

Supplemental Listing Document

If you are in any doubt as to any aspect of this document, you should consult your stockbroker or other registered dealer in securities, bank manager, solicitor, accountant or other professional adviser.

Application has been made to the Singapore Exchange Securities Trading Limited (the “**SGX-ST**”) for permission to deal in and for quotation of the Certificates (as defined below). The SGX-ST takes no responsibility for the contents of this document, makes no representation as to its accuracy or completeness and expressly disclaims any liability whatsoever for any loss howsoever arising from or in reliance upon the whole or any part of the contents of this document. Admission to the Official List of the SGX-ST is not to be taken as an indication of the merits of UBS AG, acting through its London branch, the Certificates, or the Company (as defined below).

**2,700,000 European Style Cash Settled Long Certificates relating to
the ordinary shares of Sunny Optical Technology (Group) Company Limited
with a Daily Leverage of 5x**

UBS AG

(Incorporated with limited liability in Switzerland)

acting through its London Branch

Issue Price: S\$0.75 per Certificate

This document is published for the purpose of obtaining a listing of all the above certificates (the “**Certificates**”) to be issued by UBS AG (the “**Issuer**”) acting through its London branch, and is supplemental to and should be read in conjunction with a base listing document dated 28 June 2023 (the “**Base Listing Document**”), including its supplements and addenda as executed from time to time, for the purpose of giving information with regard to the Issuer and the Certificates. Information relating to the Company (as defined below) is contained in this document.

This document does not constitute or form part of any offer, or invitation, to subscribe for or to sell, or solicitation of any offer to subscribe for or to purchase, Certificates or other securities of the Issuer, nor is it calculated to invite, nor does it permit the making of, offers by the public to subscribe for or purchase for cash or other consideration the Certificates or other securities of the Issuer. Restrictions have been imposed on offers and sales of the Certificates and on distributions of documents relating thereto in the United States, the United Kingdom, the European Economic Area, Singapore and Hong Kong (see “Placing and Sale” contained herein).

The Certificates are complex products. You should exercise caution in relation to them. Investors are warned that the price of the Certificates may fall in value as rapidly as it may rise and holders may sustain a total loss of their investment. The price of the Certificates also depends on the supply and demand for the Certificates in the market and the price at which the Certificates is trading at any time may differ from the underlying valuation of the Certificates because of market inefficiencies. It is not possible to predict the secondary market for the Certificates. Although the

Issuer and/or any of its affiliates may from time to time purchase the Certificates or sell additional Certificates on the market, the Issuer and/or any of its affiliates are not obliged to do so. Investors should also note that there are leveraged risks because the Certificates integrate a leverage mechanism and the Certificates will amplify the movements in the increase, and in the decrease, of the value of the Underlying Stock (as defined below) and if the investment results in a loss, any such loss will be increased by the leverage factor of the Certificates. As such, investors could lose more than they would if they had invested directly in the Underlying Stock.

For the purpose of section 309B(1) of the Securities and Futures Act 2001 of Singapore (the "SFA"), the Issuer has determined, and hereby notifies all relevant persons (as defined in section 309A of the SFA) that the Certificates are classified as capital markets products other than prescribed capital markets products¹ and Specified Investment Products (SIPs)², and may only be sold to retail investors with enhanced safeguards, including an assessment of such investors' investment knowledge or experience.

Prospective purchasers should therefore ensure that they understand the nature of the Certificates and carefully study the risk factors set out in the Base Listing Document and pages 5 to 10 of this document before they invest in the Certificates.

Application has been made to the SGX-ST for permission to deal in and for quotation of the Certificates and the SGX-ST has agreed in principle to grant permission to deal in and for quotation of the Certificates. It is expected that dealings in the Certificates will commence on or about 6 September 2023.

As at the date hereof, the Issuer's long term credit rating by S&P Global Ratings Europe Limited is A+, by Moody's Investors Service Ltd. is Aa3 and by Fitch Ratings Ireland Limited is A+.

The Issuer is regulated by, among others, the Swiss Federal Banking Commission. In the United Kingdom, it is authorised by the Prudential Regulatory Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulatory Authority.

5 September 2023

¹ As defined in the Securities and Futures (Capital Markets Products) Regulations 2018.

² As defined in the MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products.

Subject as set out below, the Issuer accepts full responsibility for the accuracy of the information contained in this document and the Base Listing Document in relation to itself and the Certificates. To the best of the knowledge and belief of the Issuer (which has taken all reasonable care to ensure that such is the case), the information contained in this document and the Base Listing Document for which it accepts responsibility (subject as set out below in respect of the information contained herein with regard to the Company) is in accordance with the facts and does not omit anything likely to affect the import of such information. The information with regard to the Company as set out herein is extracted from publicly available information. The Issuer accepts responsibility only for the accurate reproduction of such information. No further or other responsibility or liability in respect of such information is accepted by the Issuer.

No persons have been authorised to give any information or to make any representation save as contained in this document or otherwise authorised by the Issuer in connection with the Certificates and, if given or made, such information or representations must not be relied upon as having been authorised by the Issuer. Neither the delivery of this document nor any sale made hereunder shall under any circumstances create any implication that there has been no change in the affairs of the Issuer or its subsidiaries and associates since the date hereof.

This document does not constitute an offer or solicitation by or on behalf of the Issuer to purchase or subscribe for any of the Certificates. The distribution of this document and the offering of the Certificates may, in certain jurisdictions, be restricted by law. The Issuer requires persons into whose possession this document comes to inform themselves of and observe all such restrictions. In particular, the Certificates have not been, and will not be, registered under the United States Securities Act of 1933, as amended (the "**Securities Act**"). Subject to certain exceptions, Certificates, or interests therein, may not at any time be offered, sold, resold or delivered, directly or indirectly, in the United States or to, or for the account or benefit of, any U.S. person (as defined in Regulation S under the Securities Act) or to others for offering, sale or resale in the United States or to any such U.S. person. Offers and sales of Certificates, or interests therein, in the United States or to U.S. persons would constitute a violation of United States securities laws unless made in compliance with registration requirements of the Securities Act or pursuant to an exemption therefrom. A further description of certain restrictions on offering and sale of the Certificates and distribution of this document is given in the section headed "Placing and Sale" contained herein.

The SGX-ST has made no assessment of, nor taken any responsibility for, the financial soundness of the Issuer or the merits of investing in the Certificates, nor have they verified the accuracy or the truthfulness of statements made or opinions expressed in this document.

The Issuer and/or any of its affiliates may repurchase Certificates at any time on or after the date of issue and any Certificates so repurchased may be offered from time to time in one or more transactions in the over-the-counter market or otherwise at prevailing market prices or in negotiated transactions, at the discretion of the Issuer and/or any of its affiliates. Investors should not therefore make any assumption as to the number of Certificates in issue at any time.

References in this document to the "**Conditions**" shall mean references to the Terms and Conditions of the European Style Cash Settled Long/Short Certificates on Single Equities contained in the Base Listing Document. Terms not defined herein shall have the meanings ascribed thereto in the Conditions.

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RISK FACTORS

The following risk factors are relevant to the Certificates:-

- (a) investment in Certificates involves substantial risks including market risk, liquidity risk, and the risk that the Issuer will be unable to satisfy its obligations under the Certificates. Investors should ensure that they understand the nature of all these risks before making a decision to invest in the Certificates. You should consider carefully whether Certificates are suitable for you in light of your experience, objectives, financial position and other relevant circumstances. Certificates are not suitable for inexperienced investors;
- (b) the Certificates constitute direct, general and unsecured contractual obligations of the Issuer and if you purchase the Certificates you are relying upon the creditworthiness of the Issuer and have no rights under the Certificates against any other person. In particular, it should be noted that the Issuer issues a large number of financial instruments, including Certificates, on a global basis and, at any given time, the financial instruments outstanding may be substantial. If you purchase the Certificates you are relying upon the creditworthiness of the Issuer and have no rights under the Certificates against the Company which has issued the Underlying Stock (as defined below). The Issuer has substantially no obligation to a Certificate Holder (as defined in the Conditions) other than to pay amounts in accordance with the terms thereof as set forth herein and in the Base Listing Document. The Issuer does not in any respect underwrite or guarantee the performance of any Certificate. Any profit or loss realised by a Certificate Holder in respect of a Certificate upon exercise or otherwise due to changes in the value of such Certificate or the Underlying Stock is solely for the account of such Certificate Holder. In addition, the Issuer shall have the absolute discretion to put in place any hedging transaction or arrangement which it deems appropriate in connection with any Certificate or the Underlying Stock. A reduction in the rating, if any, accorded to outstanding debt securities of the Issuer by any one of its rating agencies could result in a reduction in the trading value of the Certificates;
- (c) since the Certificates relate to the price of the Underlying Stock, certain events relating to the Underlying Stock may cause adverse movements in the value and the price of the Underlying Stock, as a result of which, the Certificate Holders may, in extreme circumstances, sustain a significant loss of their investment if the price of the Underlying Stock has fallen sharply;
- (d) due to their nature, the Certificates can be volatile instruments and may be subject to considerable fluctuations in value. The price of the Certificates may fall in value as rapidly as it may rise due to, including but not limited to, variations in the frequency and magnitude of the changes in the price of the Underlying Stock, the time remaining to expiry and the creditworthiness of the Issuer;
- (e) fluctuations in the price of the Underlying Stock will affect the price of the Certificates but not necessarily in the same magnitude and direction, therefore, prospective investors intending to purchase Certificates to hedge their market risk associated with investing in the Underlying Stock which may be specified herein, should recognise the complexities of utilising the Certificates in this manner;
- (f) a Certificate Holder must tender a specified number of Certificates at any one time in order to exercise. Thus, Certificate Holders with fewer than the specified minimum number of Certificates in a particular series will either have to sell their Certificates or purchase additional Certificates, incurring transactions costs in each case, in order to realise their investment;

- (g) if, whilst any of the Certificates remain unexercised, trading in the Underlying Stock is suspended or halted on the relevant stock exchange, trading in the Certificates may be suspended for a similar period;
- (h) investors should note that the Issuer's obligations to pay amounts in accordance with the terms thereof as set forth herein shall be discharged by delivery of the aggregate Cash Settlement Amount (if positive) to all Certificate Holders in accordance with the agreement with the Warrant Agent;
- (i) investors should note that in the event of there being a Market Disruption Event (as defined in the Conditions) determination or payment of the Cash Settlement Amount (as defined in the Conditions) may be delayed, all as more fully described in the Conditions;
- (j) certain events relating to the Underlying Stock require or, as the case may be, permit the Issuer to make certain adjustments or amendments to the Conditions;
- (k) the Certificates are only exercisable on the expiry date and may not be exercised by Certificate Holders prior to such expiry date. Accordingly, if on such expiry date the Cash Settlement Amount is zero, a Certificate Holder will lose the value of his investment;
- (l) the total return on an investment in any Certificate may be affected by the Hedging Fee Factor (as defined below), Management Fee (as defined below) and Gap Premium (as defined below);
- (m) investors holding their position overnight should note that they would be required to bear the annualised cost which consists of the Management Fee and Gap Premium, which are calculated daily and applied to the value of the Certificates, as well as certain costs embedded within the Leverage Strategy (as described below) including the Funding Cost (as defined below) and the Rebalancing Cost (as defined below);
- (n) investors should note that there may be an exchange rate risk where the Cash Settlement Amount may be converted from a foreign currency into Singapore dollars. Exchange rates between currencies are determined by forces of supply and demand in the foreign exchange markets. These forces are, in turn, affected by factors such as international balances of payments and other economic and financial conditions, government intervention in currency markets and currency trading speculation. Fluctuations in foreign exchange rates, foreign political and economic developments, and the imposition of exchange controls or other foreign governmental laws or restrictions applicable to such investments may affect the foreign currency market price and the exchange rate-adjusted equivalent price of the Certificates. Fluctuations in the exchange rate of any one currency may be offset by fluctuations in the exchange rate of other relevant currencies;
- (o) investors should note that there are leveraged risks because the Certificates integrate a leverage mechanism and the Certificates will amplify the movements in the increase, and in the decrease, of the value of the Underlying Stock and if the investment results in a loss, any such loss will be increased by the leverage factor of the Certificates. As such, investors could lose more than they would if they had invested directly in the Underlying Stock;
- (p) when held for longer than a day, the performance of the Certificates could be more or less than the leverage factor that is embedded within the Certificates. The performance of the Certificates each day is locked in, and any subsequent returns are based on what was achieved the previous day. This process, referred to as compounding, may lead to a performance difference from 5 times the performance of the Underlying Stock over a period longer than one day. This difference may be amplified in a volatile market with a sideways

trend, where market movements are not clear in direction, whereby investors may sustain substantial losses;

- (q) the Air Bag Mechanism (as defined below) is triggered only when the Underlying Stock is calculated or traded, which may not be during the trading hours of the Relevant Stock Exchange for the Certificates (as defined below);
- (r) investors should note that the Air Bag Mechanism reduces the impact on the Leverage Strategy if the Underlying Stock falls further, but will also maintain a reduced exposure to the Underlying Stock in the event the Underlying Stock starts to rise after the Air Bag Mechanism is triggered, thereby reducing its ability to recoup losses;
- (s) there is no assurance that the Air Bag Mechanism will prevent investors from losing the entire value of their investment, in the event of (i) an overnight fall in the Underlying Stock, where there is a 20% or greater gap between the previous day closing price and the opening price of the Underlying Stock the following day, as the Air Bag Mechanism will only be triggered when the market (in respect of which the Underlying Stock is listed) opens the following day (including pre-opening session or opening auction, as the case may be) or (ii) a sharp intraday fall in the Underlying Stock of 20% or greater during the observation period compared to the reference price, being: (a) if air bag event has not been previously triggered on the same day, the previous closing price of the Underlying Stock, or (b) if one or more air bag events have been previously triggered on the same day, the latest new observed price. Investors may refer to pages 41 to 42 of this document for more information;
- (t) certain events may, pursuant to the terms and conditions of the Certificates, trigger (A) the implementation of methods of adjustment or (B) the early termination of the Certificates. The Issuer will give the investors reasonable notice of any early termination. If the Issuer terminates the Certificates early, then the Issuer will, if and to the extent permitted by applicable law, pay an amount to each Certificate Holder in respect of each Certificate held by such holder equal to the fair market value of the Certificate less the cost to the Issuer of unwinding any underlying related hedging arrangements, all as determined by the Issuer in its sole and absolute discretion. The performance of this commitment shall depend on (A) general market conditions and (B) the liquidity conditions of the underlying instrument(s) and, as the case may be, of any other hedging transactions. Investors should note that the amount repaid by the Issuer may be less than the amount initially invested. Investors may refer to Condition 13 on pages 28 to 29 of this document for more information;
- (u) investors should note that it is not possible to predict the price at which the Certificates will trade in the secondary market or whether such market will be liquid or illiquid. To the extent Certificates of a particular issue are exercised, the number of Certificates of such issue outstanding will decrease, resulting in a diminished liquidity for the remaining Certificates of such issue. A decrease in the liquidity of an issue of Certificates may cause, in turn, an increase in the volatility associated with the price of such issue of Certificates. The Issuer may, but is not obligated to, at any time, purchase Certificates at any price in the open market or by tender or private agreement. Any Certificates so purchased may be held or resold or surrendered for cancellation. To the extent that an issue of Certificates becomes illiquid, an investor may have to exercise such Certificates to realise value;
- (v) two or more risk factors may simultaneously have an effect on the value of a Certificate such that the effect of any individual risk factor may not be predicted. No assurance can be given as to the effect any combination of risk factors may have on the value of a Certificate;

- (w) investors should note that they may be required to pay stamp taxes or other documentary charges in accordance with the laws and practices of the country where the Certificates are transferred. Investors who are in any doubt as to their tax position should consult their own independent tax advisers. In addition, investors should be aware that tax regulations and their application by the relevant taxation authorities change from time to time. Accordingly, it is not possible to predict the precise tax treatment which will apply at any given time. Investors should refer to the Taxation Section in the Base Listing Document;
- (x) investors should note that the Issuer may enter into discount, commission or fee arrangements with brokers and/or any of its subsidiaries or affiliates with respect to the primary or secondary market in the Certificates. The arrangements may result in the benefit to investors in Certificates buying and selling Certificates through nominated brokers by reducing or eliminating the commission payable by such Certificate Holders. In the event that the commission payable by Certificate Holders is eliminated, fee arrangements between the Issuer and brokers and/or any of its subsidiaries or affiliates will continue to apply. Investors in the Certificates should note that any brokers with whom the Issuer has a commission arrangement does not, and cannot be expected to, deal exclusively in the Certificates, therefore any broker and/or any of its subsidiaries or affiliates may from time to time engage in transactions involving the Underlying Stock and/or structured products of other issuers over the Underlying Stock as the Certificates for their proprietary accounts and/or accounts of their clients. The fact that the same broker may deal simultaneously for different clients in competing products in the market place may affect the value of the Certificates and present certain conflicts of interests;
- (y) various potential and actual conflicts of interest may arise from the overall activities of the Issuer and any of its subsidiaries and affiliates.

The Issuer and any of its subsidiaries and affiliates are diversified financial institutions with relationships in countries around the world. These entities engage in a wide range of commercial and investment banking, brokerage, funds management, hedging transactions and investment and other activities for their own account or the account of others. In addition, the Issuer and any of its subsidiaries and affiliates, in connection with their other business activities, may possess or acquire material information about the Underlying Stock. Such activities and information may involve or otherwise affect issuers of the Underlying Stock in a manner that may cause consequences adverse to the Certificate Holders or otherwise create conflicts of interests in connection with the issue of Certificates by the Issuer. Such actions and conflicts may include, without limitation, the exercise of voting power, the purchase and sale of securities, financial advisory relationships and exercise of creditor rights. The Issuer and any of its subsidiaries and affiliates have no obligation to disclose such information about the Underlying Stock or such activities. The Issuer and any of its subsidiaries and affiliates and their officers and directors may engage in any such activities without regard to the issue of Certificates by the Issuer or the effect that such activities may directly or indirectly have on any Certificate;

- (z) in the ordinary course of their business, including without limitation in connection with the Issuer or its appointed designated market maker's market making activities, the Issuer and any of its respective subsidiaries and affiliates may effect transactions for their own account or for the account of their customers and hold long or short positions in the Underlying Stock and/or related derivatives. In addition, in connection with the offering of any Certificates, the Issuer and any of its respective subsidiaries and affiliates may enter into one or more hedging transactions with respect to the Underlying Stock and/or related derivatives. In connection with such hedging or market-making activities or with respect to proprietary or other trading

activities by the Issuer and any of its respective subsidiaries and its affiliates, the Issuer and any of its respective subsidiaries and affiliates may enter into transactions in the Underlying Stock and/or related derivatives which may affect the market price, liquidity or value of the Certificates and which may affect the interests of Certificate Holders;

- (aa) the value of the Certificates depends on the Leverage Strategy performance built in the Certificate. The Calculation Agent will make the Leverage Strategy last closing level and a calculation tool available to the investors on a website;
- (bb) certain risks relating to the Issuer's operating environment and strategy, including those as set out in Appendix 2 of the Base Listing Document, may impact the Issuer's ability to execute its strategy and directly affect its business activities, financial condition, results of operations and prospects. As a broad-based international financial services firm, the Issuer is inherently exposed to risks that become apparent only with the benefit of hindsight, risks of which it is not presently aware or which it currently does not consider to be material could also materially affect its business activities, financial condition, results of operations and prospects. The sequence in which the risk factors are set out in Appendix 2 of the Base Listing Document is not indicative of their likelihood of occurrence or the potential magnitude of their financial consequences;
- (cc) as the Certificates are represented by a global warrant certificate which will be deposited with The Central Depository (Pte) Limited ("**CDP**"):-
 - (i) investors should note that no definitive certificate will be issued in relation to the Certificates;
 - (ii) there will be no register of Certificate Holders and each person who is for the time being shown in the records maintained by CDP as entitled to a particular number of Certificates by way of interest (to the extent of such number) in the global warrant certificate in respect of those Certificates represented thereby shall be treated as the holder of such number of Certificates;
 - (iii) investors will need to rely on any statements received from their brokers/custodians as evidence of their interest in the Certificates; and
 - (iv) notices to such Certificate Holders will be published on the website of the SGX-ST. Investors will need to check the website of the SGX-ST regularly and/or rely on their brokers/custodians to obtain such notices;
- (dd) Generally, investing in the Certificates may involve risks related to the discontinuance, changes or adjustments to benchmarks generally

Discontinuance of, or changes to, benchmarks may require adjustments to the Issuer's agreements, systems and processes. The interbank offered rate(s) and other interest rate, equity, commodity, foreign exchange and other types of indices which are deemed to be "benchmarks", are the subject of national, international and other regulatory guidance and proposals for reform. Some of these reforms are already effective whilst others are still to be or may be implemented. These reforms may cause such benchmarks to perform differently than in the past, to disappear entirely, or have other consequences which cannot be predicted. Any such consequence could have a material adverse effect on any Certificates referencing such a benchmark. Investors should consult their own independent advisers and make their own assessment about the potential risks or any of the international or national reforms in making any investment decision with respect to any Certificates referencing a benchmark; and

(ee) Specifically, the reform of HIBOR may adversely affect the value of the Certificates

The Hong Kong Inter-bank Offered Rate (“**HIBOR**”) benchmark is referenced in the Leverage Strategy.

It is not possible to predict with certainty whether, and to what extent, HIBOR will continue to be supported going forwards. This may cause HIBOR to perform differently than they have done in the past, and may have other consequences which cannot be predicted. Such factors may have (without limitation) the following effects: (i) discouraging market participants from continuing to administer or contribute to a benchmark; (ii) triggering changes in the rules or methodologies used in the benchmark and/or (iii) leading to the disappearance of the benchmark. Any of the above changes or any other consequential changes as a result of international or national reforms or other initiatives or investigations, could have a material adverse effect on the value of and return on the Certificates.

In addition, the occurrence of a modification or cessation of HIBOR may cause adjustment of the Certificates which may include selecting one or more successor benchmarks and making related adjustments to the Certificates, including if applicable to reflect increased costs.

The Calculation Agent may make adjustments as it may determine appropriate if any of the following circumstances occurs or may occur: (1) HIBOR is materially changed or cancelled or (2)(i) the relevant authorisation, registration, recognition, endorsement, equivalence decision or approval in respect of the benchmark or the administrator or sponsor of the benchmark is not obtained, (ii) an application for authorisation, registration, recognition, endorsement, equivalence decision, approval or inclusion in any official register is rejected or (iii) any authorisation, registration, recognition, endorsement, equivalence decision or approval is suspended or inclusion in any official register is withdrawn.

Investors should consult their own independent advisers and make their own assessment about the potential risks imposed by any of the international or national reforms in making any investment decision with respect to any Certificate.

TERMS AND CONDITIONS OF THE CERTIFICATES

The following are the terms and conditions of the Certificates and should be read in conjunction with, and are qualified by reference to, the other information set out in this document and the Base Listing Document.

The Conditions are set out in the section headed “Terms and Conditions of the European Style Cash Settled Long/Short Certificates on Single Equities” in the Base Listing Document. For the purposes of the Conditions, the following terms shall have the following meanings:

Certificates:	2,700,000 European Style Cash Settled Long Certificates relating to the ordinary shares of Sunny Optical Technology (Group) Company Limited traded in HKD (the “ Underlying Stock ” or the “ Underlying ”)
ISIN:	CH1227876542
Company:	Sunny Optical Technology (Group) Company Limited (RIC: 2382.HK)
Underlying Price ³ and Source:	HK\$66.3 (Bloomberg)
Calculation Agent:	UBS AG acting through its London Branch
Strike Level:	Zero
Daily Leverage:	5x (within the Leverage Strategy as described below)
Notional Amount per Certificate:	SGD 0.75
Management Fee (p.a.) ⁴ :	0.40%
Gap Premium (p.a.) ⁵ :	7.50%, is a hedging cost against extreme market movements overnight.
Funding Cost ⁶ :	The annualised costs of funding, referencing a publically published interbank offered rate plus spread.
Rebalancing Cost ⁶ :	The transaction costs (if applicable), computed as a function of leverage and daily performance of the Underlying Stock.
Launch Date:	24 August 2023
Closing Date:	5 September 2023

³ These figures are calculated as at, and based on information available to the Issuer on or about 5 September 2023. The Issuer is not obliged, and undertakes no responsibility to any person, to update or inform any person of any changes to the figures after 5 September 2023.

⁴ Please note that the Management Fee is calculated on a 360-day basis and may be increased up to a maximum of 3% p.a. on giving one month’s notice to investors. Any increase in the Management Fee will be announced on the SGXNET. Please refer to “Fees and Charges” below for further details of the fees and charges payable and the maximum of such fees as well as other ongoing expenses that may be borne by the Certificates.

⁵ Please note that the Gap Premium is calculated on a 360-day basis.

⁶ These costs are embedded within the Leverage Strategy.

Expected Listing Date:	6 September 2023
Last Trading Date:	The date falling 5 Business Days immediately preceding the Expiry Date, currently being 23 June 2025
Expiry Date:	30 June 2025 (if the Expiry Date is not a Business Day, then the Expiry Date shall fall on the preceding Business Day and subject to adjustment of the Valuation Date upon the occurrence of Market Disruption Events as set out in the Conditions of the Certificates)
Board Lot:	100 Certificates
Valuation Date:	27 June 2025 or if such day is not an Exchange Business Day, the immediately preceding Exchange Business Day.
Exercise:	The Certificates may only be exercised on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, in a Board Lot or integral multiples thereof. Certificate Holders shall not be required to deliver an exercise notice. Exercise of Certificates shall be determined by whether the Cash Settlement Amount (less any Exercise Expenses) is positive. If the Cash Settlement Amount (less any Exercise Expenses) is positive, all Certificates shall be deemed to have been automatically exercised at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day. The Cash Settlement Amount less the Exercise Expenses in respect of the Certificates shall be paid in the manner set out in Condition 4(c) of the Conditions. In the event the Cash Settlement Amount (less any Exercise Expenses) is zero, all Certificates shall be deemed to have expired at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, and Certificate Holders shall not be entitled to receive any payment from the Issuer in respect of the Certificates.
Cash Settlement Amount:	In respect of each Certificate, shall be an amount (if positive) payable in the Settlement Currency equal to: Closing Level multiplied by the Notional Amount per Certificate Please refer to the “Information relating to the European Style Cash Settled Long Certificates on Single Equities” section on pages 33 to 47 of this document for examples and illustrations of the calculation of the Cash Settlement Amount.
Hedging Fee Factor:	In respect of each Certificate, shall be an amount calculated as: Product (for t from Expected Listing Date to Valuation Date) of $(1 - \text{Management Fee} \times (\text{ACT}(t-1;t) \div 360)) \times (1 - \text{Gap Premium}(t-1) \times (\text{ACT}(t-1;t) \div 360))$, where:

“t” refers to “**Observation Date**” which means each Underlying Stock Business Day (subject to Market Disruption Event) from (and including) the Underlying Stock Business Day immediately preceding the Expected Listing Date to the Valuation Date; and

ACT (t-1;t) means the number of calendar days between the Underlying Stock Business Day immediately preceding the Observation Date (which is “t-1”) (included) and the Observation Date (which is “t”) (excluded).

An “**Underlying Stock Business Day**” is a day on which The Stock Exchange of Hong Kong Limited (the “**HKEX**”) is open for dealings in Hong Kong during its normal trading hours and banks are open for business in Hong Kong.

Please refer to the “Information relating to the European Style Cash Settled Long Certificates on Single Equities” section on pages 33 to 47 of this document for examples and illustrations of the calculation of the Hedging Fee Factor.

Closing Level: In respect of each Certificate, shall be an amount payable in the Settlement Currency equal to:

$$\left(\frac{\text{Final Reference Level} \times \text{Final Exchange Rate}}{\text{Initial Reference Level} \times \text{Initial Exchange Rate}} - \text{Strike Level} \right) \times \text{Hedging Fee Factor}$$

Initial Reference Level: 1,000

Final Reference Level: The closing level of the Leverage Strategy (as described below) on the Valuation Date

The calculation of the closing level of the Leverage Strategy is set out in the “Specific Definitions relating to the Leverage Strategy” section on pages 15 to 19 below.

Initial Exchange Rate³: 0.1736043782

Final Exchange Rate: The rate for the conversion of HKD to SGD as at 5:00pm (Singapore Time) on the Valuation Date as shown on Reuters, provided that if the Reuters service ceases to display such information, as determined by the Issuer by reference to such source(s) as the Issuer may reasonably determine to be appropriate at such a time.

Air Bag Mechanism: The “**Air Bag Mechanism**” refers to the mechanism built in the Leverage Strategy and which is designed to reduce the Leverage Strategy exposure to the Underlying Stock during extreme market conditions. If the Underlying Stock falls by 15% or more (“**Air Bag Trigger Price**”) during the trading day (which represents approximately 75% loss after a 5 times leverage), the Air Bag Mechanism is triggered and the Leverage Strategy is adjusted intra-day. The Air Bag Mechanism reduces the impact on the Leverage Strategy if the Underlying Stock falls further, but will also maintain a reduced exposure to the Underlying Stock in the event the Underlying Stock starts to rise after the Air Bag Mechanism is triggered, thereby reducing its ability to recoup losses.

Trading of Certificates is suspended for at least 30 minutes of continuous trading after the Air Bag is triggered. The resumption of trading is subject to the SGX-ST's requirements of at least 15 minutes after the SGX-ST approves the request from the Issuer to resume trading on the Certificates, rounded to the next quarter of an hour.

The Leverage Strategy is floored at 0 and the Certificates cannot be valued below zero.

Please refer to the "Air Bag Mechanism" section on page 19 below and the "Description of Air Bag Mechanism" section on pages 39 to 40 of this document for further information of the Air Bag Mechanism.

Adjustments and Extraordinary Events:	The Issuer has the right to make adjustments to the terms of the Certificates if certain events, including any capitalisation issue, rights issue, extraordinary distributions, merger, delisting, insolvency (as more specifically set out in the terms and conditions of the Certificates) occur in respect of the Underlying Stock. For the avoidance of doubt, no notice will be given if the Issuer determines that adjustments will not be made.
Underlying Stock Currency:	Hong Kong Dollar (" HKD ")
Settlement Currency:	Singapore Dollar (" SGD ")
Exercise Expenses:	Certificate Holders will be required to pay all charges which are incurred in respect of the exercise of the Certificates.
Relevant Stock Exchange for the Certificates:	The Singapore Exchange Securities Trading Limited (" SGX-ST ")
Relevant Stock Exchange for the Underlying Stock:	HKEX
Business Day, Settlement Business Day and Exchange Business Day:	<p>A "Business Day" or a "Settlement Business Day" is a day (excluding Saturdays, Sundays and public holidays) on which the SGX-ST is open for dealings in Singapore during its normal trading hours and banks are open for business in Singapore.</p> <p>An "Exchange Business Day" is a day on which the SGX-ST and the HKEX are open for dealings in Singapore and Hong Kong respectively during its normal trading hours and banks are open for business in Singapore and Hong Kong.</p>
Warrant Agent:	The Central Depository (Pte) Limited (" CDP ")
Clearing System:	CDP
Fees and Charges:	Normal transaction and brokerage fees shall apply to the trading of the Certificates on the SGX-ST. Investors should note that they may be required to pay stamp taxes or other documentary charges in

accordance with the laws and practices of the country where the Certificates are transferred. Investors who are in any doubt as to their tax position should consult their own independent tax advisers. In addition, investors should be aware that tax regulations and their application by the relevant taxation authorities change from time to time. Accordingly, it is not possible to predict the precise tax treatment which will apply at any given time.

Investors holding position overnight would also be required to bear the Management Fee and Gap Premium, which are calculated daily and applied to the value of the Certificates, as well as certain costs embedded within the Leverage Strategy including the Funding Cost and the Rebalancing Cost. The Management Fee may be increased up to a maximum of 3% p.a. on giving one month's notice to investors in accordance with the terms and conditions of the Certificates. Any increase in the Management Fee will be announced on the SGXNET.

Further Information:

Please refer to the website at <http://dlc.ubs.com> for more information on the theoretical closing price of the Certificates on the previous trading day, the closing price of the Underlying Stock on the previous trading day, the Air Bag Trigger Price for each trading day and the Management Fee and Gap Premium.

Specific Definitions relating to the Leverage Strategy

Description of the Leverage Strategy

The Leverage Strategy is designed to track a 5 times daily leveraged exposure to the Underlying Stock.

At the end of each trading day of the Underlying Stock, the exposure of the Leverage Strategy to the Underlying Stock is reset within the Leverage Strategy in order to retain a daily leverage of 5 times the performance of the Underlying Stock (excluding costs) regardless of the performance of the Underlying Stock on the preceding day. This mechanism is referred to as the Daily Reset.

The Leverage Strategy incorporates an air bag mechanism which is designed to reduce exposure to the Underlying Stock during extreme market conditions, as further described below.

Leverage Strategy Formula

LSL_t means, the Leverage Strategy Level as at the Leverage Reset Time (t), calculated in accordance with the following formulae:

On Leverage Reset Time (1):

$$LSL_1 = 1000$$

On each subsequent Leverage Reset Time (t):

$$LSL_t = \text{Max} \left[LSL_{r(t)} \times \left(1 + LR_{r(t),t} - FC_{r(t),t} - RC_{r(t),t} \right), 0 \right]$$

Leverage Reset Time (t)	<p>means</p> <p>1) the scheduled closing time for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto) on any Observation Date; and</p> <p>2) end of any Intraday Restrike Event Observation Period.</p> <p>Leverage Reset Time (1) is the scheduled close for the Relevant Stock Exchange for the Underlying Stock on Issue Date.</p>
Leverage Reset Time r(t)	<p>means the Leverage Reset Time immediately preceding the Leverage Reset Time (t).</p>
LR_{r(t),t}	<p>means the Leveraged Return of the Underlying Stock between Leverage Reset Time r(t) and Leverage Reset Time (t), calculated as follows:</p> $LR_{r(t),t} = \text{Leverage} \times \left(\frac{S_t}{S_{r(t)} \times Rfactor_t} - 1 \right)$
FC_{r(t),t}	<p>means, the Funding Cost between the Leverage Reset Time r(t) (included) and the Leverage Reset Time (t) (excluded) calculated as follows:</p> <p>If the Leverage Reset Time r(t) is at the scheduled closing time for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto) on any Observation Date,</p> $FC_{r(t),t} = (\text{Leverage} - 1) \times \frac{\text{Rate}_{r(t)} \times \text{ACT}(r(t), t)}{\text{DayCountBasisRate}}$ <p>Otherwise, $FC_{r(t),t} = 0$</p>
RC_{r(t),t}	<p>means the Rebalancing Cost of the Leverage Strategy as at Leverage Reset Time (t), calculated as follows:</p> $RC_{r(t),t} = \text{Leverage} \times (\text{Leverage} - 1) \times \left(\left \frac{S_t}{S_{r(t)} \times Rfactor_t} - 1 \right \right) \times \text{TC}$
TC	<p>means the Transaction Costs applicable as determined by the Calculation Agent (including Stamp Duty and any other applicable taxes, levies and costs which may be levied on the stock transactions on the Relevant Stock Exchange for the Underlying Stock by the applicable regulatory authorities from time to time) that are currently equal to:</p> <p>0.13%</p> <p>“Stamp Duty” refers to the applicable rate of stamp duty on the stock transactions in the jurisdiction of the Relevant Stock Exchange for the Underlying Stock, which may be changed by the applicable regulatory authorities from time to time.</p>
Leverage	5

S_t means the Underlying Stock Price as of Leverage Reset Time (t) computed as follows, subject to the adjustments and provisions of the Conditions:

If the Leverage Reset Time (t) is at the scheduled closing time for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto) on any Observation Date,

S_t is the Closing Price of the Underlying Stock as of such Observation Date.

Otherwise,

S_t is the lowest price of the Underlying Stock during the respective Intraday Restrike Observation Period.

$Rfactor_t$ means an amount determined by the Calculation Agent, according to the following formula, subject to the adjustments and provisions of the Conditions:

If in respect of the Leverage Reset Time (t), the immediately preceding Leverage Reset Time $r(t)$ is at the scheduled closing time for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto) on any Observation Date,

$$Rfactor_t = 1 - \frac{Div_t}{S_{r(t)}}$$

Otherwise,

$$Rfactor_t = 1$$

Where

Div_t is the dividend to be paid out in respect of the Underlying Stock on the Observation Date of the Leverage Reset Time (t) if such Observation Date is an ex-dividend date, otherwise is zero. The dividend shall be considered net of any applicable withholding taxes.

$Rate_t$ means, in respect of the Observation Date of Leverage Reset Time (t), a rate calculated as of such day in accordance with the following formula:

$$Rate_t = CashRate_t + \%SpreadLevel_t$$

$CashRate_t$ means, in respect of the Observation Date of the Leverage Reset Time (t), the Overnight HKD Hong Kong Interbank Offered Rate (HIBOR) Fixing, as published on Reuters RIC H1HKDOND= or any successor page, being the rate as of day (t), provided that if any of such rate is not available, then that rate shall be determined by reference to the latest available rate that was published on the relevant Reuters page. Upon the occurrence or likely occurrence, as determined by the Calculation Agent, of a Benchmark Event, the Calculation Agent may make adjustments as it may determine appropriate to account for the relevant event or circumstance, including but not limited to using any alternative rates from such date, with or without retroactive effect as the Calculation Agent may in its sole and absolute discretion determine.

%SpreadLevel_t means, in respect of the Observation Date of the Leverage Reset Time (t), a rate which shall be determined with respect to such Valuation Date(t) by the Calculation Agent as the difference between (1) the 12-month HKD Hong Kong Interbank Offered Rate (HIBOR) Fixing, as published on Reuters RIC HHHKD1YD= and (2) Overnight HKD Hong Kong Interbank Offered Rate (HIBOR) Fixing, as published on Reuters RIC HHHKDOND=or any successor page, each being the rate as of day (t), provided that if any of such rates is not available, then that rate shall be determined by reference to the latest available rate that was published on the relevant Reuters page. Upon the occurrence or likely occurrence, as determined by the Calculation Agent, of a Benchmark Event, the Calculation Agent may make adjustments as it may determine appropriate to account for the relevant event or circumstance, including but not limited to using any alternative rates from such date, with or without retroactive effect as the Calculation Agent may in its sole and absolute discretion determine.

Provided that if such difference is negative, **%SpreadLevel_t** should be 0%.

Benchmark Event means:

- (a) the relevant reference rate has ceased to be published on the relevant screen page as a result of such benchmark ceasing to be calculated or administered; or
- (b) a public statement by the administrator of the relevant reference rate that (in circumstances where no successor administrator has been or will be appointed that will continue publication of such reference rate) it has ceased publishing such reference rate permanently or indefinitely or that it will cease to do so by a specified future date (the "**Specified Future Date**"); or
- (c) a public statement by the supervisor of the administrator of the relevant reference rate that such reference rate has been or will, by a specified future date (the "**Specified Future Date**"), be permanently or indefinitely discontinued; or
- (d) a public statement by the supervisor of the administrator of the relevant reference rate as a consequence of which Reference Rate will, by a specified future date (the "**Specified Future Date**"), be prohibited from being used, or that its use will be subject to restrictions or adverse consequences, either generally or in respect of the Certificates; or
- (e) a public statement by the supervisor of the administrator of the relevant reference rate that, in the view of such supervisor, such reference rate is or will, by a specified future date (the "**Specified Future Date**"), be no longer representative of an underlying market or the methodology to calculate such reference rate has materially changed; or
- (f) it has or will, by a specified date within the following six months, become unlawful for the Calculation Agent or the Issuer to calculate any payments due to be made to any holder of the Certificates

using the relevant reference rate (including, without limitation, under the Benchmarks Regulation (EU) 2016/1011, if applicable).

Notwithstanding the subparagraphs above, where the relevant Benchmark Event is a public statement within subparagraphs (b), (c), (d) or (e) above and the Specified Future Date in the public statement is more than six months after the date of that public statement, the Benchmark Event shall not be deemed occur until the date falling six months prior to such Specified Future Date.

ACT(r(t),t) ACT(r(t),t) means the number of calendar days between the Observation Date of the Leverage Reset Time r(t) (included) and the Observation Date of the Leverage Reset Time (t) (excluded).

DayCountBasisRate 365

Air Bag Mechanism

Intraday Restrike Event means in respect of an Observation Date, the decrease at any Calculation Time of the Underlying Stock price by 15% or more compared with the amount of $S_{r(t)} \times Rfactor_t$ where r(t) means the immediately preceding Leverage Reset Time prior to such Calculation Time.

Calculation Time means any time between the TimeReferenceOpening and the TimeReferenceClosing, provided that the relevant data is available to enable the Calculation Agent to determine the Leverage Strategy Level.

