-information.html> Where research refers to any particular financial product recipients of the research should consider any product disclosure statement, prospectus or other applicable disclosure document before making any decision about whether to acquire the product.

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. Copyright © 2018 Deutsche Bank AG



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 Production 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
