UBS

Global Research
17 March 2025

China Economic Perspectives

Mixed Growth Momentum in Jan-Feb, More Policy Details to Confirm

Economics

China

Tao Wang
Economist
wang.tao@ubs.com
+852-2971 7525

Ning Zhang
Economist
ning.zhang@ubs.com
+852-2971 8135

Jennifer Zhong
Economist
S1460516050002
jennifer-a.zhong@ubs.com
+86-105-832 8324

Grace Wang
Economist
S1460524050003
grace-zc.wang@ubs.com
+86-105-832 8335

Mixed growth momentum in Jan-Feb

Jan-Feb saw mixed growth momentum, with retail sales and overall FAI growth improving modestly from December and better than market expected, partly helped by fiscal subsidies for trade-in of consumer goods and corporate equipment upgrade. Meanwhile, nationwide property sales and new starts softened again in Jan-Feb from the previous rebound in Q4. These, plus the weaker-than-expected export growth amid higher US tariffs, led to marginal deceleration of industrial production, which however still beat market expectation. CPI inflation and new credit both saw large swing from January to February, mainly due to the CNY holiday distortion effect. Jan-Feb average CPI saw a small YoY decline while PPI stayed in deflation. TSF credit growth edged up thanks to strong issuance of special refinancing LGB.

External policies and property market recovery are key to watch

The US has implemented 10+10% additional tariffs and proposed new Section 301 actions against China. After the ongoing "America First Trade Policy" review concludes by April 1, we think the US may roll out more tariff hikes on Chinese goods, while some other economies are considering to follow suit. These potential new tariffs on China will likely pose headwinds on China's export growth ahead. In addition, there are signs of property sales improvement in tier 1 and core tier 2 cities. That said, we believe a nationwide recovery is still fragile, as sales momentum in Jan-Feb is cooling down from previous rebound in Q4 and lower tier cities still face challenges from elevated inventory and housing price decline. We continue to expect property activities to decline further but by less in 2025 than 2024.

Ambitious growth target for 2025, moderate policy stimulus

The government set an ambitious GDP growth target of "around 5%" again for 2025 at the NPC meeting. China announced a broad fiscal expansion of 1.5-2% of GDP to support growth, listed supporting consumption as a top priority (with an Action Plan just released last weekend), gave local governments more autonomy and available funds to facilitate inventory destocking, emphasized boosting high-quality growth and supporting the private sectors, and vowed to deepen the opening-up of domestic markets. More policy details remain to be finalized and clarified. Given the domestic and external growth headwinds, we think the government may need to roll out additional policy support later this year to achieve its growth target.

Maintain our 2025 baseline growth forecast at 4%, with elevated uncertainties

We continue to project China's real GDP growth to slow to around 4% in 2025, assuming ongoing property downturn to last until 2026 and significant trade tariffs to sustain, with policy support offering only a partial offset. Given lingering deflation pressures from continued property downturn and lower external demand, we see CPI averaging -0.3% in 2025. Downside risk to our forecast mainly comes from prolonged property downturn, higher additional tariffs, weaker US and global growth, and slow implementation of policy support. Upside could come from earlier-than-expected property market stabilization, roll-back of some tariffs (though we think it is highly unlikely), and stronger policy stimulus later in the year (see key themes & surprise in 2025).

Mixed Growth Momentum in Jan-Feb

Figure 1: China Jan-Feb 2025 data summary

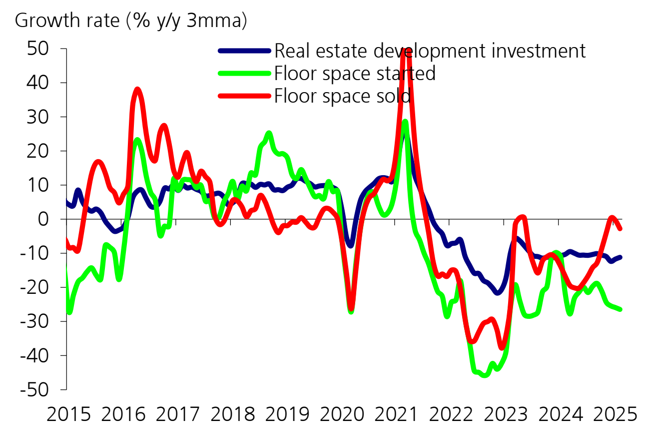
	Growth (%y/y)		
	Q4 2024	Dec 24	Jan-Feb 25
Industrial value added (IP)	5.6	6.2	**5.9**
Retail sales	3.8	3.7	**4.0**
Fixed asset investment	2.7	2.2	**4.1**
# Manufacturing FAI	9.2	8.3	**9.0**
# Infrastructure FAI	9.0	7.5	**9.9**
# Real estate development FAI	-12.4	-13.3	**-9.8**
Property sales (floor space)	0.3	-0.5	**-5.1**
Property new starts (floor space)	-25.4	-23.0	**-29.6**
Exports (in USD)	9.9	10.7	**2.3**
Imports (in USD)	-1.8	1.0	**-8.4**

Source: CEIC, UBS estimates

Property sales growth cooled again in Jan-Feb but likely improved a bit in early March. Property sales edged down again to -5.1%y/y in Jan-Feb (vs -1% y/y in Dec), while new starts declined -29.6%y/y (vs -23% in Dec), against a modestly high base last year. After seasonal adjustment, volume of property sales fell from a robust rebound in Q4, while that of new starts edged down further. Property investment contracted by another -9.8%y/y (vs -13% in December). Moreover, average new home price and secondary home price in 70 major cities continued to decline sequentially in Jan-Feb. That said, new home prices in tier 1 cities have rebounded slightly since last November, although their secondary home prices slipped in February. More recently, high frequency data suggest property sales in 30 major cities improved to around 10% y/y in the first half of March.