TimeReferenceOpening means the scheduled opening time (including pre-opening session or opening auction, as the case may be) for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto).

TimeReferenceClosing means the scheduled closing time (including closing auction session) for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto).

Intraday Restrike Event Observation Period means in respect of an Intraday Restrike Event, the period starting on and excluding the Intraday Restrike Event Time and finishing on and including the sooner between (1) the time falling 15 minutes of continuous trading after the Intraday Restrike Event Time and (2) the TimeReferenceClosing.

Where, during such period, the Calculation Agent determines that (1) the trading in the Underlying Stock is disrupted or subject to suspension or limitation or (2) the Relevant Stock Exchange for the Underlying Stock is not open for continuous trading, the Intraday Restrike Event Observation Period will be extended to the extent necessary until (1) the trading in the Underlying Stock is no longer disrupted, suspended or limited and (2) the Relevant Stock Exchange for the Underlying Stock is open for continuous trading.

Intraday Restrike Event Time means in respect of an Intraday Restrike Event, the Calculation Time on which such event occurs.

The Conditions set out in the section headed "Terms and Conditions of the European Style Cash Settled Long/Short Certificates on Single Equities" in the Base Listing Document are set out below. This section is qualified in its entirety by reference to the detailed information appearing elsewhere in this document which shall, to the extent so specified or to the extent inconsistent with the relevant Conditions set out below, replace or modify the relevant Conditions for the purpose of the Certificates.

TERMS AND CONDITIONS OF

THE EUROPEAN STYLE CASH SETTLED LONG/SHORT CERTIFICATES ON SINGLE EQUITIES

1. Form, Status, Transfer and Title

- (a) *Form.* The Certificates (which expression shall, unless the context otherwise requires, include any further certificates issued pursuant to Condition 11) are issued subject to and with the benefit of:-
- (i) a master instrument by way of deed poll (the "**Master Instrument**") dated 28 June 2023, made by UBS AG (the "**Issuer**") acting through its London Branch; and
 - (ii) a warrant agent agreement (the "**Master Warrant Agent Agreement**" or "**Warrant Agent Agreement**") dated any time on or before the Closing Date, made between the Issuer and the Warrant Agent for the Certificates.

Copies of the Master Instrument and the Master Warrant Agent Agreement or Warrant Agent Agreement are available for inspection at the specified office of the Warrant Agent.

The Certificate Holders (as defined below) are entitled to the benefit of, are bound by and are deemed to have notice of all the provisions of the Master Instrument and the Master Warrant Agent Agreement or Warrant Agent Agreement.

- (b) *Status.* The Certificates constitute direct, general and unsecured contractual obligations of the Issuer and rank, and will rank, equally among themselves and *pari passu* with all other present and future unsecured and unsubordinated obligations of the Issuer (save for statutorily preferred exceptions). The Certificates provide for cash settlement on exercise and, in particular, the Certificates will not be secured by any underlying assets. The Certificates do not entitle Certificate Holders to the delivery of any Underlying Stock, are not secured by the Underlying Stock and do not entitle Certificate Holders to any interest in any Underlying Stock.
- (c) *Transfer.* The Certificates are represented by a global warrant certificate ("**Global Warrant**") which will be deposited with The Central Depository (Pte) Limited ("**CDP**"). Certificates in definitive form will not be issued. Transfers of Certificates may be effected only in Board Lots or integral multiples thereof. All transactions in (including transfers of) Certificates, in the open market or otherwise, must be effected through a securities account with CDP. Title will pass upon registration of the transfer in the records maintained by CDP.
- (d) *Title.* Each person who is for the time being shown in the records maintained by CDP as entitled to a particular number of Certificates shall be treated by the Issuer and the Warrant Agent as the holder and absolute owner of such number of Certificates, notwithstanding any notice to the contrary. The expression "**Certificate Holder**" shall be construed accordingly.

2. Certificate Rights and Exercise Expenses

- (a) *Certificate Rights.* Every Certificate entitles each Certificate Holder, upon due exercise and on compliance with Condition 4, to payment by the Issuer of the Cash Settlement Amount (as defined below) (if any) in the manner set out in Condition 4.

The "**Cash Settlement Amount**", in respect of each Certificate, shall be an amount (if positive) payable in the Settlement Currency equal to the Closing Level multiplied by the Notional Amount per Certificate.

The "**Closing Level**", in respect of each Certificate, shall be an amount payable in the Settlement Currency equal to:

$$\left(\frac{\text{Final Reference Level} \times \text{Final Exchange Rate}}{\text{Initial Reference Level} \times \text{Initial Exchange Rate}} - \text{Strike Level} \right) \times \text{Hedging Fee Factor}$$

If the Issuer determines, in its sole discretion, that on the Valuation Date or any Observation Date a Market Disruption Event has occurred, then that Valuation Date or Observation Date shall be postponed until the first succeeding Exchange Business Day or Underlying Stock Business Day, as the case may be, on which there is no Market Disruption Event, unless there is a Market Disruption Event on each of the five Exchange Business Days or Underlying Stock Business Days, as the case may be, immediately following the original date that, but for the Market Disruption Event, would have been a Valuation Date or an Observation Date. In that case:-

- (i) that fifth Exchange Business Day or Underlying Stock Business Day, as the case may be, shall be deemed to be the Valuation Date or the Observation Date notwithstanding the Market Disruption Event; and
- (ii) the Issuer shall determine the Final Reference Level or the relevant closing level on the basis of its good faith estimate of the Final Reference Level or the relevant closing level that would have prevailed on that fifth Exchange Business Day or Underlying Stock Business Day, as the case may be, but for the Market Disruption Event provided that the Issuer, if applicable, may, but shall not be obliged to, determine such Final Reference Level or the relevant closing level by having regard to the manner in which futures contracts relating to the Underlying Stock are calculated.

"**Market Disruption Event**" means the occurrence or existence of (i) any suspension of trading on the Relevant Stock Exchange of the Underlying Stock requested by the Company if that suspension is, in the determination of the Issuer, material, (ii) any suspension of or limitation imposed on trading (including but not limited to unforeseen circumstances such as by reason of movements in price exceeding limits permitted by the Relevant Stock Exchange or any act of God, war, riot, public disorder, explosion, terrorism or otherwise) on the Relevant Stock Exchange in the Underlying Stock if that suspension or limitation is, in the determination of the Issuer, material, or (iii) the closing of the Relevant Stock Exchange or a disruption to trading on the Relevant Stock Exchange, if that disruption is, in the determination of the Issuer, material as a result of the occurrence of any act of God, war, riot, public disorder, explosion or terrorism.

- (b) *Exercise Expenses.* Certificate Holders will be required to pay all charges which are incurred in respect of the exercise of the Certificates (the "**Exercise Expenses**"). An amount equivalent to the Exercise Expenses will be deducted by the Issuer from the Cash Settlement Amount in accordance with Condition 4. Notwithstanding the foregoing, the Certificate Holders shall account to the Issuer on demand for any Exercise Expenses to the extent that they were not or could not be deducted from the Cash Settlement Amount prior to the date of payment of the Cash Settlement Amount to the Certificate Holders in accordance with Condition 4.
- (c) *No Rights.* The purchase of Certificates does not confer on the Certificate Holders any right (whether in respect of voting, dividend or other distributions in respect of the Underlying Stock or otherwise) which the holder of an Underlying Stock may have.

3. Expiry Date

Unless automatically exercised in accordance with Condition 4(b), the Certificates shall be deemed to expire at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day (as defined below), the immediately preceding Business Day.

4. Exercise of Certificates

- (a) *Exercise.* Certificates may only be exercised on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, in accordance with Condition 4(b).
- (b) *Automatic Exercise.* Certificate Holders shall not be required to deliver an exercise notice. Exercise of Certificates shall be determined by whether the Cash Settlement Amount (less any Exercise Expenses) is positive. If the Cash Settlement Amount (less any Exercise Expenses) is positive, all Certificates shall be deemed to have been automatically exercised at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day. The Cash Settlement Amount less the Exercise Expenses in respect of the Certificates shall be paid in the manner set out in Condition 4(c) below. In the event the Cash Settlement Amount (less any Exercise Expenses) is zero, all Certificates shall be deemed to have expired at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, and Certificate Holders shall not be entitled to receive any payment from the Issuer in respect of the Certificates.
- (c) *Settlement.* In respect of Certificates which are automatically exercised in accordance with Condition 4(b), the Issuer will pay to the Warrant Agent who will then pay to the relevant Certificate Holder the Cash Settlement Amount (if any) in the Settlement Currency. The aggregate Cash Settlement Amount (less any Exercise Expenses) shall be dispatched by the Warrant Agent as soon as practicable and no later than five Settlement Business Days (as defined in the relevant Supplemental Listing Document) following the Expiry Date (subject to extension upon the occurrence of a Market Disruption Event (as defined above) by way of crossed cheque or other payment in immediately available funds drawn in favour of the Certificate Holder only (or, in the case of joint Certificate Holders, the first-named Certificate Holder) appearing in the records maintained by CDP. Any payment made pursuant to this Condition 4(c) shall be delivered at the risk and expense of the Certificate Holder and posted to the Certificate Holder's address appearing in the records maintained by CDP (or, in the case of joint Certificate Holders, to the address of the first-named Certificate Holder appearing in the records maintained by CDP). If

the Cash Settlement Amount is equal to or less than the determined Exercise Expenses, no amount is payable.

The Issuer's obligations to pay the Cash Settlement Amount shall be discharged by payment to the Warrant Agent in accordance with the Master Warrant Agent Agreement or Warrant Agent Agreement.

- (d) *CDP not liable.* CDP shall not be liable to any Certificate Holder with respect to any action taken or omitted to be taken by the Issuer or the Warrant Agent in connection with the exercise of the Certificates or otherwise pursuant to or in connection with these Conditions.
- (e) *Business Day.* In these Conditions, a "**Business Day**" shall be a day (excluding Saturdays, Sundays and public holidays) on which the SGX-ST is open for dealings in Singapore during its normal trading hours and banks are open for business in Singapore.

5. Warrant Agent

- (a) *Warrant Agent.* The Issuer reserves the right, subject to the appointment of a successor, at any time to vary or terminate the appointment of the Warrant Agent and to appoint another Warrant Agent provided that it will at all times maintain a Warrant Agent which, so long as the Certificates are listed on the SGX-ST, shall be in Singapore. Notice of any such termination or appointment and of any change in the specified office of the Warrant Agent will be given to the Certificate Holders in accordance with Condition 9.
- (b) *Agent of Issuer.* The Warrant Agent will be acting as agent of the Issuer and will not assume any obligation or duty to or any relationship of agency or trust for the Certificate Holders. All determinations and calculations by the Warrant Agent under these Conditions shall (save in the case of manifest error) be final and binding on the Issuer and the Certificate Holders.

6. Adjustments

- (a) *Potential Adjustment Event.* Following the declaration by a Company of the terms of any Potential Adjustment Event (as defined below), the Issuer will determine whether such Potential Adjustment Event has a dilutive or concentrative or other effect on the theoretical value of the Underlying Stock and, if so, will (i) make the corresponding adjustment, if any, to any one or more of the Conditions as the Issuer determines appropriate to account for that dilutive or concentrative or other effect, and (ii) determine the effective date of that adjustment. The Issuer may, but need not, determine the appropriate adjustment by reference to the adjustment in respect of such Potential Adjustment Event made by an exchange on which options or futures contracts on the Underlying Stock are traded.
- (b) *Definitions.* "*Potential Adjustment Event*" means any of the following:
 - (i) a subdivision, consolidation, reclassification or other restructuring of the Underlying Stock (excluding a Merger Event) or a free distribution or dividend of any such Underlying Stock to existing holders by way of bonus, capitalisation or similar issue;
 - (ii) a distribution or dividend to existing holders of the Underlying Stock of (1) such Underlying Stock, or (2) other share capital or securities granting the

- right to payment of dividends and/or the proceeds of liquidation of the Company equally or proportionately with such payments to holders of such Underlying Stock, or (3) share capital or other securities of another issuer acquired by the Company as a result of a “spin-off” or other similar transaction, or (4) any other type of securities, rights or warrants or other assets, in any case for payment (in cash or otherwise) at less than the prevailing market price as determined by the Issuer;
- (iii) an extraordinary dividend;
 - (iv) a call by the Company in respect of the Underlying Stock that is not fully paid;
 - (v) a repurchase by the Company of the Underlying Stock whether out of profits or capital and whether the consideration for such repurchase is cash, securities or otherwise;
 - (vi) with respect to a Company an event that results in any shareholder rights pursuant to a shareholder rights agreement or other plan or arrangement of the type commonly referred to as a “poison pill” being distributed, or becoming separated from shares of common stock or other shares of the capital stock of such Company (provided that any adjustment effected as a result of such an event shall be readjusted upon any redemption of such rights); or
 - (vii) any other event that may have, in the opinion of the Issuer, a dilutive or concentrative or other effect on the theoretical value of the Underlying Stock.
- (c) *Merger Event, Tender Offer, Nationalisation and Insolvency.* If a Merger Event, Tender Offer, Nationalisation or Insolvency occurs in relation to the Underlying Stock, the Issuer may take any action described below:
- (i) determine the appropriate adjustment, if any, to be made to any one or more of the Conditions to account for the Merger Event, Tender Offer, Nationalisation or Insolvency, as the case may be, and determine the effective date of that adjustment. The Issuer may, but need not, determine the appropriate adjustment by reference to the adjustment in respect of the Merger Event, Tender Offer, Nationalisation or Insolvency made by an options exchange to options on the Underlying Stock traded on that options exchange;
 - (ii) cancel the Certificates by giving notice to the Certificate Holders in accordance with Condition 9. If the Certificates are so cancelled, the Issuer will pay an amount to each Certificate Holder in respect of each Certificate held by such Certificate Holder which amount shall be the fair market value of a Certificate taking into account the Merger Event, Tender Offer, Nationalisation or Insolvency, as the case may be, less the cost to the Issuer and/or any of its affiliates of unwinding any underlying related hedging arrangements, all as determined by the Issuer in its reasonable discretion. Payment will be made in such manner as shall be notified to the Certificate Holders in accordance with Condition 9; or
 - (iii) following any adjustment to the settlement terms of options on the Underlying Stock on such exchange(s) or trading system(s) or quotation system(s) as the Issuer in its reasonable discretion shall select (the “**Option Reference Source**”) make a corresponding adjustment to any one or more of the Conditions, which adjustment will be effective as of the date determined by the Issuer to be the

effective date of the corresponding adjustment made by the Option Reference Source. If options on the Underlying Stock are not traded on the Option Reference Source, the Issuer will make such adjustment, if any, to any one or more of the Conditions as the Issuer determines appropriate, with reference to the rules and precedents (if any) set by the Option Reference Source, to account for the Merger Event, Tender Offer, Nationalisation or Insolvency, as the case may be, that in the determination of the Issuer would have given rise to an adjustment by the Option Reference Source if such options were so traded.

Once the Issuer determines that its proposed course of action in connection with a Merger Event, Tender Offer, Nationalisation or Insolvency, it shall give notice to the Certificate Holders in accordance with Condition 9 stating the occurrence of the Merger Event, Tender Offer, Nationalisation or Insolvency, as the case may be, giving details thereof and the action proposed to be taken in relation thereto. Certificate Holders should be aware that due to the nature of such events, the Issuer will not make an immediate determination of its proposed course of action or adjustment upon the announcement or occurrence of a Merger Event, Tender Offer, Nationalisation or Insolvency.

- (d) *Definitions.* “**Insolvency**” means that by reason of the voluntary or involuntary liquidation, bankruptcy, insolvency, dissolution or winding-up of or any analogous proceeding affecting a Company (i) all the Underlying Stock of that Company is required to be transferred to a trustee, liquidator or other similar official or (ii) holders of the Underlying Stock of that Company become legally prohibited from transferring them. “**Merger Date**” means the closing date of a Merger Event or, where a closing date cannot be determined under the local law applicable to such Merger Event, such other date as determined by the Issuer. “**Merger Event**” means, in respect of the Underlying Stock, any (i) reclassification or change of such Underlying Stock that results in a transfer of or an irrevocable commitment to transfer all of such Underlying Stock outstanding to another entity or person, (ii) consolidation, amalgamation, merger or binding share exchange of a Company with or into another entity or person (other than a consolidation, amalgamation, merger or binding share exchange in which such Company is the continuing entity and which does not result in reclassification or change of all of such Underlying Stock outstanding), (iii) takeover offer, exchange offer, solicitation, proposal or other event by any entity or person to purchase or otherwise obtain 100 per cent. of the outstanding Underlying Stock of the Company that results in a transfer of or an irrevocable commitment to transfer all such Underlying Stock (other than such Underlying Stock owned or controlled by such other entity or person), or (iv) consolidation, amalgamation, merger or binding share exchange of the Company or its subsidiaries with or into another entity in which the Company is the continuing entity and which does not result in a reclassification or change of all such Underlying Stock outstanding but results in the outstanding Underlying Stock (other than Underlying Stock owned or controlled by such other entity) immediately prior to such event collectively representing less than 50 per cent. of the outstanding Underlying Stock immediately following such event, in each case if the Merger Date is on or before the Valuation Date. “**Nationalisation**” means that all the Underlying Stock or all or substantially all of the assets of a Company are nationalised, expropriated or are otherwise required to be transferred to any governmental agency, authority, entity or instrumentality thereof. “**Tender Offer**” means a takeover offer, tender offer, exchange offer, solicitation, proposal or other event by any entity or person that results in such entity or person purchasing, or otherwise obtaining or having the right to obtain, by conversion or other means, greater than 10 per cent. and less than 100 per cent. of the outstanding voting shares of the Company, as determined by the Issuer, based upon the making of filings with

governmental or self-regulatory agencies or such other information as the Issuer deems relevant.

- (e) *Subdivision or Consolidation of the Certificates.* The Issuer reserves the right to subdivide or consolidate the Certificates, provided that such adjustment is considered by the Issuer not to be materially prejudicial to the Certificate Holders generally (without considering the circumstances of any individual Certificate Holder or the tax or other consequences of such adjustment or amendment in any particular jurisdiction).
- (f) *Other Adjustments.* Except as provided in this Condition 6 and Conditions 10 and 12, adjustments will not be made in any other circumstances, subject to the right reserved by the Issuer (such right to be exercised in the Issuer's sole and unfettered discretion and without any obligation whatsoever) to make such adjustments and amendments as it believes appropriate in circumstances where an event or events (including the events as contemplated in Conditions 6(a) to 6(e)) occur which it believes in its sole discretion (and notwithstanding any prior adjustment made pursuant to the above) and irrespective of, in substitution for, or in addition to the provisions contemplated in Conditions 6(a) to 6(e) should, in the context of the issue of the Certificates and the obligations of the Issuer, give rise to such adjustment or as the case may be, amendment provided that such adjustment or as the case may be, amendment is considered by the Issuer not to be materially prejudicial to the Certificate Holders generally (without considering the circumstances of any individual Certificate Holder or the tax or other consequences of such adjustment or amendment in any particular jurisdiction).
- (g) *Notice of Adjustments.* All determinations made by the Issuer pursuant hereto will be conclusive and binding on the Certificate Holders. The Issuer will give, or procure that there is given notice as soon as practicable of any adjustment and of the date from which such adjustment is effective in accordance with Condition 9. For the avoidance of doubt, no notice will be given if the Issuer determines that adjustments will not be made.

7. Purchases

The Issuer or its related corporations may at any time purchase Certificates at any price in the open market or by tender or by private treaty. Any Certificates so purchased may be held or resold or surrendered for cancellation.

8. Meetings of Certificate Holders; Modification

- (a) *Meetings of Certificate Holders.* The Master Warrant Agent Agreement or Warrant Agent Agreement contains provisions for convening meetings of the Certificate Holders to consider any matter affecting their interests, including the sanctioning by Extraordinary Resolution (as defined in the Master Warrant Agent Agreement or Warrant Agent Agreement) of a modification of the provisions of the Certificates or of the Master Warrant Agent Agreement or Warrant Agent Agreement.

At least 21 days' notice (exclusive of the day on which the notice is given and of the day on which the meeting is held) specifying the date, time and place of the meeting shall be given to the Certificate Holders.

Such a meeting may be convened by the Issuer or by Certificate Holders holding not less than ten per cent. of the Certificates for the time being remaining unexercised. The quorum at any such meeting for passing an Extraordinary Resolution will be two

or more persons holding or representing not less than 25 per cent. of the Certificates for the time being remaining unexercised, or at any adjourned meeting two or more persons being or representing Certificate Holders whatever the number of Certificates so held or represented.

A resolution will be an Extraordinary Resolution when it has been passed at a duly convened meeting by not less than three-quarters of the votes cast by such Certificate Holders who, being entitled to do so, vote in person or by proxy.

An Extraordinary Resolution passed at any meeting of the Certificate Holders shall be binding on all the Certificate Holders whether or not they are present at the meeting. Resolutions can be passed in writing if passed unanimously.

- (b) *Modification.* The Issuer may, without the consent of the Certificate Holders, effect (i) any modification of the provisions of the Certificates or the Master Instrument which is not materially prejudicial to the interests of the Certificate Holders or (ii) any modification of the provisions of the Certificates or the Master Instrument which is of a formal, minor or technical nature, which is made to correct an obvious error or which is necessary in order to comply with mandatory provisions of Singapore law. Any such modification shall be binding on the Certificate Holders and shall be notified to them by the Warrant Agent before the date such modification becomes effective or as soon as practicable thereafter in accordance with Condition 9.

9. Notices

- (a) *Documents.* All cheques and other documents required or permitted by these Conditions to be sent to a Certificate Holder or to which a Certificate Holder is entitled or which the Issuer shall have agreed to deliver to a Certificate Holder may be delivered by hand or sent by post addressed to the Certificate Holder at his address appearing in the records maintained by CDP or, in the case of joint Certificate Holders, addressed to the joint holder first named at his address appearing in the records maintained by CDP, and airmail post shall be used if that address is not in Singapore. All documents delivered or sent in accordance with this paragraph shall be delivered or sent at the risk of the relevant Certificate Holder.
- (b) *Notices.* All notices to Certificate Holders will be validly given if published in English on the website of the SGX-ST. Such notices shall be deemed to have been given on the date of the first such publication. If publication on the website of the SGX-ST is not practicable, notice will be given in such other manner as the Issuer may determine. The Issuer shall, at least one month prior to the expiry of any Certificate, give notice of the date of expiry of such Certificate in the manner prescribed above.

10. Liquidation

In the event of a liquidation or dissolution of the Company or the appointment of a liquidator (including a provisional liquidator) or receiver or judicial manager or trustee or administrator or analogous person under Singapore or other applicable law in respect of the whole or substantially the whole of its undertaking, property or assets, all unexercised Certificates will lapse and shall cease to be valid for any purpose, in the case of voluntary liquidation, on the effective date of the relevant resolution and, in the case of an involuntary liquidation or dissolution, on the date of the relevant court order or, in the case of the appointment of a liquidator (including a provisional liquidator) or receiver or judicial manager or trustee or administrator or analogous person under Singapore or other applicable law in respect of the whole or substantially the whole of its undertaking, property or assets, on the date when such appointment is effective but subject (in any such case) to any contrary mandatory

requirement of law. In the event of the voluntary liquidation of the Company, the Issuer shall make such adjustments or amendments as it reasonably believes are appropriate in the circumstances.

11. Further Issues

The Issuer shall be at liberty from time to time, without the consent of the Certificate Holders, to create and issue further certificates so as to form a single series with the Certificates.

12. Delisting

- (a) *Delisting.* If at any time, the Underlying Stock ceases to be listed on the Relevant Stock Exchange, the Issuer shall give effect to these Conditions in such manner and make such adjustments and amendments to the rights attaching to the Certificates as it shall, in its absolute discretion, consider appropriate to ensure, so far as it is reasonably able to do so, that the interests of the Certificate Holders generally are not materially prejudiced as a consequence of such delisting (without considering the individual circumstances of any Certificate Holder or the tax or other consequences that may result in any particular jurisdiction).
- (b) *Issuer's Determination.* The Issuer shall determine, in its absolute discretion, any adjustment or amendment and its determination shall be conclusive and binding on the Certificate Holders save in the case of manifest error. Notice of any adjustments or amendments shall be given to the Certificate Holders in accordance with Condition 9 as soon as practicable after they are determined.

13. Early Termination

- (a) *Early Termination for Illegality etc.* The Issuer shall have the right to terminate the Certificates if it shall have determined in its absolute discretion that a Regulatory Event (as defined below) has occurred and, for reasons beyond its control its performance thereunder shall have become unlawful in whole or in part under any applicable present or future law, rule, regulation, judgment, order or directive of any governmental, administrative, legislative or judicial authority or power ("**Applicable Law**").

For the purposes of this Condition:

"**Regulatory Event**" means, following the occurrence of a Change in Law (as defined below) with respect to the Issuer and/or any of its affiliates involved in the issue of the Certificates (hereafter the "**Relevant Affiliates**" and each of the Issuer and the Relevant Affiliates, a "**Relevant Entity**") that, after the Certificates have been issued, (i) any Relevant Entity would incur a materially increased (as compared with circumstances existing prior to such event) amount of tax, duty, liability, penalty, expense, fee, cost or regulatory capital charge however defined or collateral requirements for performing its obligations under the Certificates or hedging the Issuer's obligations under the Certificates, including, without limitation, due to clearing requirements of, or the absence of, clearing of the transactions entered into in connection with the issue of, or hedging the Issuer's obligation under, the Certificates, (ii) it is or will become for any Relevant Entity impracticable, impossible (in each case, after using commercially reasonable efforts), unlawful, illegal or otherwise prohibited or contrary, in whole or in part, under any law, regulation, rule, judgment, order or directive of any governmental, administrative or judicial authority, or power, applicable to such Relevant Entity (a) to hold, acquire, issue, reissue, substitute, maintain, settle, or as the case may be, guarantee, the Certificates, (b) to acquire, hold, sponsor or dispose of any asset(s) (or any interest thereof) of any other transaction(s) such Relevant Entity may use in connection with the issue of the Certificates or to hedge the Issuer's obligations under the Certificates, (c) to perform

obligations in connection with, the Certificates or any contractual arrangement entered into between the Issuer and any Relevant Affiliate (including without limitation to hedge the Issuer's obligations under the Certificates) or (d) to hold, acquire, maintain, increase, substitute or redeem all or a substantial part of its direct or indirect shareholding in the Issuer's capital or the capital of any Relevant Affiliate or to directly or indirectly sponsor the Issuer or any Relevant Affiliate, or (iii) there is or may be a material adverse effect on a Relevant Entity in connection with the issue of the Certificates.

"Change in Law" means (i) the adoption, enactment, promulgation, execution or ratification of any applicable new law, regulation or rule (including, without limitation, any applicable tax law, regulation or rule) after the Certificates have been issued, (ii) the implementation or application of any applicable law, regulation or rule (including, without limitation, any applicable tax law, regulation or rule) already in force when the Certificates have been issued but in respect of which the manner of its implementation or application was not known or unclear at the time, or (iii) the change of any applicable law, regulation or rule existing when the Certificates are issued, or the change in the interpretation or application or practice relating thereto, existing when the Certificates are issued of any applicable law, regulation or rule, by any competent court, tribunal, regulatory authority or any other entity exercising executive, legislative, judicial, taxing, regulatory or administrative powers or functions of or pertaining to government (including any additional or alternative court, tribunal, authority or entity, to that existing when the Certificates are issued).

- (b) *Early Termination for other reasons.* The Issuer reserves the right (such right to be exercised in the Issuer's sole and unfettered discretion and without any obligation whatsoever) to terminate the Certificates in accordance with Condition 13(c) where an event or events occur which it believes in its sole discretion should, in the context of the issue of the Certificates and the obligations of the Issuer, give rise to such termination provided that such termination is considered by the Issuer not to be materially prejudicial to the interests of Certificate Holders generally (without considering the circumstances of any individual Certificate Holder or the tax or other consequences of such termination in any particular jurisdiction).
- (c) *Termination.* If the Issuer terminates the Certificates early, then the Issuer will give notice to the Certificate Holders in accordance with Condition 9. The Issuer will, if and to the extent permitted by the Applicable Law, pay to each Certificate Holder in respect of each Certificate held by such Certificate Holder an amount calculated by it as the fair market value of the Certificate immediately prior to such termination (ignoring such illegality) less the cost to the Issuer of unwinding any related hedging arrangements. Payment will be made to the Certificate Holder in such manner as shall be notified to the Certificate Holder in accordance with Condition 9.

14. Governing Law

The Certificates, the Master Instrument and the Master Warrant Agent Agreement or Warrant Agent Agreement will be governed by and construed in accordance with Singapore law. The Issuer and each Certificate Holder (by its purchase of the Certificates) shall be deemed to have submitted for all purposes in connection with the Certificates, the Master Instrument and the Master Warrant Agent Agreement or Warrant Agent Agreement to the non-exclusive jurisdiction of the courts of Singapore.

15. Prescription

Claims against the Issuer for payment of any amount in respect of the Certificates will become void unless made within six years of the Expiry Date and, thereafter, any sums payable in respect of such Certificates shall be forfeited and shall revert to the Issuer.

16. Contracts (Rights of Third Parties) Act 2001 of Singapore

Unless otherwise expressly provided in the Global Warrant, the Master Instrument and the Master Warrant Agent Agreement or Warrant Agent Agreement, a person who is not a party to any contracts made pursuant to the Global Warrant, the Master Instrument and the Master Warrant Agent Agreement or Warrant Agent Agreement has no rights under the Contracts (Rights of Third Parties) Act 2001 of Singapore to enforce any terms of such contracts. Except as expressly provided herein, the consent of any third party is not required for any subsequent agreement by the parties hereto to amend or vary (including any release or compromise of any liability) or terminate such contracts.

SUMMARY OF THE ISSUE

The following is a summary of the issue and should be read in conjunction with, and is qualified by reference to, the other information set out in this document and the Base Listing Document. Terms used in this Summary are defined in the Conditions.

Issuer:	UBS AG acting through its London Branch
Company:	Sunny Optical Technology (Group) Company Limited
The Certificates:	European Style Cash Settled Long Certificates relating to the Underlying Stock
Number:	2,700,000 Certificates
Form:	The Certificates will be issued subject to, and with the benefit of, a master instrument by way of deed poll dated 28 June 2023 (the “ Master Instrument ”) and executed by the Issuer and a master warrant agent agreement dated 27 February 2008 (the “ Master Warrant Agent Agreement ”) and made between the Issuer and the Warrant Agent.
Cash Settlement Amount:	In respect of each Certificate, is the amount (if positive) equal to: Notional Amount per Certificate x Closing Level
Denominations:	Certificates are represented by a global warrant in respect of all the Certificates.
Exercise:	The Certificates may only be exercised on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, in a Board Lot or integral multiples thereof. Certificate Holders will not be required to deliver an exercise notice. If the Cash Settlement Amount (less any Exercise Expenses) is positive, all Certificates will be deemed to have been automatically exercised at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day. The Cash Settlement Amount less the Exercise Expenses in respect of the Certificates shall be paid in the manner set out in Condition 4(c) of the Conditions. In the event the Cash Settlement Amount (less any Exercise Expenses) is zero, all Certificates shall be deemed to have expired at 5:00 p.m. (Singapore time) on the Expiry Date or if the Expiry Date is not a Business Day, the immediately preceding Business Day, and Certificate Holders shall not be entitled to receive any payment from the Issuer in respect of the Certificates.
Exercise and Trading Currency:	SGD
Board Lot:	100 Certificates

- Transfers of Certificates: Certificates may only be transferred in Board Lots (or integral multiples thereof). All transfers in Certificates, in the open market or otherwise, must be effected through a securities account with CDP. Title will pass upon registration of the transfer in the records of CDP.
- Listing: Application has been made to the SGX-ST for permission to deal in and for quotation of the Certificates and the SGX-ST has agreed in principle to grant permission to deal in and for quotation of the Certificates. Issue of the Certificates is conditional on such listing being granted. It is expected that dealings in the Certificates on the SGX-ST will commence on or about 6 September 2023.
- Governing Law: The laws of Singapore
- Warrant Agent: The Central Depository (Pte) Limited
11 North Buona Vista Drive
#06-07 The Metropolis Tower 2
Singapore 138589
- Further Issues: Further issues which will form a single series with the Certificates will be permitted.

The above summary is qualified in its entirety by reference to the detailed information appearing elsewhere in this document and the Base Listing Document.

**INFORMATION RELATING TO
THE EUROPEAN STYLE CASH SETTLED LONG CERTIFICATES ON SINGLE EQUITIES**

What are European Style Cash Settled Long Certificates on Single Equities?

European style cash settled long certificates on single equities (the “**Certificates**”) are structured products relating to the Underlying Stock and the return on a Certificate is linked to the performance of the Leverage Strategy.

A) Cash Settlement Amount Payable upon the Exercise of the Certificates at Expiry

Upon the exercise of the Certificates at expiry, the Certificate Holders would be paid a Cash Settlement Amount in respect of each Certificate.

The Cash Settlement Amount, in respect of each Certificate, shall be an amount payable in the Settlement Currency equal to the Closing Level multiplied by the Notional Amount per Certificate.

The Closing Level, in respect of each Certificate, shall be an amount payable in the Settlement Currency equal to (1) divided by (2) less (3) subject to any adjustments such as (4), where:

- (1) is the Final Reference Level multiplied by the Final Exchange Rate;
- (2) is the Initial Reference Level multiplied by the Initial Exchange Rate;
- (3) is the Strike Level; and
- (4) is the Hedging Fee Factor.

If the Cash Settlement Amount (less any Exercise Expenses) is positive, all Certificates shall be deemed to have been automatically exercised and investors will receive a Cash Settlement Amount. If the Cash Settlement Amount (less any Exercise Expenses) is zero, all Certificates shall be deemed to have expired. Please refer to the section headed “Terms and Conditions of the European Style Cash Settled Long/Short Certificates on Single Equities” for further details on the calculation of the Cash Settlement Amount.

The Certificates are only suitable for investors who believe that the price of the Underlying Stock will increase and are seeking short-term leveraged exposure to the Underlying Stock.

B) Trading the Certificates before Expiry

If the Certificate Holders want to cash out their investments in the Certificates before the expiry of the Certificates, they may sell the Certificates in the secondary market during the life of the Certificates, and would be subject to the following fees and charges:

- (i) For Certificate Holders who trade the Certificates intraday: shall pay normal transaction and brokerage fees for the trading of the Certificates on the SGX-ST, and may be required to pay stamp taxes or other documentary charges in accordance with the laws and practices of the country where the Certificates are transferred; and
- (ii) For Certificate Holders who hold the Certificates overnight: in addition to the normal transaction and brokerage fees and applicable stamp taxes, would also be required to bear the Management Fee and Gap Premium as well as certain costs embedded within the Leverage Strategy including the Funding Cost and the Rebalancing Cost.

Illustration of the Calculation of Hedging Fee Factor

Hedging Fee Factor	=	Product of the Daily Fees
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Daily Fees	=	Daily Management Fee Adjustment	
		$1 - \text{Management Fee} \times \text{ACT} (t-1;t) / 360$	
		x	
		Daily Gap Premium Adjustment	
		$1 - \text{Gap Premium} (t-1) \times \text{ACT} (t-1;t) / 360$	

Illustration of the Calculation of Cash Settlement Amount

Cash Settlement Amount = Final Value of Certificates – Strike Level (zero)

Value of Certificates	=	t ⁷ =0	x	Leverage Strategy daily performance ⁸	x	Daily Fees	x	Leverage Strategy daily performance	x	Daily Fees	x ...	Leverage Strategy Daily performance	x	Daily Fees
		Notional Amount												

Value of Certificates	=	t=0	x	Product of the daily Leverage Strategy Performance		x	Product of the Daily Fees (Hedging Fee Factor)	
		Notional Amount		Leverage Strategy daily performance	x		Leverage Strategy daily performance	Daily Fees

Final Value of Certificates	=	t=0	x	$\frac{\text{Final Reference Level} \times \text{Final Exchange Rate}}{\text{Initial Reference Level} \times \text{Initial Exchange Rate}}$		x	Hedging Fee Factor
		Notional Amount					

Illustration of the applicable fees and charges for an intraday trading scenario

Hedging Fee is implemented overnight in the price of the Certificate. As a consequence, when trading intraday, investors will not bear any Hedging Fee.

Investors will only support bid/ask costs, which are the difference between the price at which the Designated Market Maker purchases (bid) and sells (ask) the Certificate at any point of time.

⁷ "t" refers to "Observation Date" which means each Underlying Stock Business Day (subject to Market Disruption Event) from (and including) the Underlying Stock Business Day immediately preceding the Expected Listing Date to the Valuation Date.
⁸ Leverage Strategy daily performance is computed as the Leverage Strategy Level on Business Day (t) divided by the Leverage Strategy Level on Business Day (t-1).

Example of Calculation of Hedging Fee Factor and Cash Settlement Amount

The example is purely hypothetical. We include the example to illustrate how the Certificates work, and you MUST NOT rely on them as any indication of the actual return or what the payout on the Certificates might actually be. The example also assumes a product which expires 16 days after listing date, to illustrate the daily calculation of price, costs and fees from listing date to expiry date.

