

Credit Suisse Payments Innovation Event Series

Introduction to Atomic, the infrastructure for connecting to payroll accounts

Payments, Processors and FinTech | Expert Insights

- **Insights & discussion with Atomic:** We recently hosted a fireside chat with two executives from [Atomic](#), including the company's CEO & Co-founder, alongside the Head of Markets. Atomic is an infrastructure platform that allows connectivity into payroll systems, specifically via user permissions to access the data. One of the core use cases ([Atomic's Deposit offering](#)) allows a user to update the destination bank account for their payroll direct deposit. Atomic noted that it is typical for its customers (Neobanks and other financial services providers such as traditional banks, credit unions, etc., with Atomic already having signed many of the top ~20 Neobanks in the US) to see a ~50% improvement in the number of people moving over their direct deposit once Atomic's offering is embedded into their offerings (alongside instances where direct deposit penetration can increase as much as ~4-5x vs. prior levels). Atomic launched in August 2020 (founded 2019), and counts the likes of Greylock, Core Innovation Capital, and Portag3 as investors.
- **Replay details:** A replay of the call will be available for a short time at (855) 859-2056, ID# 1873400. This call is relevant for those interested in Cash App (Square), PayPal & Venmo (PayPal) within our coverage, but also other public and private Neobanking and other financial service providers.
- **Business overview:** Atomic has already developed ~165 unique integrations into payroll systems, which provides the platform access to ~65-75% of the US workforce (i.e., ~95 million workers mapped by Atomic). These integrations include the more well-known payroll providers, modern HR platforms, custom systems (at large corporations), gig economy platforms, government systems (e.g., state unemployment systems), and more. This infrastructure allows Atomic to offer a range of products, including [Deposit](#), [Verify](#), [Identify](#), and [Balance](#). Atomic's Deposit offering allows users to connect their payroll account (via entry of their payroll logon credential) and redirect their direct deposit to a different or newly formed account (e.g., when a customer is opening an account with a Neobank), detailed further below. Atomic's Verify gives platforms the ability to verify income and employment information (e.g., confirm employment status, verify salary, discern the cadence with which they are paid, tenure of employment, job title changes, etc.). The Identity product provides feedback on customer identity-related items, such as address confirmation, employee information, etc. In addition to direct deposit switching (Atomic Deposit), Atomic's additional capabilities bring valuable insights to consumer lending decisions (more detail below).
- **Deposit product overview & mechanics:** Atomic Deposit allows users to update the destination of their direct deposit in a secure and verified in real-time manner, a big improvement from the typical high-friction process today that's often paper-based. To better illustrate how simple the process has been made, [Atomic's website](#) provides a sample demonstration of how its payroll connect offering works from the consumer's perspective. First, the user selects their employer. Then, the user is prompted to enter their payroll account credentials (enabling the payroll account to be verified). The direct deposit account is then updated with the new destination information (routing number, account number).

Research Analysts

Timothy Chiodo, CFA
415 249 7921
timothy.chiodo@credit-suisse.com

Nik Cremo
415 249 7922
nikolai.cremo@credit-suisse.com

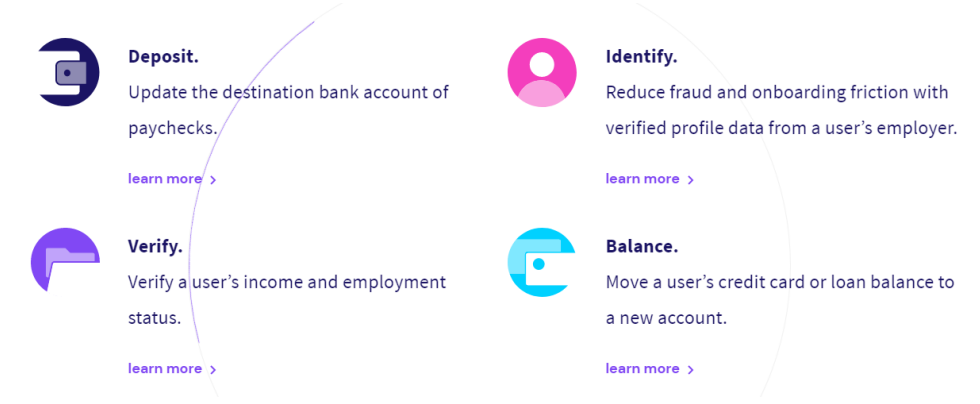
Justin Forsythe, CPA
415 249 7924
justin.forsythe@credit-suisse.com

