

| | |
|------------------------|----------------|
| Rating | NEUTRAL |
| Price (26 Feb 18, €) | 2.64 |
| Target price (€) | 2.85 |
| Market Cap (€ m) | 11,091.3 |
| Enterprise value (€ m) | 18,168.1 |

Target price is for 12 months.

Research Analysts

Paul Sidney
 44 20 7888 6015
 paul.sidney@credit-suisse.com

KPN (KPN.AS)

RESEARCH BULLETIN

ACM proposes regulation of VodafoneZiggo—our thoughts & EC readacross

The Neths Telecom Regulator (ACM) has published its draft Neths market analysis on wholesale access today which takes into account new analysis of the Neths Telecom market.

What is the ACM proposing?

The ACM has concluded that both KPN and VodafoneZiggo have collective Significant Market Power (SMP) and that, as a result, both need to be regulated. The ACM adds that neither KPN nor VodafoneZiggo have individual SMP. Specifically:

- For KPN, the ACM proposes to continue to regulate KPN's unbundled access copper and fibre products (virtual or otherwise) by providing access to KPN's network to alternative providers on reasonable terms.
- For VodafoneZiggo, the ACM is proposing for VodafoneZiggo to offer access to its cable network on reasonable terms. The ACM is not proposing, at this stage, to impose wholesale tariffs on VodafoneZiggo but if VodafoneZiggo cannot reach agreement with alternative operators it would then, in our view, look to intervene. VodafoneZiggo will have three months to realize this access under the proposal.
- The ACM does not propose to allow KPN or VodafoneZiggo regulated access to each other's networks,
- The ACM also commented *"For new types of access such as VULA over FttH or wholesale central cable access, ACM gives KPN and VodafoneZiggo the freedom to negotiate access conditions in consultation with alternative providers. Should market participants not come to an agreement, ACM will have the ability to set access conditions and prices."*

KPN separately offers to extend and expand its commercial offer

In a separate press release this morning KPN has offered to both expand and extend its commercial access offer to alternative Neths telecom providers. KPN's offer builds on the existing commercial agreement offer made to alternative providers back in 2015 (for a period of 7 years). These voluntary wholesale agreements with service providers already in place since 2015 offer access to KPN's FttC/VDSL network based on Virtual Unbundled Local Access (VULA). KPN has offered to extend these offers for a period of 7 years from today. Furthermore, KPN has offered to extend its VULA offer to its FttH network as well.

DISCLOSURE APPENDIX AT THE BACK OF THIS REPORT CONTAINS IMPORTANT DISCLOSURES, ANALYST CERTIFICATIONS, LEGAL ENTITY DISCLOSURE AND THE STATUS OF NON-US ANALYSTS. US Disclosure: Credit Suisse does and seeks to do business with companies covered in its 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. Investors should consider this report as only a single factor in making their investment decision.

Neths regulatory timeline

- Stakeholders have six weeks (starting today) to submit their opinions about the ACM proposal.
- ACM will then submit a revised draft decision to the European Commission.
- EC will then have 4 weeks to give its view on the proposal when it would have the option of vetoing the ACM proposal
- In the event of the EC not vetoing the ACM proposal then potential legal challenges to the proposal from KPN and/or VodafoneZiggo could follow this decision, in our view
- ACM aiming for the decision to come into force in the summer of 2018 but, in our view, this looks ambitious

Credit Suisse comments

In its market analysis the ACM has established that "KPN and VodafoneZiggo have the incentive and the opportunity to collude tacitly" and, as a result, both KPN and VodafoneZiggo have SMP and should therefore be regulated. We are not particularly surprised that the ACM is proposing to regulate cable in today's review (see [A day on the road with KPN](#), dated 7 December 2017) with the Dutch regulator having attempted to regulate cable in previous years and is viewed, along with Belgium's BiPT, as one of the more hawkish European regulators.

Any future regulation of VodafoneZiggo would, in our view, increase the risk of cable access in Neths becoming cheaper than KPN's own comparable fixed access rates, which could put pressure on KPN to reduce its own fixed commercial wholesale rates over time and add pressure to fixed wholesale revenues. The negotiating position of the Neths fixed resellers would improve materially with another network access option (i.e. cable). In 2017 KPN reported €556m in fixed wholesale revenues (although we note that this includes revenue other than access e.g. mobile backhaul revenue).

