CREDIT SUISSE

Alder Biopharmaceuticals (ALDR)

SMALL & MID CAP RESEARCH

Q4: Focus on New Migraine Trial and Competitive Data

The primary value driver for ALDR remains its Phase II migraine program. While this is likely to be a competitive space (AMGN, TEVA, LLY), the market opportunity for a truly game-changing migraine drug is extremely large. ALDR has presented the most complete data, with efficacy lasting up to 3 months from a single dose.

ALDR initiates large Phase II trial:

ALDR recently initiated a 600-patient Ph2 trial of ALD403 in chronic migraine (15-25 migraine days per month). The trial tests four different single doses of ALD403 (by IV infusion) vs. placebo. The primary endpoint is change in migraine days from baseline to 12 weeks, with an expected completion by year-end 2015. The goal is to establish a minimally effective dose for quarterly administration.

We believe the IV formulation of ALD403 could be competitive if it provides adequate migraine relief for a large portion of patients over the full 12 week period. More frequent administration would likely be better served with a subcutaneous (subQ) injection. ALDR expects data from the Phase I trial of its subQ formulation by year-end and plans to start a monthly subQ Phase II in episodic migraine in 2015.

AMGN plans Phase II data announcement by year-end:

AMGN highlighted its AMG 334 (anti-CGRP receptor) program at its analyst event today as one of its programs with the greatest potential to impact patient quality of life and described the opportunity as "huge". They made the case that targeting the receptor may have advantages over targeting CGRP (AMG 334 is the only antibody targeting the receptor). Results from its Ph2 trial in episodic migraine are expected in Q4, and the chronic migraine Ph2 trial is ongoing.

Rating	**OUTPERFORM* [V]**
Price (27 Oct 14, US$)	16.23
Target price (US$)	19.00[1]
52-week price range	20.34 - 9.91
Market cap. (US$ m)	499.94
Enterprise value (US$ m)	455.72

**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.
[V] = Stock considered volatile (see Disclosure Appendix).

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
Koon Ching PhD
212 325 6286
koon.ching@credit-suisse.com
Anuj Shah
212 325 6931
anuj.shah@credit-suisse.com

Financial and valuation metrics

Year	12/13A	12/14E	12/15E	12/16E
EPS (CS adj.) (US$)	-0.94	0.09	-2.10	-2.23
Prev. EPS (US$)	—	—	—	—
P/E (x)	-17.2	182.6	-7.7	-7.3
P/E rel. (%)	-100.4	NM	-54.1	-56.7
Revenue (US$ m)	18.8	54.5	9.6	10.3
EBITDA (US$ m)	-19.8	3.4	-69.3	-87.1
OCFPS (US$)	-1.65	-1.58	-0.74	-2.12
P/OCF (x)	—	-10.3	-21.9	-7.7
EV/EBITDA (current)	-21.7	126.1	-6.2	-4.9
Net debt (US$ m)	-23	-44	-149	-65
ROIC (%)	37.60	32.92	210.17	266.90

Number of shares (m)	30.80	IC (current, US$ m)	-55.22
BV/share (Next Qtr., US$)	2.2	EV/IC (x)	53.5
Net debt (Next Qtr., US$ m)	-59.7	Dividend (current, US$)	—
Net debt/tot eq (Next Qtr., %)	-87.9	Dividend yield (%)	—

Source: Company data, Credit Suisse estimates

The CGRP Competitive Landscape

There are four Phase II programs targeting CGRP signaling. Three target CGRP and one targets the CGRP receptor. All of the programs are in large dose finding Phase II trials in chronic and/or episodic migraine.

- The next major data read out will be AMGN's Phase II in episodic migraine. This 483-patient trial tested 3 doses of AMG 334 vs placebo in patients with 4-14 migraine days per month. The primary endpoint was change in monthly migraine days from baseline to 12 weeks.