Christopher Zhang, CFA
212 325 4431
chris.zhang@credit-suisse.com

Cole Hyland
212 325 2645
cole.hyland@credit-suisse.com

- **Atomic’s clear value proposition for redirecting direct deposit:** Achieving a primary account relationship (via direct deposit) is often their key aim for Neobanks and traditional financial service providers. Having this relationship allows the financial service provider to generate a higher level of interchange revenue (an attractive, recurring, transactional, largely non-discretionary revenue stream) and as a result, also provides a greater opportunity to cross-sell additional financial services via that pole position (as the primary account provider). Atomic allows its customers to meaningfully increase their direct deposit penetration (leading to meaningful revenue opportunities), while at the same time reducing the total costs to acquire these customers (vs. a backdrop of the costs to acquire a direct deposit customer being ~\$80-\$100 at the low-end, and potentially as high as ~\$200-\$300, and can be meaningfully higher for traditional banks). As referenced above, Atomic’s customers can experience a ~50% lift in direct deposit conversion (typically on the low-end), and some are seeing as much as ~4-5x increase in direct deposit penetration. Further, our guests noted that, broadly speaking, they have observed Neobank direct deposit penetration of roughly ~5-25% across the landscape, with a few select Neobanks having meaningfully higher success (in part due to their relationship with Atomic, alongside other factors including incentives, etc.). This compares to the ~40% range for a new retail banking account at a traditional financial institution (based on our guests’ broader industry observations over time).
- **Emerging capability to repay loans via paycheck (“Payroll Lending”):** Our guests noted that one of the larger opportunities over the next few years will be the increasing ability for consumers to take out loans and be able to pay them back directly via their paycheck (sometimes referred to as Payroll Lending). Atomic considers this a large opportunity, particularly for the consumers with sub-700 credit scores (e.g., more easily qualify for a loan, or receive a lower interest rate, if willing to pay back directly through his or her paycheck). This is a win-win, with the consumer receiving credit (and likely at a discount), while the lender takes on reduced risk (no need to collect repayment, rather, they are first in line with their repayment coming directly out of the consumer’s paycheck like taxes). As an additional benefit, the consumer is likely to improve their credit score in the process. Lastly, we note this could have implications for the BNPL group (e.g., ability to initiate a BNPL offering, and be repaid directly via paycheck).
- **Atomic’s revenue & pricing model:** Atomic’s pricing model assesses a fee per successful pull of data, per direct deposit switch, or per payment made. These fees can also vary based on volume and additional factors. Atomic’s customers tend to pay in the ~\$4-\$10 range for the direct deposit switching product (success-based), and generally lower (within that range) than that on verifying income. Most of Atomic’s customers sign up for a monthly minimum as part of their contract, and as long as that monthly minimum is met (which typically is), Atomic is able to benefit from any overflow on top of those minimums on a per transaction basis.
- **Additional points:** 1) During 2020, Neobanks evolved from solutions that were targeting specific pain points to full service digital banking platforms that are mass market addressable; 2) We note that accessing payroll data via APIs (like Atomic’s) provides a more certain and secure manner for gathering information about a customer prior to opening a banking and/or lending relationship (e.g., confirmed data from the source, vs. input on a form by the user, providing physical documentation that can be altered and/or fraudulent, etc.); 3) We continue to view the Neobanking space as one that is likely to somewhat consolidate over time (consistent with prior panels and events we have hosted on this topic), alongside a re-bundling of services (with each of the successful platforms likely offering a range of financial services, however coming from various different starting points – e.g., P2P, core checking accounts, lending, stock trading, BNPL, etc.); 4) Another emerging trend called out by our guests relates to employers increasingly offering more financial services to their employees (gig economy platforms, but beyond just those), with startups launching that are helping employers service their employees in this manner; and 5) For further views on the broader Payments, Processor, & FinTech sector, including the intersection of software and payments, please see our industry presentation, [“If Software is Eating the World... Payments is Taking a Bite”](#), containing slides related to our coverage universe, industry data, private company map, primer-like material, and “The Credit Suisse Payments, Processors, & FinTech Top 40 Industry Themes”.