Assuming an investor purchases the following Certificates at the Issue Price:

Underlying Stock:	Ordinary shares of Sunny Optical Technology (Group) Company Limited traded in HKD
Expected Listing Date:	01/02/2021
Expiry Date:	16/02/2021
Initial Reference Level:	1,000
Initial Exchange Rate:	1
Final Reference Level:	1,200
Final Exchange Rate:	1
Issue Price:	0.75 SGD
Notional Amount per Certificate:	0.75 SGD
Management Fee (p.a.):	0.40%
Gap Premium (p.a.):	7.50%
Strike Level:	Zero

Hedging Fee Factor

Hedging Fee Factor on the n^{th} Underlying Stock Business Day after issuance of Certificate ("HFF (n)") is calculated as follows:

$$\text{HFF}(0) = 100\%$$

On Next Calendar Day (assuming it is an Underlying Stock Business Day):

$$\text{HFF}(1) = \text{HFF}(0) \times \left(1 - \text{Management Fee} \times \frac{\text{ACT}(t-1; t)}{360}\right) \times \left(1 - \text{Gap Premium} \times \frac{\text{ACT}(t-1; t)}{360}\right)$$

$$\text{HFF}(1) = 100\% \times \left(1 - 0.40\% \times \frac{1}{360}\right) \times \left(1 - 7.50\% \times \frac{1}{360}\right)$$

$$\text{HFF}(1) = 100\% \times 99.9989\% \times 99.9792\% \approx 99.9781\%$$

Assuming 2nd Underlying Stock Business Day falls 3 Calendar Days after 1st Underlying Stock Business Day:

$$\text{HFF (2)} = \text{HFF (1)} \times \left(1 - \text{Management Fee} \times \frac{\text{ACT (t-1; t)}}{360}\right) \times \left(1 - \text{Gap Premium} \times \frac{\text{ACT (t-1; t)}}{360}\right)$$

$$\text{HFF (2)} = 99.9781\% \times \left(1 - 0.40\% \times \frac{3}{360}\right) \times \left(1 - 7.50\% \times \frac{3}{360}\right)$$

$$\text{HFF (2)} = 99.9781\% \times 99.9967\% \times 99.9375\% \approx 99.9122\%$$

The same principle applies to the following Underlying Stock Business Days:

$$\text{HFF (n)} = \text{HFF (n-1)} \times \left(1 - \text{Management Fee} \times \frac{\text{ACT (t-1; t)}}{360}\right) \times \left(1 - \text{Gap Premium} \times \frac{\text{ACT (t-1; t)}}{360}\right)$$

In this example, the Hedging Fee Factor as of the Valuation Date would be equal to 99.6713% as illustrated below:

Date	HFF
2/1/2021	100.0000%
2/2/2021	99.9781%
2/3/2021	99.9561%
2/4/2021	99.9342%
2/5/2021	99.9123%
2/8/2021	99.8465%
2/9/2021	99.8246%
2/10/2021	99.8027%
2/11/2021	99.7808%
2/12/2021	99.7589%
2/15/2021	99.6932%
2/16/2021	99.6713%

Cash Settlement Amount

In this example, the Closing Level and the Cash Settlement Amount would be computed as follows:

$$\text{Closing Level} = [(\text{Final Reference Level} \times \text{Final Exchange Rate}) / (\text{Initial Reference Level} \times \text{Initial Exchange Rate}) - \text{Strike Level}] \times \text{Hedging Fee Factor}$$

$$= [(1200 \times 1) / (1000 \times 1) - 0] \times 99.6713\%$$

$$= 119.61\%$$

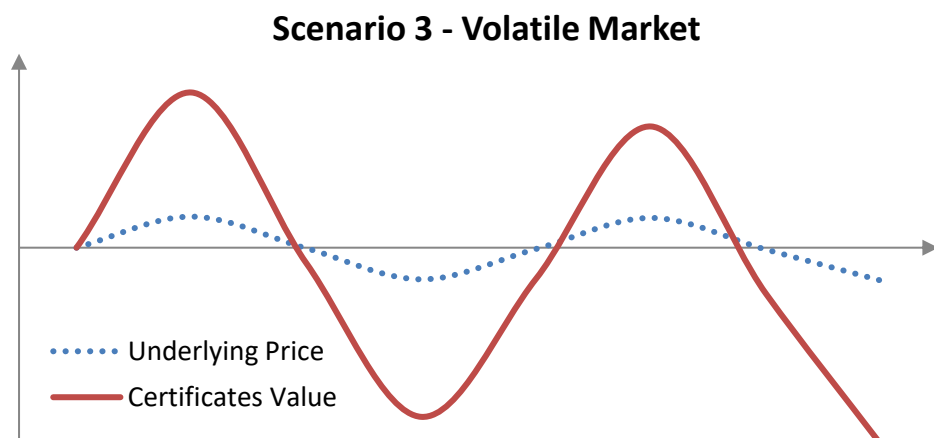
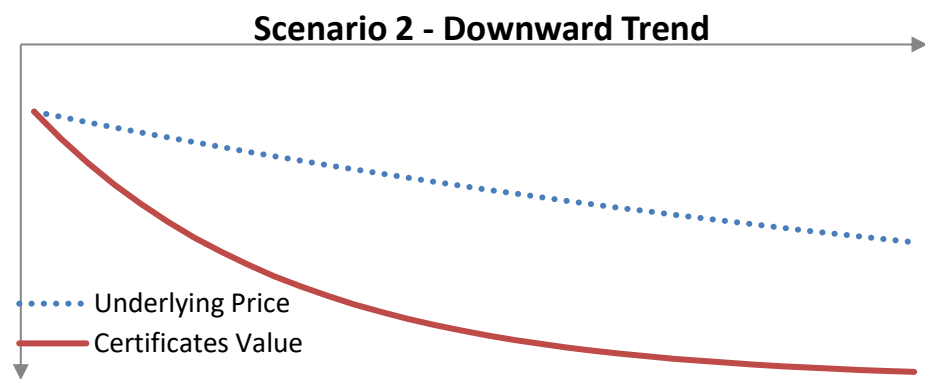
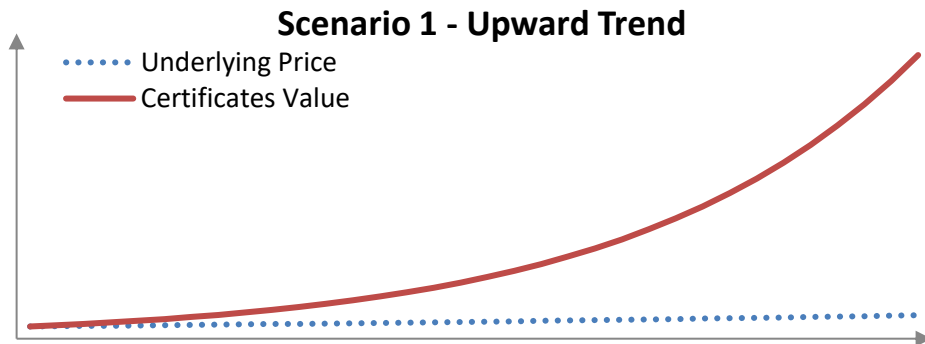
$$\text{Cash Settlement Amount} = \text{Closing Level} \times \text{Notional Amount per Certificate}$$

$$= 119.61\% \times 0.75 \text{ SGD}$$

$$= \mathbf{0.897 \text{ SGD}}$$

Illustration on how returns and losses can occur under different scenarios

The examples are purely hypothetical and do not take fees and charges payable by investors into consideration. The examples highlight the effect of the Underlying Stock performance on the value of the Certificates and do not take into account the possible influence of fees, exchange rates, dividends, or any other market parameters.

1. Illustrative examples

2. Numerical Examples

Scenario 1 – Upward Trend

Underlying						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Daily Return		2.00%	2.00%	2.00%	2.00%	2.00%
Value at end of day	10,000.00	10,200.00	10,404.00	10,612.08	10,824.32	11,040.81
Accumulated Return		2.00%	4.04%	6.12%	8.24%	10.41%

Value of the Certificates						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Daily Return		10.00%	10.00%	10.00%	10.00%	10.00%
Price at end of day	0.75	0.83	0.91	1.00	1.10	1.21
Accumulated Return		10.00%	21.00%	33.10%	46.41%	61.05%

Scenario 2 – Downward Trend

Underlying						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Daily Return		-2.00%	-2.00%	-2.00%	-2.00%	-2.00%
Value at end of day	10,000.00	9,800.00	9,604.00	9,411.92	9,223.68	9,039.21
Accumulated Return		-2.00%	-3.96%	-5.88%	-7.76%	-9.61%

Value of the Certificates						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Daily Return		-10.00%	-10.00%	-10.00%	-10.00%	-10.00%
Price at end of day	0.75	0.68	0.61	0.55	0.49	0.44
Accumulated Return		-10.00%	-19.00%	-27.10%	-34.39%	-40.95%

Scenario 3 – Volatile Market

Underlying						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Daily Return		2.00%	-2.00%	-2.00%	2.00%	2.00%
Value at end of day	10,000.00	10,200.00	9,996.00	9,796.08	9,992.00	10,191.84
Accumulated Return		2.00%	-0.04%	-2.04%	-0.08%	1.92%

Value of the Certificates						
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Daily Return		10.00%	-10.00%	-10.00%	10.00%	10.00%
Price at end of day	0.75	0.83	0.74	0.67	0.74	0.81
Accumulated Return		10.00%	-1.00%	-10.90%	-1.99%	7.81%

Description of Air Bag Mechanism

The Certificates integrate an “Air Bag Mechanism” which is designed to reduce exposure to the Underlying Stock during extreme market conditions.

In accordance with the Air Bag Mechanism timeline below, when the Air Bag triggers, the following typically occurs:

- Observation Period: the price of the Underlying Stock is observed and its minimum price is recorded (i) during 15 minutes of continuous trading after the Air Bag is triggered, or (ii) until Market Close if there is 15 minutes (or less) of continuous trading until Market Close when the Air Bag is triggered; and
- Reset Period: thereafter, the Leverage Strategy is reset using the minimum price of the Underlying Stock during the Observation Period as the New Observed Price. The New Observed Price replaces the last closing price of the Underlying Stock in order to compute the performance of the Leverage Strategy.

During the Observation Period and Reset Period, trading of Certificates is suspended for a period of **at least** 30 minutes of continuous trading after the Air Bag is triggered, and such suspension will be based on instructions provided by the Issuer to the SGX-ST for suspension of trading. Investors cannot sell or purchase any Certificates during this period.

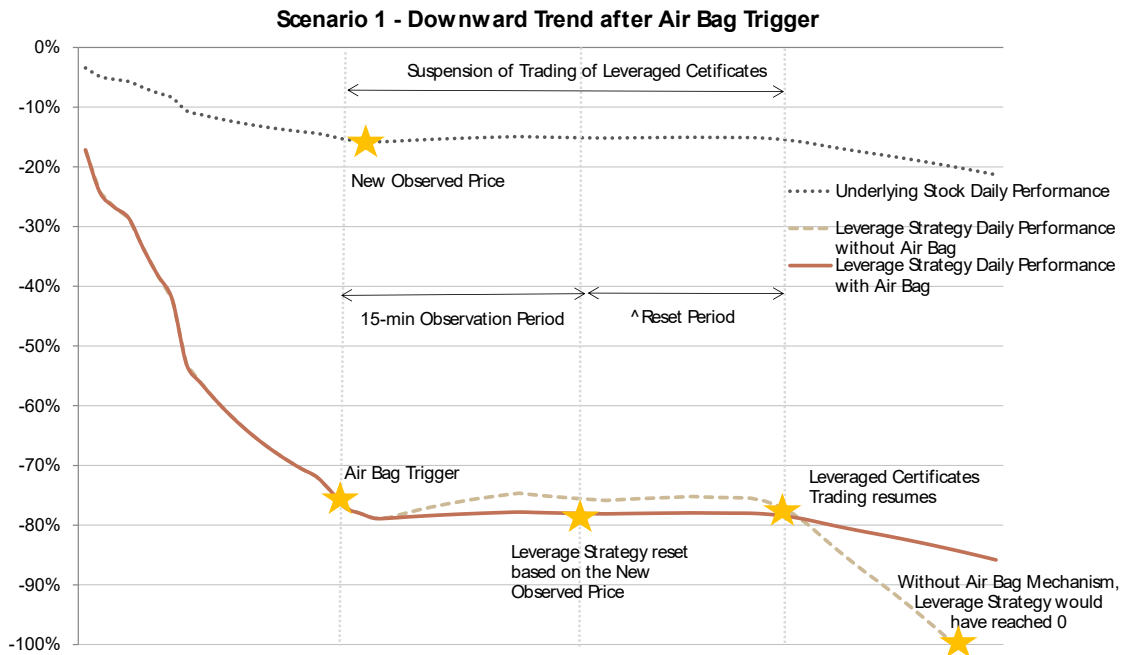
For the avoidance of doubt, if the Air Bag Mechanism was triggered with more than 60 minutes of continuous trading before Market Close, trading of Certificates will resume the same trading day after the Reset Period has elapsed, subject to the SGX-ST’s approval to resume trading. If the Air Bag Mechanism was triggered between 45 minutes and 60 minutes of continuous trading before Market Close, trading of Certificates may or may not resume the same trading day after the Reset Period has elapsed. If the Air Bag Mechanism was triggered with only 45 minutes (or less) of continuous trading before Market Close, trading of Certificates resumes on the next trading day.

The resumption of trading is subject to the SGX-ST’s requirements of at least 15 minutes after the SGX-ST approves the request from the Issuer to resume trading on the Certificates, rounded to the next quarter of an hour. The Issuer will provide at least 15 minutes’ notice of the resumption of trading by making an SGXNET announcement.

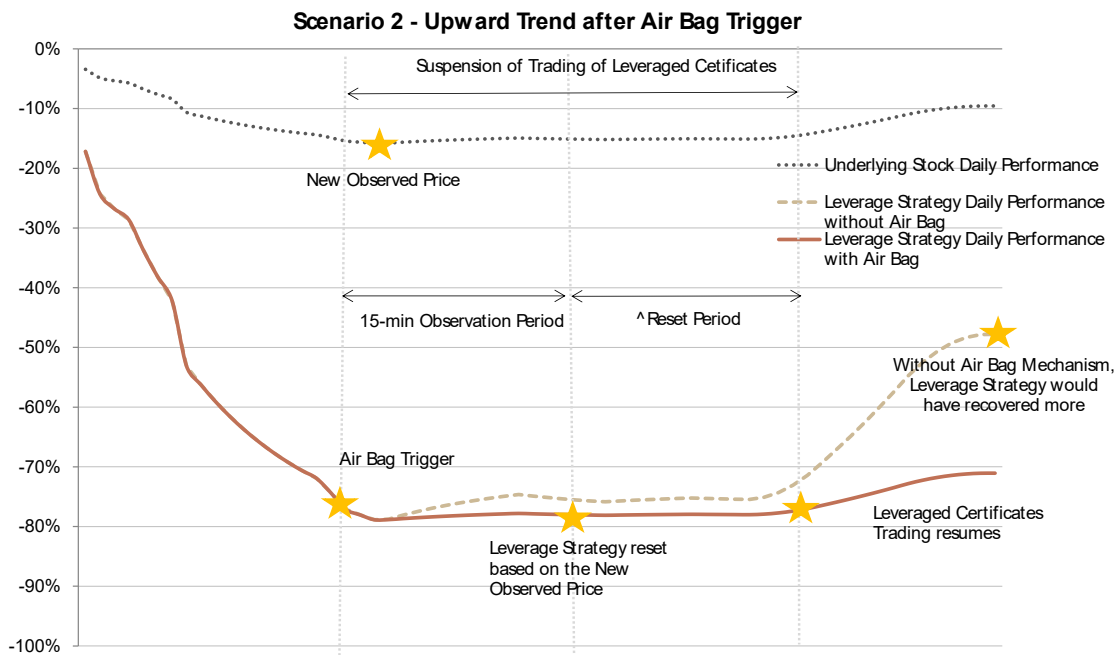
With **Market Close** defined as:

- the Underlying Stock closing time, including the closing auction session, with respect to the Observation Period; and
- the sooner of (i) the Underlying Stock closing time for continuous trading and (ii) the SGX-ST closing time, with respect to the Resumption of Trading

Illustrative examples of the Air Bag Mechanism⁹



^ The resumption of trading is subject to the SGX-ST's requirements of at least 15 minutes after the SGX-ST approves the request from the Issuer to resume trading on the Certificates, rounded to the next quarter of an hour.



^ The resumption of trading is subject to the SGX-ST's requirements of at least 15 minutes after the SGX-ST approves the request from the Issuer to resume trading on the Certificates, rounded to the next quarter of an hour.

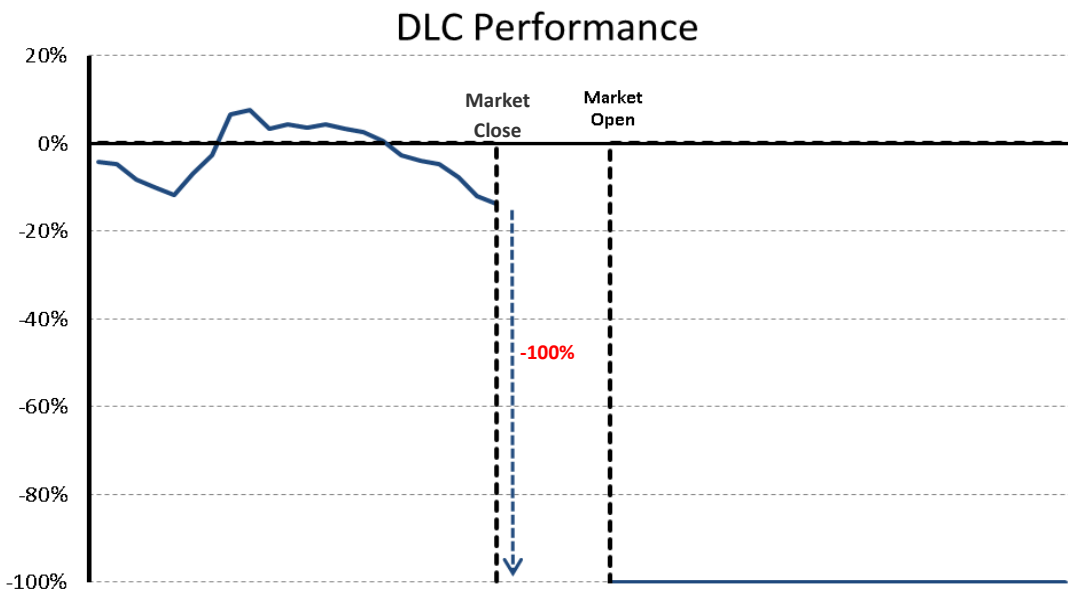
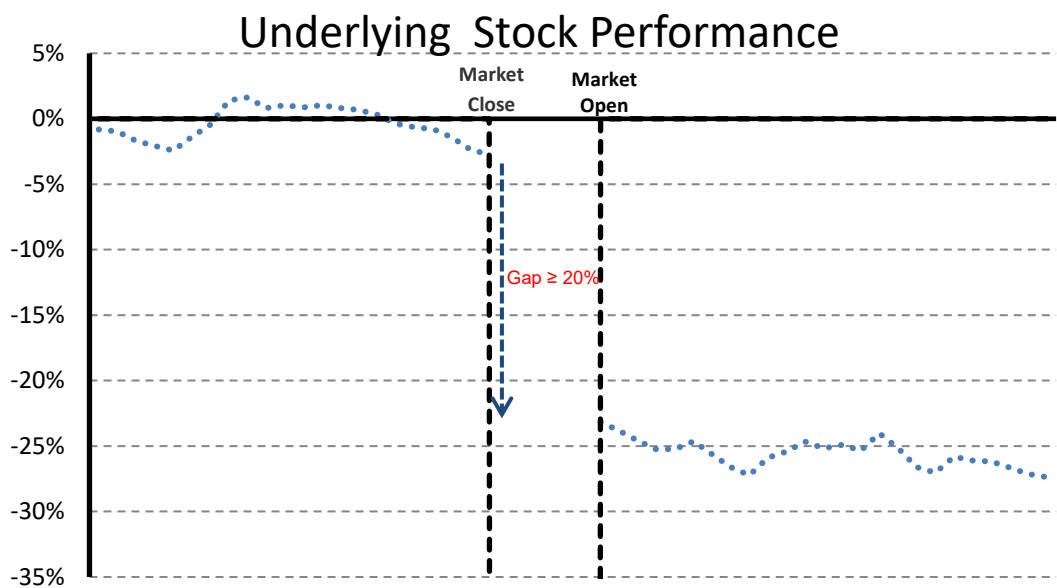
⁹ The illustrative examples are not exhaustive.

Scenarios where the investor may lose the entire value of the investment

The scenarios below are purely hypothetical and do not take fees and charges payable by investors into consideration. The scenarios highlight cases where the Certificates may lose 100% of their value.

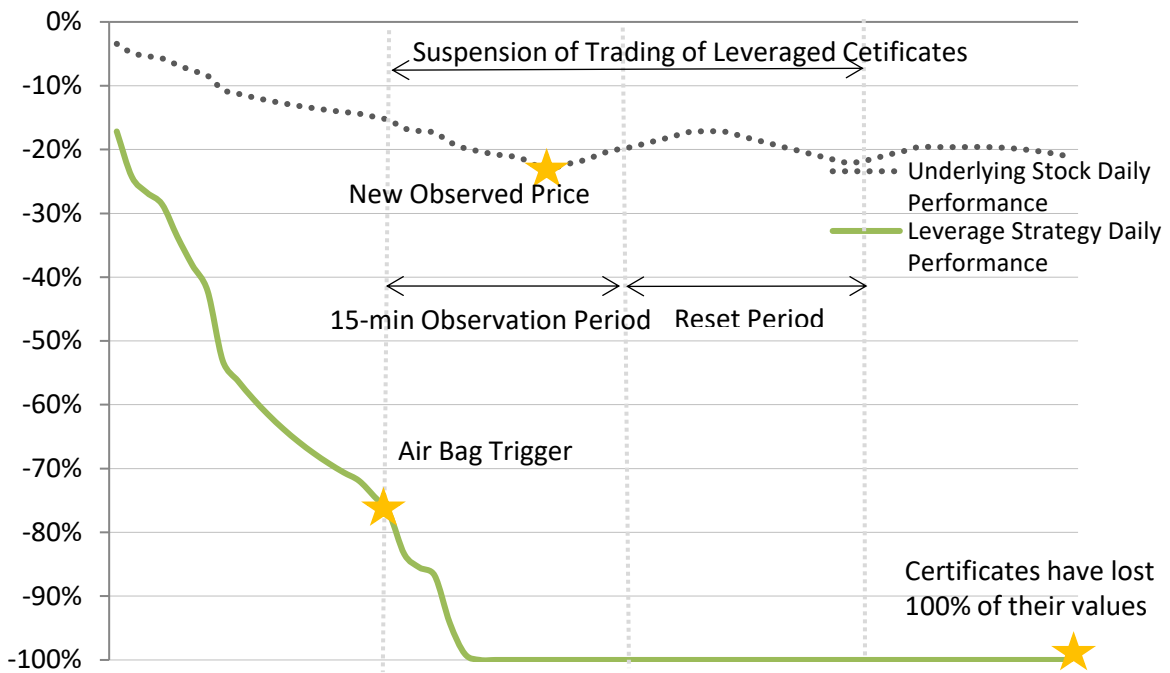
Scenario 1 – Overnight fall of the Underlying Stock

On any business day, the opening price of the Underlying Stock may be higher or lower than the closing price on the previous day. The difference between the previous closing price and the opening price of the Underlying Stock is termed a “gap”. If the opening price of the Underlying Stock is 20% or more below the previous day closing price, the Air Bag Mechanism would only be triggered when the market (in respect of which the Underlying Stock is listed) opens the following day (including pre-opening session or opening auction, as the case may be), and the Certificates would lose their entire value in such event.



Scenario 2 – Sharp intraday fall of the Underlying Stock

Although the Air Bag Mechanism is designed to reduce the exposure to the Underlying Stock during extreme market conditions, the Certificate can lose 100% of its value in the event the price of the Underlying Stock falls by 20% or more within the 15 minutes Observation Period compared to the reference price, being: (i) if air bag event has not been previously triggered on the same day, the previous closing price of the Underlying Stock, or (ii) if one or more air bag events have been previously triggered on the same day, the latest New Observed Price. The Certificates would lose their entire value in such event.



Examples and illustrations of adjustments due to certain corporate actions

The examples are purely hypothetical and do not take fees and charges payable by investors into consideration. The examples highlight the effect of corporate actions on the value of the Certificates and do not take into account the possible influence of fees, exchange rates, or any other market parameters.

In the case of any corporate action on the Underlying Stock, the Calculation Agent will, as soon as reasonably practical after it becomes aware of such event, determine whether such corporate action has a dilutive or concentrative effect on the theoretical value of the Underlying Stock, and if so, will (a) calculate the corresponding adjustment, if any, to be made to the elements relating to the Underlying Stock which are used to determine any settlement or payment terms under the Certificates and/or adjust at its discretion any other terms of the Certificates as it determines appropriate to preserve the economic equivalent of the obligations of the Issuer under the Certificates and (b) determine the effective date of such adjustment.

Notwithstanding the foregoing, in the event the Observation Date of the Leverage Reset Time (t) is an ex-date with respect to a corporate action related to the Underlying Stock, and the immediately preceding Leverage Reset Time r(t) is at the scheduled closing time for the Relevant Stock Exchange for the Underlying Stock (or any successor thereto), the Calculation Agent may, in its sole and absolute discretion, replace the $Rfactor_t$ with respect to such Leverage Reset Time (t) by an amount computed according to the following generic formula :

$$Rfactor_t = \left[1 - \frac{Div_t + DivExc_t - M \times R}{S_{r(t)}} \right] \times \frac{1}{1 + M}$$

This formula is provided for indicative purposes and the Calculation Agent may determine that this formula is not appropriate for certain corporate actions and may apply a different formula instead.

Such adjustment of $Rfactor_t$ would affect the Leveraged Return, the Rebalancing Cost, and the Underlying Reference Price used to determine the Intraday Restrike Event. The Air Bag mechanism would not be triggered if the stock price falls by 15% exclusively because of the dilutive effect of a corporate action.

Where:

$DivExc_t$ is the amount received as an Extraordinary Dividend by a holder of existing Shares for each Share held prior to the Extraordinary Dividend, net of any applicable withholding taxes.

M is the number of new Share(s) (whether a whole or a fraction) per existing Share each holder thereof is entitled to subscribe or to receive (positive amount) or the number of existing Shares redeemed or canceled per existing Share (negative amount), as the case may be, resulting from the corporate action.

R is the subscription price per Share (positive amount) or the redemption price per Share (negative amount) including any dividends or other benefits forgone to be subscribe to or to receive (as applicable), or to redeem a Share.

1. Stock split

Assuming the Underlying Stock is subject to a 1 to 2 stock split (i.e. 1 new Share for every 1 existing share):

$$S_{r(t)} = \$100$$

$$S_t = \$51$$

$$\text{Div}_t = \$0$$

$$\text{DivExc}_t = \$0$$

$M = 1$ (i.e. 1 new Shares for 1 existing Share)

$R = \$0$ (no subscription price / redemption price)

$$Rfactor_t = \left[1 - \frac{0 + 0 - 2 \times 0}{100} \right] \times \frac{1}{1 + 1} = 50\%$$

As a consequence:

$$LR_{r(t),t} = \text{Leverage} \times \left(\frac{S_t}{S_{r(t)} \times Rfactor_t} - 1 \right) = 5 \times \left(\frac{51}{100 \times 50\%} - 1 \right) = 10\%$$

$S_{r(t)}$	$S_{r(t)} \times Rfactor_t$	S_t	Adjusted Underlying Stock Performance
100	50	51	2%

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.75	0.825	10%

In such case an Intraday Restrike Event would occur if the Underlying Stock price falls to \$42.5, which is 15% below \$50, the Underlying Stock Reference Price.

2. Share Consolidation

Assuming the Underlying Stock is subject to a 2 to 1 share consolidation (i.e. 1 Share canceled for every 2 existing Shares):

$$S_{r(t)} = \$100$$

$$S_t = \$202$$

$$\text{Div}_t = \$0$$

$$\text{DivExc}_t = \$0$$

$M = -0.5$ (i.e. 0.5 Shares canceled for each 1 existing Share)

$R = \$0$ (no subscription price / redemption price)

$$Rfactor_t = \left[1 - \frac{0 + 0 - (-0.5) \times 0}{100} \right] \times \frac{1}{1 + (-0.5)} = 200\%$$

As a consequence:

$$LR_{r(t),t} = \text{Leverage} \times \left(\frac{S_t}{S_{r(t)} \times Rfactor_t} - 1 \right) = 5 \times \left(\frac{202}{100 \times 200\%} - 1 \right) = 5\%$$

$S_{r(t)}$	$S_{r(t)} \times Rfactor_t$	S_t	Adjusted Underlying Stock Performance
100	200	202	1%

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.75	0.7875	5%

In such case an Intraday Restrike Event would occur if the Underlying Stock price falls to \$170, which is 15% below \$200, the Underlying Stock Reference Price.

3. Rights Issues

Assuming there is a rights issue with respect to the Underlying Stock, with a right to receive 1 new Share for every 2 existing Shares, for a subscription price of \$40.

$$S_{r(t)} = \$100$$

$$S_t = \$84$$

$$\text{Div}_t = \$0$$

$$\text{DivExc}_t = \$0$$

$$R = \$40 \text{ (i.e. subscription price of \$40)}$$

$$M = 0.5 \text{ (i.e. 1 new share for every 2 existing shares)}$$

$$Rfactor_t = \left[1 - \frac{0 + 0 - 0.5 \times 40}{100} \right] \times \frac{1}{1 + 0.5} = 80\%$$

As a consequence:

$$LR_{r(t),t} = \text{Leverage} \times \left(\frac{S_t}{S_{r(t)} \times Rfactor_t} - 1 \right) = 5 \times \left(\frac{84}{100 \times 80\%} - 1 \right) = 25\%$$

$S_{r(t)}$	$S_{r(t)} \times Rfactor_t$	S_t	Adjusted Underlying Stock Performance
100	80	84	5%

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.75	0.9375	25%

In such case an Intraday Restrike Event would occur if the Underlying Stock price falls to \$68, which is 15% below \$80, the Underlying Stock Reference Price.

4. Bonus Issues

Assuming there is a bonus issue with respect to the Underlying Stock, where shareholders receive 1 bonus share for 5 existing shares:

$$S_{r(t)} = \$100$$

$$S_t = \$85$$

$$\text{Div}_t = \$0$$

$$\text{DivExc}_t = \$0$$

$$R = \$0$$

M = 0.2 (i.e. 1 new share for 5 existing shares)

$$Rfactor_t = \left[1 - \frac{0 + 0 - 0.2 \times 0}{100} \right] \times \frac{1}{1 + 0.2} = 83.33\%$$

As a consequence:

$$LR_{r(t),t} = \text{Leverage} \times \left(\frac{S_t}{S_{r(t)} \times Rfactor_t} - 1 \right) = 5 \times \left(\frac{85}{100 \times 83.33\%} - 1 \right) = 10\%$$

$S_{r(t)}$	$S_{t(t)} \times Rfactor_t$	S_t	Adjusted Underlying Stock Performance
100	83.33	85	2%

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.75	0.825	10%

In such case an Intraday Restrike Event would occur if the Underlying Stock price falls to \$70.83, which is 15% below \$83.33, the Underlying Stock Reference Price.

5. Extraordinary Dividend

Assuming there is an extraordinary dividend of \$20 (net of taxes) paid in respect of each stock.

$$S_{r(t)} = \$100$$

$$S_t = \$84$$

$$\text{Div}_t = \$0$$

$$\text{DivExc}_t = \$20$$

$$R = \$0$$

$$M = 0$$

$$Rfactor_t = \left[1 - \frac{0 + 20 - 0 \times 0}{100} \right] \times \frac{1}{1 + 0} = 80\%$$

As a consequence:

$$LR_{r(t),t} = \text{Leverage} \times \left(\frac{S_t}{S_{r(t)} \times Rfactor_t} - 1 \right) = 5 \times \left(\frac{84}{100 \times 80\%} - 1 \right) = 25\%$$

$S_{r(t)}$	$S_{r(t)-} \times Rfactor_t$	S_t	Adjusted Underlying Stock Performance
100	80	84	5%

Value of the Certificate r(t)	Value of the Certificate (t)	Certificates' performance (excluding any cost and fees)
0.75	0.9375	25%

In such case an Intraday Restrike Event would occur if the Underlying Stock price falls to \$68, which is 15% below \$80, the Underlying Stock Reference Price.

INFORMATION RELATING TO THE COMPANY

All information contained in this document regarding the Company, including, without limitation, its financial information, is derived from publicly available information which appears on the web-site of Hong Kong Exchanges and Clearing Limited (the “HKExCL”) at <http://www.hkex.com.hk> and/or the Company’s web-site at <http://www.sunnyoptical.com/en/default.html>. The Issuer has not independently verified any of such information.

Sunny Optical Technology (Group) Company Limited (the “**Company**”) is an investment holding company principally engaged in the design, research and development, manufacture and sale of optical and optical related products and scientific instruments. The Company operates its business through three segments: Optical Components, Optoelectronic Products and Optical Instruments. Through its subsidiaries, the Company is also engaged in the research and development of infrared technologies. The Company distributes its products in domestic market and to overseas market.

The information set out in Appendix I of this document relates to the unaudited condensed consolidated interim results of the Company and its subsidiaries for the six months ended 30 June 2023 and has been extracted and reproduced from an announcement by the Company dated 22 August 2023 in relation to the same. Further information relating to the Company may be located on the web-site of the HKExCL at <http://www.hkex.com.hk>.

INFORMATION RELATING TO THE DESIGNATED MARKET MAKER

UBS AG, acting through its London Branch, has been appointed the designated market maker (“DMM”) for the Certificates. The DMM will provide competitive buy and sell quotes for the Certificates continuously during the trading hours of the SGX-ST on the following basis:

- (a) Maximum bid and offer spread : (i) when the best bid price of the Certificate is S\$10 and below: 10 ticks or S\$0.20 whichever is greater; and
(ii) when the best bid price of the Certificate is above S\$10: 5% of the best bid price of the Certificate.
- (b) Minimum quantity subject to bid and offer spread : 10,000 Certificates
- (c) Last Trading Day for Market Making : The date falling 5 Exchange Business Days immediately preceding the Expiry Date

In addition, the DMM may not provide a quotation in the following circumstances:

- (i) during the pre-market opening and five minutes following the opening of the SGX-ST on any trading day;
- (ii) if the Certificates are valueless (where the Issuer’s bid price is below the minimum bid size for such securities as prescribed by the SGX-ST);
- (iii) before the Relevant Stock Exchange for the Underlying Stock has opened and after the Relevant Stock Exchange for the Underlying Stock has closed on any trading day;
- (iv) when trading in the Underlying Stock is suspended or limited in a material way for any reason, for the avoidance of doubt, the DMM is not obliged to provide quotations for the Certificates at any time when the Underlying Stock is not negotiated/traded for any reason;
- (v) where the Certificates are suspended from trading for any reason;
- (vi) market disruption events, including, without limitation, any suspension of or limitation imposed on trading (including but not limited to unforeseen circumstances such as by reason of movements in price exceeding limits permitted by the SGX-ST or any act of God, war, riot, public disorder, explosion, terrorism or otherwise) in the Underlying Stock;
- (vii) where the Issuer or the DMM faces technical problems affecting the ability of the DMM to provide bids and offer quotations;
- (viii) where the ability of the Issuer to source a hedge or unwind an existing hedge, as determined by the Issuer in good faith, is materially affected by the prevailing market conditions, and the Issuer informs the SGX-ST of its inability to do so as soon as practicable;
- (ix) in cases where the Issuer has no Certificates to sell, then the DMM will only provide the bid price;

- (x) if the stock market experiences exceptional price movement and volatility;
- (xi) when it is a public holiday in Singapore and/or Hong Kong and/or the SGX-ST and/or the HKEX is not open for dealings; and
- (xii) during the suspension of trading of Certificates after an Air Bag Mechanism has been triggered.

The last trading day on which the DMM will provide competitive quotations for the Certificates would be the fifth Exchange Business Day immediately preceding the Expiry Date.

PLACING AND SALE

General

No action has been or will be taken by the Issuer that would permit a public offering of the Certificates or possession or distribution of any offering material in relation to the Certificates in any jurisdiction where action for that purpose is required. No offers, sales or deliveries of any Certificates, or distribution of any offering material relating to the Certificates may be made in or from any jurisdiction except in circumstances which will result in compliance with any applicable laws or regulations and will not impose any obligation on the Issuer. In the event that the Issuer contemplates a placing, placing fees may be payable in connection with the issue and the Issuer may at its discretion allow discounts to placees.

United Kingdom

In relation to each tranche of Certificates, the Issuer has represented, warranted and agreed that:

(a) No deposit-taking: in relation to any Certificates having a maturity of less than one year:

(i) it is a person whose ordinary activities involve it in acquiring, holding, managing or disposing of investments (as principal or agent) for the purposes of its business; and

(ii) it has not offered or sold and will not offer or sell any Certificates other than to persons:

(A) whose ordinary activities involve them in acquiring, holding, managing or disposing of investments (as principal or agent) for the purposes of their businesses; or

(B) who it is reasonable to expect will acquire, hold, manage or dispose of investments (as principal or agent) for the purposes of their businesses,

where the issue of the Certificates would otherwise constitute a contravention of section 19 of the Financial Services and Markets Act 2000 (the "FSMA") by the Issuer;

(b) Financial Promotion: it has only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of section 21 of the FSMA) received by it in connection with the issue or sale of any Certificates in circumstances in which section 21(1) of the FSMA does not or would not, if the Issuer was not an authorised person, apply to the Issuer; and

(c) General Compliance: it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to any Certificates in, from or otherwise involving the United Kingdom.

If the applicable Supplemental Listing Document in respect of any Certificates specifies the "Prohibition of Sales to European Economic Area Retail Investors" as "Not Applicable", the Issuer has represented and agreed that it has not offered, sold or otherwise made available such Certificates to any retail investor in the United Kingdom. For the purposes of this provision:

(a) the expression "**retail investor**" means a person who is one (or more) of the following:

(i) a retail client, as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018 ("**EUWA**"); or

- (ii) a customer within the meaning of the provisions of the FSMA and any rules or regulations made under the FSMA which were relied on immediately before exit day to implement Directive (EU) 2016/97, where that customer would not qualify as a professional client, as defined in point (8) of Article 2(1) of Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA; or
 - (iii) not a qualified investor as defined in Article 2 of Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the EUWA; and
- (b) the expression an "**offer**" includes the communication in any form and by any means of sufficient information on the terms of the offer and the Certificates to be offered so as to enable an investor to decide to purchase or subscribe for the Certificates.

If the applicable Supplemental Listing Document in respect of any Certificates specifies the "Prohibition of Sales to European Economic Area Retail Investors" as "Not Applicable", the Issuer has represented and agreed that it has not made and will not make an offer of Certificates which are the subject of the offering contemplated by the Base Listing Document as completed by this Supplemental Listing Document to the public in the United Kingdom except that it may make an offer of such Certificates to the public in the United Kingdom:

- a) if the Supplemental Listing Document in relation to the Certificates specifies an offer of those Certificates may be made other than pursuant to Article 1(4) of the UK Prospectus Regulation in the United Kingdom (a "**Public Offer**"), following the date of publication of a prospectus in relation to such Certificates which either (i) has been approved by the UK Financial Conduct Authority ("**FCA**"), or (ii) is to be treated as if it had been approved by the FCA in accordance with the transitional provision in Regulation 74 of the Prospectus (Amendment etc.) (EU Exit) Regulations 2019, provided that any such prospectus has subsequently been completed by final terms contemplating such Public Offer, in the period beginning and ending on the dates specified in such prospectus or final terms, as applicable, and the Issuer has consented in writing to its use for the purpose of that Public Offer;
- b) at any time to any legal entity which is a qualified investor as defined in Article 2 of the UK Prospectus Regulation;
- c) at any time to fewer than 150 natural or legal persons (other than qualified investors as defined in Article 2 of the UK Prospectus Regulation); or
- d) at any time in any other circumstances falling within section 86 of the FSMA, provided that no such offer of Certificates to the public referred to in (a) to (c) above shall require the publication of a prospectus pursuant to section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation,

provided that no such offer of Certificates referred to in (b) to (d) above shall require the Issuer to publish a prospectus pursuant to section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation.

For the purposes of this provision, the expression "an offer of Certificates to the public" in relation to any products in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and the Certificates to be offered so as to enable an investor to decide to purchase or subscribe the Certificates, and the expression "**UK Prospectus Regulation**" means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the EUWA.

United States of America

The Certificates have not been, and will not be, registered under the Securities Act. Subject to certain exceptions, Certificates, or interests therein, may not at any time be offered, sold, resold or delivered, directly or indirectly, in the United States or to, or for the account or benefit of, any U.S. person or to others for offering, sale or resale in the United States or to any such U.S. person. Offers and sales of Certificates, or interests therein, in the United States or to U.S. persons would constitute a violation of United States securities laws unless made in compliance with registration requirements of the Securities Act or pursuant to an exemption therefrom. The Certificates will not be offered, sold or delivered within the United States or to U.S. persons. As used herein, "**United States**" means the United States of America (including the States and the District of Columbia), its territories, its possessions and other areas subject to its jurisdiction; and "**U.S. person**" means (i) any citizen or resident of the United States, including any corporation, partnership or other entity created or organised in or under the laws of the United States or of any political subdivision thereof, (ii) any estate or trust the income of which is subject to United States income taxation regardless of its source, (iii) "U.S. person" as such term is defined in (a) Regulation S under the Securities Act or (b) the Interpretive Guidance and Policy Statement Regarding Compliance with Certain Swap Regulations promulgated by the U.S. Commodity Futures Trading Commission ("**CFTC**") pursuant to the U.S. Commodity Exchange Act of 1936, as amended, or (iv) a person other than a "Non-United States Person" as defined in CFTC Rule 4.7, in each case, as such definition is amended, modified or supplemented from time to time.

Prohibition of Sales to European Economic Area

If the applicable Supplemental Listing Document in respect of any Certificates specifies the "Prohibition of Sales to European Economic Area Retail Investors" as "Not Applicable", the Issuer has represented and agreed that it has not offered, sold or otherwise made available and will not offer, sell or otherwise make available any Certificates which are the subject of the offering contemplated by the Base Listing Document as completed by this Supplemental Listing Document to any retail investor in the European Economic Area. For the purposes of this provision:

- (a) the expression "retail investor" means a person who is one (or more) of the following:
 - (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "**MiFID II**");
 - (ii) a customer within the meaning of Directive 2016/97 (as amended), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or
 - (iii) not a qualified investor as defined in Regulation (EU) 2017/1129 (as amended, the "**Prospectus Regulation**"); and
- (b) the expression an "offer" includes the communication in any form and by any means of sufficient information on the terms of the offer and the Certificates to be offered so as to enable an investor to decide to purchase or subscribe the Certificates.

PUBLIC OFFER SELLING RESTRICTION UNDER THE PROSPECTUS REGULATION

If the Supplemental Listing Document specifies "Prohibition of Sales to European Economic Area Retail Investors" as "Not Applicable", in relation to each member state of the European

Economic Area (each, a "**Relevant State**"), the Issuer has represented, warranted and agreed that it has not made and will not make an offer of Certificates which are the subject of the offering contemplated by the Base Listing Document as completed by this Supplemental Listing Document to the public in that Relevant State except that it may make an offer of such Certificates to the public in that Relevant State:

(a) Approved listing document: if the Supplemental Listing Document in relation to the Certificates specifies that an offer of those Certificates may be made other than pursuant to Article 1(4) of the Prospectus Regulation in that Relevant State (a "**Non-exempt Offer**"), following the date of publication of a listing document in relation to such Certificates which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, provided that any such listing document has subsequently been completed by the Supplemental Listing Document contemplating such Non-exempt Offer, in accordance with the Prospectus Regulation, in the period beginning and ending on the dates specified in such listing document or Supplemental Listing Document, as applicable and the Issuer has consented in writing to its use for the purpose of that Non-exempt Offer;

(b) Qualified investors: at any time to any legal entity which is a qualified investor as defined in the Prospectus Regulation;

(c) Fewer than 150 offered: at any time to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Regulation), subject to obtaining the prior consent of the Issuer for any such offer; or

(d) Other exempt offers: at any time in any other circumstances falling within Article 3(2) of the Prospectus Regulation,

provided that no such offer of Certificates referred to in (b) to (d) above shall require the Issuer to publish a listing document pursuant to Article 3 of the Prospectus Regulation or supplement a listing document pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an "**offer of Certificates to the public**" in relation to any Certificates in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and the Certificates to be offered so as to enable an investor to decide to purchase or subscribe for the Certificates, as the same may be varied in that Relevant State by any measure implementing the Prospectus Regulation in that Relevant State.