Exhibit 1: CGRP Antibodies in Development for Migraine

Company	Drug	MOA	Stage
Amgen	AMG 334	Anti-CGRP receptor	Phase II
Alder	ALD403	Anti-CGRP	Phase II
Eli Lilly	LY2951742	Anti-CGRP	Phase II
Teva (Labrys)	LBR-101 (RN-307)	Anti-CGRP	Phase II

Source: Company data, Credit Suisse estimates

Exhibit 2: ALD403 Clinical Program

	ALD403-CLIN-002	ALD403-Clin-005
Stage	Phase Ib	Phase II
# of patients	163	600
Indication	High frequency episodic migraine	Chronic migraine
Migraine days per month	5-14 migraine days/ month	15-25 migraine days/ month
Treatment arms	ALD403 (1g) vs. placebo	ALD403 (4 doses) vs. placebo
Dosing	IV infusion (1x)	IV infusion
Duration	12 weeks	12 weeks
Primary endpoint	Safety	Change in migraine days from baseline
Secondary endpoints		Safety, PK
Start	Jan-13	Oct-14
Primary completion	Dec-13	Dec-15
Status	Data presented at AAN 2014	Enrolling
Identifier	NCT01772524	NCT02275117

Source: www.clinicaltrials.gov, Credit Suisse estimates

Exhibit 3: AMG 334 Clinical Program

	20120178	20120295	20130255
Stage	Phase II	Phase II	Phase II
# of patients	483	490	Chronic migraine: Long-term safety 490
Indication	High frequency episodic migraine	Chronic migraine	Open label extension of study 20120295
Migraine days per month	4-14 migraine days/ month (past 3 months)	≥15 migraine days/ month	
Treatment arms	AMG 334 (3 doses) vs. placebo	AMG 334 (SC, 2 doses) vs. placebo	Open label AMG 334
Dosing	not disclosed	not disclosed	
Duration	12 weeks	12 weeks	10 months (open label)
Primary endpoint	Change in monthly migraine days from baseline to last 4 weeks of 12 week dosing	Change in monthly migraine days from baseline to last 4 weeks of 12 week dosing	Safety
Secondary endpoints	50% responder analysis	50% responder analysis	50% responder analysis
Start	Aug-13	Feb-14	Jun-14
Primary completion	Aug-14	Feb-16	Sep-16
Status	Completed enrollment Jul 2014	Enrolling	Enrolling
Identifier	NCT01952574	NCT02066415	NCT02174861

Source: www.clinicaltrials.gov, Credit Suisse estimates

Exhibit 4: LY2951742 Clinical Program

	ART-01	15414
Stage	Phase II	Phase IIb
# of patients	190	402
Indication	High frequency episodic migraine	Episodic migraine
Migraine days per month	4-14 migraine days/ month	(# not defined)
Treatment arms	LY2951742 (150mg) vs. placebo	LY2951742 (4 doses) vs placebo
Dosing	subcutaneous every 2 weeks	subcutaneous every 4 weeks
Duration	12 weeks	12 weeks
Primary endpoint	Change from baseline in number of migraines in a 28d period	Change from baseline in number of migraine days in a 28d period
Start	Jun-12	Jul-14
Primary completion	Sep-13	Jun-15
Status	Data reported at AAN 2014	Enrolling
Identifier	NCT01625988	NCT02163993

Source: www.clinicaltrials.gov, Credit Suisse estimates

Exhibit 5: LBR-101 Clinical Program

	LBR-101-022	LBR-101-021
Stage	Phase II	Phase II
# of patients	270	225
Indication	High frequency episodic migraine	Chronic migraine
Migraine days per month	8-14 migraine days/ month	≥15 migraine days/ month
Treatment arms	LBR-101 high and low dose vs. placebo	LBR-101 high and low dose vs. placebo
Dosing	Monthly subcutaneous	Monthly subcutaneous
Duration	12 weeks	12 weeks
Primary endpoint	Mean change in monthly migraine days	Mean change in headache hours
Start	Jan-14	Jan-14
Primary completion	Jan-15	Feb-15
Status	Enrolling	Completed enrollment 10/2/14
Identifier	NCT02025556	NCT02021773

Source: www.clinicaltrials.gov, Credit Suisse estimates

Comments from AMGN's Business Review

AMG 334 is different because it targets the receptor (Is this a good thing?)

AMGN highlighted AMG 334 as one of its most important pipeline programs. As the only drug in the class that directly targets the receptor (the other target the ligand – CGRP), AMGN made a point to emphasize what it thought were the benefits of targeting the receptor.

