CREDIT SUISSE

Xencor, Inc (XNCR)

SMALL & MID CAP RESEARCH

Rating	**OUTPERFORM***
Price (17 Dec 14, US$)	15.55
Target price (US$)	14.00[1]
52-week price range	15.55 - 7.99
Market cap. (US$ m)	488.20
Enterprise value (US$ m)	431.97

**Stock ratings are relative to the coverage universe in each analyst's or each team's respective sector.*
[1]Target price is for 12 months.

Research Analysts

Jason Kantor, PhD
415 249 7942
jason.kantor@credit-suisse.com

Jeremiah Shepard, PhD
415 249 7933
jeremiah.shepard@credit-suisse.com

Ravi Mehrotra PhD
212 325 3487
ravi.mehrotra@credit-suisse.com

Anuj Shah
212 325 6931
anuj.shah@credit-suisse.com

Bispecifics Heat Up - Sooner than Expected

In our recent note, we highlighted the growing interest in bispecific antibodies (LINK). Today, there were two significant announcements in the space: (1) XNCR signed a deal with Novo Nordisk, and (2) Roche announced the acquisition of Dutalys. We expect to see continued interest from investors and big pharma throughout 2015.

- **XNCR / Novo Nordisk deal:** XNCR signed a deal with up to $175M in upfront and milestone payments (upfront not disclosed). The deal covers a single target and includes both its proprietary bispecific antibody technology and its Fc engineered immune downregulating technology. This is a very early stage deal, but highlights the growing interest in the space and the unique solutions offered by XNCR.
- **Roche to acquire Dutalys:** Roche announced plans to acquire privately held Dutalys for approximately $134M upfront and $355M in future milestones. The primary technology at Dutalys is the so-called DutaMab technology for generating bispecific antibodies that are either in Fab or full-length formats. The DutaMab technology adds to the in-house developed technology at Roche for generating bispecific antibodies. Other players in the bispecific space include REGN, MGNX, XNCR, and Genmab.

Financial and valuation metrics

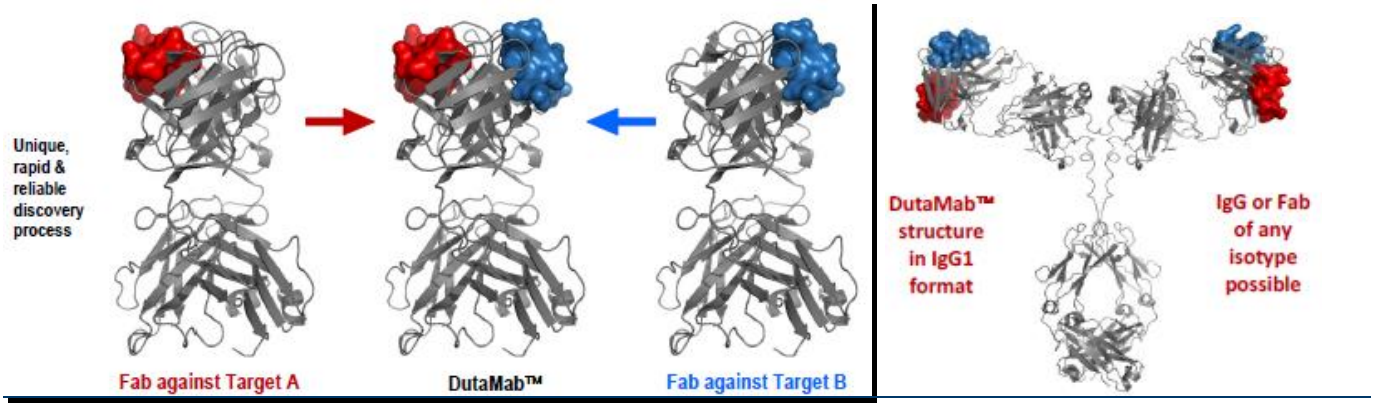
Year	12/13A	12/14E	12/15E	12/16E
EPS (CS adj.) (US$)	-3.85	-0.68	-0.68	-0.62
Prev. EPS (US$)	—	—	—	—
P/E (x)	-4.0	-22.9	-23.0	-25.3
P/E rel. (%)	-21.4	-130.6	-143.9	-176.7
Revenue (US$ m)	10.2	5.5	7.0	11.0
EBITDA (US$ m)	-9.8	-21.2	-23.5	-26.3
OCFPS (US$)	-0.24	-0.65	-0.45	-0.72
P/OCF (x)	-37.6	-23.9	-34.6	-21.5
EV/EBITDA (current)	-43.0	-19.9	-17.9	-16.1
Net debt (US$ m)	-78	-56	-138	-107
ROIC (%)	236.83	872.33	290.05	10,395.64