Singapore

This document has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this document and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of Certificates may not be circulated or distributed, nor may Certificates be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than pursuant to, and in accordance with the conditions of, any applicable provision of the Securities and Futures Act 2001 of Singapore.

Hong Kong

No person, other than a person permitted to do so under the securities laws of Hong Kong, has issued, or had in its possession for the purposes of issue, or will issue, or have in its possession for the purposes of issue any advertisement, invitation or document relating to the Certificates, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong other than with respect to Certificates which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” within the meaning of the Securities and Futures Ordinance (Cap. 571) of the Laws of Hong Kong and any rules made thereunder.

SUPPLEMENTAL INFORMATION RELATING TO THE ISSUER

The information set out in Appendix II of this document is an extract of the unaudited consolidated financial statements of UBS AG and its subsidiaries for the second quarter ended 30 June 2023.

For more information on the Issuer, please see <http://www.ubs.com/>.

Queries regarding the Certificates may be directed to +852 2971 6668 or OL-HKWarrants@ubs.com.

SUPPLEMENTAL GENERAL INFORMATION

The information set out herein is supplemental to, and should be read in conjunction with, the information set out on page 267 of the Base Listing Document.

1. Save as disclosed in the Base Listing Document and herein, there is no litigation, arbitration or administrative proceedings relating to claims or amounts which are material in the context of the issue of the Certificates to which the Issuer is a party nor, to the best of its knowledge and belief, is there any threatened litigation, arbitration or administrative proceedings relating to claims or amounts which are material in the context of the issue of the Certificates which would in either case jeopardise its ability to discharge its obligations in respect of the Certificates.
 2. UBS AG, Singapore Branch at 9 Penang Road, Singapore 238459, has been authorised to accept, on behalf of the Issuer, service of process and any other notices required to be served on the Issuer. Any notices required to be served on the Issuer should be sent to UBS AG, Singapore Branch at the above address for the attention of Han-Kiat Tan, Legal & Compliance.
 3. Settlement of trades done on a normal “ready basis” on the SGX-ST generally take place on the second Business Day following the transaction. Dealing in the Certificates will take place in board lots of 100 Certificates in Singapore dollars. For further details on the transfer of Certificates and their exercise, please refer to the section headed “Summary of the Issue” above.
 4. It is not the current intention of the Issuer to apply for a listing of the Certificates on any stock exchange other than the SGX-ST.
 5. There has been no adverse change, material in the context of the issue of the Certificates, in the financial position of the Issuer since 30 June 2023.
 6. The following contracts, relating to the issue of the Certificates, have been or will be entered into by the Issuer and may be material to the issue of the Certificates:
 - (a) the Master Instrument; and
 - (b) the Master Warrant Agent Agreement.
- None of the directors of the Issuer has any direct or indirect interest in any of the above contracts.
7. The Issuer has appropriate risk management capabilities to manage the issue of the Certificates.
 8. Copies of the following documents may be inspected during usual business hours on any weekday (Saturdays, Sundays and holidays excepted) at the office of Allen & Gledhill LLP at One Marina Boulevard #28-00, Singapore 018989, during the period of 14 days from the date of this document:

- (a) the articles of association of the Issuer;
- (b) the latest financial reports (including the notes thereto) of the Issuer;
- (c) the Base Listing Document; and
- (d) this document.

APPENDIX I

**REPRODUCTION OF THE UNAUDITED CONDENSED CONSOLIDATED INTERIM RESULTS
FOR THE SIX MONTHS ENDED 30 JUNE 2023 OF
SUNNY OPTICAL TECHNOLOGY (GROUP) COMPANY LIMITED AND ITS SUBSIDIARIES**

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SUNNY OPTICAL TECHNOLOGY (GROUP) COMPANY LIMITED

舜宇光學科技（集團）有限公司

(Incorporated in the Cayman Islands with limited liability)

(Stock Code: 2382.HK)

INTERIM RESULTS ANNOUNCEMENT FOR THE SIX MONTHS ENDED 30 JUNE 2023

RESULTS HIGHLIGHTS

For the six months ended 30 June 2023, the Group's unaudited revenue was approximately Renminbi (“**RMB**”) 14,278.6 million, representing a decrease of approximately 15.9% as compared to the corresponding period of last year.

For the six months ended 30 June 2023, the Group's gross profit was approximately RMB2,130.6 million, representing a decrease of approximately 39.5% as compared to the corresponding period of last year. The gross profit margin was approximately 14.9%, which was approximately 5.9 percentage points lower than that of the corresponding period of last year.

For the six months ended 30 June 2023, the Group's profit for the period attributable to owners of the Company was approximately RMB436.7 million, representing a decrease of approximately 67.8% as compared to the corresponding period of last year.

FINANCIAL RESULTS

The board (the “**Board**”) of directors (the “**Directors**”, and each a “**Director**”) of Sunny Optical Technology (Group) Company Limited (the “**Company**”) presents the unaudited condensed consolidated interim results of the Company and its subsidiaries (collectively referred to as the “**Group**”) for the six months ended 30 June 2023, together with the comparative figures for the corresponding period of the year 2022 as follows:

**CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME
FOR THE SIX MONTHS ENDED 30 JUNE 2023**

	NOTES	For the six months ended 30 June	
		2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited)
Revenue	3A	14,278,565	16,971,756
Cost of sales		(12,147,977)	(13,449,358)
Gross profit		2,130,588	3,522,398
Other income	4	695,512	408,347
Other gains and losses	5	(123,937)	(55,498)
Impairment losses under expected credit loss (“ECL”) model, net of reversal		(5,617)	(7,906)
Selling and distribution expenses		(240,092)	(163,430)
Research and development expenditure		(1,204,802)	(1,468,215)
Administrative expenses		(457,944)	(437,988)
Share of results of associates		29,142	955
Finance costs		(230,974)	(114,903)
Profit before tax		591,876	1,683,760
Income tax expense	6	(132,485)	(304,917)
Profit for the period	7	459,391	1,378,843
Other comprehensive (expense) income:			
<i>Item that will not be reclassified to profit or loss:</i>			
Fair value (loss) gain on investments in equity instruments at fair value through other comprehensive income (“FVTOCI”), net of income tax		(32,628)	1,241
<i>Item that may be reclassified subsequently to profit or loss:</i>			
Exchange differences arising on translation of foreign operations		16,114	6,700
Other comprehensive (expense) income for the period		(16,514)	7,941
Total comprehensive income for the period		442,877	1,386,784

		For the six months ended 30 June	
	<i>NOTE</i>	2023	2022
		<i>RMB'000</i>	<i>RMB'000</i>
		(Unaudited)	(Unaudited)
Profit for the period attributable to:			
Owners of the Company		436,714	1,357,905
Non-controlling interests		22,677	20,938
		<u>459,391</u>	<u>1,378,843</u>
Total comprehensive income for the period attributable to:			
Owners of the Company		420,926	1,368,209
Non-controlling interests		21,951	18,575
		<u>442,877</u>	<u>1,386,784</u>
Earnings per share			
– Basic (<i>RMB cents</i>)	<i>8</i>	<u>39.99</u>	<u>124.13</u>
– Diluted (<i>RMB cents</i>)	<i>8</i>	<u>39.95</u>	<u>124.03</u>

CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION
AT 30 JUNE 2023

	<i>NOTES</i>	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
NON-CURRENT ASSETS			
Property, plant and equipment	<i>10(a)</i>	9,858,872	10,119,846
Right-of-use assets	<i>10(b)</i>	602,965	612,062
Investment properties		33,064	35,502
Intangible assets		222,611	250,715
Interests in associates		1,378,227	200,645
Deferred tax assets	<i>11</i>	246,367	257,178
Deposits paid for acquisition of property, plant and equipment	<i>12</i>	776,183	489,947
Equity instruments at FVTOCI		104,974	168,160
Financial assets at fair value through profit or loss (“FVTPL”)	<i>13(b)</i>	19,518	19,518
Time deposits		1,450,000	200,000
Goodwill		2,119	2,119
		14,694,900	12,355,692
CURRENT ASSETS			
Inventories	<i>15</i>	4,416,911	4,720,913
Trade and other receivables and prepayments	<i>16</i>	6,286,289	7,205,110
Receivables at FVTOCI	<i>16A</i>	562,638	548,956
Tax recoverable		–	28,120
Derivative financial assets	<i>14</i>	–	29,681
Financial assets at FVTPL	<i>13(a)</i>	8,142,596	10,086,415
Amounts due from related parties		366	8,256
Time deposits		–	500,000
Pledged bank deposits		142,371	9,775
Short term fixed deposits		1,269,225	475,176
Cash and cash equivalents		11,169,963	7,033,194
		31,990,359	30,645,596

	<i>NOTES</i>	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
CURRENT LIABILITIES			
Trade and other payables	<i>18</i>	16,988,538	12,917,286
Amounts due to related parties		5,917	9,992
Derivative financial liabilities	<i>14</i>	256,082	17,655
Contract liabilities		135,544	166,096
Tax payable		31,764	–
Bank borrowings	<i>19</i>	730,000	1,989,981
Lease liabilities		50,134	51,378
Deferred income		9,813	6,446
Bonds payable	<i>20</i>	–	4,178,082
		18,207,792	19,336,916
NET CURRENT ASSETS			
		13,782,567	11,308,680
TOTAL ASSETS LESS CURRENT LIABILITIES			
		28,477,467	23,664,372
NON-CURRENT LIABILITIES			
Deferred tax liabilities	<i>11</i>	787,203	850,321
Long term payables	<i>18</i>	118,690	122,777
Bank borrowings	<i>19</i>	2,031,547	30,000
Lease liabilities		159,752	187,938
Deferred income		238,276	290,950
Bonds payable	<i>20</i>	2,953,739	–
		6,289,207	1,481,986
NET ASSETS			
		22,188,260	22,182,386
CAPITAL AND RESERVES			
Share capital	<i>21</i>	105,163	105,163
Reserves		21,632,595	21,733,224
Equity attributable to owners of the Company		21,737,758	21,838,387
Non-controlling interests		450,502	343,999
TOTAL EQUITY			
		22,188,260	22,182,386

NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

FOR THE SIX MONTHS ENDED 30 JUNE 2023

1. GENERAL INFORMATION AND BASIS OF PRESENTATION

The Company was incorporated in the Cayman Islands on 21 September 2006 as an exempted company under the Companies Act Chapter 22 (Law 3 of 1961 as consolidated and revised, formerly known as Companies Law) of the Cayman Islands and its shares have been listed on the Stock Exchange of Hong Kong Limited (the “**Stock Exchange**”) with effect from 15 June 2007.

The condensed consolidated financial statements have been prepared in accordance with Hong Kong Accounting Standard (“**HKAS**”) 34 *Interim Financial Reporting* issued by the Hong Kong Institute of Certified Public Accountants (the “**HKICPA**”) as well as the applicable disclosure requirements of Appendix 16 to the Rules Governing the Listing of Securities on the Stock Exchange (the “**Listing Rules**”).

The Directors of the Company have, at the time of approving the condensed consolidated financial statements, a reasonable expectation that the Group has adequate resources to continue in operational existence for the foreseeable future. Thus they continue to adopt the going concern basis of accounting in preparing the condensed consolidated financial statements.

2. PRINCIPAL ACCOUNTING POLICIES

The condensed consolidated financial statements have been prepared on the historical cost basis except for certain financial instruments, which are measured at fair values, as appropriate.

Other than additional/change in accounting policies resulting from application of amendments to Hong Kong Financial Reporting Standards (“**HKFRSs**”), the accounting policies and methods of computation used in the condensed consolidated financial statements for the six months ended 30 June 2023 are the same as those presented in the Group’s annual consolidated financial statements for the year ended 31 December 2022.

Application of amendments to HKFRSs

In the current interim period, the Group has applied the following new and amendments to HKFRSs issued by the HKICPA, for the first time, which are mandatorily effective for the Group’s annual period beginning on 1 January 2023 for the preparation of the Group’s condensed consolidated financial statements:

HKFRS 17 (including the October 2020 and February 2022 Amendments to HKFRS 17)	Insurance Contracts
Amendments to HKAS 8	Definition of Accounting Estimates
Amendments to HKAS 12	Deferred Tax related to Assets and Liabilities arising from a Single Transaction

Except as described below, the application of the new and amendments to HKFRSs in the current interim period has had no material impact on the Group’s financial positions and performance for the current and prior periods and/or on the disclosures set out in these condensed consolidated financial statements.

2.1 Impacts and changes in accounting policies on application of Amendments to HKAS 12 *Deferred Tax related to Assets and Liabilities arising from a Single Transaction*

2.1.1 Accounting policies

Deferred tax is recognised on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognised for all taxable temporary differences. Deferred tax assets are generally recognised for all deductible temporary differences to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilised. Such deferred tax assets and liabilities are not recognised if the temporary difference arises from the initial recognition (other than in a business combination) of assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit and at the time of the transaction does not give rise to equal taxable and deductible temporary differences. In addition, deferred tax liabilities are not recognised if the temporary difference arises from the initial recognition of goodwill.

For leasing transactions in which the tax deductions are attributable to the lease liabilities, the Group applies HKAS 12 requirements to the lease liabilities and the related assets separately. The Group recognises a deferred tax asset related to lease liabilities to the extent that it is probable that taxable profit will be available against which the deductible temporary difference can be utilised and a deferred tax liability for all taxable temporary differences.

2.1.2 Transition and summary of effects

As disclosed in the Group's annual financial statements for the year ended 31 December 2022, the Group previously applied the HKAS 12 requirements to assets and liabilities arising from a single transaction separately and temporary differences on initial recognition on the relevant assets and liabilities were not recognised due to application of the initial recognition exemption. In accordance with the transition provision:

- (i) the Group has applied the new accounting policy retrospectively to leasing transactions that occurred on or after 1 January 2022;
- (ii) the Group also, as at 1 January 2022, recognised a deferred tax asset (to the extent that it is probable that taxable profit will be available against which the deductible temporary difference can be utilised) and a deferred tax liability for all deductible and taxable temporary difference associated with right-of-use assets and lease liabilities.

The Directors of the Company considered that the application of amendments of HKAS 12 *Deferred Tax related to Assets and Liabilities arising from a Single Transaction* had no material impact on the amount of deferred tax assets, deferred tax liabilities and income tax expenses recognised in the respective reporting periods, retained earnings at the earliest period presented and the disclosures set out in these condensed consolidated financial statements.

2.2 Impacts on application of Amendments to HKAS 12 *Income Taxes International Tax Reform-Pillar Two Model Rules*

HKAS 12 was amended to add the exception to recognising and disclosing information about deferred tax assets and liabilities that are related to tax law enacted or substantively enacted to implement the Pillar Two model rules published by the Organisation for Economic Co-operation and Development (the “**Pillar Two legislation**”). The amendments require that entities shall apply the amendments immediately upon issuance. The amendments also require that entities shall disclose separately its current tax expense/income related to Pillar Two income taxes, and the qualitative and quantitative information about its exposure to Pillar Two income taxes in periods in which the Pillar Two legislation is enacted or substantially enacted but not yet in effect in annual reporting periods beginning on or after 1 January 2023.

The Group has yet to apply the temporary exception during the current interim period because the Group’s entities are operating in jurisdictions where the Pillar Two legislation has not yet been enacted or substantially enacted. The Group will disclose known or reasonably estimable information that helps users of financial statements to understand the Group’s exposure to Pillar Two income taxes in the Group’s annual consolidated financial statements in which the Pillar Two legislation has been enacted or substantially enacted and will disclose separately current tax expense/income related to Pillar Two income taxes when it is in effect.

2.3 Impacts on application of Amendments to HKAS 1 and HKFRS Practice Statement 2 *Disclosure of Accounting Policies*

In addition, the Group will apply Amendments to HKAS 1 and HKFRS Practice Statement 2 *Disclosure of Accounting Policies* which are mandatorily effective for the Group’s annual period beginning on 1 January 2023 for the preparation of the Group’s consolidated financial statements for the year ending 31 December 2023.

The application of the amendments in the current period had no material impact on the condensed consolidated financial statements but is expected to affect the disclosures of the Group’s accounting policies in the Group’s annual consolidated financial statements for the year ending 31 December 2023.

3B. SEGMENT INFORMATION

Information reported to the Board of Directors, being the chief operating decision maker, for the purpose of resource allocation and assessment of segment performance, focuses on types of goods delivered because the Board of Directors has chosen to organise the Group among different major products. No operating segments identified by chief operating decision maker have been aggregated in arriving at the reportable segments of the Group.

Specifically, the Group's operating segments under HKFRS 8 *Operating Segments* are as follows:

1. Optical Components
2. Optoelectronic Products
3. Optical Instruments

The following is an analysis of the Group's revenue and results by operating and reportable segments.

For the six months ended 30 June 2023

	Optical Components <i>RMB'000</i> (Unaudited)	Optoelectronic Products <i>RMB'000</i> (Unaudited)	Optical Instruments <i>RMB'000</i> (Unaudited)	Segments Total <i>RMB'000</i> (Unaudited)	Eliminations <i>RMB'000</i> (Unaudited)	Total <i>RMB'000</i> (Unaudited)
Revenue						
External sales	4,317,911	9,736,523	224,131	14,278,565	–	14,278,565
Inter-segment sales	853,559	11,623	38,805	903,987	(903,987)	–
Total	<u>5,171,470</u>	<u>9,748,146</u>	<u>262,936</u>	<u>15,182,552</u>	<u>(903,987)</u>	<u>14,278,565</u>
Segment profit	<u>651,745</u>	<u>60,184</u>	<u>65,553</u>	<u>777,482</u>	<u>–</u>	<u>777,482</u>
Share of results of associates						29,142
Unallocated other income, other gains and losses						34,551
Unallocated administrative expenses and finance costs						<u>(249,299)</u>
Profit before tax						<u>591,876</u>

For the six months ended 30 June 2022

	Optical Components <i>RMB'000</i> (Unaudited)	Optoelectronic Products <i>RMB'000</i> (Unaudited)	Optical Instruments <i>RMB'000</i> (Unaudited)	Segments Total <i>RMB'000</i> (Unaudited)	Eliminations <i>RMB'000</i> (Unaudited)	Total <i>RMB'000</i> (Unaudited)
Revenue						
External sales	4,399,044	12,370,867	201,845	16,971,756	–	16,971,756
Inter-segment sales	1,162,632	1,515	46,065	1,210,212	(1,210,212)	–
Total	<u>5,561,676</u>	<u>12,372,382</u>	<u>247,910</u>	<u>18,181,968</u>	<u>(1,210,212)</u>	<u>16,971,756</u>
Segment profit	<u>1,160,152</u>	<u>684,405</u>	<u>63,746</u>	<u>1,908,303</u>	<u>–</u>	<u>1,908,303</u>
Share of results of associates						955
Unallocated other income, other gains and losses						(98,983)
Unallocated administrative expenses and finance costs						<u>(126,515)</u>
Profit before tax						<u>1,683,760</u>

As at 30 June 2023

	Optical Components <i>RMB'000</i> (Unaudited)	Optoelectronic Products <i>RMB'000</i> (Unaudited)	Optical Instruments <i>RMB'000</i> (Unaudited)	Total <i>RMB'000</i> (Unaudited)
Assets				
Trade receivables	1,957,887	3,427,784	99,193	5,484,864
Bill receivables	456,994	94,406	11,238	562,638
Inventories	<u>1,562,267</u>	<u>2,752,988</u>	<u>101,656</u>	<u>4,416,911</u>
Total segment assets	<u>3,977,148</u>	<u>6,275,178</u>	<u>212,087</u>	<u>10,464,413</u>
Unallocated assets				<u>36,220,846</u>
Consolidated assets				<u>46,685,259</u>
Liabilities				
Trade payables	1,717,811	3,195,182	125,399	5,038,392
Note payables	<u>761,651</u>	<u>8,505,551</u>	<u>46,769</u>	<u>9,313,971</u>
Total segment liabilities	<u>2,479,462</u>	<u>11,700,733</u>	<u>172,168</u>	<u>14,352,363</u>
Unallocated liabilities				<u>10,144,636</u>
Consolidated liabilities				<u>24,496,999</u>

As at 31 December 2022

	Optical Components <i>RMB'000</i> (Audited)	Optoelectronic Products <i>RMB'000</i> (Audited)	Optical Instruments <i>RMB'000</i> (Audited)	Total <i>RMB'000</i> (Audited)
Assets				
Trade receivables	2,086,386	4,197,913	50,612	6,334,911
Bill receivables	359,503	178,872	10,581	548,956
Inventories	<u>1,861,542</u>	<u>2,786,978</u>	<u>72,393</u>	<u>4,720,913</u>
Total segment assets	<u>4,307,431</u>	<u>7,163,763</u>	<u>133,586</u>	11,604,780
Unallocated assets				<u>31,396,508</u>
Consolidated assets				<u>43,001,288</u>
Liabilities				
Trade payables	1,938,163	3,340,195	107,145	5,385,503
Note payables	<u>946,672</u>	<u>3,380,393</u>	<u>39,899</u>	<u>4,366,964</u>
Total segment liabilities	<u>2,884,835</u>	<u>6,720,588</u>	<u>147,044</u>	9,752,467
Unallocated liabilities				<u>11,066,435</u>
Consolidated liabilities				<u>20,818,902</u>

Segment profit represents the profit earned by each segment without allocation of gains and losses, income and expenses of unallocated subsidiaries and central administration costs including Directors' emoluments, share of results of associates and finance costs. There were asymmetrical allocations to operating segments because the Group allocates interest income, government grants, depreciation and amortisation and gain or loss on disposal of property, plant and equipment to each segment without allocating the related bank balances, deferred income, property, plant and equipment and intangible assets to those segments. This is the measure reported to the Board of Directors for the purposes of resource allocation and performance assessment.

Inter-segment sales are charged at prevailing market rates.

For the purposes of monitoring segment performances and allocating resources between segments:

- Trade receivables, bill receivables and inventories are allocated to the respective operating and reportable segments. All other assets are unallocated assets, which are not regularly reported to the Board of Directors.
- Trade payables and note payables are allocated to the respective operating and reportable segments. All other liabilities are unallocated liabilities, which are not regularly reported to the Board of Directors.

4. OTHER INCOME

	For the six months ended 30 June	
	2023	2022
	RMB'000	RMB'000
	(Unaudited)	(Unaudited)
Government grants	162,498	142,525
Interest income from time deposits, short term fixed deposits, pledged bank deposits and bank balances	236,641	69,117
Investment income from unlisted financial products at FVTPL	227,811	144,393
Interest income from debt instruments	–	818
Interest income from small loan services	2,472	3,387
Income from sales of moulds	25,743	10,538
Income from sales of scrap materials	16,259	29,096
Others	24,088	8,473
	<u>695,512</u>	<u>408,347</u>

5. OTHER GAINS AND LOSSES

	For the six months ended 30 June	
	2023	2022
	RMB'000	RMB'000
	(Unaudited)	(Unaudited)
Net foreign exchange gain (loss)	125,163	(77,134)
Gain on disposal of property, plant and equipment and right-of-use assets	23,102	7,417
Loss on changes in fair value of derivative financial instruments	(268,108)	(12,278)
Loss on changes in fair value of debt instruments, equity investments and fund investments at FVTPL	–	(28,703)
Gain on disposal of a subsidiary	–	55,200
Loss on lease termination	(4,094)	–
	<u>(123,937)</u>	<u>(55,498)</u>

6. INCOME TAX EXPENSE

	For the six months ended 30 June	
	2023	2022
	RMB'000	RMB'000
	(Unaudited)	(Unaudited)
Current tax:		
PRC Enterprise Income Tax	99,569	289,257
Withholding tax expense	57,625	57,521
Other jurisdiction	21,840	5,053
	<u>179,034</u>	<u>351,831</u>
Deferred tax (Note 11):		
Current period	(46,549)	(46,914)
	<u>132,485</u>	<u>304,917</u>

7. PROFIT FOR THE PERIOD

	For the six months ended 30 June	
	2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited)
Profit for the period has been arrived at after charging (crediting) the following items:		
Depreciation of property, plant and equipment	977,141	876,474
Depreciation of investment properties	2,438	2,440
Depreciation of right-of-use assets	29,815	33,962
Amortisation of intangible assets	28,104	28,105
Allowance for (reversals of) inventories (included in cost of sales)	22,055	(47,952)
	<u>977,141</u>	<u>876,474</u>

8. EARNINGS PER SHARE

The calculation of basic and diluted earnings per share attributable to the owners of the Company is based on the following data:

	For the six months ended 30 June	
	2023 RMB'000 (Unaudited)	2022 RMB'000 (Unaudited)
Earnings		
Earnings for the purposes of basic and diluted earnings per share	<u>436,714</u>	<u>1,357,905</u>
Number of shares	'000	'000
Weighted average number of ordinary shares for the purpose of basic earnings per share (<i>Note</i>)	1,092,180	1,093,966
Effect of dilutive potential ordinary shares		
Restricted shares	<u>852</u>	<u>872</u>
Weighted average number of ordinary shares for the purpose of diluted earnings per share	<u>1,093,032</u>	<u>1,094,838</u>

Note: The weighted average number of ordinary shares has been calculated taking into account the shares held by the Group under share award scheme.

9. DIVIDENDS

For the six months ended 30 June	
2023	2022
<i>RMB'000</i>	<i>RMB'000</i>
(Unaudited)	(Unaudited)

Dividends for ordinary shareholders of the Company recognised as distribution during the period:

Final dividend paid in 2023 for 2022 of Hong Kong Dollar (“HKD”) 50.00 cents per share (2022: HKD111.80 cents per share for 2021)

504,852	1,047,715
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The Directors of the Company do not recommend the payment of an interim dividend for the six months ended 30 June 2023 (corresponding period of 2022: nil).

10. PROPERTY, PLANT AND EQUIPMENT AND RIGHT-OF-USE ASSETS

(a) Property, plant and equipment

During the current interim period, the Group acquired manufacturing equipment and incurred construction costs for manufacturing plants of approximately RMB694,774,000 (corresponding period of 2022: RMB827,255,000) in order to upgrade its manufacturing capabilities and capacity expansion.

In addition, the Group disposed certain of its plants and equipment with carrying amount of approximately RMB9,988,000 (corresponding period of 2022: RMB16,238,000) which resulted in a gain on disposal of approximately RMB2,843,000 (corresponding period of 2022: RMB7,417,000).

As at 30 June 2023, no property, plant and equipment of the Group were pledged to secure bank borrowings granted.

(b) Right-of-use assets

During the current interim period, the Group entered into several new lease agreements for the use of office and manufactory for fixed term of 1.5 to 8.5 years. On the lease commencement date, the Group recognised additional RMB27,394,000 of right-of-use assets (corresponding period of 2022: RMB144,463,000) and RMB27,105,000 of lease liabilities (corresponding period of 2022: RMB142,589,000).

The Group also acquired a leasehold land which was recognised as right-of-use assets on the commencement date in the amount of RMB31,467,000 (corresponding period of 2022: RMB25,771,000).

As at 30 June 2023, no leasehold lands of the Group were pledged to secure bank borrowings granted.

11. DEFERRED TAXATION

For the purpose of presentation in the condensed consolidated statement of financial position, certain deferred tax assets and liabilities have been offset. The following is the analysis of the deferred tax balances for financial reporting purposes:

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Deferred tax assets	(246,367)	(257,178)
Deferred tax liabilities	787,203	850,321
	<u>540,836</u>	<u>593,143</u>

The following are the major deferred tax liabilities (assets) recognised and movements thereon during the current and preceding interim periods:

	Withholding tax on undistributed profit from the PRC RMB'000	Allowance for inventories and ECL provision RMB'000	Deferred subsidy income RMB'000	Accelerated depreciation RMB'000	Accrued bonus RMB'000	Right- of-use assets RMB'000	Lease liabilities RMB'000	Tax loss RMB'000	Others RMB'000	Total RMB'000
At 1 January 2022 (Audited)	157,371	(111,932)	(26,679)	810,002	(95,741)	-	-	-	27,218	760,239
Adjustments	-	-	-	-	-	27,856	(27,856)	-	-	-
At 1 January 2022 (Restated)	157,371	(111,932)	(26,679)	810,002	(95,741)	27,856	(27,856)	-	27,218	760,239
(Credit) charge to profit or loss	(29,179)	17,694	(16,553)	106,432	(2,757)	8,145	(8,321)	(232,649)	(5,914)	(163,102)
Credit to other comprehensive income	-	-	-	-	-	-	-	-	(7,707)	(7,707)
Derecognised on disposal of a subsidiary	-	1,399	2,314	-	-	-	-	-	-	3,713
At 31 December 2022 (Restated)	128,192	(92,839)	(40,918)	916,434	(98,498)	36,001	(36,177)	(232,649)	13,597	593,143
(Credit) charge to profit or loss (Note 6)	(50,089)	(1,320)	7,396	72,003	-	(1,822)	1,736	(39,058)	(35,395)	(46,549)
Credit to other comprehensive income	-	-	-	-	-	-	-	-	(5,758)	(5,758)
At 30 June 2023 (Unaudited)	78,103	(94,159)	(33,522)	988,437	(98,498)	34,179	(34,441)	(271,707)	(27,556)	540,836

12. DEPOSITS PAID FOR ACQUISITION OF PROPERTY, PLANT AND EQUIPMENT

The deposits are paid for construction of factory buildings and acquisition of plants and equipment located in the PRC and other regions for the expansion of Group's production plants.

During the current interim period, the Group paid an amount of approximately RMB411,739,000 (corresponding period of 2022: RMB585,025,000) as the deposits for acquisition of property, plant and equipment and transferred an amount of approximately RMB125,503,000 (corresponding period of 2022: RMB191,978,000) to property, plant and equipment.

13. FINANCIAL ASSETS AT FVTPL

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Current assets		
Unlisted financial products (<i>Note a</i>)	<u>8,142,596</u>	<u>10,086,415</u>
Non-current assets		
Equity investments (<i>Note b</i>)	<u>19,518</u>	<u>19,518</u>

Notes:

(a) Unlisted financial products

The Group entered into several contracts of unlisted financial products with banks, which are managed by related banks in the PRC to invest principally in certain financial assets including bonds, trusts and cash funds, etc. The unlisted financial products have been accounted for as financial assets at FVTPL on initial recognition in which that the return on the unlisted financial products was determined by reference to the performance of the underlying investment assets and as at 30 June 2023, the expected return rates stated in the contracts range from 1.75% to 5.00% (31 December 2022: 1.80% to 5.00%) per annum.

The investment income from unlisted financial products amounting to RMB227,811,000 (corresponding period of 2022: RMB144,393,000) was recognised in the profit or loss in the current interim period.

(b) Equity investments

The Group's equity investments in several partnership enterprises amounting to RMB19,518,000 (31 December 2022: RMB19,518,000) were classified as financial assets at FVTPL.

In the opinion of the Directors of the Company, the fair value change of the equity investments is insignificant in the current interim period.

14. DERIVATIVE FINANCIAL ASSETS AND LIABILITIES

At the end of the reporting period, the Group held certain derivatives classified as held for trading and not under hedge accounting as follows:

	Assets		Liabilities	
	30 June 2023 <i>RMB'000</i> (Unaudited)	31 December 2022 <i>RMB'000</i> (Audited)	30 June 2023 <i>RMB'000</i> (Unaudited)	31 December 2022 <i>RMB'000</i> (Audited)
Foreign currency forward contracts	–	29,681	252,348	508
Foreign currency options contracts	–	–	3,734	17,147
Total	–	29,681	256,082	17,655
Less: current portion				
Foreign currency forward contracts	–	29,681	252,348	508
Foreign currency options contracts	–	–	3,734	17,147
	–	29,681	256,082	17,655
Non-current portion	–	–	–	–

The Group entered into several United States Dollar (“USD”)/RMB foreign currency options and foreign currency forward contracts with banks in the PRC in order to manage the Group’s foreign currency risk.

As at 30 June 2023, the notional amount of outstanding foreign currency option contracts amounted to approximately USD38,000,000 (equivalent to RMB274,580,000) (31 December 2022: USD606,040,000 (equivalent to RMB4,220,826,000)) while the notional amount of outstanding foreign currency forward contracts amounted to approximately USD660,430,000 (equivalent to RMB4,772,135,000) (31 December 2022: USD61,250,000 and HKD780,000,000 (equivalent to RMB426,582,000 and RMB696,751,000 respectively)).

All these option and forward contracts are matured within one year.

15. INVENTORIES

	30 June 2023 <i>RMB'000</i> (Unaudited)	31 December 2022 <i>RMB'000</i> (Audited)
Raw materials	949,534	1,061,132
Work in progress	263,267	202,428
Finished goods	3,204,110	3,457,353
	4,416,911	4,720,913

16. TRADE AND OTHER RECEIVABLES AND PREPAYMENTS

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Trade receivables	5,585,752	6,428,554
Less: allowance for credit losses	<u>(100,888)</u>	<u>(93,643)</u>
	5,484,864	6,334,911
Loan receivables	<u>105,743</u>	<u>87,619</u>
Other receivables and prepayments:		
Value added tax and other tax receivables	113,350	199,895
Advance to suppliers	152,642	132,028
Interest receivables	32,857	42,977
Prepaid expenses	143,646	177,693
Utilities deposits and prepayments	98,615	76,712
Advances to employees	128,619	124,890
Others	<u>25,953</u>	<u>28,385</u>
	695,682	782,580
Total trade and other receivables and prepayments	<u>6,286,289</u>	<u>7,205,110</u>

The Group allows a credit period of average 90 days to its trade customers. The following is an aged analysis of trade receivables, net of allowance for credit losses, presented based on the invoice date at the end of reporting period, which approximated the respective revenue recognition date.

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Within 90 days	5,234,922	6,082,252
91 to 180 days	249,547	252,335
Over 180 days	<u>395</u>	<u>324</u>
	5,484,864	6,334,911

Movement in the allowance for credit losses:

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Balance at the beginning of the reporting period	93,643	95,625
Changes due to financial assets recognised:		
– Impairment losses recognised on trade receivables	3,310	7,462
– Impairment losses reversed	(4,070)	(8,275)
– Elimination on disposal of a subsidiary	–	(5,926)
New financial assets originated	7,956	4,704
Foreign exchange realignment	49	53
	<u>100,888</u>	<u>93,643</u>

16A. RECEIVABLES AT FVTOCI

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Receivables at FVTOCI comprise:		
Bill receivables (<i>Note</i>)	<u>562,638</u>	<u>548,956</u>

Note: That included in the Group's bill receivables is amounts of RMB27,147,000 (2022: RMB37,681,000) being endorsed to certain suppliers for settlement of trade payables on a full recourse basis. If the bills are not paid on maturity, the suppliers have the right to request the Group to pay the unsettled balance. As the Group has not transferred the significant risks and rewards relating to the bill receivables to its suppliers upon endorsement, it continues to recognise the full carrying amount of bill receivables and has recognised the payables from the endorsement of the bills with full recourse. The financial asset is carried at fair value in the condensed consolidated statement of financial position.

Receivables at FVTOCI endorsed to suppliers with full recourse:

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Carrying amount of transferred assets	27,147	37,681
Carrying amount of associated liabilities	<u>(27,147)</u>	<u>(37,681)</u>
Net position	<u>–</u>	<u>–</u>

The credit period of bill receivables is 90 to 180 days. Aging of bill receivables based on the issue date at the end of the reporting period is as follows:

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Within 90 days	389,173	391,133
91 to 180 days	173,465	157,823
	<u>562,638</u>	<u>548,956</u>

17. IMPAIRMENT ASSESSMENT ON TRADE RECEIVABLES AND AMOUNT DUE FROM A RELATED PARTY SUBJECT TO EXPECTED CREDIT LOSS MODEL

As part of the Group's credit risk management, except for the debtors with credit-impaired the Group uses debtors' aging to assess the impairment for its customers which are with common risk characteristics that are representative of the customers' abilities to pay all amounts due in accordance with the contractual terms. Debtors with credit-impaired are assessed individually by the Group. The following table provides information about the exposure to credit risk and ECL for trade receivables which are assessed collectively based on provision matrix as at 30 June 2023.

	Average loss rate	Gross carrying amount RMB'000	Impairment loss allowance RMB'000
1 to 90 days	0.04%	5,236,953	2,031
91 to 120 days	0.16%	185,882	293
121 to 180 days	1.77%	65,113	1,155
More than 180 days	92.05%	4,966	4,571
		<u>5,492,914</u>	<u>8,050</u>

During the year ended 31 December 2022, the credit risk of amount due from a related party has significantly increased since initial recognition as the risk of default was increased and the impairment allowance in the amount of RMB6,679,000 was recognised in profit or loss. During the current interim period, the Group reversed impairment allowance of RMB1,608,000 (corresponding period of 2022: nil), which was assessed individually based on lifetime ECL.

	Loss rate	Gross carrying amount RMB'000	Impairment loss allowance RMB'000
Amount due from a related party	94.24%	<u>5,381</u>	<u>5,071</u>

The basis of determining the inputs and assumptions and the estimation techniques used in the condensed consolidated financial statements for the six months ended 30 June 2023 are the same as those followed in the preparation of the Group's annual financial statements for the year ended 31 December 2022.

The estimated loss rates are estimated based on historical observed default rates over the expected life of the debtors and are adjusted for forward-looking information that is available without undue cost or effort. The grouping is regularly reviewed by management to ensure relevant information about specific debtors is updated.

During the current interim period, the Group provided impairment allowance of RMB100,888,000 (corresponding period of 2022: RMB97,631,000), among which RMB8,050,000 was made based on the provision matrix with life time ECL (not credit-impaired) while RMB92,838,000 was assessed individually on the credit-impaired debtors.

18. TRADE AND OTHER PAYABLES

The following is an aged analysis of trade payables presented based on the invoice date and note payables presented based on issue date at the end of the reporting period.

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Current liabilities		
Trade payables		
Within 90 days	4,018,886	4,193,511
91 to 180 days	513,324	625,453
Over 180 days	20,841	12,387
Accrued purchases	485,341	554,152
	<hr/>	<hr/>
Total trade payables and accrued purchases	5,038,392	5,385,503
	<hr/>	<hr/>
Note payables		
Within 90 days	4,342,369	3,663,957
91 to 180 days	2,859,389	680,441
Over 180 days	2,112,213	22,566
	<hr/>	<hr/>
	9,313,971	4,366,964
	<hr/>	<hr/>
Advance deposits from a customer	569,414	555,456
Payables for purchase of property, plant and equipment	477,863	410,958
Staff salaries and welfare payables	1,067,010	1,378,175
Labor outsourcing payables	91,332	194,150
Payables for acquisition of patents	38,254	39,534
Value added tax payables and other tax payables	128,718	214,476
Interest payables	16,404	76,738
Rental and utilities payables	54,792	61,367
Others	192,388	233,965
	<hr/>	<hr/>
	2,636,175	3,164,819
	<hr/>	<hr/>
	16,988,538	12,917,286
	<hr/> <hr/>	<hr/> <hr/>
Non-current liability		
Long term payables		
Payables for acquisition of patents	118,690	122,777
	<hr/> <hr/>	<hr/> <hr/>

The credit period on purchases of goods is up to 180 days (2022: 180 days) and the credit period for note payables is 90 days to 365 days averagely (2022: 90 days to 365 days). The Group has financial risk management policies in place to ensure that all payables are settled within the credit time frame.

19. BANK BORROWINGS

During the current interim period, the Group obtained new bank borrowings amounting to approximately RMB4,463,023,000 (corresponding period of 2022: RMB5,393,483,000), and the proceeds were used to meet the working capital requirement. Repayment of bank borrowings amounting to approximately RMB3,884,221,000 (corresponding period of 2022: RMB5,478,417,000) was made in line with the relevant repayment terms.

As at 30 June 2023, the bank borrowings amounted to a total of RMB730,000,000 (31 December 2022: RMB1,989,981,000) were repayable within one year, and RMB2,031,547,000 (31 December 2022: RMB30,000,000) were repayable within a period of more than one year.