The primary benefit in their view was that it might be easier to block the receptors than to mop up all the CGRP that is released in a very short period of time into the synapse. AMGN also suggested that the CGRP receptor was very difficult to "drug" and that their expertise contributed to their ability to have a unique drug in the class.

We asked AMGN about potential safety concerns of blocking the receptor chronically, and they pointed to significant preclinical toxicity work that supported their approach.

Receptor vs. Ligand

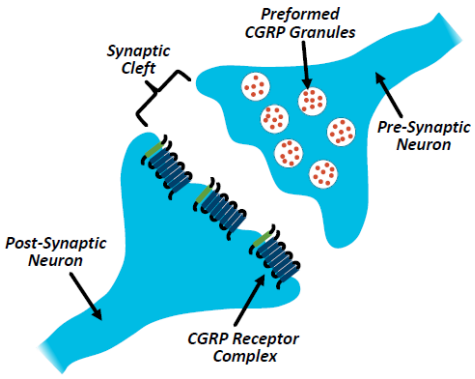
The benefits of targeting the ligand vs. the receptor are likely to persist unless one approach shows a clear efficacy advantage or safety concern. There are good examples of antibodies that target either the ligands (e.g. Humira and Avastin) and the receptors (e.g. Actemra and Herceptin).

- The primary risk of targeting the receptor is that the antibody could cause damage to the target cell through activation of the immune system (ADCC) or it could cross link the receptors and lead to some unwanted signaling.

- Targeting the ligand can be a problem if there are more than one ligand that hits the receptors and you want to block all of them, or if the ligand hits multiple receptors and you only want to block one of them.
- Companies targeting the ligand point out that the knockout for the receptor is lethal while the knockout for the ligand is not. Obviously, this does not specifically mean that targeting the receptor will be less safe, but it does point to potentially non-overlapping roles of the two molecules and the potential for some differences to emerge in these strategies.

For CGRP, we believe the data will be the key determinant of which approach (if any) is better.

Exhibit 6: AMG 334 Targets the CGRP Receptor



- **CGRP is a validated target for migraine**
- **CGRP receptors at interface of neurovascular junction**
- **Receptor antagonism is independent of CGRP release and concentration**
- **Currently in Phase 2b for episodic and chronic migraine**
  - **Dosed monthly**
  - **Data from episodic study expected in Q4 2014**

Source: AMGN Business Review, October 2014

Exhibit 7: AMGN's View of the Market Opportunity

AMG 334 Has the Potential to Address the Significant Unmet Need In Migraine Prophylaxis

- **~ 26M Americans suffer from migraine, ~ 8M > 2 days/month[1,2]**
- **Options for prophylaxis are limited by poor efficacy and significant side effects**
- **Migraine affects patients in prime working years**
  - **Most have reduced ability to function during the attack, one third require bed rest**
  - **Disability increases with increased attack frequency**