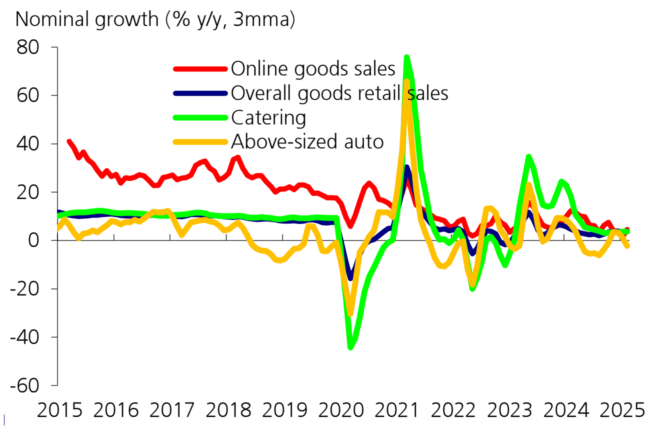
Retail sales growth edged up to 4%y/y in Jan-Feb vs 3.7% in December. Seasonally adjusted retail sales levels improved in Jan-Feb from December according to both official and our own estimate. Jan-Feb retail sales data showed clear evidence that ongoing trade-in subsidies have boosted related consumption: sales of communication appliances picked up further to 26%y/y despite a high base, and sales of household appliances softened to a solid pace of 11%y/y from 39%y/y in December. Auto sales decline -4.4%y/y vs 0.5% in December, however. Possibly reflecting better property sales in last Q4, sales growth of furniture picked up to 11.7%y/y from 8.8%y/y before, while that of construction & decoration materials stayed weak. Meanwhile, catering sales improved to 4.3%y/y in Jan-Feb from 2.7%y/y in December.

Figure 2: Property sales growth cooled again in Jan-Feb



Source: CEIC, UBS estimates

Figure 3: Retail sales growth edged up from December



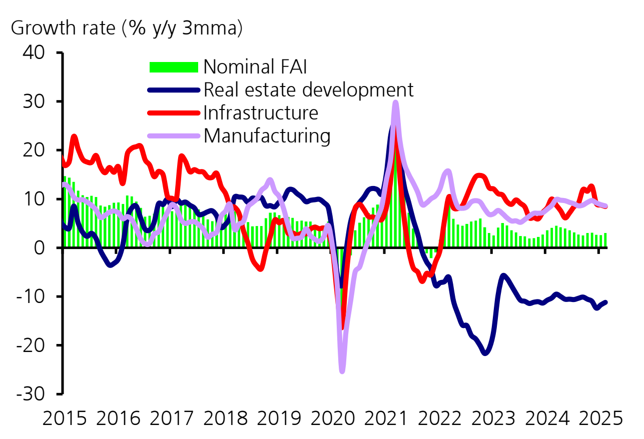
Source: CEIC, UBS estimates

FAI growth edged up with cross-the-board improvement. Infrastructure investment growth picked up to 9.9%y/y (from 7.5% in December), despite weak work resumption of construction projects post CNY holidays and continued tight control of LGFV financing. Manufacturing investment improved further to 9%y/y in Jan-Feb from 8.3% in December. Property investment growth declined by another 10%y/y as expected. Thanks to continued policy subsidies in equipment upgrading, equipment purchase (under overall FAI) strengthened to 18%y/y in Jan-Feb from 14%y/y in Q4, again driving up the overall FAI improvement. In addition, "other FAI" excluding infrastructure, manufacturing and property sectors rebounded notably from -10.7%y/y in December to a modest growth of 3.2% in Jan-Feb, contributing to 2.8ppt to the improvement of headline FAI growth.

Export growth slowed down more than expected. Exports grew by 2.3% y/y for the Jan-Feb period, down from 10.7%y/y in December. Our estimate suggests that export level contracted on a seasonally adjusted basis while real export growth also cooled. Shipment growth softened across DM and EM. In particular, shipment growth to the US slowed to 2.3%y/y from the significant upswings in Q4 (15.8% in December), though shipment level is still higher than most of the recent months. We estimate that there may not be much stronger front loadings to the US in Jan-Feb at an overall level, while data has not yet reflected a sharp reversal either. By key products, export growth of IT goods strengthened, but the slowdown of imports of tech components suggests the export rebound is likely short-lived. Overall imports contracted by 8.4% y/y for the Jan-Feb period. See more in trade data comment.

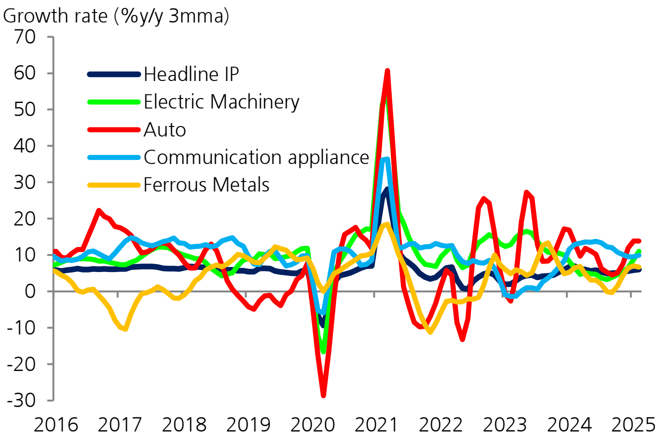
Industrial production (IP) growth edged down to 5.9%y/y in Jan-Feb from 6.2%y/y in December, though still better than market expected (Bloomberg consensus: 5.3%). Seasonally adjusted industrial production saw largely stable sequential growth momentum. The y/y slowdown is likely weighed down a higher base, cooling export shipment and slow work resumption post CNY, while better-than-expected consumption and FAI growth offered partial offset. By sector, thanks to trade-in subsidies, value-added (VA) growth in electric machinery & equipment picked up further to 12%y/y from 9.2%y/y on a low base. VA growth in communication appliances improved slightly despite a high base, though production growth of cellphone and electronic ICs both softened, weighed down by softer momentum of global tech cycle. In addition, slower work resumption of construction projects in February likely depressed demand of metals and minerals, despite strong official growth of infrastructure investment. VA growth of ferrous metal and non-metal minerals both softened, with production growth of steel and cement weakening notably.