As at 30 June 2023, the bank borrowings amounting to approximately RMB2,001,547,000 (31 December 2022: RMB348,230,000) were denominated in USD, and no bank borrowing (31 December 2022: RMB696,751,000) was denominated in HKD. The Group's bank borrowings carried fixed-rate of 2.30% to 3.97% and variable-rate of 4.80% (31 December 2022: 2.30% to 3.20% and 3.60% to 3.70% respectively) per annum.

As at 30 June 2023, no bank borrowing was secured by any other assets of the Group.

20. BONDS PAYABLE

On 16 January 2018, the Company issued unsecured bonds in the amount of USD600 million (equivalent to RMB3,832,145,000) at the rate of 3.75% per annum to professional investors outside of United States in accordance with Regulation S under the U.S. Securities Act which was due on 23 January 2023. The issuance had been completed on 23 January 2018 and the listing of the bonds in the Hong Kong Stock Exchange became effective on 24 January 2018. In January 2023, the bonds payable amounting to approximately RMB4,062,120,000 were repaid in line with the relevant repayment terms.

On 9 January 2023, the Company issued unsecured sustainability-linked bonds in the amount of USD400 million at the rate of 5.95% per annum which will be due by year 2026 to professional investors outside of the United States in accordance with Regulation S under the U.S. Securities Act. The issuance has been successfully completed on 17 January 2023 and the listing of the bonds in the Hong Kong Stock Exchange became effective on 18 January 2023.

The Company had fully used the net proceeds from the bonds for refinancing existing indebtedness.

During the current interim period, interest expense of approximately RMB87,534,000 (corresponding period of 2022: RMB77,826,000) was recognised in the profit or loss.

21. SHARE CAPITAL

	Number of shares	Amount <i>HKD'000</i>	Equivalent to <i>RMB'000</i>
Authorised:			
Ordinary share of HKD0.10 each at			
1 January 2022 (Audited),			
30 June 2022 (Unaudited),			
1 January 2023 (Audited),			
30 June 2023 (Unaudited)	<u>100,000,000,000</u>	<u>10,000,000</u>	
Issued & fully paid			
Ordinary shares of HKD0.10 each at			
1 January 2022 (Audited),			
30 June 2022 (Unaudited),			
1 January 2023 (Audited),			
30 June 2023 (Unaudited)	<u>1,096,849,700</u>	<u>109,685</u>	<u>105,163</u>

22. SHARE AWARD SCHEME

The fair value of the Company's restricted shares awarded was determined based on the market values of the Company's shares at the grant dates.

Movements in the number of restricted shares granted and related fair value are as follows:

	Weighted average fair value (per share) HKD	Number of restricted shares (<i>'000</i>)
At 1 January 2022 (Audited)	187.090	2,486
Forfeited	146.271	(205)
Vested	151.230	(1,626)
Granted	104.976	<u>4,300</u>
At 31 December 2022 and 1 January 2023 (Audited)	129.288	4,955
Forfeited	106.516	(154)
Vested	124.013	(1,610)
Granted (<i>Note</i>)	81.700	<u>2,467</u>
As at 30 June 2023 (Unaudited)	110.661	<u><u>5,658</u></u>

The equity-settled share-based payments expense charged to profit or loss was approximately RMB133,892,000 for the current interim period (corresponding period of 2022: RMB113,596,000).

Note: The restricted shares granted during the current interim period were vested on every anniversary date of the grant date of each batch of the restricted shares in tranches on the following scale:

Restricted shares	Fair value (per share) HKD	Scales
2,340,173	81.700	One-half
126,593	81.700	One-fourth

The fair value of the restricted shares granted is measured on the basis of an observable market price.

During the current interim period, the Group purchased 2,355,153 shares at the average price of HKD73.994 (total amount equivalent to approximately RMB158,983,000) under the share award scheme.

23. COMMITMENTS

	30 June 2023 RMB'000 (Unaudited)	31 December 2022 RMB'000 (Audited)
Capital expenditure in respect of acquisition of property, plant and equipment contracted for but not provided in the condensed consolidated financial statements	<u><u>1,081,607</u></u>	<u><u>1,257,523</u></u>

MANAGEMENT DISCUSSION AND ANALYSIS

The Group is principally engaged in the design, research and development (the “**R&D**”), manufacture and sales of optical and optical-related products. Such products include Optical Components (such as vehicle lens sets, optical parts of vehicle light detection and ranging (“**LiDAR**”), VR positioning lens sets, handset lens sets, glass spherical lenses and other optical components), Optoelectronic Products (such as vehicle modules, VR folded path (“**Pancake**”) modules, VR visual modules, handset camera modules, the red, green, blue and depth (“**RGBD**”) robotic vision modules and other optoelectronic modules) and Optical Instruments (such as intelligent inspection equipment and microscopes). The Group focuses on the optoelectronic-related products that combine optics, electronics, algorithm and mechanical technologies in the application fields such as vehicles, VR/AR, robots and handsets.

Save as disclosed in this announcement, there have been no material changes in respect of the development or future development of the Group’s business and financial position since the publication of the annual report of the Company for the year ended 31 December 2022, and no important events affecting the Group which have occurred since 30 June 2023.

BUSINESS REVIEW

The business review of the Group for the six months ended 30 June 2023 shall be presented in the following three categories, namely Optical Components, Optoelectronic Products and Optical Instruments.

Optical Components

In terms of the vehicle lens sets business, in the first half of 2023, key components shortage in the vehicle supply chain has eased and the market demands of vehicle cameras has gradually restored, among which advanced driver assistance systems (“**ADAS**”) vehicle cameras experienced the most prominent growth but also encountered fiercer market competition than before. Faced with such environment, in addition to enhancing cooperations with traditional vehicle manufacturers, the Group also attached great importance to the cooperations with new power of vehicle manufacturers to consolidate its leading position in the industry. At the same time, the Group continued to intensively develop its advantageous businesses, and made R&D and innovation efforts in high-end ADAS vehicle lens sets. For example, the Group surmounted technological difficulties in hybrid products, which enriched the product categories and improved its market competitiveness. Moreover, with the development of intelligent cabin industry, the Group also increased its efforts in the R&D of vehicle lens sets in in-cabin sensors, and further consolidated the leading advantages in the industry. During the period under review, the Group has completed the R&D of a complete set of 17-mega pixel front-view and surrounding vehicle lens sets, which have been used for level-4 autonomous driving and have been tested and recognized by well-known fully autonomous driving manufacturers. Meanwhile, the R&D of 3-mega pixel and 8-mega pixel sub-miniature sideview vehicle lens sets, as well as 5-mega pixel sub-miniature occupancy monitoring system (“**OMS**”) vehicle lens sets have also been completed. During the period under review, the shipment volume of vehicle lens sets of the Group increased by approximately 25.2% to approximately 47,078,000 units as compared to the corresponding period of last year. The market share of the Group further increased, maintaining its position as the global No. 1.

In terms of the emerging vehicle optical field, the Group continued to explore market opportunities in the fields including LiDAR, head-up display (“HUD”) and smart headlamp, to strengthen product layouts and to seek differentiated technological breakthroughs. During the period under review, the Group has completed the R&D of several LiDAR related products, including scanning modules combined with polygons and electrical motors and three-dimensional flash (“3D Flash”) transceiver modules. Meanwhile, in terms of the HUD, the Group focused on core optical engine business and sped up the R&D and marketing of new HUD products with core manufacturers in the upstream and downstream of the industry chain to realize diversified layouts with multiple technological routes. In particular, the self-developed display modules with laser beam scanning (“LBS”) solution featured lighter weight, smaller size and higher resolution, providing better performance experience to customers. In addition, during the period under review, the Group actively seized the opportunities arising from the ground projection unit market, and has completed the R&D of ground projection units that could be applicable to various scenarios including safety warning, vehicle window projection and chair back projection respectively.

In terms of VR/AR field, the sales performance of the Group’s VR-related optical products was adversely affected by the weak sales of VR market in the first half of 2023. With the launch of cost-effective products and the content ecosystem becoming gradually enriched, the Group is firmly confident in the promising prospect for future growth, and continuously strengthened the R&D efforts in VR near to eye display related products and perception and interaction lens sets. The Group is seeking to gain market recognition with innovative products and technologies and has already acquired multiple world-renowned customers. In addition, the AR market is currently in the industrial incubation period while the technical system, industrial chain construction, product form and content ecology are still being improved and developed, which is expected to be implemented in more scenarios in the future. During the period under review, the Group continued to invest in resources and increase efforts in the R&D of full-color AR optical waveguides.

In terms of the handset lens set business, the further decline in the global smartphone shipment and the downgraded specification of smartphone cameras brought enormous pressure on the Group’s handset lens sets business. During the period under review, the shipment volume of handset lens sets of the Group decreased by approximately 21.3% to approximately 512,760,000 units as compared to the corresponding period of last year. In the face of the challenging situation, the Group acted quickly and took various measures in marketing, technology and manufacturing. In marketing, the Group firmly adhered to its product strategy of “Ding Tian Li Di (頂天立地)”, to further enhance customer satisfaction and increase customer stickiness; in technology, the Group unswervingly stuck to the “Innovation-Driven” technology route to enhance the core competitiveness of products with “High Specification, Quality and Added-Value”. During the period under review, the Group completed the R&D of the industry’s first new long-focus handset lens sets with folded light route and various hybrid handset lens sets with large image size and variable apertures for main cameras. Meanwhile, the Group’s handset lens sets with ultra-low reflection coating for each lens, various ultra-thin handset lens sets with ultra-miniaturized head for flagship foldable phones and various 1-inch hybrid handset lens sets have been commenced mass production. In addition, the Group continued to upgrade and iterate the new-generation ultra-low reflection coating technology, multi-set assembly technology and testing technology; in manufacturing, the Group deepened the path to “Lean and Intelligent Manufacturing” to ensure its delivery capability with high-quality and consolidate its global No. 1 position in terms of market share.

Optoelectronic Products

In terms of the vehicle modules business, the Group has completed the layout of four product lines of sensing vehicle modules, viewing vehicle modules, sensing and viewing vehicle modules, and in-cabin monitoring vehicle modules based on the application scenarios and product features of intelligent driving and intelligent cabin. Capitalizing on its leading technological strengths, the Group provides valuable services with excellent products and co-develops and adapts with world-renowned leading master chip companies in advance, which could empower the customers to accelerate the R&D implementation. The Group has commenced mass production of 8-mega pixel, 3-mega pixel and 1.7-mega pixel sensing vehicle modules, 3-mega pixel electronic rearview mirror (“**E-mirror**”) sensing and viewing vehicle modules, and 8-mega pixel, 5-mega pixel and 2-mega pixel in-cabin monitoring vehicle modules. Meanwhile, the 8-mega pixel sensing vehicle modules using chip on board (“**COB**”) technology have also been commenced mass production. Furthermore, in addition to strengthening cooperation with domestic customers, the Group was actively expanding into the international market. The Group has made phased progress with key global leading clients in Europe, the United States, Japan and South Korea and has obtained a designated project from a well-known car maker in Europe.

In terms of the VR/AR and the robotic vision fields, the R&D of the innovative miniaturized high-pixel VR see through camera modules with better heat dissipation have been completed and the imaging consistency and stability of the module has been further improved. Meanwhile, the Group commenced the application of three mainstream 3D vision technologies, namely binocular, structured light and time of flight (“**ToF**”), which enabled the functionalities such as positioning, mapping and navigation, intelligent obstacle avoidance and recognition, and thus empowering robots with accurate visual perception capabilities, thereby achieving more efficient and intelligent robot applications. During the period under review, the Group’s intelligent door lock recognition modules based on self-developed algorithms have been already commenced mass production; and the RGBD robotic vision modules based on self-developed algorithms have been developed and started to launch to the market.

In terms of the handset camera modules business, as continuously affected by the further decline in the global smartphone shipment and the downgraded specification of smartphone cameras, which also had a significant impact on the Group's handset camera module business, the shipment volume of handset camera modules of the Group during the period under review decreased by approximately 11.8% to approximately 254,565,000 units as compared to the corresponding period of last year. Compounded by the increasingly fierce market competition and the increasing cost pressure, the profitability of the handset camera modules business of the Group was also under huge pressure. In this unfavorable market environment, the Group made continued efforts to make breakthroughs, and further exerted its technology-leading strengths and product innovation capabilities to enhance customer stickiness and consolidate its global No. 1 market position. During the period under review, the Group has completed the R&D of variable aperture handset camera modules with large image size and optical image stabilization (“OIS”) and 200-mega pixel periscope handset camera modules. Meanwhile, by further tapping into core actuators, and leveraging the advantages of the integration of motor, lens set and module, the product systematic integration and customization capabilities and its product competitiveness have been further enhanced. During the period under review, the Group's OIS handset camera modules with self-developed motors have been commenced mass production. In addition, with ongoing implementation of the construction of intelligent factories, and the global factory layout in Vietnam and India, the Group further boosted its strengths in high-end scale manufacturing and its industry-leading position.

Optical Instruments

In terms of the intelligent equipment business, the Group grasped the rise of internal demand among enterprises as an opportunity to leverage its leading capabilities in optical imaging, design of precision machinery and automatic control technology to empower precision industrial manufacturing. During the period under review, the Group has completed the R&D of VR optical component inspection equipment, which adopts high-precision optical system and self-developed algorithms to achieve accurate identification of appearance defects, and has the industry-leading position in overall efficiency of equipment and the accuracy of defect identification. In addition, the world's largest vehicles lens sets manufacturer has extensively applied the Group's self-developed vehicle lens sets dust detection equipment, which could realize fully-automatic loading and unloading, code scanning, inspection, vehicle manufacturing execution system (“MES”) upthrowing and other functions. Defect detection could be made on vehicle lens sets such as the long-focus, wide-angle or square-type ones, and its comprehensive efficiency and missed detection performance are at the forefront of the industry.

In terms of the microscopic instrument business, as deeply rooted in scientific research, medical and industrial fields, the Group vigorously expanded customer base and continuously increased the scale of sales. During the period under review, the Group and its partners have completed the R&D of a prototype of a circulating tumor cell analysis system, which can conduct quantitative analysis on slide samples of circulating tumor cells to provide diagnostic basis for early screening of tumors, intra-operative monitoring, medication guidance and prognosis recurrence of tumor patients, thus bridging our gap in the field of liquid biopsy of tumor.

OUTLOOK AND FUTURE STRATEGIES

Looking forward, the Group will continue to face grave challenges such as slow recovery of the global economy, weak consumption demand and more intensified competition. However, development direction of the global economy sticking to digital economy and green economy will not change. This will bring new growth potentials and development opportunities to the optoelectronic industry. The rapid development of autonomous driving will promote the adoption of multi-sensor and huge market potentials will appear in VR/AR, robotic vision and other emerging industries. As such, the Group will also explore and seize new opportunities in the markets based on the following three principles, so as to achieve sustainable business development.

1. Tapping new potentials in mature businesses

- Potential of new customers – keep an eye on target major customers and satisfy their demands so as to rapidly increase our supply proportion and become their important supplier; and
- Potential of product mix – further improve the proportion of high-end and high-value products.

2. Seeking new opportunities in emerging industries

- While the number and specification of vehicles cameras are improving quickly, the Group continues to strengthen its competitiveness in the vehicle lens sets business and builds brand products in this category; the Group will also increase its resource investment in vehicle modules business and grasp opportunities to quickly expand its market share, aiming to become an irreplaceable supplier in vehicle camera field; and
- In vehicle LiDAR, HUD, VR/AR, robotic vision and other emerging fields, the Group will not only provide basic optical components, but will also improve its product portfolio constantly and enhance added value to its products and its competitiveness in the industry.

3. Focusing on quality while expanding volume

- Continue to improve operational efficiency and quality, and further increase its capacity utilization rate;
- Further improve product quality, working efficiency and yield rate; and
- Continuously reduce product cost per unit and loss rate.

FINANCIAL REVIEW

Revenue

For the six months ended 30 June 2023, the Group's revenue was approximately RMB14,278.6 million, representing a decrease of approximately 15.9% as compared to the corresponding period of last year. The decrease in revenue was mainly attributable to the decrease in the revenue of handset lens sets and handset camera modules of the Group as a result of the continued weak global demand of the smartphone market, the intense industrial competition and the prolonged trend of de-specification of smartphone cameras, which were brought by the factors such as slow recovery of the Chinese economy and the uncertainties of global economy.

Revenue generated from the Optical Components business segment was approximately RMB4,317.9 million, representing a slight decrease of approximately 1.8% as compared to the corresponding period of last year. The slight decrease in revenue was mainly attributable to the increase in revenue of vehicle related products which was offset by the decrease in revenue of handset lens sets and VR related products. The revenue of the vehicle lens sets increased with the gradual easing of the chip shortage in the supply chain, and the revenue related to the optical parts of vehicle LiDAR and HUD increased significantly due to the increase in these mass production projects. However, the revenue of handset lens sets has decreased as a result of the continued weak demand of the smartphone market and the prolonged trend of de-specification of smartphone cameras. Furthermore, the revenue of VR related products has also decreased as a result of the weak sales of VR market.

Revenue generated from the Optoelectronic Products business segment was approximately RMB9,736.5 million, representing a decrease of approximately 21.3% as compared to the corresponding period of last year. The decrease in revenue was mainly attributable to the decrease of shipment volume and average selling price of handset camera modules as compared to the corresponding period of last year, which was affected by the continued weak demand of the smartphone market and the prolonged trend of de-specification of smartphone cameras.

Revenue generated from the Optical Instruments business segment was approximately RMB224.2 million, representing an increase of approximately 11.0% as compared to the corresponding period of last year. The increase in revenue was mainly attributable to the increase in the market demand for optical instruments applied to domestic industrial and medical fields and overall overseas market demand.

Gross Profit and Gross Profit Margin

The gross profit of the Group for the six months ended 30 June 2023 was approximately RMB2,130.6 million, representing a decrease of approximately 39.5% as compared to the corresponding period of last year. The gross profit margin was approximately 14.9%, which was approximately 5.9 percentage points lower than that of the corresponding period of last year. The decrease in gross profit margin was mainly attributable to the decrease in gross profit margins of handset lens sets and handset camera modules as compared to the corresponding period of last year, which was affected by the continued weak demand of the smartphone market and the prolonged trend of de-specification of smartphone cameras.

The gross profit margins of the Optical Components business segment, the Optoelectronic Products business segment and the Optical Instruments business segment were approximately 26.0%, 6.9% and 42.7%, respectively (corresponding period of 2022: approximately 35.5%, 11.6% and 44.6%, respectively).

Selling and Distribution Expenses

The selling and distribution expenses of the Group for the six months ended 30 June 2023 was approximately RMB240.1 million, representing an increase of approximately 46.9% as compared to the corresponding period of last year. It accounted for approximately 1.7% of the Group's revenue during the period under review, as compared to approximately 1.0% for the corresponding period of last year. The increase in absolute amount was mainly attributable to the increase in the headcount and remuneration of sales staff and the increased marketing activities.

R&D Expenditure

The R&D expenditure of the Group for the six months ended 30 June 2023 was approximately RMB1,204.8 million, representing a decrease of approximately 17.9% as compared to the corresponding period of last year. It accounted for approximately 8.4% of the Group's revenue during the period under review, as compared to approximately 8.7% for the corresponding period of last year. The decrease in absolute amount was mainly attributable to the strengthening of the management of the Group's R&D investment.

Administrative Expenses

The administrative expenses of the Group for the six months ended 30 June 2023 was approximately RMB457.9 million, representing an increase of approximately 4.6% as compared to the corresponding period of last year. It accounted for approximately 3.2% of the Group's revenue during the period under review, as compared to approximately 2.6% for the corresponding period of last year. The increase in absolute amount was mainly attributable to the increase in the remuneration of administrative staff, and the increase in expenses related to the grant of restricted shares under the restricted share award scheme (the "**Restricted Share Award Scheme**") of the Company and the informationization construction.

Income Tax Expenses

The Group's income tax expenses for the six months ended 30 June 2023 was approximately RMB132.5 million, representing a decrease of approximately 56.6% as compared to the corresponding period of last year. The decrease in absolute amount was mainly attributable to the decrease of profit before tax. The Group's effective tax rate was approximately 22.4% during the period under review, and it was approximately 18.1% for the corresponding period of last year.

Net Profit and Net Profit Margin

For the six months ended 30 June 2023, the Group's net profit was approximately RMB459.4 million, representing a decrease of approximately 66.7% as compared to the corresponding period of last year. The decrease in net profit was mainly attributable to (i) the factors such as slow recovery of the Chinese economy and the uncertainties of the global economy for the six months ended 30 June 2023, continued weak global demand of smartphone market, the intense industrial competition and the prolonged trend of de-specification of smartphone camera, which resulted in the year-on-year decrease of the shipment volume of handset lens sets and handset camera modules of the Group, with increasing pressure on average selling prices and gross profit margins; and (ii) the depreciation of the Renminbi for the six months ended 30 June 2023, an unrealized foreign exchange loss amounting to approximately RMB161.5 million was caused by the USD400.0 million sustainability-linked bonds issued by the Company on 17 January 2023 and long-term bank borrowings amounting to approximately USD277.0 million, which was a non-cash item. The net profit margin was approximately 3.2% for the six months ended 30 June 2023 and it was approximately 8.1% for the corresponding period of last year.

Profit for the Period Attributable to Owners of the Company and Basic Earnings per Share

The profit for the period attributable to owners of the Company for the six months ended 30 June 2023 was approximately RMB436.7 million, representing a decrease of approximately 67.8% as compared to the corresponding period of last year.

The basic earnings per share for the six months ended 30 June 2023 was approximately RMB39.99 cents, representing a decrease of approximately 67.8% as compared to the corresponding period of last year.

Interim Dividend

The Company has paid the dividend for the year ended 31 December 2022 in June 2023, which was HKD0.500 per share of the Company. The payout ratio was approximately 20.0% of the profit for the year attributable to owners of the Company.

The Board of the Company does not recommend the payment of an interim dividend for the six months ended 30 June 2023 (corresponding period of 2022: nil).

LIQUIDITY AND FINANCIAL RESOURCES

Cash Flows

The table below summarises the Group's cash flows for the six months ended 30 June 2023 and 30 June 2022:

	For the six months ended 30 June	
	2023 <i>RMB million</i>	2022 <i>RMB million</i>
Net cash from operating activities	1,053.6	1,571.1
Net cash used in investing activities	(1,379.8)	(723.6)
Net cash from (used in) financing activities	4,449.3	(1,510.5)

The Group derives its working capital mainly from cash on hand and net cash generated from operating activities. The Board expects that the Group will rely on net cash generated from operating activities, bank borrowings and debt financing in the short run to meet its working capital and other requirements. In the long run, the Group will be mainly funded by net cash from operating activities and, if necessary, by additional bank borrowings, debt financing or equity financing. There were no material changes in the funding and financial policy of the Group for the six months ended 30 June 2023.

As at 30 June 2023, the Group had current assets of approximately RMB31,990.4 million (31 December 2022: approximately RMB30,645.6 million); and current liabilities of approximately RMB18,207.8 million (31 December 2022: approximately RMB19,336.9 million). The Group's current ratio was approximately 1.8 times (31 December 2022: approximately 1.6 times). The Group's total assets as at 30 June 2023 was approximately RMB46,685.3 million, representing an increase of approximately 8.6% as compared to that as at 31 December 2022.

As at 30 June 2023, the Group's cash and cash equivalents were approximately RMB11,170.0 million (31 December 2022: approximately RMB7,033.2 million). The cash and cash equivalents were mainly denominated in RMB and USD.

Capital Expenditure

For the six months ended 30 June 2023, the Group's capital expenditure amounted to approximately RMB1,050.3 million, which was mainly used for the purchase of property, plant and equipment, acquisition of land use right and purchases of other tangible assets. All of the capital expenditure was financed by internal resources.

CAPITAL STRUCTURE

Indebtedness

Bank borrowings

Bank borrowings of the Group as at 30 June 2023 amounted to approximately RMB2,761.5 million (31 December 2022: approximately RMB2,020.0 million). As at 30 June 2023, no bank borrowings were secured by certain buildings and land of the Group. As at 30 June 2023, the bank borrowings were denominated in RMB and USD.

Bank facilities

As at 30 June 2023, the Group had bank facilities of RMB6,400.0 million with Agricultural Bank of China Limited, RMB3,000.0 million with Ningbo Bank Co., Ltd., RMB2,400.0 million with The Export-Import Bank of China, RMB2,670.0 million with Industrial and Commercial Bank of China Limited, RMB2,200.0 million with China Merchants Bank Co., Ltd., RMB2,000.0 million with China Construction Bank Corporation, RMB380.0 million with of Bank of Communications Co., Ltd., RMB3,115.0 million and USD75.0 million with Bank of China Limited respectively, USD120.0 million with BNP Paribas, USD110.0 million with The Hongkong and Shanghai Banking Corporation Limited, USD154.0 million with China Development Bank, USD20.0 million and Indian rupee 4,500.0 million with Crédit Agricole Corporate and Investment Bank, USD80.0 million with Standard Chartered Bank and USD75.0 million with Citibank.

Debt securities

As at 30 June 2023, the Group had debt securities of approximately RMB2,953.7 million (31 December 2022: approximately RMB4,178.1 million). The Group issued USD400.0 million sustainability-linked bonds on 17 January 2023.

As at 30 June 2023, the Group's gearing ratio was approximately 12.2%, with the basis of the ratio of total borrowings to total capital (total capital being the sum of total liabilities and shareholders' equity), reflecting the Group's financial position at a sound level.

Contingent liabilities

As at 30 June 2023, the Group did not have any material contingent liabilities or guarantees.

Financing and funding and treasury policies and objectives

The Group adopts prudent financing and funding and treasury policies. The Group will seek bank borrowings and debt financing when its operating demand grows, and will regularly review its bank borrowings and debt securities to achieve a sound financial position.

PLEDGE OF ASSETS

As at 30 June 2023, the Group did not have any pledge or charge on assets, except for the pledged bank deposits of approximately RMB142.4 million (31 December 2022: approximately RMB9.8 million).

COMMITMENTS

As at 30 June 2023, the capital expenditure of the Group in respect of acquisition of property, plant and equipment contracted for but not provided in the condensed consolidated financial statements amounted to approximately RMB1,081.6 million (31 December 2022: approximately RMB1,257.5 million).

As at 30 June 2023, the Group had no other capital commitments save as disclosed above.

OFF-BALANCE SHEET TRANSACTIONS

As at 30 June 2023, the Group did not enter into any material off-balance sheet transactions.

PERFORMANCE OF INVESTMENTS AND FUTURE INVESTMENTS PLAN

The Group's investing activities primarily include the purchase and redemption of unlisted financial products, placement and release of short-term fixed deposits, placement and release of time deposits, purchase of property, plant and equipment and acquisition of investment in an associate. The purchase and disposal of financial assets at FVTPL include equity investments and unlisted financial products. Among them, unlisted financial products are managed by relevant banks in China, mainly investing in certain financial assets such as bonds, trusts and cash funds, and their investment incomes are determined based on the performance of relevant government debt instruments and treasury bills.

Important Investments, Acquisitions and Disposals

As at 30 June 2023, the Group maintained a portfolio of unlisted financial products with the total carrying amount of approximately RMB8,142.6 million (31 December 2022: approximately RMB10,086.4 million), of which approximately RMB1,726.8 million has been released on or before 18 August 2023. As at 30 June 2023, the size of the unlisted financial products subscribed by the Group in aggregate represented approximately 17.4% of the Group's total assets (31 December 2022: approximately 23.5%). The investment costs for the unlisted financial products subscribed as at 30 June 2023 was approximately RMB7,988.8 million (31 December 2022: approximately RMB10,007.6 million). For the six months ended 30 June 2023, the amount of investment income from the unlisted financial products was approximately RMB227.8 million (corresponding period of 2022: approximately RMB144.4 million).

The following table sets forth a breakdown of the major unlisted financial products subscribed by the Group as at 30 June 2023 (in descending order):

Name of the unlisted financial products*	Name of banks	Investment costs <i>RMB '000</i>	Fair value of the unlisted financial products as at 30 June 2023		Percentage of fair value of the unlisted financial products relative to the total assets of the Group as at 30 June 2023
			<i>RMB '000</i>	<i>RMB '000</i>	
Sunshine Jin Zhou Tian Li Zhen Xiang No. B001* 陽光金周添利臻享B001號	China Everbright Bank Co., Ltd.	800,000	823,600		1.8%
Bank of Ningbo NingXin fixed income one-year fixed-term open-ended wealth management No. 32 – B shares* 寧銀理財寧欣固定收益類一年定期開放式理財32號 – B份額	Bank of Ningbo Co., Ltd.	300,000	306,400		0.7%
Bank of Ningbo NingXin fixed income close-ended wealth management No. 664* 寧銀理財寧欣固定收益類封閉式理財664號	Bank of Ningbo Co., Ltd.	300,000	303,700		0.7%
Bank of Ningbo NingXin fixed income close-ended wealth management No. 429* 寧銀理財寧欣固定收益類封閉式理財429號	Bank of Ningbo Co., Ltd.	300,000	303,500		0.7%
Bank of Ningbo NingXin TianYi fixed income close-ended wealth management No. 55* 寧銀理財寧欣添益固定收益類封閉式理財55號	Bank of Ningbo Co., Ltd.	300,000	301,400		0.6%
Bank of Ningbo NingXin fixed income close-ended wealth management No. 485* 寧銀理財寧欣固定收益類封閉式理財485號	Bank of Ningbo Co., Ltd.	300,000	300,000		0.6%
Others#		5,688,800	5,804,000		12.3%
Total		7,988,800	8,142,600		17.4%

* The English names are unofficial English translations of unlisted financial products with Chinese names only. If there is any inconsistency, the Chinese names shall prevail.

Other unlisted financial products included 45 unlisted financial products with 4 different banks to lower the concentration risk. The fair value of such 45 unlisted financial products as at 30 June 2023 was approximately RMB129.0 million in average.

The unlisted financial products were measured at fair value as at 30 June 2023. Such investment activities were funded primarily by the idle self-owned funds of the Group.

The Board considers that the terms of such unlisted financial products are on normal commercial terms, fair and reasonable and in the interests of the Company and shareholders of the Company (the “**Shareholders**”) as a whole.

For the six months ended 30 June 2023, the Group’s investments amounted to approximately RMB1,050.3 million, which was primarily for the purchases of property, plant and equipment, acquisition of a land use right and purchase of other tangible assets. These investments enhanced the Group’s R&D and technological application capability and production efficiency, and thus expanded the sources of revenue.

Going forward, the Group will continue to further diversify its investments among different banks to lower the concentration risk and will closely monitor the performance of investments made and future investments plan in accordance with its prudent funding and treasury policy to utilise and to increase the yield of the idle funds of the Group while maintaining a high level of liquidity and a low level of risk. Such investment activities were made and will be made on the premises that it would not adversely affect the working capital of the Group or the operation of the Group’s principal business. The Group intends to make further investments to enhance its competitiveness in the future.

QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

Interest Rate Risk

The Group is exposed to interest rate risks arising from its bank borrowings for working capital and capital expenditure that are associated with the expansion of the Group and utilisation for other purposes. The rising of interest rates increases the costs of both existing and new debts. As at 30 June 2023, the effective interest rate on fixed-rate bank borrowings was approximately 2.30% to 3.97% per annum, while the effective interest rate of variable-rate bank borrowings was approximately 4.80% per annum.

Foreign Exchange Rate Fluctuation Risk

The Group exports a portion of its products to and purchases a considerable amount of products from international markets where transactions are denominated in USD or other foreign currencies. For details of the Group’s foreign currency forward contracts and foreign currency option contracts, please refer to Note 14 to the condensed consolidated financial statements in this announcement. Except certain investments which are in line with the Group’s business and which are denominated in foreign currencies, the Group did not and has no plan to make any foreign currency investment.

Credit Risk

The Group’s financial assets include derivative financial assets, cash and cash equivalents, pledged bank deposits, short-term fixed deposits, time deposits, financial assets at FVTPL, trade and other receivables and prepayments, amounts due from related parties, receivables at FVTOCI and equity instruments at FVTOCI, which represent the Group’s maximum exposure to credit risk in relation to financial assets.

In order to minimise the credit risk in relation to trade receivables, the management of the Company (the “**Management**”) has delegated a team responsible for the determination of credit limits, credit approvals and other monitoring procedures to ensure that appropriate follow-up actions are taken to recover overdue debts. The Group has also purchased insurance relating to trade receivables. In addition, the Group reviews the recoverable amount of each individual trade debt at the end of each reporting period to ensure that adequate impairment losses are made for irrecoverable amounts. Therefore, the Directors consider that the Group’s credit risk is significantly reduced. The amounts presented in the condensed consolidated statement of financial position are net of allowance for credit losses, estimated by the Management based on prior experience and historical observed default rates, their assessment of the current economic environment and the discounted cash flows to be received in future.

The Group has no significant concentration of credit risk since its trade receivables are dispersed over a large number of counterparties and customers. The credit risk on liquidity is limited because the majority of the counterparties are banks with high credit ratings by international credit-rating agencies.

Cash Flow Interest Rate Risk

The Group’s cash flow interest rate risk is primarily related to variable rates applicable to bank borrowings. The Management will review the proportion of borrowings in fixed and variable rates and ensure they are within reasonable range. Therefore, any future variations in interest rates will not have any significant impact on the results of the Group.

Liquidity Risk

The Group manages liquidity risk by maintaining an adequate level of cash and cash equivalents through continuously monitoring the forecast and actual cash flows and matching them with the maturity profiles of financial assets and liabilities.

OTHER INFORMATION

A. PURCHASE, SALE OR REDEMPTION OF THE COMPANY’S SHARES

The Company is empowered by the applicable Cayman Islands Companies Act and the Company’s articles of association (the “**Articles of Association**”) to repurchase its own shares subject to certain restrictions and the Board may only exercise this power on behalf of the Company subject to any applicable requirements imposed from time to time by the Stock Exchange. There was no purchase, sale, redemption or writing-off by the Company, with the exception of the trustee of the Restricted Share Award Scheme, of the Company’s listed shares for the six months ended 30 June 2023.

B. RESTRICTED SHARE AWARD SCHEME

On 22 March 2010 (the “**Adoption Date**”), the Board adopted the Restricted Share Award Scheme. Pursuant to the Restricted Share Award Scheme (the “**Scheme**”), the Directors, all employees, senior staff, agents and consultants of the Company and its subsidiaries are entitled to participate in the Scheme. The purposes of the Scheme are (i) to assist the Company in attracting new staff and (ii) to motivate and retain its existing talents.

For more details of the Scheme, please refer to Note 22 to the condensed consolidated financial statements in this announcement.

C. CORPORATE GOVERNANCE, INTERNAL CONTROL AND RISK MANAGEMENT AND SECURITIES TRANSACTIONS BY DIRECTORS

Corporate Governance

The Directors recognise the importance of incorporating elements of good corporate governance in the management structure and internal control procedures of the Group so as to achieve effective accountability and to maximise the Shareholders’ benefits. For the six months ended 30 June 2023, the Company complied with all of the mandatory disclosure requirements of the Corporate Governance Code (the “**Corporate Governance Code**”) contained in Appendix 14 to the Listing Rules. Meanwhile, the Company has applied the principles of good corporate governance (the “**Principles**”) and complied with the code provisions and most of the recommended best practices set out in Part 2 of the Corporate Governance Code. The Company annually reviews the application of the Principles.

Securities Transactions by Directors

The Company has adopted the Model Code for Securities Transactions by Directors of Listed Issuers (the “**Model Code**”) set out in Appendix 10 to the Listing Rules. Having made specific enquiries to all Directors, all Directors have confirmed their compliance with the required standards set out in the Model Code and its code of conduct regarding Directors’ securities transactions throughout the six months ended 30 June 2023.

D. AUDIT COMMITTEE

The audit committee of the Board (the “**Audit Committee**”) consists of four independent non-executive Directors (namely Mr. Zhang Yuqing (committee chairman), Mr. Feng Hua Jun, Mr. Shao Yang Dong and Ms. Jia Lina). The Audit Committee and the Company’s external auditors have reviewed the interim report of 2023 and the unaudited condensed consolidated financial statements for the six months ended 30 June 2023. Members of the Audit Committee agreed with the accounting treatment adopted in the preparation of the condensed consolidated financial statements.

By order of the Board
Sunny Optical Technology (Group) Company Limited
Ye Liaoning
Chairman and Executive Director

Hong Kong, 22 August 2023

As at the date of this announcement, the Board comprises Mr. Ye Liaoning, Mr. Sun Yang and Mr. Wang Wenjie, who are executive Directors; Mr. Wang Wenjian, who is a non-executive Director, and Mr. Zhang Yuqing, Mr. Feng Hua Jun, Mr. Shao Yang Dong and Ms. Jia Lina, who are independent non-executive Directors.

APPENDIX II

**EXTRACT OF
THE UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS OF
UBS AG AND ITS SUBSIDIARIES
FOR THE SECOND QUARTER ENDED 30 JUNE 2023**

UBS AG interim consolidated financial statements (unaudited)

Income statement

USD m	Note	For the quarter ended			Year-to-date	
		30.6.23	31.3.23	30.6.22	30.6.23	30.6.22
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3	5,483	4,815	2,381	10,298	4,526
Interest expense from financial instruments measured at amortized cost	3	(4,607)	(3,853)	(1,103)	(8,461)	(1,912)
Net interest income from financial instruments measured at fair value through profit or loss and other	3	430	426	356	856	766
Net interest income	3	1,305	1,388	1,634	2,694	3,380
Other net income from financial instruments measured at fair value through profit or loss		2,337	2,673	1,620	5,009	3,845
Fee and commission income	4	5,008	5,076	5,235	10,083	11,103
Fee and commission expense	4	(419)	(447)	(450)	(866)	(934)
Net fee and commission income	4	4,589	4,628	4,785	9,217	10,169
Other income		237	155	996	392	1,135
Total revenues		8,468	8,844	9,036	17,313	18,529
Credit loss expense / (release)	7	16	38	7	54	25
Personnel expenses	5	3,847	3,898	3,762	7,745	7,996
General and administrative expenses	6	2,443	2,983	2,364	5,425	4,597
Depreciation, amortization and impairment of non-financial assets		707	469	451	1,176	900
Operating expenses		6,997	7,350	6,577	14,346	13,492
Operating profit / (loss) before tax		1,456	1,456	2,452	2,912	5,012
Tax expense / (benefit)		332	445	478	776	1,026
Net profit / (loss)		1,124	1,012	1,974	2,136	3,986
Net profit / (loss) attributable to non-controlling interests		4	8	10	12	18
Net profit / (loss) attributable to shareholders		1,120	1,004	1,964	2,124	3,968

Statement of comprehensive income

USD m	For the quarter ended			Year-to-date	
	30.6.23	31.3.23	30.6.22	30.6.23	30.6.22
Comprehensive income attributable to shareholders¹					
Net profit / (loss)	1,120	1,004	1,964	2,124	3,968
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation					
Foreign currency translation movements related to net assets of foreign operations, before tax	307	224	(994)	532	(1,459)
Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax	(149)	(126)	434	(275)	646
Foreign currency translation differences on foreign operations reclassified to the income statement	(3)	(1)	8	(3)	8
Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement	(1)	(1)	(4)	(2)	(4)
Income tax relating to foreign currency translations, including the effect of net investment hedges	(3)	(2)	5	(5)	8
Subtotal foreign currency translation, net of tax	151	95	(551)	246	(801)
Financial assets measured at fair value through other comprehensive income					
Net unrealized gains / (losses), before tax	(1)	2	(3)	1	(442)
Net realized (gains) / losses reclassified to the income statement from equity	0	0	0	0	0
Reclassification of financial assets to Other financial assets measured at amortized cost ²			449		449
Income tax relating to net unrealized gains / (losses)	0	0	(116)	0	(3)
Subtotal financial assets measured at fair value through other comprehensive income, net of tax	(1)	2	330	1	3
Cash flow hedges of interest rate risk					
Effective portion of changes in fair value of derivative instruments designated as cash flow hedges, before tax	(1,082)	387	(1,298)	(695)	(3,763)
Net (gains) / losses reclassified to the income statement from equity	413	349	(149)	762	(386)
Income tax relating to cash flow hedges	127	(130)	276	(2)	794
Subtotal cash flow hedges, net of tax	(542)	606	(1,171)	64	(3,355)
Cost of hedging					
Cost of hedging, before tax	11	(5)	21	6	98
Income tax relating to cost of hedging	0	0	0	0	0
Subtotal cost of hedging, net of tax	11	(5)	21	6	98
Total other comprehensive income that may be reclassified to the income statement, net of tax	(381)	698	(1,370)	317	(4,055)
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans					
Gains / (losses) on defined benefit plans, before tax	(13)	33	127	20	255
Income tax relating to defined benefit plans	(37)	4	(8)	(32)	(26)
Subtotal defined benefit plans, net of tax	(50)	38	119	(12)	229
Own credit on financial liabilities designated at fair value					
Gains / (losses) from own credit on financial liabilities designated at fair value, before tax	(212)	69	296	(143)	719
Income tax relating to own credit on financial liabilities designated at fair value	61	(17)	(26)	44	(26)
Subtotal own credit on financial liabilities designated at fair value, net of tax	(151)	51	271	(100)	693
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(201)	89	389	(112)	922
Total other comprehensive income	(582)	787	(981)	206	(3,133)
Total comprehensive income attributable to shareholders	538	1,791	982	2,329	835
Comprehensive income attributable to non-controlling interests					
Net profit / (loss)	4	8	10	12	18
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(3)	5	(28)	2	(10)
Total comprehensive income attributable to non-controlling interests	1	13	(17)	14	9
Total comprehensive income					
Net profit / (loss)	1,124	1,012	1,974	2,136	3,986
Other comprehensive income	(585)	792	(1,009)	207	(3,142)
<i>of which: other comprehensive income that may be reclassified to the income statement</i>	<i>(381)</i>	<i>698</i>	<i>(1,370)</i>	<i>317</i>	<i>(4,055)</i>
<i>of which: other comprehensive income that will not be reclassified to the income statement</i>	<i>(204)</i>	<i>94</i>	<i>361</i>	<i>(110)</i>	<i>913</i>
Total comprehensive income	539	1,804	965	2,343	844

¹ Refer to the "UBS AG consolidated performance" section of this report for more information. ² Effective 1 April 2022, a portfolio of assets previously classified as Financial assets measured at fair value through other comprehensive income was reclassified to Other financial assets measured at amortized cost. As a result, the related cumulative fair value losses of USD 449m pre-tax and USD 333m post-tax, previously recognized in Other comprehensive income, have been removed from equity and adjusted against the value of the assets at the reclassification date.