However, whether this ACM proposal will finally be adopted in its current form is unclear with the EC having the option to veto (once the ACM has submitted its final proposal to the EC) and potential legal challenges testing the robustness of the ACM's analysis, particularly that the ACM sees enough evidence that both KPN and VodafoneZiggo have an incentive to collude under anti-competition laws.

We believe the Neths operators would also likely consider a legal injunction to stop the regulatory process while the wider appeals against the ACM's market analysis were ongoing. This could potentially delay the whole process well into 2019, in our view.

Readacross for Europe

If, as we expect, the ACM submits its proposal to the EC in its current format we believe this will be prove a major test case for the EC in terms of what the EC thinks is required to prove the "joint dominance" concept and, ultimately, how much the EC believes in incentivizing network investment.

The EC's reaction to the ACM proposal is likely come at around the same time as the EC looks to publish its own regulatory review (The European Communication Code) with some regulatory hawks within the European Parliament still pushing for more intrusive cable regulation. The EC's reaction to the Dutch proposal is likely to be of particular interest to other member states, especially those that want the option to go down the route of pursuing more intrusive cable regulation (e.g. Belgium and the UK).

In recent research ([Bits and bytes: EC not giving up on its deregulatory plan](#), dated 6 February 2018) published after we attended the ETNO-MLEX regulatory conference in Brussels, we were encouraged to find that the

European Commission has not given up on its original plan to relax network access regulation in return for co-investment in very high speed (VHC) networks such as fibre.

Indeed the consensus at the conference seemingly felt that regulation of tight oligopolies (such as cable) was now unlikely to be strengthened much and that deregulation in return for co-investment in VHC networks was back as the main thrust of the review of Access regulation.

Completion of the regulatory review still has some way to go so we should not exclude a rearguard action by the regulatory hawks (a minority of member states and the left-wing voting bloc in the European Parliament) but the risk of more intrusive cable (or mobile) regulation appeared to us to have reduced somewhat after attending the ETNO-MLEX regulatory conference earlier this month.

In subsequent research ([Feedback from fibre conference](#), dated 19 February) we note that, according to speakers from the EC and the German and Irish regulators, "The joint dominance issue is overblown". Interestingly, the UK regulator Occam was the one regulator present that seemed more keen on the joint dominance tool ("we are not as sanguine as our peers").

In conclusion, as we await the draft of the EC's regulatory review, the EC's reaction to the Neths ACM proposal could provide an early strong indication of the direction the EC is headed and whether political pressure from the European Parliament is affecting the EC's original plan to relax network access regulation in return for co-investment in very high speed (VHC) networks such as fibre.

Companies Mentioned (Price as of 26-Feb-2018)

KPN (KPN.AS, €2.64, NEUTRAL, TP €2.85)

Liberty Global (LBTYA.OQ, \$32.28)

Vodafone Group (VOD.L, 205.55p)

Disclosure Appendix

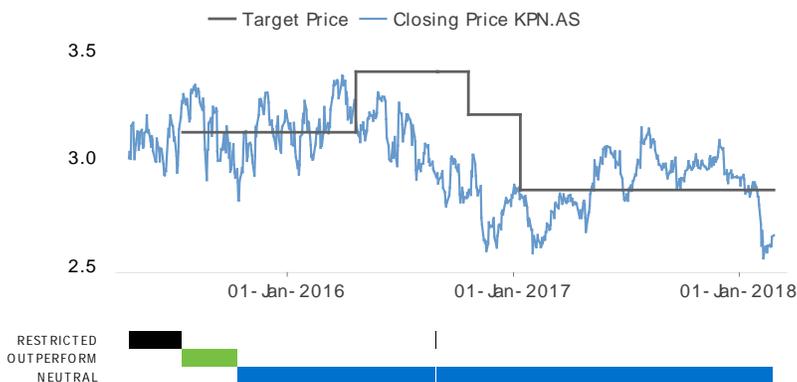
Analyst Certification

I, Paul Sidney, certify that (1) the views expressed in this report accurately reflect my personal views about all of the subject companies and securities and (2) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this report.