Figure 4: Overall FAI growth edged up with cross-the-board improvement



Source: CEIC, UBS estimates

Figure 5: IP growth softened in Jan-Feb, though still better than expected

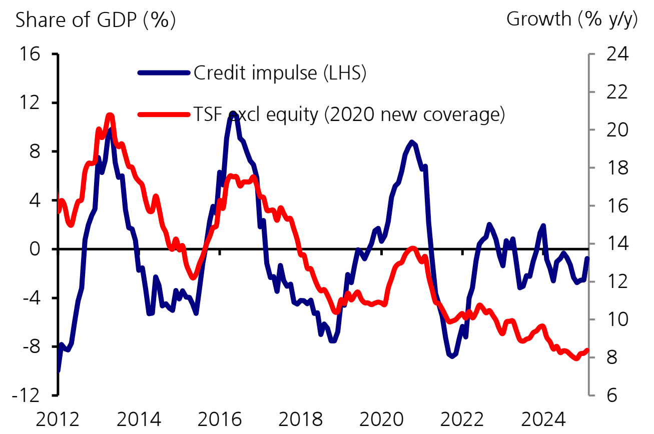


Source: CEIC, UBS estimates

Average Jan-Feb CPI inflation showed a mild decline; PPI stayed in YoY deflation. CPI inflation dropped to -0.7%y/y in Feb from an upswing of 0.5% in Jan. Such large swing mainly reflected the distortion of earlier timing of CNY holidays in 2025. Average Jan-Feb CPI reading dipped down to a mild decline of -0.1%y/y, from 0.1% in December. Food price decline was the key driver as it declined by -3.3%y/y in Feb (-0.5%m/m), led by fresh vegetable prices. Despite the YoY decline in February, non-food prices averaged 0.2%y/y in Jan-Feb period (same as December), as weaker touring & outgoing prices was partly offset by rise of fuel prices during the period. Excluding food and energy prices, core CPI inflation was slightly softer in Jan-Feb (0.3%y/y) than December (0.4%y/y), reflecting generally soft domestic demand. Meanwhile, PPI declined by -2.2% y/y in Feb following -2.3% in Jan (vs -2.3% in Dec), mirroring lingering deflation pressure from soft production & investment demand but robust production capacity. See China Weekly for more details.

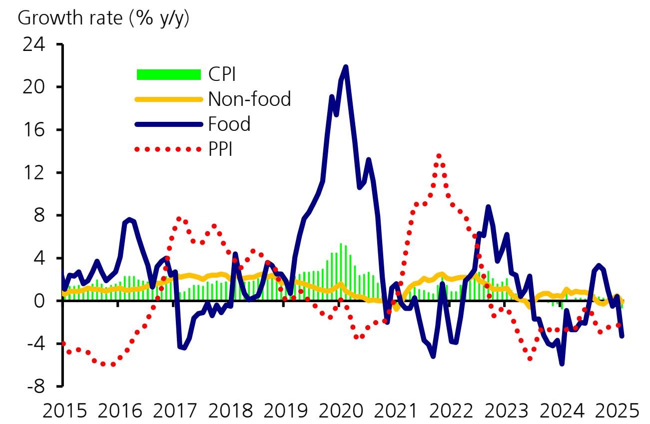
TSF credit growth edged up to 8.2% on strong government bond issuance. New RMB loans printed RMB 1.01trn and new TSF recorded RMB 2.2 trillion in February, both below expectation and falling seasonally after their record high readings of RMB 5.1 trillion and RMB 7.1 trillion in January, respectively. The large swing in monthly data prints was mainly led by earlier timing of CNY holidays this year. Taken together, the combined Jan-Feb RMB loans recorded RMB 6.14trn (RMB -230bn YoY), with M&L household loans (RMB -145bn YoY) and M&L corporate loans (RMB -600bn YoY) falling short of a year ago, while strong bill financing (RMB +904bn YoY) offered partial offset. The weakness in M&L loans points to still subdued credit demand. In addition, net issuance of government bonds accelerated to RMB 2.4trn in Jan-Feb period, almost RMB 1.5trn higher than a year ago, thanks to sizable issuance of special refinancing LGB. Corporate bonds and shadow credit were both largely at par with a year ago in the Jan-Feb period. Overall TSF growth edged up to 8.2% YoY in February from 8% YoY in January and December, and credit impulse turned less negative. See China Weekly for more details.

Figure 6: TSF growth picked up in February



Source: CEIC, UBS estimates

Figure 7: CPI inflation drooped to -0.7%y/y in February from an upswing of 0.5%y/y in January



Source: CEIC, UBS estimates

Policy and growth outlook

Property sales improved in high tier cities; nationwide recovery is still fragile. High frequency data suggests property sales in 30 major cities improved to 10%y/y in the first 15 days of March (vs 3%y/y in Jan-Feb) with no new policy easing in the past month. The rebound is particularly strong in tier 1 cities and some core tier 2 cities (such as Hangzhou and Chengdu), underpinned by lower new home inventory, strong secondary home sales and stabilization of housing prices, even though rental rates have yet to pick up. That said, housing market in lower tier cities remain weak, with elevated inventory and continued housing price decline. Official data release showed that China's overall property sales declined by 5% y/y again in Jan-Feb, with the seasonally adjusted volume falling slightly from last Q4. UBS property team expects home inventory destocking to end in early 2026. We continue to expect property sales and investment to decline by 5-10% in 2025, leading to less of a drag on GDP growth.

Significant external uncertainties ahead. The US administration has implemented 20% additional tariffs on all imports from China since February 2025, 10% tariff hike effective on February 4 and another 10% hike effective on March 4. We estimate these tariff hikes, if sustained, could pose a 0.7ppts drag on GDP growth in 2025. The US also proposed Section 301 actions targeting China's maritime, logistics and shipbuilding sectors on February 21. We think the US may roll out more tariff hikes on Chinese goods in conjunction with the ongoing "America First Trade Policy" review, to be concluded by April 1. Reportedly, Mexico offered matching tariffs that the US has on Chinese goods to avoid tariffs on its own, while US government officials called on Canada to follow suit. Potential additional US tariff hikes on China and other countries, as well as tariffs from other countries on China pose downward pressure on China's exports and growth ahead. Our current 2025 full year export growth forecast of 0% in USD terms may face downward risk. There are also other external uncertainties related to US investment restrictions (such as "American First Investment Policy") and uncertain geopolitical outcomes.