Number of shares (m)	31.40	IC (current, US$ m)	-4.44
BV/share (Next Qtr., US$)	1.9	EV/IC (x)	-203.0
Net debt (Next Qtr., US$ m)	-61.9	Dividend (current, US$)	—
Net debt/tot eq (Next Qtr., %)	-103.5	Dividend yield (%)	—

Source: Company data, Credit Suisse estimates

Roche buys bispecific antibody platform Dutalys

Exhibit 1: DutaMab Bispecific Platform



Source: Company data, Credit Suisse estimates

Immuno-oncology: Bispecifics seen as a key technology

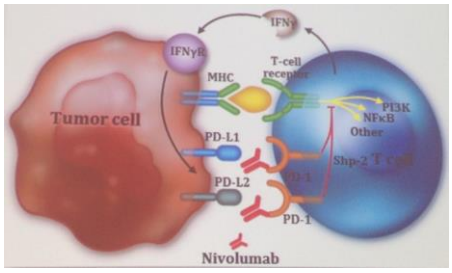
The field of immune activation to treat lymphoma and leukemia is not new, but at this year's ASH the immuno-oncology space was front and center. Besides traditional and Fc enhanced antibodies, which are both a form of immune therapy, the focus is on much higher potency treatments, such as CART cells, bispecifics, and checkpoint inhibitors.

Among these, the bispecific field is the least well recognized and has the greatest potential for increased investor focus. The recent FDA approval of AMGN's Blincyto for acute lymphoblastic leukemia 5 months ahead of its PDUFA date highlights the potential importance of this new approach.

Exhibit 2: Immuno-oncology – Getting T-cells to Kill Tumor cells

Checkpoint Inhibitors

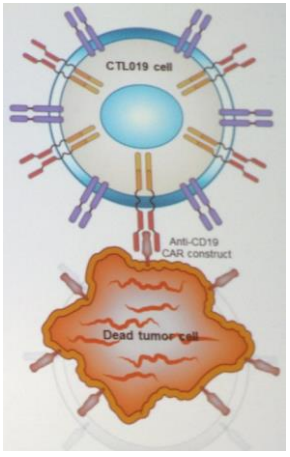
off-the-shelf antibodies
a large and emerging new class of drugs



Yervoy (BMY), Keytruda (MRK), Nivolumab (BMY) approved in solid tumors. Huge "buzz" at ASH for first major data in lymphoma/leukemia. Global market opportunity for checkpoint inhibitors estimated at $30B

CAR T cells

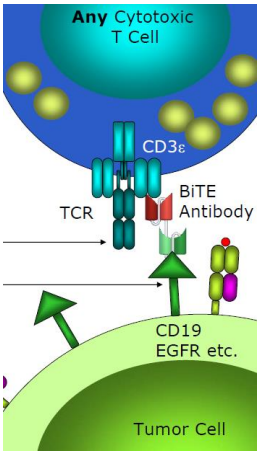
personalized "living" drugs
one time treatments



Activity seen by many independent groups in lymphoma and leukemia. Impressive efficacy, many long lasting remissions after single (or sometimes two) infusions. Significant excitement at ASH this weekend

Bispecifics

off-the-shelf, infused



AMGN's Blincyto was approved last week, 5 months early!!
It is the first bispecific.
Others are working on improved versions and new targets

Source: Company data, Credit Suisse estimates

Bispecifics to activate the immune system

The BiTE approach (bispecific T-cell engager) was first championed by Micromet, which was acquired by AMGN. The concept is to create a molecule that can bind to a tumor specific antigen (such as CD19 in the case of Blincyto) and at the same time bind to (and activate) T-cells. In this way, the BiTE can direct the potent cell-killing activity of the T-cell to the cancer cell. Unlike CART cells (which also direct T-cells to tumor cells), the BiTE approach is an off-the-shelf product.