3-Year Price and Rating History for KPN (KPN.AS)

| KPN.AS | Closing Price | Target Price | |
|-----------|---------------|--------------|--------|
| Date | (€) | (€) | Rating |
| 20-Apr-15 | 3.00 | | R |
| 16-Jul-15 | 3.25 | 3.12 | O |
| 13-Oct-15 | 2.89 | 3.12 | N |
| 21-Apr-16 | 3.17 | 3.40 | |
| 30-Aug-16 | 2.91 | | R |
| 31-Aug-16 | 2.91 | 3.40 | N |
| 20-Oct-16 | 2.84 | 3.20 | |
| 12-Jan-17 | 2.81 | 2.85 | |

* Asterisk signifies initiation or assumption of coverage.



3-Year Price and Rating History for Liberty Global (LBTYA.OQ)

| LBTYA.OQ | Closing Price | Target Price | |
|-----------|---------------|--------------|--------|
| Date | (US\$) | (US\$) | Rating |
| 11-Jun-15 | 46.04 | 49.46 | O |
| 19-Oct-15 | 39.94 | 43.62 | |
| 16-Nov-15 | 38.47 | | R |
| 03-Feb-16 | 30.11 | 43.62 | O |
| 07-Oct-16 | 32.47 | 42.00 | * |
| 24-May-17 | 30.53 | 30.00 | N |
| 11-Jan-18 | 36.59 | 40.00 | |
| 05-Feb-18 | 36.66 | 44.00 | |

* Asterisk signifies initiation or assumption of coverage.



3-Year Price and Rating History for Vodafone Group (VOD.L)

| VOD.L | Closing Price | Target Price | |
|-----------|---------------|--------------|--------|
| Date | (p) | (p) | Rating |
| 11-Jun-15 | 237.00 | 250.00 | O |
| 19-Oct-15 | 208.40 | 230.00 | |
| 25-Apr-16 | 227.35 | 240.00 | |
| 10-Jan-17 | 210.25 | 225.00 | |
| 22-May-17 | 224.35 | 240.00 | |
| 07-Aug-17 | 226.60 | 250.00 | |

* Asterisk signifies initiation or assumption of coverage.



The analyst(s) responsible for preparing this research report received Compensation that is based upon various factors including Credit Suisse's total revenues, a portion of which are generated by Credit Suisse's investment banking activities

As of December 10, 2012 Analysts' stock rating are defined as follows:

Outperform (O) : The stock's total return is expected to outperform the relevant benchmark* over the next 12 months.

Neutral (N) : The stock's total return is expected to be in line with the relevant benchmark* over the next 12 months.

Underperform (U) : The stock's total return is expected to underperform the relevant benchmark* over the next 12 months.

**Relevant benchmark by region: As of 10th December 2012, Japanese ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. As of 2nd October 2012, U.S. and Canadian as well as European ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. For Latin American and Asia stocks (excluding Japan and Australia), ratings are based on a stock's total return relative to the average total return of the relevant country or regional benchmark (India - S&P BSE Sensex Index); prior to 2nd October 2012 U.S. and Canadian ratings were based on (1) a stock's absolute total return potential to its current share price and (2) the relative attractiveness of a stock's total return potential within an analyst's coverage universe. For Australian and New Zealand stocks, the expected total return (ETR) calculation includes 12-month rolling dividend yield. An Outperform rating is assigned where an ETR is greater than or equal to 7.5%; Underperform where an ETR less than or equal to 5%. A Neutral may be assigned where the ETR is between -5% and 15%. The overlapping rating range allows analysts to assign a rating that puts ETR in the context of associated risks. Prior to 18 May 2015, ETR ranges for Outperform and Underperform ratings did not overlap with Neutral thresholds between 15% and 7.5%, which was in operation from 7 July 2011.*

Restricted (R) : In certain circumstances, Credit Suisse policy and/or applicable law and regulations preclude certain types of communications, including an investment recommendation, during the course of Credit Suisse's engagement in an investment banking transaction and in certain other circumstances.

Not Rated (NR) : Credit Suisse Equity Research does not have an investment rating or view on the stock or any other securities related to the company at this time.

Not Covered (NC) : Credit Suisse Equity Research does not provide ongoing coverage of the company or offer an investment rating or investment view on the equity security of the company or related products.

Volatility Indicator [V] : A stock is defined as volatile if the stock price has moved up or down by 20% or more in a month in at least 8 of the past 24 months or the analyst expects significant volatility going forward.

Analysts' sector weightings are distinct from analysts' stock ratings and are based on the analyst's expectations for the fundamentals and/or valuation of the sector* relative to the group's historic fundamentals and/or valuation:

Overweight : The analyst's expectation for the sector's fundamentals and/or valuation is favorable over the next 12 months.