The NPC set an ambitious growth target for 2025, with moderate policy stimulus. The government set an ambitious GDP growth target of "around 5%" again for 2025 at the NPC meeting. China announced a broad fiscal expansion of 1.5-2% of GDP to support growth, including an increase of headline fiscal deficit by 1ppt (to 4% of GDP), new ultra-long special CGB by RMB 300bn (to RMB 1.3 trillion) and new special LGB by RMB 500bn (to RMB 4.4 trillion). Supporting consumption was listed as a top priority policy focus, with an Action Plan just released last weekend. The Action Plan largely followed policy settings in the NPC meeting with more granular on key policy directions, vowing to increase household income and social spending to the household sector, expand supply of service consumption, push for opening up of selected service sectors, scrap policy restrictions on consumption, increase government's budget investment in consumption projects, offer interest subsidies and encourage issuance of personal consumer loans (see more details). Trade-in subsidies of consumer goods is doubled to RMB300bn as expected, but the incremental social spending looks small in 2025 (<RMB 100bn) and the size and scope of childcare subsidies remain unclear. Local governments are also granted more autonomy and special LGB funding to facilitate inventory destocking, although further details remain to be clarified. In addition, China emphasized boosting high-quality growth and supporting the private sectors. Amidst external uncertainty and US tariff hikes, China vowed to deepen its opening-up, including to foreign investment in more domestic service sectors. Given the domestic and external growth headwinds, we think the government may need to roll out additional policy support later this year to achieve its growth target.

We maintain our 2025 baseline growth forecast at 4%, albeit with elevated uncertainties. Jan-Feb retail sales, overall FAI and industrial production came in better-than-expected, while export growth slowed and missed expectation, and property activities softened after the previous rebound in Q4. We continue to project China's real GDP growth to slow to around 4% in 2025, assuming ongoing property downturn to last until 2026 and significant trade tariffs to sustain, with policy support offering only a partial offset. Given lingering deflation pressures from continued property downturn and lower external demand, we see CPI averaging -0.3% in 2025. Our baseline forecasts face both upside and downside risks amid unusually high uncertainties. Downside risk mainly comes from prolonged property downturn, higher additional tariffs, weaker US and global growth, and slow implementation of policy support. Upside could come from earlier-than-expected property market stabilization, roll-back of some tariffs (though we think it is highly unlikely), and stronger policy stimulus later in the year (see key themes & surprise in 2025).

Required Disclosures

This document has been prepared by UBS Securities Asia Limited, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates, including former Credit Suisse AG and its subsidiaries, branches and affiliates are referred to herein as "UBS".

For information on the ways in which UBS manages conflicts and maintains independence of its UBS Global Research product; historical performance information; certain additional disclosures concerning UBS Global Research recommendations; and terms and conditions for certain third party data used in research report, please visit https://www.ubs.com/disclosures. Unless otherwise indicated, information and data in this report are based on company disclosures including but not limited to annual, interim, quarterly reports and other company announcements. The figures contained in performance charts refer to the past; past performance is not a reliable indicator of future results. Additional information will be made available upon request. UBS Securities Co. Limited is licensed to conduct securities investment consultancy businesses by the China Securities Regulatory Commission. UBS acts or may act as principal in the debt securities (or in related derivatives) that may be the subject of this report. This recommendation was finalized on: 17 March 2025 11:17 AM GMT. UBS has designated certain UBS Global Research department members as Derivatives Research Analysts where those department members publish research principally on the analysis of the price or market for a derivative, and provide information reasonably sufficient upon which to base a decision to enter into a derivatives transaction. Where Derivatives Research Analysts co-author research reports with Equity Research Analysts or Economists, the Derivatives Research Analyst is responsible for the derivatives investment views, forecasts, and/or recommendations. **Quantitative Research Review:** UBS Global Research publishes a quantitative assessment of its analysts' responses to certain questions about the likelihood of an occurrence of a number of short term factors in a product known as the 'Quantitative Research Review'. Views contained in this assessment on a particular stock reflect only the views on those short term factors which are a different timeframe to the 12-month timeframe reflected in any equity rating set out in this note. For the latest responses, please see the Quantitative Research Review Addendum at the back of this report, where applicable. For previous responses please make reference to (i) previous UBS Global Research reports; and (ii) where no applicable research report was published that month, the Quantitative Research Review which can be found at https://neo.ubs.com/quantitative, or contact your UBS sales representative for access to the report or the Quantitative Research Team on qa@ubs.com. A consolidated report which contains all responses is also available and again you should contact your UBS sales representative for details and pricing or the Quantitative Research team on the email above.

Analyst Certification:

Each research analyst primarily responsible for the content of this research report, in whole or in part, certifies that with respect to each security or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about those securities or issuers and were prepared in an independent manner, including with respect to UBS, 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 by that research analyst in the research report.

Research analysts contributing to this report who are employed by any non-US affiliate of UBS Securities LLC are not registered/qualified as research analysts with FINRA. Such analysts may not be associated persons of UBS Securities LLC and therefore are not subject to the FINRA restrictions on communications with a subject company, public appearances, and trading securities held by a research analyst account. The name of each affiliate and analyst employed by that affiliate contributing to this report, if any, follows.

UBS AG Hong Kong Branch: Ning Zhang, Tao Wang.**UBS Securities Co. Limited:** Grace Wang, Jennifer Zhong.

Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report. For a complete set of disclosure statements associated with the companies discussed in this report, including information on valuation and risk, please contact UBS Securities LLC, 1285 Avenue of Americas, New York, NY 10019, USA, Attention: Investment Research.

UBS Global Research Disclaimer

This document has been prepared by UBS Securities Asia Limited, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates, including former Credit Suisse AG and its subsidiaries, branches and affiliates are referred to herein as "UBS".

Any opinions expressed in this document may change without notice and are only current as of the date of publication. Different areas, groups, and personnel within UBS may produce and distribute separate research products independently of each other. For example, research publications from **UBS CIO** are produced by UBS Global Wealth Management. **UBS Global Research** is produced by UBS Investment Bank. Research methodologies and rating systems of each separate research organization may differ, for example, in terms of investment recommendations, investment horizon, model assumptions, and valuation methods. As a consequence, except for certain economic forecasts (for which UBS CIO and UBS Global Research may collaborate), investment recommendations, ratings, price targets, and valuations provided by each of the separate research organizations may be different, or inconsistent. You should refer to each relevant research product for the details as to their methodologies and rating system. Not all clients may have access to all products from every organization. Each research product is subject to the policies and procedures of the organization that produces it.