First generation BiTEs are small single-chain antibody fragments whose half-life is quite short, and in the case of Blincyto, require a continuous infusion pump to deliver the drug. Other similar approaches like MGNX's DART technology have a similar issue, but modifications can be made to extend their half-life.

More recently, a number of companies have developed full length bispecific antibodies, which combine the potent T-cell mediated tumor killing with a longer half-life product. Historically, full length bispecifics have been difficult to manufacture and several companies have developed technologies to make it feasible, which we believe will represent next-generation bispecifics.

- **Xencor**: Uses Fc engineering and a plug-and-play anti-CD3 binding domain to ensure proper heavy chain and light chain pairing and purification of the bispecific.
- **Regeneron**: Uses a common light chain and Fc engineering to ensure proper heavy chain and light chain pairing and purification of the bispecific .
- **Roche**: Uses a variety of approaches (Knob in holes and CrossMAbs) which are forms of Fc engineering and heavy chain engineering to ensure proper heavy chain and light chain pairing and purification of the bispecific. The acquisition of Dutalys adds a new technology to Roche's bispecific platform.
- **Genmab**: Expresses two separate engineered antibodies and then mixes them together under specific conditions to preferentially form mixed bispecifics.

Exhibit 3: XNCR Newsflow

Product/Event	Indication	Catalyst	Expected Date
XmAb5871	RA	Phase IIa results	YE:14
MOR208	ALL	Complete enrollment in ALL cohort	Q4:14
MOR208	NHL, r/r CLL	Phase II data at ASH	Dec. 2014
Bispecifics	Multiple	Presentation of preclinical data at ASH	Dec. 2014
XmAb7195	Asthma	Phase Ia data in patients with asthma and allergic disease (includes high IgE cohort)	Jan. 2015
XmAb7195	Asthma	Phase Ib start	Q1:15
XmAb5871	IgG4- related disease	Start first clinical study	2015
XmAb7195	Asthma	Start Phase II in poorly controlled	late 15/ early 16
MOR208	CLL	IST to complete enrollment of CLL study	H2:15
XmAb14045	AML	Phase I start	mid-2016

Source: Company data, Credit Suisse estimates

Exhibit 4: XNCR Pipeline

Drug	Target	Technology	Indication	Stage	Partner
XmAb5574/MOR208	CD19	High ADCC	CLL, NHL, ALL	Phase II	Morphosys
XmAb5871	CD19	Immune inhibitory	Autoimmune/ IgG4RD	Phase I/II	Proprietary
XmAb7195	IgE	Immune inhibitory	Asthma/Allergy	Phase I	Proprietary
BI 836826	CD37	High ADCC	CLL, NHL	Phase I	Boehringer Ingelheim
BI 836858	CD33	High ADCC	AML	Phase I	Boehringer Ingelheim
CSL362	CD123 (IL3R)	High ADCC	AML	Phase I	CSL/Janssen
ND	ND	Stability	Autoimmune	Phase I	Merck
ND	ND	Long half-life	Undisclosed	Phase I	Alexion
Xtend-TNF	TNF	Long half-life	Autoimmune	Preclinical	Proprietary
XmAb14045	CD123	Bispecific	AML	Preclinical	Proprietary
CD3 X CD38	CD38	Bispecific	Oncology	Preclinical	Proprietary
CD3 X CD20	CD20	Bispecific	Lymphoma	Preclinical	Proprietary
Xtend-CTLA4	CTLA4	Long half-life	Autoimmune	Preclinical	Proprietary
Anti-X/ CD32b	ND	Immune inhibitory	TBD	Discovery Lead	Proprietary
ND	ND	Long half-life	Hematology	Preclinical	CSL
ND	ND	Long half-life	Autoimmune	Preclinical	Janssen