Market Weight : The analyst's expectation for the sector's fundamentals and/or valuation is neutral over the next 12 months.

Underweight : The analyst's expectation for the sector's fundamentals and/or valuation is cautious over the next 12 months.

**An analyst's coverage sector consists of all companies covered by the analyst within the relevant sector. An analyst may cover multiple sectors.*

Credit Suisse's distribution of stock ratings (and banking clients) is:

Global Ratings Distribution

| Rating | Versus universe (%) | Of which banking clients (%) |
|--------------------|---------------------|------------------------------|
| Outperform/Buy* | 47% | (62% banking clients) |
| Neutral/Hold* | 38% | (56% banking clients) |
| Underperform/Sell* | 13% | (53% banking clients) |
| Restricted | 2% | |

**For purposes of the NYSE and FINRA ratings distribution disclosure requirements, our stock ratings of Outperform, Neutral, and Underperform most closely correspond to Buy, Hold, and Sell, respectively; however, the meanings are not the same, as our stock ratings are determined on a relative basis. (Please refer to definitions above.) An investor's decision to buy or sell a security should be based on investment objectives, current holdings, and other individual factors.*

Important Global Disclosures

Credit Suisse's research reports are made available to clients through our proprietary research portal on CS PLUS. Credit Suisse research products may also be made available through third-party vendors or alternate electronic means as a convenience. Certain research products are only made available through CS PLUS. The services provided by Credit Suisse's analysts to clients may depend on a specific client's preferences regarding the frequency and manner of receiving communications, the client's risk profile and investment, the size and scope of the overall client relationship with the Firm, as well as legal and regulatory constraints. To access all of Credit Suisse's research that you are entitled to receive in the most timely manner, please contact your sales representative or go to <https://plus.credit-suisse.com>.

Credit Suisse's policy is to update research reports as it deems appropriate, based on developments with the subject company, the sector or the market that may have a material impact on the research views or opinions stated herein.

Credit Suisse's policy is only to publish investment research that is impartial, independent, clear, fair and not misleading. For more detail please refer to Credit Suisse's Policies for Managing Conflicts of Interest in connection with Investment Research: <https://www.credit-suisse.com/sites/disclaimers-ib/en/managing-conflicts.html>.

Credit Suisse does not provide any tax advice. Any statement regarding any US federal tax is not intended or written to be used, and cannot be used, by any taxpayer for the purposes of avoiding any penalties.

Credit Suisse has decided not to enter into business relationships with companies that Credit Suisse has determined to be involved in the development, manufacture, or acquisition of anti-personnel mines and cluster munitions. For Credit Suisse's position on the issue, please see <https://www.credit-suisse.com/media/assets/corporate/docs/about-us/responsibility/banking/policy-summaries-en.pdf>.

Target Price and Rating

Valuation Methodology and Risks: (12 months) for KPN (KPN.AS)

Method: We set our target price of €2.85 as the mid point of (1) applying a sector 2018E FCF yield of 6.8% to KPN's proportionate FCF (including proportionate FCF from its 9.5% stake in TEFD and (2) 6.3x 2018E EBITDA, consistent with flat EBITDA. We rate KPN Neutral relative to

the European Telecoms Sector given we forecast KPN EBITDA to be broadly stable yoy going forward - this is consistent with our rating methodology across our coverage universe.

Risk: The main risk to both our target price and Neutral rating is Tele2 or T-Mobile Netherlands acting irrationally on price and causing Netherlands consumer mobile contract ARPU's to decline even more than we are conservatively forecasting. Conversely if Tele2 or T-Mobile Netherlands has no impact in the Dutch mobile market over the next 2 years then our view of flat EBITDA could potentially prove conservative.

Please refer to the firm's disclosure website at <https://rave.credit-suisse.com/disclosures/view/selectArchive> for the definitions of abbreviations typically used in the target price method and risk sections.

See the Companies Mentioned section for full company names

Credit Suisse currently has, or had within the past 12 months, the following as investment banking client(s): KPN.AS, VOD.L, LBTYA.OQ

Credit Suisse provided investment banking services to the subject company (KPN.AS, LBTYA.OQ) within the past 12 months.