This document is provided solely to recipients who are expressly authorized by UBS to receive it. If you are not so authorized you must immediately destroy the document.

UBS Global Research is provided to our clients through UBS Neo, and in certain instances, UBS.com and any other system or distribution method specifically identified in one or more communications distributed through UBS Neo or UBS.com (each a system) as an approved means for distributing UBS Global Research. It may also be made available through third party vendors and distributed by UBS and/or third parties via e-mail or alternative electronic means.

All UBS Global Research is available on UBS Neo. Please contact your UBS sales representative if you wish to discuss your access to UBS Neo. Where UBS Global Research refers to "UBS Evidence Lab Inside" or has made use of data provided by UBS Evidence Lab and you would like to access that data please contact your UBS sales representative. UBS Evidence Lab data is available on UBS Neo. The level and types of services provided by UBS Global Research and UBS Evidence Lab to a client may vary depending upon various factors such as a client's individual preferences as to the frequency and manner of receiving communications, a client's risk profile and investment focus and perspective (e.g., market wide, sector specific, long-term, short-term, etc.), the size and scope of the overall client relationship with UBS Global Research and UBS Evidence Lab and legal and regulatory constraints. UBS HOLT is an offering of UBS Global Research. HOLT Lens is a corporate performance platform offering that provides an objective accounting-led framework for comparing and valuing companies and is available to clients of UBS Global Research; for further details and pricing please contact your UBS Sales representative. In particular, HOLT has a variety of warranted prices based on the scenario chosen; please mail UBS Securities LLC, 1285 Avenue of Americas, New York, NY 10019, USA, Attention: Investment Research, if you are interested in the warranted price on a particular company, again subject to commercial considerations. For all other HOLT specific disclaimers, please see https://www.ubs.com/disclosures.

When you receive UBS Global Research through a system, your access and/or use of such UBS Global Research is subject to this UBS Global Research Disclaimer and to the UBS Neo Platform Use Agreement (the "Neo Terms") together with any other relevant terms of use governing the applicable System.

When you receive UBS Global Research via a third party vendor, e-mail or other electronic means, you agree that use shall be subject to this UBS Global Research Disclaimer, the Neo Terms and where applicable the UBS Investment Bank terms of business (https://www.ubs.com/global/en/investment-bank/regulatory.html) and to UBS's Terms of Use/Disclaimer (https://www.ubs.com/global/en/legalinfo2/disclaimer.html). In addition, you consent to UBS processing your personal data and using cookies in accordance with our Privacy Statement (https://www.ubs.com/global/en/legalinfo2/privacy.html) and cookie notice (https://www.ubs.com/global/en/legal/privacy/users.html).

If you receive UBS Global Research, whether through a System or by any other means, you agree that you shall not copy, revise, amend, create a derivative work, provide to any third party, or in any way commercially exploit any UBS research provided via UBS Global Research or otherwise, and that you shall not extract data from any research or estimates provided to you via UBS Global Research or otherwise, without the prior written consent of UBS.

In certain circumstances (including for example, if you are an academic or a member of the media) you may receive UBS Global Research otherwise than in the capacity of a client of UBS and you understand and agree that (i) the UBS Global Research is provided to you for information purposes only; (ii) for the purposes of receiving it you are not intended to be and will not be treated as a "client" of UBS for any legal or regulatory purpose; (iii) the UBS Global Research must not be relied on or acted upon for any purpose; and (iv) such content is subject to the relevant disclaimers that follow.

This document is for distribution only as may be permitted by law. It 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 would subject UBS to any registration or licensing requirement within such jurisdiction.

This document is a general communication and is educational in nature; it is not an advertisement nor is it a solicitation or an offer to buy or sell any financial instruments or to participate in any particular trading strategy. Nothing in this document constitutes a representation that any investment strategy or recommendation is suitable or appropriate to an investor's individual circumstances or otherwise constitutes a personal recommendation. By providing this document, none of UBS or its representatives has any responsibility or authority to provide or have provided investment advice in a fiduciary capacity or otherwise. Investments involve risks, and investors should exercise prudence and their own judgment in making their investment decisions. None of UBS or its representatives is suggesting that the recipient or any other person take a specific course of action or any action at all. The recipient should carefully read this document in its entirety and not draw inferences or conclusions from the rating alone. By receiving this document, the recipient acknowledges and agrees with the intended purpose described above and further disclaims any expectation or belief that the information constitutes investment advice to the recipient or otherwise purports to meet the investment objectives of the recipient. The financial instruments described in the document may not be eligible for sale in all jurisdictions or to certain categories of investors.

Options, structured derivative products and futures (including OTC derivatives) are not suitable for all investors. Trading in these instruments is considered risky and may be appropriate only for sophisticated investors. Prior to buying or selling an option, and for the complete risks relating to options, you must receive a copy of "The Characteristics and Risks of Standardized Options." You may read the document at https://www.theocc.com/publications/risks/riskchap1.jsp or ask your salesperson for a copy. Various theoretical explanations of the risks associated with these instruments have been published. Supporting documentation for any claims, comparisons, recommendations, statistics or other technical data will be supplied upon request. Past performance is not necessarily indicative of future results. Transaction costs may be significant in option strategies calling for multiple purchases and sales of options, such as spreads and straddles. Because of the importance of tax considerations to many options transactions, the investor considering options should consult with his/her tax advisor as to how taxes affect the outcome of contemplated options transactions.

Mortgage and asset-backed securities may involve a high degree of risk and may be highly volatile in response to fluctuations in interest rates or other market conditions. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument referred to in the document. For investment advice, trade execution or other enquiries, clients should contact their local sales representative.

UBS notes that no globally accepted framework or definition (legal, regulatory or otherwise) currently exists, nor is there a market consensus as to what constitutes an "ESG" (Environmental, Social or Governance) or an equivalent-label, or as to what precise attributes are required for the Information (as defined below) to be defined as ESG or equivalently-labelled. Any information, data or other content including from a third party source contained, referred to herein or used for whatsoever purpose by UBS or a third party ("Information"), in relation to any actual or potential ESG objective, issue or consideration is not intended to be relied upon for ESG classification, regulatory regime or industry initiative purposes ("ESG Regimes"). Nothing in these materials is intended to convey, suggest or indicate that UBS considers or represents any product, service, person or body mentioned in these materials as meeting or qualifying for any ESG classification, labelling or similar standards that may exist under the ESG Regimes. UBS has not conducted any assessment of compliance with ESG Regimes. Parties are reminded to make their own assessments for these purposes.