Source: Company data, Credit Suisse estimates

Exhibit 5: XNCR Model

	2012A	2013A	Q1:14A	Q2:14A	Q3:14A	Q4:14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Revenues													
US sales of XmAb7195													
Ex-US royalties on XmAb7195													
Royalties on XmAb5871													
Partnering, grants, milestones	**9.5**	**10.2**	2.2	0.8	0.8	1.6	5.5	7.0	11.0	26.1	15.0	20.0	20.0
Total Revenues	**9.5**	**10.2**	**2.2**	**0.8**	**0.8**	**1.6**	**5.5**	**7.0**	**11.0**	**26.1**	**15.0**	**20.0**	**20.0**
Expenses													
Cost of goods													
Research and development	**12.7**	**17.0**	4.2	4.3	5.0	6.3	19.8	22.6	28.5	31.4	39.3	40.6	42.0
Sales, general, administrative	**3.1**	**3.7**	1.7	1.6	2.2	1.9	7.3	7.9	8.7	9.9	14.3	14.6	19.0
Total Operating Expenses	**15.8**	**20.7**	**6.0**	**5.9**	**7.1**	**8.2**	**27.1**	**30.5**	**37.2**	**41.3**	**53.6**	**55.2**	**61.0**
Operating income (loss)	**(6.2)**	**(10.5)**	(3.8)	(5.1)	(6.3)	(6.6)	(21.7)	(23.5)	(26.3)	(15.2)	(38.6)	(35.2)	(41.0)
Total Other Income (Expense)	**(2.4)**	**(49.7)**	0.0	0.0	0.0		0.0						
Pre Tax Income	**(8.6)**	**(60.3)**	(3.8)	(5.0)	(6.3)	(6.6)	(21.6)	(23.5)	(26.3)	(15.2)	(38.6)	(35.2)	(41.0)
Income tax													
Net Income	**(8.6)**	**(60.3)**	**(3.8)**	**(5.0)**	**(6.3)**	**(6.6)**	**(21.6)**	**(23.5)**	**(26.3)**	**(15.2)**	**(38.6)**	**(35.2)**	**(41.0)**
EPS - diluted (proforma)	**($38.31)**	**($3.85)**	**($0.12)**	($0.16)	($0.20)	($0.20)	($0.68)	($0.68)	($0.62)	($0.33)	($0.77)	($0.58)	($0.65)
Shares outstanding - basic (proforma)	**0.22**	**15.65**	**31.36**	31.37	31.40	32.31	31.83	34.88	42.70	46.21	49.98	60.48	63.50
Shares outstanding - diluted (proforma)	**0.22**	**15.65**	**31.36**	31.37	31.40	33.60	33.08	36.23	44.16	47.80	51.69	62.27	65.39

Source: Company data, Credit Suisse estimates

Companies Mentioned *(Price as of 17-Dec-2014)*

GENMAB (GEN.CO, Dkr345.1)
MacroGenics (MGNX.OQ, $29.25)
Regeneron Pharmaceutical (REGN.OQ, $410.99)
Roche (ROG.VX, SFr279.0)
Xencor, Inc (XNCR.OQ, $15.55, OUTPERFORM, TP $14.0)

CREDIT SUISSE

Disclosure Appendix

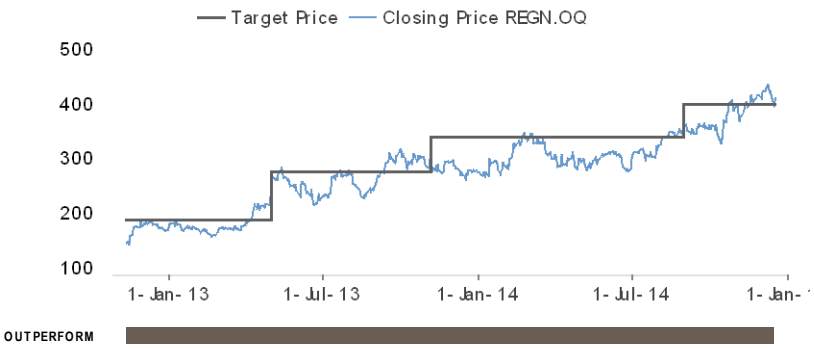
Important Global Disclosures

Jason Kantor, PhD, Jeremiah Shepard, PhD and Ravi Mehrotra PhD each certify, with respect to the companies or securities that the individual analyzes, that (1) the views expressed in this report accurately reflect his or her personal views about all of the subject companies and securities and (2) no part of his or her 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 Regeneron Pharmaceutical (REGN.OQ)

REGN.OQ	Closing Price	Target Price	
Date	(US$)	(US$)	Rating
12-Nov-12	144.90	187.00	O *
02-May-13	248.63	275.00	
06-Nov-13	288.27	340.00	
31-Aug-14	350.52	400.00	