Credit Suisse currently has, or had within the past 12 months, the following issuer(s) as client(s), and the services provided were non-investment banking, securities-related: KPN.AS, LBTYA.OQ

Credit Suisse has managed or co-managed a public offering of securities for the subject company (LBTYA.OQ) within the past 12 months.

Within the past 12 months, Credit Suisse has received compensation for investment banking services from the following issuer(s): KPN.AS, LBTYA.OQ

Credit Suisse expects to receive or intends to seek investment banking related compensation from the subject company (KPN.AS, VOD.L, LBTYA.OQ) within the next 3 months.

Within the last 12 months, Credit Suisse has received compensation for non-investment banking services or products from the following issuer(s): KPN.AS, LBTYA.OQ

Credit Suisse or a member of the Credit Suisse Group is a market maker or liquidity provider in the securities of the following subject issuer(s): KPN.AS, LBTYA.OQ, VOD.L

A member of the Credit Suisse Group is party to an agreement with, or may have provided services set out in sections A and B of Annex I of Directive 2014/65/EU of the European Parliament and Council ("MIFID Services") to, the subject issuer (KPN.AS, VOD.L, LBTYA.OQ) within the past 12 months.

Credit Suisse has a material conflict of interest with the subject company (LBTYA.OQ). Credit Suisse International is acting as financial advisor to Liberty Global plc (LBTYA.OQ) in relation to the announced acquisition of Multimedia Polska S.A. through its subsidiary UPC Poland.

For date and time of production, dissemination and history of recommendation for the subject company(ies) featured in this report, disseminated within the past 12 months, please refer to the link: <https://rave.credit-suisse.com/disclosures/view/report?i=350021&v=-3wbjx9n0le6wx90rru4xq0czm>.

Important Regional Disclosures

Singapore recipients should contact Credit Suisse AG, Singapore Branch for any matters arising from this research report.

The analyst(s) involved in the preparation of this report may participate in events hosted by the subject company, including site visits. Credit Suisse does not accept or permit analysts to accept payment or reimbursement for travel expenses associated with these events.

Restrictions on certain Canadian securities are indicated by the following abbreviations: NVS--Non-Voting shares; RVS--Restricted Voting Shares; SVS--Subordinate Voting Shares.

Individuals receiving this report from a Canadian investment dealer that is not affiliated with Credit Suisse should be advised that this report may not contain regulatory disclosures the non-affiliated Canadian investment dealer would be required to make if this were its own report.

For Credit Suisse Securities (Canada), Inc.'s policies and procedures regarding the dissemination of equity research, please visit <https://www.credit-suisse.com/sites/disclaimers-ib/en/canada-research-policy.html>.

Principal is not guaranteed in the case of equities because equity prices are variable.

Commission is the commission rate or the amount agreed with a customer when setting up an account or at any time after that.

This research report is authored by:

Credit Suisse International.....Paul Sidney

To the extent this is a report authored in whole or in part by a non-U.S. analyst and is made available in the U.S., the following are important disclosures regarding any non-U.S. analyst contributors: The non-U.S. research analysts listed below (if any) are not registered/qualified as research analysts with FINRA. The non-U.S. research analysts listed below may not be associated persons of CSSU and therefore may not be subject to the FINRA 2241 and NYSE Rule 472 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

Credit Suisse International.....Paul Sidney

Important disclosures regarding companies that are the subject of this report are available by calling +1 (877) 291-2683. The same important disclosures, with the exception of valuation methodology and risk discussions, are also available on Credit Suisse's disclosure website at <https://rave.credit-suisse.com/disclosures>. For valuation methodology and risks associated with any recommendation, price target, or rating referenced in this report, please refer to the disclosures section of the most recent report regarding the subject company.