The value of any investment or income may go down as well as up, and investors may not get back the full (or any) amount invested. Past performance is not necessarily a guide to future performance. Neither UBS nor any of its directors, employees or agents accepts any liability for any loss (including investment loss) or damage arising out of the use of all or any of the Information.

Prior to making any investment or financial decisions, any recipient of this document or the information should take steps to understand the risk and return of the investment and seek individualized advice from his or her personal financial, legal, tax and other professional advisors that takes into account all the particular facts and circumstances of his or her investment objectives.

Any prices stated in this document are for information purposes only and do not represent valuations for individual securities or other financial instruments. There is no representation that any transaction can or could have been effected at those prices, and any prices do not necessarily reflect UBS's internal books and records or theoretical model-based valuations and may be based on certain assumptions. Different assumptions by UBS or any other source may yield substantially different results.

No representation or warranty, either expressed or implied, is provided in relation to the accuracy, completeness or reliability of the information contained in any materials to which this document relates (the "Information"), except with respect to Information concerning UBS. The Information is not intended to be a complete statement or summary of the securities, markets or developments referred to in the document. UBS does not undertake to update or keep current the Information. Any statements contained in this report attributed to a third party represent UBS's interpretation of the data, information and/or opinions provided by that third party either publicly or through a subscription service, and such use and interpretation have not been reviewed by the third party. In no circumstances may this document or any of the Information (including any forecast, value, index or other calculated amount ("Values")) be used for any of the following purposes:

(i) valuation or accounting purposes;

(ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or

(iii) to measure the performance of any financial instrument including, without limitation, for the purpose of tracking the return or performance of any Value or of defining the asset allocation of portfolio or of computing performance fees.

By receiving this document and the Information you will be deemed to represent and warrant to UBS that you will not use this document or any of the Information for any of the above purposes or otherwise rely upon this document or any of the Information.

UBS has policies and procedures, which include, without limitation, independence policies and permanent information barriers, that are intended, and upon which UBS relies, to manage potential conflicts of interest and control the flow of information within divisions of UBS and among its subsidiaries, branches and affiliates. For further information on the ways in which UBS Global Research manages conflicts and maintains independence of its research products, historical performance information and certain additional disclosures concerning UBS Global Research recommendations, please visit https://www.ubs.com/disclosures.

UBS Global Research will initiate, update and cease coverage solely at the discretion of UBS Global Research Management, which will also have sole discretion on the timing and frequency of any published research product. The analysis contained in this document is based on numerous assumptions. All material information in relation to published research reports, such as valuation methodology, risk statements, underlying assumptions (including sensitivity analysis of those assumptions), ratings history etc. as required by the Market Abuse Regulation, can be found on UBS Neo. Different assumptions could result in materially different results.

The analyst(s) responsible for the preparation of this document may interact with trading desk personnel, sales personnel and other parties for the purpose of gathering, applying and interpreting market information. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS into other areas, units, groups or affiliates of UBS. The compensation of the analyst who prepared this document is determined exclusively by UBS Global Research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues; however, compensation may relate to the revenues of UBS and/or its divisions as a whole, of which investment banking, sales and trading are a part, and UBS as a whole.

For financial instruments admitted to trading on an EU regulated market: UBS (excluding UBS Securities LLC) acts as a market maker or liquidity provider (in accordance with the interpretation of these terms under English law or, if not carried out by UBS in the UK the law of the relevant jurisdiction in which UBS determines it carries out the activity) in the financial instruments of the issuer save that where the activity of liquidity provider is carried out in accordance with the definition given to it by the laws and regulations of any other EU jurisdictions, such information is separately disclosed in this document. For financial instruments admitted to trading on a non-EU regulated market: UBS may act as a market maker save that where this activity is carried out in the US in accordance with the definition given to it by the relevant laws and regulations, such activity will be specifically disclosed in this document. UBS may have issued a warrant the value of which is based on one or more of the financial instruments referred to in the document. UBS and its affiliates and employees may have long or short positions, trade as principal and buy and sell in instruments or derivatives identified herein; such transactions or positions may be inconsistent with the opinions expressed in this document.

Within the past 12 months UBS may have received or provided investment services and activities or ancillary services as per MiFID II which may have given rise to a payment or promise of a payment in relation to these services from or to this company.