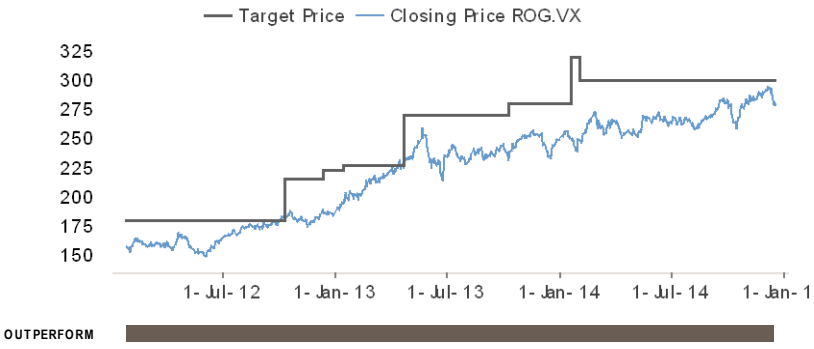
** Asterisk signifies initiation or assumption of coverage.*



3-Year Price and Rating History for Roche (ROG.VX)

ROG.VX	Closing Price	Target Price	
Date	(SFr)	(SFr)	Rating
27-Jan-12	157.10	180.00	O
11-Oct-12	181.20	215.00	
12-Dec-12	187.20	223.00	
14-Jan-13	194.60	227.00	
22-Apr-13	225.10	270.00	
10-Oct-13	234.60	280.00	
20-Jan-14	250.00	320.00	
03-Feb-14	248.20	300.00	

** Asterisk signifies initiation or assumption of coverage.*



3-Year Price and Rating History for Xencor, Inc (XNCR.OQ)

XNCR.OQ	Closing Price	Target Price	
Date	(US$)	(US$)	Rating
03-Dec-13	8.34		R
03-Jan-14	9.15	14.00	O *

** 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 non-Japan Asia stocks, ratings are based on a stock's total return relative to the average total return of the relevant country or regional benchmark; 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, 12-month rolling yield is incorporated in the absolute total return calculation and a 15% and a 7.5% threshold replace the 10-15% level in the Outperform and Underperform stock rating definitions, respectively. The 15% and 7.5% thresholds replace the +10-15% and -10-15% levels in the Neutral stock rating definition, respectively. Prior to 10th December 2012, Japanese ratings were based on a stock's total return relative to the average total return of the relevant country or regional benchmark.*

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.

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*	46%	(54% banking clients)
Neutral/Hold*	38%	(50% banking clients)
Underperform/Sell*	14%	(43% banking clients)
Restricted	2%	

**For purposes of the NYSE and NASD 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.*

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: http://www.csfb.com/research-and-analytics/disclaimer/managing_conflicts_disclaimer.html

Credit Suisse does not provide any tax advice. Any statement herein 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.

Price Target: (12 months) for Xencor, Inc (XNCR.OQ)

Method: Our $14 target for XNCR is derived using a probability-adjusted DCF (discounted cash flow), including $9 for XmAb7195 (40% POS), $3 for XmAb5871 (25% POS), and $1 each for MOR208 and the technology licensees. We us a 12% discount rate and model through the products' entire lifecycle.

Risk: Risks to our $14 target price for Xencor, Inc include: 1) unexpected negative result for proprietary or partnered clinical programs, 2) financing risk from expected future equity raises, 3) competition in the CD19 and asthma programs, and 4) significant delay in one or more clinical programs that pushes potential approval timeline(s) out.

Please refer to the firm's disclosure website at https://rave.credit-suisse.com/disclosures 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

The subject company (XNCR.OQ, ROG.VX, REGN.OQ) currently is, or was during the 12-month period preceding the date of distribution of this report, a client of Credit Suisse.

Credit Suisse provided investment banking services to the subject company (XNCR.OQ, REGN.OQ) within the past 12 months.

Credit Suisse provided non-investment banking services to the subject company (ROG.VX) within the past 12 months

Credit Suisse has received investment banking related compensation from the subject company (XNCR.OQ, REGN.OQ) within the past 12 months

Credit Suisse expects to receive or intends to seek investment banking related compensation from the subject company (XNCR.OQ, REGN.OQ) within the next 3 months.