This report is produced by subsidiaries and affiliates of Credit Suisse operating under its Global Markets Division. For more information on our structure, please use the following link: <https://www.credit-suisse.com/who-we-are>. This report may contain material that is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or which would subject Credit Suisse or its affiliates ("CS") to any registration or licensing requirement within such jurisdiction. All material presented in this report, unless specifically indicated otherwise, is under copyright to CS. None of the material, nor its content, nor any copy of it, may be altered in any way, transmitted to, copied or distributed to any other party, without the prior express written permission of CS. All trademarks, service marks and logos used in this report are trademarks or service marks of CS or its affiliates. The information, tools and material presented in this report are provided to you for information purposes only and are not to be used or considered as an offer or the solicitation of an offer to sell or to buy or subscribe for securities or other financial instruments. CS may not have taken any steps to ensure that the securities referred to in this report are suitable for any particular investor. CS will not treat recipients of this report as its customers by virtue of their receiving this report. The investments and services contained or referred to in this report may not be suitable for you and it is recommended that you consult an independent investment advisor if you are in doubt about such investments or investment services. Nothing in this report constitutes investment, legal, accounting or tax advice, or a representation that any investment or strategy is suitable or appropriate to your individual circumstances, or otherwise constitutes a personal recommendation to you. CS does not advise on the tax consequences of investments and you are advised to contact an independent tax adviser. Please note in particular that the bases and levels of taxation may change. Information and opinions presented in this report have been obtained or derived from sources believed by CS to be reliable, but CS makes no representation as to their accuracy or completeness. CS accepts no liability for loss arising from the use of the material presented in this report, except that this exclusion of liability does not apply to the extent that such liability arises under specific statutes or regulations applicable to CS. This report is not to be relied upon in substitution for the exercise of independent judgment. CS may have issued, and may in the future issue, other communications that are inconsistent with, and reach different conclusions from, the information presented in this report. Those communications reflect the different assumptions, views and analytical methods of the analysts who prepared them and CS is under no obligation to ensure that such other communications are brought to the attention of any recipient of this report. Some investments referred to in this report will be offered solely by a single entity and in the case of some investments solely by CS, or an associate of CS or CS may be the only market maker in such investments. Past performance should not be taken as an indication or guarantee of future performance, and no representation or warranty, express or implied, is made regarding future performance. Information, opinions and estimates contained in this report reflect a judgment at its original date of publication by CS and are subject to change without notice. The price, value of and income from any of the securities or financial instruments mentioned in this report can fall as well as rise. The value of securities and financial instruments is subject to exchange rate fluctuation that may have a positive or adverse effect on the price or income of such securities or financial instruments. Investors in securities such as ADRs, the values of which are influenced by currency volatility, effectively assume this risk. Structured securities are complex instruments, typically involve a high degree of risk and are intended for sale only to sophisticated investors who are capable of understanding and assuming the risks involved. The market value of any structured security may be affected by changes in economic, financial and political factors (including, but not limited to, spot and forward interest and exchange rates), time to maturity, market conditions and volatility, and the credit quality of any issuer or reference issuer. Any investor interested in purchasing a structured product should conduct their own investigation and analysis of the product and consult with their own professional advisers as to the risks involved in making such a purchase. Some investments discussed in this report may have a high level of volatility. High volatility investments may experience sudden and large falls in their value causing losses when that investment is realised. Those losses may equal your original investment. Indeed, in the case of some investments the potential losses may exceed the amount of initial investment and, in such circumstances, you may be required to pay more money to support those losses. Income yields from investments may fluctuate and, in consequence, initial capital paid to make the investment may be used as part of that income yield. Some investments may not be readily realisable and it may be difficult to sell or realise those investments, similarly it may prove difficult for you to obtain reliable information about the value, or risks, to which such an investment is exposed. This report may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the report refers to website material of CS, CS has not reviewed any such site and takes no responsibility for the content contained therein. Such address or hyperlink (including addresses or hyperlinks to CS's own website material) is provided solely for your convenience and information and the content of any such website does not in any way form part of this document. Accessing such website or following such link through this report or CS's website shall be at your own risk.