United Kingdom: This material is distributed by UBS AG, London Branch to persons who are eligible counterparties or professional clients. UBS AG, London Branch is authorised by the Prudential Regulation Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. **Europe:** Except as otherwise specified herein, these materials are distributed by UBS Europe SE, a subsidiary of UBS AG, to persons who are eligible counterparties or professional clients (as detailed in the Bundesanstalt fur Finanzdienstleistungsaufsicht (BaFin) Rules and according to MIFID) and are only available to such persons. The information does not apply to, and should not be relied upon by, retail clients. UBS Europe SE is authorised by the European Central Bank (ECB) and regulated by the BaFin and the ECB. **Germany, Luxembourg, the Netherlands, Belgium and Ireland:** Where an analyst of UBS Europe SE has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE. In all cases it is distributed by UBS Europe SE and UBS AG, London Branch. **Turkey:** Distributed by UBS AG, London Branch. No information in this document is provided for the purpose of offering, marketing and sale by any means of any capital market instruments and services in the Republic of Turkey. Therefore, this document may not be considered as an offer made or to be made to residents of the Republic of Turkey. UBS AG, London Branch is not licensed by the Turkish Capital Market Board under the provisions of the Capital Market Law (Law No. 6362). Accordingly, neither this document nor any other offering material related to the instruments/services may be utilized in connection with providing any capital market services to persons within the Republic of Turkey without the prior approval of the Capital Market Board. However, according to article 15 (d) (ii) of the Decree No. 32, there is no restriction on the purchase or sale of the securities abroad by residents of the Republic of Turkey. **Poland:** Distributed by UBS Europe SE (spolka z ograniczona odpowiedzialnoscia) Oddzial w Polsce. Where an analyst of UBS Europe SE (spolka z ograniczona odpowiedzialnoscia) Oddzial w Polsce has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE (spolka z ograniczona odpowiedzialnoscia) Oddzial w Polsce. **Russia:** Prepared and distributed by UBS Bank (OOO). Should not be construed as an individual Investment Recommendation for the purpose of the Russian Law - Federal Law #39-FZ ON THE SECURITIES MARKET Articles 6.1-6.2.**Switzerland:** Distributed by UBS AG to persons who are institutional investors only. UBS AG is regulated by the Swiss Financial Market Supervisory Authority (FINMA). **Italy:** Prepared by UBS Europe SE and distributed by UBS Europe SE and UBS Europe SE, Italy Branch. Where an analyst of UBS Europe SE, Italy Branch has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE, Italy Branch. **France:** Prepared by UBS Europe SE and distributed by UBS Europe SE and UBS Europe SE, France Branch. Where an analyst of UBS Europe SE, France Branch has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE, France Branch. **Spain:** Prepared by UBS Europe SE and distributed by UBS Europe SE and UBS Europe SE, Spain Branch. Where an analyst of UBS Europe SE, Spain Branch has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE, Spain Branch. **Sweden:** Prepared by UBS Europe SE and distributed by UBS Europe SE and UBS Europe SE, Sweden Branch. Where an analyst of UBS Europe SE, Sweden Branch has contributed to this document, the document is also deemed to have been prepared by UBS Europe SE, Sweden Branch. **South Africa:** Distributed by UBS South Africa (Pty) Limited (Registration No. 1995/011140/07), an authorised user of the JSE and an authorised Financial Services Provider (FSP 7328). **Saudi Arabia:** This document has been issued by UBS AG (and/or any of its subsidiaries, branches or affiliates), a public company limited by shares, incorporated in Switzerland with its registered offices at Aeschenvorstadt 1, CH-4051 Basel and Bahnhofstrasse 45, CH-8001 Zurich. This publication has been approved by UBS Saudi Arabia (a subsidiary of UBS AG), a Saudi closed joint stock company incorporated in the Kingdom of Saudi Arabia under commercial register number 1010257812 having its registered office at Tatweer Towers, P.O. Box 75724, Riyadh 11588, Kingdom of Saudi Arabia. UBS Saudi Arabia is authorized and regulated by the Capital Market Authority to conduct securities business under license number 08113-37. **UAE / Dubai:** The information distributed by UBS AG Dubai Branch is only intended for Professional Clients and/or Market Counterparties, as classified under the DFSA rulebook. No other person should act upon this material/communication. The information is not for further distribution within the United Arab Emirates. UBS AG Dubai Branch is regulated by the DFSA in the DIFC. UBS Investment Bank is not licensed to provide banking services in the UAE by the Central Bank of the UAE, nor is it licensed by the UAE Securities and Commodities Authority. **Israel:** This Material is distributed by UBS AG, London Branch. UBS Securities Israel Ltd is a licensed Investment Marketer that is supervised by the Israel Securities Authority (ISA). UBS AG, London Branch and its affiliates incorporated outside Israel are not licensed under the Israeli Advisory Law. UBS may engage among others in issuance of Financial Assets or in distribution of Financial Assets of other issuers for fees or other benefits. UBS AG, London Branch and its affiliates may prefer various Financial Assets to which they have or may have an Affiliation (as such term is defined under the Israeli Advisory Law). Nothing in this Material should be considered as investment advice under the Israeli Advisory Law. This Material is being issued only to and/or is directed only at persons who are Eligible Clients within the meaning of the Israeli Advisory Law, and this Material must not be furnished to, relied on or acted upon by any other persons. **United States:** Distributed to US persons by either UBS Securities LLC or by UBS Financial Services Inc., subsidiaries of UBS AG; or by a group, subsidiary or affiliate of UBS AG that is not registered as a US broker-dealer (a **'non-US affiliate'**) to major US institutional investors only. UBS Securities LLC or UBS Financial Services Inc. accepts responsibility for the content of a report prepared by another non-US affiliate when distributed to US persons by UBS Securities LLC or UBS Financial Services Inc. All transactions by a US person in the securities mentioned in this report must be effected through UBS Securities LLC or UBS Financial Services Inc., and not through a non-US affiliate. UBS Securities LLC is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule"), and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule. **Canada:** Distributed by UBS Securities Canada Inc., a registered investment dealer in Canada and a Member-Canadian Investor Protection Fund, or by another affiliate of UBS AG that is registered to conduct business in Canada or is otherwise exempt from registration. **Brazil:** Except as otherwise specified herein, this Material is prepared by UBS Brasil Corretora de Câmbio, Títulos e Valores Mobiliários S.A. (UBS Brasil CCTVM) to persons who are eligible investors residing in Brazil, which are considered to be Professional Investors (Investidores Profissionais), as designated by the applicable regulation, mainly the CVM Resolution No. 30 from the 11th of May 2021 (determines the duty to verify the suitability of products, services and transactions with regards to the client´s profile). UBS Brasil CCTVM is a subsidiary of UBS BB Servicos de Assessoria Financeira e Participacoes S.A. ("UBS BB"). UBS BB is an association between UBS AG and Banco do Brasil (through its subsidiary BB – Banco de Investimentos S.A.), of which UBS AG is the majority owner and which provides investment banking services and coverage in Brazil, Argentina, Chile, Paraguay, Peru and Uruguay. UBS Brasil CCTVM is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. Ombudsman: 0800-940-0266/ https://www.ubs.com/br/pt/ubsbb-investment-bank/ombudsman.html. UBS may hold relevant financial and