Balance sheet

USD m	Note	30.6.23	31.3.23	31.12.22
Assets				
Cash and balances at central banks		159,425	144,183	169,445
Amounts due from banks		21,395	14,773	14,671
Receivables from securities financing transactions measured at amortized cost		61,977	60,010	67,814
Cash collateral receivables on derivative instruments	9	35,068	32,726	35,033
Loans and advances to customers	7	397,596	395,429	390,027
Other financial assets measured at amortized cost	10	52,180	49,289	53,389
Total financial assets measured at amortized cost		727,642	696,411	730,379
Financial assets at fair value held for trading	8	120,232	118,009	108,034
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>		<i>39,568</i>	<i>37,569</i>	<i>36,742</i>
Derivative financial instruments	8, 9	124,046	114,253	150,109
Brokerage receivables	8	21,218	21,025	17,576
Financial assets at fair value not held for trading	8	63,714	66,511	59,408
Total financial assets measured at fair value through profit or loss		329,210	319,799	335,127
Financial assets measured at fair value through other comprehensive income	8	2,217	2,241	2,239
Investments in associates		1,109	1,114	1,101
Property, equipment and software		11,193	11,274	11,316
Goodwill and intangible assets		6,281	6,272	6,267
Deferred tax assets		9,411	9,281	9,354
Other non-financial assets	10	9,254	10,367	9,652
Total assets		1,096,318	1,056,758	1,105,436
Liabilities				
Amounts due to banks		16,290	13,595	11,596
Payables from securities financing transactions measured at amortized cost		12,320	9,870	4,202
Cash collateral payables on derivative instruments	9	31,445	32,240	36,436
Customer deposits		521,657	507,844	527,171
Funding from UBS Group AG measured at amortized cost	11	61,445	63,093	56,147
Debt issued measured at amortized cost	13	62,561	54,733	59,499
Other financial liabilities measured at amortized cost	10	11,673	10,695	10,391
Total financial liabilities measured at amortized cost		717,392	692,071	705,442
Financial liabilities at fair value held for trading	8	35,616	34,374	29,515
Derivative financial instruments	8, 9	127,367	116,113	154,906
Brokerage payables designated at fair value	8	43,357	43,911	45,085
Debt issued designated at fair value	8, 12	78,741	74,974	71,842
Other financial liabilities designated at fair value	8, 10	31,425	28,018	32,033
Total financial liabilities measured at fair value through profit or loss		316,506	297,391	333,382
Provisions	15	3,817	3,886	3,183
Other non-financial liabilities	10	5,330	4,673	6,489
Total liabilities		1,043,044	998,021	1,048,496
Equity				
Share capital		386	338	338
Share premium		24,594	24,644	24,648
Retained earnings		27,806	32,863	31,746
Other comprehensive income recognized directly in equity, net of tax		136	541	(133)
Equity attributable to shareholders		52,922	58,386	56,598
Equity attributable to non-controlling interests		352	352	342
Total equity		53,274	58,738	56,940
Total liabilities and equity		1,096,318	1,056,758	1,105,436

Statement of changes in equity

<i>USD m</i>	Share capital and share premium	Retained earnings	OCI recognized directly in equity, net of tax ¹	<i>of which: foreign currency translation</i>	<i>of which: cash flow hedges</i>	Total equity attributable to shareholders
Balance as of 1 January 2023²	24,985	31,746	(133)	4,098	(4,234)	56,598
Premium on shares issued and warrants exercised	(5) ³					(5)
Tax (expense) / benefit	(1)					(1)
Dividends		(6,000)				(6,000)
Translation effects recognized directly in retained earnings		48	(48)		(48)	0
Share of changes in retained earnings of associates and joint ventures		0				0
New consolidations / (deconsolidations) and other increases / (decreases)	0					0
Total comprehensive income for the period		2,012	317	246	64	2,329
<i>of which: net profit / (loss)</i>		2,124				2,124
<i>of which: OCI, net of tax</i>		(112)	317	246	64	206
Balance as of 30 June 2023²	24,979	27,806	136	4,344	(4,218)	52,922
Non-controlling interests as of 30 June 2023						352
Total equity as of 30 June 2023						53,274
Balance as of 1 January 2022²	24,991	27,912	5,200	4,617	628	58,102
Tax (expense) / benefit	4					4
Dividends		(4,200)				(4,200)
Translation effects recognized directly in retained earnings		(13)	13		13	0
Share of changes in retained earnings of associates and joint ventures		0				0
New consolidations / (deconsolidations) and other increases / (decreases)	4	3	(3)			4
Total comprehensive income for the period		4,890	(4,055)	(801)	(3,355)	835
<i>of which: net profit / (loss)</i>		3,968				3,968
<i>of which: OCI, net of tax</i>		922	(4,055)	(801)	(3,355)	(3,133)
Balance as of 30 June 2022²	24,999	28,592	1,154	3,815	(2,713)	54,746
Non-controlling interests as of 30 June 2022						339
Total equity as of 30 June 2022						55,085

¹ Excludes other comprehensive income related to defined benefit plans and own credit that is recorded directly in Retained earnings. ² Excludes non-controlling interests. ³ Includes decreases related to recharges by UBS Group AG for share-based compensation awards granted to employees of UBS AG or its subsidiaries.

Statement of cash flows

	Year-to-date	
USD m	30.6.23	30.6.22
Cash flow from / (used in) operating activities		
Net profit / (loss)	2,136	3,986
Non-cash items included in net profit and other adjustments:		
Depreciation, amortization and impairment of non-financial assets	1,176	900
Credit loss expense / (release)	54	25
Share of net (profit) / loss of associates and joint ventures and impairment related to associates	(25)	(12)
Deferred tax expense / (benefit)	(63)	348
Net loss / (gain) from investing activities	(116)	(778)
Net loss / (gain) from financing activities	3,085	(14,371)
Other net adjustments	(1,198)	9,346
Net change in operating assets and liabilities:¹		
Amounts due from banks and amounts due to banks	(3,313)	3,000
Securities financing transactions measured at amortized cost	13,672	10,833
Cash collateral on derivative instruments	(5,104)	(4,704)
Loans and advances to customers and customer deposits	(14,863)	(13,959)
Financial assets and liabilities at fair value held for trading and derivative financial instruments	(7,726)	13,149
Brokerage receivables and payables	(5,366)	8,239
Financial assets at fair value not held for trading and other financial assets and liabilities	(1,306)	1,480
Provisions and other non-financial assets and liabilities	658	3
Income taxes paid, net of refunds	(810)	(847)
Net cash flow from / (used in) operating activities	(19,110)	16,639
Cash flow from / (used in) investing activities		
Disposal of subsidiaries, associates and intangible assets	35	911
Purchase of property, equipment and software	(669)	(695)
Disposal of property, equipment and software	0	3
Purchase of financial assets measured at fair value through other comprehensive income	(2,444)	(2,821)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	2,468	2,291
Purchase of debt securities measured at amortized cost	(7,541)	(8,167)
Disposal and redemption of debt securities measured at amortized cost	4,659	3,914
Net cash flow from / (used in) investing activities	(3,492)	(4,565)
Cash flow from / (used in) financing activities		
Net issuance (repayment) of short-term debt measured at amortized cost	5,555	(10,440)
Distributions paid on UBS AG shares	(6,000)	(4,200)
Issuance of debt designated at fair value and long-term debt measured at amortized cost ²	51,141	48,856
Repayment of debt designated at fair value and long-term debt measured at amortized cost ²	(44,091)	(36,309)
Net cash flows from other financing activities	(242)	(341)
Net cash flow from / (used in) financing activities	6,362	(2,433)
Total cash flow		
Cash and cash equivalents at the beginning of the period	195,200	207,755
Net cash flow from / (used in) operating, investing and financing activities	(16,239)	9,642
Effects of exchange rate differences on cash and cash equivalents	1,999	(9,648)
Cash and cash equivalents at the end of the period³	180,959	207,748
<i>of which: cash and balances at central banks⁴</i>	<i>159,343</i>	<i>190,244</i>
<i>of which: amounts due from banks</i>	<i>12,189</i>	<i>15,625</i>
<i>of which: money market paper⁵</i>	<i>9,428</i>	<i>1,880</i>

Additional information

Net cash flow from / (used in) operating activities includes:

Interest received in cash	15,024	6,094
Interest paid in cash	11,429	2,732
Dividends on equity investments, investment funds and associates received in cash ⁶	1,259	1,059

¹ Movements in this section exclude foreign currency translation and foreign exchange effects, which are presented within the Other net adjustments line. ² Includes funding from UBS Group AG measured at amortized cost (recognized in Funding from UBS Group AG on the balance sheet) and measured at fair value (recognized in Other financial liabilities designated at fair value on the balance sheet). ³ USD 3,073m and USD 4,434m of cash and cash equivalents (mainly reflected in Amounts due from banks) were restricted as of 30 June 2023 and 30 June 2022, respectively. Refer to "Note 22 Restricted and transferred financial assets" in the "Consolidated financial statements" section of the Annual Report 2022 for more information. ⁴ Includes only balances with an original maturity of three months or less. ⁵ Money market paper is included on the balance sheet under Financial assets at fair value not held for trading (30 June 2023: USD 9,270m; 30 June 2022: USD 1,516m), Other financial assets measured at amortized cost (30 June 2023: USD 149m; 30 June 2022: USD 127m), Financial assets at fair value held for trading (30 June 2023: USD 9m; 30 June 2022: USD 58m) and Financial assets measured at fair value through other comprehensive income (30 June 2023: USD 0m; 30 June 2022: USD 180m). ⁶ Includes dividends received from associates reported within Net cash flow from / (used in) investing activities.

Notes to the UBS AG interim consolidated financial statements (unaudited)

Note 1 Basis of accounting

Basis of preparation

The consolidated financial statements (the financial statements) of UBS AG and its subsidiaries (together, UBS AG) are prepared in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (the IASB), and are presented in US dollars. These interim financial statements are prepared in accordance with IAS 34, *Interim Financial Reporting*.

In preparing these interim financial statements, the same accounting policies and methods of computation have been applied as in the UBS AG consolidated annual financial statements for the period ended 31 December 2022, except for the changes described in this Note. These interim financial statements are unaudited and should be read in conjunction with UBS AG's audited consolidated financial statements in the Annual Report 2022 and the "Management report" sections of this report. In the opinion of management, all necessary adjustments have been made for a fair presentation of UBS AG's financial position, results of operations and cash flows.

Preparation of these interim financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, income, expenses and disclosures of contingent assets and liabilities. These estimates and assumptions are based on the best available information. Actual results in the future could differ from such estimates and differences may be material to the financial statements. Revisions to estimates, based on regular reviews, are recognized in the period in which they occur. For more information about areas of estimation uncertainty that are considered to require critical judgment, refer to "Note 1a Material accounting policies" in the "Consolidated financial statements" section of the Annual Report 2022.

IFRS 17, *Insurance Contracts*

Effective from 1 January 2023, UBS AG has adopted IFRS 17, *Insurance Contracts*, which sets out the accounting requirements for contractual rights and obligations that arise from insurance contracts issued and reinsurance contracts held. The adoption has had no effect on UBS AG's financial statements. UBS AG does not provide insurance services in any market.

Other amendments to IFRS

Effective from 1 January 2023, UBS AG has adopted a number of minor amendments to IFRS, which have had no significant effect on UBS AG.

Amendments to IAS 12, *Income Taxes*

In May 2023, the IASB issued amendments to IAS 12, *Income Taxes*, whereby, under an exception, deferred tax assets (DTAs) and deferred tax liabilities (DTLs) will not be recognized in respect of top-up tax on income under the Global Anti-Base Erosion Rules that is imposed under tax law that is enacted or substantively enacted to implement the Pillar Two model rules published by the Organisation for Economic Co-operation and Development. This exception applies immediately upon the issuance of the amendments and it is, therefore, potentially relevant to these financial statements and subsequent financial statements. Although countries are starting to implement the rules, UBS AG did not have any DTAs or DTLs on 30 June 2023 that had not been recognized as a result of the application of this exception. The exception is expected to be removed by the IASB in due course, although the timing of that has not been specified. The amendments also introduced new disclosure requirements in relation to top-up tax, which will first apply to UBS AG's financial statements for the year ended 31 December 2023.

Note 1 Basis of accounting (continued)

Currency translation rates

The following table shows the rates of the main currencies used to translate the financial information of UBS AG's operations with a functional currency other than the US dollar into US dollars.

	Closing exchange rate				Average rate ¹				
	As of				For the quarter ended			Year-to-date	
	30.6.23	31.3.23	31.12.22	30.6.22	30.6.23	31.3.23	30.6.22	30.6.23	30.6.22
1 CHF	1.12	1.09	1.08	1.05	1.11	1.08	1.04	1.10	1.06
1 EUR	1.09	1.08	1.07	1.05	1.09	1.08	1.06	1.08	1.09
1 GBP	1.27	1.23	1.21	1.22	1.24	1.22	1.25	1.24	1.29
100 JPY	0.69	0.75	0.76	0.74	0.71	0.75	0.76	0.73	0.80

¹ Monthly income statement items of operations with a functional currency other than the US dollar are translated into US dollars using month-end rates. Disclosed average rates for a quarter represent an average of three month-end rates, weighted according to the income and expense volumes of all operations of UBS AG with the same functional currency for each month. Weighted average rates for individual business divisions may deviate from the weighted average rates for UBS AG.

Note 2 Segment reporting

<i>USD m</i>	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Group Functions	UBS AG
For the six months ended 30 June 2023¹						
Net interest income	2,934	1,529	(14)	(1,093)	(663)	2,694
Non-interest income	6,594	1,163	1,015	5,329	518	14,619
Total revenues	9,528	2,692	1,001	4,236	(145)	17,313
Credit loss expense / (release)	20	26	0	8	0	54
Operating expenses	7,204	1,379	818	3,639	1,305	14,346
Operating profit / (loss) before tax	2,303	1,287	184	588	(1,450)	2,912
Tax expense / (benefit)						776
Net profit / (loss)						2,136
As of 30 June 2023¹						
Total assets	375,119	241,726	18,767	363,348	97,357	1,096,318
For the six months ended 30 June 2022¹						
Net interest income	2,409	1,057	(7)	104	(182)	3,380
Non-interest income	7,168	1,089	1,958	4,897	37	15,149
Total revenues	9,577	2,146	1,950	5,000	(144)	18,529
Credit loss expense / (release)	(10)	57	0	(24)	2	25
Operating expenses	7,174	1,260	815	3,729	514	13,492
Operating profit / (loss) before tax	2,413	829	1,135	1,295	(660)	5,012
Tax expense / (benefit)						1,026
Net profit / (loss)						3,986
As of 31 December 2022¹						
Total assets	388,624	235,330	16,971	391,495	73,016	1,105,436

¹ Refer to "Note 2 Segment reporting" in the "Consolidated financial statements" section of the Annual Report 2022 for more information about UBS AG's reporting segments.

Note 3 Net interest income

USD m	For the quarter ended			Year-to-date	
	30.6.23	31.3.23	30.6.22	30.6.23	30.6.22
Interest income from loans and deposits ¹	4,804	4,145	1,887	8,949	3,548
Interest income from securities financing transactions measured at amortized cost ²	833	766	209	1,599	327
Interest income from other financial instruments measured at amortized cost	276	259	118	535	191
Interest income from debt instruments measured at fair value through other comprehensive income	26	23	6	48	47
Interest income from derivative instruments designated as cash flow hedges	(457)	(376)	160	(833)	413
Total interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	5,483	4,815	2,381	10,298	4,526
Interest expense on loans and deposits ³	3,452	2,909	618	6,361	1,046
Interest expense on securities financing transactions measured at amortized cost ⁴	474	365	288	839	512
Interest expense on debt issued	656	555	176	1,211	311
Interest expense on lease liabilities	25	25	21	50	43
Total interest expense from financial instruments measured at amortized cost	4,607	3,853	1,103	8,461	1,912
Total net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	876	962	1,278	1,837	2,614
Net interest income from financial instruments measured at fair value through profit or loss and other	430	426	356	856	766
Total net interest income	1,305	1,388	1,634	2,694	3,380

¹ Consists of interest income from cash and balances at central banks, loans and advances to banks and customers, and cash collateral receivables on derivative instruments, as well as negative interest on amounts due to banks, customer deposits, and cash collateral payables on derivative instruments. ² Includes interest income on receivables from securities financing transactions and negative interest, including fees, on payables from securities financing transactions. ³ Consists of interest expense on amounts due to banks, cash collateral payables on derivative instruments, customer deposits, and funding from UBS Group AG, as well as negative interest on cash and balances at central banks, loans and advances to banks, and cash collateral receivables on derivative instruments. ⁴ Includes interest expense on payables from securities financing transactions and negative interest, including fees, on receivables from securities financing transactions.

Note 4 Net fee and commission income

USD m	For the quarter ended			Year-to-date	
	30.6.23	31.3.23	30.6.22	30.6.23	30.6.22
Underwriting fees	131	149	122	280	324
M&A and corporate finance fees	156	178	220	335	456
Brokerage fees	800	880	870	1,681	1,948
Investment fund fees	1,179	1,178	1,233	2,357	2,621
Portfolio management and related services	2,254	2,210	2,298	4,464	4,761
Other	487	480	492	967	993
Total fee and commission income¹	5,008	5,076	5,235	10,083	11,103
<i>of which: recurring</i>	<i>3,496</i>	<i>3,413</i>	<i>3,593</i>	<i>6,909</i>	<i>7,452</i>
<i>of which: transaction-based</i>	<i>1,504</i>	<i>1,639</i>	<i>1,632</i>	<i>3,143</i>	<i>3,621</i>
<i>of which: performance-based</i>	<i>7</i>	<i>24</i>	<i>10</i>	<i>31</i>	<i>29</i>
Fee and commission expense	419	447	450	866	934
Net fee and commission income	4,589	4,628	4,785	9,217	10,169

¹ Reflects third-party fee and commission income for the second quarter of 2023 of USD 3,134m for Global Wealth Management (first quarter of 2023: USD 3,145m; second quarter of 2022: USD 3,281m), USD 465m for Personal & Corporate Banking (first quarter of 2023: USD 449m; second quarter of 2022: USD 422m), USD 673m for Asset Management (first quarter of 2023: USD 687m; second quarter of 2022: USD 720m), USD 731m for the Investment Bank (first quarter of 2023: USD 791m; second quarter of 2022: USD 811m) and USD 4m for Group Functions (first quarter of 2023: USD 3m; second quarter of 2022: USD 1m).

Note 5 Personnel expenses

USD m	For the quarter ended			Year-to-date	
	30.6.23	31.3.23	30.6.22	30.6.23	30.6.22
Salaries and variable compensation ¹	3,364	3,356	3,316	6,720	7,001
<i>of which: variable compensation – financial advisors²</i>	<i>1,110</i>	<i>1,111</i>	<i>1,122</i>	<i>2,222</i>	<i>2,342</i>
Contractors	24	27	30	50	58
Social security	176	220	164	396	392
Post-employment benefit plans	139	174	137	313	320
Other personnel expenses	144	122	116	266	225
Total personnel expenses	3,847	3,898	3,762	7,745	7,996

¹ Includes role-based allowances. ² Consists of cash and deferred compensation awards and is based on compensable revenues and firm tenure using a formulaic approach. It also includes expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements.

Note 6 General and administrative expenses

USD m	For the quarter ended			Year-to-date	
	30.6.23	31.3.23	30.6.22	30.6.23	30.6.22
Outsourcing costs	121	124	115	245	221
Technology costs	128	132	126	260	248
Consulting, legal and audit fees	160	108	123	268	227
Real estate and logistics costs	134	119	129	252	253
Market data services	101	99	89	200	182
Marketing and communication	44	34	43	78	74
Travel and entertainment	51	49	43	101	62
Litigation, regulatory and similar matters ¹	55	721	220	776	277
Other	1,649	1,596	1,475	3,245	3,052
<i>of which: shared services costs charged by UBS Group AG or its subsidiaries</i>	<i>1,460</i>	<i>1,385</i>	<i>1,348</i>	<i>2,845</i>	<i>2,738</i>
Total general and administrative expenses	2,443	2,983	2,364	5,425	4,597

¹ Reflects the net increase in provisions for litigation, regulatory and similar matters recognized in the income statement. Refer to Note 15b for more information.

Note 7 Expected credit loss measurement

a) Credit loss expense / release

Total net credit loss expenses in the second quarter of 2023 were USD 16m, reflecting USD 10m net credit loss releases related to stage 1 and 2 positions and USD 26m net credit loss expenses related to stage 3 positions.

Stage 1 and 2 net releases included: scenario-related net releases of USD 42m; net expenses of USD 27m from model changes, mainly in Personal & Corporate Banking and the Investment Bank; and additional net expenses of USD 5m from book quality and size changes, mainly across the corporate and real estate lending portfolios of Personal & Corporate Banking and Global Wealth Management.

Stage 3 net credit loss expenses were USD 26m, driven by net expenses of USD 21m in Personal & Corporate Banking, which were primarily due to a single commodity trade finance client (USD 11m), as well as ECL on various corporate lending positions.

b) Changes to ECL models, scenarios, scenario weights and post-model adjustments

Scenarios and weights

The expected credit loss (ECL) scenarios, along with their related macroeconomic factors and market data, were reviewed in light of the economic and political conditions prevailing in the second quarter of 2023 through a series of governance meetings, with input and feedback from UBS AG Risk and Finance experts across the business divisions and regions.

The baseline scenario was updated with the latest macroeconomic forecasts as of 30 June 2023. The assumptions on a calendar-year basis are included in the table below and imply a broadly unchanged economic outlook for 2023, the Eurozone and Switzerland, and more optimistic projections for the US. Compared with the baseline used in the first quarter of 2023, the house price forecast for the US and the Eurozone in 2023 is less pessimistic, although it is slightly more pessimistic for Switzerland.

At the beginning of the second quarter of 2023, UBS AG replaced the global crisis scenario applied at year-end 2022 and at the end of the first quarter of 2023 with the mild debt crisis scenario. Recent economic, market and political developments suggest that the scenario suite should be rebalanced by reintroducing a mild downside scenario. The mild debt crisis scenario covers similar risks, but the assumptions are milder than the global crisis scenario. Therefore, the scenario is less severe. It assumes that political, solvency and liquidity concerns cause a sell-off of sovereign debt in emerging markets and the peripheral Eurozone. The global economy and financial markets are negatively affected, and central banks are assumed to ease their monetary policy.

The stagflationary geopolitical crisis scenario and the asset price inflation scenario were updated based on the latest market data, but the assumptions remain broadly unchanged. Refer to the table below for the scenarios and weights applied.

UBS AG kept scenario weights in line with those applied in the first quarter of 2023, with a 15% weight assigned to the mild debt crisis scenario instead of the global crisis scenario, which it replaced.

Note 7 Expected credit loss measurement (continued)

Post-model adjustments

Total stage 1 and 2 allowances and provisions amounted to USD 551m as of 30 June 2023 and included post-model adjustments (PMA) of USD 131m (31 March 2023: USD 128m), as uncertainty levels remain high, including the geopolitical situation.

Comparison of shock factors

Key parameters	Baseline		
	2022	2023	2024
Real GDP growth (annual percentage change)			
US	2.1	1.4	0.1
Eurozone	3.5	0.8	1.0
Switzerland	2.1	0.9	1.3
Unemployment rate (% , annual average)			
US	3.6	3.7	5.1
Eurozone	6.7	6.7	6.9
Switzerland	2.2	2.2	2.5
Fixed income: 10-year government bonds (% , Q4)			
USD	3.9	3.7	3.6
EUR	2.6	2.3	2.2
CHF	1.6	1.0	0.9
Real estate (annual percentage change, Q4)			
US	7.4	(1.9)	2.1
Eurozone	2.8	(1.2)	1.8
Switzerland	3.9	(0.5)	(1.0)

Economic scenarios and weights applied

ECL scenario	Assigned weights in %		
	30.6.23	31.3.23	30.6.22
Asset price inflation	0.0	0.0	0.0
Baseline	60.0	60.0	55.0
Severe Russia–Ukraine conflict scenario	–	–	25.0
Mild debt crisis	15.0	–	–
Stagflationary geopolitical crisis	25.0	25.0	–
Global crisis	–	15.0	20.0

Note 7 Expected credit loss measurement (continued)

c) ECL-relevant balance sheet and off-balance sheet positions including ECL allowances and provisions

The following tables provide information about financial instruments and certain non-financial instruments that are subject to ECL requirements. For amortized-cost instruments, the carrying amount represents the maximum exposure to credit risk, taking into account the allowance for credit losses. Financial assets measured at fair value through other comprehensive income (FVOCI) are also subject to ECL; however, unlike amortized-cost instruments, the allowance for credit losses for FVOCI instruments does not reduce the carrying amount of these financial assets. Instead, the carrying amount of financial assets measured at FVOCI represents the maximum exposure to credit risk.

In addition to recognized financial assets, certain off-balance sheet financial instruments and other credit lines are also subject to ECL. The maximum exposure to credit risk for off-balance sheet financial instruments is calculated based on the maximum contractual amounts.

USD m	30.6.23							
	Carrying amount ¹				ECL allowances			
Financial instruments measured at amortized cost	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Cash and balances at central banks	159,425	159,393	32	0	(10)	0	(10)	0
Loans and advances to banks ²	21,395	21,239	157	0	(6)	(5)	(1)	0
Receivables from securities financing transactions	61,977	61,977	0	0	(1)	(1)	0	0
Cash collateral receivables on derivative instruments	35,068	35,068	0	0	0	0	0	0
Loans and advances to customers	397,596	378,647	17,204	1,746	(859)	(182)	(173)	(504)
<i>of which: Private clients with mortgages</i>	163,560	153,443	9,358	758	(154)	(44)	(87)	(23)
<i>of which: Real estate financing</i>	50,054	45,959	4,088	7	(44)	(21)	(23)	0
<i>of which: Large corporate clients</i>	13,444	11,792	1,292	359	(179)	(37)	(29)	(113)
<i>of which: SME clients</i>	12,482	10,776	1,293	413	(256)	(32)	(21)	(203)
<i>of which: Lombard</i>	124,511	124,469	0	42	(26)	(9)	0	(17)
<i>of which: Credit cards</i>	1,939	1,502	403	34	(39)	(8)	(11)	(21)
<i>of which: Commodity trade finance</i>	2,193	2,179	0	15	(110)	(7)	0	(104)
Other financial assets measured at amortized cost	52,180	51,650	377	153	(84)	(16)	(7)	(62)
<i>of which: Loans to financial advisors</i>	2,588	2,287	174	126	(55)	(6)	(2)	(47)
Total financial assets measured at amortized cost	727,642	707,974	17,770	1,898	(961)	(205)	(190)	(566)
Financial assets measured at fair value through other comprehensive income	2,217	2,217	0	0	0	0	0	0
Total on-balance sheet financial assets in scope of ECL requirements	729,859	710,191	17,770	1,898	(961)	(205)	(190)	(566)
Off-balance sheet (in scope of ECL)	Total exposure				ECL provisions			
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Guarantees	23,469	22,430	921	118	(37)	(12)	(7)	(17)
<i>of which: Large corporate clients</i>	3,367	2,598	690	79	(5)	(2)	(2)	0
<i>of which: SME clients</i>	1,423	1,218	167	38	(11)	(1)	(1)	(9)
<i>of which: Financial intermediaries and hedge funds</i>	12,874	12,859	15	0	(11)	(8)	(3)	0
<i>of which: Lombard</i>	3,019	3,019	0	1	(1)	0	0	(1)
<i>of which: Commodity trade finance</i>	2,008	2,008	0	0	(1)	(1)	0	0
Irrevocable loan commitments	40,074	37,920	2,076	78	(93)	(54)	(38)	(2)
<i>of which: Large corporate clients</i>	23,220	21,436	1,731	52	(76)	(44)	(31)	(2)
Forward starting reverse repurchase and securities borrowing agreements	4,972	4,972	0	0	0	0	0	0
Unconditionally revocable loan commitments	44,716	42,915	1,739	63	(43)	(34)	(9)	0
<i>of which: Real estate financing</i>	8,929	8,671	258	0	(6)	(6)	0	0
<i>of which: Large corporate clients</i>	4,566	4,401	158	7	(6)	(3)	(3)	0
<i>of which: SME clients</i>	4,963	4,743	179	40	(19)	(16)	(3)	0
<i>of which: Lombard</i>	8,671	8,670	0	1	0	0	0	0
<i>of which: Credit cards</i>	9,762	9,274	484	4	(7)	(6)	(2)	0
<i>of which: Commodity trade finance</i>	534	534	0	0	0	0	0	0
Irrevocable committed prolongation of existing loans	3,811	3,802	7	2	(3)	(2)	0	0
Total off-balance sheet financial instruments and other credit lines	117,043	112,039	4,743	261	(175)	(102)	(54)	(19)
Total allowances and provisions					(1,136)	(307)	(244)	(585)

¹ The carrying amount of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances. ² Includes USD 7.8bn against Credit Suisse AG.

Note 7 Expected credit loss measurement (continued)

USD m	31.3.23				31.3.23			
	Carrying amount ¹				ECL allowances			
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Financial instruments measured at amortized cost								
Cash and balances at central banks	144,183	144,144	39	0	(12)	0	(12)	0
Loans and advances to banks	14,773	14,728	45	0	(6)	(5)	0	0
Receivables from securities financing transactions	60,010	60,010	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	32,726	32,726	0	0	0	0	0	0
Loans and advances to customers	395,429	377,266	16,573	1,591	(804)	(152)	(180)	(472)
<i>of which: Private clients with mortgages</i>	159,409	149,701	8,999	709	(171)	(43)	(103)	(25)
<i>of which: Real estate financing</i>	48,672	45,159	3,504	8	(42)	(18)	(24)	0
<i>of which: Large corporate clients</i>	12,943	11,216	1,408	320	(139)	(20)	(16)	(102)
<i>of which: SME clients</i>	13,610	11,781	1,437	392	(243)	(29)	(25)	(189)
<i>of which: Lombard</i>	128,960	128,903	0	57	(26)	(9)	0	(17)
<i>of which: Credit cards</i>	1,831	1,418	381	32	(37)	(8)	(10)	(20)
<i>of which: Commodity trade finance</i>	3,053	3,022	20	10	(96)	(5)	0	(91)
Other financial assets measured at amortized cost	49,289	48,771	372	146	(84)	(17)	(6)	(61)
<i>of which: Loans to financial advisors</i>	2,571	2,323	121	127	(54)	(6)	(2)	(46)
Total financial assets measured at amortized cost	696,411	677,646	17,028	1,737	(908)	(176)	(198)	(534)
Financial assets measured at fair value through other comprehensive income	2,241	2,241	0	0	0	0	0	0
Total on-balance sheet financial assets in scope of ECL requirements	698,652	679,887	17,028	1,737	(908)	(176)	(198)	(534)
		Total exposure			ECL provisions			
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Off-balance sheet (in scope of ECL)								
Guarantees	22,670	21,670	887	113	(54)	(13)	(8)	(33)
<i>of which: Large corporate clients</i>	3,476	2,733	668	75	(19)	(2)	(3)	(14)
<i>of which: SME clients</i>	1,368	1,197	133	38	(11)	(1)	(1)	(9)
<i>of which: Financial intermediaries and hedge funds</i>	13,076	13,037	38	0	(11)	(8)	(4)	0
<i>of which: Lombard</i>	2,171	2,170	0	1	(1)	0	0	(1)
<i>of which: Commodity trade finance</i>	1,815	1,815	0	0	(1)	(1)	0	0
Irrevocable loan commitments	39,775	37,261	2,400	114	(113)	(57)	(56)	0
<i>of which: Large corporate clients</i>	23,294	21,263	1,948	83	(95)	(47)	(49)	0
Forward starting reverse repurchase and securities borrowing agreements	4,748	4,748	0	0	0	0	0	0
Unconditionally revocable loan commitments	41,970	40,206	1,724	40	(44)	(36)	(8)	0
<i>of which: Real estate financing</i>	8,226	8,037	188	0	(6)	(6)	0	0
<i>of which: Large corporate clients</i>	4,496	4,284	205	7	(5)	(3)	(2)	0
<i>of which: SME clients</i>	4,898	4,656	214	28	(21)	(18)	(3)	0
<i>of which: Lombard</i>	8,166	8,165	0	1	0	0	0	0
<i>of which: Credit cards</i>	9,567	9,078	486	3	(7)	(5)	(2)	0
<i>of which: Commodity trade finance</i>	370	370	0	0	0	0	0	0
Irrevocable committed prolongation of existing loans	4,161	4,126	33	2	(3)	(3)	0	0
Total off-balance sheet financial instruments and other credit lines	113,323	108,010	5,044	269	(214)	(108)	(72)	(33)
Total allowances and provisions					(1,121)	(284)	(271)	(567)

¹ The carrying amount of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances.

Note 7 Expected credit loss measurement (continued)

USD m	31.12.22							
	Carrying amount ¹				ECL allowances			
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Financial instruments measured at amortized cost								
Cash and balances at central banks	169,445	169,402	44	0	(12)	0	(12)	0
Loans and advances to banks	14,671	14,670	1	0	(6)	(5)	(1)	0
Receivables from securities financing transactions	67,814	67,814	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	35,033	35,033	0	0	0	0	0	0
Loans and advances to customers	390,027	372,903	15,587	1,538	(783)	(129)	(180)	(474)
<i>of which: Private clients with mortgages</i>	156,930	147,651	8,579	699	(161)	(27)	(107)	(28)
<i>of which: Real estate financing</i>	46,470	43,112	3,349	9	(41)	(17)	(23)	0
<i>of which: Large corporate clients</i>	12,226	10,733	1,189	303	(130)	(24)	(14)	(92)
<i>of which: SME clients</i>	13,903	12,211	1,342	351	(251)	(26)	(22)	(203)
<i>of which: Lombard</i>	132,287	132,196	0	91	(26)	(9)	0	(17)
<i>of which: Credit cards</i>	1,834	1,420	382	31	(36)	(7)	(10)	(19)
<i>of which: Commodity trade finance</i>	3,272	3,261	0	11	(96)	(6)	0	(90)
Other financial assets measured at amortized cost ²	53,389	52,829	413	147	(86)	(17)	(6)	(63)
<i>of which: Loans to financial advisors</i>	2,611	2,357	128	126	(59)	(7)	(2)	(51)
Total financial assets measured at amortized cost	730,379	712,651	16,044	1,685	(890)	(154)	(199)	(537)
Financial assets measured at fair value through other comprehensive income²	2,239	2,239	0	0	0	0	0	0
Total on-balance sheet financial assets in scope of ECL requirements	732,618	714,889	16,044	1,685	(890)	(154)	(199)	(537)
	Total exposure				ECL provisions			
Off-balance sheet (in scope of ECL)	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Guarantees	22,167	19,805	2,254	108	(48)	(13)	(9)	(26)
<i>of which: Large corporate clients</i>	3,663	2,883	721	58	(26)	(2)	(3)	(21)
<i>of which: SME clients</i>	1,337	1,124	164	49	(5)	(1)	(1)	(3)
<i>of which: Financial intermediaries and hedge funds</i>	11,833	10,513	1,320	0	(12)	(8)	(4)	0
<i>of which: Lombard</i>	2,376	2,376	0	1	(1)	0	0	(1)
<i>of which: Commodity trade finance</i>	2,121	2,121	0	0	(1)	(1)	0	0
Irrevocable loan commitments	39,996	37,531	2,341	124	(111)	(59)	(52)	0
<i>of which: Large corporate clients</i>	23,611	21,488	2,024	99	(93)	(49)	(45)	0
Forward starting reverse repurchase and securities borrowing agreements	3,801	3,801	0	0	0	0	0	0
Unconditionally revocable loan commitments	43,677	41,809	1,833	36	(40)	(32)	(8)	0
<i>of which: Real estate financing</i>	8,711	8,528	183	0	(6)	(6)	0	0
<i>of which: Large corporate clients</i>	4,578	4,304	268	5	(4)	(1)	(2)	0
<i>of which: SME clients</i>	4,723	4,442	256	26	(19)	(16)	(3)	0
<i>of which: Lombard</i>	7,855	7,854	0	1	0	0	0	0
<i>of which: Credit cards</i>	9,390	8,900	487	3	(7)	(5)	(2)	0
<i>of which: Commodity trade finance</i>	327	327	0	0	0	0	0	0
Irrevocable committed prolongation of existing loans	4,696	4,600	94	2	(2)	(2)	0	0
Total off-balance sheet financial instruments and other credit lines	114,337	107,545	6,522	270	(201)	(106)	(69)	(26)
Total allowances and provisions					(1,091)	(260)	(267)	(564)

¹ The carrying amount of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances. ² Effective 1 April 2022, a portfolio of assets previously classified as Financial assets measured at fair value through other comprehensive income was reclassified to Other financial assets measured at amortized cost. Refer to Note 10a for more information.

Note 7 Expected credit loss measurement (continued)

The table below provides information about the ECL gross exposure and the ECL coverage ratio for UBS AG's core loan portfolios (i.e., *Loans and advances to customers* and *Loans to financial advisors*) and relevant off-balance sheet exposures. *Cash and balances at central banks, Loans and advances to banks, Receivables from securities financing transactions, Cash collateral receivables on derivative instruments* and *Financial assets measured at fair value through other comprehensive income* are not included in the table below, due to their lower sensitivity to ECL.

ECL coverage ratios are calculated by dividing ECL allowances and provisions by the gross carrying amount of the related exposures.

Coverage ratios for core loan portfolio		Gross carrying amount (USD m)				ECL coverage (bps)				
		Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 1&2	Stage 3
On-balance sheet										
Private clients with mortgages		163,714	153,488	9,445	781	9	3	92	8	298
Real estate financing		50,098	45,980	4,111	7	9	5	55	9	26
Total real estate lending		213,812	199,468	13,556	788	9	3	80	8	296
Large corporate clients		13,622	11,829	1,320	472	131	31	217	50	2,391
SME clients		12,737	10,808	1,313	616	201	29	157	43	3,298
Total corporate lending		26,360	22,637	2,634	1,089	165	30	187	47	2,904
Lombard		124,537	124,478	0	59	2	1	0	1	2,873
Credit cards		1,978	1,510	413	55	199	53	255	97	3,821
Commodity trade finance		2,304	2,185	0	118	479	30	351	30	8,770
Other loans and advances to customers		29,466	28,550	773	142	17	9	47	10	1,642
Loans to financial advisors		2,643	2,293	177	173	208	24	140	33	2,707
Total other lending		160,927	159,017	1,363	547	18	3	122	4	3,872
Total¹		401,098	381,122	17,553	2,423	23	5	100	9	2,275
Off-balance sheet										
Private clients with mortgages		6,406	6,072	324	11	6	5	22	6	60
Real estate financing		9,757	9,477	280	0	6	8	0	6	0
Total real estate lending		16,163	15,549	603	11	6	7	0	6	60
Large corporate clients		31,238	28,520	2,580	138	28	17	141	28	132
SME clients		7,309	6,814	400	95	53	28	257	41	994
Total corporate lending		38,547	35,334	2,980	233	33	19	156	30	482
Lombard		13,912	13,910	0	1	1	1	0	1	0
Credit cards		9,762	9,274	484	4	7	6	37	8	0
Commodity trade finance		2,555	2,555	0	0	2	2	0	2	0
Financial intermediaries and hedge funds		18,519	18,139	380	0	7	5	90	7	0
Other off-balance sheet commitments		12,613	12,306	296	11	14	6	95	8	0
Total other lending		57,361	56,184	1,160	17	7	4	69	5	0
Total²		112,071	107,067	4,743	261	16	10	114	14	737
Total on- and off-balance sheet³		513,169	488,189	22,296	2,684	21	6	103	10	2,125

¹ Includes Loans and advances to customers and Loans to financial advisors which are presented on the balance sheet line Other assets measured at amortized cost. ² Excludes Forward starting reverse repurchase and securities borrowing agreements. ³ Includes on-balance sheet exposure, gross and off-balance sheet exposure (notional) and the related ECL coverage ratio (bps).