This report is issued and distributed in European Union (except Switzerland): by Credit Suisse Securities (Europe) Limited, One Cabot Square, London E14 4QJ, England, which is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority; Germany: Credit Suisse (Deutschland) Aktiengesellschaft regulated by the Bundesanstalt fuer Finanzdienstleistungsaufsicht ("BaFin"); United States and Canada: Credit Suisse Securities (USA) LLC; Switzerland: Credit Suisse AG; Brazil: Banco de Investimentos Credit Suisse (Brasil) S.A or its affiliates; Mexico: Banco Credit Suisse (México), S.A. (transactions related to the securities mentioned in this report will only be effected in compliance with applicable regulation); Japan: by Credit Suisse Securities (Japan) Limited, Financial Instruments Firm, Director-General of Kanto Local Finance Bureau (Kisho) No. 66, a member of Japan Securities Dealers Association, The Financial Futures Association of Japan, Japan Investment Advisers Association, Type II Financial Instruments Firms Association; Hong Kong: Credit Suisse (Hong Kong) Limited; Australia: Credit Suisse Equities (Australia) Limited; Thailand: Credit Suisse Securities (Thailand) Limited, regulated by the Office of the Securities and Exchange Commission, Thailand, having registered address at 990 Abdulrahman Place, 27th Floor, Unit 2701, Rama IV Road, Silom, Bangkok, Bangkok10500, Thailand, Tel. +66 2614 6000; Malaysia: Credit Suisse Securities (Malaysia) Sdn Bhd; Singapore: Credit Suisse AG, Singapore Branch; India: Credit Suisse Securities (India) Private Limited (CIN no.U67120MH1996PTC104392) regulated by the Securities and Exchange Board of India as Research Analyst (registration no. INH 000001030) and as Stock Broker (registration no. INB230970637; INF230970637; INF010970631; INF010970631), having registered address at 9th Floor, Cejaj House, Dr.A.B. Road, Worli, Mumbai - 18, India, T- +91-22 6777 3777; South Korea: Credit Suisse Securities (Europe) Limited, Seoul Branch; Taiwan: Credit Suisse AG Taipei Securities Branch; Indonesia: PT Credit Suisse Sekuritas Indonesia; Philippines: Credit Suisse Securities (Philippines) Inc., and elsewhere in the world by the relevant authorised affiliate of the above.

Additional Regional Disclaimers

Hong Kong: Credit Suisse (Hong Kong) Limited ("CSHK") is licensed and regulated by the Securities and Futures Commission of Hong Kong under the laws of Hong Kong, which differ from Australian laws. CSHK does not hold an Australian financial services licence (AFSL) and is exempt from the requirement to hold an AFSL under the Corporations Act 2001 (the Act) under Class Order 03/1103 published by the ASIC in respect of financial services provided to Australian wholesale clients (within the meaning of section 761G of the Act). Research on Taiwanese securities produced by Credit Suisse AG, Taipei Securities Branch has been prepared by a registered Senior Business Person.

Australia (to the extent services are offered in Australia): Credit Suisse Securities (Europe) Limited ("CSSEL") and Credit Suisse International ("CSI") are authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority ("FCA") and the Prudential Regulation Authority under UK laws, which differ from Australian Laws. CSSEL and CSI do not hold an Australian Financial Services Licence ("AFSL") and are exempt from the requirement to hold an AFSL under the Corporations Act (Ch) 2001 ("Corporations Act") under Class Order 03/1099 published by the Australian Securities and Investments Commission ("ASIC"), in respect of the financial services provided to Australian wholesale clients (within the meaning of section 761G of the Corporations Act). This material is not for distribution to retail clients and is directed exclusively at Credit Suisse's professional clients and eligible counterparties as defined by the FCA, and wholesale clients as defined under section 761G of the Corporations Act. Credit Suisse (Hong Kong) Limited ("CSHK") is licensed and regulated by the Securities and Futures Commission of Hong Kong under the laws of Hong Kong, which differ from Australian laws. CSHK does not hold an AFSL and is exempt from the requirement to hold an AFSL under the Corporations Act under Class Order 03/1103 published by the ASIC in respect of financial services provided to Australian wholesale clients (within the meaning of section 761G of the Corporations Act). Credit Suisse Securities (USA) LLC (CSSU) and Credit Suisse Asset Management LLC (CSAM LLC) are licensed and regulated by the Securities Exchange Commission of the United States under the laws of the United States, which differ from Australian laws. CSSU and CSAM LLC do not hold an AFSL and is exempt from the requirement to hold an AFSL under the Corporations Act under Class Order 03/1100 published by the ASIC in respect of financial services provided to Australian wholesale clients (within the meaning of section 761G of the Corporations Act).

Malaysia: Research provided to residents of Malaysia is authorised by the Head of Research for Credit Suisse Securities (Malaysia) Sdn Bhd, to whom they should direct any queries on +603 2723 2020.