Credit Suisse has received compensation for products and services other than investment banking services from the subject company (ROG.VX) within the past 12 months

As of the date of this report, Credit Suisse makes a market in the following subject companies (XNCR.OQ, REGN.OQ).

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 have not visited the material operations of the subject company (XNCR.OQ, ROG.VX, REGN.OQ) within the past 12 months

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 http://www.csfb.com/legal_terms/canada_research_policy.shtml.

Credit Suisse has acted as lead manager or syndicate member in a public offering of securities for the subject company (XNCR.OQ) within the past 3 years.

As of the date of this report, Credit Suisse acts as a market maker or liquidity provider in the equities securities that are the subject of this report.

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.

For Credit Suisse disclosure information on other companies mentioned in this report, please visit the website at https://rave.credit-suisse.com/disclosures or call +1 (877) 291-2683.

CREDIT SUISSE

References in this report to Credit Suisse include all of the subsidiaries and affiliates of Credit Suisse operating under its investment banking division. For more information on our structure, please use the following link: https://www.credit-suisse.com/who_we_are/en/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 AG 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 or registered 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 ADR's, 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 Europe (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. This report is being distributed in Germany by Credit Suisse Securities (Europe) Limited Niederlassung Frankfurt am Main regulated by the Bundesanstalt fuer Finanzdienstleistungsaufsicht ("BaFin"). This report is being distributed in the United States and Canada by Credit Suisse Securities (USA) LLC; in Switzerland by Credit Suisse AG; in Brazil by Banco de Investimentos Credit Suisse (Brasil) S.A or its affiliates; in Mexico by Banco Credit Suisse (México), S.A. (transactions related to the securities mentioned in this report will only be effected in compliance with applicable regulation); in Japan by Credit Suisse Securities (Japan) Limited, Financial Instruments Firm, Director-General of Kanto Local Finance Bureau (*Kinsho*) 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; elsewhere in Asia/ Pacific by whichever of the following is the appropriately authorised entity in the relevant jurisdiction: Credit Suisse (Hong Kong) Limited, Credit Suisse Equities (Australia) Limited, Credit Suisse Securities (Thailand) Limited, regulated by the Office of the Securities and Exchange Commission, Thailand, having registered address at 990 Abdulrahim Place, 27th Floor, Unit 2701, Rama IV Road, Silom, Bangrak, Bangkok 10500, Thailand, Tel. +66 2614 6000, Credit Suisse Securities (Malaysia) Sdn Bhd, Credit Suisse AG, Singapore Branch, Credit Suisse Securities (India) Private Limited (CIN no. U67120MH1996PTC104392) regulated by the Securities and Exchange Board of India (registration Nos. INB230970637; INF230970637; INB010970631; INF010970631), having registered address at 9th Floor, Ceejay House, Dr.A.B. Road, Worli, Mumbai - 18, India, T- +91-22 6777 3777, Credit Suisse Securities (Europe) Limited, Seoul Branch, Credit Suisse AG, Taipei Securities Branch, PT Credit Suisse Securities Indonesia, Credit Suisse Securities (Philippines) Inc., and elsewhere in the world by the relevant authorised affiliate of the above. Research on Taiwanese securities produced by Credit Suisse AG, Taipei Securities Branch has been prepared by a registered Senior Business Person. 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. 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). 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. This information is being distributed by Credit Suisse AG, Dubai Branch, duly licensed and regulated by the Dubai Financial Services Authority (DFSA), and is directed at Professional Clients or Market Counterparties only, as defined by the DFSA. The financial products or financial services to which the information relates will only be made available to a client who meets the regulatory criteria to be a Professional Client or Market Counterparty only, as defined by the DFSA, and is not intended for any other person. This research may not conform to Canadian disclosure requirements. 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. Non-U.S. customers wishing to effect a transaction should contact a CS entity in their local jurisdiction unless governing law permits otherwise. U.S. customers wishing to effect a transaction should do so only by contacting a representative at Credit Suisse Securities (USA) LLC in the U.S. 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.

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.

When you purchase non-listed Japanese fixed income securities (Japanese government bonds, Japanese municipal bonds, Japanese government guaranteed bonds, Japanese corporate bonds) from CS as a seller, you will be requested to pay the purchase price only.