Source: AMGN Business Review, October 2014

Exhibit 8: ALDR Model

	2012A	2013A	Q1:14A	Q2:14A	Q3:14E	Q4:14E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Revenues													
US sales of ALD403												29.7	154.6
Ex-US royalties on ALD403													0.7
Royalties on Clazakizumab												1.4	3.1
Collaboration and license agreement	**20.1**	18.8	4.8	4.7	45.0		54.5	9.6	10.3	10.3	65.7	94.8	12.0
Total Revenues	**20.1**	**18.8**	**4.8**	**4.7**	**45.0**		**54.5**	**9.6**	**10.3**	**10.3**	**65.7**	**125.9**	**170.3**
Expenses													
Cost of goods												3.0	15.5
Research and development	**30.7**	31.9	7.0	9.4	10.0	12.0	38.4	58.5	74.0	90.0	92.0	87.0	77.0
Sales, general, administrative	**7.2**	7.7	3.2	2.7	3.5	4.0	13.4	21.0	24.0	24.0	26.0	35.0	40.0
Total Operating Expenses	**37.9**	**39.6**	**10.2**	**12.1**	**13.5**	**16.0**	**51.8**	**79.5**	**98.0**	**114.0**	**118.0**	**122.0**	**117.0**
Operating income (loss)	**(17.8)**	(20.8)	(5.4)	(7.4)	31.5	(16.0)	2.7	(69.9)	(87.7)	(103.7)	(52.3)	3.9	53.3
Total Other Income (Expense)	**0.0**	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Pre Tax Income	**(17.8)**	(20.6)	(5.4)	(7.4)	31.5	(16.0)	2.8	(69.9)	(87.7)	(103.7)	(52.1)	4.1	53.5
Income tax													
Net Income	**(17.8)**	**(20.6)**	**(5.4)**	**(7.4)**	**31.5**	**(16.0)**	**2.8**	**(69.9)**	**(87.7)**	**(103.7)**	**(52.1)**	**4.1**	**53.5**
EPS - basic (proforma)	**($3.55)**	($3.84)	($5.38)	($0.40)	$1.02	($0.51)	$0.13	($2.10)	($2.23)	($2.20)	($1.09)	$0.08	$1.09
EPS - diluted (proforma)	**($3.55)**	($3.84)	($5.38)	($0.40)	$0.95	($0.51)	$0.09	($2.10)	($2.23)	($2.20)	($1.09)	$0.08	$1.02
Shares outstanding - basic (proforma)	**5.01**	21.89	1.00	18.56	31.04	31.20	20.45	33.34	39.31	47.16	47.99	48.47	48.95
Shares outstanding - diluted (proforma)	**5.01**	21.89	1.00	18.56	33.24	31.20	30.93	33.34	39.31	47.16	50.97	51.60	52.24

Source: Company data, Credit Suisse estimates

CREDIT SUISSE

Companies Mentioned *(Price as of 27-Oct-2014)*

Alder Biopharmaceuticals (ALDR.OQ, $16.23, OUTPERFORM[V], TP $19.0)

Disclosure Appendix

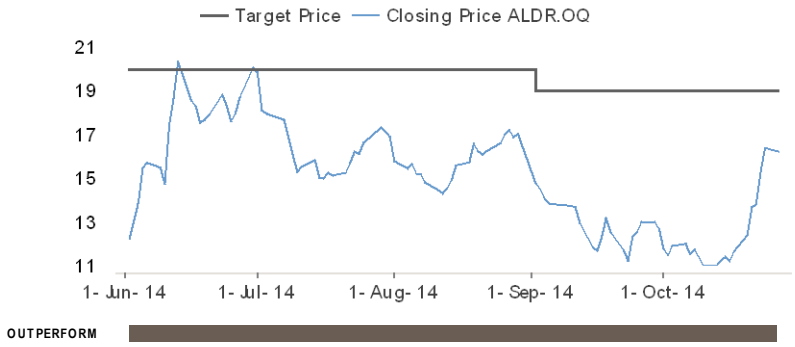
Important Global Disclosures

I, Jason Kantor, PhD, 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 Alder Biopharmaceuticals (ALDR.OQ)

ALDR.OQ	Closing Price	Target Price	
Date	(US$)	(US$)	Rating
02-Jun-14	12.26	20.00	O *
02-Sep-14	14.80	19.00	

** 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 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*	45%	(53% banking clients)
Neutral/Hold*	39%	(51% banking clients)
Underperform/Sell*	13%	(44% banking clients)
Restricted	3%	

**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 Alder Biopharmaceuticals (ALDR.OQ)

Method: Our $19 target includes $16 for ALD-403, $2 for Clazakizumab, and $1 for its NOLs. Our $19 valuation is justified by a fully-taxed, probability weighted, product level DCF for each of the two clinical stage programs plus the value of future NOLs. We assume an ex-US partner for ALD403 and significant dilution from future equity raises prior to profitability. For our DCF analysis, we use a 12% discount rate and 35% tax rate.

Risk: Risks to our $19 TP include: 1) unexpected negative result for proprietary clinical programs, 2) financing risk from expected future equity raises, 3) 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

The subject company (ALDR.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 (ALDR.OQ) within the past 12 months.

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

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

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

As of the date of this report, Credit Suisse makes a market in the following subject companies (ALDR.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 (ALDR.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 (ALDR.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.

CREDIT SUISSE

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 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.