Singapore: This report has been prepared and issued for distribution in Singapore to institutional investors, accredited investors and expert investors (each as defined under the Financial Advisers Regulations) only, and is also distributed by Credit Suisse AG, Singapore Branch to overseas investors (as defined under the Financial Advisers Regulations). Credit Suisse AG, Singapore Branch may distribute reports produced by its foreign entities or affiliates pursuant to an arrangement under Regulation 32C of the Financial Advisers Regulations. Singapore recipients should contact Credit Suisse AG, Singapore Branch at +65-6212-2000 for matters arising from, or in connection with, this report. By virtue of your status as an institutional investor, accredited investor, expert investor or overseas investor, Credit Suisse AG, Singapore Branch is exempted from complying with certain compliance requirements under the Financial Advisers Act, Chapter 110 of Singapore (the "FAA"), the Financial Advisers Regulations and the relevant Notices and Guidelines issued thereunder, in respect of any financial advisory service which Credit Suisse AG, Singapore Branch may provide to you.

UAE: This information is being distributed by Credit Suisse AG (DIFC Branch), duly licensed and regulated by the Dubai Financial Services Authority ("DFSA"). Related financial services or products are only made available to Professional Clients or Market Counterparties, as defined by the DFSA, and are not intended for any other persons. Credit Suisse AG (DIFC Branch) is located on Level 9 East, The Gate Building, DIFC, Dubai, United Arab Emirates.

EU: This report has been produced by subsidiaries and affiliates of Credit Suisse operating under its Global Markets Division

In jurisdictions where CS is not already registered or licensed to trade in securities, transactions will only be effected in accordance with applicable securities legislation, which will vary from jurisdiction to jurisdiction and may require that the trade be made in accordance with applicable exemptions from registration or licensing requirements.

This material is issued and distributed in the U.S. by CSSU, a member of NYSE, FINRA, SIPC and the NFA, and CSSU accepts responsibility for its contents. Clients should contact analysts and execute transactions through a Credit Suisse subsidiary or affiliate in their home jurisdiction unless governing law permits otherwise.

Please note that this research was originally prepared and issued by CS for distribution to their market professional and institutional investor customers. Recipients who are not market professional or institutional investor customers of CS should seek the advice of their independent financial advisor prior to taking any investment decision based on this report or for any necessary explanation of its contents. This research may relate to investments or services of a person outside of the UK or to other matters which are not authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority or in respect of which the protections of the Prudential Regulation Authority and Financial Conduct Authority for private customers and/or the UK compensation scheme may not be available, and further details as to where this may be the case are available upon request in respect of this report.

CS may provide various services to US municipal entities or obligated persons ("municipalities"), including suggesting individual transactions or trades and entering into such transactions. Any services CS provides to municipalities are not viewed as "advice" within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. CS is providing any such services and related information solely on an arm's length basis and not as an advisor or fiduciary to the municipality. In connection with the provision of the any such services, there is no agreement, direct or indirect, between any municipality (including the officials, management, employees or agents thereof) and CS for CS to provide advice to the municipality. Municipalities should consult with their financial, accounting and legal advisors regarding any such services provided by CS. In addition, CS is not acting for direct or indirect compensation to solicit the municipality on behalf of an unaffiliated broker, dealer, municipal securities dealer, municipal advisor, or investment adviser for the purpose of obtaining or retaining an engagement by the municipality for or in connection with Municipal Financial Products, the issuance of municipal securities, or of an investment adviser to provide investment advisory services to or on behalf of the municipality. If this report is being distributed by a financial institution other than Credit Suisse AG, or its affiliates, that financial institution is solely responsible for distribution. Clients of that institution should contact that institution to effect a transaction in the securities mentioned in this report or require further information. This report does not constitute investment advice by Credit Suisse to the clients of the distributing financial institution, and neither Credit Suisse AG, its affiliates, and their respective officers, directors and employees accept any liability whatsoever for any direct or consequential loss arising from their use of this report or its content. Principal is not guaranteed. Commission is the commission rate or the amount agreed with a customer when setting up an account or at any time after that. No information or communication provided herein or otherwise is intended to be, or should be construed as, a recommendation within the meaning of the US Department of Labor's final regulation defining "investment advice" for purposes of the Employee Retirement Income Security Act of 1974, as amended and Section 4975 of the Internal Revenue Code of 1986, as amended, and the information provided herein is intended to be general information, and should not be construed as, providing investment advice (impartial or otherwise).

Copyright © 2018 CREDIT SUISSE AG and/or its affiliates. All rights reserved.

Investment principal on bonds can be eroded depending on sale price or market price. In addition, there are bonds on which investment principal can be eroded due to changes in redemption amounts. Care is required when investing in such instruments.