Figure 1: Atomic's product offerings including Deposit, Verify, Identify, & Balance



Source: Company data

Companies Mentioned (Price as of 26-Apr-2021)

PayPal (PYPL.OQ, \$266.03)

Square (SQ.N, \$246.43)

Disclosure Appendix

Analyst Certification

I, Timothy Chiodo, CFA, 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 PayPal (PYPL.OQ)

PYPL.OQ	Closing Price	Target Price	
Date	(US\$)	(US\$)	Rating
18-May-18	80.79	93.00	O
19-Jul-18	87.38	100.00	
02-Nov-18	83.51		NC
23-Jan-20	117.89	135.00	O *
07-May-20	146.29	140.00	
21-Jun-20	164.36	190.00	
30-Jul-20	192.51	205.00	
03-Nov-20	179.81	215.00	
03-Feb-21	251.90	275.00	
11-Feb-21	285.03	310.00	

* Asterisk signifies initiation or assumption of coverage.

Effective July 3, 2016, NC denotes termination of coverage.


3-Year Price and Rating History for Square (SQ.N)

SQ.N	Closing Price	Target Price	
Date	(US\$)	(US\$)	Rating
03-May-18	49.21	44.00	N
19-Jul-18	70.32	81.00	O
10-Oct-18	77.45	94.00	
02-Nov-18	77.76		NC
23-Jan-20	69.29	84.00	O *
26-Feb-20	76.59	92.00	
30-Mar-20	55.00	66.00	
07-May-20	74.62	73.00	
20-May-20	82.04	80.00	
05-Aug-20	146.55	170.00	
27-Sep-20	157.72	175.00	
05-Nov-20	175.23	200.00	
24-Nov-20	202.90	210.00	
23-Feb-21	256.59	270.00	
08-Apr-21	258.37	290.00	

* Asterisk signifies initiation or assumption of coverage.

Effective July 3, 2016, NC denotes termination of coverage.


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 (excluding Turkey) 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 America,

Turkey and Asia (excluding Japan and Australia), stock 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*	54%	(31% banking clients)
Neutral/Hold*	34%	(26% banking clients)
Underperform/Sell*	10%	(21% banking clients)
Restricted	2%	

Please click [here](#) to view the MAR quarterly recommendations and investment services report for fundamental research recommendations.

**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>.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

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>.

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

See the Companies Mentioned section for full company names

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): PYPL.OQ, SQ.N

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=610303&v=6qdx9qv2kqq1yy861wsvdm29w>.

Important Regional Disclosures

Singapore recipients should contact Credit Suisse AG, Singapore Branch for any matters arising from, or in connection with, 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.

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>.

Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment.

To the extent any Credit Suisse equity research analyst employed by Credit Suisse International (a "UK Analyst") has interactions with a Spanish domiciled client of Credit Suisse AG or its affiliates, such UK Analyst will be acting for and on behalf of CSSSV, with respect only to the provision of equity research services to Spanish domiciled clients of Credit Suisse AG or its affiliates.