Note 7 Expected credit loss measurement (continued)

Coverage ratios for core loan portfolio					31.3.23				
On-balance sheet	Gross carrying amount (USD m)				ECL coverage (bps)				
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 1&2	Stage 3
Private clients with mortgages	159,580	149,744	9,102	734	11	3	113	9	344
Real estate financing	48,714	45,177	3,529	8	9	4	69	9	22
Total real estate lending	208,294	194,921	12,631	742	10	3	101	9	341
Large corporate clients	13,082	11,236	1,424	422	106	18	115	29	2,424
SME clients	13,853	11,811	1,461	581	175	25	168	41	3,253
Total corporate lending	26,936	23,047	2,886	1,003	142	22	142	35	2,904
Lombard	128,995	128,912	0	74	2	1	0	1	2,286
Credit cards	1,868	1,426	391	52	201	56	255	99	3,793
Commodity trade finance	3,149	3,028	20	101	305	18	11	17	9,001
Other loans and advances to customers	27,002	26,085	825	92	18	7	24	8	3,117
Loans to financial advisors	2,626	2,329	123	174	206	26	145	32	2,659
Total other lending	163,630	161,778	1,360	492	16	3	101	4	4,109
Total¹	398,859	379,746	16,876	2,237	22	4	108	9	2,319

Off-balance sheet	Gross exposure (USD m)				ECL coverage (bps)				
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 1&2	Stage 3
Private clients with mortgages	6,377	6,163	212	3	6	5	28	6	340
Real estate financing	9,298	9,101	197	0	7	8	0	7	0
Total real estate lending	15,675	15,263	409	3	6	7	0	6	340
Large corporate clients	31,375	28,390	2,821	165	38	18	190	34	830
SME clients	7,674	7,124	470	80	55	30	245	44	1,114
Total corporate lending	39,049	35,514	3,290	245	41	21	198	36	923
Lombard	12,456	12,455	0	1	1	1	0	1	0
Credit cards	9,567	9,078	486	3	8	6	36	8	0
Commodity trade finance	2,187	2,187	0	0	4	4	0	4	0
Financial intermediaries and hedge funds	18,159	17,680	479	0	7	5	80	7	0
Other off-balance sheet commitments	11,483	11,086	380	17	18	7	66	9	0
Total other lending	53,852	52,485	1,345	22	8	5	60	6	0
Total²	108,576	103,263	5,044	269	20	10	143	17	1,232
Total on- and off-balance sheet³	507,435	483,009	21,920	2,506	21	6	116	10	2,202

¹ Includes Loans and advances to customers and Loans to financial advisors which are presented on the balance sheet line Other assets measured at amortized cost. ² Excludes Forward starting reverse repurchase and securities borrowing agreements. ³ Includes on-balance sheet exposure, gross and off-balance sheet exposure (notional) and the related ECL coverage ratio (bps).

Coverage ratios for core loan portfolio					31.12.22				
On-balance sheet	Gross carrying amount (USD m)				ECL coverage (bps)				
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 1&2	Stage 3
Private clients with mortgages	157,091	147,678	8,686	727	10	2	123	9	381
Real estate financing	46,511	43,129	3,372	9	9	4	70	9	232
Total real estate lending	203,602	190,807	12,059	736	10	2	108	9	379
Large corporate clients	12,356	10,757	1,204	395	105	22	120	32	2,325
SME clients	14,154	12,237	1,364	553	177	22	161	36	3,664
Total corporate lending	26,510	22,994	2,567	949	144	22	142	34	3,106
Lombard	132,313	132,205	0	108	2	1	0	1	1,580
Credit cards	1,869	1,427	393	50	190	46	256	91	3,779
Commodity trade finance	3,367	3,266	0	101	285	18	0	18	8,901
Other loans and advances to customers	23,149	22,333	748	68	18	6	38	7	3,769
Loans to financial advisors	2,670	2,364	130	176	221	28	124	33	2,870
Total other lending	163,368	161,595	1,270	503	16	3	114	3	4,016
Total¹	393,480	375,396	15,896	2,188	21	4	114	8	2,398

Off-balance sheet	Gross exposure (USD m)				ECL coverage (bps)				
	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 1&2	Stage 3
Private clients with mortgages	6,535	6,296	236	3	5	4	18	4	1,183
Real estate financing	10,054	9,779	275	0	6	7	0	6	0
Total real estate lending	16,589	16,075	511	3	6	6	2	6	1,288
Large corporate clients	32,126	28,950	3,013	163	38	18	165	32	1,263
SME clients	7,122	6,525	499	98	47	30	214	43	304
Total corporate lending	39,247	35,475	3,513	260	40	20	172	34	903
Lombard	12,919	12,918	0	1	2	1	0	1	0
Credit cards	9,390	8,900	487	3	7	5	36	7	0
Commodity trade finance	2,459	2,459	0	0	3	3	0	3	0
Financial intermediaries and hedge funds	18,128	16,464	1,664	0	7	6	25	7	0
Other off-balance sheet commitments	11,803	11,454	346	3	11	8	68	9	0
Total other lending	54,700	52,195	2,498	7	6	5	33	6	0
Total²	110,537	103,745	6,522	270	18	10	106	16	980
Total on- and off-balance sheet³	504,016	479,140	22,418	2,458	21	5	112	10	2,242

¹ Includes Loans and advances to customers and Loans to financial advisors which are presented on the balance sheet line Other assets measured at amortized cost. ² Excludes Forward starting reverse repurchase and securities borrowing agreements. ³ Includes on-balance sheet exposure, gross and off-balance sheet exposure (notional) and the related ECL coverage ratio (bps).

Note 8 Fair value measurement

a) Fair value hierarchy

The fair value hierarchy classification of financial and non-financial assets and liabilities measured at fair value is summarized in the table below.

During the first six months of 2023, assets and liabilities that were transferred from Level 2 to Level 1, or from Level 1 to Level 2, and were held for the entire reporting period were not material.

Determination of fair values from quoted market prices or valuation techniques¹

USD m	30.6.23				31.3.23				31.12.22			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value on a recurring basis												
Financial assets at fair value held for trading	104,834	13,871	1,527	120,232	104,793	12,118	1,099	118,009	96,263	10,284	1,488	108,034
of which: Equity instruments	90,318	453	130	90,901	87,722	295	177	88,193	83,095	789	126	84,010
of which: Government bills / bonds	7,500	2,119	12	9,631	8,902	1,534	23	10,460	5,496	950	18	6,464
of which: Investment fund units	6,123	726	10	6,859	7,187	536	10	7,733	6,673	596	61	7,330
of which: Corporate and municipal bonds	889	9,531	438	10,859	977	7,702	442	9,121	976	6,509	541	8,026
of which: Loans	0	941	821	1,763	0	1,812	329	2,141	0	1,179	628	1,807
of which: Asset-backed securities	4	101	115	220	4	239	118	360	22	261	114	397
Derivative financial instruments	1,042	121,686	1,318	124,046	879	112,066	1,309	114,253	769	147,876	1,464	150,109
of which: Foreign exchange	551	58,332	5	58,889	515	51,733	3	52,251	575	84,882	2	85,459
of which: Interest rate	0	38,982	492	39,474	0	36,339	398	36,737	0	39,345	460	39,805
of which: Equity / index	0	21,944	433	22,378	1	21,180	578	21,759	1	21,542	653	22,195
of which: Credit	0	1,001	361	1,362	0	944	309	1,253	0	719	318	1,038
of which: Commodities	0	1,371	24	1,394	0	1,780	20	1,800	0	1,334	30	1,365
Brokerage receivables	0	21,218	0	21,218	0	21,025	0	21,025	0	17,576	0	17,576
Financial assets at fair value not held for trading	31,296	28,577	3,841	63,714	32,279	30,398	3,834	66,511	26,572	29,110	3,725	59,408
of which: Financial assets for unit-linked investment contracts	14,740	164	0	14,904	14,004	97	0	14,101	13,071	1	0	13,072
of which: Corporate and municipal bonds	61	11,730	236	12,026	86	13,601	241	13,928	35	14,101	230	14,366
of which: Government bills / bonds	16,144	3,976	0	20,120	17,824	3,140	0	20,965	13,103	3,638	0	16,741
of which: Loans	0	3,766	819	4,585	0	3,706	810	4,516	0	3,602	736	4,337
of which: Securities financing transactions	0	8,751	105	8,856	0	9,670	108	9,779	0	7,590	114	7,704
of which: Auction rate securities	0	0	1,321	1,321	0	0	1,321	1,321	0	0	1,326	1,326
of which: Investment fund units	321	190	210	720	295	183	288	766	307	178	190	675
of which: Equity instruments	29	0	990	1,020	70	0	879	949	57	0	792	849
Financial assets measured at fair value through other comprehensive income on a recurring basis												
Financial assets measured at fair value through other comprehensive income	65	2,152	0	2,217	60	2,181	0	2,241	57	2,182	0	2,239
of which: Commercial paper and certificates of deposit	0	1,926	0	1,926	0	1,921	0	1,921	0	1,878	0	1,878
of which: Corporate and municipal bonds	65	217	0	282	60	233	0	293	57	278	0	335
Non-financial assets measured at fair value on a recurring basis												
Precious metals and other physical commodities	4,426	0	0	4,426	4,506	0	0	4,506	4,471	0	0	4,471
Non-financial assets measured at fair value on a non-recurring basis												
Other non-financial assets ²	0	0	16	16	0	0	18	18	0	0	21	21
Total assets measured at fair value	141,663	187,505	6,701	335,870	142,516	177,787	6,260	326,563	128,132	207,028	6,698	341,858

Note 8 Fair value measurement (continued)

Determination of fair values from quoted market prices or valuation techniques (continued) ¹												
USD m	30.6.23				31.3.23				31.12.22			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial liabilities measured at fair value on a recurring basis												
Financial liabilities at fair value held for trading	29,147	6,330	139	35,616	28,332	5,941	101	34,374	23,578	5,823	114	29,515
of which: Equity instruments	20,572	303	73	20,947	19,411	370	58	19,839	16,521	352	78	16,951
of which: Corporate and municipal bonds	31	5,217	61	5,308	33	4,610	38	4,681	36	4,643	27	4,707
of which: Government bills / bonds	7,487	737	0	8,224	7,919	728	0	8,647	5,880	706	1	6,587
of which: Investment fund units	1,057	45	3	1,106	969	204	3	1,176	1,141	84	3	1,229
Derivative financial instruments	974	124,250	2,144	127,367	967	113,051	2,095	116,113	640	152,582	1,684	154,906
of which: Foreign exchange	565	59,112	40	59,718	529	52,706	33	53,267	587	87,897	24	88,508
of which: Interest rate	0	37,861	133	37,994	0	34,317	360	34,677	0	37,429	116	37,545
of which: Equity / index	0	24,398	1,665	26,064	1	23,207	1,365	24,573	0	24,963	1,184	26,148
of which: Credit	0	1,267	260	1,527	0	1,057	286	1,343	0	920	279	1,199
of which: Commodities	0	1,511	30	1,541	0	1,592	33	1,625	0	1,309	52	1,361
Financial liabilities designated at fair value on a recurring basis												
Brokerage payables designated at fair value	0	43,357	0	43,357	0	43,911	0	43,911	0	45,085	0	45,085
Debt issued designated at fair value	0	68,909	9,832	78,741	0	65,845	9,130	74,974	0	62,603	9,240	71,842
Other financial liabilities designated at fair value	0	29,204	2,221	31,425	0	26,083	1,935	28,018	0	30,055	1,978	32,033
of which: Financial liabilities related to unit-linked investment contracts	0	15,055	0	15,055	0	14,243	0	14,243	0	13,221	0	13,221
of which: Securities financing transactions	0	11,344	0	11,344	0	9,707	0	9,707	0	15,333	0	15,333
of which: Funding from UBS Group AG	0	979	1,320	2,299	0	903	1,356	2,259	0	508	1,287	1,796
of which: Over-the-counter debt instruments and others	0	1,826	901	2,727	0	1,230	579	1,809	0	993	691	1,684
Total liabilities measured at fair value	30,121	272,049	14,336	316,506	29,299	254,831	13,260	297,391	24,219	296,148	13,015	333,382

¹ Bifurcated embedded derivatives are presented on the same balance sheet lines as their host contracts and are not included in this table. The fair value of these derivatives was not material for the periods presented.

² Other non-financial assets primarily consist of properties and other non-current assets held for sale, which are measured at the lower of their net carrying amount or fair value less costs to sell.

b) Valuation adjustments

The table below summarizes the changes in deferred day-1 profit or loss reserves during the relevant period.

Deferred day-1 profit or loss is generally released into *Other net income from financial instruments measured at fair value through profit or loss* when the pricing of equivalent products or the underlying parameters become observable or when the transaction is closed out.

Deferred day-1 profit or loss reserves

USD m	For the quarter ended			Year-to-date	
	30.6.23	31.3.23	30.6.22	30.6.23	30.6.22
Reserve balance at the beginning of the period	399	422	425	422	418
Profit / (loss) deferred on new transactions	71	91	86	162	161
(Profit) / loss recognized in the income statement	(75)	(113)	(58)	(188)	(127)
Foreign currency translation	(1)	0	(1)	(1)	(1)
Reserve balance at the end of the period	396	399	451	396	451

The table below summarizes other valuation adjustment reserves recognized on the balance sheet.

Other valuation adjustment reserves on the balance sheet

USD m	As of		
	30.6.23	31.3.23	31.12.22
Own credit adjustments on financial liabilities designated at fair value	405	624	556
of which: debt issued designated at fair value	115	276	289
of which: other financial liabilities designated at fair value	290	347	266
Credit valuation adjustments ¹	(34)	(33)	(33)
Funding valuation adjustments	(102)	(108)	(50)
Debit valuation adjustments	4	6	4
Other valuation adjustments	(726)	(801)	(839)
of which: liquidity	(275)	(299)	(311)
of which: model uncertainty	(451)	(502)	(529)

¹ Amount does not include reserves against defaulted counterparties.

Note 8 Fair value measurement (continued)

c) Level 3 instruments: valuation techniques and inputs

The table below presents material Level 3 assets and liabilities, together with the valuation techniques used to measure fair value, as well as the inputs used in a given valuation technique that are considered significant as of 30 June 2023 and unobservable, and a range of values for those unobservable inputs.

The range of values represents the highest- and lowest-level inputs used in the valuation techniques. Therefore, the range does not reflect the level of uncertainty regarding a particular input or an assessment of the reasonableness of UBS AG's estimates and assumptions, but rather the different underlying characteristics of the relevant assets and liabilities held by UBS AG.

The significant unobservable inputs disclosed in the table below are consistent with those included in "Note 20 Fair value measurement" in the "Consolidated financial statements" section of the Annual Report 2022.

Valuation techniques and inputs used in the fair value measurement of Level 3 assets and liabilities

USD bn	Fair value				Valuation technique(s)	Significant unobservable input(s) ¹	Range of inputs						unit ¹
	Assets		Liabilities				30.6.23			31.12.22			
	30.6.23	31.12.22	30.6.23	31.12.22			low	high	weighted average ²	low	high	weighted average ²	
Financial assets and liabilities at fair value held for trading and Financial assets at fair value not held for trading													
<i>Corporate and municipal bonds</i>	0.7	0.8	0.1	0.0	Relative value to market comparable	Bond price equivalent	4	99	73	14	112	85	points
					Discounted expected cash flows	Discount margin	391	391		412	412		basis points
<i>Traded loans, loans measured at fair value, loan commitments and guarantees</i>	1.8	1.7	0.0	0.0	Relative value to market comparable	Loan price equivalent	34	100	98	30	100	97	points
					Discounted expected cash flows	Credit spread	200	275	249	200	200	200	basis points
					Market comparable and securitization model	Credit spread	165	1,544	349	145	1,350	322	basis points
<i>Auction rate securities</i>	1.3	1.3			Discounted expected cash flows	Credit spread	115	209	156	115	196	144	basis points
<i>Investment fund units³</i>	0.2	0.3	0.0	0.0	Relative value to market comparable	Net asset value							
<i>Equity instruments³</i>	1.1	0.9	0.1	0.1	Relative value to market comparable	Price							
Debt issued designated at fair value⁴			9.8	9.2									
Other financial liabilities designated at fair value			2.2	2.0	Discounted expected cash flows	Funding spread	25	175		23	175		basis points
Derivative financial instruments													
<i>Interest rate</i>	0.5	0.5	0.1	0.1	Option model	Volatility of interest rates	69	129		75	143		basis points
<i>Credit</i>	0.4	0.3	0.3	0.3	Discounted expected cash flows	Credit spreads	9	538		9	565		basis points
						Bond price equivalent	3	281		3	277		points
<i>Equity / index</i>	0.4	0.7	1.7	1.2	Option model	Equity dividend yields	0	9		0	20		%
						Volatility of equity stocks, equity and other indices	4	138		4	120		%
						Equity-to-FX correlation	(40)	84		(29)	84		%
						Equity-to-equity correlation	(25)	99		(25)	100		%

¹ The ranges of significant unobservable inputs are represented in points, percentages and basis points. Points are a percentage of par (e.g., 100 points would be 100% of par). ² Weighted averages are provided for most non-derivative financial instruments and were calculated by weighting inputs based on the fair values of the respective instruments. Weighted averages are not provided for inputs related to Other financial liabilities designated at fair value and Derivative financial instruments, as this would not be meaningful. ³ The range of inputs is not disclosed, as there is a dispersion of values given the diverse nature of the investments. ⁴ Debt issued designated at fair value primarily consists of UBS AG structured notes, which include variable maturity notes with various equity and foreign exchange underlying risks, as well as rates-linked and credit-linked notes, all of which have embedded derivative parameters that are considered to be unobservable. The equivalent derivative instrument parameters are presented in the respective derivative financial instruments lines in this table.

Note 8 Fair value measurement (continued)

d) Level 3 instruments: sensitivity to changes in unobservable input assumptions

The table below summarizes those financial assets and liabilities classified as Level 3 for which a change in one or more of the unobservable inputs to reflect reasonably possible alternative assumptions would change fair value significantly, and the estimated effect thereof.

The sensitivity data shown below presents an estimation of valuation uncertainty based on reasonably possible alternative values for Level 3 inputs at the balance sheet date and does not represent the estimated effect of stress scenarios. Typically, these financial assets and liabilities are sensitive to a combination of inputs from Levels 1–3. Although well-defined interdependencies may exist between Level 1 / 2 parameters and Level 3 parameters (e.g., between interest rates, which are generally Level 1 or Level 2, and prepayments, which are generally Level 3), these have not been incorporated in the table. Furthermore, direct interrelationships between the Level 3 parameters are not a significant element of the valuation uncertainty.

Sensitivity of fair value measurements to changes in unobservable input assumptions¹

USD m	30.6.23		31.3.23		31.12.22	
	Favorable changes	Unfavorable changes	Favorable changes	Unfavorable changes	Favorable changes	Unfavorable changes
Traded loans, loans measured at fair value, loan commitments and guarantees	12	(6)	12	(13)	19	(12)
Securities financing transactions	27	(18)	27	(29)	33	(37)
Auction rate securities	44	(44)	45	(45)	46	(46)
Asset-backed securities	29	(28)	29	(27)	27	(27)
Equity instruments	193	(169)	188	(164)	183	(161)
Interest rate derivatives, net	5	(18)	20	(13)	18	(12)
Credit derivatives, net	4	(3)	3	(5)	3	(4)
Foreign exchange derivatives, net	6	(6)	4	(5)	10	(5)
Equity / index derivatives, net	350	(318)	371	(338)	361	(330)
Other	60	(56)	93	(105)	39	(62)
Total	730	(666)	791	(744)	738	(696)

¹ Sensitivity of issued and over-the-counter debt instruments is reported with the equivalent derivative or Other.

e) Level 3 instruments: movements during the period

The table below presents additional information about material Level 3 assets and liabilities measured at fair value on a recurring basis. Level 3 assets and liabilities may be hedged with instruments classified as Level 1 or Level 2 in the fair value hierarchy and, as a result, realized and unrealized gains and losses included in the table may not include the effect of related hedging activity. Furthermore, the realized and unrealized gains and losses presented in the table are not limited solely to those arising from Level 3 inputs, as valuations are generally derived from both observable and unobservable parameters.

Assets and liabilities transferred into or out of Level 3 are presented as if those assets or liabilities had been transferred at the beginning of the year.

Note 8 Fair value measurement (continued)

Movements of Level 3 instruments											
<i>USD bn</i>	Balance at the beginning of the period	Net gains / losses included in comprehensive income ¹	<i>of which: related to instruments held at the end of the period</i>	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation	Balance at the end of the period
For the six months ended 30 June 2023²											
Financial assets at fair value held for trading											
	1.5	0.0	(0.0)	0.2	(0.7)	0.7	0.0	0.1	(0.3)	0.0	1.5
<i>of which: Investment fund units</i>	0.1	(0.0)	(0.0)	0.0	(0.0)	0.0	0.0	0.0	(0.0)	0.0	0.0
<i>of which: Corporate and municipal bonds</i>	0.5	(0.0)	(0.0)	0.1	(0.2)	0.0	0.0	0.0	(0.0)	0.0	0.4
<i>of which: Loans</i>	0.6	0.0	0.0	0.0	(0.3)	0.7	0.0	0.0	(0.2)	0.0	0.8
Derivative financial instruments – assets											
	1.5	(0.2)	(0.2)	0.0	0.0	0.4	(0.2)	0.1	(0.2)	0.0	1.3
<i>of which: Interest rate</i>	0.5	0.0	(0.0)	0.0	0.0	0.1	(0.0)	0.0	(0.0)	(0.0)	0.5
<i>of which: Equity / index</i>	0.7	(0.2)	(0.1)	0.0	0.0	0.3	(0.2)	0.0	(0.2)	(0.0)	0.4
<i>of which: Credit</i>	0.3	(0.1)	(0.1)	0.0	0.0	0.1	(0.0)	0.0	(0.0)	0.0	0.4
Financial assets at fair value not held for trading											
	3.7	0.0	0.0	0.5	(0.4)	0.0	0.0	0.1	(0.1)	0.0	3.8
<i>of which: Loans</i>	0.7	0.0	0.0	0.2	(0.0)	0.0	0.0	0.0	(0.1)	(0.0)	0.8
<i>of which: Auction rate securities</i>	1.3	0.0	0.0	0.0	(0.0)	0.0	0.0	0.0	0.0	0.0	1.3
<i>of which: Equity instruments</i>	0.8	0.0	0.0	0.2	(0.1)	0.0	0.0	0.0	0.0	0.0	1.0
Derivative financial instruments – liabilities											
	1.7	0.2	0.2	0.0	0.0	0.7	(0.3)	0.1	(0.3)	0.0	2.1
<i>of which: Interest rate</i>	0.1	(0.0)	0.0	0.0	0.0	0.1	(0.1)	0.0	0.0	0.0	0.1
<i>of which: Equity / index</i>	1.2	0.2	0.2	0.0	0.0	0.5	(0.2)	0.0	(0.1)	0.0	1.7
<i>of which: Credit</i>	0.3	(0.0)	(0.0)	0.0	0.0	0.1	0.0	0.1	(0.2)	(0.0)	0.3
Debt issued designated at fair value											
	9.2	0.5	0.4	0.0	0.0	2.3	(2.0)	0.6	(0.8)	(0.0)	9.8
Other financial liabilities designated at fair value											
	2.0	0.1	0.1	0.0	0.0	0.2	(0.0)	0.0	(0.0)	(0.0)	2.2
For the six months ended 30 June 2022											
Financial assets at fair value held for trading											
	2.3	(0.1)	(0.2)	0.3	(1.3)	1.0	0.0	0.1	(0.3)	(0.0)	1.9
<i>of which: Investment fund units</i>	0.0	(0.0)	(0.0)	0.0	(0.0)	0.0	0.0	0.0	(0.0)	(0.0)	0.0
<i>of which: Corporate and municipal bonds</i>	0.6	(0.0)	(0.0)	0.2	(0.1)	0.0	0.0	0.0	(0.0)	(0.0)	0.7
<i>of which: Loans</i>	1.4	(0.1)	(0.1)	0.0	(1.2)	1.0	0.0	0.0	(0.2)	(0.0)	1.0
Derivative financial instruments – assets											
	1.1	0.5	0.6	0.0	0.0	0.5	(0.4)	0.2	(0.2)	(0.0)	1.8
<i>of which: Interest rate</i>	0.5	0.1	0.1	0.0	0.0	0.0	(0.1)	0.1	(0.1)	(0.0)	0.4
<i>of which: Equity / index</i>	0.4	0.3	0.3	0.0	0.0	0.2	(0.2)	0.0	(0.0)	(0.0)	0.7
<i>of which: Credit</i>	0.2	0.1	0.1	0.0	0.0	0.2	(0.0)	0.1	0.0	0.0	0.6
Financial assets at fair value not held for trading											
	4.2	0.1	0.1	0.6	(0.6)	0.0	(0.0)	0.0	(0.1)	(0.1)	4.2
<i>of which: Loans</i>	0.9	(0.0)	(0.0)	0.5	(0.2)	0.0	0.0	0.0	(0.1)	(0.0)	1.0
<i>of which: Auction rate securities</i>	1.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6
<i>of which: Equity instruments</i>	0.7	0.0	0.0	0.0	(0.1)	0.0	0.0	0.0	0.0	(0.0)	0.7
Derivative financial instruments – liabilities											
	2.2	(0.6)	(0.6)	0.0	0.0	0.9	(0.8)	0.1	(0.1)	(0.1)	1.7
<i>of which: Interest rate</i>	0.3	(0.2)	(0.2)	0.0	0.0	0.1	(0.0)	0.0	0.0	(0.0)	0.1
<i>of which: Equity / index</i>	1.5	(0.3)	(0.3)	0.0	0.0	0.6	(0.7)	0.0	(0.1)	(0.0)	1.1
<i>of which: Credit</i>	0.3	(0.1)	(0.1)	0.0	0.0	0.1	0.0	0.1	(0.0)	(0.0)	0.4
Debt issued designated at fair value											
	11.9	(1.9)	(1.6)	0.0	0.0	4.2	(2.7)	0.7	(1.3)	(0.4)	10.5
Other financial liabilities designated at fair value											
	3.2	(0.7)	(0.7)	0.0	0.0	0.2	(0.1)	0.0	(0.2)	(0.0)	2.4

¹ Net gains / losses included in comprehensive income are recognized in Net interest income and Other net income from financial instruments measured at fair value through profit or loss in the Income statement, and also in Gains / (losses) from own credit on financial liabilities designated at fair value, before tax in the Statement of comprehensive income. ² Total Level 3 assets as of 30 June 2023 were USD 6.7bn (31 December 2022: USD 6.7bn). Total Level 3 liabilities as of 30 June 2023 were USD 14.3bn (31 December 2022: USD 13.0bn).

Note 8 Fair value measurement (continued)

f) Financial instruments not measured at fair value

The table below reflects the estimated fair values of financial instruments not measured at fair value. Valuation principles applied when determining fair value estimates for financial instruments not measured at fair value are consistent with those described in "Note 20 Fair value measurement" in the "Consolidated financial statements" section of the Annual Report 2022.

Financial instruments not measured at fair value

<i>USD bn</i>	30.6.23		31.3.23		31.12.22	
	Carrying amount	Fair value	Carrying amount	Fair value	Carrying amount	Fair value
Assets						
Cash and balances at central banks	159.4	159.4	144.2	144.2	169.4	169.4
Loans and advances to banks	21.4	21.4	14.8	14.8	14.7	14.6
Receivables from securities financing transactions measured at amortized cost	62.0	62.0	60.0	60.0	67.8	67.8
Cash collateral receivables on derivative instruments	35.1	35.1	32.7	32.6	35.0	35.0
Loans and advances to customers	397.6	385.1	395.4	383.8	390.0	377.7
Other financial assets measured at amortized cost	52.2	51.8	49.3	49.0	53.4	51.0
Liabilities						
Amounts due to banks	16.3	16.3	13.6	13.6	11.6	11.6
Payables from securities financing transactions measured at amortized cost	12.3	12.3	9.9	9.9	4.2	4.2
Cash collateral payables on derivative instruments	31.4	31.4	32.2	32.2	36.4	36.4
Customer deposits	521.7	521.4	507.8	507.2	527.2	526.9
Funding from UBS Group AG measured at amortized cost	61.4	60.3	63.1	61.2	56.1	55.7
Debt issued measured at amortized cost	62.6	62.0	54.7	54.0	59.5	58.9
Other financial liabilities measured at amortized cost ¹	8.6	8.6	7.5	7.5	7.2	7.2

¹ Excludes lease liabilities.

Note 9 Derivative instruments

a) Derivative instruments

	Derivative financial assets	Derivative financial liabilities	Notional values related to derivative financial assets and liabilities ¹	Other notional values ²
<i>As of 30.6.23, USD bn</i>				
Derivative financial instruments				
Interest rate	39.5	38.0	2,356	15,180
Credit derivatives	1.4	1.5	90	
Foreign exchange	58.9	59.7	6,636	78
Equity / index	22.4	26.1	1,001	77
Commodities	1.4	1.5	141	16
Other ³	0.5	0.5	121	
Total derivative financial instruments, based on IFRS netting⁴	124.0	127.4	10,345	15,351
Further netting potential not recognized on the balance sheet ⁵	(114.0)	(116.0)		
<i>of which: netting of recognized financial liabilities / assets</i>	<i>(92.8)</i>	<i>(92.8)</i>		
<i>of which: netting with collateral received / pledged</i>	<i>(21.2)</i>	<i>(23.2)</i>		
Total derivative financial instruments, after consideration of further netting potential	10.1	11.4		

<i>As of 31.3.23, USD bn</i>				
Derivative financial instruments				
Interest rate	36.7	34.7	2,345	13,842
Credit derivatives	1.3	1.3	86	
Foreign exchange	52.3	53.3	6,610	56
Equity / index	21.8	24.6	932	76
Commodities	1.8	1.6	146	19
Other ³	0.4	0.6	106	
Total derivative financial instruments, based on IFRS netting⁴	114.3	116.1	10,224	13,993
Further netting potential not recognized on the balance sheet ⁵	(105.4)	(104.3)		
<i>of which: netting of recognized financial liabilities / assets</i>	<i>(84.9)</i>	<i>(84.9)</i>		
<i>of which: netting with collateral received / pledged</i>	<i>(20.5)</i>	<i>(19.4)</i>		
Total derivative financial instruments, after consideration of further netting potential	8.8	11.8		

<i>As of 31.12.22, USD bn</i>				
Derivative financial instruments				
Interest rate	39.8	37.5	2,080	11,255
Credit derivatives	1.0	1.2	74	
Foreign exchange	85.5	88.5	6,080	40
Equity / index	22.2	26.1	886	63
Commodities	1.4	1.4	132	18
Other ³	0.2	0.1	50	
Total derivative financial instruments, based on IFRS netting⁴	150.1	154.9	9,302	11,376
Further netting potential not recognized on the balance sheet ⁵	(139.4)	(137.1)		
<i>of which: netting of recognized financial liabilities / assets</i>	<i>(110.9)</i>	<i>(110.9)</i>		
<i>of which: netting with collateral received / pledged</i>	<i>(28.5)</i>	<i>(26.2)</i>		
Total derivative financial instruments, after consideration of further netting potential	10.7	17.8		

¹ In cases where derivative financial instruments are presented on a net basis on the balance sheet, the respective notional values of the netted derivative financial instruments are still presented on a gross basis. Notional amounts of client-cleared ETD and OTC transactions through central clearing counterparties are not disclosed, as they have a significantly different risk profile. ² Other notional values relate to derivatives that are cleared through either a central counterparty or an exchange. The fair value of these derivatives is presented on the balance sheet net of the corresponding cash margin under Cash collateral receivables on derivative instruments and Cash collateral payables on derivative instruments and was not material for all periods presented. ³ Includes mainly Loan commitments measured at FVTPL, as well as unsettled purchases and sales of non-derivative financial instruments, for which the changes in the fair value between trade date and settlement date are recognized as derivative financial instruments. ⁴ Financial assets and liabilities are presented net on the balance sheet if UBS AG has the unconditional and legally enforceable right to offset the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of UBS AG or its counterparties, and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. ⁵ Reflects the netting potential in accordance with enforceable master netting and similar arrangements where not all criteria for a net presentation on the balance sheet have been met. Refer to "Note 21 Offsetting financial assets and financial liabilities" in the "Consolidated financial statements" section of the Annual Report 2022 for more information.

Note 9 Derivative instruments (continued)

b) Cash collateral on derivative instruments

<i>USD bn</i>	Receivables 30.6.23	Payables 30.6.23	Receivables 31.3.23	Payables 31.3.23	Receivables 31.12.22	Payables 31.12.22
Cash collateral on derivative instruments, based on IFRS netting ¹	35.1	31.4	32.7	32.2	35.0	36.4
Further netting potential not recognized on the balance sheet ²	(22.9)	(18.8)	(18.6)	(17.3)	(22.9)	(21.9)
<i>of which: netting of recognized financial liabilities / assets</i>	<i>(20.3)</i>	<i>(16.1)</i>	<i>(15.6)</i>	<i>(14.3)</i>	<i>(20.9)</i>	<i>(20.0)</i>
<i>of which: netting with collateral received / pledged</i>	<i>(2.6)</i>	<i>(2.6)</i>	<i>(3.0)</i>	<i>(3.0)</i>	<i>(1.9)</i>	<i>(1.9)</i>
Cash collateral on derivative instruments, after consideration of further netting potential	12.1	12.7	14.1	14.9	12.1	14.5

¹ Financial assets and liabilities are presented net on the balance sheet if UBS AG has the unconditional and legally enforceable right to offset the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of UBS AG or its counterparties, and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. ² Reflects the netting potential in accordance with enforceable master netting and similar arrangements where not all criteria for a net presentation on the balance sheet have been met. Refer to "Note 21 Offsetting financial assets and financial liabilities" in the "Consolidated financial statements" section of the Annual Report 2022 for more information.

Note 10 Other assets and liabilities

a) Other financial assets measured at amortized cost

<i>USD m</i>	30.6.23	31.3.23	31.12.22
Debt securities	41,521	40,646	44,594
Loans to financial advisors	2,588	2,571	2,611
Fee- and commission-related receivables	1,822	1,922	1,803
Finance lease receivables	1,376	1,344	1,314
Settlement and clearing accounts	395	542	1,174
Accrued interest income	1,430	1,340	1,276
Other	3,048	924	618
Total other financial assets measured at amortized cost	52,180	49,289	53,389

b) Other non-financial assets

<i>USD m</i>	30.6.23	31.3.23	31.12.22
Precious metals and other physical commodities	4,426	4,506	4,471
Deposits and collateral provided in connection with litigation, regulatory and similar matters ¹	2,250	2,235	2,205
Prepaid expenses	1,019	848	709
VAT, withholding tax and other tax receivables	707	1,830	1,405
Properties and other non-current assets held for sale	111	279	279
Other	741	670	583
Total other non-financial assets	9,254	10,367	9,652

¹ Refer to Note 15 for more information.

c) Other financial liabilities measured at amortized cost

<i>USD m</i>	30.6.23	31.3.23	31.12.22
Other accrued expenses	1,543	1,613	1,564
Accrued interest expenses	2,577	1,954	2,008
Settlement and clearing accounts	1,499	1,533	1,060
Lease liabilities	3,105	3,174	3,211
Other	2,948	2,422	2,549
Total other financial liabilities measured at amortized cost	11,673	10,695	10,391

d) Other financial liabilities designated at fair value

<i>USD m</i>	30.6.23	31.3.23	31.12.22
Financial liabilities related to unit-linked investment contracts	15,055	14,243	13,221
Securities financing transactions	11,344	9,707	15,333
Over-the-counter debt instruments and other	2,727	1,809	1,684
Funding from UBS Group AG	2,299	2,259	1,796
Total other financial liabilities designated at fair value	31,425	28,018	32,033

Note 10 Other assets and liabilities (continued)

e) Other non-financial liabilities

USD m	30.6.23	31.3.23	31.12.22
Compensation-related liabilities	3,248	2,628	4,424
<i>of which: net defined benefit liability</i>	455	463	449
Current tax liabilities	991	952	1,044
Deferred tax liabilities	212	261	233
VAT, withholding tax and other tax payables	514	481	472
Deferred income	280	288	233
Other	86	62	84
Total other non-financial liabilities	5,330	4,673	6,489

Note 11 Funding from UBS Group AG measured at amortized cost

USD m	30.6.23	31.3.23	31.12.22
Senior unsecured debt that contributes to total loss-absorbing capacity (TLAC)	48,546	47,172	42,073
Senior unsecured debt other than TLAC	1,180	3,606	236
Subordinated debt	11,719	12,315	13,838
<i>of which: eligible as high-trigger loss-absorbing additional tier 1 capital instruments</i>	10,528	11,118	10,654
<i>of which: eligible as low-trigger loss-absorbing additional tier 1 capital instruments</i>	1,189	1,198	1,187
Total funding from UBS Group AG measured at amortized cost¹	61,445	63,093	56,147

¹ UBS AG has also recognized funding from UBS Group AG that is designated at fair value. Refer to Note 10d for more information.

Note 12 Debt issued designated at fair value

USD m	30.6.23	31.3.23	31.12.22
Issued debt instruments			
Equity-linked ¹	45,475	44,721	41,901
Rates-linked	15,945	15,797	16,276
Credit-linked	4,230	2,815	2,170
Fixed-rate	8,378	6,673	6,538
Commodity-linked	3,979	4,311	4,294
Other	734	656	663
Total debt issued designated at fair value	78,741	74,974	71,842
<i>of which: issued by UBS AG with original maturity greater than one year²</i>	<i>64,047</i>	<i>60,268</i>	<i>57,750</i>

¹ Includes investment fund unit-linked instruments issued. ² Based on original contractual maturity without considering any early redemption features. As of 30 June 2023, 100% of the balance was unsecured (31 March 2023: 100%; 31 December 2022: 100%).

Note 13 Debt issued measured at amortized cost

USD m	30.6.23	31.3.23	31.12.22
Short-term debt¹	35,590	27,412	29,676
Senior unsecured debt	14,920	15,472	17,892
<i>of which: issued by UBS AG with original maturity greater than one year</i>	<i>14,918</i>	<i>15,472</i>	<i>17,892</i>
Subordinated debt	2,976	2,975	2,968
<i>of which: eligible as low-trigger loss-absorbing tier 2 capital instruments</i>	<i>0</i>	<i>2,438</i>	<i>2,422</i>
<i>of which: eligible as non-Basel III-compliant tier 2 capital instruments</i>	<i>539</i>	<i>538</i>	<i>536</i>
Debt issued through the Swiss central mortgage institutions	9,076	8,873	8,962
Long-term debt²	26,971	27,320	29,823
Total debt issued measured at amortized cost³	62,561	54,733	59,499

¹ Debt with an original contractual maturity of less than one year, includes mainly certificates of deposit and commercial paper. ² Debt with an original contractual maturity greater than or equal to one year. The classification of debt issued into short-term and long-term does not consider any early redemption features. ³ Net of bifurcated embedded derivatives, the fair value of which was not material for the periods presented.

Note 14 Interest rate benchmark reform

During 2023, UBS AG has largely completed the transition of the remaining USD London Interbank Offered Rate (LIBOR) contracts. The transition of the largest remaining non-derivative exposure, the US mortgage portfolio of approximately USD 9bn as of 31 December 2022, had been substantially completed as of 30 June 2023, with these contracts automatically converting to term Secured Overnight Financing Rate (SOFR) from their next interest rate reset date following the cessation of the respective USD LIBOR rates, i.e., 30 June 2023. Corporate loans in the Investment Bank have now either been transitioned to alternative rates or are temporarily utilizing the last available USD LIBOR fixing to complete transition, with a small residual amount relying on synthetic LIBOR rates.