commercial interest in relation to the company subject to this Research report. **Hong Kong:** Distributed by UBS Securities Asia Limited. Please contact local licensed persons of UBS Securities Asia Limited in respect of any matters arising from, or in connection with, the analysis or document **Singapore:** Distributed by UBS Securities Pte. Ltd. [Co. Reg. No.: 198500648C] or UBS AG, Singapore Branch. Please contact UBS Securities Pte. Ltd., an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110); or UBS AG, Singapore Branch, an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110) and a wholesale bank licensed under the Singapore Banking Act (Cap. 19) regulated by the Monetary Authority of Singapore, in respect of any matters arising from, or in connection with, the analysis or document. The recipients of this document represent and warrant that they are accredited and institutional investors as defined in the Securities and Futures Act (Cap. 289). **Japan:** Distributed by UBS Securities Japan Co., Ltd. to professional investors (except as otherwise permitted). Where this report has been prepared by UBS Securities Japan Co., Ltd., UBS Securities Japan Co., Ltd. is the author, publisher and distributor of the report. Distributed by UBS AG, Tokyo Branch to Professional Investors (except as otherwise permitted) in relation to foreign exchange and other banking businesses when relevant. **Australia:** Clients of UBS AG: Distributed by UBS AG (ABN 47 088 129 613 and holder of Australian Financial Services License No. 231087). For all other recipients: Distributed by UBS Securities Australia Ltd (ABN 62 008 586 481 and holder of Australian Financial Services License No. 231098). This document contains general information and/or general advice only and does not constitute personal financial product advice. As such, the Information in this document has been prepared without taking into account any investor's objectives, financial situation or needs, and investors should, before acting on the Information, consider the appropriateness of the Information, having regard to their objectives, financial situation and needs. If the Information contained in this document relates to the acquisition, or potential acquisition of a particular financial product by a 'Retail' client as defined by section 761G of the Corporations Act 2001 where a Product Disclosure Statement would be required, the retail client should obtain and consider the Product Disclosure Statement relating to the product before making any decision about whether to acquire the product. **New Zealand:** Distributed by UBS New Zealand Ltd. UBS New Zealand Ltd is not a registered bank in New Zealand. You are being provided with this publication or material because you have indicated to UBS that you are a "wholesale client" within the meaning of section 5C of the Financial Advisers Act 2008 of New Zealand (Permitted Client). This publication or material is not intended for clients who are not Permitted Clients (non-permitted Clients). If you are a non-permitted Client you must not rely on this publication or material. If despite this warning you nevertheless rely on this publication or material, you hereby (i) acknowledge that you may not rely on the content of this publication or material and that any recommendations or opinions in such this publication or material are not made or provided to you, and (ii) to the maximum extent permitted by law (a) indemnify UBS and its associates or related entities (and their respective Directors, officers, agents and Advisors) (each a 'Relevant Person') for any loss, damage, liability or claim any of them may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material and (b) waive any rights or remedies you may have against any Relevant Person for (or in respect of) any loss, damage, liability or claim you may incur or suffer as a result of, or in connection with, your unauthorised reliance on this publication or material. **Korea:** Distributed in Korea by UBS Securities Pte. Ltd., Seoul Branch. This report may have been edited or contributed to from time to time by affiliates of UBS Securities Pte. Ltd., Seoul Branch. This material is intended for professional/institutional clients only and not for distribution to any retail clients. **Malaysia:** This material is authorized to be distributed in Malaysia by UBS Securities Malaysia Sdn. Bhd (Capital Markets Services License No.: CMSL/A0063/2007). This material is intended for professional/institutional clients only and not for distribution to any retail clients. **India:** Distributed by UBS Securities India Private Ltd. (Corporate Identity Number U67120MH1996PTC097299) 2/F, 3 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai (India) 400051. Phone: +912261556000. It provides brokerage services bearing SEBI Registration Number: INZ000259830; Merchant Banking services bearing SEBI Registration Number: INM000013101; and Research Analyst services bearing SEBI Registration Number: INH000001204. Name of Compliance Officer Mr. Parameshwaran Shivaramakrishnan, Phone : +912261556151, Email : parameshwaran.s@ubs.com, Name of Grievance Officer Parameshwaran Shivaramakrishnan, Phone : +912261556151, Email: ol-ubs-sec-compliance@ubs.com Registration granted by SEBI, and certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors. UBS may have debt holdings or positions in the subject Indian company/companies. UBS may have financial interests (e.g. loan/derivative products, rights to or interests in investments, etc.) in the subject Indian company / companies from time to time. Within the past 12 months, UBS may have received compensation for non-investment banking securities-related services and/or non-securities services from the subject Indian company/companies. The subject company/companies may have been a client/clients of UBS during the 12 months preceding the date of distribution of the research report with respect to investment banking and/or non-investment banking securities-related services and/or non-securities services. With regard to information on associates, please refer to the Annual Report at: https://www.ubs.com/global/en/about_ubs/investor_relations/annualreporting.html **Taiwan:** Except as otherwise specified herein, this material may not be distributed in Taiwan. Information and material on securities/instruments that are traded in a Taiwan organized exchange is deemed to be issued and distributed by UBS Securities Pte. LTD., Taipei Branch, which is licensed and regulated by Taiwan Financial Supervisory Commission. Save for securities/instruments that are traded in a Taiwan organized exchange, this material should not constitute "recommendation" to clients or recipients in Taiwan for the covered companies or any companies mentioned in this document. No portion of the document may be reproduced or quoted by the press or any other person without authorisation from UBS. **Indonesia:** This report is being distributed by PT UBS Sekuritas Indonesia and is delivered by its licensed employee(s), including marketing/sales person, to its client. PT UBS Sekuritas Indonesia, having its registered office at Sequis Tower Level 22 unit 22-1,Jl.Jend. Sudirman, kav.71, SCBD lot 11B, Jakarta 12190. Indonesia, is a subsidiary company of UBS AG and licensed under Capital Market Law no. 8 year 1995, a holder of broker-dealer and underwriter licenses issued by the Capital Market and Financial Institution Supervisory Agency (now Otoritas Jasa Keuangan/OJK). PT UBS Sekuritas Indonesia is also a member of Indonesia Stock Exchange and supervised by Otoritas Jasa Keuangan (OJK). Neither this report nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens except in compliance with applicable Indonesian capital market laws and regulations. This report is not an offer of securities in Indonesia and may not be distributed within the territory of the Republic of Indonesia or to Indonesian citizens in circumstance which constitutes an offering within the meaning of Indonesian capital market laws and regulations.

The disclosures contained in research documents produced by UBS AG, London Branch or UBS Europe SE shall be governed by and construed in accordance with English law.

UBS