Pursuant to CVM Resolution No. 20/2021, of February 25, 2021, the author(s) of the report hereby certify(ies) that the views expressed in this report solely and exclusively reflect the personal opinions of the author(s) and have been prepared independently, including with respect to Credit Suisse. Part of the author(s)'s compensation is based on various factors, including the total revenues of Credit Suisse, but no part of the compensation has been, is, or will be related to the specific recommendations or views expressed in this report. In addition, Credit Suisse declares that: Credit Suisse has provided, and/or may in the future provide investment banking, brokerage, asset management, commercial banking and other financial services to the subject company/companies or its affiliates, for which they have received or may receive customary fees and commissions, and which constituted or may constitute relevant financial or commercial interests in relation to the subject company/companies or the subject securities.

This research report is authored by:

Credit Suisse Securities (USA) LLC Timothy Chiodo, CFA ; Nik Cremo ; Justin Forsythe, CPA ; Cole Hyland ; Christopher Zhang, CFA

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 Sustainability, Research & Investment Solutions 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 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 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. 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 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 Germany and Spain)**: 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; **Spain**: Credit Suisse Securities, Sociedad de Valores, S.A. ("CSSSV") regulated by the Comisión Nacional del Mercado de Valores; **Germany**: Credit Suisse (Deutschland) Aktiengesellschaft regulated by the Bundesanstalt fuer Finanzdienstleistungsaufsicht ("BaFin"); **United States**: Credit Suisse Securities (USA) LLC; **Canada**: Credit Suisse Securities (Canada), Inc.; **Switzerland**: Credit Suisse AG; **Brazil**: Banco de Investimentos Credit Suisse (Brasil) S.A or its affiliates; **Mexico**: Banco Credit Suisse (México), S.A., Institución de Banca Múltiple, Grupo Financiero Credit Suisse (México) and Casa de Bolsa Credit Suisse (México), S.A. de C.V., Grupo Financiero Credit Suisse (México) ("Credit Suisse Mexico"). This document has been prepared for information purposes only and is exclusively distributed in Mexico to Institutional Investors. Credit Suisse Mexico is not responsible for any onward distribution of this report to non-institutional investors by any third party. The authors of this report have not received payment or compensation from any entity or company other than from the relevant Credit Suisse Group company employing them; **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; **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 Abdulrahim Place, 27th Floor, Unit 2701, Rama IV Road, Siom, Bangkok 10500, 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. INZ000248233), having registered address at 9th Floor, Ceejay 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

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 (Cth) 2001 ("Corporations Act") in respect of the financial services provided to Australian wholesale clients (within the meaning of section 761G of the Corporations Act) (hereinafter referred to as "Financial Services"). 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 in respect of providing Financial Services. Investment banking services in the United States are provided by Credit Suisse Securities (USA) LLC, an affiliate of Credit Suisse Group. CSSU is regulated by the United States Securities and Exchange Commission under United States laws, which differ from Australian laws. CSSU does not hold an AFSL and is exempt from the requirement to hold an AFSL under the Corporations Act in respect of providing Financial Services. Credit Suisse Asset Management LLC (CSAM) is authorised by the Securities and Exchange Commission under US laws, which differ from Australian laws. CSAM does not hold an AFSL and is exempt from the requirement to hold an AFSL under the Corporations Act in respect of providing Financial Services. This material is provided solely to Institutional Accounts (as defined in the FINRA rules) who are Eligible Contract Participants (as defined in the US Commodity Exchange Act). Credit Suisse Equities (Australia) Limited (ABN 35 068 232 708) ("CSEAL") is an AFSL holder in Australia (AFSL 237237).

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.

EU: This report has been produced by subsidiaries and affiliates of Credit Suisse operating under its Sustainability, Research & Investment Solutions 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.

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. 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 © 2021 CREDIT SUISSE AG and/or its affiliates. All rights reserved.

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.