In August 2022, to facilitate the transition of derivatives linked to the USD LIBOR Swap Rate, UBS AG adhered to the June 2022 Benchmark Module of the ISDA 2021 Fallbacks Protocol on the USD LIBOR Swap Rate. The majority of these contracts had transitioned as of 30 June 2023, with a small number of contracts transitioned in July 2023. The transition of USD LIBOR-cleared derivatives has been effected through industry-wide central clearing counterparty conversion events that occurred primarily in April and May 2023. As of 30 June 2023 the transition of these USD LIBOR-linked derivatives has been materially accomplished.

UBS AG has approximately USD 3bn equivalent of Japanese yen- and US dollar-denominated funding from UBS Group AG that, per current contractual terms, if not called on their respective call dates, would reset based directly on JPY LIBOR and USD LIBOR. In addition, several contracts providing funding from UBS Group AG reference rates indirectly derived from IBORs, if they are not called on their respective call dates. These contracts have robust IBOR fallback language and the confirmation of interest rate calculation mechanics will be communicated in advance of any rate resets.

Note 15 Provisions and contingent liabilities

a) Provisions

The table below presents an overview of total provisions.

<i>USD m</i>	30.6.23	31.3.23	31.12.22
Provisions other than provisions for expected credit losses	3,641	3,673	2,982
Provisions for expected credit losses ¹	175	214	201
Total provisions	3,817	3,886	3,183

¹ Refer to Note 7c for more information.

The following table presents additional information for provisions other than provisions for expected credit losses.

<i>USD m</i>	Litigation, regulatory and similar matters ¹	Other ²	Total
Balance as of 31 December 2022	2,586	396	2,982
Balance as of 31 March 2023	3,306	366	3,673
Increase in provisions recognized in the income statement	56	12	68
Release of provisions recognized in the income statement	(1)	(3)	(4)
Provisions used in conformity with designated purpose	(83)	(33)	(116)
Foreign currency translation and other movements ³	10	11	21
Balance as of 30 June 2023	3,289	353	3,641

¹ Consists of provisions for losses resulting from legal, liability and compliance risks. ² Mainly includes restructuring provisions and provisions related to real estate, employee benefits and operational risks. ³ Other movements include capitalized reinstatement costs and unwinding of discount.

Information about provisions and contingent liabilities in respect of litigation, regulatory and similar matters, as a class, is included in Note 15b. There are no material contingent liabilities associated with the other classes of provisions.

Note 15 Provisions and contingent liabilities (continued)

b) Litigation, regulatory and similar matters

UBS operates in a legal and regulatory environment that exposes it to significant litigation and similar risks arising from disputes and regulatory proceedings. As a result, UBS is involved in various disputes and legal proceedings, including litigation, arbitration, and regulatory and criminal investigations. "UBS," "we" and "our", for purposes of this Note, refer to UBS AG and / or one or more of its subsidiaries, as applicable.

Such matters are subject to many uncertainties, and the outcome and the timing of resolution are often difficult to predict, particularly in the earlier stages of a case. There are also situations where UBS may enter into a settlement agreement. This may occur in order to avoid the expense, management distraction or reputational implications of continuing to contest liability, even for those matters for which UBS believes it should be exonerated. The uncertainties inherent in all such matters affect the amount and timing of any potential outflows for both matters with respect to which provisions have been established and other contingent liabilities. UBS makes provisions for such matters brought against it when, in the opinion of management after seeking legal advice, it is more likely than not that UBS has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required, and the amount can be reliably estimated. Where these factors are otherwise satisfied, a provision may be established for claims that have not yet been asserted against UBS, but are nevertheless expected to be, based on UBS's experience with similar asserted claims. If any of those conditions is not met, such matters result in contingent liabilities. If the amount of an obligation cannot be reliably estimated, a liability exists that is not recognized even if an outflow of resources is probable. Accordingly, no provision is established even if the potential outflow of resources with respect to such matters could be significant. Developments relating to a matter that occur after the relevant reporting period, but prior to the issuance of financial statements, which affect management's assessment of the provision for such matter (because, for example, the developments provide evidence of conditions that existed at the end of the reporting period), are adjusting events after the reporting period under IAS 10 and must be recognized in the financial statements for the reporting period.

Specific litigation, regulatory and other matters are described below, including all such matters that management considers to be material and others that management believes to be of significance to UBS due to potential financial, reputational and other effects. The amount of damages claimed, the size of a transaction or other information is provided where available and appropriate in order to assist users in considering the magnitude of potential exposures.

In the case of certain matters below, we state that we have established a provision, and for the other matters, we make no such statement. When we make this statement and we expect disclosure of the amount of a provision to prejudice seriously our position with other parties in the matter because it would reveal what UBS believes to be the probable and reliably estimable outflow, we do not disclose that amount. In some cases we are subject to confidentiality obligations that preclude such disclosure. With respect to the matters for which we do not state whether we have established a provision, either: (a) we have not established a provision, in which case the matter is treated as a contingent liability under the applicable accounting standard; or (b) we have established a provision but expect disclosure of that fact to prejudice seriously our position with other parties in the matter because it would reveal the fact that UBS believes an outflow of resources to be probable and reliably estimable.

With respect to certain litigation, regulatory and similar matters for which we have established provisions, we are able to estimate the expected timing of outflows. However, the aggregate amount of the expected outflows for those matters for which we are able to estimate expected timing is immaterial relative to our current and expected levels of liquidity over the relevant time periods.

The aggregate amount provisioned for litigation, regulatory and similar matters as a class is disclosed in the "Provisions" table in Note 15a above. It is not practicable to provide an aggregate estimate of liability for our litigation, regulatory and similar matters as a class of contingent liabilities. Doing so would require UBS to provide speculative legal assessments as to claims and proceedings that involve unique fact patterns or novel legal theories, that have not yet been initiated or are at early stages of adjudication, or as to which alleged damages have not been quantified by the claimants. Although UBS therefore cannot provide a numerical estimate of the future losses that could arise from litigation, regulatory and similar matters, UBS believes that the aggregate amount of possible future losses from this class that are more than remote substantially exceeds the level of current provisions.

Note 15 Provisions and contingent liabilities (continued)

Litigation, regulatory and similar matters may also result in non-monetary penalties and consequences. A guilty plea to, or conviction of, a crime could have material consequences for UBS. Resolution of regulatory proceedings may require UBS to obtain waivers of regulatory disqualifications to maintain certain operations, may entitle regulatory authorities to limit, suspend or terminate licenses and regulatory authorizations, and may permit financial market utilities to limit, suspend or terminate UBS's participation in such utilities. Failure to obtain such waivers, or any limitation, suspension or termination of licenses, authorizations or participations, could have material consequences for UBS.

The risk of loss associated with litigation, regulatory and similar matters is a component of operational risk for purposes of determining capital requirements. Information concerning our capital requirements and the calculation of operational risk for this purpose is included in the "Capital management" section of this report.

Provisions for litigation, regulatory and similar matters by business division and in Group Functions¹

<i>USD m</i>	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Group Functions	Total
Balance as of 31 December 2022	1,182	159	8	308	928	2,586
Balance as of 31 March 2023	1,193	161	8	351	1,594	3,306
Increase in provisions recognized in the income statement	35	0	1	20	0	56
Release of provisions recognized in the income statement	(1)	0	0	0	0	(1)
Provisions used in conformity with designated purpose	(37)	0	(1)	(45)	0	(83)
Foreign currency translation / unwind of discount	7	1	0	1	1	10
Balance as of 30 June 2023	1,196	162	8	327	1,595	3,289

¹ Provisions, if any, for the matters described in item 3 of this Note are recorded in Global Wealth Management, and provisions, if any, for the matters described in item 2 are recorded in Group Functions. Provisions, if any, for the matters described in items 1 and 5 of this Note are allocated between Global Wealth Management and Personal & Corporate Banking, and provisions, if any, for the matters described in item 4 are allocated between the Investment Bank and Group Functions.

1. Inquiries regarding cross-border wealth management businesses

Tax and regulatory authorities in a number of countries have made inquiries, served requests for information or examined employees located in their respective jurisdictions relating to the cross-border wealth management services provided by UBS and other financial institutions.

Since 2013, UBS (France) S.A., UBS AG and certain former employees have been under investigation in France in relation to UBS's cross-border business with French clients. In connection with this investigation, the investigating judges ordered UBS AG to provide bail ("*caution*") of EUR 1.1bn.

In 2019, the court of first instance returned a verdict finding UBS AG guilty of unlawful solicitation of clients on French territory and aggravated laundering of the proceeds of tax fraud, and UBS (France) S.A. guilty of aiding and abetting unlawful solicitation and of laundering the proceeds of tax fraud. The court imposed fines aggregating EUR 3.7bn on UBS AG and UBS (France) S.A. and awarded EUR 800m of civil damages to the French state. A trial in the French Court of Appeal took place in March 2021. In December 2021, the Court of Appeal found UBS AG guilty of unlawful solicitation and aggravated laundering of the proceeds of tax fraud. The court ordered a fine of EUR 3.75m, the confiscation of EUR 1bn, and awarded civil damages to the French state of EUR 800m. UBS AG has filed an appeal with the French Supreme Court. A hearing in the Supreme Court is currently scheduled for 27 September 2023. The fine and confiscation imposed by the Court of Appeal are suspended during the appeal. The civil damages award has been paid to the French state (EUR 99m of which was deducted from the bail), subject to the result of UBS's appeal.

Our balance sheet at 30 June 2023 reflected provisions with respect to this matter in an amount of EUR 1.1bn (USD 1.2bn). The wide range of possible outcomes in this case contributes to a high degree of estimation uncertainty and the provision reflects our best estimate of possible financial implications, although actual penalties and civil damages could exceed (or may be less than) the provision amount.

Note 15 Provisions and contingent liabilities (continued)

2. Claims related to sales of residential mortgage-backed securities and mortgages

From 2002 through 2007, prior to the crisis in the US residential loan market, UBS was a substantial issuer and underwriter of US residential mortgage-backed securities (RMBS) and was a purchaser and seller of US residential mortgages.

In 2018, the DOJ filed a civil complaint in the District Court for the Eastern District of New York. The complaint seeks unspecified civil monetary penalties under the Financial Institutions Reform, Recovery and Enforcement Act of 1989 related to UBS's issuance, underwriting and sale of 40 RMBS transactions in 2006 and 2007. UBS moved to dismiss the civil complaint in 2019. Later in 2019, the district court denied UBS's motion to dismiss. In August 2023, UBS reached a settlement with the DOJ, under which UBS paid USD 1.435bn to resolve all civil claims by the DOJ.

Our balance sheet at 30 June 2023 reflected a provision with respect to matters described in this item 2 in an amount that UBS believed to be appropriate under the applicable accounting standard.

3. Madoff

In relation to the Bernard L. Madoff Investment Securities LLC (BMIS) investment fraud, UBS AG, UBS (Luxembourg) S.A. (now UBS Europe SE, Luxembourg branch) and certain other UBS subsidiaries have been subject to inquiries by a number of regulators, including the Swiss Financial Market Supervisory Authority (FINMA) and the Luxembourg Commission de Surveillance du Secteur Financier. Those inquiries concerned two third-party funds established under Luxembourg law, substantially all assets of which were with BMIS, as well as certain funds established in offshore jurisdictions with either direct or indirect exposure to BMIS. These funds faced severe losses, and the Luxembourg funds are in liquidation. The documentation establishing both funds identifies UBS entities in various roles, including custodian, administrator, manager, distributor and promoter, and indicates that UBS employees serve as board members.

In 2009 and 2010, the liquidators of the two Luxembourg funds filed claims against UBS entities, non-UBS entities and certain individuals, including current and former UBS employees, seeking amounts totaling approximately EUR 2.1bn, which includes amounts that the funds may be held liable to pay the trustee for the liquidation of BMIS (BMIS Trustee).

A large number of alleged beneficiaries have filed claims against UBS entities (and non-UBS entities) for purported losses relating to the Madoff fraud. The majority of these cases have been filed in Luxembourg, where decisions that the claims in eight test cases were inadmissible have been affirmed by the Luxembourg Court of Appeal, and the Luxembourg Supreme Court has dismissed a further appeal in one of the test cases.

In the US, the BMIS Trustee filed claims against UBS entities, among others, in relation to the two Luxembourg funds and one of the offshore funds. The total amount claimed against all defendants in these actions was not less than USD 2bn. In 2014, the US Supreme Court rejected the BMIS Trustee's motion for leave to appeal decisions dismissing all claims except those for the recovery of approximately USD 125m of payments alleged to be fraudulent conveyances and preference payments. In 2016, the bankruptcy court dismissed these claims against the UBS entities. In 2019, the Court of Appeals reversed the dismissal of the BMIS Trustee's remaining claims, and the US Supreme Court subsequently denied a petition seeking review of the Court of Appeals' decision. The case has been remanded to the Bankruptcy Court for further proceedings.

Note 15 Provisions and contingent liabilities (continued)

4. Foreign exchange, LIBOR and benchmark rates, and other trading practices

Foreign exchange-related regulatory matters: Beginning in 2013, numerous authorities commenced investigations concerning possible manipulation of foreign exchange markets and precious metals prices. As a result of these investigations, UBS entered into resolutions with Swiss, US and United Kingdom regulators and the European Commission. UBS was granted conditional immunity by the Antitrust Division of the DOJ and by authorities in other jurisdictions in connection with potential competition law violations relating to foreign exchange and precious metals businesses.

Foreign exchange-related civil litigation: Putative class actions have been filed since 2013 in US federal courts and in other jurisdictions against UBS and other banks on behalf of putative classes of persons who engaged in foreign currency transactions with any of the defendant banks. UBS has resolved US federal court class actions relating to foreign currency transactions with the defendant banks and persons who transacted in foreign exchange futures contracts and options on such futures under a settlement agreement that provides for UBS to pay an aggregate of USD 141m and provide cooperation to the settlement classes. Certain class members have excluded themselves from that settlement and have filed individual actions in US and English courts against UBS and other banks, alleging violations of US and European competition laws and unjust enrichment. UBS and the other banks have resolved those individual matters.

In 2015, a putative class action was filed in federal court against UBS and numerous other banks on behalf of persons and businesses in the US who directly purchased foreign currency from the defendants and alleged co-conspirators for their own end use. In 2022, the court denied plaintiffs' motion for class certification. In March 2023, the court granted defendants' summary judgment motion, dismissing the case. Plaintiffs have appealed.

LIBOR and other benchmark-related regulatory matters: Numerous government agencies conducted investigations regarding potential improper attempts by UBS, among others, to manipulate LIBOR and other benchmark rates at certain times. UBS reached settlements or otherwise concluded investigations relating to benchmark interest rates with the investigating authorities. UBS was granted conditional leniency or conditional immunity from authorities in certain jurisdictions, including the Antitrust Division of the DOJ and the Swiss Competition Commission (WEKO), in connection with potential antitrust or competition law violations related to certain rates. However, UBS has not reached a final settlement with WEKO, as the Secretariat of WEKO has asserted that UBS does not qualify for full immunity.

LIBOR and other benchmark-related civil litigation: A number of putative class actions and other actions are pending in the federal courts in New York against UBS and numerous other banks on behalf of parties who transacted in certain interest rate benchmark-based derivatives. Also pending in the US and in other jurisdictions are a number of other actions asserting losses related to various products whose interest rates were linked to LIBOR and other benchmarks, including adjustable rate mortgages, preferred and debt securities, bonds pledged as collateral, loans, depository accounts, investments and other interest-bearing instruments. The complaints allege manipulation, through various means, of certain benchmark interest rates, including USD LIBOR, Euroyen TIBOR, Yen LIBOR, EURIBOR, CHF LIBOR, GBP LIBOR and seek unspecified compensatory and other damages under varying legal theories.

Note 15 Provisions and contingent liabilities (continued)

USD LIBOR class and individual actions in the US: In 2013 and 2015, the district court in the USD LIBOR actions dismissed, in whole or in part, certain plaintiffs' antitrust claims, federal racketeering claims, Commodity Exchange Act claims, and state common law claims, and again dismissed the antitrust claims in 2016 following an appeal. In 2021, the Second Circuit affirmed the district court's dismissal in part and reversed in part and remanded to the district court for further proceedings. The Second Circuit, among other things, held that there was personal jurisdiction over UBS and other foreign defendants. Separately, in 2018, the Second Circuit reversed in part the district court's 2015 decision dismissing certain individual plaintiffs' claims and certain of these actions are now proceeding. In 2018, the district court denied plaintiffs' motions for class certification in the USD class actions for claims pending against UBS, and plaintiffs sought permission to appeal that ruling to the Second Circuit. The Second Circuit denied the petition to appeal. In 2020, an individual action was filed in the Northern District of California against UBS and numerous other banks alleging that the defendants conspired to fix the interest rate used as the basis for loans to consumers by jointly setting the USD LIBOR rate and monopolized the market for LIBOR-based consumer loans and credit cards. In September 2022, the court granted defendants' motion to dismiss the complaint in its entirety, while allowing plaintiffs the opportunity to file an amended complaint. Plaintiffs filed an amended complaint in October 2022, and defendants have moved to dismiss the amended complaint.

Other benchmark class actions in the US:

Yen LIBOR / Euroyen TIBOR – In 2017, the court dismissed one Yen LIBOR / Euroyen TIBOR action in its entirety on standing grounds. In 2020, the appeals court reversed the dismissal and, subsequently, plaintiffs in that action filed an amended complaint focused on Yen LIBOR. In 2022, the court granted UBS's motion for reconsideration and dismissed the case against UBS. The dismissal of the case against UBS could be appealed following the disposition of the case against the remaining defendant in the district court.

CHF LIBOR – In 2017, the court dismissed the CHF LIBOR action on standing grounds and failure to state a claim. Plaintiffs filed an amended complaint, and the court granted a renewed motion to dismiss in 2019. Plaintiffs appealed. In 2021, the Second Circuit granted the parties' joint motion to vacate the dismissal and remand the case for further proceedings. Plaintiffs filed a third amended complaint in November 2022 and defendants moved to dismiss the amended complaint in January 2023.

EURIBOR – In 2017, the court in the EURIBOR lawsuit dismissed the case as to UBS and certain other foreign defendants for lack of personal jurisdiction. Plaintiffs have appealed.

GBP LIBOR – The court dismissed the GBP LIBOR action in 2019. Plaintiffs have appealed.

Government bonds: Putative class actions have been filed since 2015 in US federal courts against UBS and other banks on behalf of persons who participated in markets for US Treasury securities since 2007. A consolidated complaint was filed in 2017 in the US District Court for the Southern District of New York alleging that the banks colluded with respect to, and manipulated prices of, US Treasury securities sold at auction and in the secondary market and asserting claims under the antitrust laws and for unjust enrichment. Defendants' motions to dismiss the consolidated complaint were granted in 2021. Plaintiffs filed an amended complaint, which defendants moved to dismiss later in 2021. In March 2022, the court granted defendants' motion to dismiss that complaint. Plaintiffs have appealed the dismissal. Similar class actions have been filed concerning European government bonds and other government bonds.

Note 15 Provisions and contingent liabilities (continued)

In 2021, the European Commission issued a decision finding that UBS and six other banks breached European Union antitrust rules in 2007–2011 relating to European government bonds. The European Commission fined UBS EUR 172m. UBS is appealing the amount of the fine.

With respect to additional matters and jurisdictions not encompassed by the settlements and orders referred to above, our balance sheet at 30 June 2023 reflected a provision in an amount that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

5. Swiss retrocessions

The Federal Supreme Court of Switzerland ruled in 2012, in a test case against UBS, that distribution fees paid to a firm for distributing third-party and intra-group investment funds and structured products must be disclosed and surrendered to clients who have entered into a discretionary mandate agreement with the firm, absent a valid waiver. FINMA issued a supervisory note to all Swiss banks in response to the Supreme Court decision. UBS has met the FINMA requirements and has notified all potentially affected clients.

The Supreme Court decision has resulted, and continues to result, in a number of client requests for UBS to disclose and potentially surrender retrocessions. Client requests are assessed on a case-by-case basis. Considerations taken into account when assessing these cases include, among other things, the existence of a discretionary mandate and whether or not the client documentation contained a valid waiver with respect to distribution fees.

Our balance sheet at 30 June 2023 reflected a provision with respect to matters described in this item 5 in an amount that UBS believes to be appropriate under the applicable accounting standard. The ultimate exposure will depend on client requests and the resolution thereof, factors that are difficult to predict and assess. Hence, as in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

Note 16 Supplemental guarantor information required under SEC regulations

Joint liability of UBS Switzerland AG

In 2015, the Personal & Corporate Banking and Wealth Management businesses booked in Switzerland were transferred from UBS AG to UBS Switzerland AG through an asset transfer in accordance with the Swiss Merger Act. Under the terms of the asset transfer agreement, UBS Switzerland AG assumed joint liability for contractual obligations of UBS AG existing on the asset transfer date, including the full and unconditional guarantee of certain registered debt securities issued by UBS AG. To reflect this joint liability, UBS Switzerland AG is presented in a separate column as a subsidiary co-guarantor.

The joint liability of UBS Switzerland AG for contractual obligations of UBS AG decreased in the first half of 2023 by USD 0.8bn to USD 3.5bn as of 30 June 2023. The decrease substantially relates to a combination of contractual maturities, early extinguishments, fair value movements and foreign currency effects.

Supplemental guarantor information

The following tables provide supplemental guarantor information that is required under SEC regulations.

Supplemental guarantor consolidated income statement

<i>USD m</i>	UBS AG (standalone) ¹	UBS Switzerland AG (standalone) ¹	Other subsidiaries ²	Elimination entries	UBS AG (consolidated)
For the six months ended 30 June 2023					
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	4,911	3,248	4,399	(2,260)	10,298
Interest expense from financial instruments measured at amortized cost	(6,508)	(1,085)	(3,543)	2,675	(8,461)
Net interest income from financial instruments measured at fair value through profit or loss and other	461	343	460	(407)	856
Net interest income	(1,136)	2,506	1,316	8	2,694
Other net income from financial instruments measured at fair value through profit or loss	3,605	505	533	366	5,009
Fee and commission income	1,384	2,557	6,457	(314)	10,083
Fee and commission expense	(345)	(233)	(601)	314	(866)
Net fee and commission income	1,038	2,324	5,855	0	9,217
Other income	2,166	118	527	(2,418)	392
Total revenues	5,673	5,453	8,231	(2,045)	17,313
Credit loss expense / (release)	1	21	29	3	54
Personnel expenses	1,670	1,092	4,983	0	7,745
General and administrative expenses	1,834	1,735	3,216	(1,360)	5,425
Depreciation, amortization and impairment of non-financial assets	427	198	605	(54)	1,176
Operating expenses	3,931	3,025	8,804	(1,414)	14,346
Operating profit / (loss) before tax	1,741	2,407	(602)	(634)	2,912
Tax expense / (benefit)	50	436	241	48	776
Net profit / (loss)	1,691	1,971	(843)	(683)	2,136
Net profit / (loss) attributable to non-controlling interests	0	0	12	0	12
Net profit / (loss) attributable to shareholders	1,691	1,971	(855)	(683)	2,124

¹ Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements under "Complementary financial information" at ubs.com/investors for information prepared in accordance with Swiss GAAP. ² The "Other subsidiaries" column includes consolidated information for the UBS Americas Holding LLC, UBS Europe SE and UBS Asset Management AG significant sub-groups, as well as standalone information for other subsidiaries.

Note 16 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of comprehensive income

<i>USD m</i>	UBS AG (standalone) ¹	UBS Switzerland AG (standalone) ¹	Other subsidiaries ²	Elimination entries	UBS AG (consolidated)
For the six months ended 30 June 2023					
Comprehensive income attributable to shareholders					
Net profit / (loss)	1,691	1,971	(855)	(683)	2,124
Other comprehensive income					
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation, net of tax	10	470	63	(297)	246
Financial assets measured at fair value through other comprehensive income, net of tax	1		1		1
Cash flow hedges, net of tax	40	108	(79)	(5)	64
Cost of hedging, net of tax	6		(1)		6
Total other comprehensive income that may be reclassified to the income statement, net of tax	57	578	(16)	(302)	317
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans, net of tax	3	(18)	2		(12)
Own credit on financial liabilities designated at fair value, net of tax	(100)				(100)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(96)	(18)	2		(112)
Total other comprehensive income	(39)	560	(14)	(302)	206
Total comprehensive income attributable to shareholders	1,652	2,531	(870)	(985)	2,329
Total comprehensive income attributable to non-controlling interests			14		14
Total comprehensive income	1,652	2,531	(856)	(985)	2,343

¹ Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements, available under "Complementary financial information" at ubs.com/investors, for information prepared in accordance with Swiss GAAP. ² The "Other subsidiaries" column includes consolidated information for the UBS Americas Holding LLC, UBS Europe SE and UBS Asset Management AG significant sub-groups, as well as standalone information for other subsidiaries.

Note 16 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated balance sheet

<i>USD m</i>					
As of 30 June 2023	UBS AG (standalone) ¹	UBS Switzerland AG (standalone) ¹	Other subsidiaries ²	Elimination entries	UBS AG (consolidated)
Assets					
Cash and balances at central banks	41,403	84,668	33,354		159,425
Amounts due from banks	58,247	6,891	16,479	(60,222)	21,395
Receivables from securities financing transactions measured at amortized cost	48,438	827	39,088	(26,375)	61,977
Cash collateral receivables on derivative instruments	36,017	1,832	10,757	(13,538)	35,068
Loans and advances to customers	91,603	239,061	97,024	(30,091)	397,596
Other financial assets measured at amortized cost	23,165	8,674	23,093	(2,753)	52,180
Total financial assets measured at amortized cost	298,872	341,954	219,795	(132,979)	727,642
Financial assets at fair value held for trading	106,625	124	15,466	(1,982)	120,232
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>	<i>45,553</i>	<i>1</i>	<i>7,170</i>	<i>(13,156)</i>	<i>39,568</i>
Derivative financial instruments	122,172	4,810	30,912	(33,849)	124,046
Brokerage receivables	11,314		9,905	0	21,218
Financial assets at fair value not held for trading	53,343	4,255	30,637	(24,522)	63,714
Total financial assets measured at fair value through profit or loss	293,455	9,189	86,919	(60,353)	329,210
Financial assets measured at fair value through other comprehensive income	1,935		282		2,217
Investments in subsidiaries and associates	50,969	34	0	(49,894)	1,109
Property, equipment and software	5,904	1,707	3,847	(265)	11,193
Goodwill and intangible assets	212		6,064	5	6,281
Deferred tax assets	1,752	263	7,479	(83)	9,411
Other non-financial assets	6,354	1,697	1,193	10	9,254
Total assets	659,454	354,843	325,579	(243,558)	1,096,318
Liabilities					
Amounts due to banks	45,557	42,309	60,365	(131,941)	16,290
Payables from securities financing transactions measured at amortized cost	21,049	439	17,170	(26,338)	12,320
Cash collateral payables on derivative instruments	32,431	1,361	11,108	(13,456)	31,445
Customer deposits	97,967	276,512	119,750	27,428	521,657
Funding from UBS Group AG measured at amortized cost	61,445				61,445
Debt issued measured at amortized cost	53,535	9,083	1	(57)	62,561
Other financial liabilities measured at amortized cost	5,598	3,076	6,118	(3,119)	11,673
Total financial liabilities measured at amortized cost	317,581	332,780	214,513	(147,482)	717,392
Financial liabilities at fair value held for trading	30,727	351	6,321	(1,784)	35,616
Derivative financial instruments	125,014	5,316	30,850	(33,813)	127,367
Brokerage payables designated at fair value	29,158		14,204	(4)	43,357
Debt issued designated at fair value	78,084		783	(127)	78,741
Other financial liabilities designated at fair value	20,073		22,163	(10,811)	31,425
Total financial liabilities measured at fair value through profit or loss	283,056	5,667	74,321	(46,539)	316,506
Provisions	1,889	215	1,713	(1)	3,817
Other non-financial liabilities	1,205	1,098	2,943	84	5,330
Total liabilities	603,731	339,760	293,491	(193,938)	1,043,044
Equity attributable to shareholders	55,723	15,083	31,736	(49,620)	52,922
Equity attributable to non-controlling interests			352		352
Total equity	55,723	15,083	32,088	(49,620)	53,274
Total liabilities and equity	659,454	354,843	325,579	(243,558)	1,096,318

¹ Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements, available under "Complementary financial information" at ubs.com/investors, for information prepared in accordance with Swiss GAAP. ² The "Other subsidiaries" column includes consolidated information for the UBS Americas Holding LLC, UBS Europe SE and UBS Asset Management AG significant sub-groups, as well as standalone information for other subsidiaries.

Note 16 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

USD m

For the six months ended 30 June 2023

	UBS AG ¹	UBS Switzerland AG ¹	Other subsidiaries ¹	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	(17,054)	699	(2,755)	(19,110)
Cash flow from / (used in) investing activities				
Disposal of subsidiaries, associates and intangible assets ²	35			35
Purchase of property, equipment and software	(220)	(142)	(307)	(669)
Purchase of financial assets measured at fair value through other comprehensive income	(2,392)		(52)	(2,444)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	2,408		60	2,468
Purchase of debt securities measured at amortized cost	(5,005)	(1,059)	(1,477)	(7,541)
Disposal and redemption of debt securities measured at amortized cost	1,141	1,421	2,097	4,659
Net cash flow from / (used in) investing activities	(4,033)	220	321	(3,492)
Cash flow from / (used in) financing activities				
Net issuance (repayment) of short-term debt measured at amortized cost	5,519	4	32	5,555
Distributions paid on UBS AG shares	(6,000)			(6,000)
Issuance of debt designated at fair value and long-term debt measured at amortized cost ³	50,162	479	500	51,141
Repayment of debt designated at fair value and long-term debt measured at amortized cost ³	(43,322)	(645)	(124)	(44,091)
Net cash flows from other financing activities	(124)	0	(118)	(242)
Net activity related to group internal capital transactions and dividends	5,128	(2,944)	(2,185)	0
Net cash flow from / (used in) financing activities	11,363	(3,106)	(1,895)	6,362
Total cash flow				
Cash and cash equivalents at the beginning of the year	63,608	86,232	45,359	195,200
Net cash flow from / (used in) operating, investing and financing activities	(9,724)	(2,187)	(4,329)	(16,239)
Effects of exchange rate differences on cash and cash equivalents	(472)	2,470	2	1,999
Cash and cash equivalents at the end of the period⁴	53,412	86,515	41,032	180,959

¹ Cash flows generally represent a third-party view from a UBS AG consolidated perspective, except for Net activity related to group internal capital transactions and dividends. ² Includes dividends received from associates. ³ Includes funding from UBS Group AG to UBS AG. ⁴ Consists of balances with an original maturity of three months or less. USD 3,073m were restricted.

Note 16 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated income statement

<i>USD m</i>	UBS AG (standalone) ¹	UBS Switzerland AG (standalone) ¹	Other subsidiaries ²	Elimination entries	UBS AG (consolidated)
For the six months ended 30 June 2022					
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	1,506	1,775	1,638	(393)	4,526
Interest expense from financial instruments measured at amortized cost	(1,629)	(238)	(643)	597	(1,912)
Net interest income from financial instruments measured at fair value through profit or loss and other	557	238	136	(165)	766
Net interest income	434	1,775	1,132	39	3,380
Other net income from financial instruments measured at fair value through profit or loss	2,373	469	468	535	3,845
Fee and commission income	1,634	2,606	7,230	(366)	11,103
Fee and commission expense	(373)	(247)	(678)	363	(934)
Net fee and commission income	1,261	2,359	6,552	(3)	10,169
Other income	3,653	104	1,944	(4,567)	1,135
Total revenues	7,721	4,708	10,095	(3,995)	18,529
Credit loss expense / (release)	(31)	58	(4)	2	25
Personnel expenses	1,782	1,031	5,183	0	7,996
General and administrative expenses	1,642	1,688	2,596	(1,330)	4,597
Depreciation, amortization and impairment of non-financial assets	432	158	366	(55)	900
Operating expenses	3,856	2,877	8,145	(1,385)	13,492
Operating profit / (loss) before tax	3,896	1,774	1,954	(2,612)	5,012
Tax expense / (benefit)	(18)	322	557	165	1,026
Net profit / (loss)	3,914	1,452	1,397	(2,777)	3,986
Net profit / (loss) attributable to non-controlling interests	0	0	18	0	18
Net profit / (loss) attributable to shareholders	3,914	1,452	1,379	(2,777)	3,968

¹ Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements under "Complementary financial information" at ubs.com/investors for information prepared in accordance with Swiss GAAP. ² The "Other subsidiaries" column includes consolidated information for the UBS Americas Holding LLC, UBS Europe SE and UBS Asset Management AG significant sub-groups, as well as standalone information for other subsidiaries.

Note 16 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of comprehensive income

<i>USD m</i>	UBS				
For the six months ended 30 June 2022	UBS AG (standalone) ¹	Switzerland AG (standalone) ¹	Other subsidiaries ²	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders					
Net profit / (loss)	3,914	1,452	1,379	(2,777)	3,968
Other comprehensive income					
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation, net of tax	(107)	(688)	(647)	641	(801)
Financial assets measured at fair value through other comprehensive income, net of tax ³	(6)		10	0	3
Cash flow hedges, net of tax	(1,970)	(889)	(492)	(3)	(3,355)
Cost of hedging, net of tax	98				98
Total other comprehensive income that may be reclassified to the income statement, net of tax	(1,986)	(1,576)	(1,130)	637	(4,055)
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans, net of tax	266	(94)	57	0	229
Own credit on financial liabilities designated at fair value, net of tax	693				693
Total other comprehensive income that will not be reclassified to the income statement, net of tax	960	(94)	57	0	922
Total other comprehensive income	(1,027)	(1,671)	(1,073)	637	(3,133)
Total comprehensive income attributable to shareholders	2,888	(219)	307	(2,140)	835
Total comprehensive income attributable to non-controlling interests			9		9
Total comprehensive income	2,888	(219)	316	(2,140)	844

¹ Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements, available under "Complementary financial information" at ubs.com/investors, for information prepared in accordance with Swiss GAAP. ² The "Other subsidiaries" column includes consolidated information for the UBS Americas Holding LLC, UBS Europe SE and UBS Asset Management AG significant sub-groups, as well as standalone information for other subsidiaries. ³ Effective 1 April 2022, a portfolio of assets previously classified as Financial assets measured at fair value through other comprehensive income was reclassified to Other financial assets measured at amortized cost. Refer to Note 10a for more information.

Note 16 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated balance sheet

<i>USD m</i>	UBS				
As of 31 December 2022	UBS AG (standalone) ¹	Switzerland AG (standalone) ¹	Other subsidiaries ²	Elimination entries	UBS AG (consolidated)
Assets					
Cash and balances at central banks	48,689	84,465	36,291	0	169,445
Amounts due from banks	39,691	6,357	19,063	(50,441)	14,671
Receivables from securities financing transactions measured at amortized cost	51,493	903	34,110	(18,691)	67,814
Cash collateral receivables on derivative instruments	35,594	1,221	10,074	(11,856)	35,033
Loans and advances to customers	90,168	229,861	101,231	(31,233)	390,027
Other financial assets measured at amortized cost	24,005	9,532	21,880	(2,029)	53,389
Total financial assets measured at amortized cost	289,641	332,339	222,649	(114,250)	730,379
Financial assets at fair value held for trading	95,810	173	13,899	(1,848)	108,034
<i>of which: assets pledged as collateral that may be sold or repledged by counterparties</i>	<i>41,056</i>	<i>0</i>	<i>5,578</i>	<i>(9,892)</i>	<i>36,742</i>
Derivative financial instruments	149,447	5,925	35,106	(40,368)	150,109
Brokerage receivables	9,763	0	7,814	0	17,576
Financial assets at fair value not held for trading	45,302	4,354	26,843	(17,091)	59,408
Total financial assets measured at fair value through profit or loss	300,321	10,453	83,661	(59,308)	335,127
Financial assets measured at fair value through other comprehensive income					
Investments in subsidiaries and associates	54,323	33	0	(53,255)	1,101
Property, equipment and software	5,852	1,654	4,077	(267)	11,316
Goodwill and intangible assets	213	0	6,050	5	6,267
Deferred tax assets	1,624	276	7,470	(16)	9,354
Other non-financial assets	6,930	1,768	951	4	9,652
Total assets	660,856	346,522	325,144	(227,087)	1,105,436
Liabilities					
Amounts due to banks	41,395	37,123	51,555	(118,477)	11,596
Payables from securities financing transactions measured at amortized cost	9,425	247	13,303	(18,774)	4,202
Cash collateral payables on derivative instruments	35,528	1,518	11,191	(11,800)	36,436
Customer deposits	98,628	273,316	132,619	22,608	527,171
Funding from UBS Group AG measured at amortized cost	56,147	0	0	0	56,147
Debt issued measured at amortized cost	50,706	8,965	1	(173)	59,499
Other financial liabilities measured at amortized cost	4,903	2,221	5,554	(2,287)	10,391
Total financial liabilities measured at amortized cost	296,733	323,391	214,222	(128,903)	705,442
Financial liabilities at fair value held for trading	25,059	183	5,843	(1,570)	29,515
Derivative financial instruments	153,778	6,177	35,314	(40,363)	154,906
Brokerage payables designated at fair value	32,346	0	12,746	(7)	45,085
Debt issued designated at fair value	71,444	0	508	(110)	71,842
Other financial liabilities designated at fair value	17,888	0	17,074	(2,928)	32,033
Total financial liabilities measured at fair value through profit or loss	300,514	6,360	71,484	(44,977)	333,382
Provisions	1,904	239	1,041	(2)	3,183
Other non-financial liabilities	1,630	1,019	3,742	98	6,489
Total liabilities	600,782	331,009	290,490	(173,785)	1,048,496
Equity attributable to shareholders					
Equity attributable to non-controlling interests	60,075	15,513	34,313	(53,303)	56,598
Total equity	60,075	15,513	34,655	(53,303)	56,940
Total liabilities and equity	660,856	346,522	325,144	(227,087)	1,105,436

¹ Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements, available under "Complementary financial information" at ubs.com/investors, for information prepared in accordance with Swiss GAAP. ² The "Other subsidiaries" column includes consolidated information for the UBS Americas Holding LLC, UBS Europe SE and UBS Asset Management AG significant sub-groups, as well as standalone information for other subsidiaries.

Note 16 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

<i>USD m</i>				
For the six months ended 30 June 2022	UBS AG ¹	UBS Switzerland AG ¹	Other subsidiaries ¹	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	13,625	6,134	(3,121)	16,639
Cash flow from / (used in) investing activities				
Disposal of subsidiaries, associates and intangible assets ²	31		880	911
Purchase of property, equipment and software	(276)	(145)	(275)	(695)
Disposal of property, equipment and software	3	0	0	3
Purchase of financial assets measured at fair value through other comprehensive income	(2,275)		(547)	(2,821)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	1,498		794	2,291
Purchase of debt securities measured at amortized cost	(5,879)	(622)	(1,666)	(8,167)
Disposal and redemption of debt securities measured at amortized cost	2,160	313	1,440	3,914
Net cash flow from / (used in) investing activities	(4,738)	(454)	627	(4,565)
Cash flow from / (used in) financing activities				
Net issuance (repayment) of short-term debt measured at amortized cost	(10,421)	(3)	(16)	(10,440)
Distributions paid on UBS AG shares	(4,200)			(4,200)
Issuance of debt designated at fair value and long-term debt measured at amortized cost ³	48,258	550	48	48,856
Repayment of debt designated at fair value and long-term debt measured at amortized cost ³	(35,671)	(385)	(253)	(36,309)
Net cash flows from other financing activities	(130)		(211)	(341)
Net activity related to group internal capital transactions and dividends	4,092	(2,088)	(2,004)	0
Net cash flow from / (used in) financing activities	1,929	(1,926)	(2,436)	(2,433)
Total cash flow				
Cash and cash equivalents at the beginning of the year	57,895	92,799	57,061	207,755
Net cash flow from / (used in) operating, investing and financing activities	10,816	3,755	(4,930)	9,642
Effects of exchange rate differences on cash and cash equivalents	(3,671)	(4,342)	(1,635)	(9,648)
Cash and cash equivalents at the end of the period⁴	65,040	92,212	50,496	207,748

¹ Cash flows generally represent a third-party view from a UBS AG consolidated perspective, except for Net activity related to group internal capital transactions and dividends. ² Includes cash proceeds from the sale of UBS AG's shareholding in its Japanese real estate joint venture, Mitsubishi Corp.-UBS Realty Inc., and dividends received from associates. ³ Includes funding from UBS Group AG to UBS AG. ⁴ Consists of balances with an original maturity of three months or less. USD 4,434m were restricted.

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